# DEVELOPMENT AND APPLICATION OF A SALMON HABITAT RESTORATION FRAMEWORK ON THE NOME RIVER WATERSHED, ALASKA

***Prepared for*:**

**Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative**
**c/o Bering Sea Fishermen's Association**
**725 Christensen Drive**
**Anchorage, AK 99501**

**June 2005**

# DEVELOPMENT AND APPLICATION OF A SALMON HABITAT RESTORATION FRAMEWORK ON THE NOME RIVER WATERSHED, ALASKA

***Prepared by*:**


**M.N. Gaboury, R.B. Murray and R.C. Bocking**
**LGL Limited**
**environmental research associates**
**9768 Second Street**
**Sidney, BC V8L 3Y8**

**and**

**M. Nemeth**
**LGL Alaska Research Associates, Inc.**
**1101 E. 76th St. Suite B**
**Anchorage AK 99518**

**and**

**Kawerak, Inc.,**
**P.O. Box 948,**
**Nome, Alaska 99518**


***Prepared for*:**

**Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative**
**c/o Bering Sea Fishermen's Association**
**725 Christensen Drive**
**Anchorage, AK 99501**

**June 2005**

# ACKNOWLEDGMENTS

Many people participated in one way or another in the completion of this study. We thank Rose Fosdick and Karen Dunmall, a principal investigator on the project, of Kawerak, Inc. who provided project direction and contract management. We thank Wes Jones and Jim Menard (Alaska Department of Fish and Game), Mac McLean (Alaska Department of Natural Resources) and Charles Lean (National Park Service), Ron Engstrom, Tim Smith and Elders: Esther Bourdon, Pete Larsen, and Dan Karmun for their assistance in providing historic and current information on the watershed. Timothy Kroeker (Kawerak, Inc.) provided valuable information and insights on past and proposed surveys and studies. Karen Dunmall, Sye Larsen, Reese Madden and Timothy Kroeker of Kawerak, Inc. provided invaluable local knowledge and field assistance throughout the study. Greg Buck (LGL Alaska) also provided field assistance. Dale Funk (LGL Alaska) provided information on native vegetation and rehabilitation methods. Robin Tamasi (LGL Limited) prepared the maps for the report. Nicole Gaboury sketched pen and ink drawings of typical stream restoration designs. Dorothy Baker proofread and coordinated the production of this report. The support of all these individuals is greatly appreciated.

Funding for this project was provided by the Arctic-Yukon-Kuskokwin Sustainable Salmon Initiative.

# TABLE OF CONTENTS

ACKNOWLEDGMENTS ..... i
LIST OF TABLES ..... iv
LIST OF FIGURES ..... iv
LIST OF APPENDICES ..... v
LIST OF MAPS ..... v
LIST OF PHOTOS ..... vi
1 INTRODUCTION ..... 1
2 STUDY AREA ..... 4
2.1 Physical setting ..... 4
2.2 Fish Resources ..... 4
3 METHODS ..... 6
3.1 Overview Assessment Methodology ..... 6
3.2 Detailed Habitat Assessment Methodology ..... 7
3.2.1 Fish Distribution and Habitat Use ..... 7
3.2.2 Stream Habitat Condition ..... 7
3.2.3 Channel Condition ..... 8
3.2.4 Sediment Sources ..... 8
3.2.5 Photography ..... 8
3.2.6 Data Analysis and Interpretation ..... 9
3.2.6.1 Diagnostic Value for Percent Pools and Pool Frequency ..... 9
3.2.6.2 Diagnostic Value for Deep Pools (Holding Pools) ..... 9
3.2.6.3 Diagnostic Value for Spawning Gravel Quantity ..... 9
3.2.6.4 Diagnostic Value for Spawning Gravel Quality ..... 10
3.2.6.5 Diagnostic Value for Off-channel Habitat ..... 10
3.3 Restoration Design Methodology ..... 10
4 RESULTS ..... 11
4.1 Overview Assessment ..... 11
4.1.1 Hydrology ..... 11
4.1.2 Reach Breaks ..... 12
4.1.3 Reach and Subbasin Priorities ..... 17
4.2 Detailed Habitat Assessment ..... 22
4.2.1 Fish Sampling and Observations ..... 23
4.2.2 Fish Habitat Condition ..... 23
4.2.3 Nome River (Reach N1) ..... 23
4.2.4 Nome River (Reach N2) ..... 24
4.2.5 Nome River (Reach N3) ..... 24
4.2.6 Nome River (Reach N4) ..... 27
4.2.7 Nome River (Reach N5) ..... 27
4.2.8 Nome River (Reach N6) ..... 28
4.2.9 Nome River (Reach N7) ..... 28
4.2.10 Osborn Creek (Reach Os1) ..... 29
4.2.11 Buster Creek (Reach Bu1, Reach Bu2, Reach Bu3-RF, Reach Bus3-LF) ..... 29
4.2.12 Dexter Creek (Reach Dx1) ..... 31
4.2.13 Basin Creek (Reach Bas1) ..... 32

4.2.14 Hobson Creek (Reach H1) .... 33
4.2.15 Hobson Creek (Reach H2) .... 33
4.2.16 Darling Creek (Reach D1) .... 33
4.2.17 Rocky Mountain Creek (Reach RM1) .... 34
4.2.18 Christian Creek (Reach C1) .... 35
4.2.19 Sulphur Creek (Reach S1) .... 35
4.2.20 Riparian Condition .... 36
4.2.21 Habitat Limitations .... 36
4.3 Fish Habitat Restoration Designs .... 39
4.3.1 Buster Creek Channel Restoration .... 41
4.3.1.1 General Design Considerations .... 41
4.3.1.2 Restoration Design .... 45
4.3.2 Darling Creek Channel Restoration .... 51
4.3.2.1 General Design Considerations .... 51
4.3.2.2 Restoration Design .... 54
4.3.3 Kink Pond and Groundwater Channel Enhancement .... 58
4.3.3.1 Enhancement Design for Kink Pond .... 58
4.3.3.2 Enhancement Design for Groundwater Channel .... 59
4.3.3.3 Potential Limitation of Project .... 61
4.3.4 Basin Creek Pond Habitat Enhancement .... 64
4.3.5 Banner Creek Habitat Restoration .... 64
4.3.6 Nome River Off-Channel Habitat Restoration .... 66
4.3.7 Best Management Practices .... 68
4.3.7.1 Stabilization of Sediment Sources .... 68
4.3.8 Project Implementation .... 70
4.3.8.1 Access, Logistics, Materials and Labor .... 70
4.3.8.2 Timing of Works, Priorities and Scheduling .... 71
5 EVALUATION OF RESTORATION FRAMEWORK .... 73
5.1 Evaluation of Trial on Nome River .... 73
5.2 Application to Western Alaska Watersheds .... 74
6 REFERENCES .... 75

APPENDICES
MAPS
PHOTOS

# LIST OF TABLES

Table 1. Known fish species of the Nome River watershed (Nemeth et al. 2005b). .................... 5
Table 2. Discharge measurements and related morphometric data for the Nome River taken downstream of Nome-Kougarok Road crossing. Modified after Kroeker and Dunmall (2005). Minimum and maximum recorded discharges shown in bold. .............................. 14
Table 3. Summary of return period maximum daily and mean monthly discharges for streams within the Nome area, AK, and underestimated values for the Nome River and tributaries.15
Table 4. Evaluation of the likelihood of restoration activities benefiting fish habitat for the mainstem and major subbasins of the Nome River watershed. ........................................... 18
Table 5. Channel widths for the reaches of Nome River based on interpretation of 1950 and 1986 aerial photomosaics (see Maps 1 and 2). Note: Only the lower portion of Reach 7 was included in the photomosaics. ........................................................................................ 21
Table 6. Channel lengths for the reaches of Nome River based on interpretation of 1950 and 1986 aerial photomosaics (see Maps 1 and 2). Note: Only a portion of Reach 7 was included in the photomosaics. ................................................................................................. 21
Table 7. Prioritization of subbasins and components for restoration in Nome River watershed. 21
Table 8. Fish distribution for selected reaches in Nome River watershed.................................. 25
Table 9. Diagnostic summary of salmonid habitat condition within the Nome River watershed. ........................................................................................................................... 26
Table 10. Summary of wetted (August 2004) and bankfull channel measurements for each surveyed cross section in Buster Creek. ............................................................................... 42
Table 11. Summary of wetted (August 2004) and bankfull channel measurements for each surveyed cross section in Darling Creek. .............................................................................. 53
Table 12. Cost estimate for proposed restoration projects in the Nome River watershed. .......... 72

# LIST OF FIGURES

Figure 1. Overview map of the Nome River showing sub-watersheds. ....................................... 3
Figure 2. Salmon escapements in Nome River from 1993 through 2004 (After Menard and Kohler in press). ................................................................................................................. 6
Figure 3. Map of the Nome River showing mainstem reaches and drainage boundaries of subbasins. ............................................................................................................................. 13
Figure 4. Estimated average annual hydrograph for the Nome River. ...................................... 14
Figure 5. Long profile, gradient (%) and reach boundaries for the mainstem of the Nome River. ........................................................................................................................... 16
Figure 6. Aerial photo view, existing cross sections and streambed profile of Buster Creek showing proposed restoration section. ................................................................................ 44
Figure 7. Relationship between drainage area and bankfull width for US and Canadian streams. Trend lines for Washington and Idaho watercourses based on USGS data, after Leopold et al. (1964). Bankfull measurements for Nome River and tributaries from detailed fish habitat assessments (Appendix D). ......................................................................... 45
Figure 8. Aerial photo view, cross sections and streambed profile of Buster Creek showing proposed restoration measures. ............................................................................................ 47

Figure 9. Schematic drawing of restoration works using LWD structures for channels with instream vehicle trails. .......... 48
Figure 10. Schematic drawing of restoration works using rock deflector structures for channels with instream vehicle trails. .......... 49
Figure 11. Aerial photo view, existing cross sections and streambed profile of Darling Creek in proposed restoration section. .......... 52
Figure 12. Aerial photo view, cross sections and streambed profile of Darling Creek showing proposed restoration measures. .......... 57
Figure 13. Schematics of LUNKER structures designed to provide overhanging shade and protection for fish while serving to stabilize the toe of a streambank. (Both versions use rebar although rebar is not shown on the upper schematic). After Allen and Leech (1997). 59
Figure 14. Aerial photo view, cross sections and existing ground profile upstream of Kink Pond in proposed groundwater channel section. .......... 62
Figure 15. Aerial photo view and proposed groundwater channel cross sections and profile upstream of Kink Pond. .......... 63
Figure 16. Profile and cross section in Banner Creek showing proposed restoration measures. 67

## LIST OF APPENDICES

Appendix A. Historical salmon escapements at the Nome River counting tower, 1993 - 1995, and weir 1996-2004. .......... 80
Appendix B. Flood frequency plots for gauged watersheds within the Nome Division County, AK. .......... 82
Appendix C. Channel, riparian and fish habitat conditions for subbasins of Nome River watershed. .......... 86
Appendix D. Fish habitat assessment data for Nome River and major tributaries. .......... 95
Appendix E. Long profiles for tributaries of Nome River. .......... 96
Appendix F. Level survey and stream substrate information for proposed restoration section in Buster Creek. .......... 100
Appendix G. Plan and cross section drawings of typical LWD structures, rock ballast specifications and detail sketch for attaching boulders to LWD. .......... 103
Appendix H. Level survey and stream substrate information for proposed restoration section in Darling Creek. .......... 109
Appendix I. Level survey information and riffle construction drawing for proposed groundwater channel near Kink Pond. .......... 112
Appendix J. Design drawings for restoration project at Banner Creek culvert. .......... 116

## LIST OF MAPS

Map 1. Lower Nome River 1950 air photo mosaic and channel position.
Map 2. Lower Nome River 1986 air photo mosaic; channel position 1950 and 1986.

# LIST OF PHOTOS

Photo 1. Looking downstream at the vehicle trails within the wetted channel of Dexter Creek. Historic placer mining and use of the channel by vehicles has degraded fish habitat. ......... 40
Photo 2. 1950 aerial photo of Buster Creek showing vehicle trail in proposed restoration section of channel. ......... 41
Photo 3. Looking upstream at eroding side slope of Nome-Kougarok Road at Rocky Mountain Creek culvert crossing. ......... 68
Photo 4. Historic use of the wetted channel in Buster Creek as a vehicle trail has over-widened the channel and degraded fish habitat. ......... 69
Photo 5. Sloughing placer mine tailings adjacent to Clara Creek. ......... 69
Photo 6. Downstream view in Nome River Reach N1 from confluence of Hazel Creek. ......... 120
Photo 7. View of excellent summer rearing habitat with overhead riparian cover in off-channel to Reach N1. ......... 120
Photo 8. Riffle with spawned-out pink and chum salmon in Reach N2, 28 July 2005. ......... 121
Photo 9. View of silt decomposition on potential spawning substrate on right side of channel in Reach N2 downstream of culvert run-off from Nome-Kougarok Road. ......... 121
Photo 10. View of multiple redds and clean gravel along left side of Nome channel in Reach N2. ......... 122
Photo 11. Upstream view in Reach N3 at Banner Creek subdivision in background. ......... 122
Photo 12. Downstream view in Reach N4. Old railway trestle in photo right background. ......... 123
Photo 13. Downstream view of unconfined meander pattern and off-channel habitat in Reach N5. ......... 124
Photo 14. Upstream view of typical deep meander bend pool in Reach N5. ......... 124
Photo 15. View of chum salmon actively spawning in typical site close to overhanging vegetation escape cover in 0.6 - 0.8 m stream depth and velocity 0.5 – 0.7 m/s. ......... 125
Photo 16. View of sockeye in off-channel in Reach N5. ......... 125
Photo 17. View of off-channel habitat in Reach N5 with excellent cover for summer rearing coho. ......... 126
Photo 18. View of juvenile coho age class 0+ and 1+ utilizing SWD, undercut bank cover, and overhanging vegetation cover in off-channel in Reach N5. ......... 126
Photo 19. Upstream view of Nome mainstem Reach N6 from Nome-Kougarok Road. ......... 127
Photo 20. Downstream view of Nome River Reach N7 from chainage 50+090 m illustrating aggraded channel with mid-channel bars and multiple channels (indicators of channel disturbance). ......... 127
Photo 21. Downstream view in Reach N8 at chainage 60+502 m. ......... 128
Photo 22. Upstream view in Osborn Creek at aggraded, over-widened channel with virtually no instream cover attributes. ......... 128
Photo 23. Upstream view in Buster Creek Reach Bu1 illustrating good summer rearing habitat with cover provided by overhanging vegetation, undercut bank and SWD. ......... 129
Photo 24. View of spawned out chum in shaded pool in Buster Creek, Reach Bu1. ......... 129
Photo 25. View of Dolly Varden in Buster Creek, Reach Bu1. ......... 130
Photo 26. View of disturbed over-widened channel Buster Creek Reach Bu2. ......... 130
Photo 27. Downstream view of stream eroded tailings pile and bank erosion in Reach Bu3-LF, Buster Creek. ......... 131

Photo 28. Upstream view of good summer rearing habitat for juvenile coho, Reach Bu3-LF, Buster Creek.......... 131
Photo 29. Downstream view of rearing pool with cover in Dexter Creek (Dx-1), downstream of Nome-Kougarok Road culvert.......... 132
Photo 30. Downstream view of a very disturbed channel in Dexter Creek upstream of culvert in Nome-Kougarok Road.......... 132
Photo 31. Downstream view of upper Dexter Creek.......... 133
Photo 32. Downstream view of aggraded channel in Banner Creek.......... 133
Photo 33. View of Mineral Creek off-channel complex from Nome-Kougarok Road.......... 134
Photo 34. View of channel from Nome River connecting Mineral Creek off-channel complex downstream of 13 mile bridge.......... 134
Photo 35. Upstream view at aggraded, over-widened channel in lower Basin Creek.......... 135
Photo 36. View from west bank of Basin Creek instream pond.......... 135
Photo 37. Upstream view at disturbed, over-widened channel in upper Basin Creek. Gravel extraction and placer mining operations are occurring in this reach.......... 136
Photo 38. Upstream view of natural substrate in culvert on Sampson Creek. This is a good example of a culvert placement that would provide fish passage.......... 136
Photo 39. Downstream view of Sampson Creek channel approximately 100 m below culvert. 137
Photo 40. Upstream view of beaver dam on lower Hobson Creek.......... 137
Photo 41. Upstream view of Hobson Creek (Reach H2) and road to hatchery.......... 138
Photo 42. View of tailing piles in Upper Hobson Creek upstream of hatchery building.......... 138
Photo 43. Upstream view in Darling Creek downstream of Nome-Kougarok Road culvert.......... 139
Photo 44. Downstream view showing instream vehicle trail in Darling Creek.......... 139
Photo 45. Pink salmon holding in cover of undercut bank and over-vegetation and SWD.......... 140
Photo 46. Upstream view in Rocky Mountain Creek at channel and canopy cover.......... 140
Photo 47. View of Kink Pond and SWD instream cover providing excellent cover for summer and winter rearing juvenile coho.......... 141
Photo 48. Spent sockeye carcass located in Kink Pond.......... 141
Photo 49. View from south end of Kink Pond at culvert connection to Nome River. Pond requires more overhead cover to enhance summer and winter rearing potential.......... 142
Photo 50. Upstream view of perched culvert (0.30 m drop) at Christian Creek.......... 142
Photo 51. Downstream view of undersized culvert at Christian Creek.......... 143
Photo 52. Upstream view in Christian Creek at chainage 0+300 m.......... 143
Photo 53. Upstream view in Sulphur Creek from chainage 0+200 m.......... 144
Photo 54. Downstream view in Sulphur Creek from chainage 0+400 m.......... 144

# 1 INTRODUCTION

Freshwater habitat impacts that result from placer mining and road construction can negatively affect salmon production and survival by altering critical fish habitats. Placer mining in streams is known to disturb the streambed and banks, often negatively impacting natural channel morphology and watershed processes and the associated spawning, incubation, rearing and overwintering habitats of native fish species (Bair et al. 2002). Improper road development can affect natural stream processes such as channel migration, and can alter channel geometry and habitat characteristics by increasing bank erosion, sediment transport, and deposition. Improperly constructed road crossings may also create migration barriers. Recovery of natural watershed and stream channel processes after disturbance from road development and placer mining is a slow process unless accelerated by habitat restoration efforts (Bair et al. 2003).

Placer mining and road construction are known to have altered stream habitat and watershed processes in a number of western Alaska streams, including those near Nome and on the Kuskokwim River (Merritt 2001; NRC 2004). These alterations have the potential for detrimental effects on freshwater survival and production of salmon. The extent of these effects on western Alaskan watersheds and salmon populations has not yet been evaluated. A first step towards such an assessment involves developing a framework to determine the present condition of salmon habitat, and to identify appropriate measures to restore salmon habitats and watershed processes altered by historic land uses. For this study, ‘framework’ is defined as a structured set of procedures and implementation steps that guide fish habitat assessments and the prioritization of restoration opportunities. Standardized habitat assessment and restoration frameworks have led to hundreds of effective habitat restoration projects on salmon streams in the Pacific Northwest, (primarily in British Columbia and Washington), but such frameworks have not been developed for or implemented in western Alaska.

The goal of this project was to implement and test a salmon habitat assessment and restoration framework that will identify high priority and cost-effective treatment strategies and designs for western Alaska streams. The framework was based on assessment and restoration protocols developed under British Columbia’s Watershed Restoration Program (Anonymous 2004). Achievement of the project goal entailed first determining the condition and functional status of salmon habitat and watershed processes in a specific watershed, then identifying and prioritizing specific locations and methods for restoring salmon habitat.

The framework was tested on the Nome River watershed (Figure 1). The Nome River was selected because of a combination of existing habitat impacts, important salmon populations, and availability of salmon data. In the Nome River, there are apparent historic impacts from both placer mining and road construction, a weir at which adult salmon have been counted since 1996, and recent information on juvenile coho salmon distribution (Nemeth et al. 2004) and habitat use (Webb and McLean 1991; Nemeth et al. 2004).

The Nome River is also an appropriate river on which to evaluate salmon habitat effects and restoration opportunities because of recent declines in salmon harvests and apparent production. The Nome River was historically an important producer of salmon, but low salmon returns over the past 15 years have resulted in commercial and subsistence fishery closures, and inadequate subsistence harvest for the native people of the region (Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative 2003; Menard 2001; Magdanz et al. 2001). The salmon populations reached such low levels that the U.S. Secretary of Commerce declared the Norton Sound region a fisheries disaster in 2000 (NSSTC 2002). These declines have had negative effects on communities that derive much of their protein from harvests of wild salmon (ADF&G 2003, Magdanz et al. 2003). Significant subsistence harvest restrictions have been in place for over 15 years, and Tier II[1] restrictions have been in effect since 1999 in the Nome Subdistrict (ADF&G 2003). Despite these restrictions, salmon populations continue to fluctuate, and the exact cause(s) for such declines remains unknown.

This report describes the development of a habitat restoration framework in three steps: (1) an overview watershed assessment to identify priority subbasins and reaches in relation to their importance to targeted fish species, probable critical limiting factors and potential for restoration success, (2) detailed habitat assessments on priority reaches to identify habitat condition, type and severity of impact and opportunities for restoration, and (3) designs for the restoration of watershed processes and critical habitats at priority sites. These restoration designs target the spawning, rearing and migration habitats of salmonids, particularly coho and chum salmon. In addition, best management practices are recommended for chronic sediment sources associated with road crossings and mine tailings piles. Included are the maps, biological rationale, construction drawings, access routes, materials summary, work plan and schedule for the proposed habitat restoration and enhancement works.

The evaluation of the habitat assessment and restoration framework will determine how best to adapt the procedures to the unique watersheds of western Alaska. Implementation of this project on the Nome River also provides the foundation for the future development of a watershed-specific salmon recovery plan, which will broaden the framework to include other factors, such as marine survival and exploitation that may be contributing to the decline of salmon populations on the Nome River.

The objectives of this project were to:

1. Identify, through watershed-level and reach-level fish habitat assessments, high priority subbasins and reaches within the Nome River watershed with high potential for habitat restoration that will benefit salmon populations;
2. Provide restoration designs for these high-priority sites where there is a high likelihood of restoration success, and;
3. Develop a habitat restoration framework for western Alaska based on the testing of the framework's effectiveness in the Nome River watershed.

[1] A "Tier II" subsistence permit system is implemented by the Alaska Department of Fish and Game when the number of participants in a subsistence fishery must be limited because the harvestable surplus of the fish stock or wildlife population is less than the amount necessary to provide for subsistence uses. Individuals are scored based on their history of use of the particular resource and availability of alternative resources; those with the highest scores receive Tier II permits (ADF&G 2003). If only a limited number of salmon then return, the Tier II permit holders get first harvest rights; otherwise, other people can also fish.

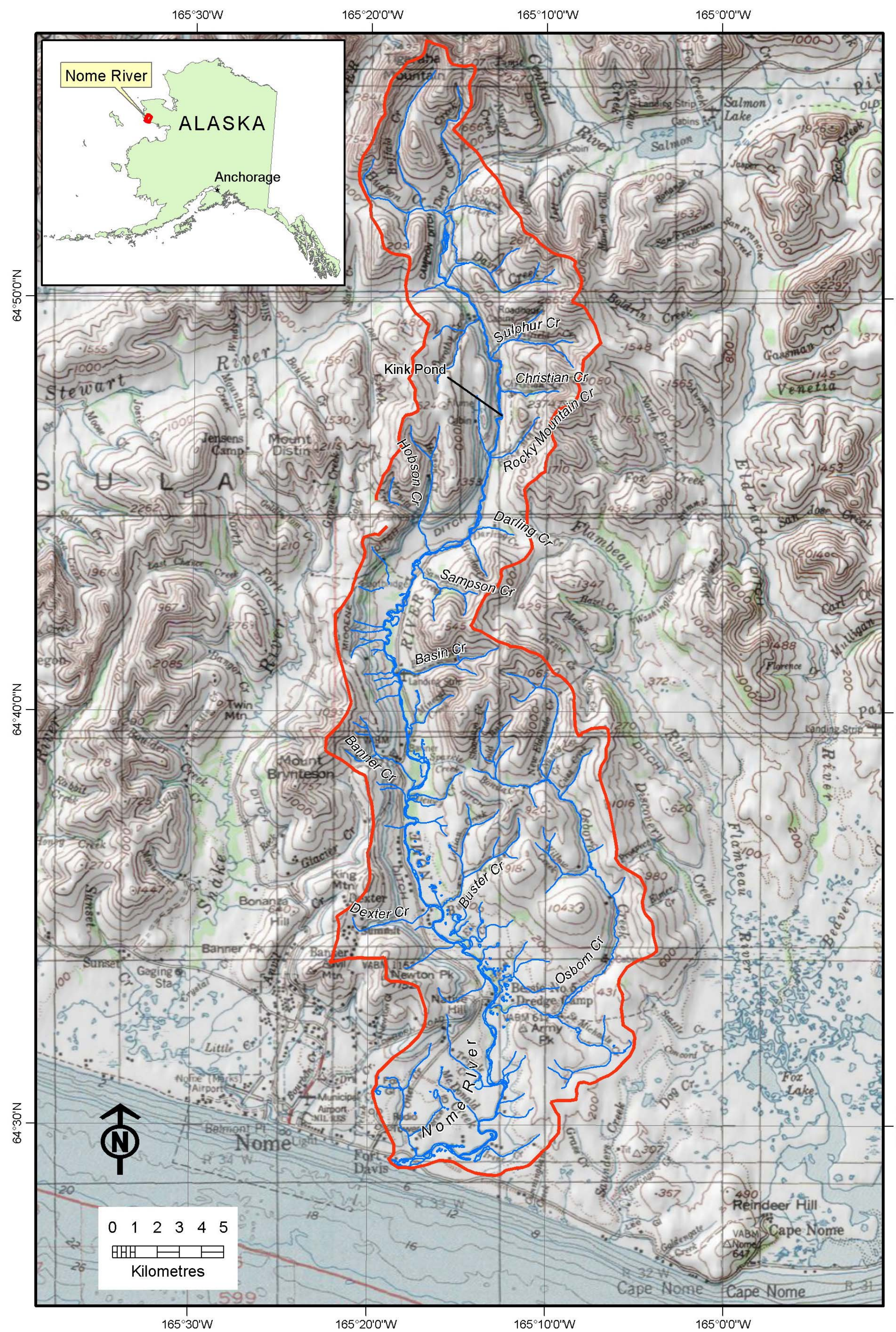



Figure 1. Overview map of the Nome River showing sub-watersheds.

# 2 STUDY AREA

## 2.1 Physical setting

The Nome River watershed is unglaciated. It arises in the Kigluiak Mountains, flows south for approximately 51 km, and empties into Norton Sound approximately 5 km east of the town of Nome (Kohler and Knuepfer 2000). The Nome River is a $4^{th}$ order watershed (at 1:63,360 scale) drains approximately 420 $km^2$ and has an estimated mean discharge of 6.5 $m^3/s$ (Selkregg 1976, as reported by Webb and McLean 1991). Major subbasins of the Nome River include Osborn, Buster, Dexter, Banner, Basin, Sampson, Hobson, Darling, Rocky Mountain, Christian and Sulphur creeks (Figure 1). The mainstem of the drainage is easily accessed by vehicle and most tributaries are within short walking distance of the road. The Nome River flows adjacent to the well-used Nome-Kougarok Road for almost the entire length of the mainstem. Several housing developments are situated along its length, including Banner Creek and Dexter, whose household gray water drains into the Nome River. The river has been subjected to significant past disturbance. The Nome River tributaries were mined extensively in the early 1900s and gravel was removed from numerous sections of the river for road building as recently as 2002.

## 2.2 Fish Resources

A total of 23 species of fish have been recorded from the Nome River watershed (Table 1; Nemeth et al. 2005b). Dolly Varden and round whitefish are present throughout the drainage, including tributaries (e.g. upper reaches of Hobson Creek) that are thought to be inaccessible to adult coho salmon (F. DiCicco, ADF&G pers. comm.).

Salmon escapements to the Nome River have been monitored by the Alaska Department of Fish and Game at a counting tower from 1993 to 1995, and a weir from 1996 and 2004 (Figure 2; Appendix A; Menard and Kohler in press). The weir project was originally developed to count chum salmon, but also provides escapement estimates of pink and king salmon, which migrate concurrently with Nome River chum. The weir is operated late enough in some years to also estimate the escapement of coho salmon, which are the last salmon to return each year.

Pink salmon are the most numerous of all the salmon species found in the Nome River, with escapement counts varying from low values in odd years to a peak of over one million in 2004. There is believed to be a ten year cycle in peak abundances of pink salmon in the Nome River (C. Lean, pers. comm.), with 2004 being a peak year. Ester Bourdon, an Elder in the Nome community, also reported a very strong return of pink salmon to the Nome River during traditional harvesting at the river mouth in 1984. An excerpt from the transcript of her interview documenting traditional knowledge[2] about the Nome River and its fish populations states:

> “We stay at the camp and one time that year [1984] there was lots of humpies and that were our camp just under the camp and then they always have to stop right there. […] My mom was old at that time. We let her go to bed. And then my sister, Pauline, was

[2] Full transcripts of interviews with Elders documenting traditional knowledge about the habitat and fish populations in the Nome River watershed are available from Kawerak, Inc., Nome, AK.

> taking care of her and after she put her to bed she started to stay outside and watch down by the river and look at those fish go like that. [*thumping sound*] And pretty soon there was no one around and there was […] my sisters boy, Ray. Playing out and watching fish. And he came to tell me that: "My mom, my mom is sick right now." "Sick of what?" I asked. "My mom is sick because there were too many fish we caught she starting to get sick just looking at them." He said, and made lots of noise."
>
> Ester Bourdon
> August 13, 2004

Chum escapement has averaged 2,872 fish annually and ranged from 1,048 fish reported in 1999 to a high of 5,131 in 1997. Only since 2001 have coho escapements included the majority of the run. Counts have ranged from a low of 548 coho to a high of 3,418 adults in 2002. Chinook escapements average 25 fish annually, with a range of 3 to 70 being recorded in the past 12 years. A few sockeye also spawn in the Nome River, with several being observed during the 2004 habitat assessment in the Nome mainstem and Kink Pond. Coho salmon is the priority species for this restoration plan because they are the primary salmon species with a significant freshwater rearing life stage in the Nome River. Estimated length of available coho salmon rearing habitat is 83 km on the Nome River (Nemeth et al. 2004).

Table 1. Known fish species of the Nome River watershed (Nemeth et al. 2005b).

| **Common Name** | **Scientific Name** |
|---|---|
| Alaska Blackfish | *Dallia pectoralis* |
| Arctic Flounder | *Pleuronectes glacialis* |
| Arctic Grayling | *Thymallus arcticus* |
| Bering Cisco | *Coregonus laurettae* |
| Burbot | *Lota lota* |
| Chinook or King Salmon | *Oncorhynchus tshawytscha* |
| Chum Salmon | *Oncorhynchus keta* |
| Coho Salmon | *Oncorhynchus kisutch* |
| Pink Salmon | *Oncorhynchus gorbuscha* |
| Sockeye Salmon | *Oncorhynchus nerka* |
| Dolly Varden | *Salvelinus malma* |
| Four Horn Sculpin | *Myoxocephalus quadricornis* |
| Least Cisco | *Coregonus sardinella* |
| Ninespine Stickleback | *Pungitius pungitius* |
| Pacific Herring | *Clupea pallasi* |
| Pacific Lamprey | *Lampetra tridentata* |
| Pond Smelt | *Hypomesus olidus* |
| Rainbow Smelt | *Osmerus mordax* |
| Round Whitefish | *Prosopium cylindraceum* |
| Saffron Cod | *Eleginus navaga* |
| Starry Flounder | *Platichthys stellatus* |
| Slimy Sculpin | *Cottus cognatus* |
| Threespine Stickleback | *Gasterosteus aculeatus* |

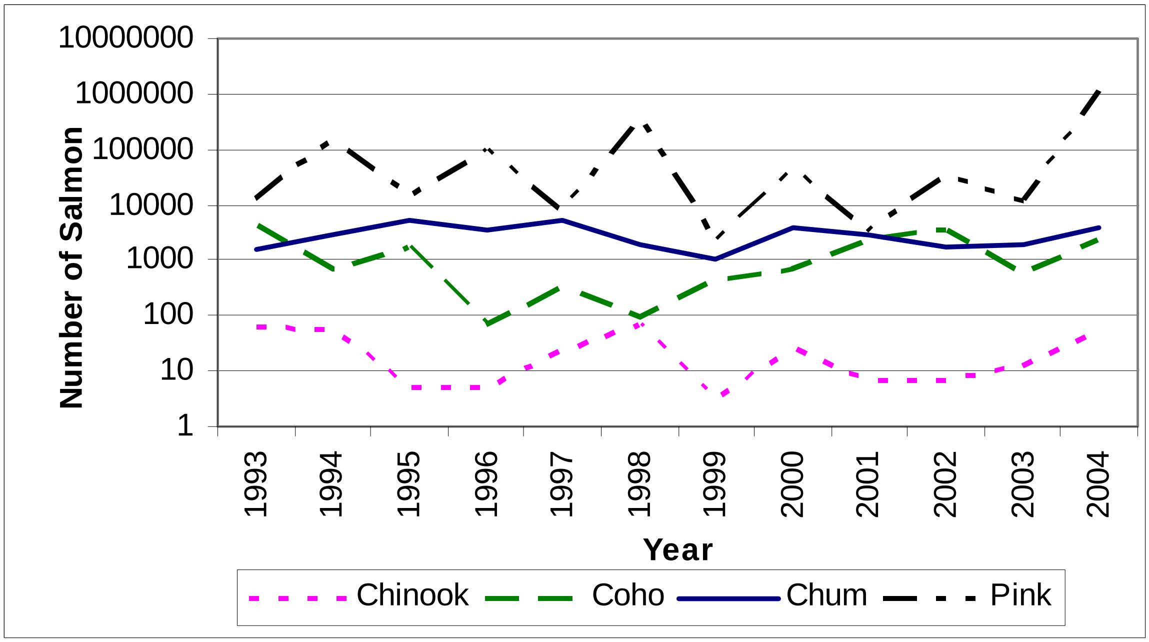



Figure 2. Salmon escapements in Nome River from 1993 through 2004 (After Menard and Kohler in press).

# 3 METHODS

## 3.1 Overview Assessment Methodology

An overview watershed assessment was undertaken to identify priority subbasins and reaches in relation to their importance to target fish species, probable critical limiting factors and potential for restoration success. The overview assessment involved the following four steps:

*1. Identifying the basins of the Nome River.*
Boundaries of the Nome River watershed and its major subbasins were delineated and their drainage areas calculated using ArcView GIS. Long profiles for the mainstem and major subbasins were drawn based on a 1:63,360 scale topographic map.

*2. Estimating stream discharges for the Nome River and its tributaries.*
Discharges in the Nome River have not been monitored on a continual basis. Therefore, mean annual, mean monthly and 2, 10, 20 and 50 year return period maximum daily discharges were estimated for the mainstem and subbasins based on US Geological Survey (USGS) information from hydrometric stations within the Nome Division County. The USGS stations included Eldorado River (gauge 15635000), Crater Creek (gauge 15668200), Snake River (gauge 15621000), Unalakleet River (gauge 15565700) and Kuzitrin River (gauge 15712000). Estimated flood frequency values for the Nome River and its tributaries were based on average unit values (cfs/mi$^2$) for three of the five regional stations. The estimates of the maximum daily peak discharges for the various flood frequencies were interpolated from the flood frequency plots for Crater Creek, Snake River and Kuzitrin River. A comparison of the flood peaks and mean monthly discharges for the Nome River watershed was also made using data from all five hydrometric stations.

*3. Compiling an overview information sheet for each subbasin.*
Overview information, obtained through interpretation of recent air photos and maps and discussions with resource professionals and long-time residents of the Nome area, was compiled for each subbasin. The information included:

- land tenure (where known),
- overview channel stability and channel type using a Reconnaissance-level Channel Assessment Procedure (Hogan et al. 1996),
- bank stability and riparian condition of the tributaries and mainstem,
- overview fish habitat assessment using Overview Fish Habitat Assessment Procedures (Johnston and Slaney 1996) to identify subbasins with critical habitat reaches and other areas of special concern, and
- interviews of Elders to document traditional knowledge about the Nome River system, including historical changes in salmon escapements and harvests, current and historic subsistence activities and observed changes in channel morphology and watershed characteristics.

*4. Prioritizing subbasins for detailed habitat assessments.*
This step involved determining the importance of the subbasin to the target species and the potential for success in restoring watershed processes and/or fish habitat in each subbasin. The potential for success was guided by the following principles:

- The main goal was to restore channel function so that the watershed will naturally recover critical habitat at an accelerated rate. Restoration work that follows has the greatest potential for success if it addresses the root causes most strongly affecting channel processes in an impacted reach.
- The most cost-effective works are those that address the critical limiting factors for the targeted fish species.

## 3.2 Detailed Habitat Assessment Methodology

Fish and fish habitat field assessments were conducted during August and September 2004. These surveys were conducted on foot and involved a crew of two people. Detailed fish-habitat surveys involved complete sampling of all habitat types within each reach. Information was collected, recorded and analyzed for the following biophysical parameters.

### 3.2.1 Fish Distribution and Habitat Use

Fish observations were recorded by reach and habitat type at the time of the detailed fish-habitat survey. Fish species were identified and their number and fork lengths estimated visually. Fish distributions and age and size classes were also based on previous assessments conducted by Nemeth et al. (2004, 2005a and 2005b).

### 3.2.2 Stream Habitat Condition

Detailed fish habitat assessments in the Nome River watershed followed the methodologies and procedures described in British Columbia's Watershed Restoration Technical Circular No. 8

(Johnston and Slaney 1996). The characteristics and condition of the existing fish habitat were described by the following attributes:

- classification of habitat types – riffle, pool, glide and cascade,
- potential fish migration barriers,
- percent pools, residual pool depth, quality and quantity of adult holding pools,
- type and effectiveness of cover for juvenile summer rearing and adult escape cover during spawning,
- extent of and access to off-channel habitat, and
- quality and quantity of anadromous spawning habitat.

### 3.2.3 Channel Condition

Field work was conducted to confirm the air photo-based interpretation of channel condition and disturbance completed in the overview. Reaches were assessed using a standard field methodology, based on the Channel Condition and Assessment Procedure guidebook (Hogan et al. 1996). Field work determined:

- channel morphology and stability,
- bankfull channel width, depth and gradient,
- bed and bank materials and sediment load characteristics,
- type and extent of channel disturbance, and
- potential for future impacts to the channel.

### 3.2.4 Sediment Sources

A sediment source survey was completed using a standard procedure of air photo interpretation and mapping, followed by ground-truthing for confirmation. Sediment source information included:

- type of sediment source (e.g., road failure, bank instability, placer mine deposit, etc.),
- size and initiation point of sediment source,
- status of revegetation and current sediment delivery to streams, and
- existing and possible future impact on streams.

### 3.2.5 Photography

Digital photographs of each measured habitat unit and significant features were taken. Each picture was labelled with:

- exact location of the habitat unit or feature,
- direction of view,
- date, and
- description of the habitat unit or feature.

### 3.2.6 Data Analysis and Interpretation

Detailed habitat assessment data for the Nome River watershed were analyzed to determine salmonid habitat condition and to identify potential physical habitat limitations to salmonid production. Nome habitat characteristics were compared to observed natural stream morphologies (Newbury and Gaboury 1993) and bio-standards for undisturbed salmonid streams (Johnston and Slaney 1996) to detect habitats that are degraded or at risk, and which may be improved through restoration. A summary of diagnostic values for salmonid habitat condition in the Nome River watershed was prepared based on bio-standards for the following parameters.

#### *3.2.6.1 Diagnostic Value for Percent Pools and Pool Frequency*

Ratings for percent pool habitat and pool frequency (spacing) were conducted for each reach. A poor rating was given if percent pool was less than 30%, a fair rating was given if less than or equal to 40%, and good rating was given if greater than 40%. Similarly, for pool frequency, a poor rating was given if the number of bankfull widths per pool was greater than 6, a fair rating was given if less than or equal to 10, and good rating was given if less than 10.

#### *3.2.6.2 Diagnostic Value for Deep Pools (Holding Pools)*

Johnston and Slaney (1996) use the simple criteria of pool depth greater than 1 m to define a "good" holding pool for adult fish. However, this ignores the importance of overhead cover within the pool for creating good fish holding habitat. To account for the inter-relationship between pool depth and cover, the number of deep pools (adult holding pool) was identified using the following criterion:

deep pool, if (maximum depth x % overhead cover >= 30)

where, overhead cover includes Large Woody Debris (LWD), boulder, cutbank and overhanging vegetation. Maximum depth was measured during summer low flows. This diagnostic was developed to better reflect the interaction of cover and pool depth in providing suitable habitat to adult salmonids. It is based on observations by the authors, within Vancouver Island streams, of numerous pools that had greater than 1.0 m depth, no cover and no utilization by adult salmonids (or juvenile fish for that matter). Conversely, there are also numerous examples of pools with less than 1.0 m depth, abundant cover (e.g., cutbanks) and adults present.

The diagnostic value used to assess adequacy of adult holding pools within a reach was then the total number of deep pools per 1,000 m of stream within each reach. A rating of poor was given if the number of deep pools as defined above was less than 1 per 1,000 m of stream, a rating of fair was given if greater than or equal to 1, but less than or equal to 2, and a rating of good was given if greater than 2.

#### *3.2.6.3 Diagnostic Value for Spawning Gravel Quantity*

Spawning gravel quantity was calculated as 100% of the stream wetted area with available gravels (2-64 mm), plus 20% of the stream wetted area with available cobbles (64-256 mm) times the wetted area of the reach. Gravel quantity was rated as poor if the spawning area was less than 10% of the wetted total area, fair if greater than or equal to 10%, but less than or equal to 25%, and good if greater than 25%.

#### *3.2.6.4 Diagnostic Value for Spawning Gravel Quality*

Spawning gravel quality was coded as high, medium or low based on the degree of compaction and embeddedness (percent fines). Loose and clean substrates (fines less than or equal to 15%) providing excellent spawning opportunity received a good rating, while compact and embedded substrates (fines greater than 25%) received a poor ranking. A fair ranking refers to moderately embedded and uncompacted gravel (between 15% and 25% fines).

#### *3.2.6.5 Diagnostic Value for Off-channel Habitat*

Off-channel habitat was rated as good if there was more than or equal to two off-channel areas (of any type), fair if there was less than two off-channel areas, and poor if no off-channel areas were present. Note that this diagnostic as currently defined in Watershed Restoration Program Technical Circular No. 8 (Johnston and Slaney 1996) does not account for the amount of off-channel habitat (i.e., length or area). However, for an off-channel area to be included, it had to be considered, in the opinion of the field biologist, as important habitat. Minimum length or area was not considered.

## 3.3 Restoration Design Methodology

For the purpose of this study, habitat restoration is defined as *an action that returns habitat or a watershed process to its original, pre-disturbance state* while habitat enhancement is defined as *an action that improves the capability of aquatic habitat to produce fish*. Habitat restoration methods and procedures are described in several sources in the literature. The most frequently used references in this study are those of Newbury and Gaboury (1993) and British Columbia's Watershed Restoration Program (WRPTC 1998; Johnston and Slaney 1996; Slaney and Zaldokas 1997).

Restoration designs were prepared for specific sites within high priority reaches where there is a high likelihood of restoration success. The restoration design methodology involved the following steps:

1. *Conducting field surveys at restoration sites in high priority restoration reaches.*

From the detailed habitat assessment information, priority sites or reaches were identified where habitat restoration designs could be prepared. A matrix was used to prioritize reaches that have the greatest potential to affect successful restoration of watershed processes and the critical limiting habitat of the target fish species. Potential treatment effectiveness was based on a general assessment of cost-effectiveness, risk, primary or persistent sediment sources, and whether benefits were expected in a long or short time period.

Reference reach surveys were conducted on channel sections which appeared relatively undisturbed to provide field-measured data on channel morphology and habitat that was used as a baseline for designing channel restoration measures. Field surveys for the siting and design of restoration treatments were conducted in August 2004. Field information included:

- Locating each proposed restoration site by thalweg chainage,

- Measuring bankfull width, bankfull height, and restoration site length,
- Estimating right and left bank heights above present water level,
- Estimating the type and size distribution of bed paving substrates,
- Topographic (engineer's level) surveys of the stream channel and floodplain near the restoration sites to provide plan, profile and cross section elevation drawings for the section of channel to be restored, and
- Photographs of each project site, labeled with D/M/Y, thalweg chainage or Geographic Position System (GPS) location in Lat/Long or UTM coordinates, and point of view.

2. *Prepare site-specific restoration designs.*

For all proposed restoration treatments, restoration design drawings were prepared that included:

- Plan and profile views of the restoration reach,
- Representative cross section plots of typical project site locations with restoration project details overlain on the cross sectional plot (Note: left and right banks as viewed looking downstream),
- Methods for design, including design criteria, assumptions and calculations, and
- Methods, specifications and scheduling for construction.

# 4 RESULTS

## 4.1 Overview Assessment

### 4.1.1 Hydrology

The drainage areas of the Nome River and its major tributaries (Figure 3) are as follows:

| Watercourse | Drainage Area $km^2$ ($mi^2$) |
|---|---|
| Nome River | 414.7 (160.1) |
| Osborn Creek | 82.4 (31.8) |
| Dexter Creek | 8.3 (3.2) |
| Buster Creek | 15.0 (5.8) |
| Banner Creek | 6.7 (2.6) |
| Basin Creek | 8.3 (3.2) |
| Sampson Creek | 5.7 (2.2) |
| Hobson Creek | 14.0 (5.4) |
| Darling Creek | 4.1 (1.6) |
| Rocky Mountain Creek | 3.4 (1.3) |
| Christian Creek | 5.7 (2.2) |
| Sulphur Creek | 11.9 (4.6) |

Mean monthly flows in this coastal watershed begin to rise in late April in response to snow melt, peak in June, and steadily decline after September with the lowest discharges occurring typically in March (Figure 4). Discharges between 91.7 and 379.8 cfs have been measured during the open water seasons of 2002, 2003 and 2004 (Table 2; Kroeker and Dunmall 2005). Mean annual flow was estimated at 373 cfs. Based on flood frequency plots from gauged stations within the Nome Division County (Appendix B), two-year and 50-year maximum daily flows for the Nome River watershed were estimated at 6,088 and 20,031 cfs, respectively (Table 3). The unit flood discharge with a return period of 50 years was calculated at 125.11 cfs/mi$^2$ from the three hydrometric stations with drainage areas similar to the Nome River watershed and 98.14 cfs/mi$^2$ when all five gauge stations were used in the calculation. Maximum daily and mean monthly flows for the Nome River and its tributaries, as estimated from unit discharges from the gauged stations, likely provide an underestimate of the streamflow values as gauge values for peak streamflows were often estimates or believed to be greater than the indicated values (USGS 2005 http://nwis.waterdata.usgs.gov/ak/nwis/).

### 4.1.2 Reach Breaks

Pre-field activities included preparing a gradient profile of the Nome River mainstem from 1:63,360 US Department of Interior Geological Survey maps (Figure 5). Eight reach breaks were established based on this gradient profile and stream pattern (Figure 3). Reach N1, Reach N3 and Reach N6 have an irregular wandering pattern and are occasionally confined; whereas, Reach N2, Reach N4 and Reach N7 have a straight or sinuous pattern and are frequently confined by topography and/or current road grade and old railroad grade (Photo 12). Reach N5 has an unconfined to occasionally confined meandering pattern. Reach N8 is braided, frequently confined and is outside our current study area.

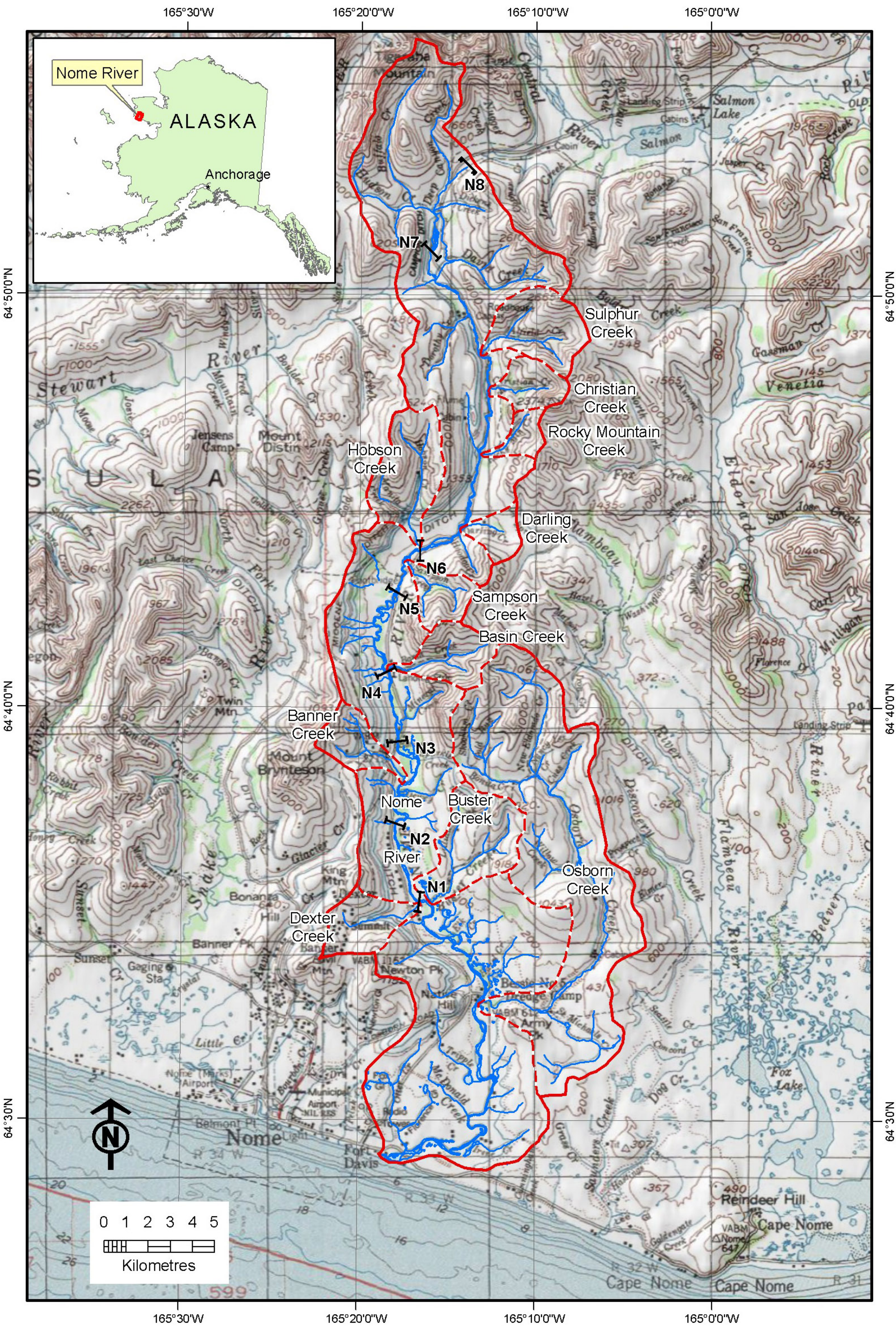



Figure 3. Map of the Nome River showing mainstem reaches and drainage boundaries of subbasins.

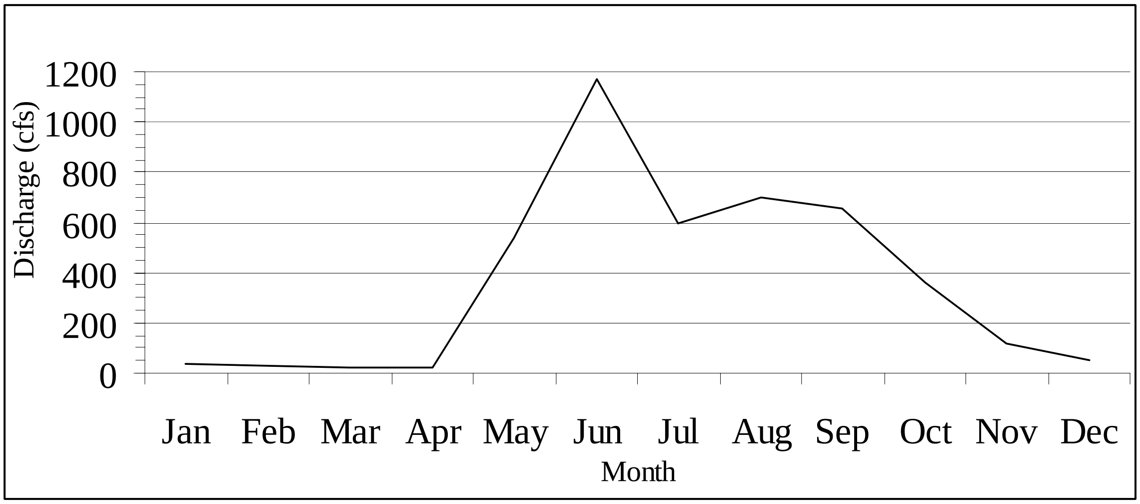



Figure 4. Estimated average annual hydrograph for the Nome River.

Table 2. Discharge measurements and related morphometric data for the Nome River taken downstream of Nome-Kougarok Road crossing. Modified after Kroeker and Dunmall (2005). Minimum and maximum recorded discharges shown in bold.

| Date | Wetted Width (ft) | Average Depth (ft) | Average Velocity (ft/s) | Discharge (cfs) |
|---|---|---|---|---|
| Jun 7 2002 | 110.0 | 1.3 | 2.1 | 284.4 |
| Jul 12 2002 | 101.0 | 0.6 | 1.4 | **91.7** |
| Oct 15 2002 | 104.6 | 1.0 | 1.8 | 201.7 |
| Jul 7 2003 | 99.0 | 1.3 | 1.5 | 205.5 |
| Aug 8 2003 | 93.5 | 1.2 | 1.2 | 147.0 |
| Sept 4 2003 | 100.4 | 1.3 | 1.5 | 211.9 |
| Oct 7 2003 | 99.4 | 1.4 | 1.8 | 288.8 |
| Jun 18 2004 | 105.0 | 1.2 | 1.9 | 281.0 |
| Jul 12 2004 | 98.0 | 1.1 | 1.2 | 134.7 |
| Aug 9 2004 | 100.0 | 1.8 | 2.1 | **379.8** |
| Aug 27 2004 | 90.5 | 1.5 | 1.9 | 267.2 |
| Sep 8 2004 | 90.0 | 1.3 | 1.4 | 176.2 |
| Oct 12 2004 | 93.0 | 0.5 | 2.1 | 103.2 |

Table 3. Summary of return period maximum daily and mean monthly discharges for streams within the Nome area, AK, and underestimated values for the Nome River and tributaries.

| USGS Gauge | Station Name | Years | No. of Years | Drainage Area ($mi^2$) | Unit Discharge ($cfs/mi^2$) Mean Annual | 1.5 yr | 2 yr | 10 yr | 25 yr | 50 yr | Mean Monthly Discharge ($cfs/mi^2$) January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15635000* | Eldorado Ck near Teller, AK | 1986-2003 | 18 | 5.83 | | | | | | | | | | | | 4.49 | 3.00 | 5.45 | 4.20 | | | |
| 15668200* | Crater Ck near Nome, AK | 1964-1989 | 26 | 21.9 | 2.48 | 31.51 | 43.38 | 100.46 | 146.12 | 187.21 | 0.09 | 0.06 | 0.04 | 0.04 | 1.80 | 9.95 | 5.48 | 4.79 | 4.61 | 2.08 | 0.59 | 0.21 |
| 15621000* | Snake R near Nome, AK | 1965-1994 | 30 | 85.7 | 2.19 | 26.84 | 32.67 | 47.84 | 58.34 | 63.01 | 0.33 | 0.27 | 0.25 | 0.27 | 4.88 | 7.49 | 2.65 | 2.85 | 3.48 | 2.47 | 0.85 | 0.45 |
| 15565700 | Unalakleet R AB Chiroskey R near Unalakleet, AK | 1997-2003 | 7 | 1048 | 1.31 | | | | | | 0.16 | 0.12 | 0.11 | 0.14 | 2.58 | 3.47 | 1.65 | 2.75 | 2.56 | 1.40 | 0.56 | 0.26 |
| 15712000 | Kuzitrin R near Nome, AK | 1962-1973 | 12 | 1720 | 0.72 | 10.47 | 12.79 | 27.91 | 36.05 | 44.19 | 0.03 | 0.01 | 0.01 | 0.01 | 1.76 | 3.97 | 0.65 | 0.73 | 0.83 | 0.41 | 0.15 | 0.06 |
| | **Mean of * Gauges Above** | | | | 2.33 | 29.17 | 38.03 | 74.15 | 102.23 | 125.11 | 0.21 | 0.17 | 0.14 | 0.15 | 3.34 | 7.31 | 3.71 | 4.37 | 4.10 | 2.28 | 0.72 | 0.33 |
| | **Mean of All Gauges** | | | | 1.67 | 22.94 | 29.61 | 58.73 | 80.17 | 98.14 | 0.15 | 0.12 | 0.10 | 0.11 | 2.75 | 5.88 | 2.69 | 3.32 | 3.14 | 1.59 | 0.54 | 0.24 |
| Gauge | Station Name | Years | No. of Years | Drainage Area ($mi^2$) | Mean Annual | Maximum Annual Peak Discharge (cfs) 1.5 yr | 2 yr | 10 yr | 25 yr | 50 yr | Mean Monthly Discharge (cfs) January | February | March | April | May | June | July | August | September | October | November | December |
| 15635000* | Eldorado Ck near Teller, AK | 1986-2003 | 18 | 5.83 | | | | | | | | | | | | 26.2 | 17.5 | 31.8 | 24.5 | | | |
| 15668200* | Crater Ck near Nome, AK | 1964-1989 | 26 | 21.9 | 54 | 690 | 950 | 2200 | 3200 | 4100 | 2.0 | 1.3 | 0.8 | 0.8 | 39.5 | 218 | 120 | 105 | 101 | 45.5 | 13.0 | 4.6 |
| 15621000* | Snake R near Nome, AK | 1965-1994 | 30 | 85.7 | 187 | 2300 | 2800 | 4100 | 5000 | 5400 | 28.3 | 23.4 | 21.4 | 22.9 | 418 | 642 | 227 | 244 | 298 | 212 | 72.6 | 38.2 |
| 15565700 | Unalakleet R AB Chiroskey R near Unalakleet, AK | 1997-2003 | 7 | 1048 | 1375 | | | | | | 164 | 128 | 112 | 142 | 2700 | 3633 | 1734 | 2882 | 2679 | 1465 | 591 | 268 |
| 15712000 | Kuzitrin R near Nome, AK | 1962-1973 | 12 | 1720 | 1238 | 18000 | 22000 | 48000 | 62000 | 76000 | 45.0 | 21.6 | 15.6 | 18.2 | 3029 | 6834 | 1120 | 1264 | 1434 | 713 | 252 | 107 |
| Estimate for Nome River watershed (based on * gauges) | | | | 160.1 | 373 | 4670 | 6088 | 11871 | 16367 | 20031 | 33.8 | 26.5 | 22.9 | 24.4 | 535 | 1171 | 594 | 699 | 656 | 364 | 115 | 52.5 |
| Estimate for Nome River watershed (based on all gauges) | | | | 160.1 | 268 | 3672 | 4741 | 9403 | 12835 | 15712 | 24.2 | 18.6 | 16.1 | 18.0 | 441 | 941 | 430 | 531 | 502 | 255 | 86.1 | 39.0 |
| Estimate for Osborn Creek (based on * gauges) | | | | 31.8 | 74.2 | 928 | 1209 | 2358 | 3251 | 3979 | 6.7 | 5.3 | 4.6 | 4.8 | 106 | 233 | 118 | 139 | 130 | 72.4 | 22.9 | 10.4 |
| Estimate for Buster Creek (based on * gauges) | | | | 5.8 | 13.5 | 169 | 221 | 430 | 593 | 726 | 1.2 | 1.0 | 0.8 | 0.9 | 19.4 | 42.4 | 21.5 | 25.3 | 23.8 | 13.2 | 4.2 | 1.9 |
| Estimate for Dexter Creek (based on * gauges) | | | | 3.2 | 7.5 | 93.4 | 122 | 237 | 327 | 400 | 0.7 | 0.5 | 0.5 | 0.5 | 10.7 | 23.4 | 11.9 | 14.0 | 13.1 | 7.3 | 2.3 | 1.0 |
| Estimate for Banner Creek (based on * gauges) | | | | 2.6 | 6.1 | 75.8 | 98.9 | 193 | 266 | 325 | 0.5 | 0.4 | 0.4 | 0.4 | 8.7 | 19.0 | 9.6 | 11.4 | 10.7 | 5.9 | 1.9 | 0.9 |
| Estimate for Basin Creek (based on * gauges) | | | | 3.2 | 7.5 | 93.4 | 122 | 237 | 327 | 400 | 0.7 | 0.5 | 0.5 | 0.5 | 10.7 | 23.4 | 11.9 | 14.0 | 13.1 | 7.3 | 2.3 | 1.0 |
| Estimate for Sampson Creek (based on * gauges) | | | | 2.2 | 5.1 | 64.2 | 83.7 | 163 | 225 | 275 | 0.5 | 0.4 | 0.3 | 0.3 | 7.3 | 16.1 | 8.2 | 9.6 | 9.0 | 5.0 | 1.6 | 0.7 |
| Estimate for Hobson Creek (based on * gauges) | | | | 5.4 | 12.6 | 158 | 205 | 400 | 552 | 676 | 1.1 | 0.9 | 0.8 | 0.8 | 18.0 | 39.5 | 20.0 | 23.6 | 22.1 | 12.3 | 3.9 | 1.8 |
| Estimate for Darling Creek (based on * gauges) | | | | 1.6 | 3.7 | 46.7 | 60.8 | 119 | 164 | 200 | 0.3 | 0.3 | 0.2 | 0.2 | 5.3 | 11.7 | 5.9 | 7.0 | 6.6 | 3.6 | 1.2 | 0.5 |
| Estimate for Rocky Mountain Creek (based on * gauges) | | | | 1.3 | 3.0 | 37.9 | 49.4 | 96.4 | 133 | 163 | 0.3 | 0.2 | 0.2 | 0.2 | 4.3 | 9.5 | 4.8 | 5.7 | 5.3 | 3.0 | 0.9 | 0.4 |
| Estimate for Christian Creek (based on * gauges) | | | | 2.2 | 5.1 | 64.2 | 83.7 | 163 | 225 | 275 | 0.5 | 0.4 | 0.3 | 0.3 | 7.3 | 16.1 | 8.2 | 9.6 | 9.0 | 5.0 | 1.6 | 0.7 |
| Estimate for Sulphur Creek (based on * gauges) | | | | 4.6 | 10.7 | 134 | 175 | 341 | 470 | 576 | 1.0 | 0.8 | 0.7 | 0.7 | 15.4 | 33.6 | 17.1 | 20.1 | 18.8 | 10.5 | 3.3 | 1.5 |

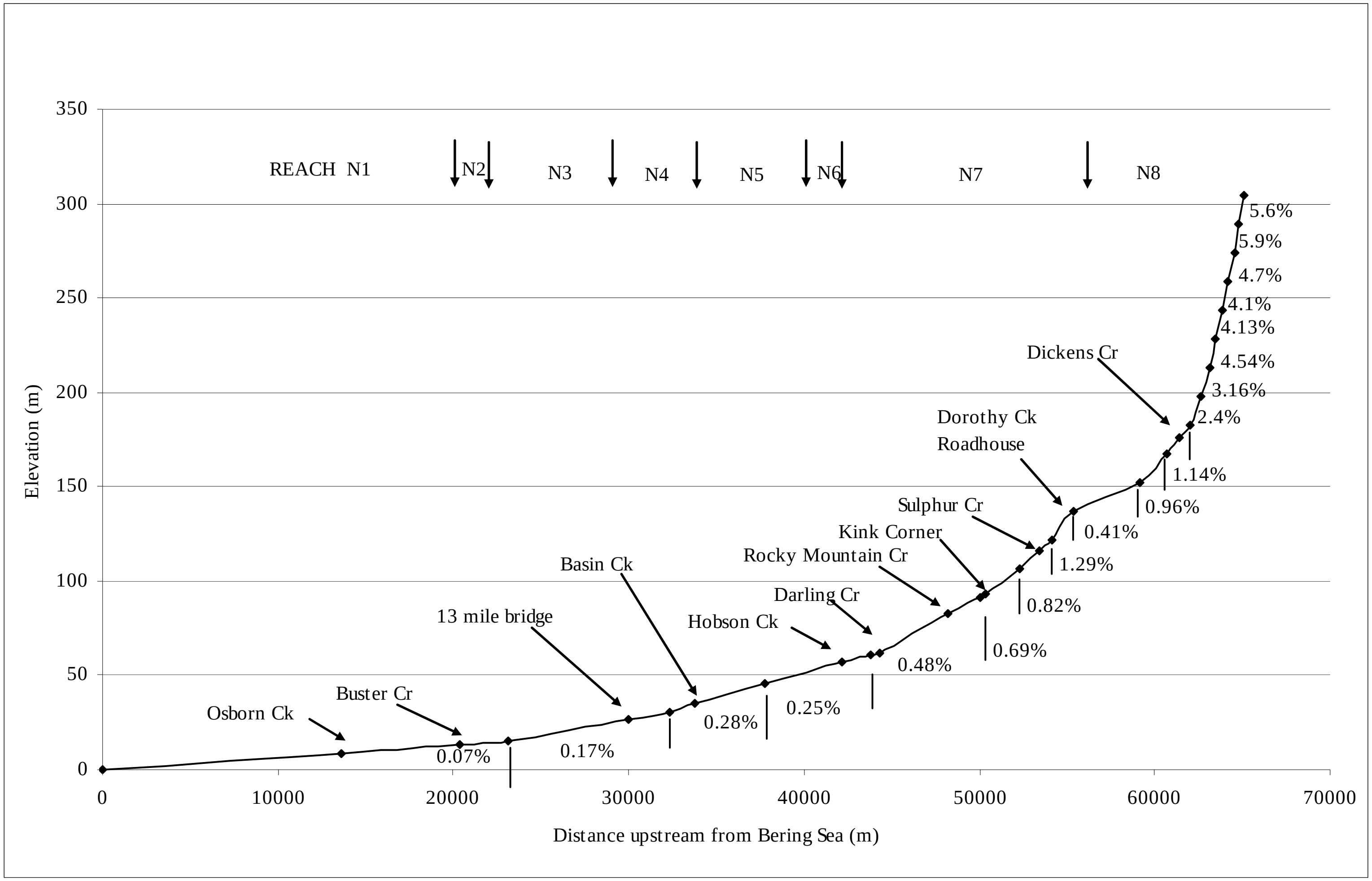



Figure 5. Long profile, gradient (%) and reach boundaries for the mainstem of the Nome River.

### 4.1.3 <u>Reach and Subbasin Priorities</u>

The overview assessment of the Nome River watershed documented the current condition of riparian, channel, and fish habitat in each of the major subbasins (Appendix C). Overview summaries of watershed conditions for the mainstem and subbasins are presented in Table 4.

Priority reaches of the Nome River mainstem would include those sections where salmon spawn, rear and overwinter. Reaches N1 through N6 (up to Hobson Creek) encompass the preferred habitats for pink, coho and chum salmon, with Reaches N1 to N3 (between Osborn and Banner creeks) being the key spawning habitat for chum (C. Lean, W. Jones, pers. comm.). Good numbers of chum also spawn in the more torturous meandering section of Reach N5.

It is suspected that at the height of placer mining activities in the Nome River watershed that sediment supply to the river would have been significant. This would have resulted in channel aggradation and over-widening, and would have in-filled pools and interstitial spaces on riffles. Based on 1986 aerial photos the channel appears to be in the process of recovering naturally from an over-widened and aggraded condition that was apparent in the 1950s (Maps 1 and 2). Average channel widths decreased between 9 and 40 m from 1950 to 1986, with the greatest decreases in width occurring in Reaches N4 to N6 (Table 5). Channel lengths have remained about the same lengths in each reach of the Nome, suggesting that gradients have not changed significantly over time (Table 6).

Original construction of the Nome-Kougarok Road resulted in some confinement of the channel and isolation of meander loops (i.e., Kink Pond, Site A in Reach N4) that would have provided potential rearing habitat for coho (Map 2). In addition, recent road construction has significantly altered the channel and floodplain in a section of Reach N7 (between Sulphur and Dorothy creeks). Rehabilitation of this section is currently in progress.

Based on the overview assessment, six of the eleven subbasins were found to have significant impacts in one or more of the watershed component areas (Table 7). Restoration in four subbasins was identified as a high priority with vehicle trails, channel and riparian components as important restoration components.

Buster and Darling creeks are the first and second priorities, respectively, for restoration. Both streams have the potential for higher quality habitat for salmon spawning and rearing. In both streams, the level of disturbance for watershed components is on average high, and it is believed that restoration will be cost-effective and result in significant improvements to limiting fish habitats. There is a high risk of impact to fish habitat from the current sediment supply, vehicle trail, riparian, and channel disturbances in the subbasins. There is a high likelihood of benefits from treatment of these components, and the vehicle trail, riparian and channel components are recommended for restoration.

Re-construction of the vehicle trail outside of the wetted perimeter of the channel and implementation of some instream restoration works would accelerate natural recovery of the channel, riparian and instream fish habitats in both Buster and Darling creeks. Also, these restoration activities would benefit the high quality habitats downstream by reducing channel instability and the generation of sediment from the channel section with the vehicle trail.

Table 4. Evaluation of the likelihood of restoration activities benefiting fish habitat for the mainstem and major subbasins of the Nome River watershed.

| Watershed | Target Species | Limiting Fish Habitat | Watershed Condition and Restoration Benefits | Watershed Components and Processes | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Sediment Supply | Roads / Vehicle Trails | Riparian | Channel | Instream Fish Habitat |
| Nome River Mainstem | Coho | Overwintering | Level of Existing or Potential Disturbance | Moderate | High | Low | Moderate | Moderate |
| | | | Impact or Risk to Fish Habitat | Moderate | Moderate | Low | Moderate | - |
| | | | Likelihood of Benefits to Fish Habitat from Restoration of Component | Moderate | Moderate | Low | Low | Moderate |
| Osborn Creek | Coho | Overwintering | Level of Existing or Potential Disturbance | High | Low | Low | High | Moderate |
| | | | Impact or Risk to Fish Habitat | High | Low | Low | Moderate | - |
| | | | Likelihood of Benefits to Fish Habitat from Restoration of Component | Moderate | Low | Low | Low | Low |
| Dexter Creek | Coho | Summer and winter rearing | Level of Existing or Potential Disturbance | High | High | High | High | High |
| | | | Impact or Risk to Fish Habitat | High | High | High | High | - |
| | | | Likelihood of Benefits to Fish Habitat from Restoration of Component | High | High | High | High | Moderate |
| Buster Creek | Coho | Summer and winter rearing | Level of Existing or Potential Disturbance | High | High | High | High | High |
| | | | Impact or Risk to Fish Habitat | High | High | High | High | - |
| | | | Likelihood of Benefits to Fish Habitat from Restoration of Component | High | High | High | High | Moderate |

| Watershed | Target Species | Limiting Fish Habitat | Watershed Condition and Restoration Benefits | Watershed Components and Processes | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Sediment Supply | Roads / Vehicle Trails | Riparian | Channel | Instream Fish Habitat |
| Banner Creek | Coho / Dolly Varden | Summer and winter rearing; Juv. Migration (culvert) | Level of Existing or Potential Disturbance | Low | High | Low | Low | Low |
| | | | Impact or Risk to Fish Habitat | Low | Moderate | Low | Low | - |
| | | | Likelihood of Benefits to Fish Habitat from Restoration of Component | Low | Moderate | Low | Low | Low |
| Basin Creek | Coho | Overwintering | Level of Existing or Potential Disturbance | High | Moderate | High | High | High |
| | | | Impact or Risk to Fish Habitat | High | Moderate | High | High | - |
| | | | Likelihood of Benefits to Fish Habitat from Restoration of Component | High | Moderate | High | High | Moderate |
| Sampson Creek | Dolly Varden | Overwintering | Level of Existing or Potential Disturbance | Low | Low | Low | Low | Low |
| | | | Impact or Risk to Fish Habitat | Low | Low | Low | Low | - |
| | | | Likelihood of Benefits to Fish Habitat from Restoration of Component | Low | Low | Low | Low | Low |
| Hobson Creek | Dolly Varden | Overwintering; Spawning | Level of Existing or Potential Disturbance | Low | Moderate | Low | Low | Low |
| | | | Impact or Risk to Fish Habitat | Low | Moderate | Low | Low | - |
| | | | Likelihood of Benefits to Fish Habitat from Restoration of Component | Low | Moderate | Low | Low | Low |

| Watershed | Target Species | Limiting Fish Habitat | Watershed Condition and Restoration Benefits | Watershed Components and Processes | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Sediment Supply | Roads / Vehicle Trails | Riparian | Channel | Instream Fish Habitat |
| Darling Creek | Coho | Summer and winter rearing | Level of Existing or Potential Disturbance | High | High | High | High | High |
| | | | Impact or Risk to Fish Habitat | High | High | High | High | - |
| | | | Likelihood of Benefits to Fish Habitat from Restoration of Component | High | High | High | High | Moderate |
| Rocky Mountain Creek | Dolly Varden | Overwintering | Level of Existing or Potential Disturbance | Moderate | Low | Low | Low | Low |
| | | | Impact or Risk to Fish Habitat | Low | Low | Low | Low | - |
| | | | Likelihood of Benefits to Fish Habitat from Restoration of Component | Low | Low | Low | Low | Low |
| Christian Creek | Dolly Varden | Overwintering | Level of Existing or Potential Disturbance | Low | Low | Low | Low | Low |
| | | | Impact or Risk to Fish Habitat | Low | Low | Low | Low | - |
| | | | Likelihood of Benefits to Fish Habitat from Restoration of Component | Low | Low | Low | Low | Low |
| Sulphur Creek | Dolly Varden | Overwintering | Level of Existing or Potential Disturbance | Low | Low | Low | Low | Low |
| | | | Impact or Risk to Fish Habitat | Low | Low | Low | Low | - |
| | | | Likelihood of Benefits to Fish Habitat from Restoration of Component | Low | Low | Low | Low | Low |

Table 5. Channel widths for the reaches of Nome River based on interpretation of 1950 and 1986 aerial photomosaics (see Maps 1 and 2). Note: Only the lower portion of Reach 7 was included in the photomosaics.

| Reach | Average Width (m) | | Difference (m) |
|---|---|---|---|
| | 1950 | 1986 | |
| N1 | 99 | 89 | 10 |
| N2 | 72 | 61 | 11 |
| N3 | 85 | 62 | 23 |
| N4 | 91 | 51 | 40 |
| N5 | 89 | 51 | 38 |
| N6 | 88 | 50 | 38 |
| N7 | 77 | 68 | 9 |

Table 6. Channel lengths for the reaches of Nome River based on interpretation of 1950 and 1986 aerial photomosaics (see Maps 1 and 2). Note: Only a portion of Reach 7 was included in the photomosaics.

| Year | N1 | N2 | N3 | N4 | N5 | N6 | N7 | Total Channel Length (m) |
|---|---|---|---|---|---|---|---|---|
| 1950 | 20621 | 3872 | 5534 | 3219 | 5036 | 2604 | 6123 | 47010 |
| 1986 | 20590 | 3922 | 5580 | 3331 | 5581 | 2686 | 6161 | 47851 |

Table 7. Prioritization of subbasins and components for restoration in Nome River watershed.

| | | Likelihood of Restoration Success | | | Component for Restoration | | |
|---|---|---|---|---|---|---|---|
| Watershed | Priority | Low | Moderate | High | Primary | Secondary | Tertiary |
| Buster | 1 | | | * | Vehicle Trails | Channel | Riparian |
| Darling | 2 | | | * | Vehicle Trails | Channel | Riparian |
| Dexter | 3 | | | * | Vehicle Trails | Channel | Riparian |
| Basin | 4 | | | * | Channel | Riparian | |
| Banner | 5 | | * | | Access (culvert) | | |
| Nome Mainstem | 6 | | * | | Roads / Vehicle Trails | | |

Dexter and Basin creeks are the third and fourth priorities for restoration. Dexter has higher quality habitat for coho than Basin but both are presently populated with coho juveniles in their lower sections. The level of disturbance for the watershed components is on average high, and it is believed that restoration will be cost-effective and result in significant improvements to limiting fish habitats. There is a high risk of impact to fish habitat from the sediment supply, vehicle trail (Dexter only), riparian, and channel disturbances in the subbasins. There is a high likelihood of benefits from treatment of these components, and the vehicle trail, riparian and channel components are recommended for restoration (Table 7). However, both Dexter and Basin are not recommended for restoration at this time as ongoing gravel extraction and/or placer mining in both basins would reduce the likelihood of restoration success. It is recommended that, in the interim, landowners follow accepted best management practices pertaining to the location of vehicle trails outside of the channel and floodplain, and the protection of riparian vegetation along the channel.

Banner Creek has a juvenile fish access barrier at the culvert crossing on the Nome-Kougarok Road. Although restoration of the access barrier would alleviate this problem, coho rearing and overwintering habitat upstream of the culvert appears to be limited by low stream discharges. Consequently, the likelihood of restoration success is considered only moderate as culvert restoration may not reduce the overriding bottleneck to fish production.

Although the Nome River mainstem appears to be recovering its natural channel characteristics and watershed processes, it continues to be affected by road development and vehicle ford crossings (Table 7). These impacts are also prevalent on many of the Nome River tributaries. It is recommended that to accelerate recovery of the Nome River mainstem and its tributaries, road construction and maintenance, and vehicle use in streams should follow best management practices, particularly, as it pertains to:

- ensuring roads and trails are set back from the channel and floodplain,
- ensuring road side slopes are stable and not contributing excessive sediment loads to the channels,
- limiting the number of ford crossings and, where necessary, ensuring that ford crossings are constructed to minimize the generation of fine sediments,
- ensuring culvert crossings provide fish passage, and
- protecting riparian vegetation along the channel and floodplain.

It is important to state that prior to the implementation of any proposed restoration works, project proponents should consult with and obtain approval to proceed from the private landowner(s) and/or appropriate government agency staff responsible for the management of public lands.

## 4.2 Detailed Habitat Assessment

Following the overview assessment, detailed assessments were made on the Nome River and its subbasins. Although detailed habitat assessments were concentrated on those high priority subbasins identified in the overview assessment, reaches in moderate and low priority subbasins were also assessed to confirm or refute the preliminary recommendations and priorities made in the overview.

### 4.2.1 Fish Sampling and Observations

Adult pink salmon followed by juvenile coho, Dolly Varden, adult chum, adult sockeye, Arctic grayling and round whitefish were the most to least abundant salmonid species observed in the present study. Species distribution and abundance by reach and habitat type are presented in Table 8 and Appendix D. Juvenile coho were well distributed throughout the watershed and abundant in pool/glide habitat with overhead cover.

### 4.2.2 Fish Habitat Condition

Detailed habitat condition results are presented in six tables located in Appendix D as follows: Table D1 is a spreadsheet listing detailed habitat attributes in each reach surveyed; Table D2 is a summary of area surveyed and percentage of each primary habitat type present in each reach; Table D3 is a summary of cover attributes in each reach surveyed; Table D4 is a summary of bed material and spawning attributes for surveyed reaches; Table D5 is summary of fish observations; and Table D6 is a summary of riparian condition. A diagnostic summary of salmonid habitat condition is presented in Table 9. Representative photos for the habitats observed at the project streams are presented in Photo 1 to Photo 54.

The detailed habitat assessment was completed on 41,180 m of Nome River mainstem and several kilometers of off-channel habitat and tributary streams. The assessment was completed over the entire area of Reach N2, Reach N3, Reach N4, Reach N5 and Reach N6; while Reach N1 and Reach N7 were sub-sampled. Detailed habitat assessments were conducted in Reach N1, upstream of the confluence with Osborn Creek at chainage 13+627 m and in Reach N7 from chainage 43+613 m to the confluence with Sulphur Creek at chainage 54+807 m. The majority of reaches assessed were of riffle-pool habitat type which is typically important for incubation, rearing and spawning.

### 4.2.3 Nome River (Reach N1)

Reach N1 extends 21,053 m upstream from the Bering Sea to a location 115 m upstream of the Dexter Creek confluence (Map 2, Appendix D). Channel pattern is irregular, wandering and occasionally confined with a mean gradient of 0.07%. Channel type is riffle-pool morphology with a predominance of gravel substrate (RPg, Hogan et al. 1996). Mean bankfull width and depth are 63 m and 0.64 m, respectively. Instream habitat type is predominantly glide (52.2%), followed by riffle (30.3%) and pool (17.6%). In all habitat types, the major components of instream cover are deep pool (4.9%), undercut banks (3.4%) and instream vegetation (2.6%). Substrate composition is gravel (81.4%), fines (18.1%), cobble (0.5%) and boulder (0.1%). Channel disturbance indicators include; bank erosion, mid-channel bars, multiple channels, denuded bars and vehicle (road) crossings on riffle crests utilized by spawning pink salmon.

The diagnostic summary in Table 9 of salmonid habitat condition gives a good rating for number of off-channel habitats with good access and for the quantity of suitable sized substrate for spawning purposes. However, substrate quality is given a fair rating based on amount of fine material (<2 mm) present. In addition, the summary gives a poor rating for; percent pool area and pool frequency, number of holding pools per km, and percent wood debris and overhead cover in pools and boulder cover in riffles. An overall poor rating for the three pool habitat diagnostics and for all instream cover elements suggests that restoration opportunities to restore fish habitats exist. The lack of pools (minimum residual pool depth of 0.8 m; Johnston and Slaney 1996) and fair gravel quality is believed due to a high level of sediment (<5 mm diameter) loading to the Nome River which has in-filled pools and spawning gravels.

### 4.2.4 Nome River (Reach N2)

Reach N2 extends 3582 m upstream from Dexter Creek confluence area to chainage 24+769 m (Map 2, Appendix D). Channel pattern is straight to sinuous and confined by the Nome-Taylor or Kougarok Road grade all along the right (west) bank. Mean gradient is 0.19%. Channel type is riffle-pool morphology with a predominance of gravel substrate (RPg, Hogan et al. 1996). Mean bankfull width and depth are 56.4 m and 0.96 m, respectively. Instream habitat type is predominantly riffle (49.4%), followed by glide (35.7%) and pool (14.9%). In all habitat types, total instream cover is low at 8.8%; primary components are instream vegetation (6.0%) and undercut banks (2.6%). Substrate composition is gravel (82.6%), fines (16.7%), cobble (0.8%) and boulder (0.2%). Fines tend to be more prevalent along the right bank of the channel and downstream of highway culverts. Channel disturbance indicators include; bank erosion, mid-channel bars, multiple channels, and denuded bars.

The diagnostic summary in Table 9 of salmonid habitat condition gives a good rating for number of off-channel habitats with good access and for the quantity of suitable sized spawning substrate. However, substrate quality was ranked as fair based on a 16.7% fines content. A poor rating was given to percent pool area (14.9%) and pool frequency, number of holding pools per km, percent wood debris and overhead cover in pools, and percent boulder cover in riffles for juvenile rearing. An overall poor rating for the three pool habitat diagnostics and for all instream cover elements suggests that restoration opportunities to restore fish habitats exist. The lack of pools (minimum residual pool depth of 0.8 m; Johnston and Slaney 1996) and fair gravel quality is believed due to a high level of sediment (<5 mm diameter) loading to the Nome River which has in-filled pools and spawning gravels.

### 4.2.5 Nome River (Reach N3)

Reach N3 extends 4,728 m upstream from chainage 24+769 m to 13-mile bridge pool at chainage 29,363 m (Map 2, Appendix D). Channel pattern is irregular, meandering and occasionally confined; mean gradient is 0.14%. Channel type is riffle-pool morphology with a predominance of gravel substrate (RPg, Hogan et al. 1996). Mean bankfull width and depth are 52.1 m and 0.87 m, respectively. Instream habitat type is 36.2% riffle, 35.3% glide and 28.5% pool. Over all habitat types, undercut banks (9.4%), and instream vegetation (6.6%) are the dominant instream cover components. Substrate composition is gravel (77.7%), fines (19.3%), cobble (2.8%) and boulder (0.2%). Channel disturbance indicators include; bank erosion, mid-channel bars, multiple channels, and denuded bars.

The diagnostic summary of salmonid habitat condition gives a good rating for the abundance of suitable sized substrate for spawning purposes and for the number of off-channel habitats with good access (Table 9). Gravel quality, pool frequency and the number of holding pools received fair ratings. However, percent pool area, percent overhead cover and woody cover in pools as well as boulder cover in riffles received a poor rating. Restoration opportunities relate to increasing pool cover and to reducing fine sediment loadings to improve gravel quality.

Table 8. Fish distribution for selected reaches in Nome River watershed.

| | | Survey Method | | CO | CO | CO | CM | CM | CM | PK | PK | PK | CH | CH | CH | SK | SK | SK | DV | DV | DV | GR | GR | GR | CCG | CCG | CCG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stream | Reach | Juv | Ad | juv | ad | sp | juv | ad | sp | juv | ad | sp | juv | ad | sp | juv | ad | sp | juv | ad | sp | juv | ad | sp | juv | ad | sp |
| Nome | N1 | VO | VO | K | K | K | K | K | K | K | K | K | K | K | S | K | K | S | K | K | K | S | K | S | S | K | K |
| Osborn | Os1 | VO | VO | K | S | S | S | S | S | S | K | K | N | N | N | N | N | N | S | S | S | S | S | S | S | K | S |
| Buster | Bu1 | VO | VO | K | S | S | S | K | K | S | K | K | U | U | U | U | U | U | K | K | K | S | S | S | S | K | S |
| Buster | Bu2 | VO | VO | S | U | U | U | U | U | U | U | U | N | N | N | N | N | N | U | U | U | U | U | U | U | U | U |
| Buster | Bu3-RF | VO | VO | K | U | U | U | U | U | N | N | N | N | N | N | N | N | N | S | S | S | U | U | U | S | S | S |
| Buster | Bu3-LF | VO | VO | K | U | U | U | U | U | N | N | N | N | N | N | N | N | N | S | S | S | U | U | U | S | S | S |
| Dexter | Dx1 | VO | VO | K | S | S | U | U | U | S | S | S | U | U | U | U | U | U | K | S | S | U | U | U | K | K | S |
| Nome | N2 | VO | VO | K | K | K | K | K | K | K | K | K | S | K | S | S | K | S | S | S | S | S | S | S | S | S | S |
| Nome | N3 | VO | VO | K | K | K | K | K | K | K | K | K | S | K | S | S | K | S | S | S | S | S | K | S | S | S | S |
| Nome | N4 | VO | VO | K | K | K | K | K | K | K | K | K | S | K | S | S | K | S | S | S | S | S | S | S | S | S | S |
| Basin | Bas1 | VO | VO | K | U | U | N | N | N | N | N | N | U | U | U | U | U | U | K | S | S | U | U | U | U | U | U |
| Nome | N5 | VO | VO | K | K | K | K | K | K | K | K | K | S | S | S | S | K | S | S | S | S | S | K | S | S | S | S |
| Nome | N6 | VO | VO | K | K | K | S | S | S | K | K | K | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| Sampson | Samp | VO | VO | K | U | U | U | U | U | U | U | U | U | U | U | N | N | N | K | S | S | U | U | U | N | N | N |
| Hobson | H1 | VO | VO | K | S | S | U | U | U | K | K | S | U | U | U | U | U | U | S | S | S | U | U | U | S | S | S |
| Hobson | H2 | VO | VO | S | H | S | U | U | U | U | U | U | U | U | U | U | U | U | S | S | U | U | U | U | S | S | S |
| Nome | N7 | VO | VO | K | U | U | U | U | U | S | K | K | U | U | U | S | S | S | S | S | S | U | U | U | S | S | S |
| Darling | D1 | VO | VO | K | S | S | U | U | U | S | K | K | U | U | U | U | U | U | K | S | S | U | U | U | S | K | S |
| Rocky Mountain | RM1 | VO | VO | K | U | U | U | U | U | U | K | K | U | U | U | U | U | U | K | S | S | U | U | U | N | N | N |
| Kink Pond | Kink P | VO | VO | K | U | U | U | U | U | S | K | K | U | U | U | S | K | S | S | S | S | U | U | U | K | K | S |
| Christian | C1 | VO | VO | K | U | U | U | U | U | S | K | S | U | U | U | U | U | U | K | S | S | U | U | U | K | K | S |
| Sulphur | S1 | VO | VO | H | U | U | U | U | U | U | K | S | U | U | U | U | U | U | K | S | S | U | U | U | K | K | S |
| Nome | N8 | VO | VO | K | U | U | U | U | U | U | K | S | U | U | U | U | U | U | S | S | S | U | U | U | U | U | U |

Symbols:

VO - visual observation
K - presence known
N - not present
S - presence suspected
U - presence unknown
H - historical presence

SPECIES

| | |
|---|---|
| CO | Coho Salmon |
| CM | Chum Salmon |
| PK | Pink Salmon |
| CH | Chinook Salmon |
| SK | Sockeye Salmon |
| DV | Dolly Varden Char |
| GR | Arctic Grayling |
| CCG | Slimy Sculpin |

LIFE STAGE

| | | |
|---|---|---|
| juv | - | Juvenile |
| ad | - | Adult |
| sp | - | Spawning |

Table 9. Diagnostic summary of salmonid habitat condition within the Nome River watershed.

| Reach Number[1] | % Pools[2] | | Pool Frequency[3] | | Holding Pools[4] | | % Wood in Pools[5] | | % Boulder in Riffles[6] | | % Overhead Cover[7] | | Gravel Quantity[8] | | Gravel Quality[9] | | Off-channel Habitat[10] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Value | Rating | Value | Rating | Value | Rating | Value | Rating | Value | Rating | Value | Rating | Value | Rating | Value | Rating | Value | Rating |
| N1 | 17.6 | Poor | 23.6 | Poor | 0.1 | Poor | 1.3 | Poor | 0.1 | Poor | 5.1 | Poor | 81.5 | Good | 18 | Fair | 22 | Good |
| N2 | 14.9 | Poor | 12.7 | Poor | 0.0 | Poor | 0.0 | Poor | 0.0 | Poor | 3.7 | Poor | 82.8 | Good | 17 | Fair | 16 | Good |
| N3 | 14.9 | Poor | 6.0 | Fair | 1.1 | Fair | 0.4 | Poor | 0.2 | Poor | 12.2 | Fair | 77.8 | Good | 19 | Fair | 21 | Good |
| N4 | 28.5 | Poor | 23.8 | Poor | 0.0 | Poor | 3.0 | Poor | 0.6 | Poor | 6.5 | Poor | 74.4 | Good | 22 | Fair | 15 | Good |
| N5 | 25.9 | Poor | 4.4 | Good | 1.0 | Fair | 1.5 | Poor | 1.0 | Poor | 6.8 | Poor | 71.5 | Good | 24 | Fair | 28 | Good |
| N6 | 17.3 | Poor | 7.4 | Fair | 0.0 | Poor | 0.5 | Poor | 0.4 | Poor | 6.2 | Poor | 71.5 | Good | 23 | Fair | 19 | Good |
| N7 | 0.0 | Poor | - | Poor | 0.0 | Poor | n/a | n/a | 3.7 | Poor | 5.8 | Poor | 61.8 | Good | 24 | Fair | 14 | Good |
| Os1 | 9.6 | Poor | 12.8 | Poor | 0.3 | Poor | 2.1 | Poor | 1.3 | Poor | 4.9 | Poor | 67.8 | Good | 22 | Fair | 16 | Good |
| Bu1 | 27.8 | Poor | 11.6 | Poor | 6.7 | Good | 13.1 | Fair | 0.0 | Poor | 37.2 | Good | 65.5 | Good | 28 | Poor | 5 | Good |
| Bu2 | 5.8 | Poor | 12.0 | Poor | 4.3 | Good | 18.6 | Fair | 2.2 | Poor | 7.8 | Poor | 76.2 | Good | 13 | Good | 6 | Good |
| Bu3-RF | 2.9 | Poor | 24.9 | Poor | 0.0 | Poor | 8.0 | Fair | 1.0 | Poor | 12.2 | Fair | 76.6 | Good | 13 | Good | 0 | Poor |
| Bu3-LF | 2.9 | Poor | 26.4 | Poor | 0.0 | Poor | 4.9 | Poor | 7.5 | Poor | 19.6 | Fair | 54.7 | Good | 24 | Fair | 0 | Poor |
| Dx1 | 9.0 | Poor | 12.2 | Poor | 2.0 | Good | 9.3 | Fair | 16.7 | Fair | 21.6 | Good | 47.1 | Good | 25 | Poor | 5 | Good |
| Bas1 | 7.6 | Poor | 15.8 | Poor | 5.3 | Good | 23.1 | Good | 1.9 | Poor | 9.5 | Poor | 44.4 | Good | 13 | Good | 0 | Poor |
| H1 | 0.0 | Poor | - | Poor | - | Poor | n/a | n/a | 2.0 | Poor | 13.9 | Fair | 1.3 | Poor | 49 | Poor | 2 | Good |
| H2 | 15.6 | Poor | 20.1 | Poor | 0.9 | Poor | 6.9 | Fair | 11.1 | Fair | 27.7 | Good | 44.4 | Good | 9 | Poor | 0 | Poor |
| D1 | 7.9 | Poor | 19.6 | Poor | 0.6 | Poor | 2.0 | Poor | 12.9 | Fair | 16.4 | Fair | 51.6 | Good | 17 | Fair | 6 | Good |
| RM1 | 0.8 | Poor | 15.9 | Poor | 0.0 | Poor | 0.0 | Poor | 0.1 | Poor | 29.7 | Good | 53.6 | Good | 30 | Poor | 1 | Fair |
| C1 | 11.1 | Poor | 34.2 | Poor | 0.0 | Poor | 0.0 | Poor | 2.6 | Poor | 15.2 | Fair | 53.9 | Good | 20 | Fair | 4 | Good |
| S1 | 3.4 | Poor | 67.9 | Poor | 0.0 | Poor | 0.0 | Poor | 2.6 | Poor | 19.8 | Fair | 47.7 | Good | 19 | Fair | 1 | Fair |

[1] N=Nome, D=Darling, Bu=Buster, Bas=Basin, S=Sulphur, C=Christian, RM=Rocky Mountain, H=Hobson, Dx=Dexter, Os=Osborn

[2] Value is percent pools (%P = total pool area / total wetted area). Poor < 30%, Fair <= 40%, Good > 40% (for gradients 2-5%).

[3] Value is number of bankfull widths per pool (PF = mean bankfull width / total number of pools). Good < 6, Fair <= 10, Poor > 10.

[4] Value is the number of pools per 1000 m for which the product of the maximum depth times the total overhead cover is >= 30. Poor < 1, Fair <= 2, Good > 2.

[5] Value is the mean percent wood cover in pools. Poor < 6%, Fair <= 20%, Good > 20%.

[6] Value is the percent boulder cover in riffles. Poor < 10%, Fair <= 30%, Good > 30%.

[7] Value is the percent overhead cover in pools. Poor < 10%, Fair < 20%, Good > 20%.

[8] Value is percent spawning area (%Quantity = spawning area / total wetted area). Poor < 10%, Fair <= 25%, Good > 25%.

[9] Value is the percent of substrate in <2 mm category (fines). Poor > 25%, Fair >15% and uncompacted, Good < =15% and uncompacted.

[10] Value is the number of off-channel habitats. Poor < 1, Fair <= 2, Good > 2.

### 4.2.6 Nome River (Reach N4)

Reach N4 extends 4,150 m upstream from 13-mile bridge area to the confluence of Basin Creek at 33+513 m (Map 2, Appendix D). Channel pattern is sinuous and frequently confined by topography along the right (west) bank and from the combination of Nome-Kougarok Road and Peninsula railroad grades along the left (east) bank. Mean gradient is 0.21%. Channel type is riffle-pool morphology with a predominance of gravel substrate (RPg, Hogan et al. 1996). Mean bankfull width and depth are 43.5 m and 0.71 m, respectively. Instream habitat type is predominantly glide (45.7%), followed by riffle (40.5%) and pool (13.8%). Key instream cover components in all habitat types are instream vegetation (5.6%) and deep pool (3.3%). Substrate composition is gravel (73.8%), fines (22.1%), cobble (3.3%) and boulder (0.5%). Deposition of fines tends to be more prevalent in this reach, in part, due to the higher proportion of glide and pool habitat types. Channel disturbance indicators include; bank erosion, mid-channel bars, multiple channels, and denuded bars.

The diagnostic summary in Table 9 of salmonid habitat condition gives a good and fair rating for quantity and quality of spawning substrate, respectively. Number of off-channel habitats are also rated as good; however, percent pool area and frequency, number of holding pools per km, percent overhead cover, wood cover in pools, boulder cover in riffles all received poor ratings. An overall poor rating for the three pool habitat diagnostics and for all instream cover elements suggests that restoration opportunities to restore fish habitats exist. The lack of pools (minimum residual pool depth of 0.8 m; Johnston and Slaney 1996) and fair gravel quality is believed due to a high level of sediment (<5 mm diameter) loading to the Nome River which has in-filled pools and spawning gravels.

### 4.2.7 Nome River (Reach N5)

Reach N5 extends 5,982 m upstream from Basin Creek confluence to chainage 39+495 m or approximately 700 m downstream of the footbridge (Map 2, Appendix D). Channel pattern is irregular meandering and occasionally confined; mean gradient is 0.27%. Channel type is riffle-pool morphology with a predominance of gravel substrate (RPg, Hogan et al. 1996). Mean bankfull width and depth are 43.9 m and 0.77 m, respectively. Instream habitat type is 47.1% riffle, 27% glide and 25.9% pool. Deep pool (3.9%) and undercut banks (3.5%) were the dominant instream cover components. Substrate composition is gravel (70.6%), fines (24.3%), cobble (4.3%) and boulder (0.8%). Channel disturbance indicators include; bank erosion, mid-channel bars, multiple channels, and denuded bars.

The diagnostic summary of salmonid habitat condition provides a good rating for pool frequency, the abundance of suitable sized substrate for spawning purposes as well as for the number of off-channel habitats with good access (Table 9). Gravel quality and number of quality holding pools per km received a fair rating. Percentage of habitat areas as pools, percent overhead cover and woody cover in pools as well as boulder cover in riffles all received poor ratings. Restoration opportunities relate to increasing pool cover and to reducing fine sediment loadings to improve gravel quality.

### 4.2.8 Nome River (Reach N6)

Reach N6 extends 2,940 m upstream to Hobson Creek confluence or chainage 42435 m (Map 2, Appendix D). Channel pattern is irregular wandering, occasionally confined, with mean gradient 0.25%. Channel type is riffle-pool morphology with a predominance of gravel substrate (RPg, Hogan et al. 1996). Mean bankfull width and depth are 36 m and 0.7 m, respectively. Instream habitat type is predominantly riffle (53.9%), followed by glide (28.8%) and pool (17.3%). Most important instream cover components in all habitat types are undercut banks (3.7%) and instream vegetation (3.5%). Substrate composition is gravel (70.3%), fines (23.3%), cobble (6%) and boulder (0.3%). Channel disturbance indicators include; bank erosion, mid-channel bars, multiple channels, and denuded bars.

The diagnostic summary of salmonid habitat condition gives a good rating for the abundance of spawning substrate as well as for number of off-channel habitats with good access (Table 9). Substrate quality received a fair rating due to the amount of fine material (<2 mm) present and degree of substrate compaction. Pool frequency also received a fair rating. Receiving poor ratings were; percent pools, number of holding pools per km, percent overhead cover and percent boulder cover in riffles. Restoration opportunities relate to increasing pool cover and to reducing fine sediment loadings to improve gravel quality.

### 4.2.9 Nome River (Reach N7)

Reach N7 extends 13,806 m from Hobson Creek confluence to the braided channel section, located 900 m upstream of Dorothy Creek confluence or chainage 56+241 m. In this reach, we conducted detailed habitat assessments from Hobson Creek to Darling Creek confluence and from Rocky Mountain Creek confluence to Sulphur Creek confluence (Map 2, Appendix D). Channel pattern is sinuous, frequently confined by topography along the right bank and by a combination of the Peninsula railway and Nome-Taylor or Kougarok Road along the left bank. Mean gradient is 0.6%. Channel type is riffle-pool morphology with a predominance of gravel substrate (RPg-c, Hogan et al. 1996). Mean bankfull width and depth are 49.9 m and 0.7 m, respectively. Instream habitat type is predominantly riffle (65.4%) and glide (34.6%). Total instream cover is sparse with boulder (3.4%) and undercut banks (0.7%) as the dominant instream cover components. Substrate composition is gravel (59.2%), fines (24.1%), cobble (13.4%) and boulder (3.4%). Channel disturbance indicators continue to include; bank erosion, mid-channel bars, multiple channels, and denuded bars.

The diagnostic summary in Table 9 of salmonid habitat condition gives a good rating for number of off-channel habitats with good access and spawning gravel quantity. Although suitable sized substrate for spawning purposes is plentiful, substrate quality is ranked as fair because of the amount of fine material (<2 mm) present and accompanying degree of compaction. Potential sediment sources include bank erosion, road construction activities within the floodplain channel upstream of Sulphur Creek confluence, contributions from tributary channels and old tailings piles along Reach N7 between Darling Creek and Sulphur Creek confluences. Furthermore, percent pool area and pool frequency, number of holding pools per km, percent overhead cover, and boulder cover in riffles all received poor ratings. An overall poor rating for the three pool habitat diagnostics and for the instream cover elements suggests that restoration opportunities to restore fish habitats exist. The lack of pools (minimum residual pool depth of 0.8 m; Johnston and Slaney 1996) and fair gravel quality is believed due to a high level of sediment (<5 mm diameter) loading to the Nome River which has in-filled pools and spawning gravels.

### 4.2.10 Osborn Creek (Reach Os1)

Osborn Creek enters the left bank of the Nome River in Reach N1 at chainage 13+627 m (UTM Zone 03:489464.7157866, Map 2, Appendix D). Over the length of Osborn Creek, gradients vary between 0.2 and 7.8%, based on a longitudinal profile from a topographical map (Appendix E).

The surveyed portion of Reach Os1 extends 3,264 m upstream from the Nome River (Photo 22). Channel pattern is irregular meandering; mean gradient is 0.36%. Channel type is riffle-pool morphology with a prevalence of gravel substrate (RPg, Hogan et al. 1996). Substrate composition is 65.7% gravel, 22.4% fines 10.8% cobble, and 0.9% boulder. Mean bankfull width and depth are 19.7 m and 0.66 m, respectively. Habitat type is predominantly glide at 47.1%, followed by 43.4% riffle and 9.6% pool. Instream cover is sparse at 6.8% over all habitat types. Instream cover is primarily provided by instream vegetation at 4%. Streamside willow vegetation provides only 2.2% overhead cover. Channel disturbance indicators include; bank erosion, denuded bars, elevated mid-channel bars and isolated side channels or backchannels.

Reach Os1 provides an abundance of suitable quality spawning gravel in both the mainstem and off-channel habitats. This, coupled with a profusion of groundwater sources in both main and off-channel habitats provides potentially, excellent spawning habitat. However, the high rate of groundwater discharge may be exacerbating the amount of anchor ice, particularly in the shallow over-widened section of lower Osborn Creek, and, therefore, limiting spawning success (C. Lean, pers. comm.). Summer rearing habitat is limited as evidenced by poor ratings for percent pool area and pool frequency (Table 9). A high percent of glide habitat is indicative of an aggraded, over-widened channel with a preponderance of in-filled pool habitat. Lack of functional hard points, such as LWD and boulder materials, does not provide for suitable pool scouring or pool habitat maintenance. An overall poor rating for the three pool habitat diagnostics and for the instream cover elements suggests that restoration opportunities to restore fish habitats exist. The lack of pools (minimum residual pool depth of 0.7 m; Johnston and Slaney 1996) and fair gravel quality is believed due to a high level of sediment (<5 mm diameter) loading to Osborn Creek from historic placer mining, which has in-filled pools and spawning gravels. However, restoration works in Reach Os1 are not recommended. The reach continues to be affected by hydraulic and dredge mining activities that occurred historically further upstream and the resultant sediment accumulations within the channel continue to be a source of high sediment loadings to the lower reach. Restoration opportunities should be examined once the channel becomes more stable and sediment loading has decreased significantly.

### 4.2.11 Buster Creek (Reach Bu1, Reach Bu2, Reach Bu3-RF, Reach Bus3-LF)

Buster Creek enters the left bank of the Nome River in Reach N1 at chainage 20+386 m or UTM Zone 03:0487334.7162360 (Map 2, Appendix D). Over the length of Buster Creek, gradients vary between 0.3 and 15%, based on a longitudinal profile from a topographical map (Appendix E). The surveyed portion of Buster Creek is divided into four reaches on the basis of channel pattern, discharge and gradient.

The lower-most reach of Buster Creek is designated as Bu1 and extends 1,349 m upstream from the Nome River confluence. This reach is highly modified by beaver activity with six active, but passable dams present. Channel pattern is irregular and wandering; mean gradient is 0.64%. Channel type is riffle-pool morphology with predominance (63.9%) of gravel substrate (RPg, Hogan et al. 1996). Mean bankfull width and depth are 7.3 m and 0.7 m, respectively. Dominant habitat type is beaver pond at 53.1%, followed by 27.8% pool, 12.8% riffle and 6.3% glide. Total instream cover in all habitat types is 23%. Small woody debris (18.3%) and deep pool (3.2%) are the main instream cover elements; whereas, streamside willow vegetation cover provides dominant overhead cover (24.1% for pool habitats, 19.3% for glide habitats and 11.2% for riffle habitats). Substrate composition is gravel (63.9%), fines (27.9%) and cobble (8.1%). Channel disturbance indicators include; bank erosion, mid-channel bars, multiple channels, denuded bars and beaver dams.

Bed paving material distribution in Reach Bu1 (riffle at chainage 0+452) is presented in Appendix F. The median bed material (4.8 cm) is larger than the bankfull tractive force (4.5 $kg/m^2$) suggesting that about 50% of the streambed paving material is stable.

The diagnostic summary of salmonid habitat condition provides a poor rating for percent pool but a good rating if percent pool and pond (‘other’) habitat are combined (80.9%) (Appendix D). Also receiving good ratings are; number of off-channel habitats with good access, gravel quantity, number of holding pools and percent overhead pool cover. Juvenile summer rearing in pool habitat is fair with 13.1% wood cover but poor in riffles where no boulder cover exists. However, overhanging vegetation provides a compensatory 11.2% in riffle habitats (Appendix D). Gravel quality is ranked poor due to elevated fine material which confirms that beaver ponds are excellent sediment traps. We do not recommend any restoration action due to present beaver activity which has created extensive pond areas that are suitable for summer rearing and overwintering in this lower reach.

Reach Bu2 is an over-widened, disturbed reach extending 1,169 m upstream from the uppermost beaver pond to the confluence of Lillian and Buster creek (Photo 26). Channel pattern is generally straight; mean gradient is 1.1%. Channel type is riffle-pool morphology with a high proportion of gravel-cobble substrate (RPg-c, Hogan et al. 1996). Mean bankfull width and depth are 12.2 m and 0.5 m, respectively. Habitat type is predominantly riffle (78.1%), followed by glide (16.1%), and pool (5.8%). Total instream-cover is poor at 4.8%. Principal instream cover components over all habitat types are small woody debris (2.3%) and boulder (1.8%). Substrate composition is 73.9% gravel, 12.6% fines, 11.7% cobble, and 1.8% boulder. Channel disturbance indicators include; road crossings, bank erosion, mid-channel bars, multiple channels, and denuded bars.

The diagnostic summary of salmonid habitat condition gives a good rating for gravel quality and gravel quantity for spawning purposes and number of holding pools with cover per km. Percent pool area and pool frequency is rated as poor due to pool infilling and lack of scour elements such as LWD. The overall scarcity of boulders (1.8%) resulted in poor boulder cover in riffles. In addition, overhead cover in pool habitat is poor. This reach is at risk of future disturbance from the vehicle trail within the channel and floodplain resulting in further bank erosion, channel over-widening and channel migration. Therefore we recommend remedying sediment input problems and channel and road realignment as a high priority restoration opportunity.

The surveyed portion of Buster Creek Reach Bu3-RF extends 148 m upstream in Lillian Creek from the confluence with Buster Creek. This reach is relatively undisturbed and channel pattern is straight to sinuous. Mean gradient is approximately 1.2%. Channel type is riffle-pool morphology with a high proportion of gravel-cobble substrate (RPg-c, Hogan et al. 1996). Mean bankfull width and depth are 5.9 m and 0.43 m, respectively. Habitat type is predominantly riffle (74.2%), followed by glide (19.9%), and pool (5.8%). Total instream cover is poor at 3.6%. Major instream-cover components for all habitat types are small woody debris (2.0%), boulder (0.8%) and undercut banks (0.8%). Key overhead cover type is overhanging willow vegetation at 8.6% for all habitat types and 30% for pool habitat. Substrate composition is 74.3% gravel, 13.4% fines, 11.5% cobble, and 0.8% boulder. Channel disturbance indicators include a mid-channel bar and denuded bars.

The diagnostic summary of salmonid habitat condition gives a good rating for gravel quality and gravel quantity for spawning purposes. Percent overhead cover and percent wood in pools is fair; while, number of holding pools with cover per km, percent pool area and pool frequency, percent boulder cover in riffles and off-channel habitat with good access are all rated poor. This reach at present is not at risk from unnatural disturbance and does not appear to be contributing to a deterioration of the downstream Reach Bu2. Accordingly, we do not recommend any restoration works for this reach.

The surveyed portion of Buster Creek Reach Bu3-LF extends 409 m upstream in Buster Creek from its confluence with Lillian Creek (Photo 28). This reach is disturbed by sporadic placer mining activity. Weathered tailing piles and a road crossing are present within the floodplain. Channel pattern is straight and mean gradient is 1.8%. Channel type is riffle-pool morphology with a prevalence of gravel-cobble substrate (RPg-c, Hogan et al. 1996). Mean bankfull width and depth are 5.2 m and 0.40 m, respectively. Habitat type is 93.6% riffle, 3.5% glide and 2.9% pool. Total instream cover over all habitat types is 8.2%. Boulder (7.3%) and overhanging vegetation (12%) are principal overhead cover components. Substrate composition is 51.1% gravel, 23.9% fines, 17.6% cobble, and 7.3% boulder. Channel disturbance indicators include eroded banks, mid-channel bar and multiple channels.

The diagnostic summary of salmonid habitat condition gives a good rating for spawning gravel quantity and a fair rating for spawning gravel quality and percent overhead cover (Table 9). Percent pool area, pool frequency and all other cover related structures received a poor rating implying that this reach is a good candidate for restoration activity. However, it is still considered an active mining property and we recommend that restoration works be deferred.

### 4.2.12 Dexter Creek (Reach Dx1)

Dexter Creek enters the right bank of the Nome River at the top end of Reach N1 at chainage 21+053 m (UTM Zone 03:486792.7162387, Map 2, Appendix D). Over the length of Dexter Creek, gradients vary between 1 and 9.3%, based on a longitudinal profile from a topographical map (Appendix E).

The surveyed portion of Reach Dx1 extends 486 m upstream from the Nome River (Photo 29). Channel pattern is sinuous and mean gradient is 2.0%. Channel type is riffle-pool morphology with a prevalence of gravel substrate (RPg, Hogan et al. 1996). Substrate composition is 43.3% gravel, 25.4% fines 18.9% cobble, and 12.3% boulder. Mean bankfull width and depth are 6.8 m and 0.45 m, respectively. Habitat type is mainly riffle at 71.7%, followed by 17.4% glide and 9% pool. Key instream cover components in all habitat types are boulder at 12.3% and instream vegetation at 11.3%. Streamside willow vegetation offers only 6.5% overhead cover. Channel disturbance indicators include; bank erosion, denuded bars and elevated mid-channel bars. Reach Dx1 provides suitable summer rearing habitat with good ratings for number of holding pools per km and percent overhead cover but fair ratings for both wood cover in pool habitats and boulder cover in riffles (Table 9). Spawning gravel is abundant but of poor quality with 25.4% fines. High fine content is not surprising since upstream gravel mining is being actively pursued. Filling of interstitial gravel spaces with fines also degrades overwinter habitat potential for juvenile fishes. Restoration works in Reach Dx1 are not recommended as the reach is primarily being affected by mining activities further upstream (Photo 1). Restoration opportunities should be examined in the upstream reaches once mining and the use of the stream channel as a vehicle trail have ceased.

#### 4.2.13 Basin Creek (Reach Bas1)

Basin Creek enters the left bank of the Nome River at chainage 33+513m of Reach N4 (UTM Zone 03:0485399.7172847, Map 2, Appendix D). Over the length of Basin Creek, gradients vary between 1.4 and >14%, based on a longitudinal profile from a topographical map (Appendix E).

Reach Bas1 extends 1,228 m upstream from the Nome River confluence to a large borrow pit at the downstream end of an active placer mining property (Photo 37). Channel pattern is sinuous, with a mean gradient approximating 1.5%. Channel type is riffle-pool morphology with prevalence (63.9%) of cobble-gravel substrate (RPc-g, Hogan et al. 1996). Mean bankfull width and depth are 7.9 m and 0.7 m, respectively. Habitat type is predominantly riffle at 82.6%, followed by 7.6% pool and 2.8% glide. Seven percent of the reach is either dry or in-culvert. Total instream cover in all habitat types is 8.1%. Boulder (3.7%) and small woody debris (2%) are key instream cover elements. Substrate composition is 48.6% cobble, 34.7% gravel, 13% fines and 3.7% boulder. Channel disturbance indicators include; bank erosion, mid-channel bars, multiple channels and denuded bars.

The diagnostic summary of salmonid habitat condition provides a good rating for number of holding pools per km, percent wood in pools, spawning gravel quantity and quality (Table 9). Juvenile coho summer rearing in pool habitat is good with 23.1% wood cover. Percent pool area and pool frequency, percent overhead pool cover and number of off-channel habitats received poor ratings. Restoration works in Reach Bas1 are not recommended as the reach is primarily being affected by mining activities further upstream. Restoration opportunities should be examined in the upstream reaches once mining has ceased.

#### 4.2.14 Hobson Creek (Reach H1)

Hobson Creek enters the right bank of the Nome River in Reach N7 at chainage 42+119 m (UTM Zone 03:486726.7178326, Map 2, Appendix D). Over the length of Hobson Creek, gradients vary between 1.4 and 3.6%, based on a longitudinal profile from a topographical map (Appendix E).

Reach H1 extends 88 m upstream from the Nome River and consists of a short riffle section (2.6%) and a large beaver pond (97.4%). Substrate composition is 45.1% gravel, 37.3% fines 16.7% cobble, and 1.0% boulder. Mean bankfull width and depth are 7.0 m and 0.9 m, respectively, excluding the beaver pond which had a width of 107 m. Small woody debris and deep pools provide dominant instream cover measuring 9.9% and 9.7% respectively, over all habitat types. Overhanging willow vegetation is the dominant overhead cover element in all habitat types at 25.1%.

The diagnostic summary of salmonid habitat condition gives good ratings for gravel quantity, number of off-channel habitats and a fair rating for percent overhead cover (Table 9). The beaver pond and off-channel habitat provide good summer rearing habitat for juvenile coho and adequate depth for good overwintering habitat. Although the beaver pond functions as a sediment trap, higher fines content in pond substrate may be degrading interstitial refuges for overwintering juveniles. Restoration works are not required or recommended in Reach H1.

#### 4.2.15 Hobson Creek (Reach H2)

The surveyed portion of Hobson Creek Reach H2 extends 1,169 m upstream from the beaver pond. Mean gradient is 1.8%. Channel type is riffle-pool morphology with predominance of cobble-gravel substrate (RPc-g, Hogan et al. 1996). Substrate composition is 48.8% cobble, 34.6% gravel, 9.1% boulder and 8.5% fines. Mean bankfull width and depth are 9.7 m and 0.66 m, respectively. Habitat type is mainly riffle at 81.6%, followed by 15.6% pool and 2% glide. Major instream cover components in all habitat types are boulder at 9.1% and undercut banks at 1.4%. Overhanging willow vegetation is the dominant overhead cover element in all habitat types at 16%. Channel disturbance indicators include; bank erosion, and elevated mid-channel bars.

Salmonid habitat condition summary gives a good rating for percent overhead cover (Table 9). Although number of holding pools per km is inadequate for overwintering and summer rearing, juvenile summer rearing is adequate in the few pools that are available with a fair rating for both percent wood cover in pool habitat and percent boulder cover in riffle habitat. Overwintering and spawning potential is poor due to the highly compact nature of the substrate in Reach H2. Although spawning habitat is degraded; no restoration works are planned for Reach H2 of Hobson Creek due to a high cost to benefit ratio.

#### 4.2.16 Darling Creek (Reach D1)

Darling Creek enters the Nome River in Reach N7 at chainage 44+375 m (UTM Zone 03:0488684.7179169, Map 2, Appendix D). Over the length of Darling Creek, gradients vary between 1.7 and 3.6%, based on a longitudinal profile from a topographical map (Appendix E).

The surveyed portion of Darling Creek extends upstream 1,643 m from its confluence. A small mining claim is still sporadically worked in the vicinity of the 1,600 m mark of Darling Creek. An access road to this claim crosses Darling Creek in several locations and is a major sediment source (Photo 44). Abandoned tailings piles are also conspicuous and, to a lesser degree, are potential sediment sources within the floodplain channel.

Channel pattern is sinuous; mean gradient is 1.9%. Channel type is riffle-pool morphology with a predominance of gravel substrate (RPg, Hogan et al. 1996). Mean bankfull width and depth are 6 m and 0.7 m, respectively. Instream habitat is riffle dominated (76.3%), followed by 15.5% glide and 7.9% pool. Total instream cover is 12.8%; most prevalent instream cover components in all habitat types are boulder (10.2%) and small woody debris (1.8%). Substrate composition is gravel (46.2%), cobble (26.6%) boulder (10.2%) and fines (16.6%). Channel disturbance indicators include; road crossings, bank erosion, mid-channel bars, multiple channels, and denuded bars.

Bed paving material distribution in Reach D1 is presented in Appendix H. The median bed material (7.6 cm) is smaller than the bankfull tractive force (13.3 kg/m$^2$) suggesting that the streambed paving material is relatively unstable.

The diagnostic summary of salmonid habitat condition gives a good rating for number of off-channel habitats with good access and gravel quantity; while, substrate quality is ranked fair (Table 9). Juvenile summer rearing habitat is adequate with 12.9% boulder cover in riffles and 16.4% percent overhead cover. Percent pool area and pool frequency, number of holding pools per km, and wood cover in pools are ranked poor, primarily due to pool in-filling with sediment and paucity of substrate scouring material like large boulders and LWD. This reach is at risk of future sediment inputs from bank erosion, channel over-widening and channel migrating into the vehicle trail. Therefore, we recommend restoring the channel morphology and remedying sediment input problems as a high priority restoration opportunity.

### 4.2.17 Rocky Mountain Creek (Reach RM1)

Rocky Mountain Creek joins the left bank of the Nome River in Reach N7 at chainage 48+213 m (UTM Zone 03:489569.7182584, Map 2, Appendix D). Over the length of Rocky Mountain Creek, gradients vary between 3 and 20%, based on a longitudinal profile from a topographical map (Appendix E).

The surveyed portion of Reach RM1 extends 210 m upstream from the Nome River (Photo 46). Channel pattern is straight and mean gradient is 3.3%. Channel type is riffle-pool morphology with 68.7% gravel-cobble substrate (RPg-c, Hogan et al. 1996). Substrate composition is 49.8% gravel, 30.1% fines 18.9% cobble, and 0.1% boulder. Mean bankfull width and depth are 13.2 m and 0.5 m, respectively. Habitat type is predominantly riffle at 85.4%, followed by 12.8% glide and 0.8% pool. Small woody debris provides dominant instream cover measuring 4.5% over all habitat types. Overhanging willow vegetation is the dominant overhead cover element in all habitat types at 25.1%. Channel disturbance indicators include; bank erosion, denuded bars, mid-channel bars and multiple channels.

The diagnostic summary of salmonid habitat condition gives poor ratings for every component except percent overhead cover (good rating), spawning gravel quantity (good rating) and off-channel habitat (fair rating) (Table 9). Although spawning habitat, as well as summer rearing and overwintering habitat are degraded; no restoration works are planned for Rocky Mountain Creek due to a high cost to benefit ratio.

#### 4.2.18 Christian Creek (Reach C1)

Christian Creek enters the left bank of the Nome River in Reach N7 at chainage 52+304m (UTM Zone 03:489919.7185507, Map 2, Appendix D). Over the length of Christian Creek, gradients vary between 2.6 and 38%, based on a longitudinal profile from a topographical map (Appendix E).

The surveyed portion of Reach C1 extends 600 m upstream from the Nome River or 141 m upstream of the culverted road crossing (Photo 51). Channel pattern is sinuous. Mean gradient is 2.4%. Channel type is riffle-pool morphology with 76.6% gravel-cobble substrate (RPg-c, Hogan et al. 1996). Substrate composition is 48.2% gravel, 28.4% cobble, 20.3% fines and 2.4% boulder. Mean bankfull width and depth are 8.8 m and 0.7 m, respectively. Habitat type is primarily riffle at 75.4%, followed by 13.2% glide and 11.1% pool. Total instream cover is 9.7%; major cover components are small woody debris (3.5%) and boulder (2.4%). Overhanging willow vegetation is the dominant overhead cover element in riffle (11.1%) and glide (3.7%) habitats. Channel disturbance indicators include; bank erosion, denuded bars, and elevated mid-channel bars.

The diagnostic summary of salmonid habitat condition provides good ratings for spawning gravel quantity and number of off-channel habitats (Table 9). Spawning quality and percent overhead cover are ranked fair. All pool and instream cover criteria are ranked poor. No restoration works are planned for Christian Creek due to a high cost to benefit ratio.

#### 4.2.19 Sulphur Creek (Reach S1)

Sulphur Creek enters the left bank of the Nome River in Reach N7 at chainage 53+433 m (UTM Zone 03:489560.7187051, Map 2, Appendix D). Over the length of Sulphur Creek, gradients vary between 2.3 and 14%, based on a longitudinal profile from a topographical map (Appendix E).

The surveyed portion of Reach S1 extends 486 m upstream from the Nome River to the culverted road crossing. Channel pattern is sinuous. Mean gradient is 2.7%. Channel type is riffle-pool morphology with 76.6% gravel-cobble substrate (RPg-c, Hogan et al. 1996). Substrate composition is 40.4% gravel, 36.2% cobble, 19.3% fines and 4.1% boulder. Mean bankfull width and depth are 7.2 m and 0.6 m, respectively. Habitat type is predominantly riffle at 81.1%, followed by 15.6% glide and 3.4% pool. Boulder provides dominant instream cover measuring 50% within pools and 4.1% over all habitat types. Overhanging willow vegetation is the dominant overhead cover element in all habitat types at 15.7%. Channel disturbance indicators include; bank erosion, denuded bars, mid-channel bars and multiple channels as this stream has migrated at will over its alluvial fan.

The diagnostic summary of salmonid habitat condition provides a good rating for only spawning gravel quantity and a fair rating for gravel quality and percent overhead cover (Table 9). Juvenile coho summer rearing in pool habitat with wood cover is poor. Pools are mainly in-filled with sediment resulting in poor ratings for percent pool area, pool frequency and number of good holding pools per km. Restoration works are not recommended in this reach due to the high incidence of channel avulsions and unpredictable location of the channel on the alluvial fan.

### 4.2.20 Riparian Condition

Results of the riparian condition including canopy cover are presented in Appendix D. The riparian vegetation type along the Nome River mainstem and tributaries is predominantly shrub/herb and is characterized by herbaceous and shrubby vegetation. Within this vegetation type, the structural vegetation stage is predominantly shrub/herb with less than 10% tree cover. This stage provides a low degree of canopy or shade cover. However, the pole sapling stage occasionally dominates, particularly along tributary streams and off-channel areas with mean bankfull widths less than 10 m. In these areas the pole saplings overtop the shrub layer by one to three meters and provide excellent summer rearing habitat, endowed with both suitable overhead canopy cover and allochthonous (defined as food items, organic matter, nutrients etc. that enter an aquatic ecosystem from outside) inputs to the stream.

### 4.2.21 Habitat Limitations

The field assessment employed in this study collected quantitative information on the following features to characterize habitat conditions for the target species. The habitat features of particular importance to salmonids are:

- adult holding pools;
- spawning gravel quantity and quality;
- (rearing) pool area and frequency;
- cover in pools and riffles;
- Small Woody Debris (SWD) and/or LWD frequency and distribution;
- substrate characteristics of the streambed; and
- off-channel habitat.

To evaluate habitat condition, the assessment compared the values of the above habitat features within each reach to expected values. Since regional criteria for habitat condition currently does not exist, the diagnostic criteria in Table 9 were used to evaluate conditions in each reach. To identify potentially degraded or limiting habitats, the following questions were asked corresponding to salmonid life stages in freshwater habitats.

<u>Adult Upstream Migration</u>

1. Are there obstructions to upstream migration?

There are no significant barriers to upstream migration within the Nome River mainstem based on the following criteria:

- all of the eight reaches have average stream gradients less than 10%, which should not inhibit anadromous salmonid migration;
- present-day upstream limits of salmonid distribution are not less than historical limits;
- large areas with maximum water depths less than 0.1 m do not exist during the upstream migration period; and
- maximum water temperatures above 20 ˚C do not occur for lengthy periods during the upstream spawning migration (Johnston and Slaney 1996).

In tributary streams and off-channel areas, culverts and beaver dams were assessed as potential barriers to fish migration using the criteria:

- potential impassable obstruction if vertical drop during the upstream migration period is greater than 2 m for salmon and 0.8 m for resident trout; and
- velocities greater than 2.5 m/s for salmon and 1.2 m/s for resident trout during the migration period.

Culverts were inspected along the Nome-Kougarok Road at Dexter Creek (Photo 30) Banner Creek, Mineral Creek and off-channel complex, Basin Creek, Sampson Creek (Photo 38), Darling Creek, Rocky Mountain Creek, Kink Corner, Christian Creek (Photo 50), Sulphur Creek and the new culverts associated with the Nome-Kougarok road upgrade project that was under construction during the summer of 2004. High water velocities in these culverts probably occur but not for protracted periods of time that would seriously delay upstream spawning migrations of fish. However, none of these culverts had a vertical drop greater than 0.6 m with the exception of the Banner Creek culvert. Furthermore, juvenile coho were observed upstream of the respective culverts in Dexter Creek, Darling Creek and Kink Corner. Beaver dams with vertical drops of 0.9 m do occur in Hobson Creek, Buster Creek, Hazel Creek and Mineral Creek off-channel complex. However, at each of these locations significant flood channels exist that by-pass these obstructions and allow adult fish passage upstream.

<u>Adult Holding Pools</u>
Is there a reduced or an inadequate quantity or quality of adult holding habitat?

Yes, adequate adult holding pools with surface cover only exist in the mainstem reaches N3 and N5 as well as in beaver controlled tributary stream reaches of Hazel Creek (tributary to N1), Buster Creek, and the beaver controlled Reach H1 in Hobson Creek (Photo 40). Non-beaver controlled tributary reaches with suitable adult holding pools include Dexter Creek and Basin Creek. Sediment aggradations and lack of adequate scour structure has resulted in pool infilling in the mainstem channel; a condition that can be remedied with rehabilitation prescriptions. However, the long-term success of rehabilitation structures in a large gravel dominated channel may require a high level of maintenance due to the impact from icing. An important question to consider is just how limiting is reduced adult holding habitat in northern areas where stocks do not hold for long periods of time before spawning.

<u>Spawning and Incubation Conditions</u>
Is the quality and quantity of spawning and incubation habitat adequate for native salmonids?

Spawning distribution observed during this study included:

- pink salmon spawned in the Nome River mainstem from the confluence of Osborn Creek (Photo 8) upstream to chainage 60+502 in Reach N7, as well as in Osborn Creek, Buster Creek, Darling Creek, Sulphur Creek and Clara Creek;
- chum salmon spawned in the Nome mainstem from Osborn Creek to just downstream of the confluence of Hobson Creek at chainage 42+119 in Reach N6 (Photo 15);
- a pair of king salmon were observed at chainage 41+809 m in Reach N6;
- three sockeye were observed in an off-channel to Reach N5 between chainages 37+938 m to 38+138 m (Photo 16), while one was observed at chainage 41+763 (Reach N6) as well as a spent male was examined in Kink Pond at chainage 50+090 m (Photo 48);
- although no adult coho were observed in the Nome River watershed during this study, coho spawning distribution in the Nome mainstem is primarily from the confluence of Osborn Creek to the confluence of Hobson Creek (W. Jones, ADF&G pers. comm.);
- juvenile coho were primarily distributed in the mainstem from Osborn Creek confluence to Sulphur Creek confluence; however, one juvenile coho was observed in an off-channel area to Reach N8 at chainage 60+564 m (Appendix D).

Suitable spawning sites for salmonids are pool tail-out and riffle crest areas where the dominant substrate sizes are approximately 1 to 10 cm diameter, fines (particle size less than 2 mm comprises less than 15% of the substratum), minimum water depths exceed 15 to 30 cm, and water velocities are between about 10 and 100 cm/s. Individual patches of gravel generally must be 1-2 $m^2$ to be considered suitable spawning areas. These conditions are abundant in the Nome River watershed and exceed the spawning area required for the target escapement for the watershed based on average redd areas of 10 $m^2$ for king salmon, 2 $m^2$ for chum salmon, 3 $m^2$ for coho salmon, 0.5 to 1 $m^2$ for pink salmon, 2 $m^2$ for sockeye salmon and 0.2 $m^2$ for resident trout or char (Bjornn and Reiser 1991).

<u>Summer Rearing</u>
Is the quality and quantity of summer rearing habitat adequate for native salmonids?

Summer rearing in the Nome mainstem and tributaries may be degraded or limiting for pool-dependent species such as coho based on:

- mean spacing between pools is greater than 10 bankfull widths;
- there are fewer than one holding pool per km with adequate surface cover;
- overhead cover is less than 15% of the wetted channel area;
- average wood cover (LWD and SWD) in pools is less than 6% of the pool area;
- inputs of riparian terrestrial insects and detritus may be less than adequate due to the poor riparian structure and canopy cover.

Juvenile salmonids, primarily coho, observed in the Nome mainstem inhabited pool areas, close to riparian and SWD cover along channel margins including vegetated islands and vegetated mid-channel bars. Major concentrations of juvenile coho were located in off-channel habitats which are numerous and distributed throughout the Nome River watershed (Appendix D).

Winter Rearing
Is the quality and quantity of overwintering habitat adequate for native salmonids?

Winter rearing potential may be the major limiting factor in all mainstem reaches except Reach N1, N3 and N5 because of fewer than one pool per km with depths greater than 1 m during the winter period. Off-channel areas and tributary streams with channel depth greater than 1 m include Hazel Creek, Buster Creek, Mineral Creek off-channel complex and Hobson Creek, Reach H1. These over-wintering areas are all created by beaver activity. However, the fact that these areas also function as sediment traps may reduce or degrade their function as over-wintering area by the accumulation of fine material infilling interstitial spaces in coarse substrates. Fine sediment accumulation in mainstem reaches may result if best management procedures are not practiced in relation to road erosion and run-off control (Photo 9).

## 4.3 Fish Habitat Restoration Designs

After detailed habitat assessments were completed and potential restoration opportunities identified, sites were further prioritized for the development of restoration designs based on:

1. Habitat limitations for critical life stages of anadromous salmonids from the diagnostic analysis of habitat condition, and
2. Potential cost-effectiveness and feasibility of implementing restoration measures.

Six high-priority habitat restoration and enhancement projects are proposed. The measures described below address and mitigate for some of the habitat impacts that have occurred historically within the Nome River watershed. In many cases, these designs provide templates for other sites where, for example, a culvert is preventing fish access, or a stream has been over-widened and degraded as a result of extensive use of the streambed as a vehicle trail (e.g., Dexter Creek - Photo 1). The six projects are:

- Buster Creek Channel Restoration – re-establish natural channel morphology,
- Darling Creek Channel Restoration – re-establish natural channel morphology,
- Kink Pond Enhancement – provide cover to the pond and construct a groundwater channel at the north end,
- Basin Creek Pond Enhancement - provide cover to the pond,
- Banner Creek - backwatering of culvert using riffle structures to provide fish access,
- Nome River Mainstem Off-channel Enhancement - re-connect abandoned meander loop to enhance coho rearing.

Restoration projects in Buster and Darling creeks propose to eliminate the use of sections of these stream courses as vehicle trails and restore natural channel, riparian vegetation and floodplain characteristics and functions. As reported by Wiedmer (2002), off-road vehicle trails can increase the risk of sediment introduction into stream courses, alter streambank structure and function, and potentially change surficial hydrology. Wiedmer (2002) and DFO (2000) state that, in general, excessive amounts of sediment can a) clog interstitial spaces of spawning gravels, thereby reducing reproductive success of commercially and socially important fish populations, b) reduce primary and secondary aquatic production, thereby reducing growth and survival of fish, and c) modify natural movements and migrations of fish through increased width/depth ratios. Moving the vehicle trails away from the active stream channel and floodplain and implementing the proposed instream restoration measures will improve channel stability and reduce sediment impacts on fish and fish habitat.

Although no specific restoration projects are proposed for the Nome River mainstem, the reduction in the generation and transport of sediment from the tributaries as a consequence of restoration projects similar to those proposed on Buster and Darling creeks will have significant downstream benefits over the long term as a result of reduced sedimentation in the Nome River mainstem. In addition, implementation of best management practices during, for example, road construction or culvert installation, will reduce sediment transport and deposition in the mainstem. A reduction of sediment loading to the mainstem will allow for continued and perhaps accelerated recovery to the historic morphology for the mainstem channel. This in turn will improve the stability and quality of the spawning habitat for chum, pink, coho and chinook salmon.

The following describes the restoration or enhancement designs for each of the six projects. In addition, several best management practices are described that will reduce chronic sediment loading to the river.

Photo 1. Looking downstream at the vehicle trails within the wetted channel of Dexter Creek. Historic placer mining and use of the channel by vehicles has degraded fish habitat.

### 4.3.1 Buster Creek Channel Restoration

#### *4.3.1.1 General Design Considerations*

Buster Creek has a drainage area of 5.8 $mi^2$ (15.1 $km^2$). The section of channel proposed for restoration is approximately 1500 m long and includes most of Reach Bu2 (Appendix D; Figure 6). A section of channel in Reach Bu2, approximately 960 m long, has been used over at least the last 55 years as a vehicle trail (Photo 2; Maps 1 and 2). The 1950 and 1986 photographs provide clear evidence that through extensive placer mining operations and the use of the channel bed as a vehicle trail, the channel has likely become less confined by its natural banks and riparian vegetation and now disperses its discharge between the valley walls during low flow periods. It is actively migrating during moderate to extreme flood events across its floodplain to the extremes of the channel's valley walls. In addition, it appears that sediments generated from the section with the instream trail have been deposited in the section of channel immediately downstream. The historical vehicle use of the stream within Reach Bu2 has resulted in channel over-widening and simplification, as evidenced by reductions in pool habitat, average water depth and streamside cover (Figure 6; Appendix D). These changes have undoubtedly affected the stability, quality and quantity of rearing and spawning habitat for native salmonids.


Photo 2. 1950 aerial photo of Buster Creek showing vehicle trail in proposed restoration section of channel.

The existing channel was surveyed along the thalweg to determine the bed and water surface profiles through the restoration section (Figure 6). The channel morphology type in the proposed restoration section would be classified as riffle-pool with gravel bed material (Hogan et al. 1996). The gradient was 0.9% over the surveyed section of channel that is proposed for restoration. Typical cross sections were also surveyed in the proposed restoration section (Table 10; Appendix F). Existing bankfull width measurements ranged from 8.3 to 30.5 m with an average of 21.2 m in the proposed restoration section of Buster Creek. Existing bankfull depth ranged from 0.13 to 0.36 with an average of 0.23 m. Width to depth ratios of natural channels are typically 10:1 to 15:1 (Newbury and Gaboury 1993). In the creek sections where the vehicle trail is absent, the width to depth ratios are 10:1 and 11:1 (Table 10). Within the proposed restoration section, the ratios range from 50:1 to 137:1. The profile and cross sections provide further evidence that the channel is over-widened, shallow and predominantly a continuous riffle habitat, with no holding pools occurring in the proposed restoration section.

Table 10. Summary of wetted (August 2004) and bankfull channel measurements for each surveyed cross section in Buster Creek.

| Reach | Site | Wetted | | | Bankfull | | | |
|---|---|---|---|---|---|---|---|---|
| | | Width (m) | Depth (m) | | Width (m) | Depth (m) | Width to Depth Ratio | Floodplain Height (m) |
| Bu1 | Near mouth | 4.4 | 0.22 | | 5.7 | 0.51 | 11.2 | 0.78 |
| Bu2 | 0+129 | 3.5 | 0.18 | | 4.9 | 0.49 | 10.0 | 0.66 |
| Bu2 | 0+540 | 8.0 | 0.08 | | 24.6 | 0.20 | 123.0 | 1.14 |
| Bu2 | 0+657 | 24.5 | 0.23 | | 30.5 | 0.36 | 84.7 | 0.75 |
| Bu2 | 0+782 | 5.5 | 0.12 | | 8.3 | 0.13 | 63.8 | 0.34 |
| Bu2 | 0+804 | 14.3 | 0.07 | | 30.2 | 0.22 | 137.3 | 1.66 |
| Bu2 | 1+026 | 15.4 | 0.08 | | 12.5 | 0.25 | 50.0 | 0.78 |

Bed paving materials were measured on the downstream faces of two riffles at chainages 0+352 and 1+169 m (Appendix F). Median (50%) diameter for the existing bed material varied between 5 and 7 cm. At a mean bankfull depth of flow of 0.26 m in the shallow, over-widened channel and an average gradient of 0.9%, the tractive force is calculated at 2.3 kg/m$^2$. At this depth of flow, the riffle substrate is currently stable.

The objectives of the proposed restoration project in Buster Creek are:

- To re-establish a narrower channel with defined riffle and pool habitats through the section of Reach Bu2 (960 m) with a vehicle trail,
- To re-establish functional riparian zones and floodplains with a diverse community of native willow and dwarf birch vegetation,
- To remove the vehicle trail from the wetted channel and floodplain, and
- To improve summer rearing and/or spawning habitats for coho, chum and pink salmon.

The restoration proposal provides an alignment option that has the creek flowing in a single, narrower channel with characteristics of the designed channel that are consistent with natural channel geometry. An estimate of the normal bankfull channel width for this section of Buster Creek was required in order to design the restoration works. The width was estimated using field measurements, photo interpretation, and assessments based on large data sets of hydrological measurements from US and Canadian streams. The available data included:

1. a watershed area of 5.8 mi$^2$ (15 km$^2$),
2. a 2 year maximum daily flow estimate of 221 cfs (6.3 m$^3$/s) (Table 3),
3. mean bankfull width of 7.3 m from detailed habitat assessments in Reach Bu2 (Appendix D), and
4. mean bankfull width of 6.8 m based on channel cross section surveys in more natural sections of Reach Bu2 (Appendix F).

Using the bankfull width versus drainage area relationship based on USGS and Canadian stream data (R. Newbury, Newbury Hydraulics pers. comm., Newbury et al. 1997), a width of between 8.5 and 9.5 m for Buster Creek appears reasonable for a drainage area of 15 $km^2$ (Figure 7).

Based on the two year peak flow estimate of 6.3 $m^3/s$, and using the formula $W = 4\ Q^{0.4}$ (Kellerhalls and Church 1989), the bankfull width of the Buster Creek channel would be approximately 8.3 m. It is expected that the bankfull discharge would be smaller than the estimated 2 year flow, which would equate to a smaller estimate for the bankfull width. However, using the drainage area versus bankfull discharge relationship (Newbury et al. 1997), 6.3 $m^3/sec$ is a close estimate for a drainage area of 15 $km^2$.

An estimate of 7.5 m for the design bankfull width was used in the restoration proposal. The design bankfull depth was 0.6 m based on channel measurements of Buster Creek at more natural cross sections and from relationships between drainage area and bankfull depth (Newbury et al. 1997).

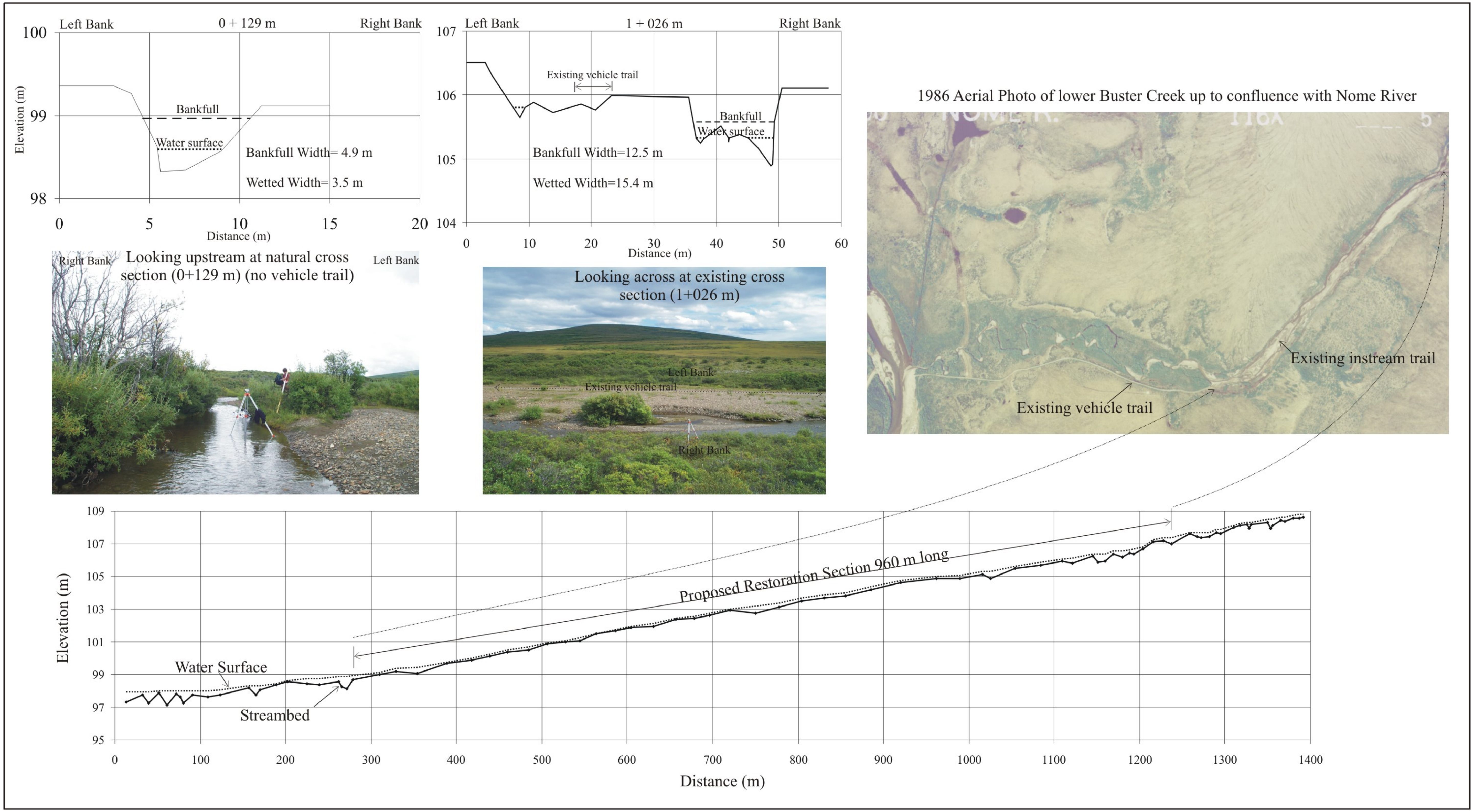



Figure 6. Aerial photo view, existing cross sections and streambed profile of Buster Creek showing proposed restoration section.

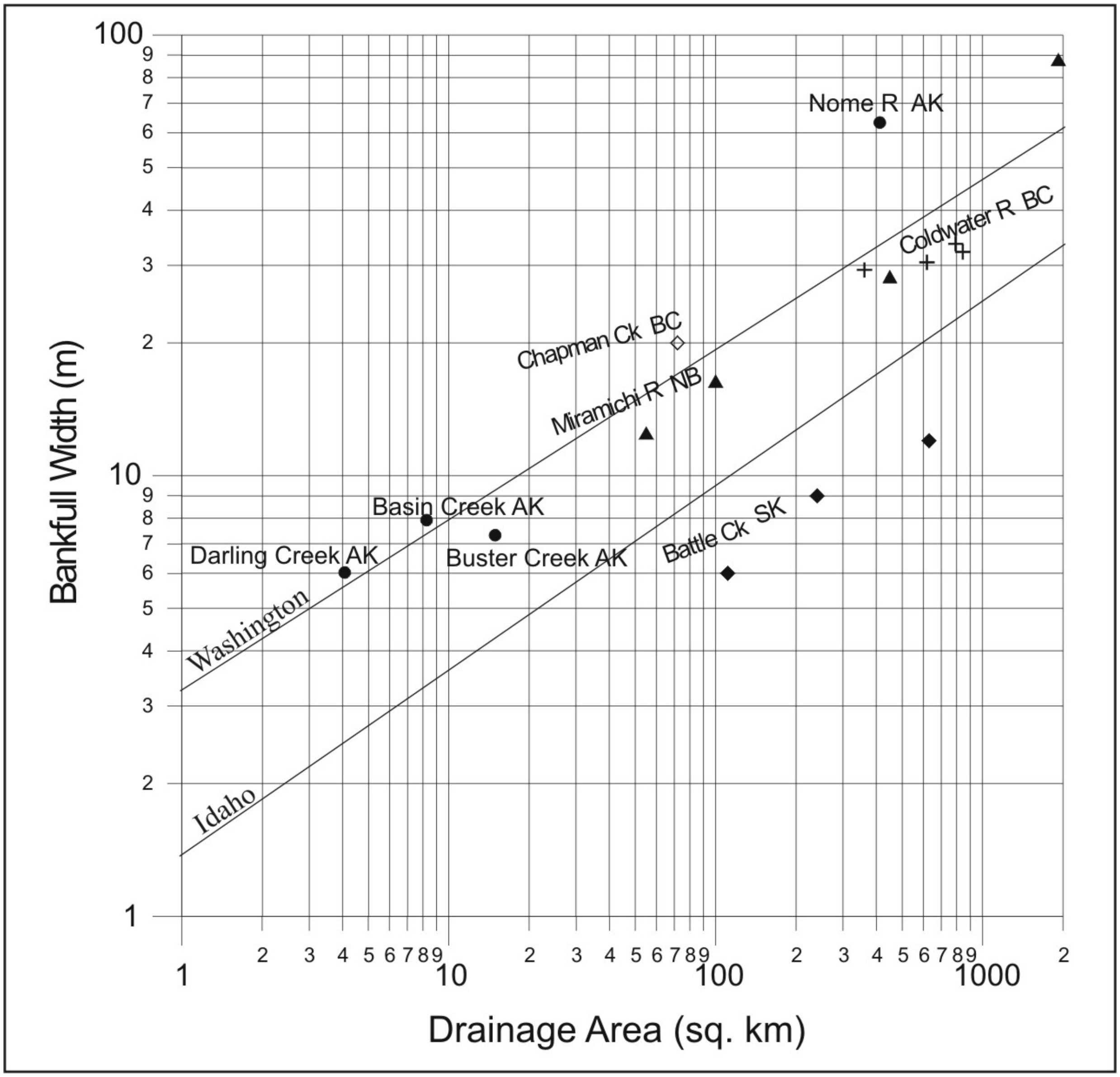



Figure 7. Relationship between drainage area and bankfull width for US and Canadian streams. Trend lines for Washington and Idaho watercourses based on USGS data, after Leopold et al. (1964). Bankfull measurements for Nome River and tributaries from detailed fish habitat assessments (Appendix D).

#### *4.3.1.2 Restoration Design*

The benefits of Buster Creek restoration are, for a 960 m section of the creek:

1. Re-establishment of a bankfull channel width and depth appropriate to the present hydrology of Buster Creek.

2. Re-establishment of the channel within one alignment, reducing channel migration across the existing floodplain and re-establishing a more stable channel morphology.
3. Improvement of spawning and/or rearing habitats for coho, chum and pink salmon within the restoration Reach Bu2 and downstream in Reach Bu1, through the re-establishment of a more natural riffle-pool sequence, functional floodplain and riparian zone, and the overall decrease in the generation and transport of coarse and suspended sediments.

The bed profile of the new channel would, in general, follow the grade line of the existing channel (Figure 8). However, pools would be created by deepening areas along the outside of meander bends that are adjacent to the vehicle trail. The spoil from the excavated pool would be used to construct the shallow berm. In addition, old spoil piles from placer mining could be a source of cobbles and gravels for the berm. The berms will need to be faced along the toe with oversize cobbles or boulders (0.3 m diameter) to prevent erosion. The median diameter of the existing substrate would, however, remain stable in a restored channel where the bankfull depth would be about 0.6 m and channel slope of 0.9%.

By using shallow berms and LWD (Figure 9) or, alternatively, rock deflector structures (Figure 10), the active channel will be confined to a bankfull channel width of 7.5 m. The berms will be low enough in elevation to allow for overbank flooding during greater than bankfull flood events. Where necessary to deepen pools and construct a shallow berm, the channel at the thalweg (i.e., deepest part of the cross section) will be deepened over an area of 2 m wide by 4 m long and excavated to a residual depth of 0.6 m. Where channel cross sections are re-constructed, the channel will be constructed with a 4 m base and 2:1 side slopes.

As a general guideline, pool and riffle spacing will be about 45 m or about six times the bankfull channel width. Based on this spacing and because the vehicle trail is predominantly on the left bank (south side) of the channel, about 10 potential pool sites will be excavated along the restoration section.

Large Woody Debris or rock deflector structures will be built at specific locations where the re-defined channel meets the existing vehicle trail and where the elevation of the vehicle trail allows lower discharges to flood and divert onto the vehicle trail. These locations will typically occur at riffle structures or on meander bends. The structures will act as spurs or groynes to prevent flows from breaking out onto the floodplain. In most cases, the structures will be constructed at the base of the proposed shallow berms.

Each proposed LWD structure will be comprised of 6 to 9 logs, depending on the length of streambank requiring protection and flow re-direction (Appendix G). A restoration design sketch that shows a typical plan view of a LWD structure along a meander bend on Buster Creek is provided in Figure 9. It is anticipated that the logs with rootwads will have an average dbh of 0.3 to 0.5 m and be approximately 8 to10 m long. It is assumed that all structure materials will be imported to lower Buster Creek and that LWD will be transported from the shoreline near Nome. Alternatively, LWD could be obtained near the mouths of other Norton Sound watersheds, such as near the Unalakleet River, but costs to transport the wood to Buster Creek would be significantly greater.

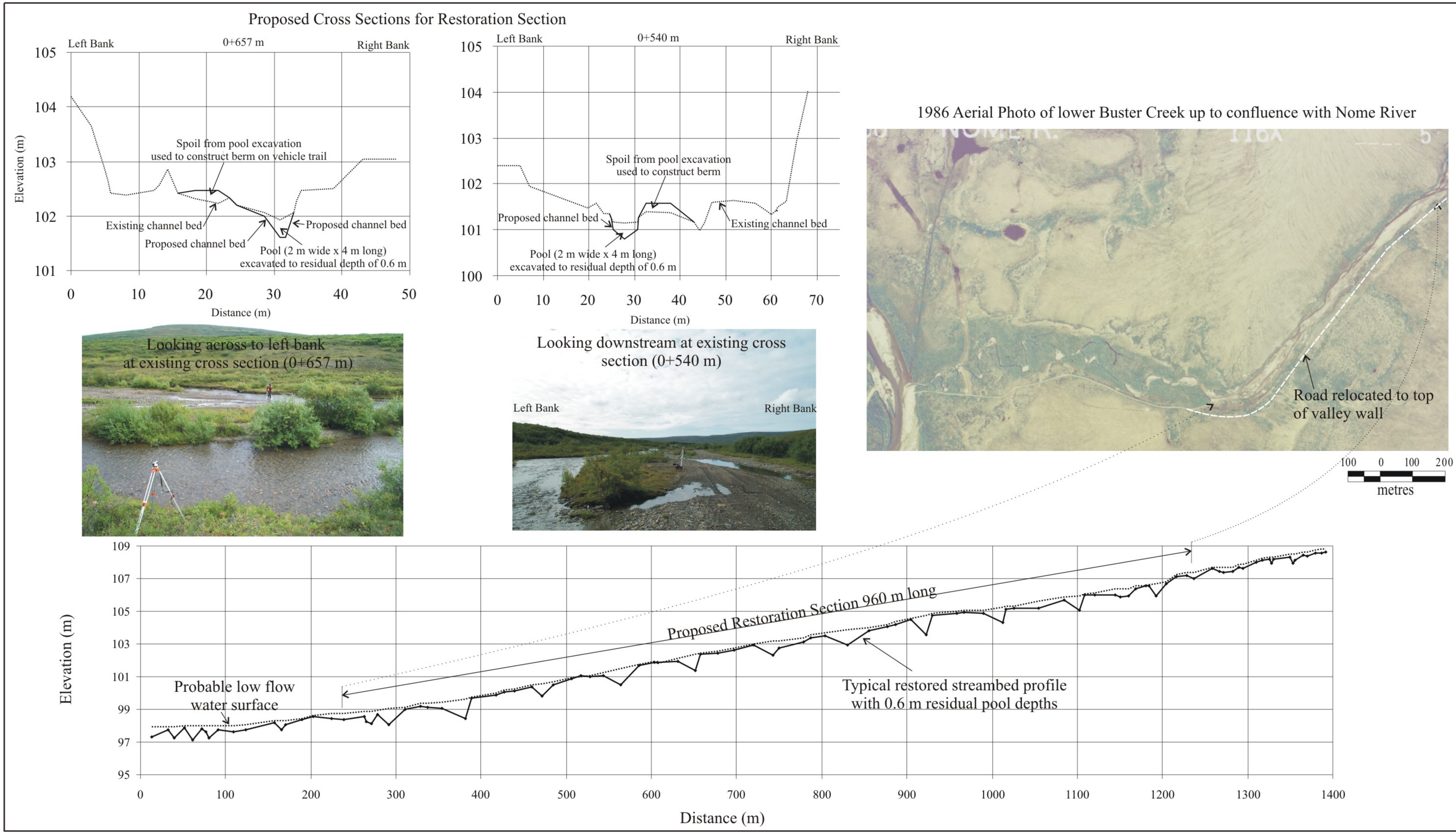



Figure 8. Aerial photo view, cross sections and streambed profile of Buster Creek showing proposed restoration measures.

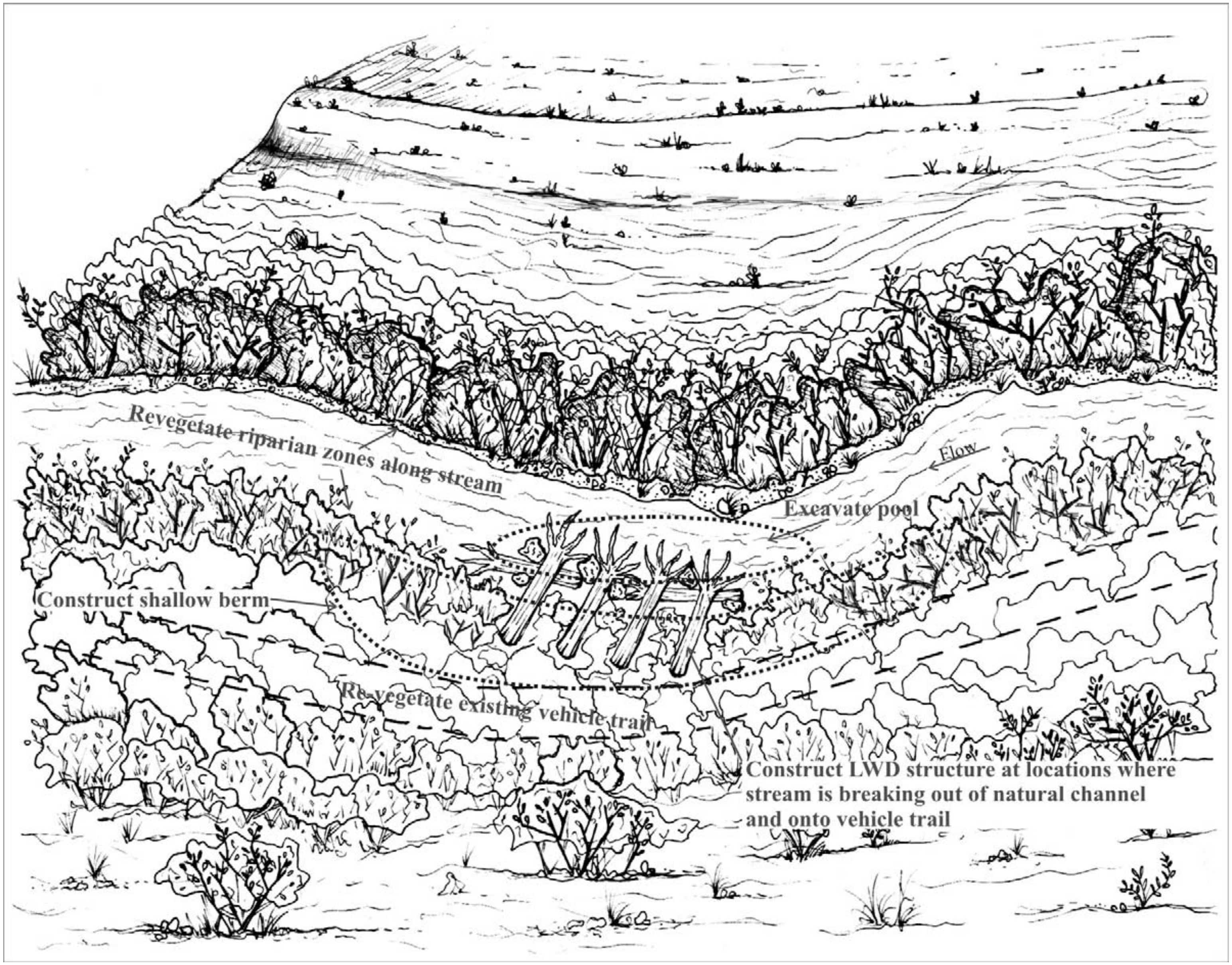



Figure 9. Schematic drawing of restoration works using LWD structures for channels with instream vehicle trails.

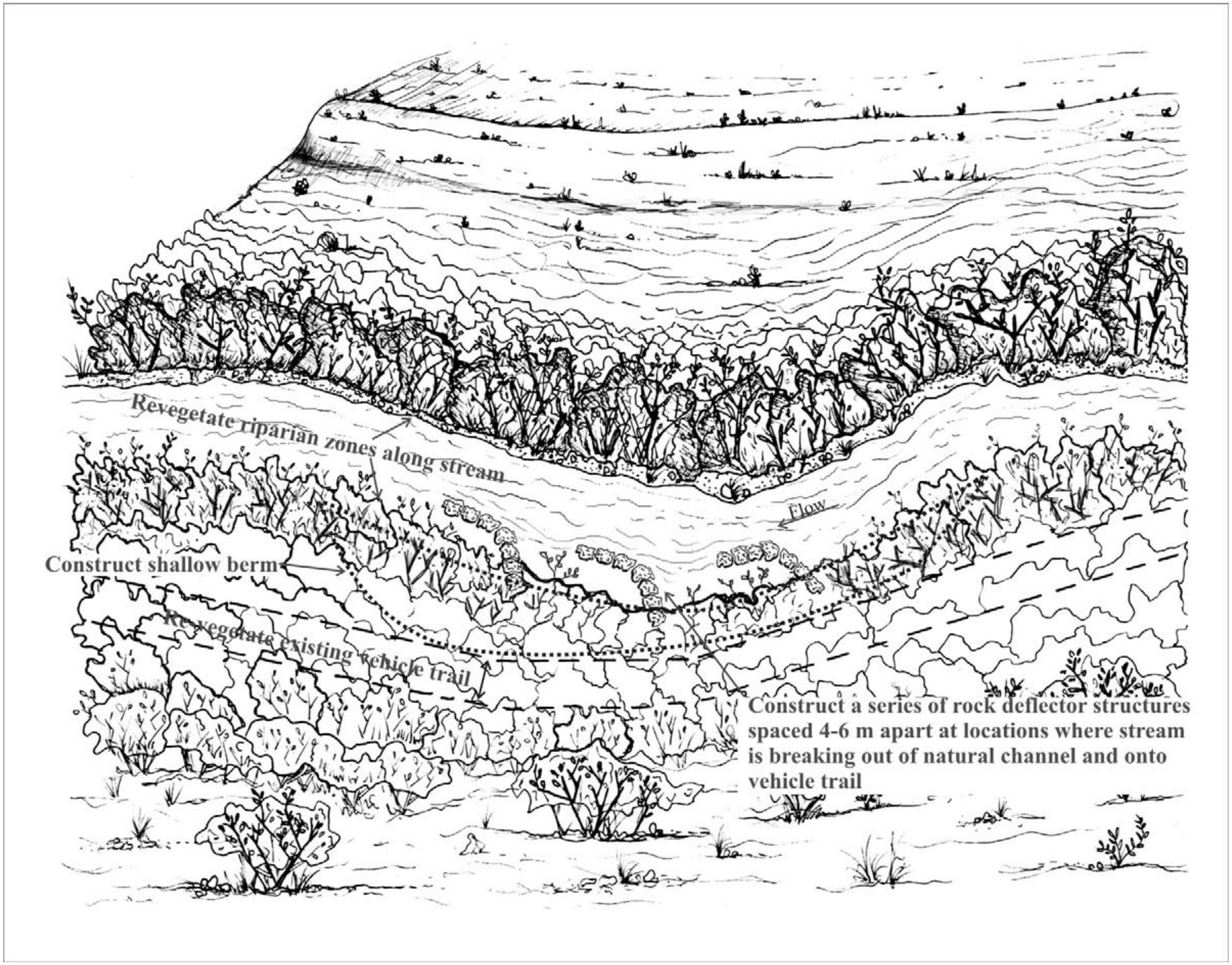



Figure 10. Schematic drawing of restoration works using rock deflector structures for channels with instream vehicle trails.

Large Woody Debris cover structures will be positioned preferentially in a triangular manner and with members fastened to deadman anchors to ensure greater stability for the structures. Deadman anchors will consist of a log without a rootwad about 5-6 m long and 0.3-0.5 m diameter buried 1 to 2 m below the ground surface. Alternatively, the tops of the LWD will be buried in the streambank (e.g., Appendix G).

In addition to the deadman anchors, the structure will need to be ballasted to prevent shifting. Ballast requirements for the LWD structure (LT-52) have been determined using design charts that assume a triangular structure and a safety buoyancy factor of 1.5 or greater (Appendix G; D'Aoust and Millar 1999; Slaney et al. 1997). As an example, for a 0.4 m diameter log with attached rootwad, the total ballast required per metre of effective length would be 110 kg/m, with safety factors of ≥1.5 for buoyancy and sliding (D'Aoust and Millar 1999). Effective length refers to the length of log projecting into the stream.

The ballast requirement for logs with rootwads attached would require conversion of the dimensions of the rootwad into an equivalent diameter and length of a log of equal mass. The total ballast requirement for the log with rootwad would be the sum of the individual ballast requirements determined for the bole and rootwad. We recommend a final recalculation of boulder ballast requirements for each site after the diameter, length and type (i.e., species, with or without rootwads / branches) of LWD that will be used in construction are known. Typically, this would occur after the LWD have been delivered to each site and immediately prior to construction. The re-calculation may result in an increase or decrease in boulder mass required.

For typical triangular log structures, we recommend anchors of 0.8 m in diameter, based on a typical log diameter of 0.4 m. Sufficient quantities of rock required to ballast the LWD structures are not available on site and would need to be brought to the proposed locations. The size or number of boulders can be reduced where a long stem lies on the streambank, as its weight will prevent movement of the rootwad end that is in the stream. Similarly, fewer boulders would be required if the tops of the LWD are buried into the streambank about 2 to 3 m horizontally and 1 m vertically. We recommend that boulder ballasting be concentrated away from the channel thalweg and preferably on the streambanks. In appropriate conditions, log piles may be considered as another alternative to boulder ballasting. The piles should be 0.5 m in diameter and buried 2.5 to 3 m below the existing thalweg elevation.

Large Woody Debris that are ballasted with boulders will be anchored by drilling 9/16-5/8" holes in the rock and using Epcon Ceramic 6 epoxy or equivalent and 2 inch galvanized cable (Appendix G). Two options for cabling of LWD to boulders are provided. The second option in Appendix G provides a more natural appearance by minimizing exposure of the cable.

Rock deflectors/groynes could be constructed as an alternative to LWD structures (Figure 10). Layout of the structures should follow methods described in Victoria Water (1991). Based on an estimated channel velocity of about 2 m/s for a 50 yr return period flood, the recommended minimum rock size for the deflectors is 0.6 m (Neil 1973). Each deflector would have a projection length of 2 m into the channel. Deflectors would be spaced at 2-3 times the projection length or 4-6 m apart.

Areas that presently have little vegetation, particularly on the vehicle trail and constructed low elevation berms, should be planted with native willow (*Salix sp.*) and dwarf birch (*Betula sp.*). Willow and birch should be planted following standard bioengineering procedures, such as those described and referenced in Slaney and Zaldokas (1997). This will re-establish vegetative cover on the floodplain, help to narrow the channel, and reduce the transport of fine and coarse sediments downstream.

### 4.3.2 Darling Creek Channel Restoration

#### *4.3.2.1 General Design Considerations*

Darling Creek has a drainage area of 1.6 $mi^2$ (4.1 $km^2$). The reach of the creek surveyed under the detailed habitat assessment was 1643 m long with an average gradient of 1.9% (Appendix D). The section of channel proposed for restoration within the surveyed reach is approximately 1120 m long (Figure 11). This section of channel has been extensively placer mined with segments of the channel being used as a vehicle trail (Maps 1 and 2). As a consequence, the channel has become less confined by its natural banks and riparian vegetation and is now more braided. Overall, the historical use of the stream in this section has resulted in channel over-widening and simplification. The diagnostic summary of salmonid habitat condition gives a poor rating for percent pool area and pool frequency, number of holding pools per km, and cover in pools, primarily due to pool in-filling with sediment (Table 9). These changes have undoubtedly affected the stability, quality and quantity of rearing and spawning habitat for native salmonids.

The existing channel was surveyed along the thalweg to determine the bed and water surface profiles through the restoration section (Figure 3). The channel morphology type in the proposed restoration section would be classified as riffle-pool with gravel and cobble bed material (Hogan et al. 1996). The gradient was 1.9% over the surveyed section of channel that is proposed for restoration. Typical cross sections were also surveyed in the proposed restoration section (Table 11; Appendix H). Existing bankfull width measurements ranged from 6.7 to 16.0 m in Darling Creek with an average of 10.9 m. Existing bankfull depth ranged from 0.12 to 0.53 m with an average of 0.31 m. In the creek sections where the vehicle trail is outside of the channel, the width to depth ratios are about 15:1 (Table 11). Where the vehicle trail is within the bankfull channel, width to depth ratios range from 34:1 to 117:1. The cross sections provide further evidence that the channel is over-widened, shallow and predominantly a continuous riffle habitat, with only four pools (>0.5 m residual depth) occurring in the proposed 1120 m restoration section.

Bed paving materials were measured at chainages 0+622 and 1+595 m (Appendix H). Median (50%) diameters for the existing bed material were 8 and 13 cm, respectively. The median sized bed material would be stable at a bankfull discharge. This assumes a mean bankfull depth of flow of 0.31 m in the shallow, over-widened channel and an average gradient of 1.9%.

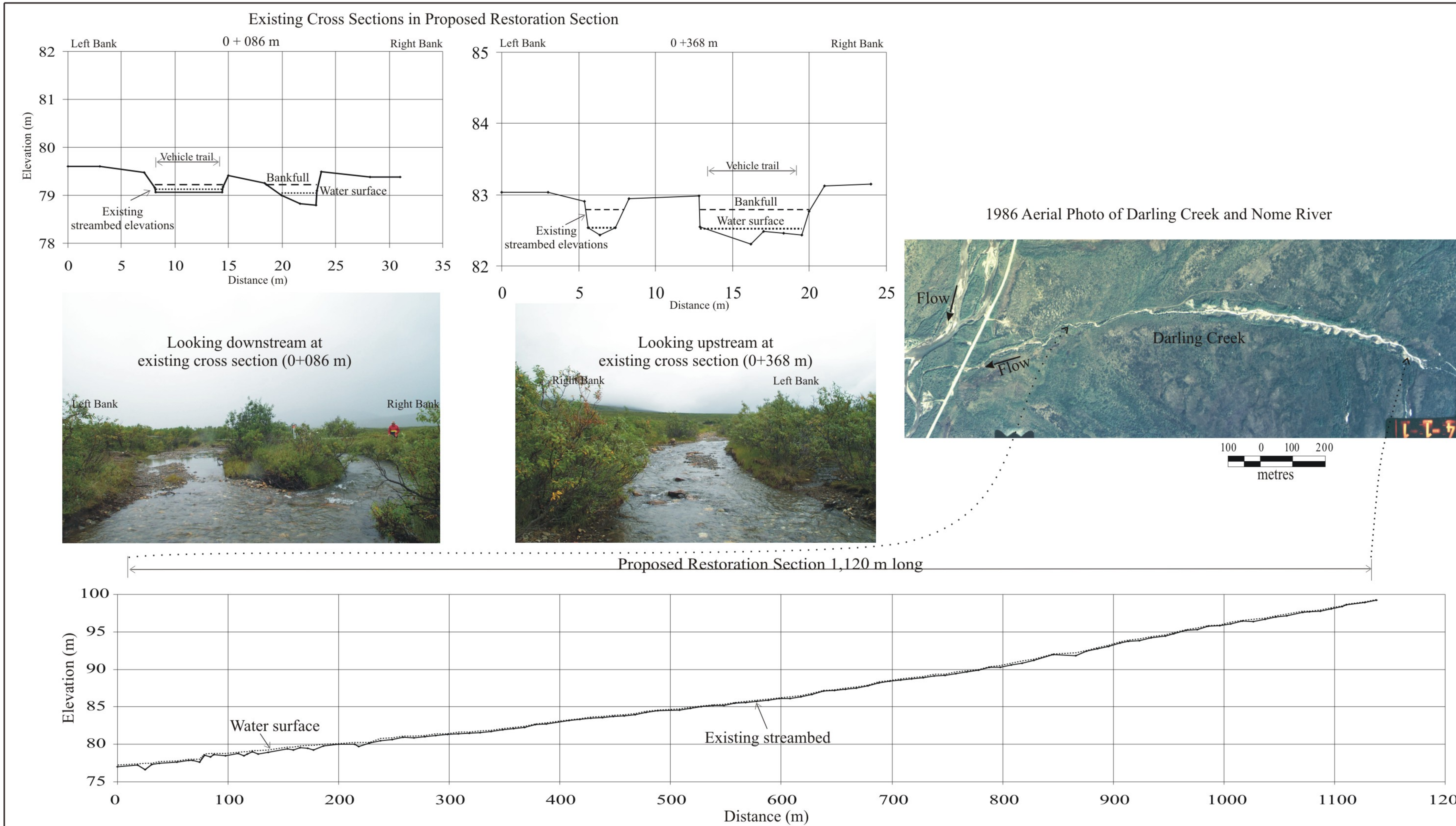



Figure 11. Aerial photo view, existing cross sections and streambed profile of Darling Creek in proposed restoration section.

Table 11. Summary of wetted (August 2004) and bankfull channel measurements for each surveyed cross section in Darling Creek.

| Site | Wetted | | | Bankfull | | | |
|---|---|---|---|---|---|---|---|
| | Width (m) | Depth (m) | | Width (m) | Depth (m) | Width to Depth Ratio | Floodplain Height (m) |
| 0+086 | 9.7 | 0.13 | | 11.1 | 0.20 | 55.5 | 0.36 |
| 0+368 | 8.4 | 0.10 | | 9.8 | 0.29 | 33.8 | 0.54 |
| 0+638 | 8.0 | 0.04 | | 16.0 | 0.29 | 55.2 | 1.95 |
| 0+853 | 3.9 | 0.13 | | 7.7 | 0.53 | 14.5 | 0.67 |
| 0+947 | 5.5 | 0.12 | | 6.7 | 0.44 | 15.2 | 0.71 |
| 1+071 | 7.0 | 0.13 | | 14.0 | 0.12 | 116.7 | 0.86 |

The objectives of the proposed restoration project in Darling Creek are:

- To re-establish a narrower channel with defined riffle and pool habitats through the section of channel with an instream vehicle trail,
- To re-establish functional riparian zones and floodplains with a diverse community of native willow and dwarf birch vegetation,
- To remove the vehicle trail from the wetted channel and floodplain, and
- To improve rearing and / or spawning habitats for coho and pink salmon.

The restoration proposal provides an alignment option that has the creek flowing in a single, narrower channel with characteristics of the designed channel that are consistent with natural channel geometry. An estimate of the normal bankfull channel width for this section of Darling Creek was required in order to design the restoration works. The width was estimated using field measurements, photo interpretation, and assessments based on large data sets of hydrological measurements from US and Canadian streams. The available data included:

1. a watershed area of 1.6 mi$^2$ (4.1 km$^2$),
2. a 2 year maximum daily flow estimate of 60.8 cfs (1.7 m$^3$/s) (Table 3),
3. mean bankfull width of 6 m from detailed habitat assessments in Reach D1 (Appendix D), and
4. mean bankfull widths of 4.7-7.0 m from channel cross section surveys in more natural sections of Reach D1 (Appendix H).

Using the bankfull width versus drainage area relationship based on USGS and Canadian stream data (R. Newbury, Newbury Hydraulics pers. comm., Newbury et al. 1997), a width of between 5 and 6 m for Darling Creek appears reasonable for a drainage area of 4.1 km$^2$ (Figure 7).

Based on the two year peak flow estimate of 1.7 m$^3$/s, and using the formula $W = 4\ Q^{0.4}$ (Kellerhalls and Church 1989), the bankfull width of the Darling Creek channel would be approximately 4.9 m. It is expected that the bankfull discharge would be smaller than the estimated two year flow, which would equate to a smaller estimate for the bankfull width. However, using the drainage area versus bankfull discharge relationship (Newbury et al. 1997), 2.3 $m^3/s$ is a closer estimate for a drainage area of 4.1 $km^2$. At this discharge the bankfull width is calculated at 5.7 m.

An estimate of 6 m for the design bankfull width was used in the restoration proposal. The design bankfull depth was 0.5 m based on channel measurements of Darling Creek at more natural cross sections and from relationships between drainage area and bankfull depth (Newbury et al. 1997).

#### *4.3.2.2 Restoration Design*

The benefits of Darling Creek restoration are:

1. Re-establishment of a more stable channel with a bankfull width and depth appropriate to the present hydrology of Darling Creek.
2. Re-establishment of the channel within one alignment, reducing braiding and channel migration across the existing floodplain.
3. Improvement of spawning and / or summer rearing habitats for coho and pink salmon within the restoration section and downstream in Reach D1, through the re-establishment of a more natural riffle-pool sequence, functional floodplain and riparian zone, and the overall decrease in the generation and transport of coarse and suspended sediments.

The restoration design would, in general, follow the restoration scheme outlined for Buster Creek. The bed profile of the new channel would follow the grade line of the existing channel. However, pools would be created by deepening areas along the outside of meander bends that are adjacent to the vehicle trail. The spoil from the excavated pool would be used to construct a shallow berm. In addition, old spoil piles from placer mining could be a source of cobbles and gravels for the berm. The berms will need to be faced with oversize cobbles or boulders to prevent erosion. By using shallow berms and some LWD structures, the active channel will be confined to a bankfull channel width of 6 m. The berms will be low enough in elevation to allow for overbank flooding during greater than bankfull flood events. Where necessary to deepen pools and construct a shallow berm, the channel at the thalweg (i.e., deepest part of the cross section) will be deepened over an area of 2 m wide by 4 m long and excavated to a residual depth of 0.6 m (Figure 12).

As a general guideline, pool and riffle spacing will be about 36 m or about 6 times the bankfull channel width. Based on this spacing, about 14 potential pool sites will be excavated along the restoration section.

Large Woody Debris structures or, alternatively, rock deflector structures (Figure 10) will be built at specific locations where the re-defined channel meets the existing vehicle trail and where the elevation of the vehicle trail allows lower discharges to flood and divert onto the vehicle trail. These locations will typically occur at riffle structures or on meander bends. The structures will act as spurs or groynes to prevent flows from breaking out onto the floodplain. In most cases, the structures will be constructed at the base of the proposed shallow berms.

Each proposed LWD structure will be comprised of 6 to 9 logs, depending on the length of streambank requiring protection and flow re-direction (Appendix G). As shown in the typical restoration design sketch for Buster Creek (Figure 9), LWD structure layout and riparian planting will be similar for Darling Creek. It is anticipated that the logs with rootwads will have an average dbh of 0.3 to 0.5 m and be approximately 8 to10 m long. It is assumed that all structure materials will be imported to Darling Creek and that LWD will be transported from the shoreline near Nome. Alternatively, LWD could be obtained near the mouths of other Norton Sound watersheds, such as near the Unalakleet River, but costs to transport the wood to Darling Creek would be significantly greater.

LWD cover structures will be positioned preferentially in a triangular manner and with members fastened to deadman anchors to ensure greater stability for the structures. Deadman anchors will consist of a log without a rootwad about 5-6 m long and 0.3-0.5 m diameter buried 1 to 2 m below the ground surface. Alternatively, the tops of the LWD will be buried in the streambank (e.g., Appendix G).

In addition to the deadman anchors, the structure will need to be ballasted to prevent shifting. Ballast requirements for the LWD structure (LT-52) have been determined using design charts that assume a triangular structure and a safety buoyancy factor of 1.5 or greater (Appendix G; D'Aoust and Millar 1999; Slaney et al. 1997). As an example, for a 0.4 m diameter log with attached rootwad, the total ballast required per metre of effective length would be 110 kg/m, with safety factors of $\geq$1.5 for buoyancy and sliding (D'Aoust and Millar 1999). Effective length refers to the length of log projecting into the stream.

The ballast requirement for logs with rootwads attached would require conversion of the dimensions of the rootwad into an equivalent diameter and length of a log of equal mass. The total ballast requirement for the log with rootwad would be the sum of the individual ballast requirements determined for the bole and rootwad. We recommend a final recalculation of boulder ballast requirements for each site after the diameter, length and type (i.e., species, with or without rootwads / branches) of LWD that will be used in construction are known. Typically, this would occur after the LWD have been delivered to each site and immediately prior to construction. The re-calculation may result in an increase or decrease in boulder mass required.

For typical triangular log structures, we recommend anchors of 0.8 m in diameter, based on a typical log diameter of 0.4 m. Sufficient quantities of rock required to ballast the LWD structures are not available on site and would need to be brought to the proposed locations. The size or number of boulders can be reduced where a long stem lies on the streambank, as its weight will prevent movement of the rootwad end that is in the stream. Similarly, fewer boulders would be required if the tops of the LWD are buried into the streambank about 2 to 3 m horizontally and 1 m vertically. We recommend that boulder ballasting be concentrated away from the channel thalweg and preferably on the streambanks. In appropriate conditions, log piles may be considered as another alternative to boulder ballasting. The piles should be 0.5 m in diameter and buried 2.5 to 3 m below the existing thalweg elevation.

LWD that are ballasted with boulders will be anchored by drilling 9/16-5/8" holes in the rock and using Epcon Ceramic 6 epoxy or equivalent and 2 inch galvanized cable (Appendix G). Two options for cabling of LWD to boulders are provided. The second option in Appendix G provides a more natural appearance by minimizing exposure of the cable.

Rock deflectors/groynes could be constructed as an alternative to LWD structures (Figure 10). Layout of the structures should follow methods described in Victoria Water (1991). Based on an estimated channel velocity of about 1.5 m/s for a 50 yr return period flood in Darling Creek, the recommended minimum rock size for the deflectors is 0.3 m (Neil 1973). Each deflector would have a projection length of 2 m into the channel. Deflectors would be spaced at 2-3 times the projection length or 4-6 m apart.

Areas that presently have little vegetation, particularly on the vehicle trail and constructed low elevation berms, should be planted with willow (*Salix sp.*) and dwarf birch (*Betula sp.*). Willow and birch should be planted following standard bioengineering procedures, such as those described and referenced in Slaney and Zaldokas (1997). This will re-establish vegetative cover on the floodplain, help to narrow the channel, and reduce the transport of fine and coarse sediments downstream.

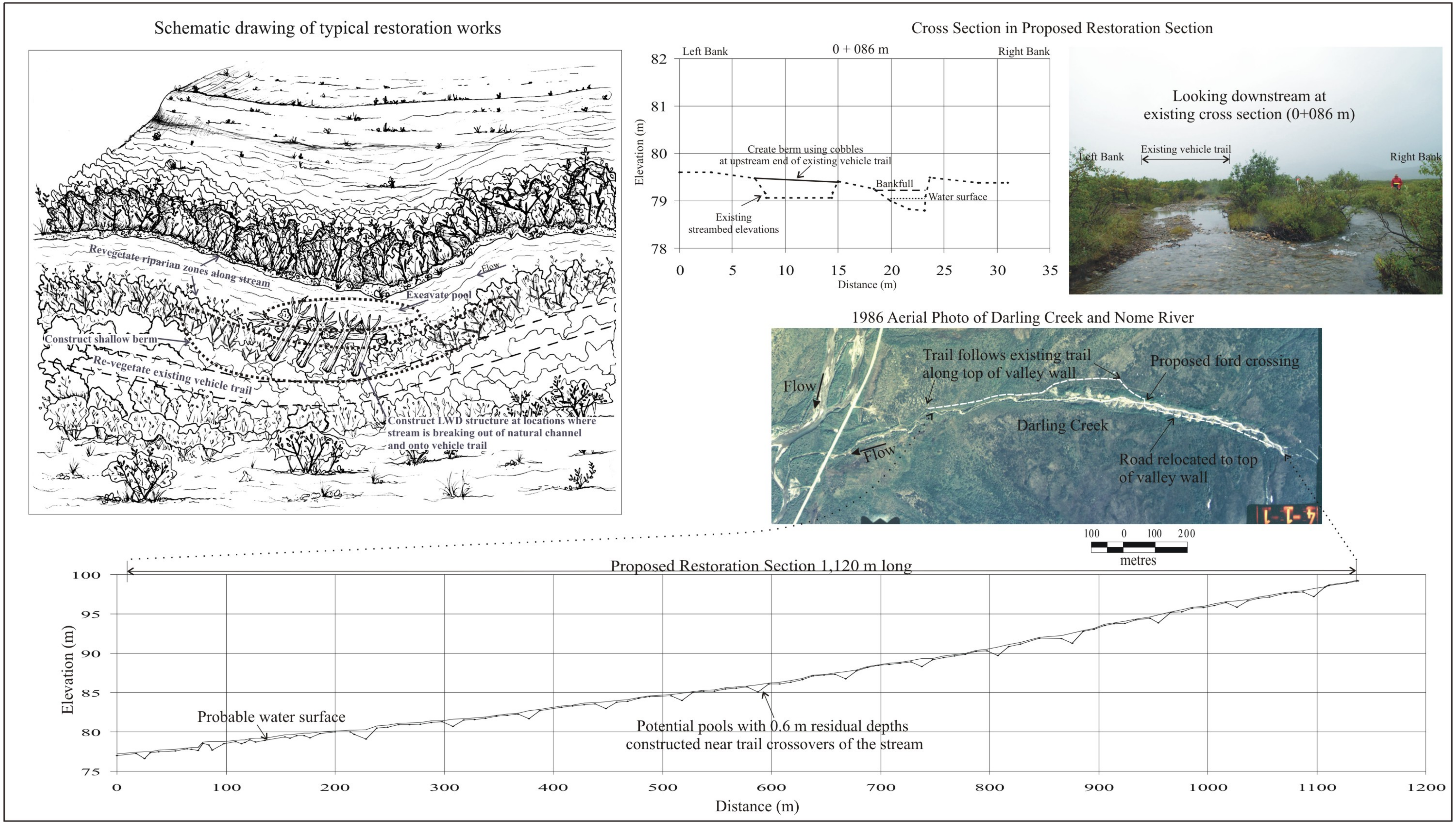



Figure 12. Aerial photo view, cross sections and streambed profile of Darling Creek showing proposed restoration measures.

### 4.3.3 Kink Pond and Groundwater Channel Enhancement

#### *4.3.3.1 Enhancement Design for Kink Pond*

Kink Pond is located in an historic meander loop of the Nome River that was cut-off by construction of the Nome-Kougarok Road (Maps 1 and 2). During road construction, the site was a borrow pit and through the removal of gravels resulted in a 280 m long pond.

Overhead and in-channel cover is very limited in the Pond currently. Increasing the amount of cover in the Pond would improve the quality of rearing habitat. To increase the amount of cover, it is proposed that LWD structures be added to the west side of the pond and willows be planted around the perimeter of the Pond. Up to 14 LWD structures will be located every 20 m along the west bank. Structure configuration will be similar to a DJ-5 LWD structure (Appendix G).

Each proposed LWD structure will be comprised of five logs. It is anticipated that the logs with rootwads will have an average dbh of 0.3 to 0.5 m and be approximately 8 to12 m long. It is assumed that LWD will be transported from the shoreline near Nome to Kink Pond. Large Woody Debris cover structures will be fastened to deadman anchors to ensure greater stability for the structures. Deadman anchors will consist of a log without a rootwad about 5-6 m long and 0.3-0.5 m diameter buried 1 to 2 m below the ground surface. Alternatively, large boulders could be used as deadman anchors or the tops of some of the LWD could be buried in the ground (e.g., Appendix G).

As alternatives to LWD structures, cover in the pond can be created by installing brush bundles, artificial undercut bank structures, or oversize riprap in mounds. Brush bundles can be constructed by tying together multiple cuttings of 3-4 m long willow, with each bundle having a diameter of 0.3-0.4 m. The bundles can be anchored by cabling the bundles to rock ballast or to Duckbill anchors (Model 138-DB1; Foresight Products Inc.). Artificial undercut bank structures can be constructed from small diameter logs (10-15 cm) or from dimension lumber (Figure 13). Construction methods should follow the guidelines provided by Allen and Leech (1997). The undercut bank structure can also be constructed by extending a reinforced concrete slab (2 by 3 m) over the pond water surface and supporting the slab with large boulders (0.8-1.5 m diameter). Vegetation should be planted overtop of the artificial undercut structure to provide additional overhead cover. As another alternative, the large voids created by piling (2 m high) oversize riprap into mounds in 2-3 m of water would also provide adequate cover.

Overhanging willow (*Salix sp.*) riparian vegetation predominates along the mainstem and tributaries and provides excellent over-stream cover. Willow should be planted around the western bank of the pond following standard bioengineering procedures, such as those described and referenced in Slaney and Zaldokas (1997). Also, *Potentilla palustris* or Marsh Five Finger, which is common along streams and in shallow water and wet meadows, should be transplanted to the shallower zones of the pond to provide additional cover.

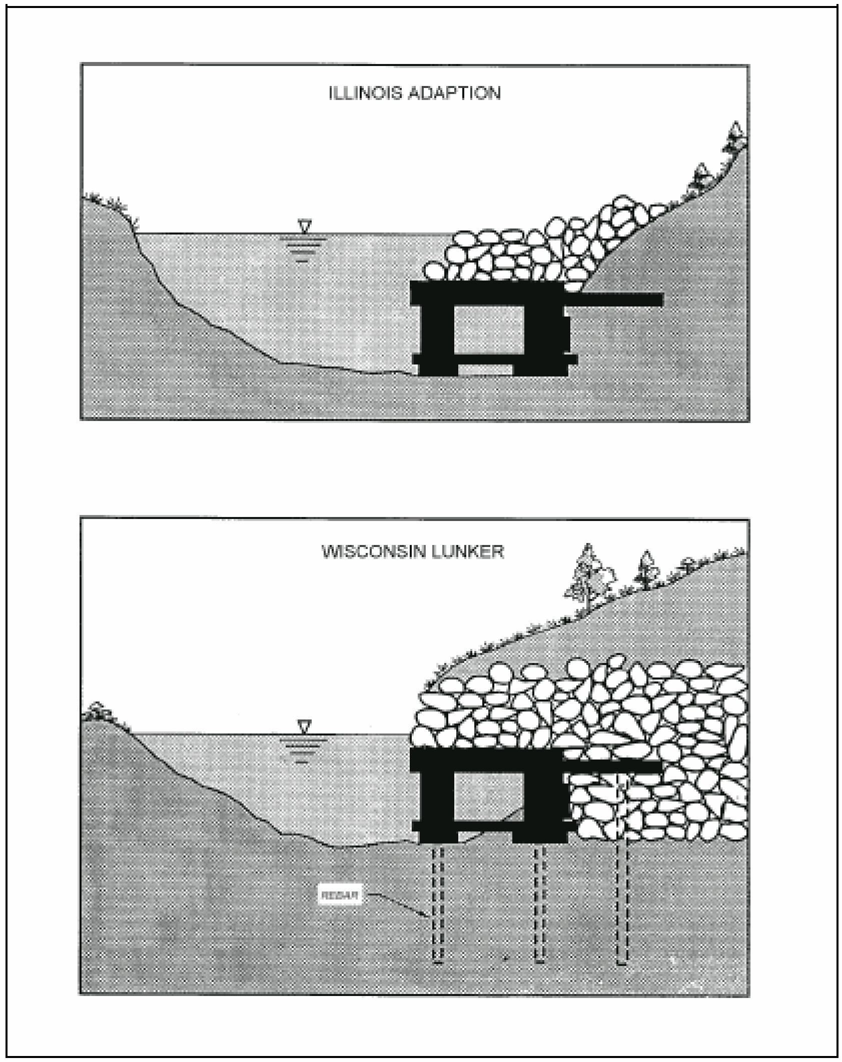



Figure 13. Schematics of LUNKER structures designed to provide overhanging shade and protection for fish while serving to stabilize the toe of a streambank. (Both versions use rebar although rebar is not shown on the upper schematic). After Allen and Leech (1997).

#### *4.3.3.2 Enhancement Design for Groundwater Channel*

There is the potential to provide additional rearing and overwintering habitat for coho juveniles by constructing a groundwater channel to the north of Kink Pond. Gravel would be placed in the channel between the ponds to provide spawning habitat for coho. The channel would also provide a large volume of groundwater discharge directly to the Pond, potentially enhancing its current utilization as summer rearing and overwintering.

The existing ground and channel were surveyed to determine ground / streambed and water surface profiles through the proposed groundwater channel section (Figure 14). The length of channel proposed for restoration is approximately 1500 m. The overall gradient was 1.1% over the surveyed section of channel. Typical cross sections were also surveyed in the proposed enhancement section (Appendix I). Throughout the length of the surveyed section, standing water was observed and measured within a well-defined channel. There were numerous channels found, all believed to be historic overflow channels of the Nome River. Existing wetted width measurements for the larger channels ranged from 4.0 to 7.2 m.

The benefits of constructing a groundwater channel upstream of Kink Pond will accrue to primarily coho and will include:

1. Off-channel rearing and overwintering habitat that is protected from Nome River floodwaters will be created.
2. High quality spawning habitat will be located in close proximity to the pond rearing habitat.
3. The volume of groundwater directly discharged to Kink Pond will increase, ensuring good water quality in the pond and providing greater attraction flows for juvenile fish at the Nome River confluence with the Kink Pond outlet.

The bed profile of the new channel will, in general, follow the grade line of the widest existing channel (Figure 15). Four long, narrow ponds will be constructed on a stepped gradient profile. The ponds will be 5-7 m wide, 25-60 m long and have a residual depth of 2 m. The channel banks will have 2 to 1 side slopes.

Spoil from the excavation will be placed adjacent to the channel and ponds, or can be hauled away from the site. Following construction, all exposed soil surfaces will be re-seeded and planted with native shrubs and grasses.

Approximately 20 to 30 logs with rootwads (0.3-0.5 diameter x 6 m) will be added to the deeper portions of each pond to provide cover. It is recommended that, where appropriate, the LWD be anchored by burying or driving the tops of the logs into the channel banks with an excavator. As described in Section 4.3.3.1, cover structures such as brush bundles, artificial undercut banks and mounds of oversize rock can be used as alternatives to the LWD structures.

Riffle structures will be constructed to facilitate juvenile fish passage into the ponds. The riffle structures will also backwater the ponds to maintain a residual depth of 2.0 m. The first riffle immediately downstream of each pond will be constructed with a spawning platform. The difference in elevation between consecutive riffle crests will be 0.3 m. All riffle structures will have a 10 to 1 downstream face, and will be constructed following the guidelines in the schematic riffle construction drawing (Appendix I).

The riffles should be built with a range of rock sizes. The largest rocks are selected to be stable at the expected discharges in the groundwater channel. Some larger rocks placed on the surface of the riffle will create chutes and small drops that will assist fish passage. An approximation of the maximum size required may be obtained by analyzing the tractive force on the face of the riffle and applying guidelines for selecting riprap materials (Newbury and Gaboury 1994). The tractive force T (kg/$m^2$) may be estimated as T = 1000 x Flow Depth (D in meters) x Slope of the Downstream Face of the Riffle (S in m/m) or:

$$T = 1000 \times D \times S \qquad \text{(Chow 1959)}$$

The stability of the riffle materials under the design flow condition can be tested where critical flow is assumed to occur on the downstream riffle face which has a 10 to 1 (10%) slope. The design discharge is expected to be low at between 0.1 and 0.3 $m^3/s$. At this discharge, critical depth was calculated at 0.13 m.

In this case, the critical depth in the channel at the design discharge would be solved using the continuity equation and mean channel width. Using a mean width of 2 m, stable rock sizes for the riffle structures were determined from the following formulae:

Discharge (Q) = velocity x depth x width
with $v_c = (g \times \text{depth})^{1/2}$ substituted for velocity, and
where g=gravitational acceleration (i.e., 9.8 $m/s^2$)

Tractive Force (T) = 1000 x depth (m) x slope (m/m)

Studies of stable channels, summarized by Lane (1955), indicate that the relationship between the tractive force and bed material diameter at incipient motion for pebble-size and larger materials is T ($kg/m^2$) = diameter of substrate (cm). A safety factor of 1.5 is recommended (U.S. Federal Highway Administration 1988). Stable rock sizes were determined to be 20 cm using the formula: 1500 x depth x slope or 1.5 times the tractive force.

The values above should be the minimum rock diameter used for riffle construction. It is recommended that stones larger than the minimum stable diameter quoted above be used for the crest and downstream surface of the riffle. Smaller diameter rocks can be used in the core of the structure. Larger diameter boulders should be randomly spaced on the downstream face of the riffles approximately 20 to 30 cm apart to provide greater hydraulic diversity. The volume of rock required for the ten riffles is about 20 $m^3$.

#### *4.3.3.3 Potential Limitation of Project*

There is a concern relating to the extent of freezing in the ponds during the winter and consequently the affect on overwintering fish and egg survival. Freezing could reduce the amount of open water volume under the ice. The volume of groundwater flow and pond water depth will dictate to what extent the ponds freeze down in winter. To reduce this potential impact, the channel has been designed to be narrow and deep. A narrower channel will tend to trap more snow, providing a deep layer of insulation over the pond and potentially reducing ice thickness. To assess this potential problem, it is recommended that several test pits similar in depth and width to the proposed ponds be excavated along the proposed channel alignment and monitored monthly through one winter. Data collected should include ice thickness, water depth, dissolved oxygen concentration and water temperature. In addition, groundwater levels should be monitored monthly throughout one winter using standpipes (i.e., piezometers) installed adjacent to the test ponds.

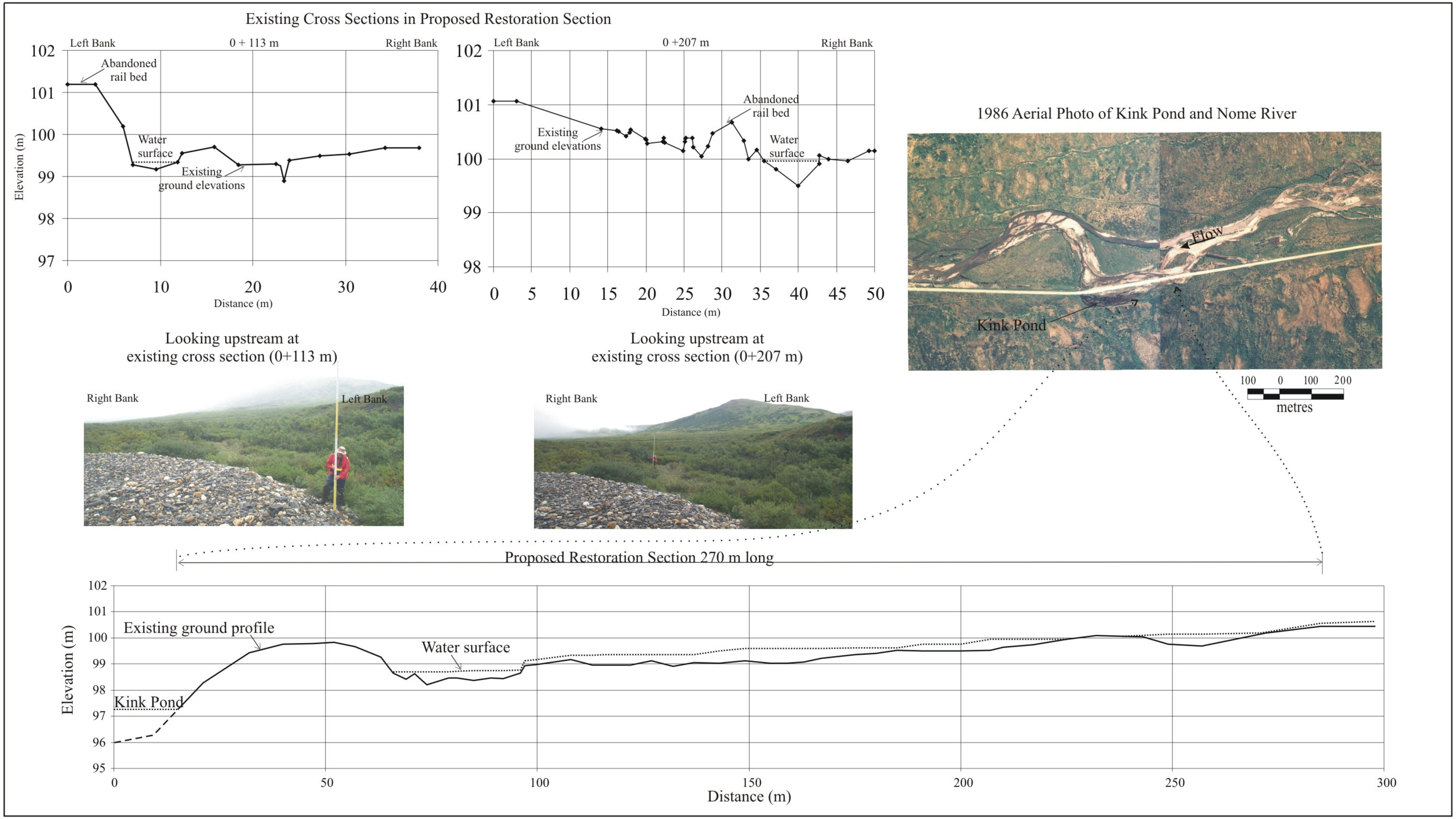
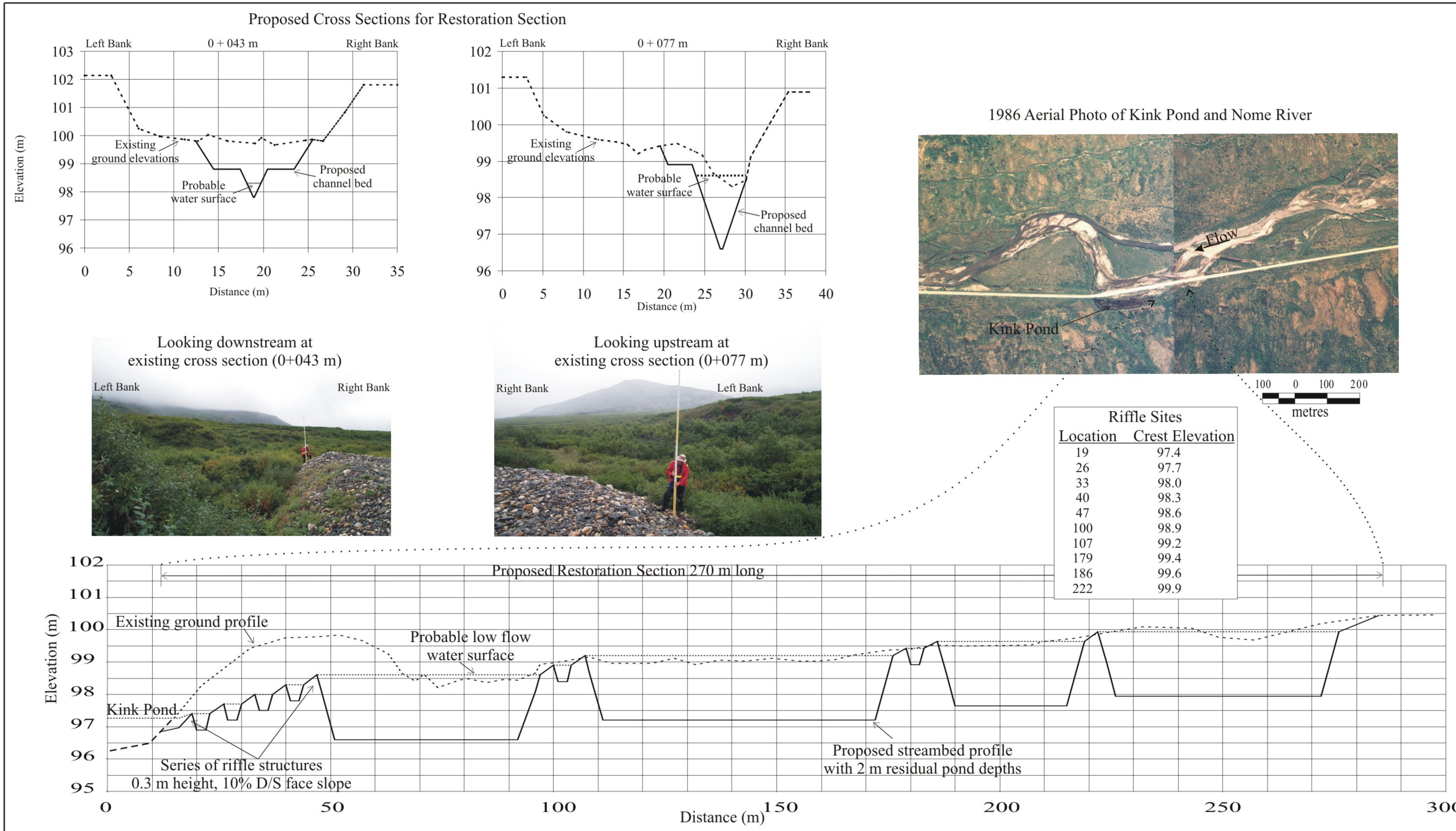



Figure 14. Aerial photo view, cross sections and existing ground profile upstream of Kink Pond in proposed groundwater channel section.




Riffle Sites

| Location | Crest Elevation |
|---|---|
| 19 | 97.4 |
| 26 | 97.7 |
| 33 | 98.0 |
| 40 | 98.3 |
| 47 | 98.6 |
| 100 | 98.9 |
| 107 | 99.2 |
| 179 | 99.4 |
| 186 | 99.6 |
| 222 | 99.9 |

Figure 15. Aerial photo view and proposed groundwater channel cross sections and profile upstream of Kink Pond.

### 4.3.4 Basin Creek Pond Habitat Enhancement

The Basin Creek Pond is located immediately upstream of the Nome-Kougarok Road (Maps 1 and 2). The site was developed as a borrow pit during road construction and subsequently Basin Creek diverted into the pit creating the pond.

Overhead and in-channel cover is very limited in Basin Creek Pond currently. Increasing the amount of cover in the pond would improve the quality of rearing habitat. To increase the amount of cover, it is proposed that LWD structures be added to the west side of the pond and willows planted. Up to 14 LWD structures will be located every 20 m along the west bank (Photo 36). Structure configuration will be similar to a DJ-5 LWD structure (Appendix G). Each proposed LWD structure will be comprised of five logs. It is anticipated that the logs with rootwads will have an average dbh of 0.3 to 0.5 m and be approximately 8 to12 m long. It is assumed that LWD will be transported from the shoreline near Nome to Basin Creek Pond. LWD cover structures will be fastened to deadman anchors to ensure greater stability for the structures. Deadman anchors will consist of a log without a rootwad about 5-6 m long and 0.3-0.5 m diameter buried 1 to 2 m below the ground surface. Alternatively, large boulders could be used as deadman anchors or the tops of some of the LWD could be buried in the ground (e.g., Appendix G). As described in Section 4.3.3.1, cover structures such as brush bundles, artificial undercut banks and mounds of oversize rock can be used as alternatives to the LWD structures.

Overhanging willow (*Salix sp.*) riparian vegetation predominates along the mainstem and tributaries and provides excellent over-stream cover. Willow should be planted around the western bank of the pond following standard bioengineering procedures, such as those described and referenced in Slaney and Zaldokas (1997). Also, *Potentilla palustris* or Marsh Five Finger, which is common along streams and in shallow water and wet meadows, should be transplanted to the shallower zones of the pond to provide additional cover.

### 4.3.5 Banner Creek Habitat Restoration

Upstream fish passage is prevented at the Banner Creek culvert crossing on the Nome-Kougarok Road (C. Lean pers. comm.). The perched culvert and high velocities through the pipe are likely both contributing causes to the fish migration barrier. Juvenile fish are particularly affected. The benefit of providing fish passage at the Banner Creek culvert is to restore historic access for primarily coho to about 3 km of spawning habitat with gradients ranging between 0.8 and 3% (Appendix E).

The culvert outlet is perched 0.6 m above the streambed and the culvert has a slope of 5%. Overall, there is a 2 m fall between the culvert invert and downstream streambed, a distance of 28.4 m. The preferred solution is to re-install the 3.6 m diameter culvert, embedding the culvert a minimum of 0.3 m or about 20% of the culvert height and decreasing the culvert slope to less than or equal to the natural channel gradient. In addition, riprap designed to be stable at the design flow should be placed inside the embedded culvert to provide fish resting pools along the length of the culvert. Culvert velocities should average about 0.6 m/s under fish passage design flows.

As an alternative to lowering the culvert, the perching problem can be corrected by installing two riffles downstream of the culvert outfall (Figure 16). The riffles improve fish passage by:

- Raising the tailwater elevation and backwatering the culvert outlet. The backwatering will improve water depths in the culvert and reduce the velocity at the culvert outlet, and
- Creating a resting pool at the culvert outlet for migrating fish before they swim into the higher velocity culvert.

Both riffle structures will have a 20 to 1 downstream face, and will be constructed following the guidelines in the schematic riffle construction drawing (Appendix J). The riffles should be built with a range of rock sizes. The largest rocks are selected to be stable at the expected discharges in Banner Creek. Some larger rocks placed on the surface of the riffle will create chutes and small drops that will assist fish passage. An approximation of the maximum size required may be obtained by analyzing the tractive force on the face of the riffle and applying guidelines for selecting riprap materials (Newbury and Gaboury 1993). The tractive force T ($kg/m^2$) may be estimated as T = 1000 x Flow Depth (D in meters) x Slope of the Downstream Face of the Riffle (S in m/m) or:

$$T = 1000 \times D \times S \qquad \text{(Chow 1959)}$$

The stability of the riffle materials under the design flow condition can be tested where critical flow is assumed to occur on the downstream riffle face which has a 20 to 1 (5%) slope. The design discharge is expected to be low at 9.2 $m^3/s$ (i.e., 50 yr return period flood of 325 cfs; Table 3).

In this case, the critical depth in the channel at the design discharge would be solved using the continuity equation and a mean channel width of 20 m in the formula:

Discharge (Q) = velocity x depth x width
with $v_c = (g \times \text{depth})^{1/2}$ substituted for velocity and
where g=gravitational acceleration (i.e., 9.8 $m/s^2$)

At this discharge, critical depth was calculated at 0.27 m.

Stable rock sizes for the riffle structures were determined using the tractive force formula:

$$\text{Tractive Force (T)} = 1000 \times \text{depth (m)} \times \text{slope (m/m)}$$

Studies of stable channels, summarized by Lane (1955), indicate that the relationship between the tractive force and bed material diameter at incipient motion for pebble-size and larger materials is T ($kg/m^2$) = diameter of substrate (cm). A safety factor of 1.5 is recommended (U.S. Federal Highway Administration 1988). Stable rock sizes were determined to be 20 cm using the formula: 1500 x depth x slope or 1.5 times the tractive force.

It is recommended that stones larger than the stable diameter quoted above be used for the crest and downstream surface of the riffle. Smaller diameter rocks can be used in the core of the structure. Larger diameter boulders should be randomly spaced on the downstream face of the riffles approximately 20 to 30 cm apart to provide greater hydraulic diversity. The volume of rock required for the two riffles is about 265 $m^3$.

Backwatering will improve fish passage for adult fish but the high slope of the Banner Creek culvert may still present a barrier for juveniles migrating upstream. Baffles are often installed in steep culverts to produce a pocket of low velocity water where fish can rest during upstream migration. Baffles are typically made of steel plate and are welded or bolted to the bottom of the culvert. McKinley and Webb (1956) and Poulin and Argent (1997) describe various culvert baffle configurations and design specifications (Appendix J). Typically, the baffle height is 10% of culvert height or a minimum of 0.3 m high. The limitations of installing baffles in culverts are that baffles significantly reduce the hydraulic efficiency of a culvert, baffles require periodic maintenance, and the installation of baffles can reduce the life expectancy of the culvert (Baker and Votapka 1990). However, it would provide the best solution for the existing Banner Creek culvert if it is found through field monitoring that fish access is still prevented after the two riffles are constructed.

### 4.3.6 Nome River Off-Channel Habitat Restoration

Based on 1950 aerial photos, an historic meander loop of the Nome River was in the process of being cut-off by the river prior to the construction of the Nome-Kougarok Road (see Site A on Maps 1 and 2). The abandoned meander loop now provides an opportunity to provide high quality off-channel rearing and overwintering for coho in close proximity to the Nome mainstem. Currently, there is limited use of the oxbow by juvenile fish (M. Nemeth unpubl. data).

A small diameter culvert (0.8 m) should be placed in the road to provide fish access to the oxbow during frequent flood events. The small diameter culvert will restrict the volume of discharge entering the off-channel habitat. The culvert should be installed with 0% gradient and placed with the invert elevation equal to the average summer water level in the oxbow. Based on the survey on August 14, 2004, the existing water surface of the oxbow was 2.1 m lower than the centreline of the road and 0.2 m lower than the mainstem water surface. Also, water depth in the oxbow was between 1 and 1.2 m adjacent to the road.

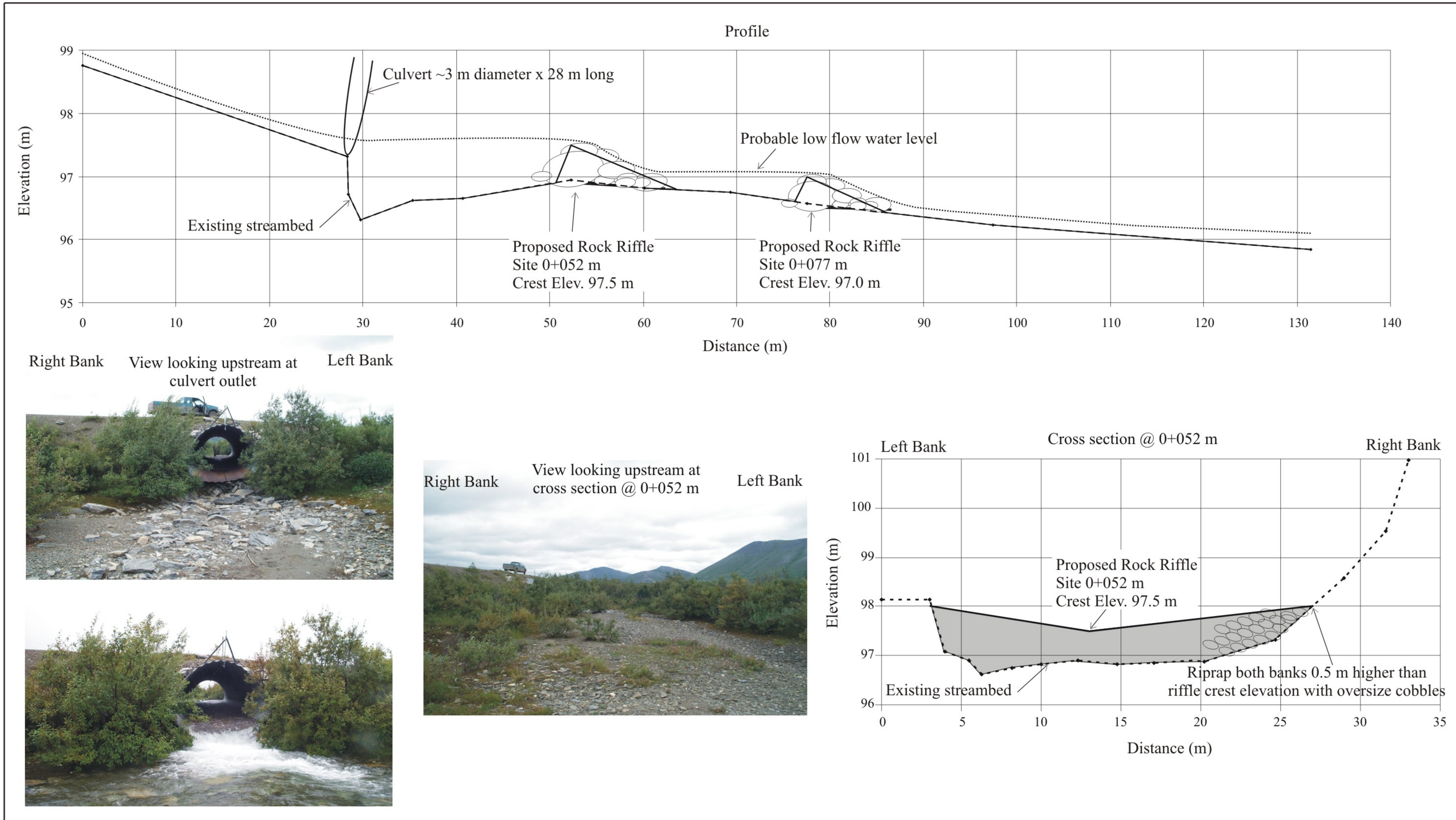



Figure 16. Profile and cross section in Banner Creek showing proposed restoration measures.

### 4.3.7 Best Management Practices

#### *4.3.7.1 Stabilization of Sediment Sources*

Side slopes at culvert crossings along the Nome-Kougarok Road are chronic sources of sediment to the stream (Photo 3). To alleviate sediment erosion at culvert crossings, side slopes along roads should be 1.5H:1V and include riprap protection (Poulin and Argent 1997). The culvert should be long enough to extend one culvert height beyond the side slope on the upstream side and 1.5 culvert heights on the downstream side. As a general rule, culvert lengths of 18-30 m should be sized to ensure an average velocity of 0.6 m/s during the period of juvenile fish migration and 0.8 m/s during the period of adult migration.

Photo 3. Looking upstream at eroding side slope of Nome-Kougarok Road at Rocky Mountain Creek culvert crossing.

Vehicle trails within the wetted perimeter of streams cause over-widening, habitat simplification and increased erosion and sedimentation (Photo 4). Frequently used vehicle trails should be located outside of the channel and riparian zone, with a setback distance from the top of bank or high water mark of generally 15-30 m.

Photo 4. Historic use of the wetted channel in Buster Creek as a vehicle trail has over-widened the channel and degraded fish habitat.

Placer mine tailings that are piled along many of the Nome tributaries are being eroded, contributing significant volumes of sand and gravel that aggrade downstream pool and riffle habitats (Photo 5). For example, eroding tailings piles are contributing sediment to Hobson, Clara, Buster, Darling, Dexter, Reach N7 of Nome River and other streams. The tailings piles are typically poorly vegetated because of their coarse composition and height above the water table. The tailings should be stabilized by lowering the top of the pile to the floodplain elevation, re-grading the side adjacent to the stream to a 2H:1V slope, and planting the surface of the tailings with native willow. A finer planting medium may also be required for the surface of the tailings. If necessary, the planting soil should be placed to a thickness of about 0.3 m.

Photo 5. Sloughing placer mine tailings adjacent to Clara Creek.

### 4.3.8 Project Implementation

#### *4.3.8.1 Access, Logistics, Materials and Labor*

Access for delivery of materials to the proposed restoration sites is fair to good. The Nome-Kougarok Road provides good access to the proposed Nome off-channel, Banner Creek and Kink Pond. Existing vehicle trails would provide fair access off the Nome-Kougarok Road to sites on Buster and Darling creeks. It is recommended that a flatbed or large dump truck move the LWD to suitable staging areas near the project sites. Similarly, a dump truck should bring boulders to these locations. A small hydraulic excavator, rubber tire loader or six wheel drive (6WD) articulated hauler should then move materials from these drop-off locations to each restoration site.

A track hydraulic excavator should be used to construct the groundwater channel, LWD and riffle structures. Drilling, cabling and gluing of the boulders to the LWD should be done by the labor crew. The required crew and machinery will be a crew supervisor, an excavator operator, several swampers, and an environmental monitor. Continued professional input from a restoration specialist that is familiar with instream structure construction is recommended.

The materials required to construct the prescriptions as outlined include:

- Large logs, preferably with branches and rootwads attached: 8-12 m long by 0.3-0.5 m average diameter;
- Boulders (0.8 m diameter) for ballasting the LWD;
- Boulders (0.3-0.6 m diameter) for deflector groyne structures (optional);
- Spawning gravel as per recommended gradation;
- Cobbles and boulders for the riffle structures;
- Galvanized cable, 1.27 cm (½") or larger; and
- Galvanized wood staples and cable clamps.

Special equipment required:

- Excavator (e.g., Hitachi 200 or Cat E70B) for instream complexing;
- Dump and self-loading logging trucks;
- 6WD articulated hauler; and
- Rock and wood drill equipment, and epoxy for fastening cable in rock.

Labor required:

- Ground crew;
- Excavator operator;
- Crew supervisor; and
- Technical support.

The estimated costs for implementing the proposed projects are shown in Table 12.

#### *4.3.8.2 Timing of Works, Priorities and Scheduling*

It is recommended that enhancement works in Basin Creek Pond and Kink Pond proceed in the first year followed by restoration measures in Buster and Darling creeks in the second and third year, respectively. This will allow time to discuss and seek approval from landowners and regulatory agencies for the extensive restoration works proposed in these two creeks. Fish passage restoration at the Banner Creek culvert, groundwater channel development at Kink Pond and Nome River off-channel reconnection should follow restoration works in Buster and Darling creeks.

As stated above, prior to the implementation of any proposed restoration works, project proponents should consult with and obtain approval to proceed from the private landowner(s) and/or appropriate government agency staff responsible for the management of public lands. Work should proceed only after approvals for the restoration or enhancement works are received from the landowners and regulatory agencies. It is anticipated that construction of the proposed restoration and enhancement works would proceed during the fisheries work window over several years. Depending on the emergence of Dolly Varden fry and the timing of pink salmon spawning in the specific subbasin, construction is recommended between June 15 and July 31.

Acquisition and scheduling of materials and construction equipment should occur during late winter / early spring by the project coordinator. Staking and layout of the restoration measures should be undertaken in early June, just prior to construction, by the design and construction team. If appropriate, delivery of the materials to each structure site can be implemented concurrently with structure layout.

Table 12. Cost estimate for proposed restoration projects in the Nome River watershed.

| | | | Buster Creek | | Darling Creek | | Kink Pond | | Kink Pond Groundwater Channel | | Basin Creek Pond | | Banner Creek | | Nome Off-channel | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Description | Unit | Unit Cost (US $) | Approx. Quantity | Cost | Approx. Quantity | Cost | Approx. Quantity | Cost | Approx. Quantity | Cost | Approx. Quantity | Cost | Approx. Quantity | Cost | Approx. Quantity | Cost |
| Major Equipment: | | | | | | | | | | | | | | | | |
| 1 Excavator, all found | hour | $135 | 110 | $14,850 | 120 | $16,200 | 30 | $4,050 | 120 | $16,200 | 30 | $4,050 | 30 | $4,050 | 20 | $2,700 |
| 2 Bulldozer, all found (road) | hour | $115 | 150 | $17,250 | 50 | $5,750 | | $0 | | $0 | | $0 | | $0 | | $0 |
| 3 Excavators mob/demob. | km | $5 | 40 | $200 | 60 | $300 | 80 | $400 | 80 | $400 | 65 | $325 | 55 | $275 | 60 | $300 |
| 4 6WD articulated hauler | hour | $85 | 20 | $1,700 | 30 | $2,550 | 0 | $0 | 80 | $6,800 | 0 | $0 | 0 | $0 | 0 | $0 |
| 5 Dump truck, all found | hour | $75 | 60 | $4,500 | 70 | $5,250 | 20 | $1,500 | 70 | $5,250 | 20 | $1,500 | 25 | $1,875 | 20 | $1,500 |
| **Sub-total major equipment** | | | | **$38,500** | | **$30,050** | | **$5,950** | | **$28,650** | | **$5,875** | | **$6,200** | | **$4,500** |
| | | | | | | | | | | | | | | | | |
| Manpower: | | | | | | | | | | | | | | | | |
| 1 Project Coordinator (1) | pers-day | $430 | 10 | $4,300 | 10 | $4,300 | 10 | $4,300 | 15 | $6,450 | 10 | $4,300 | 4 | $1,720 | 3 | $1,290 |
| 2 Restoration Specialist (1) | pers-day | $745 | 2 | $1,490 | 2 | $1,490 | 2 | $1,490 | 4 | $2,980 | 2 | $1,490 | 1 | $745 | 1 | $745 |
| 3 Semi-skilled Labour (2) | pers-day | $200 | 6 | $1,200 | 6 | $1,200 | 8 | $1,600 | 20 | $4,000 | 8 | $1,600 | 2 | $400 | 3 | $600 |
| **Sub-total manpower** | | | | **$6,990** | | **$6,990** | | **$7,390** | | **$13,430** | | **$7,390** | | **$2,865** | | **$2,635** |
| | | | | | | | | | | | | | | | | |
| Light Equipment: | | | | | | | | | | | | | | | | |
| 1 Drilling Equipment Rental | week | $500 | 2 | $1,000 | 2 | $1,000 | 2 | $1,000 | 2 | $1,000 | 2 | $1,000 | 0 | $0 | 0 | $0 |
| **Sub-total light equipment** | | | | **$1,000** | | **$1,000** | | **$1,000** | | **$1,000** | | **$1,000** | | **$0** | | **$0** |
| | | | | | | | | | | | | | | | | |
| Materials: | | | | | | | | | | | | | | | | |
| 1[1] LWD With and Without Rootwads | log | $0 | 90 | $0 | 182 | $0 | 70 | $0 | 30 | $0 | 70 | $0 | 0 | $0 | 0 | $0 |
| 2[2] Rock for groyne structures | $m^3$ | $20 | 80 | $1,600 | 15 | $300 | | | | | | | | | | |
| 3 Rock for riffle structures | $m^3$ | $20 | | | | | | | 20 | $400 | | | 265 | $5,300 | | |
| 4 Gravel for spawning platform and culvert installation | $m^3$ | $15 | | | | | | | 30 | $450 | | | | | 50 | $750 |
| 5[3] Ballast Rock (0.8 m) for LWD Structures | $m^3$ | $40 | 65 | $2,600 | 75 | $3,000 | 20 | $800 | 10 | $400 | 20 | $800 | 0 | $0 | 0 | $0 |
| 6 Miscellaneous (epoxy, clamps, cable, culvert, etc.) | | $1,000 | 3 | $3,000 | 3 | $3,000 | 3 | $3,000 | 1 | $1,000 | 3 | $3,000 | 0.5 | $500 | 6 | $6,000 |
| **Sub-total materials** | | | | **$5,600** | | **$6,000** | | **$3,800** | | **$2,250** | | **$3,800** | | **$5,800** | | **$6,750** |
| | | | | | | | | | | | | | | | | |
| **Total Cost[4]** | | | | **$52,090** | | **$44,040** | | **$18,140** | | **$45,330** | | **$18,065** | | **$14,865** | | **$13,885** |
| Total estimated cost for all projects: | | **$206,415** | | | | | | | | | | | | | | |

Note: 1 - A cost to purchase large woody debris (LWD) has been assumed to be 0$ as the logs are available along the beaches near Nome AK. The costs for locating, mapping and transporting the LWD are covered under 'Manpower' and 'Major Equipment'. Alternative sources for LWD exist within Norton Sound, such as near the Unalakleet River, but transportation costs would increase significantly.

2 - Material cost estimate for groyne structures included as an alternative to LWD structures. Cost of purchasing and transporting rock, and construction of groyne structures not included in 'Total Cost' estimates.

3 -Assume 0.8 m diameter boulder has a volume of 0.51 $m^3$

4 - The equipment rental and material costs are estimates and may not accurately reflect Nome prices.

# 5 EVALUATION OF RESTORATION FRAMEWORK

## 5.1 Evaluation of Trial on Nome River

Application of the habitat assessment and restoration framework on the Nome River appeared to accurately describe the current fish habitat condition for the mainstem and tributaries. The assessment procedure identified habitat components that may be limiting anadromous fish production in freshwater. Furthermore, the procedure allowed for an integrated examination and analysis of the potential impacts from watershed processes and anthropogenic activities and the selection of priority treatments and sites where restoration works would have the highest likelihood of being successful, given the current conditions within the watershed.

The assessment and restoration framework applied in the Nome River watershed in 2004 consisted of the following three components: (1) an overview watershed assessment of the Nome River to identify priority subbasins and reaches in relation to their importance to target fish species, probable critical limiting factors and potential for restoration success, (2) detailed habitat assessments on priority reaches to identify habitat condition, type and severity of impact and opportunities for restoration, and (3) designs for specific treatments or structures that address the restoration of watershed processes and critical habitats. These activities provided the basis for understanding the contemporary channel and fish habitat condition in each subbasin surveyed, determining the causes and mechanisms of how habitat changes have occurred, and prioritizing restoration treatments to re-establish functional watershed processes and critical habitats.

The detailed habitat assessment parameters appeared to encompass the key components that characterize anadromous fish habitat and the range in measured values appeared consistent with other surveys using this procedure in the Pacific Northwest. However, the frequency of poor ratings for most cover types, particularly in the Nome River mainstem, suggests that the rating scheme may need to be re-adjusted in some watersheds of western Alaska where large conifers or deciduous trees do not dominate the riparian zone. Similarly, the high incidence of 'poor' ratings for pool frequency and percent pools suggests that some refinement of the decision criteria may be warranted.

The overview and detailed assessment procedures allowed us to assess the current condition and postulate on the historic status of watershed processes as a means to determining the cause of observed habitat disturbances and to forecast how these watershed processes would influence habitat or potential restoration works in the future. The Nome River mainstem and tributaries were characterized as moderately disturbed with evidence of sediment aggradation in pools and riffles which has decreased pool frequency and negatively affected the quality of rearing and spawning habitat. In contrast, the assessment found that the more torturous meandering reaches of N3, N5 and N6 had pool frequencies closer to the expected values for an undisturbed watercourse. Although recovery of the Nome River mainstem appears to be occurring naturally, based on a decrease in channel width from 1950 to 1986, habitat in the mainstem is being affected primarily from sediment loading originating from an extensive source area that includes historic gravel accumulations in bars within the mainstem as well as from in-channel sources in the tributaries. It was apparent that, in general, ongoing mining activities and vehicle trails in the tributaries of the Nome River are impeding the natural recovery of the tributaries and is contributing to a higher than natural sediment loading to downstream reaches in tributaries and the mainstem. Restoration works and best management practices (BMP) have been proposed to address watershed processes and channel characteristics that affect sediment generation and transport. Tributaries that have been highly disturbed and are chronic sources of sediment have been recommended as the highest priorities. We believe the recommended works and BMPs are supported by the assessment information and, from our interpretation of the assessment information, offer the highest likelihood of restoration success.

## 5.2 Application to Western Alaska Watersheds

The three stage approach used in the assessment and restoration framework on the Nome River is applicable to any stream or watershed where fish habitats have been degraded by human activity. Assessment and restoration protocols are transferable in part because they are based on general principles of hydrology, geomorphology and fish biology. However, the protocols need to be adapted and applied to specific landscapes that vary in aspects such as, climate, topography, species, and forest cover. For example, in western Alaska watersheds we would expect that climate (long, cold winters with extreme freezing), areas of permafrost, rainfall and snowmelt hydrology, ice breakup and scour, and lack of forest cover (some places) may lead to adjustments in the assessment criteria for overwintering and rearing habitats of salmon. We would also expect adjustments to the evaluation benchmarks that identify undesirable and desirable habitat based on our assessment variables, such as, pool area, pool frequency, residual pool depth, and cover. As discussed above, the rating scheme for the various cover types may need to be adjusted to better reflect the riparian vegetation of some western Alaska watercourses.

Some fine tuning of the physical relationships that characterize channel morphology may also be required to establish what would be expected for undisturbed or natural streams in western Alaska. It is recommended that reference reach surveys be undertaken over a range of stream sizes and gradients to develop a database of channel and habitat characteristics for western Alaska streams. Measurements should include parameters such as, pool frequency, residual pool depths, thalweg profile and cross section surveys, cover characteristics, bankfull width and depth, proportion of riffle and pool habitats by area, width to depth ratios, and median bed paving material sizes. Methodology for the reference reach surveys should follow stream hydrology surveys techniques described in Harrelson et al. (1994), Newbury and Gaboury (1993) and habitat assessments as described in Johnston and Slaney (1996). The reference reach surveys should be used to develop relationships that specifically characterize western Alaska streams. For example, the relationships should include bankfull discharge, bankfull depth and bankfull width versus drainage area, and residual pool depth versus bankfull width for various stream gradients. Habitat surveys of undisturbed watercourses will document assessment data on the types and areal extent of cover in pools, percent pools and pool frequencies, and provide the basis for refining the rating schemes for these parameters. In addition, topographic surveys of natural spawning and rearing habitats of targeted species should be undertaken to provide templates of key habitats that can be used in restoration designs.

# 6 REFERENCES

ADF&G. 2003. Alaska subsistence fisheries 2002 annual report. Alaska Department of Fish and Game, Juneau, Alaska.

Allen, H.H. and J.R. Leech. 1997. Bioengineering for streambank erosion control; report 1, guidelines. Tech. Report EL-97-8. U.S. Corps of Engineers, Vicksburg, MS. 103pp.

Anonymous. 2004. Watershed restoration planning and priority setting: an emphasis on fish habitat. Modified from 'Planning and priority setting for the next five years, phase 3 watershed-level planning, working draft, May 15, 2000', prepared by the Watershed Restoration Program Provincial Coordination Team, British Columbia.

Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative. 2003. Web site: 2002 interim research and restoration priorities.

Bair, B., P. Powers and A. Olegario. 2002. Resurrection Creek stream channel and riparian restoration analysis river kilometer 8.0-9.3. U.S. Forest Service, Wind River Ranger District, Carson, Washington.

Bair, B., D. Blanchet, P. Powers and A. Olegario. 2003. Planning a resurrection: Resurrection Creek, Alaska. Streamline Watershed Management Bulletin, Vol. 7, No. 2, pg. 1-4.

Baker, C.O. and F.E. Votapka. 1990. Fish passage through culverts. Report No. FHWA-FL-90-006. USDA Forest Service, San Dimas, CA.

Bjornn, T.C. and D.W. Reiser. 1991. Habitat requirements of salmonids in streams. Pages 83-138 *in* W.R. Meehan [editor] Influences of forest and range land management of salmonid fishes and their habitats. Amer. Fish. Soc. Special Publ. 19, Bethesda, MD.

Chow, V.T. 1959. Open Channel Hydraulics. McGraw-Hill, New York, NY. 680 p.

DFO. 2000. Effects of sediment on fish and their habitat. Fisheries and Oceans Canada, Pacific Region Habitat Status Report 2000/01.

D'Aoust, S.G. and R.G. Millar. 1999. Large Woody Debris Fish Habitat Structure Performance and Ballasting Requirements. British Columbia Ministry of Environment, Lands and Parks, and British Columbia Ministry of Forests, Watershed Restoration Program, Management Report No. 8, 119 pp.

Harrelson, C.C., C.L. Rawlins, and J.P. Potyondy. 1994. Stream channel reference sites: an illustrated guide to field technique. Gen. Tech. Rep. RM-245. Fort Collins, CO. U.S. Dept. of Agric., Forest Serv., Rocky Mountain Forest and Range Experiment Station. 61 pp.

Hogan, D.L., S.A. Bird, and D.J. Wilford. 1996. Channel conditions and prescriptions assessment (Interim Methods). Watershed Restoration Program Technical Circular No. 7. Ministry of Environment, Lands and Parks and Ministry of Forests.

Johnston, N.T. and P.A. Slaney. 1996. Fish habitat assessment procedures. Watershed Restoration Tech. Circ. No. 8. Ministry of Environment, Lands and Parks and Ministry of Forests, Vancouver, BC.

Kellerhalls, R., and M. Church. 1989. The morphology of large rivers: characterization and management. Pages 31-48 *in* D.P. Dodge [ed.] Proceedings of the international large river symposium. Canadian Special Publication Fisheries and Aquatic Sciences 106.

Kohler, T, and G. Knuepfer. 2000. Nome River Salmon Counting Weir Project Summary Report, 2000. ADF&G Regional Information Report 3A01-21. Alaska Department of Fish and Game, Anchorage, Alaska

Kroeker, T. and K. Dunmall. 2005. Norton Sound Environmental Condition Monitoring Report June 2002-October 2004. A report to the Norton Sound Fishery Disaster Relief Fund by Kawerak, Inc. 39pp.

Lane, E.W. 1955. Design of Stable Channels. ASCE Transactions 120: 1234-1279.

Leopold, L.B., M.G. Wolman and J.P. Miller. 1964. Fluvial processes in geomorphology. W. H. Freeman and Company, San Francisco.

Magdanz, J. S., S. T. Tahbone, K. Kamletz, and A. Ahmasuk. 2001. Subsistence Salmon Fishing by Residents of Nome, Alaska, 2001 . Technical Paper No. 274, Alaska Department of Fish and Game, Division of Subsistence and Natural Resources Department, Kawerak, Inc. Juneau, Alaska.

McKinley, W.R. and R.D. Webb. 1956. A proposed correction of migratory fish problems at box culverts. Wash. Dept. Fish. Fish Res. Pap. 1(4): 33-45.

Menard, J. 2001. 2001 Norton Sound season summary. Memorandum to ADF&G, Division of Commercial Fisheries Alaska Department of Fish and Game, Nome, Alaska.

Menard, J. and T. Kohler. In Press. Salmonid escapements at Kwiniuk, Niukluk and Nome Rivers, 2004. Alaska Dept. of Fish and Game, Commercial Fisheries Division, Fishery Data Series No. 04-XX, Anchorage, AK.

Merritt, M. F. 2001. Strategic plan for salmon research in the Kuskokwim River drainage. Special Publication No. 01-07. ADF&G, Division of Sport Fish, Anchorage, Alaska.

NRC. 2004. Developing a research and restoration plan for Arctic-Yukon-Kuskokwim (Western Alaska) salmon. National Research Council of the National Academies, The National Academies Press, Washington, D.C.

Neil, C. R. 1973. Guide to bridge hydraulics. Roads and Transportation Association of Canada, University of Toronto Press, Toronto, Ontario. 191 p.

Nemeth, M.J., R. C. Bocking, and S.K. Kinneen. 2004. Development of habitat-based escapement goals for coho salmon in Norton Sound drainages. 2003 annual report prepared for the Norton Sound Fishery Disaster Relief Fund by LGL Alaska Research Associates and Norton Sound Economic Development Corporation, Anchorage, Alaska.

Nemeth, M. J., B. Bocking, and S. Kinneen. 2005a (in prep.). Freshwater habitat as a predictor of coho salmon smolt production in two Norton Sound rivers: an initial study to support the development of habitat-based escapement goals. 2004 annual report prepared for the Norton Sound Fishery Disaster Relief Fund by LGL Alaska Research Associates and Norton Sound Economic Development Corporation, Anchorage, Alaska.

Nemeth, M. J., B. C. Williams, B. Haley, and S. Kinneen. 2005b (in prep.). Ecology of juvenile chum salmon from Norton Sound: estuarine habitat and the early marine life stage. Annual report prepared for the Norton Sound Fishery Disaster Relief Fund by LGL Alaska Research Associates and Norton Sound Economic Development Corporation, Anchorage, Alaska.

Newbury, R.W. and M.N. Gaboury. 1993. Stream Analysis and Fish Habitat Design: A Field Manual. Newbury Hydraulics, Gibsons, BC. 262 p.

Newbury, R.W., M.N. Gaboury, and D.J. Bates. 1997. Restoring Habitats in Channelized or Uniform Streams Using Riffle and Pool Sequences. *In* Slaney, P.A. and D. Zaldokas [eds.] Fish Habitat Restoration Procedures. British Columbia Ministry of Environment, Lands and Parks, and British Columbia Ministry of Forests, Watershed Restoration Program, Technical Circular No. 9.

Norton Sound Scientific Technical Committee (NSSTC). 2002. Norton Sound Research and Restoration Plan. Anchorage, Alaska.

Poulin, V.A. and H.W. Argent. 1997. Stream crossing guidebook for fish streams. Prepared for BC Ministry of Forests, BC Ministry of Employment and Investment, BC Ministry of Environment, Lands and Parks, and Department of Fisheries and Oceans.

Slaney, P.A., R.J. Finnegan, and R.G. Millar. 1997. Accelerating the Recovery of Log-jam Habitats: Large Woody Debris-boulder Complexes. *In* Slaney, P.A. and D. Zaldokas [eds.] Fish Habitat Restoration Procedures. British Columbia Ministry of Environment, Lands and Parks, and British Columbia Ministry of Forests, Watershed Restoration Program, Technical Circular No. 9.

Slaney, P.A. and D. Zaldokas [eds.]. 1997. Fish Habitat Restoration Procedures. British Columbia Ministry of Environment, Lands and Parks, and British Columbia Ministry of Forests, Watershed Restoration Program, Technical Circular No. 9.

U.S. Federal Highway Administration. 1988. Use of RipRap for Bank Protection. Highway Engineering Circular No. 11. Washington, DC.

Victoria Water. 1991. Guidelines for stabilising waterways. Rural Water Commission of Victoria, Standing Committee on Rivers and Catchments, Victoria, Australia.

Webb, J.F. and R.F. McLean. 1991. An investigation of coho salmon rearing habitat in selected tributaries of the Nome River. Alaska Dept. of Fish and Game.

Wiedmer, M. 2002 (draft). Lower Kenai peninsula summer off-road vehicle trail stream crossings. Alaska Department of Fish and Game, Anchorage, Alaska. 23p.

WRPTC. 1998. Watershed Restoration Program Technical Circular No. 6: Riparian Assessment and Prescription Procedures. Draft, March 1998. Ministry of Environment, Lands and Parks, and Ministry of Forests.

# APPENDICES

Appendix A. Historical salmon escapements at the Nome River counting tower, 1993 - 1995, and weir 1996-2004.

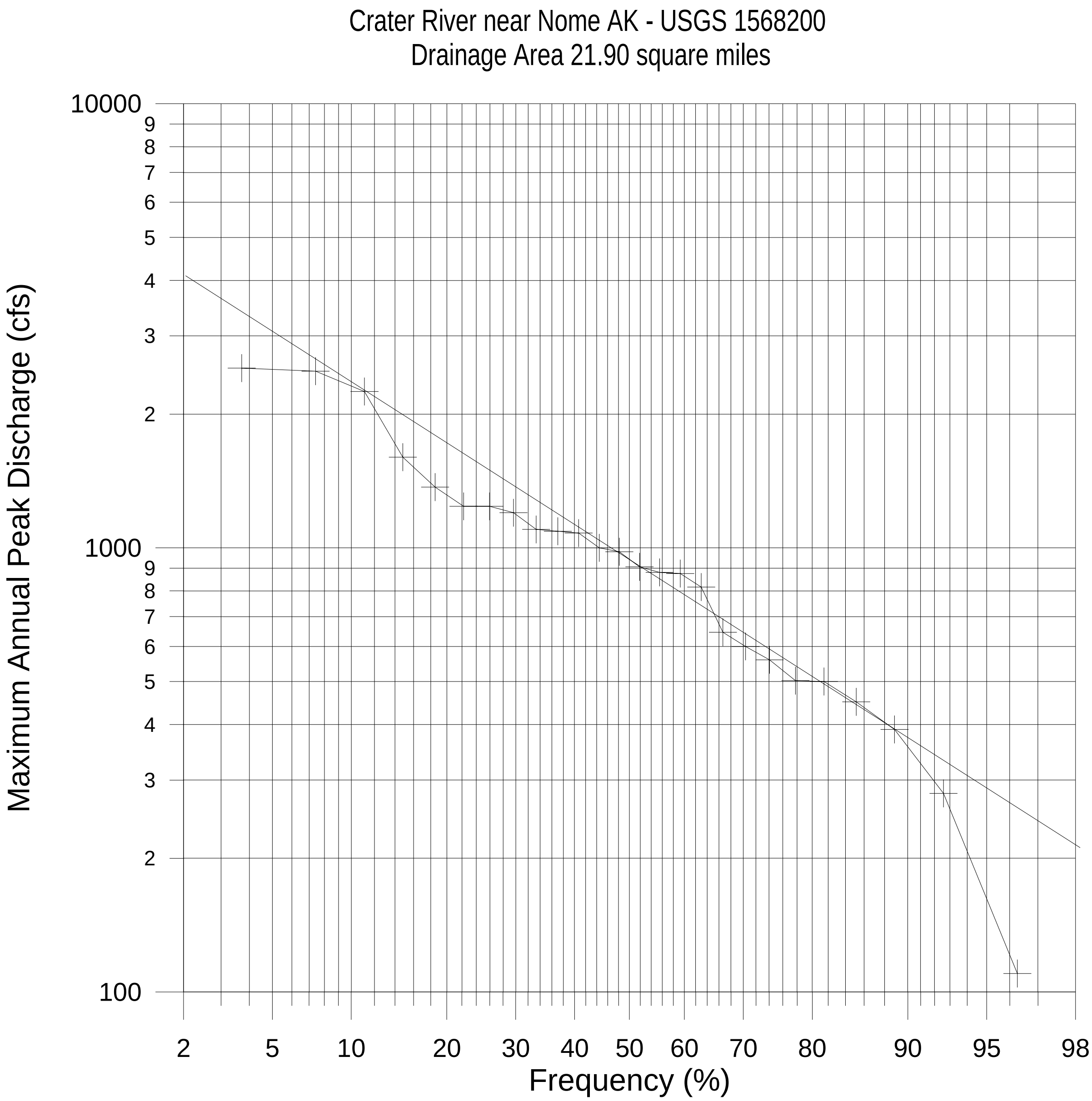
Appendix A. Historical salmon escapements at the Nome River counting tower, 1993 - 1995, and weir 1996-2004 (Menard and Kohler in press).

| Year | Operating Period | Chum | Pink | Chinook | Coho |
|---|---|---|---|---|---|
| 1993 | July 25-Aug 28 | 1,566 | 13,034 | 63 | 4,349 |
| 1994 | June 24-Aug 15 | 2,893 | 141,246 | 54 | 726 |
| 1995 | June 22-Sept 6 | 5,092 | 13,890 | 5 | 1,650 |
| 1996 | June 26-Jul 23 | 3,339 | 95,681 [a] | 5 | 66 |
| 1997 | June 27-Aug 27 | 5,131 | 8,035 | 22 | 321 |
| 1998 | July 01-Aug 11 | 1,930 | 359,469 | 70 | 96 |
| 1999 | July 02-Aug 25 | 1,048 | 2,033 | 3 | 417 |
| 2000 | June 29-Aug 25 | 4,056 | 44,368 | 25 | 698 |
| 2001 | July 8-Sept 11 | 2,859 | 3,138 | 7 | 2,418 |
| 2002 | June 29-Sept 11 | 1,720 | 35,057 | 7 | 3,418 |
| 2003 | July 5-Sept 10 | 1,957 | 11,402 | 12 | 548 |
| 2004 | June 25-Sept 8 | 3,903 | 1,051,146 | 51 | 2,283 |
| | Average 1993-2003 [b] | 2,872 | 66,123 | 25 | 2,128 |

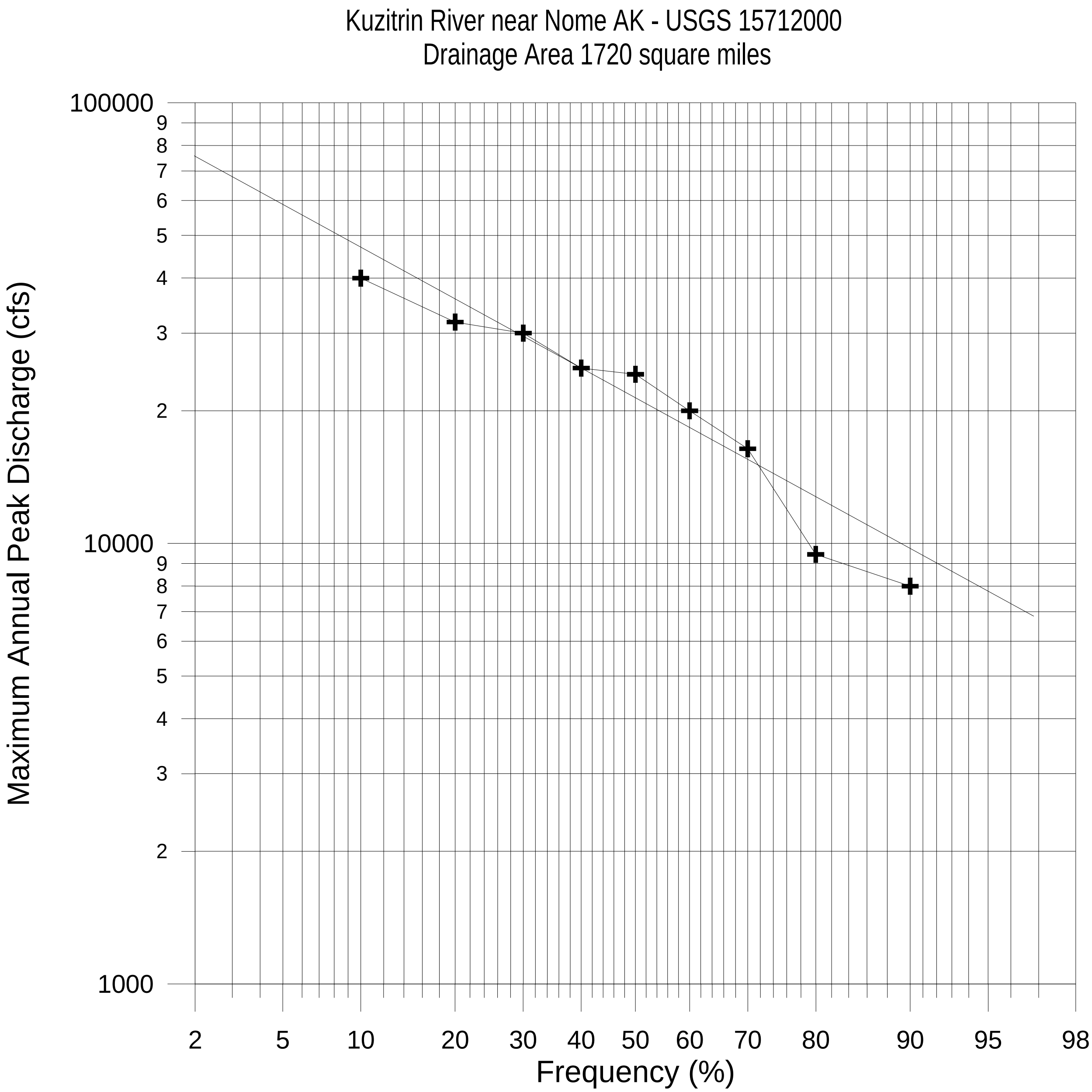
[a] In 1996 the majority of pink salmon escaped through the pickets and were not counted.

[b] Coho salmon average is from 2001 - 2003 as the majority of the run has been counted only since 2001.

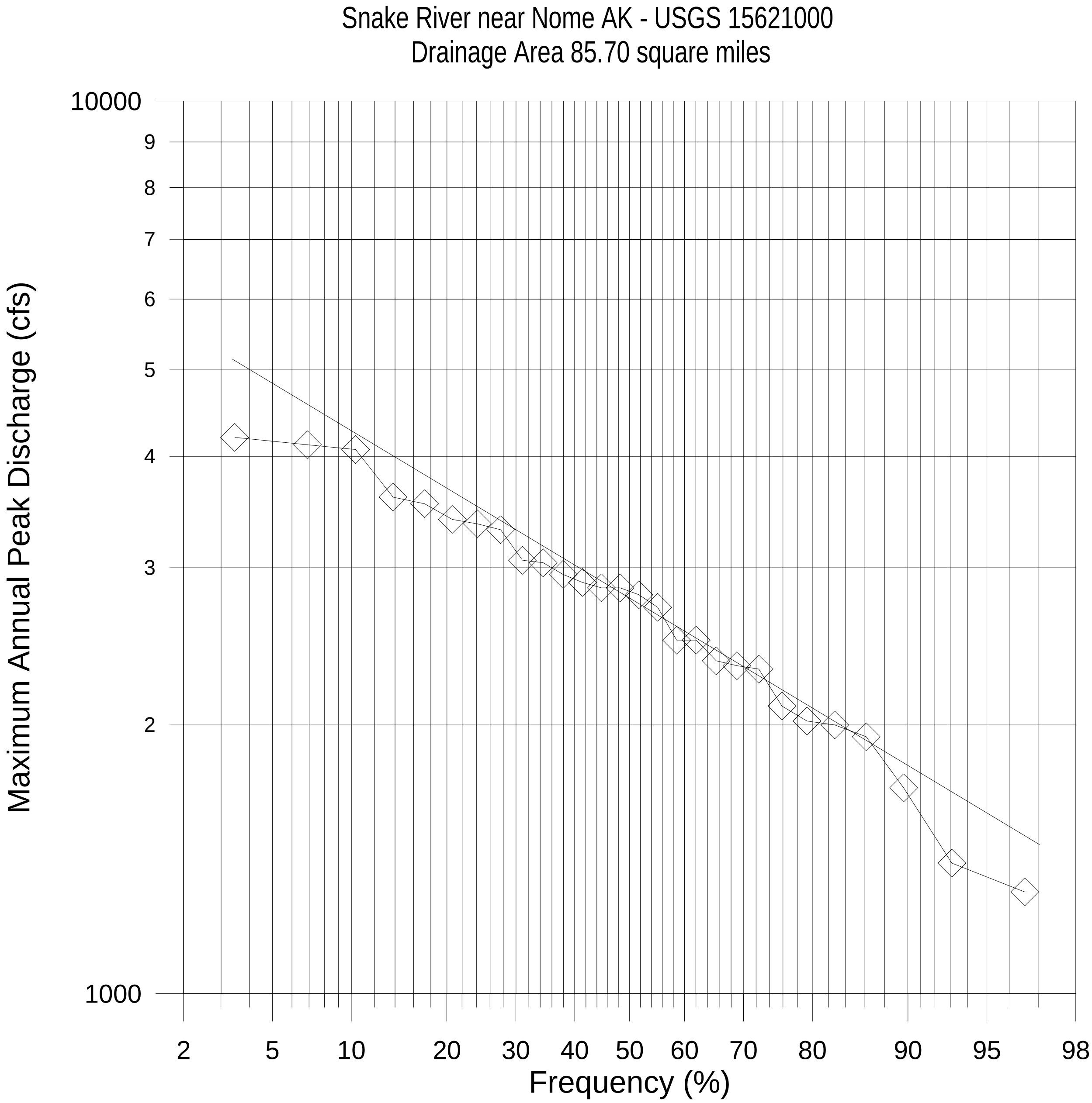
Appendix B. Flood frequency plots for gauged watersheds within the Nome Division County, AK.




Appendix B1. Flood frequency plot for Crater River, AK at hydrometric gauging station USGS 1568200.




Appendix B2. Flood frequency plot for Kuzitrin River, AK at hydrometric gauging station USGS 15712000.




Appendix B3. Flood frequency plot for Snake River, AK at hydrometric gauging station USGS 15621000.

Appendix C. Channel, riparian and fish habitat conditions for subbasins of Nome River watershed.

Appendix C1. Channel, riparian and fish habitat conditions for Osborn Creek.

| | |
|---|---|
| **Sub-basin** | Osborn Creek |
| **Drainage Area ($mi^2$)** | 31.8 |
| **Land Ownership** | 12 (a) Interim Conveyed, 12 (b) Interim Conveyed, AK DNR |
| **Channel (lower reach)** | |
| **Type (CAP)** | Riffle-pool |
| **Width (m)** | 10-26 |
| **Gradient (%)** | 0.2-0.5 |
| **Channel Condition** | Poor. The mainstem channel appears to be overwidened and aggraded as a result of historic placer mining. In addition, the aggradation has de-stabilized the streambanks and increased bank erosion. Bank stability is considered moderate. Sediment wedges, elevated mid-channel bars and bank scour were evident in the mainstem |
| **Riparian Condition** | Fair. Dominated by shrubs and willows |
| **Fish Habitat Condition** | Fair. Good quality spawning substrate with abundance of groundwater intrusions. Shallow depths and anchor ice formation may limit successful egg incabation in several areas. In-stream rearing habitat, especially overwintering habitat, limited by channel aggradation and few quality pools. Off-channel summer rearing habitat is abundant. |
| **Disturbances** | Placer mining, tailings piles, extensive icing in winter, bank erosion, channel aggradation as evidenced by numerous elevated mid-channel gravel bars |

Appendix C2. Channel, riparian and fish habitat conditions for Buster Creek.

| | |
|---|---|
| **Sub-basin** | Buster Creek |
| **Drainage Area (mi$^2$)** | 5.8 |
| **Land Ownership** | 12 (a) Interim Conveyed, 12 (b) Interim Conveyed |
| **Channel (lower reach)** | |
| **Type (CAP)** | Riffle-pool |
| **Width (m)** | 4-40 |
| **Gradient (%)** | 0.3-2 |
| **Channel Condition** | Good-Poor. The channel in Reach 1 appears stable and dominated with beaver ponds. The mainstem channel in Reach 2 appears to be overwidened and aggraded as a result of historic placer mining. In addition, the aggradation has de-stabilized the streambanks and increased bank erosion. Bank stability is considered moderate. |
| **Riparian Condition** | Good-Poor. Good riparian cover in lower reaches associated with beaver ponds and pool-riffle sequences. Overwidening of the channel has reduced the function of the riparian vegetation in providing stream shading and allocthonous inputs in the section with the instream vehicle trail. Dominated by willow |
| **Fish Habitat Condition** | Good-Poor. Beaver dams and pool-riffle sections in lower reach providing good rearing, spawning and overwintering habitat. In section with vehicle trail, in-stream rearing habitat limited by channel overwidening, shallow water depth, in-filled pools and number of pools. Off-channel rearing habitat is abundant in lower reaches. |
| **Disturbances** | Placer mining, tailings piles, bank erosion, multiple channels, channel aggradation as evidenced by numerous elevated mid-channel gravel |

Appendix C3. Channel, riparian and fish habitat conditions for Dexter Creek.

| | |
|---|---|
| **Sub-basin** | Dexter Creek |
| **Drainage Area (mi$^2$)** | 3.2 |
| **Land Ownership** | 12 (a) Interim Conveyed |
| **Channel (lower reach)** | |
| **Type (CAP)** | Riffle-pool |
| **Width (m)** | 2-26 |
| **Gradient (%)** | 1-2 |
| **Channel Condition** | Poor. The mainstem channel appears to be overwidened and aggraded upstream of Nome-Kougarouk road crossing as a result of historic placer mining and current gravel extraction. In addition, the aggradation has infilled pools, de-stabilized the streambanks and increased bank erosion. Bank stability is considered moderate. [illegible] |
| **Riparian Condition** | Fair. Overwidening of the channel has reduced the function of the riparian vegetation in providing stream shading and allocthonous inputs. Dominated by willow |
| **Fish Habitat Condition** | Good-Poor. Pool-riffle sections in lower reach providing good rearing, spawning and overwintering habitat. In section with vehicle trail, in-stream rearing habitat limited by channel overwidening, shallow water depth, in-filled pools and number of pools. Alcove and off-channel rearing habitat is good in lower reaches. |
| **Disturbances** | Placer mining, tailings piles, bank erosion, channel aggradation as evidenced by numerous elevated mid-channel gravel bars |

Appendix C4. Channel, riparian and fish habitat conditions for Banner Creek.

| | |
|---|---|
| **Sub-basin** | Banner Creek |
| **Drainage Area (mi$^2$)** | 2.6 |
| **Land Ownership** | 12 (a) Interim Conveyed, 12 (b) Interim Conveyed |
| **Channel (lower reach)** | |
| **Type (CAP)** | Riffle-pool |
| **Width (m)** | 2-6 |
| **Gradient (%)** | 1-2 |
| **Channel Condition** | Poor. Channel appears to be aggraded in lower reach. Diminished surface flow for critical periods of time in all but the top section of the stream where resident Dolly Varden reside (M. Nemeth pers.comm.). Bank stability is considered good. |
| **Riparian Condition** | Good-Fair. Dominated by willow |
| **Fish Habitat Condition** | Poor. In-stream rearing habitat limited by lack of surface flow. Juvenile and possibly adult fish barrier at Nome-Kougarouk Road culvert. |
| **Disturbances** | None evident except perched culvert. |

Appendix C5. Channel, riparian and fish habitat conditions for Basin Creek.

| | |
|---|---|
| **Sub-basin** | Basin Creek |
| **Drainage Area ($mi^2$)** | 3.2 |
| **Land Ownership** | Unknown |
| **Channel (lower reach)** | |
| **Type (CAP)** | Riffle-pool |
| **Width (m)** | 3-25 |
| **Gradient (%)** | 1-3.5 |
| **Channel Condition** | Poor. In the upper reaches, the mainstem channel is overwidened and aggraded as a result of historic placer mining. The mainstem has diverted into a recent borrow pit / pond, abandoning a section of its historic channel. Sediment wedges and bank scour were evident in the mainstem downstream of the Nome-Kougarouk Road. Aggradation has de-stabilized the streambanks and increased bank erosion. Bank stability is considered moderate. |
| **Riparian Condition** | Fair-Poor. Riparian vegetation is providing stream shading and allocthonous inputs in the reach below Nome-Kougarouk Road. No significant or functional riparian vegetation exists upstream of the borrow pit pond. Dominated by willow |
| **Fish Habitat Condition** | Poor. Ongoing placer mining in the upper reaches has reduced the quality of fish habitat upstream to poor. The Basin Creek pond provides good rearing and overwintering habitat. The reach below the Nome-Kougarouk Road is unstable from year to year due to sub-surface flow, pool infilling and channel migration. In-stream rearing habitat during periods of surface flow is limited by long, shallow riffles, and the low number of pools with cover and depth. No off-channel rearing habitat is present. |
| **Disturbances** | Placer mining, tailings piles, stream diversion, bank erosion, channel aggradation as evidenced by dry channel (sub-surface flow) and numerous elevated mid-channel gravel bars |

Appendix C6. Channel, riparian and fish habitat conditions for Sampson Creek.

| | |
|---|---|
| **Sub-basin** | Sampson Creek |
| **Drainage Area ($mi^2$)** | 2.2 |
| **Land Ownership** | Unknown |
| **Channel (lower reach)** | |
| **Type (CAP)** | Riffle-pool |
| **Width (m)** | 8-25 |
| **Gradient (%)** | 4-5 |
| **Channel Condition** | Poor. Channel migration is evident downstream of the Nome-Kougarouk road culvert. In addition, channel migration has de-stabilized the streambanks and increased bank erosion. Bank stability is considered moderate. Sediment wedges and bank scour were evident in the mainstem. |
| **Riparian Condition** | Poor-Good. Dominated by willow |
| **Fish Habitat Condition** | Fair. In-stream summer rearing habitat limited by long riffles and few quality of pools for pool dependent species such as coho. Boulder cover in riffles is moderate to good for riffle tolerate species. Summer rearing is more suitable to juvenile Dolly Varden. Off-channel rearing habitat is moderate to good. Overwintering habitat is poor. |
| **Disturbances** | Bank erosion, channel aggradation as evidenced by numerous elevated mid-channel gravel bars |

Appendix C7. Channel, riparian and fish habitat conditions for Hobson Creek.

| | |
|---|---|
| **Sub-basin** | Hobson Creek |
| **Drainage Area ($mi^2$)** | 5.4 |
| **Land Ownership** | Unknown |
| **Channel (lower reach)** | |
| **Type (CAP)** | Riffle-pool |
| **Width (m)** | 7-14 |
| **Gradient (%)** | 1-2 |
| **Channel Condition** | Good. Channel is not overwidened significantly, except for beaver pond. Bank stability is considered moderate. |
| **Riparian Condition** | Good. Dominated by willow |
| **Fish Habitat Condition** | Fair-Good. In-stream beaver pond and off-channels providing fair quality rearing habitat. Rearing and overwintering habitat, upstream of beaver pond in Reach H1, limited by number of pools. Off-channel rearing habitat is abundant in the lower reach. Spawing potential is poor due to highly compacted substrate. Hobson Creek is a cold stream (temperature range 2 - 6 C) probably due to abundance of |
| **Disturbances** | Several tailing piles within channel in upper reach, downstream channel aggradation as evidenced by numerous elevated mid-channel gravel bars. |

Appendix C8. Channel, riparian and fish habitat conditions for Darling Creek.

| | |
|---|---|
| **Sub-basin** | Darling Creek |
| **Drainage Area ($mi^2$)** | 1.6 |
| **Land Ownership** | Unknown |
| **Channel (lower reach)** | |
| **Type (CAP)** | Riffle-pool |
| **Width (m)** | 3-12 |
| **Gradient (%)** | 2 |
| **Channel Condition** | Poor. The mainstem channel appears to be overwidened and aggraded as a result of historic placer mining. In addition, the aggradation has de-stabilized the streambanks and increased bank erosion. Bank stability is considered moderate. Sediment wedges and bank scour were evident in the mainstem. |
| **Riparian Condition** | Good-Poor. Good riparian cover in lower reaches associated with pool-riffle sequences. Overwidening of the channel has reduced the function of the riparian vegetation in providing stream shading and allocthonous inputs in the section with the instream vehicle trail. Dominated by willow |
| **Fish Habitat Condition** | Fair-Poor. Pool-riffle sections in lower reach providing fair quality rearing and spawning habitat. In section with vehicle trail, in-stream rearing habitat limited by channel overwidening, shallow water depth, in-filled pools and number of pools. Off-channel rearing habitat is good in lower reaches. |
| **Disturbances** | Placer mining, tailings piles, bank erosion, multiple channels, channel aggradation as evidenced by numerous elevated mid-channel gravel bars |

Appendix C9. Channel, riparian and fish habitat conditions for Rocky Mountain Creek.

| | |
|---|---|
| **Sub-basin** | Rocky Mountain Creek |
| **Drainage Area ($mi^2$)** | 1.3 |
| **Land Ownership** | Unknown |
| **Channel (lower reach)** | |
| **Type (CAP)** | Riffle-pool |
| **Width (m)** | 5-30 |
| **Gradient (%)** | 3-5 |
| **Channel Condition** | Fair. The mainstem channel appears overwidened in certain sections. Bank stability is considered moderate. Sediment wedges and bank scour were evident in the mainstem. |
| **Riparian Condition** | Fair-Good. Dominated by willow |
| **Fish Habitat Condition** | Fair. In-stream rearing habitat limited for coho because of relatively high gradient. Pool frequency, number of pools and cover appear to be limited. Some off-channel rearing habitat exists. |
| **Disturbances** | Bank erosion, channel aggradation as evidenced by numerous elevated mid-channel gravel bars |

Appendix C10. Channel, riparian and fish habitat conditions for Christian Creek.

| | |
|---|---|
| **Sub-basin** | Christian Creek |
| **Drainage Area ($mi^2$)** | 2.2 |
| **Land Ownership** | Unknown |
| **Channel (lower reach)** | |
| **Type (CAP)** | Riffle-pool |
| **Width (m)** | 5-20 |
| **Gradient (%)** | 3-7 |
| **Channel Condition** | Fair. The mainstem channel appears overwidened in certain sections. Bank stability is considered moderate. Sediment wedges and bank scour were evident in the mainstem. |
| **Riparian Condition** | Fair. Dominated by willow |
| **Fish Habitat Condition** | Fair. In-stream rearing habitat limited for coho because of relatively high gradient. Pool frequency, number of pools and cover appears limited. Off-channel rearing habitat is abundant. |
| **Disturbances** | Bank erosion, channel aggradation as evidenced by numerous elevated mid-channel gravel bars |

Appendix C11. Channel, riparian and fish habitat conditions for Sulphur Creek.

| | |
|---|---|
| **Sub-basin** | Sulphur Creek |
| **Drainage Area ($mi^2$)** | 4.6 |
| **Land Ownership** | Unknown |
| **Channel (lower reach)** | |
| **Type (CAP)** | Riffle-pool |
| **Width (m)** | 5-9 |
| **Gradient (%)** | 2-3 |
| **Channel Condition** | Fair. The mainstem channel appears to be aggraded. The channel is not overwidened. Bank stability is considered moderate. Multiple channels are apparent on the alluvial fan. |
| **Riparian Condition** | Fair. Dominated by willow |
| **Fish Habitat Condition** | Fair. In-stream rearing habitat limited by channel aggradation which has in-filled and reduced the number of pools. Some off-channel rearing habitat is present |
| **Disturbances** | Bank erosion, multiple channels, channel aggradation as evidenced by numerous elevated mid-channel gravel bars |

Appendix D. Fish habitat assessment data for Nome River and major tributaries.

Table D1. Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$)[5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type[6] | Quality[7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
| Nome Main | N1 | 13627 | G | 1 | 77 | 0.1 | 0.70 | 0.05 | 0.75 | 31.8 | 26.0 | 2002 | 15 | 85 | 0 | 0 | 0 | M | 5 | AR | M | 1702 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 1 | 2 | 7.9 | 2 | SC | P | | DW, MB, MC | N |
| Nome Main | N1 | 13704 | R | 1 | 92 | 0.1 | 0.38 | 0.10 | 0.48 | 62.2 | 53.8 | 4950 | 10 | 90 | 0 | 0 | 0 | L | 5 | AR | H | 4455 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 0 | | | | DW, MB, MC | N |
| Nome Main | N1 | 13796 | G | 1 | 564 | 0.1 | 0.60 | 0.10 | 0.70 | 60.0 | 41.8 | 23575 | 15 | 85 | 0 | 0 | 0 | M | 5 | AR | M | 20039 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 2 | | | | DW, EB, RC | N |
| Nome Main | N1 | 14360 | R | 1 | 34 | 0.1 | 0.36 | 0.10 | 0.46 | 38.0 | 26.0 | 884 | 13 | 85 | 0 | 2 | 0 | L | 5 | AR | H | 751 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 5 | 0 | 2 | 9.0 | 0 | SC | G | | DW, MB, MC | N |
| Nome Main | N1 | 14394 | P | 1 | 210 | 0.1 | 0.75 | 0.10 | 0.85 | 69.0 | 25.0 | 5250 | 15 | 85 | 0 | 0 | 0 | M | 5 | AR | M | 4463 | 1.45 | 0.36 | 1.09 | R | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 3 | 5 | 18.0 | 2 | SC | P | 70 | DW, EB | N |
| Nome Main | N1 | 14604 | R | 1 | 65 | 0.1 | 0.38 | 0.10 | 0.48 | 80.5 | 63.2 | 4108 | 10 | 90 | 0 | 0 | 0 | L | 5 | AR | H | 3697 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 0 | 5.0 | 0 | | | | MB, MC | N |
| Nome Main | N1 | 14669 | G | 1 | 431 | 0.1 | 0.16 | 0.10 | 0.26 | 67.0 | 64.0 | 27584 | 15 | 85 | 0 | 0 | 0 | M | 5 | AR | M | 23446 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 0 | | | | MB, EB | N |
| Nome Main | N1 | 15100 | R | 1 | 239 | 0.1 | 0.28 | 0.10 | 0.38 | 50.0 | 45.0 | 10755 | 10 | 90 | 0 | 0 | 0 | M | 5 | AR | H | 9680 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 0 | | | | MB | N |
| Nome Main | N1 | 15339 | G | 1 | 73 | 0.1 | 0.36 | 0.10 | 0.46 | 61.0 | 60.0 | 4380 | 10 | 90 | 0 | 0 | 0 | L | 5 | AR | H | 3942 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | SC | G | 150 | MB | N |
| Nome Main | N1 | 15412 | R | 1 | 129 | 0.1 | 0.47 | 0.10 | 0.57 | 125.0 | 123.0 | 15867 | 10 | 90 | 0 | 0 | 0 | L | 5 | AR | H | 14280 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | | | | MB | N |
| Nome Main | N1 | 15541 | G | 1 | 376 | 0.1 | 0.87 | 0.10 | 0.97 | 49.8 | 45.3 | 17033 | 25 | 73 | 2 | 0 | 0 | M | 4 | AR | M | 12502 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 5 | 7.0 | 2 | SC | G | 1948 | MB | N |
| Nome Main | N1 | 15917 | P | 1 | 58 | 0.0 | 0.99 | 0.10 | 1.09 | 69.0 | 50.0 | 2900 | 20 | 80 | 0 | 0 | 0 | M | 4 | AR | M | 2320 | 2.10 | 0.47 | 1.63 | R | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 60 | | 60.0 | 2 | SC | G | | EB | N |
| Nome Main | N1 | 15975 | G | 1 | 52 | 0.1 | 1.00 | 0.30 | 1.30 | 85.0 | 45.0 | 2340 | 20 | 80 | 0 | 0 | 0 | M | 4 | AR | M | 1872 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 5 | 7.0 | 2 | | | | EB | N |
| Nome Main | N1 | 16027 | P | 1 | 102 | 0.0 | 1.03 | 0.30 | 1.33 | 85.0 | 45.0 | 4590 | 20 | 80 | 0 | 0 | 0 | M | 4 | AR | M | 3672 | 1.45 | 0.50 | 0.95 | R | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 30 | 5 | 37.0 | 2 | | | | EB | N |
| Nome Main | N1 | 16129 | R | 1 | 158 | 0.1 | 0.52 | 0.2 | 0.72 | 85.0 | 50 | 7900 | 20 | 80 | 0 | 0 | 0 | M | 4 | AR | M | 6320 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 2 | 4.0 | 0 | | | | | N |
| Nome Main | N1 | 16287 | P | 1 | 24 | 0.1 | 1.20 | 0.50 | 1.70 | 70.0 | 60.0 | 1440 | 25 | 75 | 0 | 0 | 0 | M | 4 | AR | L | 1080 | 2.10 | 0.52 | 0.98 | BD | Y | 0 | 0 | 0 | 0 | 50.0 | 0 | 2 | 30 | 5 | 87.0 | 2 | | | | EB | N |
| Nome Main | N1 | 16311 | R | 1 | 116 | 0.1 | 0.58 | 0.50 | 1.08 | 66.0 | 34.0 | 3944 | 25 | 75 | 0 | 0 | 0 | M | 4 | AR | M | 2958 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 5 | 7.0 | 2 | SC | G | 50 | EB | N |
| Nome Main | N1 | 16427 | G | 1 | 160 | 0.1 | 0.72 | 0.50 | 1.22 | 65.0 | 30.0 | 4800 | 25 | 75 | 0 | 0 | 0 | M | 4 | AR | L | 3600 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | SC | G | 80 | EB | N |
| Nome Main | N1 | 16587 | R | 1 | 256 | 0.5 | 0.14 | 0.50 | 0.64 | 55.0 | 39.0 | 9984 | 20 | 78 | 2 | 0 | 0 | M | 5 | AR | M | 7827 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 2 | | | | MB, MC, DW | N |
| Nome Main | N1 | 16843 | G | 1 | 80 | 0.1 | 0.40 | 0.50 | 0.90 | 75.0 | 50.0 | 4000 | 20 | 80 | 0 | 0 | 0 | M | 4 | AR | M | 3200 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 5 | SC | G | 50 | MB, MC, DW | N |
| Nome Main | N1 | 16923 | R | 1 | 20 | 0.5 | 0.33 | 0.15 | 0.48 | 90.0 | 49.0 | 980 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 784 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 0 | 5.0 | 0 | | | | MB, MC, DW | N |
| Nome Main | N1 | 16943 | G | 1 | 110 | 0.1 | 0.31 | 0.15 | 0.46 | 90.0 | 49.0 | 5390 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 4312 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 5 | | | | MB, MC, | N |
| Nome Main | N1 | 17053 | R | 1 | 60 | 0.4 | 0.30 | 0.15 | 0.45 | 90.0 | 49.0 | 2940 | 10 | 90 | 0 | 0 | 0 | L | 5 | AR | H | 2646 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 2 | | | | MB, MC, | N |
| Nome Main | N1 | 17113 | P | 1 | 430 | 0.0 | 0.93 | 0.15 | 1.08 | 130.0 | 100.0 | 43000 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 34400 | 1.35 | 0.30 | 1.05 | BD | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 28 | 0 | 27.9 | 0 | | | | BD | N |
| Nome Main | N1 | 17543 | G | 1 | 178 | 0.1 | 0.57 | 0.15 | 0.72 | 20.0 | 15.4 | 2741 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 2193 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 5 | SC | G | | DW, EB | N |
| Nome Main | N1 | 17721 | R | 1 | 82 | 0.4 | 0.15 | 0.15 | 0.30 | 40.0 | 32.0 | 2624 | 13 | 85 | 2 | 0 | 0 | L | 5 | AR | H | 2241 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 5 | PD | P | | DW, MC, MB | N |
| Nome Main | N1 | 17803 | G | 1 | 132 | 0.1 | 0.64 | 0.30 | 0.94 | 35.0 | 26.0 | 3432 | 20 | 80 | 0 | 0 | 0 | M | 4 | AR | M | 2746 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 2 | 4.0 | 2 | | | | DW, EB | N |
| Nome Main | N1 | 17935 | R | 1 | 143 | 0.3 | 0.27 | 0.30 | 0.57 | 39.0 | 38.0 | 5434 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 4402 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 2 | 4.0 | 2 | SC | G | | DW, EB | N |
| Nome Main | N1 | 18078 | G | 1 | 105 | 0.1 | 0.33 | 0.30 | 0.63 | 45.0 | 44.0 | 4620 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 3696 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 5 | | | | | N |
| Nome Main | N1 | 18183 | R | 1 | 70 | 0.4 | 0.27 | 0.20 | 0.47 | 51.0 | 42.0 | 2940 | 10 | 90 | 0 | 0 | 0 | L | 5 | AR | H | 2646 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 2 | 4.0 | 0 | | | | DW, EB | N |
| Nome Main | N1 | 18253 | G | 1 | 165 | 0.1 | 0.40 | 0.20 | 0.60 | 60.0 | 25.0 | 4125 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 3300 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 0 | SC | G | | DW, EB,MB, MC | N |
| Nome Main | N1 | 18418 | R | 1 | 35 | 0.3 | 0.21 | 0.20 | 0.41 | 80.0 | 46.0 | 1610 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 1288 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 2 | 4.0 | 0 | SC | G | | DW, EB,MB, MC | N |
| Nome Main | N1 | 18453 | G | 1 | 205 | 0.1 | 0.21 | 0.15 | 0.36 | 40.0 | 36.0 | 7380 | 20 | 78 | 2 | 0 | 0 | M | 5 | AR | M | 5786 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 2 | | | | DW, EB,MB, MC | N |
| Nome Main | N1 | 18658 | R | 1 | 36 | 0.3 | 0.23 | 0.15 | 0.38 | 40.0 | 31.0 | 1116 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 893 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 0 | 5.0 | 2 | SC | G | >180 | DW | N |
| Nome Main | N1 | 18694 | G | 1 | 82 | 0.1 | 0.36 | 0.15 | 0.51 | 36.0 | 24.0 | 1968 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 1476 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 20 | DW | N |
| Nome Main | N1 | 18776 | R | 1 | 62 | 0.1 | 0.30 | 0.15 | 0.45 | 23.0 | 22.3 | 1383 | 10 | 90 | 0 | 0 | 0 | L | 5 | AR | H | 1244 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 10 | SC | G | 200 | DW, EB,MB, MC | N |
| Nome Main | N1 | 18838 | G | 1 | 373 | 0.1 | 0.35 | 0.15 | 0.50 | 45.0 | 41.0 | 15293 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 12234 | 1.30 | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0.1 | 5 | 10.1 | 5 | | | | | N |
| Nome Main | N1 | 19211 | G | 1 | 86 | 0.1 | 0.59 | 0.20 | 0.79 | 96.8 | 13.7 | 1178 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 943 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 5 | | | | DW, EB,MB, MC | N |
| Nome Main | N1 | 19297 | R | 1 | 68 | 0.3 | 0.30 | 0.10 | 0.40 | 96.8 | 72.8 | 4950 | 20 | 78 | 2 | 0 | 0 | M | 5 | AR | M | 3881 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 2 | | | | DW, MB, MC | N |
| Nome Main | N1 | 19365 | G | 1 | 278 | 0.1 | 0.43 | 0.15 | 0.58 | 34.0 | 32.0 | 8896 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 6672 | 1.43 | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 2 | 2 | 0.0 | 0 | SC | G | 70 | DW, EB | N |
| Nome Main | N1 | 19643 | R | 1 | 94 | 0.4 | 0.31 | 0.25 | 0.56 | 90.0 | 30.0 | 2820 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 2397 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 5 | 0 | 5 | 12.0 | 5 | | | | DW, EB | N |
| Nome Main | N1 | 19737 | G | 1 | 68 | 0.1 | 0.00 | 0.10 | 0.10 | 85.0 | 21.8 | 1482 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 1112 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 2 | 0 | 5 | 12.0 | 2 | | | | DW, EB | N |
| Nome Main | N1 | 19805 | R | 1 | 172 | 0.3 | 0.31 | 0.10 | 0.41 | 105.0 | 23.3 | 4008 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 3206 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N1 | 19977 | G | 1 | 243 | 0.1 | 0.33 | 0.10 | 0.43 | 45.0 | 43.0 | 10449 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 7837 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | SC | G | | DW, EB | N |
| Nome Main | N1 | 20220 | R | 1 | 72 | 0.3 | 0.22 | 0.10 | 0.32 | 52.0 | 40.0 | 2880 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 2402 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 2 | 4.0 | 0 | | | | DW, EB, RC | N |
| Nome Main | N1 | 20292 | G | 1 | 133 | 0.1 | 0.43 | 0.10 | 0.53 | 60.0 | 28.0 | 3724 | 25 | 73 | 2 | 0 | 0 | M | 5 | AR | L | 2733 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |

Table D1.  Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$)[5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type[6] | Quality[7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
| Nome Main | N1 | 20425 | R | 1 | 80 | 0.4 | 0.20 | 0.25 | 0.45 | 88.0 | 44.6 | 3568 | 15 | 81 | 2 | 2 | 0 | L | 5 | AR | H | 2904 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 0 | SC | G | | DW,EB,MB,MC,RC | N |
| Nome Main | N1 | 20505 | G | 1 | 162 | 0.1 | 0.55 | 0.25 | 0.80 | 28.0 | 26.2 | 4244 | 25 | 71 | 2 | 2 | 0 | M | 5 | AR | M | 3031 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 2 | 0 | 2 | 6.0 | 0 | SC | G | | DW, EB | N |
| Nome Main | N1 | 20667 | R | 1 | 53 | 0.3 | 0.18 | 0.20 | 0.38 | 50.0 | 40.0 | 2120 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 1802 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | | | N |
| Nome Main | N1 | 20720 | G | 1 | 113 | 0.1 | 0.49 | 0.20 | 0.69 | 39.0 | 27.4 | 3096 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 2632 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N1 | 20833 | R | 1 | 24 | 0.4 | 0.27 | 0.2 | 0.47 | 63.0 | 33.0 | 792 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 673 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | | | | DW, EB | N |
| Nome Main | N1 | 20857 | G | 1 | 196 | 0.1 | 0.62 | 0.25 | 0.87 | 40.0 | 32.0 | 6272 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 5231 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | | | | DW, EB | N |
| Nome Main | N2 | 21053 | R | 1 | 95 | 0.6 | 0.28 | 0.2 | 0.48 | 74.0 | 70.0 | 6650 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 5546 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | MB, DW | N |
| Nome Main | N2 | 21148 | G | 1 | 76 | 0.1 | 0.60 | 0.35 | 0.95 | 80.0 | 32.0 | 2432 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 2067 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | MB | N |
| Nome Main | N2 | 21224 | R | 1 | 76 | 0.4 | 0.18 | 0.35 | 0.53 | 62.0 | 60.0 | 4560 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 3876 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | | | | | N |
| Nome Main | N2 | 21300 | G | 1 | 258 | 0.1 | 0.62 | 0.35 | 0.97 | 45.0 | 43.0 | 11094 | 15 | 83 | 2 | 2 | 0 | L | 5 | AR | H | 9252 | 0.90 | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 2 | 4.0 | 2 | | | | | N |
| Nome Main | N2 | 21558 | R | 1 | 56 | 0.2 | 0.42 | 0.45 | 0.87 | 47.0 | 40.0 | 2240 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 1868 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | SC | G | | | N |
| Nome Main | N2 | 21614 | G | 1 | 64 | 0.1 | 0.55 | 0.15 | 0.70 | 77.0 | 32.0 | 2048 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 1741 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | SC | G | 10 | MB, EB | N |
| Nome Main | N2 | 21678 | R | 1 | 48 | 0.9 | 0.43 | 0.25 | 0.68 | 78.0 | 78.0 | 3744 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 3122 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | | | | MB, DW | N |
| Nome Main | N2 | 21726 | G | 1 | 74 | 0.1 | 0.47 | 0.35 | 0.82 | 78.0 | 37.0 | 2738 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 2327 | 0.80 | 0.40 | 0.40 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 2 | 4.0 | 2 | SC | G | | DW | N |
| Nome Main | N2 | 21800 | R | 1 | 161 | 0.1 | 0.40 | 0.32 | 0.72 | 80.0 | 42.0 | 6762 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 5640 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | SC | G | | DW | N |
| Nome Main | N2 | 21961 | P | 1 | 98 | 0.0 | 0.67 | 0.5 | 1.17 | 43.0 | 28.0 | 2744 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 2332 | 0.80 | 0.40 | 0.40 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | | | | DW, MB, MC | N |
| Nome Main | N2 | 22059 | R | 1 | 166 | 0.7 | 0.30 | 0.35 | 0.65 | 82.0 | 51.0 | 8466 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 7196 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | | | | MB | N |
| Nome Main | N2 | 22225 | P | 1 | 83 | 0.0 | 0.80 | 0.45 | 1.25 | 82.0 | 22.0 | 1826 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 1552 | 0.80 | 0.30 | 0.50 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | SC | G | | MB | N |
| Nome Main | N2 | 22308 | G | 1 | 60 | 0.1 | 0.46 | 0.45 | 0.91 | 82.0 | 36.0 | 2160 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 1836 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | MB | N |
| Nome Main | N2 | 22368 | R | 1 | 145 | 0.6 | 0.35 | 0.45 | 0.80 | 82.0 | 50.0 | 7250 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 6163 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | | N |
| Nome Main | N2 | 22513 | G | 1 | 200 | 0.1 | 0.53 | 0.95 | 1.48 | 40.0 | 29.0 | 5800 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 4930 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | SC | P | 350 | EB | N |
| Nome Main | N2 | 22713 | R | 1 | 40 | 0.4 | 0.29 | 0.95 | 1.24 | 30.0 | 27.0 | 1080 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 810 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 2 | 12.0 | 2 | SC | P | 60 | MB, EB | N |
| Nome Main | N2 | 22753 | P | 1 | 233 | 0.0 | 0.58 | 1.1 | 1.68 | 35.0 | 19.9 | 4637 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 3478 | 1.00 | 0.29 | 0.71 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 1 | 50 | 50.9 | 0 | SC | P | 30 | EB, DW | N |
| Nome Main | N2 | 22986 | R | 1 | 104 | 0.5 | 0.43 | 0.65 | 1.08 | 93.0 | 36.0 | 3744 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 2808 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 20 | 20.0 | 2 | SC | P | 20 | DW, MC, MB, EB | N |
| Nome Main | N2 | 23090 | G | 1 | 31 | 0.1 | 0.56 | 0.7 | 1.26 | 22.3 | 19.0 | 589 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 491 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | | EB | N |
| Nome Main | N2 | 23121 | R | 1 | 125 | 0.4 | 0.37 | 0.2 | 0.57 | 28.0 | 16.3 | 2038 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 1732 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 50 | 60.0 | 0 | | | | MB, DW | N |
| Nome Main | N2 | 23246 | G | 1 | 200 | 0.1 | 0.48 | 0.25 | 0.73 | 40.0 | 33.0 | 6600 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 5610 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 30 | 0 | 20 | 50.0 | 0 | | | | | N |
| Nome Main | N2 | 23446 | R | 1 | 82 | 0.4 | 0.33 | 0.25 | 0.58 | 33.0 | 30.1 | 2468 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 2098 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | PD | G | | DW | N |
| Nome Main | N2 | 23528 | G | 1 | 94 | 0.1 | 0.49 | 0.95 | 1.44 | 40.0 | 23.7 | 2228 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 1671 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 0 | SC | G | 20 | EB, DW | N |
| Nome Main | N2 | 23622 | R | 1 | 45 | 0.3 | 0.23 | 0.7 | 0.93 | 41.0 | 33 | 1485 | 15 | 85 | 20 | 0 | 0 | L | 5 | AR | H | 1322 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 100 | EB, DW | N |
| Nome Main | N2 | 23667 | P | 1 | 246 | 0.0 | 0.53 | 0.77 | 1.30 | 37.0 | 19.0 | 4674 | 25 | 75 | 0 | 0 | 0 | L | 5 | AR | M | 3506 | 0.85 | 0.23 | 0.62 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 10 | 10.0 | 0 | | | | EB, DW | N |
| Nome Main | N2 | 23913 | R | 1 | 56 | 0.4 | 0.39 | 0.7 | 1.09 | 44.0 | 40.0 | 2240 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 1904 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | SC | G | 60 | DW, MC, MB, EB | N |
| Nome Main | N2 | 23969 | G | 1 | 51 | 0.1 | 0.53 | 0.45 | 0.98 | 39.0 | 24.4 | 1244 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 1058 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | EB, DW | N |
| Nome Main | N2 | 24020 | R | 1 | 162 | 0.4 | 0.41 | 0.45 | 0.86 | 62.0 | 38.0 | 6156 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 5134 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | SC | G | 30 | MB, DW, EB | N |
| Nome Main | N2 | 24182 | G | 1 | 257 | 0.1 | 0.47 | 0.45 | 0.92 | 36.0 | 28.0 | 7196 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 6117 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 2 | 12.0 | 0 | SC | P | 30 | | N |
| Nome Main | N2 | 24439 | R | 1 | 51 | 0.4 | 0.43 | 0.45 | 0.88 | 50.0 | 27.0 | 1377 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 1102 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | | | | MB, DW | N |
| Nome Main | N2 | 24490 | P | 1 | 123 | 0.0 | 0.65 | 0.65 | 1.30 | 71.0 | 37.0 | 4551 | 25 | 75 | 0 | 0 | 0 | L | 5 | AR | M | 3413 | 0.85 | 0.43 | 0.42 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | MB, DW, EB | N |
| Nome Main | N2 | 24613 | R | 1 | 22 | 0.5 | 0.28 | 0.7 | 0.98 | 71.0 | 35.0 | 770 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 655 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | MB, DW | N |
| Nome Main | N3 | 24635 | P | 1 | 134 | 0.0 | 1.11 | | 1.11 | 91.0 | 19.0 | 2546 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 2037 | 1.43 | 0.28 | 1.15 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 60 | 0 | 62.0 | 0 | SC | G | 100 | DW, EB | N |
| Nome Main | N3 | 24769 | R | 1 | 52 | 0.3 | 0.31 | | 0.31 | 52.0 | 40.0 | 2080 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 1768 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 2 | 4.0 | 0 | SC | G | 45 | DW, MC, MB, EB | N |
| Nome Main | N3 | 24821 | G | 1 | 126 | 0.1 | 0.53 | 0.35 | 0.88 | 145.0 | 19.6 | 2470 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 1976 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 30 | 32.0 | 10 | SC | G | 400+ | DW, EB | N |
| Nome Main | N3 | 24947 | R | 1 | 64 | 0.3 | 0.29 | 0.1 | 0.39 | 50.0 | 14.6 | 934 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 748 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 50 | 52.0 | 5 | SC | G | 100+ | DW, EB | N |
| Nome Main | N3 | 25011 | P | 1 | 102 | 0.0 | 0.91 | 0.6 | 1.51 | 41.0 | 18.0 | 1836 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 1561 | 1.15 | 0.29 | 0.86 | | Y | 0 | 0 | 0 | 0 | 0.0 | 0 | 50 | 0 | 10 | 60.0 | 5 | | | | DW, EB | N |
| Nome Main | N3 | 25113 | R | 1 | 20 | 0.4 | 0.30 | 0.6 | 0.90 | 45.0 | 40.0 | 800 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 648 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 5 | 5.0 | 0 | | | | DW, EB | N |
| Nome Main | N3 | 25133 | G | 1 | 167 | 0.1 | 0.48 | 0.2 | 0.68 | 64.0 | 19.1 | 3190 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 2711 | 1.10 | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 7 | 20 | 31.9 | 10 | | | | DW, EB | N |
| Nome Main | N3 | 25300 | R | 1 | 59 | 0.3 | 0.33 | 0.2 | 0.53 | 64.0 | 48.0 | 2832 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 2407 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 16.9 | 0 | SC | G | 100+ | MB | N |

Table D1. Detailed habitat descriptions for selected reaches in Nome River watershed.

| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bank Height (m): Bankfull height (m) | Bank Height (m): Bankfull depth (m) | Mean Width (m): Bankfull width (m) | Mean Width (m): Wetted width (m) | Rearing Habitat Area (m²)[5] | Percent Bed Material (range in mm): <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Spawning Gravel: Type[6] | Quality[7] | Amount (m²) | Pools Only: Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Functional LWD Tally: Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Cover: Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Off-channel Habitat: Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N3 | 25359 | P | 1 | 276 | 0.0 | 0.88 | 0.5 | 1.38 | 26.1 | 22.5 | 6210 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 4968 | 1.60 | 0.33 | 1.27 | | Y | 0 | 0 | 0 | 0 | 0.0 | 0 | 20 | 13 | 10 | 42.9 | 5 | | | | DW, EB | N |
| Nome Main | N3 | 25635 | R | 1 | 31 | 0.3 | 0.36 | 0.35 | 0.71 | 35.0 | 14.8 | 459 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 372 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 0 | | | | DW, EB | N |
| Nome Main | N3 | 25666 | P | 1 | 49 | 0.0 | 1.57 | 0.5 | 2.07 | 40.0 | 15.2 | 745 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | L | 559 | 3.05 | 0.38 | 2.67 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 55 | 0 | 54.8 | 0 | | | | DW, EB | N |
| Nome Main | N3 | 25715 | R | 1 | 8 | 0.4 | 0.30 | 0.23 | 0.53 | 40.0 | 23.0 | 184 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 147 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N3 | 25723 | G | 1 | 454 | 0.1 | 0.66 | 0.25 | 0.91 | 106.0 | 16.0 | 7264 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | L | 5448 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 30 | 30.0 | 0 | | | | DW, EB | N |
| Nome Main | N3 | 26177 | R | 1 | 44 | 0.3 | 0.41 | 0.3 | 0.71 | 40.0 | 12.2 | 537 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 456 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 0 | 5.0 | 0 | | | | DW, EB | N |
| Nome Main | N3 | 26221 | P | 1 | 52 | 0.0 | 1.39 | 0.2 | 1.59 | 40.0 | 10.0 | 520 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 390 | 3.00 | 0.41 | 2.59 | | Y | 0 | 0 | 0 | 0 | 0.0 | 0 | 50 | 46 | 2 | 98.2 | 2 | | | | DW, EB | N |
| Nome Main | N3 | 26273 | R | 1 | 62 | 0.3 | 0.34 | 0.2 | 0.54 | 27.0 | 24.0 | 1488 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 1190 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 20 | 0 | 0 | 22.0 | 2 | PD | P | 20 | DW, EB | N |
| Nome Main | N3 | 26335 | P | 1 | 85 | 0.0 | 0.92 | 0.4 | 1.32 | 55.0 | 8.6 | 731 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 548 | 3.00 | 0.34 | 2.66 | | Y | 0 | 0 | 0 | 0 | 2.0 | 0 | 30 | 34 | 20 | 86.0 | 2 | | | | DW, EB | N |
| Nome Main | N3 | 26420 | R | 1 | 18 | 0.3 | 0.47 | 0.3 | 0.77 | 50.0 | 27.0 | 486 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 389 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | | 2 | 4.0 | 0 | WL | P | 500+ | DW, EB | N |
| Nome Main | N3 | 26438 | P | 1 | 28 | 0.0 | 0.73 | 0.5 | 1.23 | 49.0 | 27.0 | 756 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 643 | 1.10 | 0.47 | 0.63 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 5 | 0 | 6.8 | 0 | | | | DW | N |
| Nome Main | N3 | 26466 | R | 1 | 115 | 0.4 | 0.48 | 0.5 | 0.98 | 64.0 | 29.0 | 3335 | 10 | 80 | 10 | 0 | 0 | L | 13 | AR | H | 2735 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 115 | DW, MB | N |
| Nome Main | N3 | 26581 | G | 1 | 20 | 0.1 | 0.57 | 0.5 | 1.07 | 51.0 | 24.0 | 480 | 15 | 75 | 10 | 0 | 0 | L | 13 | AR | H | 394 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 20 | DW, MB | N |
| Nome Main | N3 | 26601 | R | 1 | 172 | 0.3 | 0.37 | 0.5 | 0.87 | 56.0 | 23.5 | 4042 | 10 | 88 | 2 | 0 | 0 | L | 5 | AR | H | 3112 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 170 | DW, MB | N |
| Nome Main | N3 | 26773 | G | 1 | 100 | 0.1 | 0.60 | 0.4 | 1.00 | 65.0 | 11.3 | 1130 | 20 | 75 | 5 | 0 | 0 | M | 5 | AR | M | 859 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 20 | 0 | 2 | 22.0 | 2 | | | | DW, EB | N |
| Nome Main | N3 | 26873 | R | 1 | 46 | 0.4 | 0.59 | 0.3 | 0.89 | 65.0 | 19.4 | 892 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 759 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 2 | SC | P | 50 | DW, EB | N |
| Nome Main | N3 | 26919 | P | 1 | 97 | 0.0 | 0.95 | 0.3 | 1.25 | 34.0 | 19.0 | 1843 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | L | 1290 | 1.20 | 0.58 | 0.62 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 2 | 5 | 11.7 | 0 | SC | P | 20 | DW, EB | N |
| Nome Main | N3 | 27016 | R | 1 | 13 | 0.4 | 0.37 | 0.2 | 0.57 | 42.0 | 24.0 | 312 | 10 | 85 | 5 | 0 | 0 | L | 5 | AR | H | 268 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | | N |
| Nome Main | N3 | 27029 | P | 1 | 137 | 0.0 | 0.88 | 0.2 | 1.08 | 75.0 | 24.0 | 3288 | 30 | 70 | 0 | 0 | 0 | H | 5 | AR | L | 2302 | 1.60 | 0.37 | 1.23 | | Y | 0 | 0 | 0 | 0 | 0.0 | 0 | 20 | 4 | 2 | 25.6 | 2 | | | | DW, EB | N |
| Nome Main | N3 | 27166 | R | 1 | 85 | 0.4 | 0.43 | 0.35 | 0.78 | 34.0 | 29.1 | 2474 | 10 | 88 | 2 | 0 | 0 | L | 5 | AR | H | 2187 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 0 | 5.0 | 10 | SC | G | 30 | DW, EB | N |
| Nome Main | N3 | 27251 | G | 1 | 206 | 0.1 | 0.33 | 0.2 | 0.53 | 40.0 | 31.5 | 6489 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 5191 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 30 | 0 | 5 | 35.0 | 5 | SC | G | 100 | DW, EB | N |
| Nome Main | N3 | 27457 | R | 1 | 160 | 0.3 | 0.34 | 0.15 | 0.49 | 45.0 | 23.0 | 3680 | 10 | 88 | 2 | 0 | 0 | L | 5 | AR | H | 3253 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 30 | 0 | 2 | 32.0 | 0 | | | | DW, EB, MB | N |
| Nome Main | N3 | 27617 | G | 1 | 291 | 0.1 | 0.43 | 0.2 | 0.63 | 36.0 | 24.3 | 7071 | 30 | 66 | 2 | 2 | 0 | M | 5 | AR | L | 4695 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 20 | 0 | 2 | 24.0 | 2 | | | | MB, EB, DW | N |
| Nome Main | N3 | 27908 | R | 1 | 81 | 0.4 | 0.38 | 0.2 | 0.58 | 40.0 | 21.9 | 1774 | 20 | 76 | 2 | 2 | 0 | M | 5 | AR | M | 1355 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 20 | 0 | 2 | 24.0 | 0 | | | | DW | N |
| Nome Main | N3 | 27989 | G | 1 | 173 | 0.1 | 0.58 | 0.2 | 0.78 | 35.0 | 29.0 | 5017 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | L | 3512 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 2 | | | | DW, EB | N |
| Nome Main | N3 | 28162 | R | 1 | 102 | 0.4 | 0.17 | 0.25 | 0.42 | 28.4 | 23.5 | 2397 | 10 | 83 | 5 | 2 | 0 | L | 5 | AR | H | 2013 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 10 | 0 | 5 | 17.0 | 2 | | | | DW, EB | N |
| Nome Main | N3 | 28264 | G | 1 | 69 | 0.1 | 0.30 | 0.3 | 0.60 | 38.0 | 26.7 | 1842 | 15 | 73 | 10 | 2 | 0 | L | 13 | AR | H | 1382 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 2 | 4.0 | 0 | | | | DW, EB | N |
| Nome Main | N3 | 28333 | R | 1 | 40 | 0.4 | 0.26 | 0.4 | 0.66 | 36.0 | 31.6 | 1264 | 10 | 80 | 10 | 0 | 0 | L | 13 | AR | H | 1036 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW | N |
| Nome Main | N3 | 28373 | G | 1 | 80 | 0.1 | 0.30 | 0.35 | 0.65 | 33.0 | 32.2 | 2576 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 2190 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 5 | | | | DW, EB | N |
| Nome Main | N3 | 28453 | R | 1 | 30 | 0.3 | 0.33 | 0.5 | 0.83 | 53.0 | 43.0 | 1290 | 10 | 80 | 10 | 0 | 0 | L | 13 | AR | H | 1058 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 6 | 2 | 13.2 | 2 | SC | G | 78 | MB, EB, DW | N |
| Nome Main | N3 | 28483 | P | 1 | 45 | 0.0 | 1.42 | 0.5 | 1.92 | 48.5 | 14.1 | 635 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 508 | 2.50 | 0.33 | 2.17 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 0 | 4 | 10 | 18.8 | 0 | SC | P | 40 | DW, EB | N |
| Nome Main | N3 | 28528 | R | 1 | 23 | 0.3 | 0.26 | 0.5 | 0.76 | 60.0 | 24.1 | 554 | 10 | 85 | 5 | 0 | 0 | L | 5 | AR | H | 477 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 5 | 7.0 | 5 | SC | P | 20 | DW, EB | N |
| Nome Main | N3 | 28551 | G | 1 | 42 | 0.1 | 0.38 | 0.2 | 0.58 | 35.0 | 19.2 | 806 | 10 | 85 | 5 | 0 | 0 | L | 5 | AR | H | 694 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N3 | 28593 | R | 1 | 35 | 0.4 | 0.23 | 0.25 | 0.48 | 36.0 | 28.6 | 1001 | 10 | 80 | 10 | 0 | 0 | L | 13 | AR | H | 821 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N3 | 28628 | P | 1 | 60 | 0.0 | 0.93 | 0.25 | 1.18 | 50.0 | 13.6 | 816 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | L | 571 | 1.35 | 0.23 | 1.12 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 5 | 2 | 6.9 | 0 | | | | DW, EB | N |
| Nome Main | N3 | 28688 | R | 1 | 38 | 0.4 | 0.27 | 0.15 | 0.42 | 50.0 | 25.5 | 969 | 10 | 80 | 10 | 0 | 0 | L | 13 | AR | H | 795 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N3 | 28726 | P | 1 | 24 | 0.0 | 0.73 | 0.25 | 0.98 | 50.0 | 14.1 | 338 | 30 | 70 | 10 | 0 | 0 | M | 13 | AR | L | 244 | 1.10 | 0.27 | 0.83 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 0 | 9 | 5 | 18.9 | 0 | SC | G | 5 | MC, MB, DW, EB | N |
| Nome Main | N3 | 28750 | R | 1 | 157 | 0.4 | 0.30 | 0.4 | 0.70 | 109.0 | 16.0 | 2512 | 10 | 80 | 10 | 0 | 0 | L | 13 | AR | H | 2060 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 0 | 0 | 10 | 15.0 | 0 | SC | G | 10 | DW, EB | N |
| Nome Main | N3 | 28907 | P | 1 | 68 | 0.0 | 0.85 | 0.14 | 0.99 | 80.0 | 12.9 | 877 | 20 | 70 | 10 | 0 | 0 | M | 13 | AR | M | 632 | 1.40 | 0.35 | 1.05 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 2 | 2 | 3.7 | 0 | | | | DW, EB | N |
| Nome Main | N3 | 28975 | R | 1 | 64 | 0.3 | 0.42 | 0.1 | 0.52 | 67.0 | 33.0 | 2112 | 10 | 80 | 10 | 0 | 0 | L | 13 | AR | H | 1732 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 10 | 10.0 | 0 | SC | G | 40 | MC, MB, DW, EB | N |
| Nome Main | N3 | 29039 | P | 1 | 148 | 0.0 | 0.62 | 0.5 | 1.12 | 64.0 | 34.0 | 5032 | 10 | 80 | 10 | 0 | 0 | L | 13 | AR | H | 4126 | 1.40 | 0.42 | 0.98 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 10 | 2 | 14.0 | 2 | | | | DW, MB | N |
| Nome Main | N3 | 29187 | R | 1 | 24 | 0.3 | 0.17 | 0.5 | 0.67 | 40.0 | 38.5 | 924 | 35 | 55 | 10 | 0 | 0 | M | 13 | AR | L | 527 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, MB | N |
| Nome Main | N3 | 29211 | P | 1 | 152 | 0.0 | 0.83 | 0.7 | 1.53 | 39.0 | 31.0 | 4712 | 40 | 58 | 2 | 0 | 0 | M | 5 | AR | L | 2752 | 1.50 | 0.17 | 1.33 | O | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 20 | 0 | 20.0 | 0 | AV | G | 50 | EB | N |
| Nome Main | N4 | 29363 | R | 1 | 90 | 0.4 | 0.30 | 0.7 | 1.00 | 62.0 | 31.0 | 2790 | 15 | 75 | 10 | 0 | 0 | L | 13 | AR | H | 2148 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 0 | 0 | 2 | 7.0 | 0 | | | | EB | N |
| Nome Main | N4 | 29453 | G | 1 | 124 | 0.5 | 0.50 | 0.5 | 1.00 | 39.0 | 21.0 | 2604 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 2109 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, MB | N |
| Nome Main | N4 | 29577 | R | 1 | 69 | 0.8 | 0.45 | 0.5 | 0.95 | 62.0 | 21.0 | 1449 | 15 | 73 | 10 | 2 | 0 | L | 12 | AR | H | 1087 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 0 | 0 | 0 | 4.0 | 2 | | | | DW, MB | N |

Table D1. Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$)[5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type[6] | Quality[7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
| Nome Main | N4 | 29646 | P | 1 | 201 | 0.0 | 0.87 | 0.4 | 1.27 | 51.0 | 28.0 | 5628 | 15 | 72 | 8 | 5 | 0 | L | 12 | AR | H | 4142 | 1.40 | 0.45 | 0.95 | O | | 0 | 0 | 0 | 0 | 2.0 | 5 | 0 | 34 | 2 | 43.0 | 2 | | | | EB | N |
| Nome Main | N4 | 29847 | R | 1 | 61 | 0.8 | 0.20 | 0.4 | 0.60 | 34.0 | 29.0 | 1769 | 15 | 83 | 2 | 0 | 0 | L | 3 | AR | H | 1475 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 217 | MB, WG | N |
| Nome Main | N4 | 29908 | G | 1 | 210 | 0.1 | 0.40 | 0.35 | 0.75 | 34.0 | 30.0 | 6300 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | L | 4410 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 50 | 50.0 | 0 | | | | | N |
| Nome Main | N4 | 30118 | P | 1 | 173 | 0.0 | 1.47 | 0.5 | 1.97 | 53.0 | 15.0 | 2595 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | L | 1817 | 1.80 | 0.30 | 1.50 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 2 | 60 | 2 | 69.0 | 2 | SC | P | | MB, DW | N |
| Nome Main | N4 | 30291 | R | 1 | 102 | 0.1 | 0.40 | 0.3 | 0.70 | 94.0 | 16.0 | 1632 | 20 | 70 | 5 | 0 | 0 | M | 5 | AR | M | 1159 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 0 | SC | G | | MB, DW | N |
| Nome Main | N4 | 30393 | G | 1 | 25 | 0.2 | 0.67 | 0.1 | 0.77 | 65.0 | 12.5 | 313 | 35 | 55 | 10 | 0 | 0 | M | 13 | AR | L | 178 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 2 | | | | MB, DW | N |
| Nome Main | N4 | 30418 | R | 1 | 24 | 0.4 | 0.28 | 0.1 | 0.38 | 51.0 | 44.4 | 1066 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 889 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 0 | | | | MB, DW | N |
| Nome Main | N4 | 30442 | G | 1 | 219 | 0.2 | 0.54 | 0.35 | 0.89 | 25.8 | 22.6 | 4949 | 30 | 70 | 0 | 0 | 0 | H | 5 | AR | L | 3465 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 0 | | | | EB, DW | N |
| Nome Main | N4 | 30661 | R | 1 | 85 | 0.4 | 0.35 | 0.1 | 0.45 | 39.0 | 28.0 | 2380 | 15 | 70 | 5 | 5 | 0 | L | 12 | AR | H | 1690 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 5 | 0 | 2 | 12.0 | 2 | SC | G | 200+ | EB, DW | N |
| Nome Main | N4 | 30746 | G | 1 | 88 | 0.2 | 0.43 | 0.1 | 0.53 | 28.0 | 19.4 | 1707 | 30 | 68 | 0 | 2 | 0 | H | 5 | AR | L | 1161 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 5 | 0 | 2 | 9.0 | 2 | | | | EB, DW | N |
| Nome Main | N4 | 30834 | R | 1 | 90 | 0.4 | 0.30 | 0.1 | 0.40 | 42.0 | 28.0 | 2520 | 15 | 75 | 5 | 0 | 0 | L | 6 | AR | H | 1915 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | SC | G | 70 | EB, DW | N |
| Nome Main | N4 | 30924 | P | 1 | 335 | 0.2 | 0.68 | 0.3 | 0.98 | 66.9 | 17.4 | 5829 | 30 | 70 | 0 | 0 | 0 | H | 5 | AR | L | 4080 | 1.44 | 0.35 | 1.09 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 5 | 1 | 5 | 12.5 | 5 | | | | MB, DW | N |
| Nome Main | N4 | 31259 | R | 1 | 74 | 0.4 | 0.49 | 0.35 | 0.84 | 47.0 | 17.0 | 1258 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 1019 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | MC, MB, EB, DW | N |
| Nome Main | N4 | 31333 | P | 1 | 35 | 0.0 | 0.68 | 0.35 | 1.03 | 48.0 | 15.0 | 525 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 425 | 1.35 | 0.49 | 0.86 | | | 0 | 0 | 0 | 0 | 15.0 | 0 | 5 | 6 | 10 | 35.7 | 0 | | | | | N |
| Nome Main | N4 | 31368 | R | 1 | 43 | 0.4 | 0.24 | 0.4 | 0.64 | 48.0 | 25.0 | 1075 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 914 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | MC, MB, EB, DW | N |
| Nome Main | N4 | 31411 | G | 1 | 32 | 0.2 | 0.43 | 0.2 | 0.63 | 48.0 | 10.5 | 336 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 280 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | MC, MB, EB, DW | N |
| Nome Main | N4 | 31443 | R | 1 | 48 | 0.5 | 0.24 | 0.1 | 0.34 | 49.0 | 25.0 | 1200 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 1020 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 5 | 0 | 0 | 7.0 | 0 | SC | G | 50+ | MC, MB, EB, DW | N |
| Nome Main | N4 | 31491 | G | 1 | 147 | 0.2 | 0.57 | 0.2 | 0.77 | 31.0 | 30.0 | 4410 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 3749 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 5 | 0 | 5 | 12.0 | 2 | SC | G | 20 | MC, MB, EB, DW | N |
| Nome Main | N4 | 31638 | R | 1 | 51 | 0.5 | 0.28 | 0.3 | 0.58 | 46.0 | 38.0 | 1938 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 1647 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 2 | | | | MC, MB, EB, DW | N |
| Nome Main | N4 | 31689 | G | 1 | 250 | 0.2 | 0.58 | 0.2 | 0.78 | 34.0 | 33.0 | 8250 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | L | 5775 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 5 | 7.0 | 5 | | | | MC, MB, EB, DW | N |
| Nome Main | N4 | 31939 | R | 1 | 123 | 0.4 | 0.24 | 0.2 | 0.44 | 45.0 | 34.0 | 4182 | 15 | 78 | 5 | 2 | 0 | L | 6 | AR | H | 3304 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 2 | 0 | 2 | 6.0 | 2 | | | | MC, MB, EB, DW | N |
| Nome Main | N4 | 32062 | G | 1 | 77 | 0.2 | 0.41 | 0.2 | 0.61 | 43.0 | 23.0 | 1771 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 1505 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 5 | 0 | 5 | 12.0 | 2 | | | | MC, MB, EB, DW | N |
| Nome Main | N4 | 32139 | R | 1 | 19 | 0.4 | 0.37 | 0.2 | 0.57 | 40.0 | 28.0 | 532 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 444 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 2 | 4.0 | 2 | | | | MC, MB, EB, DW | N |
| Nome Main | N4 | 32158 | G | 1 | 179 | 0.2 | 0.44 | 0.15 | 0.59 | 23.0 | 22.0 | 3938 | 35 | 63 | 2 | 0 | 0 | M | 5 | AR | L | 2497 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 2 | 4.0 | 2 | SC | G | 30+ | MC, MB, EB, DW | N |
| Nome Main | N4 | 32337 | R | 1 | 90 | 0.4 | 0.35 | 0.3 | 0.65 | 31.0 | 18.3 | 1647 | 15 | 78 | 5 | 2 | 0 | L | 5 | AR | H | 1301 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 5 | 0 | 2 | 9.0 | 2 | SC | G | 50 | EB, DW | N |
| Nome Main | N4 | 32427 | G | 1 | 36 | 0.2 | 0.43 | 0.15 | 0.58 | 25.2 | 19.7 | 709 | 25 | 70 | 5 | 0 | 0 | M | 5 | AR | M | 504 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 2 | 4.0 | 2 | | | | EB | N |
| Nome Main | N4 | 32463 | R | 1 | 150 | 0.4 | 0.33 | 0.2 | 0.53 | 31.0 | 25.0 | 3750 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 3038 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 20 | EB, DW | N |
| Nome Main | N4 | 32613 | G | 1 | 201 | 0.2 | 0.39 | 0.45 | 0.84 | 45.0 | 35.0 | 7035 | 30 | 65 | 5 | 0 | 0 | M | 5 | AR | L | 4643 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 2 | | | | EB, DW | N |
| Nome Main | N4 | 32814 | R | 1 | 36 | 0.4 | 0.40 | 0.2 | 0.60 | 35.0 | 23.0 | 828 | 20 | 75 | 5 | 0 | 0 | M | 5 | AR | M | 629 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 2 | 4.0 | 2 | SC | G | 25 | EB, DW | N |
| Nome Main | N4 | 32850 | G | 1 | 69 | 0.2 | 0.54 | 0.15 | 0.69 | 30.0 | 16.8 | 1159 | 25 | 70 | 5 | 0 | 0 | M | 5 | AR | M | 823 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | EB, DW | N |
| Nome Main | N4 | 32919 | R | 1 | 51 | 0.8 | 0.25 | 0.15 | 0.40 | 27.0 | 26.0 | 1326 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 1074 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | MB, EB, DW | N |
| Nome Main | N4 | 32970 | G | 1 | 40 | 0.3 | 0.48 | 0.1 | 0.58 | 29.0 | 24.0 | 960 | 30 | 65 | 5 | 0 | 0 | M | 5 | AR | L | 634 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 2 | SC | G | 50 | | N |
| Nome Main | N4 | 33010 | R | 1 | 148 | 0.8 | 0.50 | 0.2 | 0.70 | 80.0 | 28.2 | 4174 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 3381 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 5 | 0 | 5 | 12.0 | 5 | SC | G | | MB, DW, EB | N |
| Nome Main | N4 | 33158 | G | 1 | 135 | 0.2 | 0.26 | 0.2 | 0.46 | 41.0 | 26.0 | 3510 | 25 | 70 | 5 | 0 | 0 | M | 5 | AR | M | 2492 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 5 | SC | G | 20+ | DW, EB | N |
| Nome Main | N4 | 33293 | R | 1 | 164 | 0.5 | 0.37 | 0.2 | 0.57 | 46.8 | 41.6 | 6822 | 20 | 75 | 5 | 0 | 0 | M | 5 | AR | M | 5185 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 5 | | | | MB, DW, EB | N |
| Nome Main | N4 | 33457 | G | 1 | 34 | 0.3 | 0.51 | 0.2 | 0.71 | 12.0 | 11.2 | 381 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 308 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 2 | | | | MB, DW, EB | N |
| Nome Main | N4 | 33491 | R | 1 | 22 | 0.8 | 0.33 | 0.2 | 0.53 | 60.0 | 23.2 | 510 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 413 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 5 | SC | G | 20 | MB, DW, EB | N |
| Nome Main | N5 | 33513 | G | 1 | 45 | 0.3 | 0.39 | 0.2 | 0.59 | 60.0 | 20.1 | 905 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 687 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 5 | | | | DW, EB | N |
| Nome Main | N5 | 33558 | R | 1 | 13 | 0.9 | 0.29 | 0.2 | 0.49 | 44.0 | 28.0 | 364 | 15 | 75 | 5 | 0 | 0 | L | 5 | AR | H | 277 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 33571 | G | 1 | 128 | 0.15 | 0.50 | 0.2 | 0.70 | 26.0 | 23.0 | 2944 | 35 | 60 | 5 | 0 | 0 | M | 5 | AR | M | 1796 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | SC | G | 5 | DW, EB | N |
| Nome Main | N5 | 33699 | P | 1 | 83 | 0 | 0.57 | 0.3 | 0.87 | 48.0 | 20.0 | 1660 | 45 | 50 | 5 | 0 | 0 | M | 5 | AR | M | 847 | 1.05 | 0.29 | 0.76 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 2 | 0 | 1.8 | 5 | | | | DW, EB | N |
| Nome Main | N5 | 33782 | R | 1 | 70 | 0.28 | 0.22 | 0.3 | 0.52 | 38.0 | 13.0 | 910 | 15 | 80 | 5 | 0 | 0 | H | 5 | AR | H | 737 | | | | | | 0 | 0 | 0 | 0 | 0.5 | 0 | 0.5 | 0 | 2 | 3.0 | 5 | | | | MB, DW | N |
| Nome Main | N5 | 33852 | P | 1 | 52 | 0 | 0.82 | 0.5 | 1.32 | 26.8 | 25.0 | 1300 | 15 | 68 | 15 | 2 | 0 | H | 15 | AR | H | 923 | 1.40 | 0.28 | 1.12 | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 0 | 9 | 0 | 13.2 | 0 | SC | G | | DW, EB | N |
| Nome Main | N5 | 33904 | R | 1 | 186 | 0.3 | 0.32 | 0.4 | 0.72 | 30.0 | 14.0 | 2604 | 15 | 77 | 8 | 0 | 0 | H | 13 | AR | H | 2047 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 34090 | P | 1 | 44 | 0 | 1.35 | 0.5 | 1.85 | 28.0 | 14.0 | 616 | 48 | 50 | 2 | 0 | 0 | M | 5 | AR | L | 310 | 2.00 | 0.32 | 1.68 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 0 | 50 | 0 | 55.0 | 2 | | | | DW | N |
| Nome Main | N5 | 34134 | R | 1 | 31 | 0.24 | 0.37 | 0.2 | 0.57 | 28.0 | 19.0 | 589 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 491 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 100+ | MB, DW | N |

Table D1. Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$)[5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type[6] | Quality[7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
| Nome Main | N5 | 34165 | G | 1 | 53 | 0 | 0.70 | 0.2 | 0.90 | 45.0 | 28.0 | 1484 | 38 | 60 | 2 | 0 | 0 | M | 5 | AR | L | 896 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 0 | SC | G | | | N |
| Nome Main | N5 | 34218 | R | 1 | 79 | 0.23 | 0.47 | 0.25 | 0.72 | 23.0 | 17.0 | 1343 | 10 | 80 | 10 | 0 | 0 | L | 13 | AR | H | 1101 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0.71 | 0 | 0 | 0.7 | 0 | | | | | N |
| Nome Main | N5 | 34297 | P | 1 | 53 | 0 | 0.75 | 0.3 | 1.05 | 27.0 | 24.0 | 1272 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | L | 890 | 1.20 | 0.47 | 0.73 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0.56 | 13 | 0 | 15.8 | 2 | SC | G | | | N |
| Nome Main | N5 | 34350 | R | 1 | 69 | 0.3 | 0.22 | 0.5 | 0.72 | 54.0 | 33.0 | 2277 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 1899 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 1.9 | 0 | 0 | 1.9 | 0 | SC | G | | MB, DW | N |
| Nome Main | N5 | 34419 | P | 1 | 100 | 0 | 0.57 | 0.5 | 1.07 | 25.0 | 23.0 | 2300 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 1863 | 0.95 | 0.22 | 0.73 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 1.6 | 0 | 0 | 3.6 | 5 | SC | G | | | N |
| Nome Main | N5 | 34519 | R | 1 | 104 | 0.15 | 0.30 | 0.1 | 0.40 | 19.0 | 12.0 | 1248 | 10 | 88 | 2 | 0 | 0 | L | 5 | AR | H | 1103 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 2 | 0 | 2 | 6.0 | 2 | SC | G | 15 | | N |
| Nome Main | N5 | 34623 | G | 1 | 110 | 0.1 | 0.30 | 0.2 | 0.50 | 22.5 | 21.0 | 2310 | 15 | 83 | 2 | | 0 | L | 5 | AR | H | 1927 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 2 | 4.0 | 2 | | | | | N |
| Nome Main | N5 | 34733 | R | 1 | 24 | 0.3 | 0.25 | 0.4 | 0.65 | 28.0 | 12.0 | 288 | 5 | 93 | 2 | 0 | 0 | L | 5 | AR | H | 269 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 2 | 4.0 | 2 | | | | | N |
| Nome Main | N5 | 34757 | G | 1 | 72 | 0.1 | 0.60 | 0.45 | 1.05 | 44.0 | 30.0 | 2160 | 15 | 80 | 5 | 0 | 0 | L | 6 | AR | H | 1750 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 2 | 4.0 | 2 | | | | | N |
| Nome Main | N5 | 34829 | R | 1 | 74 | 0.27 | 0.25 | 0.5 | 0.75 | 37.0 | 30.0 | 2220 | 15 | 80 | 5 | 0 | 0 | L | 6 | AR | H | 1798 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 1 | 0 | 2 | 5.0 | 2 | | | | MB, DW | N |
| Nome Main | N5 | 34903 | G | 1 | 106 | 0.1 | 0.28 | 0.25 | 0.53 | 34.0 | 32.0 | 3392 | 15 | 80 | 5 | 0 | 0 | L | 6 | AR | H | 2748 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | | N |
| Nome Main | N5 | 35009 | R | 1 | 50 | 0.3 | 0.20 | 0.25 | 0.45 | 34.0 | 32.0 | 1600 | 15 | 80 | 5 | 0 | 0 | L | 6 | AR | H | 1296 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | | N |
| Nome Main | N5 | 35059 | G | 1 | 86 | 0.15 | 0.40 | 0.2 | 0.60 | 24.0 | 21.0 | 1806 | 30 | 40 | 25 | 5 | 0 | M | 20 | AR | M | 813 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 0 | | | | | N |
| Nome Main | N5 | 35145 | R | 1 | 178 | 0.3 | 0.25 | 0.5 | 0.75 | 26.0 | 19.0 | 3382 | 20 | 50 | 15 | 15 | 0 | M | 25 | AR | M | 1792 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 15 | 0 | 0 | 0 | 15.0 | 2 | | | | | N |
| Nome Main | N5 | 35323 | P | 1 | 72 | 0 | 0.80 | 0.6 | 1.40 | 38.0 | 32.0 | 2304 | 30 | 30 | 30 | 10 | 0 | M | 25 | AR | M | 829 | 1.80 | 0.25 | 1.55 | R | | 0 | 0 | 0 | 0 | 2.0 | 10 | 0 | 60 | 0 | 72.0 | 0 | | | | MB, DW | N |
| Nome Main | N5 | 35395 | R | 1 | 15 | 0.15 | 0.00 | 0.25 | 0.25 | 24.0 | 14.6 | 219 | 20 | 75 | 5 | 0 | 0 | L | 6 | AR | H | 166 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 35410 | P | 1 | 41 | 0 | 0.00 | 0.35 | 0.35 | 63.0 | 11.0 | 451 | 35 | 65 | 0 | 0 | 0 | M | 5 | AR | M | 293 | 2.10 | 0.15 | 1.70 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 65 | 2 | 77.0 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 35451 | G | 1 | 22 | 0.1 | 0.00 | 0.35 | 0.35 | 60.0 | 10.7 | 235 | 35 | 65 | 0 | 0 | 0 | M | 5 | AR | M | 153 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 20 | 0 | 2 | 24.0 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 35473 | R | 1 | 404 | 0.3 | 0.00 | 0.35 | 0.35 | 28.6 | 17.4 | 7030 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 5624 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 35877 | P | 1 | 63 | 0 | 0.68 | 0.35 | 1.03 | 26.0 | 15.9 | 1002 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 801 | 1.45 | 0.26 | 1.19 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 3 | 0 | 3.0 | 0 | SC | P | 15 | | N |
| Nome Main | N5 | 35940 | R | 1 | 13 | 0.8 | 0.25 | 0.35 | 0.60 | 22.0 | 18.1 | 235 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 188 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | SC | P | 10 | DW, EB | N |
| Nome Main | N5 | 35953 | P | 1 | 50 | 0 | 0.82 | 0.25 | 1.07 | 36.0 | 12.0 | 600 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | L | 420 | 1.10 | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 10 | 1 | 5 | 18.0 | 5 | | | | DW, EB | N |
| Nome Main | N5 | 36003 | R | 1 | 12 | 0.9 | 0.25 | 0.25 | 0.50 | 38.0 | 22.0 | 264 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 214 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 5 | 0 | 2 | 9.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 36015 | P | 1 | 90 | 0 | 0.70 | 0.25 | 0.95 | 30.0 | 14.6 | 1314 | 25 | 75 | 0 | 0 | 0 | L | 5 | AR | M | 986 | 1.04 | 0.28 | 0.76 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 10 | 2 | 5 | 19.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 36105 | R | 1 | 31 | 0.5 | 0.28 | 0.25 | 0.53 | 25.0 | 18.1 | 561 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 454 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 2 | 12.0 | 2 | SC | P | 30 | DW, EB | N |
| Nome Main | N5 | 36136 | P | 1 | 57 | 0 | 0.69 | 0.25 | 0.94 | 22.0 | 12.4 | 707 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | M | 495 | 1.10 | 0.32 | 0.78 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 10 | 1 | 2 | 14.8 | 2 | | | | EB | N |
| Nome Main | N5 | 36193 | R | 1 | 27 | 0.5 | 0.32 | 0.25 | 0.57 | 24.0 | 15.2 | 410 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 332 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 5 | 0 | 5 | 12.0 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 36220 | G | 1 | 75 | 0.15 | 0.68 | 0.25 | 0.93 | 40.0 | 14.6 | 1095 | 25 | 70 | 5 | 0 | 0 | L | 5 | AR | M | 777 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | PD | N | 50 | MB, EB | N |
| Nome Main | N5 | 36295 | R | 1 | 29 | 0.8 | 0.26 | 0.25 | 0.51 | 26.0 | 22.0 | 638 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 542 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 36324 | P | 1 | 86 | 0 | 0.78 | 0.5 | 1.28 | 35.0 | 8.3 | 714 | 40 | 60 | 0 | 0 | 0 | M | 5 | AR | L | 428 | 1.15 | 0.37 | 0.78 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 26 | 0 | 31.0 | 2 | | | | | N |
| Nome Main | N5 | 36410 | R | 1 | 49 | 0.4 | 0.37 | 0.15 | 0.52 | 60.0 | 14.5 | 711 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 540 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 36459 | P | 1 | 25 | 0 | 1.47 | 0.25 | 1.72 | 60.0 | 12.0 | 300 | 25 | 70 | 5 | 0 | 0 | L | 5 | AR | H | 213 | 2.30 | 0.26 | 2.04 | | Y | 0 | 0 | 0 | 0 | 2.0 | 0 | 10 | 18 | 2 | 32.0 | 2 | | | | DW, EB, MB | N |
| Nome Main | N5 | 36484 | R | 1 | 28 | 0.5 | 0.26 | 0.25 | 0.51 | 30.0 | 15.0 | 420 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 357 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 0 | 5.0 | 0 | | | | DW, EB, MB | N |
| Nome Main | N5 | 36512 | G | 1 | 54 | 0.1 | 0.58 | 0.25 | 0.83 | 31.0 | 17.0 | 918 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | L | 643 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 5 | 0 | 2 | 9.0 | 2 | SC | P | | DW, EB | N |
| Nome Main | N5 | 36566 | R | 1 | 49 | 0.4 | 0.22 | 0.2 | 0.42 | 25.0 | 22.0 | 1078 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 819 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 2 | 12.0 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 36615 | G | 1 | 84 | 0.1 | 0.42 | 0.2 | 0.62 | 25.7 | 17.0 | 1428 | 35 | 65 | 0 | 0 | 0 | L | 5 | AR | L | 928 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 2 | 12.0 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 36699 | R | 1 | 46 | 0.4 | 0.16 | 0.2 | 0.36 | 60.0 | 30.0 | 1380 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 1049 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 5 | 7.0 | 2 | SC | G | 200+ | DW, EB | N |
| Nome Main | N5 | 36745 | P | 1 | 55 | 0 | 0.75 | 0.6 | 1.35 | 56.0 | 13.5 | 743 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 446 | 1.20 | 0.33 | 0.87 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 10 | 2 | 10 | 24.2 | 5 | | | | DW, EB | N |
| Nome Main | N5 | 36800 | R | 1 | 20 | 0.8 | 0.33 | 0.2 | 0.53 | 55.0 | 12.2 | 244 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 195 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 10 | 0 | 2 | 14.0 | 2 | PD | P | 5 | DW, EB | N |
| Nome Main | N5 | 36820 | P | 1 | 65 | 0 | 0.78 | 0.2 | 0.98 | 61.0 | 18.8 | 1222 | 40 | 60 | 0 | 0 | 0 | M | 5 | AR | L | 733 | 1.10 | 0.27 | 0.80 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 3 | 2 | 15.0 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 36885 | R | 1 | 19 | 0.8 | 0.27 | 0.25 | 0.52 | 60.0 | 19.0 | 361 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 289 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | P | 8 | DW, EB | N |
| Nome Main | N5 | 36904 | P | 1 | 31 | 0 | 1.26 | 0.15 | 1.41 | 31.0 | 15.0 | 465 | 45 | 55 | 0 | 0 | 0 | M | 5 | AR | L | 256 | 2.10 | 0.46 | 1.64 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 5 | 11 | 5 | 25.8 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 36935 | R | 1 | 33 | 0.5 | 0.46 | 0.15 | 0.61 | 31.0 | 13.7 | 452 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 362 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 10 | 0 | 5 | 17.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 36968 | G | 1 | 35 | 0.1 | 0.60 | 0.15 | 0.75 | 30.4 | 11.4 | 399 | 25 | 75 | 0 | 0 | 0 | L | 5 | AR | M | 299 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 5 | 0 | 5 | 15.0 | 5 | | | | DW, EB | N |
| Nome Main | N5 | 37003 | R | 1 | 41 | 0.5 | 0.36 | 0.25 | 0.61 | 27.8 | 16.0 | 656 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 499 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 5 | | | | DW, EB | N |
| Nome Main | N5 | 37044 | G | 1 | 54 | 0.15 | 0.47 | 0.25 | 0.72 | 32.0 | 18.0 | 972 | 25 | 75 | 0 | 0 | 0 | L | 5 | AR | M | 729 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | P | 20 | DW, EB | N |

Table D1. Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$)[5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type[6] | Quality[7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
| Nome Main | N5 | 37098 | R | 1 | 55 | 0.4 | 0.20 | 0.2 | 0.40 | 55.0 | 26.5 | 1458 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 1166 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 5 | 0 | 5 | 15.0 | 5 | | | | MB, DW, EB | N |
| Nome Main | N5 | 37153 | G | 1 | 46 | 0.15 | 0.54 | 0.2 | 0.74 | 50.0 | 27.4 | 1260 | 25 | 75 | 0 | 0 | 0 | L | 5 | AR | M | 945 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | | | | MB, DW, EB | N |
| Nome Main | N5 | 37199 | R | 1 | 31 | 0.4 | 0.30 | 0.1 | 0.40 | 60.0 | 32.4 | 1004 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 804 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 10 | | | | MB, DW, EB | N |
| Nome Main | N5 | 37230 | P | 1 | 81 | 0 | 0.61 | 0.1 | 0.71 | 31.0 | 22.6 | 1831 | 45 | 55 | 0 | 0 | 0 | M | 5 | AR | L | 1007 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 0 | 10.0 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 37311 | R | 1 | 34 | 0.5 | 0.29 | 0.1 | 0.39 | 55.0 | 17.3 | 588 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 471 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 10 | 0 | 0 | 12.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 37345 | P | 1 | 36 | 0 | 0.49 | 0.1 | 0.59 | 60.0 | 22.0 | 792 | 25 | 75 | 0 | 0 | 0 | L | 5 | AR | M | 594 | 1.20 | 0.21 | 0.99 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 1 | 0 | 10.8 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 37381 | R | 1 | 55 | 0.5 | 0.21 | 0.3 | 0.51 | 150.0 | 15.1 | 831 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 664 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 300+ | MB, MC, EB, DW | N |
| Nome Main | N5 | 37436 | G | 1 | 70 | 0.15 | 0.49 | 0.5 | 0.99 | 150.0 | 9.8 | 686 | 25 | 70 | 5 | 0 | 0 | L | 5 | AR | M | 487 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | MB, MC, EB, DW | N |
| Nome Main | N5 | 37506 | R | 1 | 31 | 0.8 | 0.28 | 0.3 | 0.58 | 60.0 | 17.1 | 530 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 403 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 10 | 0 | 5 | 20.0 | 5 | | | | MB, MC, EB, DW | N |
| Nome Main | N5 | 37537 | G | 1 | 27 | 0 | 0.57 | 0.3 | 0.87 | 24.0 | 19.0 | 513 | 45 | 55 | 0 | 0 | 0 | M | 5 | AR | L | 282 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 0 | 0 | 5 | 10.0 | 5 | | | | | N |
| Nome Main | N5 | 37564 | R | 1 | 51 | 0.4 | 0.31 | 0.25 | 0.56 | 50.0 | 17.6 | 898 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 682 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 5 | 5.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 37615 | P | 1 | 39 | 0 | 0.79 | 0.25 | 1.04 | 50.0 | 14.2 | 554 | 40 | 60 | 0 | 0 | 0 | M | 5 | AR | L | 332 | 1.75 | 0.30 | 1.45 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 5 | 27 | 5 | 42.1 | 5 | | | | DW, EB | N |
| Nome Main | N5 | 37654 | R | 1 | 28 | 0.8 | 0.30 | 0.25 | 0.55 | 50.0 | 15.8 | 442 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 354 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 10 | 20.0 | 0 | SC | P | 20 | DW, EB | N |
| Nome Main | N5 | 37682 | P | 1 | 31 | 0 | 0.94 | 0.25 | 1.19 | 40.0 | 11.0 | 341 | 40 | 60 | 0 | 0 | 0 | M | 5 | AR | L | 205 | 1.60 | 0.30 | 1.30 | | Y | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 12 | 5 | 26.7 | 10 | | | | DW, EB | N |
| Nome Main | N5 | 37713 | G | 1 | 40 | 0.15 | 0.51 | 0.25 | 0.76 | 45.0 | 11.9 | 476 | 35 | 65 | 0 | 0 | 0 | M | 5 | AR | L | 309 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 5 | | | | DW, EB | N |
| Nome Main | N5 | 37753 | R | 1 | 36 | 0.5 | 0.29 | 0.25 | 0.54 | 50.0 | 16.1 | 580 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 440 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 5 | SC | P | 5 | DW, EB | N |
| Nome Main | N5 | 37789 | P | 1 | 92 | 0 | 1.80 | 0.2 | 2.00 | 96.0 | 24.6 | 2263 | 45 | 55 | 0 | 0 | 0 | M | 5 | AR | L | 1245 | 2.50 | 0.30 | 2.20 | | Y | 0 | 0 | 0 | 0 | 2.0 | 0 | 10 | 53 | 5 | 70.0 | 5 | SC | P | | DW, MB, EB | N |
| Nome Main | N5 | 37881 | R | 1 | 32 | 0.8 | 0.30 | 0.2 | 0.50 | 96.0 | 14.5 | 464 | 20 | 70 | 5 | 0 | 0 | L | 5 | AR | M | 329 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, MB, EB | N |
| Nome Main | N5 | 37913 | P | 1 | 10 | 0 | 0.67 | 0.26 | 0.93 | 96.0 | 11.4 | 114 | 35 | 65 | 0 | 0 | 0 | M | 5 | AR | L | 74 | 1.80 | 0.28 | 1.52 | | Y | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 18 | 10 | 37.5 | 10 | SC | N | 30 | DW, MB, EB | N |
| Nome Main | N5 | 37923 | R | 1 | 15 | 1 | 0.28 | 0.2 | 0.48 | 96.0 | 25.4 | 381 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 290 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 5 | | | | DW, MB, EB | N |
| Nome Main | N5 | 37938 | P | 1 | 73 | 0 | 1.23 | 0.5 | 1.73 | 109.0 | 15.0 | 1095 | 40 | 60 | 0 | 0 | 0 | M | 5 | AR | L | 657 | 1.60 | 0.16 | 1.44 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 0 | 5 | 5 | 15.5 | 5 | | | | DW, EB | N |
| Nome Main | N5 | 38011 | R | 1 | 51 | 0.8 | 0.16 | 0.5 | 0.66 | 109.0 | 35.0 | 1785 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 1357 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | N | 30 | DW, EB | N |
| Nome Main | N5 | 38062 | G | 1 | 95 | 0.1 | 0.51 | 0.5 | 1.01 | 50.0 | 19.6 | 1862 | 40 | 58 | 2 | 0 | 0 | M | 5 | AR | L | 1087 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 38157 | R | 1 | 61 | 0.4 | 0.36 | 0.5 | 0.86 | 35.0 | 17.0 | 1037 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 788 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 2 | 12.0 | 0 | SC | G | 30 | DW, EB | N |
| Nome Main | N5 | 38218 | G | 1 | 72 | 0.2 | 0.39 | 0.35 | 0.74 | 30.0 | 19.0 | 1368 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 1040 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 38290 | R | 1 | 21 | 0.7 | 0.36 | 0.35 | 0.71 | 29.5 | 17.0 | 357 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 271 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | SC | P | 10 | DW, EB | N |
| Nome Main | N5 | 38311 | P | 1 | 53 | 0 | 0.53 | 0.4 | 0.93 | 35.0 | 15.0 | 795 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | L | 557 | 0.70 | 0.33 | 0.37 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 38364 | R | 1 | 27 | 0.8 | 0.33 | 0.3 | 0.63 | 31.0 | 21.6 | 583 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | L | 467 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | P | 10 | | N |
| Nome Main | N5 | 38391 | P | 1 | 54 | 0 | 0.62 | 0.2 | 0.82 | 27.9 | 10.6 | 572 | 25 | 70 | 5 | 0 | 0 | L | 5 | AR | M | 406 | 1.70 | 0.23 | 1.47 | | Y | 0 | 0 | 0 | 0 | 0.0 | 0 | 20 | 9 | 10 | 38.7 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 38445 | R | 1 | 25 | 0.8 | 0.23 | 0.4 | 0.63 | 27.6 | 24.2 | 605 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 460 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | | N |
| Nome Main | N5 | 38470 | G | 1 | 47 | 0.15 | 0.51 | 0.15 | 0.66 | 18.0 | 16.0 | 752 | 30 | 65 | 5 | 0 | 0 | M | 5 | AR | L | 496 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 20 | 0 | 2 | 22.0 | 2 | | | | | N |
| Nome Main | N5 | 38517 | R | 1 | 95 | 0.8 | 0.33 | 0.3 | 0.63 | 23.3 | 17.5 | 1663 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 1264 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 5 | 15.0 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 38612 | G | 1 | 16 | 0.15 | 0.52 | 0.45 | 0.97 | 50.0 | 14.0 | 224 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 168 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 2 | 4.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 38628 | R | 1 | 63 | 0.8 | 0.31 | 0.35 | 0.66 | 76.0 | 19.2 | 1210 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 919 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 2 | 4.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 38691 | P | 1 | 54 | 0 | 1.06 | 0.2 | 1.26 | 60.0 | 18.0 | 972 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 583 | 1.40 | 0.25 | 1.15 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 5 | 2 | 9.1 | 0 | SC | P | 5 | DW, EB | N |
| Nome Main | N5 | 38745 | R | 1 | 82 | 0.5 | 0.25 | 0.25 | 0.50 | 33.0 | 25.0 | 2050 | 20 | 78 | 2 | 0 | 0 | M | 5 | AR | M | 1607 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 0 | | | | MB, DW, EB | N |
| Nome Main | N5 | 38827 | G | 1 | 43 | 0.15 | 0.38 | 0.2 | 0.58 | 27.4 | 22.8 | 980 | 25 | 70 | 5 | 0 | 0 | L | 5 | AR | M | 696 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | SC | G | 20 | DW, EB | N |
| Nome Main | N5 | 38870 | R | 1 | 55 | 0.5 | 0.26 | 0.3 | 0.56 | 28.0 | 26.8 | 1474 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 1120 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 38925 | G | 1 | 49 | 0.15 | 0.42 | 0.15 | 0.57 | 30.0 | 18.0 | 882 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | L | 617 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 2 | 12.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 38974 | R | 1 | 30 | 0.8 | 0.22 | 0.35 | 0.57 | 30.6 | 24.5 | 735 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 559 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | SC | G | 100 | | N |
| Nome Main | N5 | 39004 | P | 1 | 17 | 0 | 0.90 | 0.2 | 1.1 | 21.7 | 10.2 | 173 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 104 | 1.35 | 0.16 | 1.19 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 23 | 2 | 35.1 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 39021 | R | 1 | 45 | 0.8 | 0.16 | 0.2 | 0.36 | 50.0 | 22.5 | 1013 | 20 | 70 | 10 | 0 | 0 | L | 13 | AR | M | 729 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 0 | 0 | 10.0 | 0 | | | | DW, MB, EB | N |
| Nome Main | N5 | 39066 | P | 1 | 53 | 0 | 0.72 | 0.3 | 1.02 | 40.0 | 12.7 | 673 | 35 | 65 | 0 | 0 | 0 | M | 5 | AR | L | 438 | 1.70 | 0.31 | 1.39 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 10 | 7 | 10 | 31.7 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 39119 | R | 1 | 34 | 0.6 | 0.31 | 0.8 | 1.11 | 40.0 | 15.4 | 524 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 398 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | P | 50 | DW, EB | N |
| Nome Main | N5 | 39153 | G | 1 | 72 | 0.15 | 0.40 | 0.4 | 0.8 | 31.0 | 15.0 | 1080 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 821 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 39225 | P | 1 | 58 | 0 | 0.75 | 0.4 | 1.15 | 40.0 | 16.0 | 928 | 30 | 65 | 5 | 0 | 0 | M | 5 | AR | L | 612 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |

Table D1. Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$)[5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type[6] | Quality[7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
| Nome Main | N5 | 39283 | R | 1 | 16 | 0.7 | 0.26 | 0.4 | 0.66 | 67.0 | 15.0 | 240 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 182 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 5 | 5.0 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 39299 | P | 1 | 40 | 0 | 0.96 | 0.3 | 1.26 | 67.0 | 14.2 | 568 | 40 | 60 | 0 | 0 | 0 | M | 5 | AR | L | 341 | 2.50 | 0.30 | 2.20 | | Y | 0 | 0 | 0 | 0 | 0.0 | 0 | 30 | 11 | 10 | 50.6 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 39339 | R | 1 | 19 | 0.5 | 0.37 | 0.2 | 0.57 | 35.0 | 14.7 | 279 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 212 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 2 | | | | DW, EB | N |
| Nome Main | N5 | 39358 | P | 1 | 52 | 0 | 0.56 | 0.25 | 0.81 | 35.0 | 13.8 | 718 | 20 | 70 | 10 | 0 | 0 | L | 13 | AR | M | 517 | 1.39 | 0.32 | 1.07 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 2 | 5 | 12.1 | 0 | | | | DW, EB | N |
| Nome Main | N5 | 39410 | R | 1 | 53 | 0.5 | 0.32 | 0.33 | 0.65 | 26.8 | 19.6 | 1039 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 789 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 10 | 0 | 0 | 12.0 | 0 | SC | P | 10 | DW, EB | N |
| Nome Main | N5 | 39463 | G | 1 | 32 | 0.15 | 0.57 | 0.3 | 0.87 | 35.0 | 13.4 | 429 | 40 | 58 | 2 | 0 | 0 | M | 5 | AR | L | 250 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 10 | 0 | 2 | 14.0 | 5 | | | | DW, EB | N |
| Nome Main | N6 | 39495 | R | 1 | 98 | 0.5 | 0.16 | 0.25 | 0.41 | 34.0 | 28.0 | 2744 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 2085 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 20 | 0 | 20 | 40.0 | 5 | | | | DW, EB, MB | N |
| Nome Main | N6 | 39593 | P | 1 | 16 | 0 | 0.33 | 0.2 | 0.53 | 25.0 | 12.0 | 192 | 40 | 58 | 2 | 0 | 0 | M | 5 | AR | L | 112 | 1.15 | 0.22 | 0.93 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 5 | 2 | 8.7 | 2 | | | | DW, EB, MB | N |
| Nome Main | N6 | 39609 | R | 1 | 30 | 1 | 0.22 | 0.4 | 0.62 | 24.3 | 13.1 | 393 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 299 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 2 | SC | P | 10 | DW, EB, MB | N |
| Nome Main | N6 | 39639 | P | 1 | 24 | 0 | 0.72 | 0.1 | 0.82 | 20.5 | 7.8 | 187 | 40 | 60 | 0 | 0 | 0 | M | 5 | AR | L | 112 | 0.95 | 0.25 | 0.70 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 20 | 0 | 0 | 22.0 | 5 | | | | DW, EB, MB | N |
| Nome Main | N6 | 39663 | R | 1 | 62 | 0.7 | 0.17 | 0.2 | 0.37 | 69.0 | 60.0 | 3720 | 15 | 73 | 10 | 2 | 0 | L | 10 | AR | H | 2790 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 10 | 12.0 | 2 | SC | G | 20 | DW, EB | N |
| Nome Main | N6 | 39725 | P | 1 | 67 | 0 | 0.60 | 0.2 | 0.8 | 22.9 | 21.6 | 1447 | 20 | 63 | 15 | 2 | 0 | L | 12 | AR | M | 955 | 2.00 | 0.35 | 1.65 | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 2 | 2 | 6.1 | 0 | | | | DW, EB | N |
| Nome Main | N6 | 39792 | R | 1 | 80 | 0.8 | 0.35 | 0.37 | 0.72 | 29.7 | 19.7 | 1576 | 25 | 70 | 5 | 0 | 0 | L | 5 | AR | M | 1119 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 5 | 5.0 | 5 | SC | G | | DW, EB | N |
| Nome Main | N6 | 39872 | P | 1 | 83 | 0.0 | 0.48 | 0.07 | 0.55 | 35.0 | 27.0 | 2241 | 20 | 70 | 10 | 0 | 0 | L | 13 | AR | M | 1614 | 1.15 | 0.25 | 0.90 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 1 | 0 | 11.3 | 0 | SC | G | 50 | DW, EB | N |
| Nome Main | N6 | 39955 | R | 1 | 125 | 0.8 | 0.25 | 0.25 | 0.5 | 34.0 | 31.0 | 3875 | 20 | 70 | 10 | 0 | 0 | M | 13 | AR | L | 2790 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 10 | 10.0 | 2 | | | | DW, EB, BC | N |
| Nome Main | N6 | 40080 | G | 1 | 81 | 0.3 | 0.46 | 0.3 | 0.76 | 31.0 | 17.0 | 1377 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | L | 1033 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | SC | G | 10 | DW, EB | N |
| Nome Main | N6 | 40161 | R | 1 | 48 | 0.8 | 0.24 | 0.3 | 0.54 | 30.7 | 26.0 | 1248 | 25 | 65 | 10 | 0 | 0 | M | 13 | AR | M | 836 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 5 | 5.0 | 5 | | | | DW, EB | N |
| Nome Main | N6 | 40209 | G | 1 | 36 | 0.3 | 0.35 | 0.2 | 0.55 | 28.4 | 24.3 | 875 | 25 | 68 | 5 | 2 | 0 | M | 6 | AR | L | 604 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 10 | 0 | 0 | 12.0 | 0 | | | | DW, EB | N |
| Nome Main | N6 | 40245 | R | 1 | 99 | 1.0 | 0.25 | 0.3 | 0.55 | 35.0 | 33.0 | 3267 | 20 | 68 | 10 | 2 | 0 | M | 13 | AR | M | 2287 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 5 | 0 | 2 | 9.0 | 5 | | | | DW, EB | N |
| Nome Main | N6 | 40344 | G | 1 | 81 | 0.4 | 0.36 | 0.3 | 0.66 | 25.0 | 21.8 | 1766 | 20 | 68 | 10 | 2 | 0 | M | 13 | AR | M | 1236 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 5 | 0 | 2 | 9.0 | 5 | | | | DW, EB | N |
| Nome Main | N6 | 40425 | R | 1 | 15 | 0.8 | 0.32 | 0.15 | 0.47 | 49.0 | 44.0 | 660 | 20 | 75 | 5 | 0 | 0 | M | 7 | AR | M | 502 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | SC | G | 30 | DW, EB | N |
| Nome Main | N6 | 40440 | G | 1 | 72 | 0.4 | 0.60 | 0.15 | 0.75 | 23.0 | 14.0 | 1008 | 30 | 58 | 2 | 0 | 0 | H | 6 | AR | L | 589 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 2 | | | | DW, EB | N |
| Nome Main | N6 | 40512 | R | 1 | 59 | 1.0 | 0.28 | 0.3 | 0.58 | 30.0 | 23.0 | 1357 | 20 | 75 | 5 | 0 | 0 | M | 5 | AR | M | 1031 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | PD | G | 20 | DW, EB | N |
| Nome Main | N6 | 40571 | P | 1 | 60 | 0.0 | 0.53 | 0.3 | 0.83 | 40.0 | 17.5 | 1050 | 30 | 68 | 2 | 0 | 0 | M | 5 | AR | L | 718 | 1.30 | 0.28 | 1.02 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 10 | 6 | 0 | 15.7 | 0 | | | | DW, EB | N |
| Nome Main | N6 | 40631 | R | 1 | 28 | 0.5 | 0.38 | 0.5 | 0.88 | 35.0 | 18.6 | 521 | 20 | 70 | 5 | 0 | 0 | M | 5 | AR | M | 370 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 50 | DW, EB | N |
| Nome Main | N6 | 40659 | P | 1 | 51 | 0.0 | 0.52 | 0.35 | 0.87 | 32.0 | 15.0 | 765 | 20 | 70 | 5 | 0 | 0 | M | 5 | AR | M | 543 | 1.35 | 0.38 | 0.97 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 2 | 2 | 8.8 | 2 | | | | DW, EB | N |
| Nome Main | N6 | 40710 | R | 1 | 15 | 0.5 | 0.42 | 0.65 | 1.07 | 45.0 | 14.5 | 218 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 174 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 5 | 0 | 0 | 10.0 | 5 | | | | DW, EB | N |
| Nome Main | N6 | 40725 | G | 1 | 27 | 0.2 | 0.49 | 0.5 | 0.99 | 45.0 | 13.7 | 370 | 20 | 75 | 5 | 0 | 0 | M | 5 | AR | M | 281 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 0 | 5.0 | 2 | | | | | N |
| Nome Main | N6 | 40752 | R | 1 | 94 | 1.0 | 0.45 | 0.2 | 0.65 | 24.0 | 14.6 | 1372 | 20 | 70 | 10 | 0 | 0 | M | 13 | AR | M | 988 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 2 | | | | DW, EB | N |
| Nome Main | N6 | 40846 | P | 1 | 54 | 0.0 | 0.62 | 0.35 | 0.97 | 30.0 | 20.3 | 1096 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 877 | 1.50 | 0.45 | 1.05 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 3 | 2 | 9.7 | 2 | | | | DW, EB, MB | N |
| Nome Main | N6 | 40900 | R | 1 | 16 | 0.8 | 0.33 | 0.4 | 0.73 | 27.0 | 19.3 | 309 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 247 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 0 | SC | G | 7 | DW, EB | N |
| Nome Main | N6 | 40916 | G | 1 | 71 | 0.3 | 0.37 | 0.3 | 0.67 | 22.0 | 16.0 | 1136 | 30 | 68 | 2 | 0 | 0 | M | 5 | AR | L | 777 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 5 | | N |
| Nome Main | N6 | 40987 | R | 1 | 57 | 0.7 | 0.37 | 0.15 | 0.52 | 26.0 | 25.0 | 1425 | 20 | 70 | 10 | 0 | 0 | L | 10 | AR | M | 1026 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 100+ | | N |
| Nome Main | N6 | 41044 | P | 1 | 48 | 0.0 | 0.75 | 0.2 | 0.95 | 30.0 | 13.0 | 624 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 374 | 1.35 | 0.37 | 0.98 | D | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 7 | 0 | 7.2 | 0 | SC | G | 100+ | DW, EB | N |
| Nome Main | N6 | 41092 | R | 1 | 16 | 0.8 | 0.38 | 0.3 | 0.68 | 18.0 | 16.3 | 261 | 20 | 70 | 10 | 0 | 0 | L | 13 | AR | M | 188 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | | N |
| Nome Main | N6 | 41108 | G | 1 | 63 | 0.4 | 0.48 | 0.3 | 0.78 | 21.3 | 17.0 | 1071 | 20 | 70 | 10 | 0 | 0 | L | 13 | AR | M | 771 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 0 | SC | P | 10 | DW, EB | N |
| Nome Main | N6 | 41171 | R | 1 | 50 | 0.7 | 0.41 | 0.2 | 0.61 | 63.0 | 11.9 | 595 | 15 | 85 | 5 | 0 | 0 | L | 5 | AR | H | 512 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 40 | DW, EB, MB | N |
| Nome Main | N6 | 41221 | P | 1 | 128 | 0.0 | 0.87 | 0.25 | 1.12 | 72.0 | 17.8 | 2278 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 1709 | 1.45 | 0.41 | 1.04 | D | | 0 | 0 | 0 | 0 | 2.0 | 0 | 10 | 2 | 2 | 16.2 | 2 | SC | G | 21 | DW, EB, MB | N |
| Nome Main | N6 | 41349 | R | 1 | 54 | 0.8 | 0.30 | 0.55 | 0.85 | 72.0 | 17.3 | 934 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 710 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 0 | 5.0 | 2 | | | | DW, EB | N |
| Nome Main | N6 | 41403 | P | 1 | 43 | 0.0 | 0.75 | 0.55 | 1.3 | 40.0 | 21.0 | 903 | 25 | 60 | 10 | 0 | 0 | M | 10 | AR | M | 560 | 1.35 | 0.30 | 1.05 | D | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 6 | 2 | 9.5 | 2 | | | | DW, EB | N |
| Nome Main | N6 | 41446 | R | 1 | 13 | 0.8 | 0.41 | 0.2 | 0.61 | 40.0 | 16.2 | 211 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 168 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 2 | | | | DW, EB | N |
| Nome Main | N6 | 41459 | P | 1 | 52 | 0.0 | 0.80 | 0.2 | 1 | 40.0 | 16.2 | 842 | 30 | 80 | 0 | 0 | 0 | M | 5 | AR | L | 674 | 1.40 | 0.30 | 1.10 | D | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 14 | 2 | 21.2 | 0 | | | | DW, EB | N |
| Nome Main | N6 | 41511 | R | 1 | 14 | 0.8 | 0.25 | 0.2 | 0.45 | 40.0 | 19.7 | 276 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 223 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N6 | 41525 | G | 1 | 96 | 0.4 | 0.70 | 0.2 | 0.9 | 30.0 | 17.0 | 1632 | 25 | 70 | 5 | 0 | 0 | M | 5 | AR | M | 1159 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 2 | 7.0 | 2 | | | | DW, EB | N |
| Nome Main | N6 | 41621 | R | 1 | 35 | 0.8 | 0.30 | 0.1 | 0.4 | 36.0 | 27.0 | 945 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 765 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | SC | G | 20 | DW, EB | N |
| Nome Main | N6 | 41656 | G | 1 | 72 | 0.4 | 0.42 | 0.3 | 0.72 | 40.0 | 19.3 | 1390 | 35 | 63 | 2 | 0 | 0 | M | 5 | AR | L | 881 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 5 | | | | DW, EB | N |

Table D1. Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$)[5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type[6] | Quality[7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
| Nome Main | N6 | 41728 | R | 1 | 68 | 0.7 | 0.25 | 0.1 | 0.35 | 20.0 | 19.0 | 1292 | 20 | 78 | 2 | 0 | 0 | L | 5 | AR | M | 1013 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 2 | | | | DW, EB, MB | N |
| Nome Main | N6 | 41796 | G | 1 | 108 | 0.4 | 0.42 | 0.1 | 0.52 | 40.0 | 22.0 | 2376 | 30 | 60 | 10 | 0 | 0 | M | 13 | AR | L | 1473 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 0 | 5.0 | 0 | | | | DW, EB | N |
| Nome Main | N6 | 41904 | R | 1 | 95 | 0.7 | 0.27 | 0.15 | 0.42 | 41.0 | 40.0 | 3800 | 25 | 70 | 5 | 0 | 0 | M | 5 | AR | M | 2698 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 5 | 0 | 5 | 10.0 | 5 | | | | MC, MB, EB, DW | N |
| Nome Main | N6 | 41999 | G | 1 | 66 | 0.4 | 0.35 | 0.2 | 0.55 | 43.0 | 27.3 | 1802 | 30 | 68 | 2 | 0 | 0 | M | 5 | AR | L | 1232 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 2 | 0 | 2 | 6.0 | 2 | | | | DW, EB | N |
| Nome Main | N6 | 42065 | R | 1 | 58 | 0.8 | 0.22 | 0.15 | 0.37 | 45.0 | 34.0 | 1972 | 25 | 70 | 5 | 0 | 0 | H | 5 | AR | L | 1400 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 30 | DW, EB | N |
| Nome Main | N6 | 42123 | G | 1 | 50 | 0.4 | 0.30 | 0.15 | 0.45 | 45.0 | 34.0 | 1700 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 1292 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | | | | DW, EB | N |
| Nome Main | N6 | 42173 | R | 1 | 39 | 0.8 | 0.27 | 0.15 | 0.42 | 34.0 | 33.0 | 1287 | 25 | 70 | 5 | 0 | 0 | H | 5 | AR | L | 914 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | | | | | N |
| Nome Main | N6 | 42212 | G | 1 | 53 | 0.4 | 0.50 | 0.15 | 0.65 | 40.0 | 26.0 | 1378 | 30 | 68 | 2 | 0 | 0 | M | 5 | AR | L | 943 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 2 | 4.0 | 0 | SC | G | 8 | DW, EB | N |
| Nome Main | N6 | 42265 | R | 1 | 89 | 1.5 | 0.28 | 0.15 | 0.43 | 40.0 | 22.5 | 2003 | 25 | 70 | 5 | 0 | 0 | H | 5 | AR | M | 1422 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 100+ | | N |
| Nome Main | N6 | 42354 | G | 1 | 81 | 0.4 | 0.50 | 0.25 | 0.75 | 35.0 | 18.1 | 1466 | 30 | 68 | 2 | 0 | 0 | M | 5 | AR | M | 1003 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | | | | DW, EB | N |
| Nome Main | N7 | 42435 | R | 1 | 73 | 0.8 | 0.27 | 0.3 | 0.57 | 40.0 | 23.3 | 1701 | 30 | 65 | 5 | 0 | 0 | H | 5 | AR | L | 1123 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | DW, EB | N |
| Nome Main | N7 | 42508 | G | 1 | 44 | 0.4 | 0.43 | 0.3 | 0.73 | 32.0 | 15.9 | 700 | 40 | 55 | 5 | 0 | 0 | H | 5 | AR | L | 392 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N7 | 42552 | R | 1 | 17 | 0.8 | 0.30 | 0.3 | 0.6 | 33.0 | 26.0 | 442 | 25 | 65 | 10 | 0 | 0 | M | 10 | AR | M | 296 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N7 | 42569 | G | 1 | 71 | 0.4 | 0.35 | 0.3 | 0.65 | 30.0 | 20.6 | 1463 | 25 | 70 | 5 | 0 | 0 | M | 5 | AR | M | 1038 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | 50 | DW, EB | N |
| Nome Main | N7 | 42640 | R | 1 | 73 | 0.9 | 0.35 | 0.3 | 0.65 | 26.0 | 19.0 | 1387 | 25 | 75 | 0 | 0 | 0 | M | 6 | AR | M | 1040 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | EB | N |
| Nome Main | N7 | 42713 | G | 1 | 52 | 0.5 | 0.41 | 0.3 | 0.71 | 35.0 | 17.8 | 926 | 30 | 70 | 0 | 0 | 0 | H | 6 | AR | L | 648 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | SC | G | 30 | EB | N |
| Nome Main | N7 | 42765 | R | 1 | 110 | 0.8 | 0.28 | 0.3 | 0.58 | 34.0 | 18.6 | 2046 | 25 | 60 | 15 | 0 | 0 | M | 13 | AR | M | 1289 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | DW, EB, MB | N |
| Nome Main | N7 | 42875 | G | 1 | 73 | 0.5 | 0.37 | 0.3 | 0.67 | 140.0 | 21.0 | 1533 | 30 | 68 | 2 | 0 | 0 | M | 5 | AR | L | 1049 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | G | | EB | N |
| Nome Main | N7 | 42948 | R | 1 | 127 | 1 | 0.25 | 0.3 | 0.55 | 51.0 | 40.0 | 5080 | 25 | 70 | 5 | 0 | 0 | M | 5 | AR | M | 3607 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | SC | G | 120 | EB | N |
| Nome Main | N7 | 43075 | G | 1 | 107 | 0.4 | 0.67 | 0.3 | 0.97 | 31.0 | 24.0 | 2568 | 30 | 70 | 0 | 0 | 0 | M | 5 | AR | L | 1798 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | DW, EB | N |
| Nome Main | N7 | 43182 | R | 1 | 93 | 1 | 0.38 | 0.3 | 0.68 | 24.0 | 16.0 | 1488 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | L | 1116 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW, EB | N |
| Nome Main | N7 | 43275 | G | 1 | 30 | 0.5 | 0.55 | 0.3 | 0.85 | 24.0 | 12.0 | 360 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 216 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 0 | 2.0 | 2 | | | | DW, EB | N |
| Nome Main | N7 | 43305 | R | 1 | 101 | 1.5 | 0.29 | 0.3 | 0.59 | 55.0 | 19.2 | 1939 | 25 | 75 | 0 | 0 | 0 | H | 5 | AR | L | 1454 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | DW, EB | N |
| Nome Main | N7 | 43406 | G | 1 | 24 | 0.5 | 0.37 | 0.3 | 0.67 | 72.0 | 25.0 | 600 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 360 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | EB | N |
| Nome Main | N7 | 43430 | R | 1 | 45 | 1 | 0.33 | 0.3 | 0.63 | 66.0 | 15.0 | 675 | 25 | 75 | 0 | 0 | 0 | H | 5 | AR | L | 506 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | MB, MC, EB, DW | N |
| Nome Main | N7 | 43475 | G | 1 | 111 | 0.5 | 0.43 | 0.3 | 0.73 | 28.8 | 15.5 | 1721 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 1032 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | EB | N |
| Nome Main | N7 | 43586 | R | 1 | 45 | 1.4 | 0.25 | 0.3 | 0.55 | 40.0 | 17.0 | 765 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | L | 574 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | DW, MC, MB | N |
| Nome Main | N7 | 43631 | G | 1 | 63 | 0.5 | 0.33 | 0.3 | 0.63 | 27.0 | 15.0 | 945 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 567 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | DW, EB | N |
| Nome Main | N7 | 43694 | R | 1 | 61 | 1 | 0.30 | 0.3 | 0.6 | 56.0 | 12.8 | 781 | 25 | 65 | 10 | 0 | 0 | M | 13 | AR | L | 523 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | DW, MC, MB | N |
| Nome Main | N7 | 43755 | G | 1 | 60 | 0.5 | 0.35 | 0.3 | 0.65 | 24.5 | 14.8 | 888 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 533 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | DW, MC, MB | N |
| Nome Main | N7 | 43815 | R | 1 | 23 | 1 | 0.18 | 0.3 | 0.48 | 58.0 | 30.0 | 690 | 25 | 75 | 0 | 0 | 0 | H | 5 | AR | L | 518 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | MB, MC, EB, DW | N |
| Nome Main | N7 | 43838 | G | 1 | 55 | 0.2 | 0.30 | 0.3 | 0.6 | 31.0 | 21.0 | 1155 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 693 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | MB, MC, EB, DW | N |
| Nome Main | N7 | 43893 | R | 1 | 33 | 0.5 | 0.40 | 0.3 | 0.7 | 31.0 | 26.0 | 858 | 25 | 75 | 0 | 0 | 0 | H | 5 | AR | L | 644 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | MB, MC, EB, DW | N |
| Nome Main | N7 | 43926 | G | 1 | 49 | 0.2 | 0.47 | 0.3 | 0.77 | 45.0 | 14.0 | 686 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 412 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | EB, DW | N |
| Nome Main | N7 | 43975 | R | 1 | 30 | 1 | 0.35 | 0.3 | 0.65 | 28.0 | 14.0 | 420 | 25 | 75 | 0 | 0 | 0 | H | 5 | AR | L | 315 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | SC | G | 150+ | EB, DW | N |
| Nome Main | N7 | 44005 | G | 1 | 92 | 0.5 | 0.47 | 0.3 | 0.77 | 21.0 | 14.0 | 1288 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 773 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | EB, DW | N |
| Nome Main | N7 | 44097 | R | 1 | 84 | 1 | 0.26 | 0.3 | 0.56 | 43.0 | 24.0 | 2016 | 25 | 75 | 0 | 0 | 0 | H | 5 | AR | L | 1512 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | EB, DW | N |
| Nome Main | N7 | 44181 | G | 1 | 194 | 0.5 | 0.60 | 0.3 | 0.9 | 35.0 | 18.0 | 3492 | 40 | 60 | 0 | 0 | 0 | H | 5 | AR | L | 2095 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | MB, MC, EB, DW | N |
| Nome Main | N7 | 44375 | R | 1 | 200 | 1 | 0.43 | 0.3 | 0.73 | 35.0 | 11.8 | 2360 | 20 | 80 | 0 | 0 | 0 | M | 5 | AR | M | 1888 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | SC | G | | MB, MC, EB, DW | N |
| Nome Main | N7 | 48213 | R | 1 | 170 | 1 | 0.38 | 0.3 | 0.68 | 41.0 | 41.0 | 6970 | 20 | 73 | 5 | 2 | 0 | M | 5 | AR | M | 5158 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 5 | 0 | 5 | 12.0 | 5 | | | | MB, MC, DW | N |
| Nome Main | N7 | 48383 | G | 1 | 55 | 0.5 | 0.58 | 0.3 | 0.88 | 30.0 | 30.0 | 1650 | 30 | 65 | 5 | 0 | 0 | M | 5 | AR | L | 1089 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 5 | 5.0 | 5 | | | | MB, MC, DW | N |
| Nome Main | N7 | 48438 | R | 1 | 742 | 1 | 0.35 | 0.3 | 0.65 | 31.0 | 31.0 | 23002 | 25 | 60 | 10 | 5 | 0 | M | 20 | AR | M | 14261 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 5 | 0.1 | 0 | 10.1 | 0 | | | | MB, MC, DW | N |
| Nome Main | N7 | 49180 | G | 1 | 243 | 0.5 | 0.53 | 0.1 | 0.63 | 32.0 | 31.0 | 7533 | 25 | 60 | 10 | 5 | 0 | M | 20 | AR | M | 4670 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0.0 | 2 | 7.0 | 0 | | | | EB, DW | N |
| Nome Main | N7 | 49423 | R | 1 | 189 | 1 | 0.37 | 0.2 | 0.57 | 82.0 | 59.0 | 11151 | 20 | 55 | 20 | 5 | 0 | M | 20 | AR | M | 6579 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0.0 | 0 | 5.0 | 2 | SC | G | | MB, MC, EB, DW | N |
| Nome Main | N7 | 49612 | G | 1 | 98 | 0.5 | 0.51 | 0.3 | 0.81 | 82.0 | 29.0 | 2842 | 25 | 50 | 20 | 5 | 0 | M | 20 | AR | M | 1535 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 2 | 7.0 | 0 | SC | G | 221 | EB, DW | N |
| Nome Main | N7 | 49710 | R | 1 | 183 | 1 | 0.36 | 0.25 | 0.61 | 91.0 | 31.0 | 5673 | 20 | 55 | 20 | 5 | 0 | M | 20 | AR | M | 3347 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 2 | SC | G | | MB, MC, EB, DW | N |

Table D1.  Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$)[5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type[6] | Quality[7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
| Nome Main | N7 | 49893 | G | 1 | 520 | 0.5 | 0.50 | 0.3 | 0.8 | 86.0 | 23.0 | 11960 | 20 | 55 | 20 | 5 | 0 | M | 20 | AR | M | 7056 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 2 | | | | EB, DW | N |
| Nome Main | N7 | 50413 | R | 1 | 322 | 1 | 0.44 | 0.3 | 0.74 | 88.0 | 24.0 | 7728 | 20 | 55 | 20 | 5 | 0 | M | 20 | AR | M | 4560 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 2 | SC | G | | MB, MC, EB, DW | N |
| Nome Main | N7 | 50735 | G | 1 | 122 | 0.5 | 0.45 | 0.2 | 0.65 | 92.0 | 38.0 | 4636 | 25 | 50 | 20 | 5 | 0 | M | 20 | AR | M | 2503 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 2 | SC | G | | MB, MC, EB, DW | N |
| Nome Main | N7 | 50857 | R | 1 | 56 | 1 | 0.38 | 0.2 | 0.58 | 90.0 | 23.0 | 1288 | 20 | 55 | 20 | 5 | 0 | M | 20 | AR | M | 760 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 2 | SC | G | | EB, DW | N |
| Nome Main | N7 | 50913 | G | 1 | 300 | 0.5 | 0.48 | 0.2 | 0.68 | 90.0 | 21.0 | 6300 | 25 | 35 | 30 | 10 | 0 | M | 25 | AR | M | 2583 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 10 | 0 | 0 | 0 | 10.0 | 2 | SC | G | | MB, MC, EB, DW | N |
| Nome Main | N7 | 51213 | R | 1 | 1400 | 0.9 | 0.46 | 0.2 | 0.66 | 49.0 | 37.0 | 51800 | 20 | 55 | 20 | 5 | 0 | M | 20 | AR | M | 30562 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 2 | SC | G | | MB, MC, EB, DW | N |
| Nome Main | N7 | 52613 | G | 1 | 350 | 0.2 | 0.48 | 0.2 | 0.68 | 61.0 | 58.0 | 20300 | 30 | 60 | 10 | 0 | 0 | L | 12 | AR | M | 12586 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | EB, DW | N |
| Nome Main | N7 | 52963 | R | 1 | 250 | 1 | 0.43 | 0.4 | 0.83 | 61.0 | 37.0 | 9250 | 20 | 75 | 5 | 0 | 0 | M | 6 | AR | M | 7030 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | MB, MC, EB, DW | N |
| Nome Main | N7 | 53213 | G | 1 | 90 | 0.5 | 0.63 | 0.3 | 0.93 | 60.0 | 20.0 | 1800 | 30 | 45 | 20 | 5 | 0 | M | 20 | AR | M | 882 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 2 | | | | MB, MC, EB, DW | N |
| Nome Main | N7 | 53303 | R | 1 | 130 | 1 | 0.47 | 0.3 | 0.77 | 34.0 | 20.0 | 2600 | 30 | 45 | 20 | 5 | 0 | M | 20 | AR | M | 1274 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 2 | | | | | N |
| Osborn Ck | Os1 | 0 | G | 1 | 36 | 0.2 | 0.56 | 0.25 | 0.81 | 26.0 | 8.0 | 288 | 35 | 63 | 2 | 0 | 0 | M | 5 | AR | M | 183 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | | | EB, DW | N |
| Osborn Ck | Os1 | 36 | R | 1 | 12 | 1.0 | 0.25 | 0.25 | 0.50 | 19.0 | 12.0 | 144 | 25 | 70 | 5 | 0 | 0 | L | 5 | AR | M | 102 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | ALC | G | 30 | EB, DW, BC | N |
| Osborn Ck | Os1 | 48 | G | 1 | 13 | 0.2 | 0.34 | 0.25 | 0.59 | 22.0 | 7.0 | 91 | 25 | 70 | 5 | 0 | 0 | L | 5 | AR | M | 65 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | | | | EB, DW | N |
| Osborn Ck | Os1 | 61 | R | 1 | 18 | 0.5 | 0.21 | 0.25 | 0.46 | 22.0 | 7.0 | 126 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 96 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | | | | DW | N |
| Osborn Ck | Os1 | 79 | G | 1 | 21 | 0.2 | 0.28 | 0.25 | 0.53 | 22.0 | 7.0 | 147 | 25 | 73 | 2 | 0 | 0 | L | 5 | AR | L | 108 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 2 | | | | DW | N |
| Osborn Ck | Os1 | 100 | R | 1 | 20 | 0.4 | 0.18 | 0.25 | 0.43 | 22.0 | 7.0 | 140 | 15 | 81 | 2 | 0 | 2 | L | 5 | AR | M | 114 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | | | | | N |
| Osborn Ck | Os1 | 120 | P | 1 | 30 | 0.0 | 0.53 | 0.25 | 0.78 | 14.0 | 6.0 | 180 | 5 | 70 | 5 | 0 | 0 | L | 5 | AR | M | 128 | 0.68 | 0.14 | 0.54 | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 2 | SC | G | 100+ | EB, DW | N |
| Osborn Ck | Os1 | 150 | R | 1 | 17 | 0.9 | 0.14 | 0.25 | 0.39 | 10.5 | 9.0 | 153 | 10 | 80 | 10 | 0 | 0 | L | 8 | AR | M | 125 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 2 | | | | EB | N |
| Osborn Ck | Os1 | 167 | G | 1 | 18 | 0.3 | 0.21 | 0.25 | 0.46 | 10.0 | 8.0 | 144 | 25 | 73 | 2 | 0 | 0 | L | 5 | AR | M | 106 | | | | | | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 7 | 5 | | | | | N |
| Osborn Ck | Os1 | 185 | R | 1 | 15 | 0.7 | 0.12 | 0.45 | 0.57 | 11.0 | 10.0 | 150 | 5 | 70 | 25 | 0 | 0 | L | 8 | AR | M | 113 | | | | | | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 5 | | | | | N |
| Osborn Ck | Os1 | 200 | G | 1 | 55 | 0.3 | 0.18 | 0.45 | 0.63 | 23.0 | 16.0 | 880 | 25 | 75 | 0 | 0 | 0 | L | 4 | AR | M | 660 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 2 | | | | | N |
| Osborn Ck | Os1 | 255 | P | 1 | 33 | 0.0 | 0.52 | 0.25 | 0.77 | 23.0 | 10.0 | 330 | 25 | 75 | 0 | 0 | 0 | L | 4 | AR | L | 248 | 0.85 | 0.25 | 0.60 | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 15 | 17 | 5 | | | | | N |
| Osborn Ck | Os1 | 288 | G | 1 | 36 | 0.2 | 0.73 | 0.25 | 0.98 | 26.0 | 8.0 | 288 | 30 | 68 | 2 | 0 | 0 | L | 4 | AR | M | 197 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | | | EB, MB, BD | N |
| Osborn Ck | Os1 | 324 | R | 1 | 12 | 0.7 | 0.25 | 0.25 | 0.50 | 19.0 | 12.0 | 144 | 15 | 80 | 5 | 0 | 0 | L | 4 | AR | M | 117 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | ALC | G | 30 | EB, BC, DW | N |
| Osborn Ck | Os1 | 336 | G | 1 | 13 | 0.3 | 0.34 | 0.25 | 0.59 | 22.0 | 7.0 | 91 | 20 | 75 | 5 | 0 | 0 | L | 4 | AR | M | 69 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | | | | EB, DW | N |
| Osborn Ck | Os1 | 349 | R | 1 | 17 | 1.0 | 0.21 | 0.25 | 0.46 | 22.0 | 7.0 | 119 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | M | 96 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | | | | DW | N |
| Osborn Ck | Os1 | 366 | G | 1 | 22 | 0.3 | 0.28 | 0.25 | 0.53 | 22.0 | 7.0 | 154 | 25 | 73 | 2 | 0 | 0 | L | 5 | AR | L | 113 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 2 | | | | DW | N |
| Osborn Ck | Os1 | 388 | R | 1 | 20 | 1.5 | 0.18 | 0.25 | 0.43 | 22.0 | 7.0 | 140 | 20 | 78 | 2 | 0 | 0 | L | 5 | AR | M | 110 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | SC | G | 50 | | N |
| Osborn Ck | Os1 | 408 | P | 1 | 30 | 0.0 | 0.53 | 0.25 | 0.78 | 14.0 | 6.0 | 180 | 25 | 70 | 5 | 0 | 0 | L | 5 | AR | M | 128 | 0.84 | 0.14 | 0.70 | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 2 | | | | EB, DW | N |
| Osborn Ck | Os1 | 438 | R | 1 | 17 | 2.0 | 0.14 | 0.25 | 0.39 | 10.5 | 9.0 | 153 | 10 | 80 | 10 | 0 | 0 | L | 7 | AR | M | 125 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 2 | | | | EB | N |
| Osborn Ck | Os1 | 455 | G | 1 | 18 | 0.2 | 0.21 | 0.25 | 0.46 | 10.0 | 8.0 | 144 | 25 | 73 | 2 | 0 | 0 | L | 5 | AR | M | 106 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 5 | | | | EB | N |
| Osborn Ck | Os1 | 473 | R | 1 | 15 | 0.7 | 0.12 | 0.45 | 0.57 | 11.0 | 10.0 | 150 | 5 | 70 | 25 | 0 | 0 | L | 8 | AR | M | 113 | | | | | | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 | 10 | 5 | | | | EB | N |
| Osborn Ck | Os1 | 488 | G | 1 | 55 | 0.3 | 0.17 | 0.1 | 0.27 | 23.0 | 10.0 | 550 | 25 | 75 | 0 | 0 | 0 | L | 5 | AR | M | 413 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 2 | | | | EB | N |
| Osborn Ck | Os1 | 543 | P | 1 | 33 | 0.0 | 0.52 | 0.25 | 0.77 | 23.0 | 10.0 | 330 | 25 | 75 | 0 | 0 | 0 | L | 5 | AR | L | 248 | 0.78 | 0.15 | 0.63 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 15 | 5 | | | | EB | N |
| Osborn Ck | Os1 | 576 | R | 1 | 16 | 0.4 | 0.15 | 0.4 | 0.55 | 21.0 | 12.0 | 192 | 25 | 73 | 2 | 0 | 0 | L | 5 | AR | M | 141 | | | | | | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 2 | 12 | 5 | | | | EB,DW | N |
| Osborn Ck | Os1 | 592 | G | 1 | 52 | 0.2 | 0.33 | 0.4 | 0.73 | 23.0 | 15.0 | 780 | 30 | 70 | 0 | 0 | 0 | L | 5 | AR | L | 546 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 2 | | | | DW | N |
| Osborn Ck | Os1 | 644 | R | 1 | 93 | 0.4 | 0.22 | 0.4 | 0.62 | 35.0 | 14.0 | 1302 | 20 | 78 | 2 | 0 | 0 | L | 5 | AR | M | 1021 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | | | EB,MB | N |
| Osborn Ck | Os1 | 737 | G | 1 | 126 | 0.1 | 0.28 | 0.4 | 0.68 | 18.0 | 17.0 | 2142 | 25 | 55 | 20 | 0 | 0 | L | 10 | AR | M | 1264 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | | | | EB,DW | N |
| Osborn Ck | Os1 | 863 | P | 1 | 42 | 0.0 | 0.82 | 0.45 | 1.27 | 32.0 | 7.0 | 294 | 25 | 75 | 0 | 0 | 0 | L | 5 | AR | M | 221 | 1.30 | 0.09 | 1.21 | | Y | 0 | 0 | 0 | 0 | 2 | 0 | 50 | 0 | 0 | 52 | 2 | PD | P | 70+ | EB,MB | N |
| Osborn Ck | Os1 | 905 | R | 1 | 13 | 0.9 | 0.09 | 0.45 | 0.54 | 24.0 | 16.0 | 208 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | H | 166 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | | | | MB,DW | N |
| Osborn Ck | Os1 | 918 | G | 1 | 55 | 0.4 | 0.27 | 0.45 | 0.72 | 22.0 | 16.0 | 880 | 25 | 75 | 0 | 0 | 0 | L | 5 | AR | M | 660 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | | | DW | N |
| Osborn Ck | Os1 | 973 | R | 1 | 56 | 0.7 | 0.17 | 0.32 | 0.49 | 24.0 | 12.0 | 672 | 20 | 80 | 0 | 0 | 0 | L | 5 | AR | M | 538 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | | | | DW | N |
| Osborn Ck | Os1 | 1029 | G | 1 | 27 | 0.3 | 0.40 | 0.32 | 0.72 | 24.0 | 12.0 | 324 | 25 | 65 | 10 | 0 | 0 | L | 5 | AR | L | 217 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 5 | | | | DW | N |
| Osborn Ck | Os1 | 1056 | P | 1 | 17 | 0.0 | 0.52 | 0.5 | 1.02 | 22.0 | 12.0 | 204 | 30 | 50 | 20 | 0 | 0 | L | 12 | AR | L | 110 | 0.69 | 0.13 | 0.56 | | | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 10 | | | | DW | N |
| Osborn Ck | Os1 | 1073 | R | 1 | 32 | 1.0 | 0.13 | 0.75 | 0.88 | 25.0 | 15.0 | 480 | 15 | 75 | 10 | 0 | 0 | L | 10 | AR | M | 370 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | SC | G | >100 | MB | N |
| Osborn Ck | Os1 | 1105 | G | 1 | 21 | 0.3 | 0.12 | 0.3 | 0.42 | 16.0 | 15.0 | 315 | 25 | 73 | 2 | 0 | 0 | L | 5 | AR | M | 231 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | | | | N |

Table D1. Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$)[5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type[6] | Quality[7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
| Osborn Ck | Os1 | 1126 | R | 1 | 61 | 0.7 | 0.13 | 0.5 | 0.63 | 16.0 | 14.0 | 854 | 15 | 75 | 10 | 0 | 0 | L | 8 | AR | M | 658 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 5 | | | | DW | N |
| Osborn Ck | Os1 | 1187 | G | 1 | 27 | 0.3 | 0.51 | 0.4 | 0.91 | 28.0 | 16.0 | 432 | 30 | 65 | 5 | 0 | 0 | L | 5 | AR | M | 285 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | SC | G | | DW | N |
| Osborn Ck | Os1 | 1214 | P | 1 | 29 | 0.0 | 0.65 | 0.4 | 1.05 | 25.0 | 9.0 | 261 | 30 | 55 | 15 | 0 | 0 | L | 12 | AR | L | 151 | 0.82 | 0.20 | 0.62 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 10 | | | | DW | N |
| Osborn Ck | Os1 | 1243 | G | 1 | 45 | 0.3 | 0.33 | 0.5 | 0.83 | 20.0 | 10.0 | 450 | 30 | 70 | 0 | 0 | 0 | L | 5 | AR | L | 315 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | | | | EB, DW | N |
| Osborn Ck | Os1 | 1288 | R | 1 | 47 | 0.8 | 0.22 | 0.4 | 0.62 | 22.9 | 10.8 | 508 | 15 | 53 | 30 | 2 | 0 | L | 13 | AR | H | 299 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 2 | | | | DW | N |
| Osborn Ck | Os1 | 1335 | G | 1 | 44 | 0.2 | 0.20 | 0.29 | 0.49 | 25.8 | 5.9 | 260 | 25 | 73 | 2 | 0 | 0 | L | 5 | AR | M | 191 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 2 | | | | DW | N |
| Osborn Ck | Os1 | 1379 | R | 1 | 12 | 0.4 | 0.32 | 0.35 | 0.67 | 29.9 | 5.2 | 62 | 20 | 78 | 2 | 0 | 0 | L | 5 | AR | H | 49 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | | | | DW | N |
| Osborn Ck | Os1 | 1391 | G | 1 | 58 | 0.2 | 0.20 | 0.15 | 0.35 | 32.1 | 15.3 | 887 | 25 | 75 | 0 | 0 | 0 | L | 5 | AR | L | 666 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 2 | ALC | G | 40 | BC, DW | N |
| Osborn Ck | Os1 | 1449 | R | 1 | 19 | 0.4 | 0.16 | 0.15 | 0.31 | 18.7 | 14.2 | 270 | 15 | 70 | 5 | 0 | 0 | L | 5 | AR | H | 192 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | | | | MB, DW | N |
| Osborn Ck | Os1 | 1468 | G | 1 | 62 | 0.2 | 0.40 | 0.37 | 0.77 | 16.0 | 15.0 | 930 | 25 | 45 | 30 | 0 | 0 | L | 13 | AR | L | 474 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | | | | DW | N |
| Osborn Ck | Os1 | 1530 | P | 1 | 43 | 0.0 | 0.78 | 0.3 | 1.08 | 17.0 | 7.3 | 314 | 25 | 55 | 20 | 0 | 0 | L | 13 | AR | L | 185 | 0.94 | 0.24 | 0.74 | | | 0 | 0 | 0 | 0 | 5 | 0 | 10 | 0 | 0 | 15 | 2 | | | | EB, DW | N |
| Osborn Ck | Os1 | 1573 | R | 1 | 99 | 0.3 | 0.24 | 0.15 | 0.39 | 16.4 | 9.0 | 891 | 15 | 48 | 35 | 2 | 0 | L | 13 | AR | H | 490 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | ALC | G | 100 | | N |
| Osborn Ck | Os1 | 1672 | G | 1 | 30 | 0.2 | 0.34 | 0.15 | 0.49 | 11.4 | 9.3 | 279 | 25 | 73 | 2 | 0 | 0 | L | 5 | AR | M | 205 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 5 | | | | NB | N |
| Osborn Ck | Os1 | 1702 | P | 1 | 17 | 0.0 | 0.50 | 0.15 | 0.65 | 14.7 | 7.6 | 129 | 25 | 65 | 10 | 0 | 0 | L | 5 | AR | M | 87 | 0.75 | 0.21 | 0.54 | | | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 2 | 12 | 5 | | | | DW | N |
| Osborn Ck | Os1 | 1719 | R | 1 | 2 | 0.5 | 0.21 | 0.15 | 0.36 | 12.4 | 7.6 | 15 | 10 | 80 | 10 | 0 | 0 | L | 5 | AR | H | 12 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | N |
| Osborn Ck | Os1 | 1721 | P | 1 | 77 | 0.0 | 0.33 | 0.15 | 0.48 | 13.5 | 13.5 | 1040 | 25 | 65 | 10 | 0 | 0 | L | 5 | AR | M | 696 | 0.73 | 0.22 | 0.51 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | ALC | G | | MB,EB | N |
| Osborn Ck | Os1 | 1798 | R | 1 | 39 | 0.3 | 0.22 | 0.35 | 0.57 | 20.0 | 14.1 | 550 | 20 | 43 | 35 | 2 | 0 | L | 13 | AR | H | 275 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 2 | | | | | N |
| Osborn Ck | Os1 | 1837 | G | 1 | 29 | 0.2 | 0.36 | 0.3 | 0.66 | 20.6 | 15.5 | 450 | 29 | 49 | 20 | 2 | 0 | L | 13 | AR | M | 238 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 5 | 7 | 2 | | | | | N |
| Osborn Ck | Os1 | 1866 | R | 1 | 70 | 0.3 | 0.23 | 0.3 | 0.53 | 17.1 | 16.2 | 1134 | 20 | 53 | 25 | 2 | 0 | L | 13 | AR | M | 658 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 | 2 | | | | EB | N |
| Osborn Ck | Os1 | 1936 | G | 1 | 55 | 0.1 | 0.28 | 0.3 | 0.58 | 13.3 | 11.0 | 605 | 33 | 50 | 15 | 2 | 0 | L | 13 | AR | M | 321 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 | 2 | | | | EB | N |
| Osborn Ck | Os1 | 1991 | R | 1 | 63 | 0.3 | 0.15 | 0.2 | 0.35 | 22.7 | 9.9 | 624 | 20 | 70 | 10 | 0 | 0 | L | 13 | AR | L | 449 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | | | MB, EB, | N |
| Osborn Ck | Os1 | 2054 | G | 1 | 41 | 0.1 | 0.28 | 0.25 | 0.53 | 14.9 | 12.8 | 525 | 30 | 40 | 25 | 5 | 0 | L | 18 | AR | M | 236 | | | | | | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 2 | 9 | 0 | | | | | N |
| Osborn Ck | Os1 | 2095 | P | 1 | 15 | 0.0 | 0.46 | 0.35 | 0.81 | 17.7 | 10.3 | 155 | 30 | 50 | 10 | 10 | 0 | L | 25 | AR | M | 80 | 0.77 | 0.26 | 0.51 | | | 0 | 0 | 0 | 0 | 8 | 10 | 0 | 0 | 2 | 20 | 5 | | | | | N |
| Osborn Ck | Os1 | 2110 | R | 1 | 62 | 0.1 | 0.26 | 0.3 | 0.56 | 7.8 | 6.9 | 428 | 15 | 45 | 38 | 2 | 0 | L | 18 | AR | M | 225 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 2 | SC | G | | MB, DW | N |
| Osborn Ck | Os1 | 2172 | P | 1 | 32 | 0.0 | 0.52 | 0.4 | 0.92 | 13.1 | 5.0 | 160 | 29 | 69 | 2 | 0 | 0 | L | 5 | AR | M | 111 | 0.68 | 0.13 | 0.55 | | | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 | 2 | | | | EB, DW | N |
| Osborn Ck | Os1 | 2204 | R | 1 | 97 | 0.3 | 0.13 | 0.25 | 0.38 | 22.1 | 18.4 | 1785 | 10 | 60 | 25 | 5 | 0 | L | 13 | AR | H | 1160 | | | | | | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 7 | 0 | | | | EB | N |
| Osborn Ck | Os1 | 2301 | G | 1 | 24 | 0.2 | 0.24 | 0.25 | 0.49 | 15.8 | 13.0 | 312 | 25 | 63 | 10 | 2 | 0 | L | 13 | AR | M | 203 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 5 | 7 | 0 | | | | EB | N |
| Osborn Ck | Os1 | 2325 | R | 1 | 76 | 0.4 | 0.13 | 0.25 | 0.38 | 13.0 | 10.4 | 790 | 20 | 55 | 20 | 5 | 0 | L | 13 | AR | M | 466 | | | | | | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 5 | 12 | 5 | | | | EB, DW | N |
| Osborn Ck | Os1 | 2401 | G | 1 | 60 | 0.2 | 0.22 | 0.25 | 0.47 | 23.2 | 18.0 | 1080 | 30 | 63 | 5 | 2 | 0 | L | 5 | AR | M | 691 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 10 | 12 | 0 | SC | P | 20 | EB, DW | N |
| Osborn Ck | Os1 | 2461 | R | 1 | 4 | 0.7 | 0.18 | 0.25 | 0.43 | 18.5 | 13.5 | 54 | 10 | 85 | 5 | 0 | 0 | M | 5 | AR | M | 46 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | SC | G | 50 | DW | N |
| Osborn Ck | Os1 | 2465 | G | 1 | 36 | 0.2 | 0.46 | 0.2 | 0.66 | 14.4 | 8.5 | 306 | 30 | 65 | 5 | 0 | 0 | M | 5 | AR | M | 202 | | | | | | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 | 10 | 5 | | | | DW | N |
| Osborn Ck | Os1 | 2501 | R | 1 | 37 | 0.8 | 0.09 | 0.45 | 0.54 | 15.5 | 13.5 | 500 | 10 | 85 | 5 | 0 | 0 | L | 5 | AR | H | 430 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 5 | 7 | 0 | SL | P | 45 | DW | N |
| Osborn Ck | Os1 | 2538 | G | 1 | 126 | 0.2 | 0.39 | 0.4 | 0.79 | 25.6 | 19.1 | 2407 | 30 | 65 | 5 | 0 | 0 | M | 5 | AR | M | 1588 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | N |
| Osborn Ck | Os1 | 2664 | P | 1 | 20 | 0.0 | 0.68 | 0.6 | 1.28 | 20.4 | 9.1 | 182 | 30 | 65 | 5 | 0 | 0 | M | 5 | AR | M | 120 | 0.85 | 0.23 | 0.62 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | N |
| Osborn Ck | Os1 | 2684 | R | 1 | 30 | 0.8 | 0.23 | 0.55 | 0.78 | 19.6 | 10.4 | 312 | 15 | 60 | 20 | 5 | 0 | M | 13 | AR | L | 200 | | | | | | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 10 | 15 | 0 | | | | MB,EB | N |
| Osborn Ck | Os1 | 2714 | G | 1 | 32 | 0.2 | 0.12 | 0.8 | 0.92 | 20.8 | 7.5 | 240 | 30 | 53 | 15 | 2 | 0 | M | 13 | AR | L | 134 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 90 | 92 | 0 | | | | | N |
| Osborn Ck | Os1 | 2746 | R | 1 | 126 | 0.7 | 0.37 | 0.55 | 0.92 | 20.1 | 14.1 | 1777 | 20 | 75 | 5 | 0 | 0 | M | 5 | AR | M | 1350 | | | | | | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 10 | 20 | 0 | | | | EB, DW | N |
| Osborn Ck | Os1 | 2872 | G | 1 | 55 | 0.3 | 0.21 | 0.43 | 0.64 | 28.9 | 7.1 | 391 | 30 | 68 | 2 | 0 | 0 | H | 5 | AR | L | 267 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 5 | SC | P | | DW | N |
| Osborn Ck | Os1 | 2927 | R | 1 | 107 | 0.8 | 0.31 | 1 | 1.31 | 13.9 | 12.1 | 1295 | 10 | 85 | 5 | 0 | 0 | M | 5 | AR | H | 1113 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 5 | | | | EB, DW | N |
| Osborn Ck | Os1 | 3034 | G | 1 | 56 | 0.3 | 0.21 | 0.8 | 1.01 | 23.5 | 8.7 | 487 | 30 | 53 | 5 | 10 | 2 | M | 5 | AR | M | 263 | | | | | | 0 | 0 | 0 | 0 | 2 | 10 | 0 | 0 | 2 | 14 | 2 | | | | EB, DW | N |
| Osborn Ck | Os1 | 3090 | R | 1 | 64 | 0.8 | 0.21 | 0.8 | 1.01 | 22.3 | 8.4 | 538 | 20 | 60 | 20 | 0 | 0 | H | 5 | AR | L | 344 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 5 | SC | P | 15 | EB, DW | N |
| Osborn Ck | Os1 | 3154 | G | 1 | 41 | 0.3 | 0.12 | 0.75 | 0.87 | 20.0 | 14.5 | 595 | 20 | 75 | 5 | 0 | 0 | M | 5 | AR | M | 452 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 10 | | | | EB, DW | N |
| Osborn Ck | Os1 | 3195 | R | 1 | 26 | 1.0 | 0.22 | 0.65 | 0.87 | 16.0 | 14.0 | 364 | 20 | 78 | 2 | 0 | 0 | M | 5 | AR | M | 285 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | | | | EB | N |
| Osborn Ck | Os1 | 3221 | G | 1 | 43 | 0.3 | 0.18 | 0.7 | 0.88 | 18.3 | 14.4 | 619 | 30 | 62 | 8 | 0 | 0 | M | 6 | AR | M | 394 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 50 | 52 | 2 | | | | EB | N |
| Buster Ck | Bu1 | 0 | P | 1 | 28 | 0.0 | 0.33 | 0.2 | 0.53 | 5.7 | 4.0 | 112 | 30 | 68 | 2 | 0 | 0 | M | 4 | AR | L | 77 | 0.45 | 0.20 | 0.25 | | | 0 | 0 | 0 | 0 | 10.0 | 0 | 6.25 | 0 | 0 | 16.3 | 5 | | | | DW | N |
| Buster Ck | Bu1 | 28 | R | 1 | 13 | 1.0 | 0.27 | 0.25 | 0.52 | 5.0 | 2.5 | 33 | 15 | 83 | 2 | 0 | 0 | L | 4 | AR | H | 27 | | | | | | 0 | 0 | 0 | 0 | 25.0 | 0 | 0 | 0 | 0 | 25.0 | 5 | | | | DW | N |

Table D1. Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m) [1] Sampling Fraction [2] | Habitat type [3] | Habitat category [4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$) [5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type [6] | Quality [7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element [8] | Good holding pool? [9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type [10] | Access [11] | Length (m) | Channel Disturbances [12] | Barriers [13] |
| Buster Ck | Bu1 | 41 | G | 1 | 22 | 0.2 | 0.28 | 0.3 | 0.58 | 4.5 | 4.0 | 88 | 30 | 68 | 2 | 0 | 0 | M | 4 | AR | L | 60 | | | | | | 0 | 0 | 0 | 0 | 25.0 | 0 | 0 | 0 | 0 | 25.0 | 20 | | | | | N |
| Buster Ck | Bu1 | 63 | R | 1 | 14 | 0.3 | 0.16 | 0.25 | 0.41 | 6.6 | 5.0 | 70 | 10 | 88 | 2 | 0 | 0 | M | 4 | AR | M | 62 | | | | | | 0 | 0 | 0 | 0 | 12.0 | 0 | 2 | 0 | 0 | 14.0 | 35 | | | | | N |
| Buster Ck | Bu1 | 77 | P | 1 | 13 | 0.0 | 0.25 | 0.25 | 0.5 | 5.0 | 4.0 | 52 | 20 | 78 | 2 | 0 | 0 | L | 4 | AR | M | 41 | 0.51 | 0.25 | 0.26 | | | 0 | 0 | 0 | 0 | 12.0 | 0 | 2 | 0 | 0 | 14.0 | 20 | | | | MB | N |
| Buster Ck | Bu1 | 90 | R | 1 | 9 | 1.1 | 0.20 | 0.25 | 0.45 | 16.3 | 13.0 | 117 | 15 | 83 | 2 | 0 | 0 | L | 4 | AR | H | 98 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 2 | 0 | 0 | 7.0 | 20 | | | | DW | N |
| Buster Ck | Bu1 | 99 | P | 1 | 13 | 0.0 | 0.66 | 0.25 | 0.91 | 10.0 | 6.0 | 78 | 30 | 70 | 0 | 0 | 0 | M | 4 | AR | M | 55 | 0.90 | 0.20 | 0.70 | | | 0 | 0 | 0 | 0 | 8.0 | 0 | 5 | 0 | 0 | 13.0 | 5 | | | | DW | N |
| Buster Ck | Bu1 | 112 | R | 1 | 3 | | 0.25 | 0.25 | 0.5 | 7.5 | 4.0 | 12 | 10 | 88 | 2 | 0 | 0 | L | 4 | AR | H | 11 | | | | | | 0 | 0 | 0 | 0 | 12.0 | 0 | 0 | 0 | 0 | 12.0 | 25 | | | | DW | N |
| Buster Ck | Bu1 | 115 | P | 1 | 12 | 0.0 | 0.52 | 0.22 | 0.74 | 7.0 | 3.5 | 42 | 40 | 58 | 2 | 0 | 0 | M | 4 | AR | L | 25 | 0.71 | 0.25 | 0.46 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 2 | 0 | 0 | 7.0 | 5 | | | | DW | N |
| Buster Ck | Bu1 | 127 | R | 1 | 7 | 0.9 | 0.27 | 0.2 | 0.47 | 9.0 | 1.8 | 12 | 10 | 88 | 2 | 0 | 0 | L | 4 | AR | H | 11 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 2 | 0 | 2 | 6.0 | 25 | | | | DW | N |
| Buster Ck | Bu1 | 134 | P | 1 | 4 | 0.0 | 0.71 | 0.2 | 0.91 | 9.0 | 4.0 | 16 | 2 | 28 | 70 | 0 | 0 | L | 4 | AR | H | 7 | 0.90 | 0.27 | 0.63 | | | 0 | 0 | 0 | 0 | 12.0 | 0 | 0 | 0 | 0 | 12.0 | 2 | | | | DW | N |
| Buster Ck | Bu1 | 138 | O | 1 | 84 | 0.0 | 0.60 | 0.2 | 0.8 | 10.5 | 10.0 | 840 | 30 | 68 | 2 | 0 | 0 | M | 4 | AR | L | 575 | 1.30 | 0.27 | 1.03 | | Y | 0 | 0 | 0 | 0 | 16.0 | 0 | 5 | 2 | 0 | 23.1 | 30 | | | | MB, BD | N |
| Buster Ck | Bu1 | 222 | O | 1 | 12 | 0.0 | 1.05 | 0.25 | 1.3 | 10.0 | 7.0 | 84 | 70 | 28 | 2 | 0 | 0 | H | 4 | AR | L | 24 | 1.60 | 0.27 | 1.33 | BD | Y | 0 | 0 | 0 | 0 | 20.0 | 0 | 0 | 40 | 0 | 60.0 | 20 | | | | BD | N |
| Buster Ck | Bu1 | 234 | P | 1 | 123 | 0.0 | 0.74 | 0.25 | 0.99 | 6.0 | 5.0 | 615 | 20 | 78 | 2 | 0 | 0 | M | 4 | AR | M | 482 | 0.85 | 0.27 | 0.58 | BD | Y | 0 | 0 | 0 | 0 | 20.0 | 0 | 3 | 0 | 0 | 23.0 | 50 | | | | | N |
| Buster Ck | Bu1 | 357 | G | 1 | 25 | 0.1 | 0.44 | 0.25 | 0.69 | 6.2 | 2.8 | 70 | 15 | 83 | 2 | 0 | 0 | L | 4 | AR | H | 58 | | | | | | 0 | 0 | 0 | 0 | 15.0 | 0 | 0 | 0 | 0 | 15.0 | 40 | | | | DW | N |
| Buster Ck | Bu1 | 382 | R | 1 | 8 | 0.3 | 0.22 | 0.25 | 0.47 | 6.7 | 4.0 | 32 | 15 | 73 | 12 | 0 | 0 | L | 8 | AR | H | 24 | | | | | | 0 | 0 | 0 | 0 | 10.0 | 0 | 0 | 0 | 0 | 10.0 | 20 | | | | DW | N |
| Buster Ck | Bu1 | 390 | P | 1 | 4 | 0.0 | 0.61 | 0.25 | 0.86 | 5.0 | 3.6 | 14 | 20 | 68 | 12 | 0 | 0 | L | 8 | AR | M | 10 | 0.73 | 0.22 | 0.51 | BD | | 0 | 0 | 0 | 0 | 15.0 | 0 | 0 | 0 | | 15.0 | 20 | | | | | N |
| Buster Ck | Bu1 | 394 | O | 1 | 58 | 0.0 | 0.88 | 0.25 | 1.13 | 5.0 | 4.0 | 232 | 30 | 58 | 10 | 0 | 0 | M | 8 | AR | L | 139 | 1.02 | 0.22 | 0.80 | BD | Y | 0 | 0 | 0 | 0 | 18.0 | 0 | 0 | 1 | 0 | 19.0 | 25 | SC | G | | DW | N |
| Buster Ck | Bu1 | 452 | R | 1 | 39 | 0.5 | 0.21 | 0.25 | 0.46 | 8.0 | 5.3 | 207 | 10 | 78 | 12 | 0 | 0 | L | 8 | AR | H | 166 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 5 | | | | MB | N |
| Buster Ck | Bu1 | 491 | P | 1 | 16 | 0.0 | 0.49 | 0.25 | 0.74 | 6.9 | 3.6 | 58 | 20 | 70 | 10 | 0 | 0 | L | 8 | AR | M | 41 | 0.80 | 0.21 | 0.59 | | | 0 | 0 | 0 | 0 | 15.0 | 0 | 0 | 0 | 0 | 15.0 | 15 | ALC | G | 30 | DW | N |
| Buster Ck | Bu1 | 507 | R | 1 | 16 | 0.5 | 0.18 | 0.25 | 0.43 | 6.9 | 6.0 | 96 | 10 | 80 | 10 | 0 | 0 | L | 8 | AR | H | 79 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | DW | N |
| Buster Ck | Bu1 | 523 | P | 1 | 10 | 0.0 | 0.37 | 0.25 | 0.62 | 10.5 | 7.0 | 70 | 20 | 70 | 10 | 0 | 0 | L | 8 | AR | M | 50 | 0.58 | 0.18 | 0.40 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | | N |
| Buster Ck | Bu1 | 533 | G | 1 | 40 | 0.1 | 0.35 | 0.25 | 0.6 | 6.5 | 5.0 | 200 | 20 | 70 | 10 | 0 | 0 | L | 8 | AR | M | 144 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 2 | 0 | 0 | 4.0 | 2 | | | | | N |
| Buster Ck | Bu1 | 573 | R | 1 | 19 | 0.3 | 0.18 | 0.3 | 0.48 | 6.5 | 3.5 | 67 | 10 | 80 | 10 | 0 | 0 | L | 8 | AR | H | 55 | | | | | | 0 | 0 | 0 | 0 | 12.0 | 0 | 0 | 0 | 0 | 12.0 | 20 | | | | | N |
| Buster Ck | Bu1 | 592 | P | 1 | 22 | 0.0 | 0.68 | 0.4 | 1.08 | 6.5 | 3.1 | 68 | 15 | 75 | 10 | 0 | 0 | L | 8 | AR | H | 53 | 0.87 | 0.18 | 0.69 | | Y | 0 | 0 | 0 | 0 | 18.0 | 0 | 19 | 0 | 0 | 37.4 | 25 | | | | MB, DW | N |
| Buster Ck | Bu1 | 614 | G | 1 | 61 | 0.1 | 0.31 | 0.4 | 0.71 | 6.0 | 3.0 | 183 | 15 | 75 | 10 | 0 | 0 | L | 8 | AR | H | 141 | 0.60 | | | | Y | 0 | 0 | 0 | 0 | 20.0 | 0 | 15 | 0 | 0 | 35.0 | 30 | | | | EB | N |
| Buster Ck | Bu1 | 675 | R | 1 | 5 | 0.4 | 0.17 | 0.4 | 0.57 | 6.0 | 4.0 | 20 | 2 | 88 | 10 | 0 | 0 | L | 8 | AR | H | 18 | | | | | | 0 | 0 | 0 | 0 | 10.0 | 0 | 0 | 0 | 0 | 10.0 | 20 | | | | | N |
| Buster Ck | Bu1 | 680 | P | 1 | 62 | 0.0 | 0.25 | 0.35 | 0.6 | 4.5 | 3.8 | 236 | 15 | 75 | 10 | 0 | 0 | L | 8 | AR | H | 181 | 0.53 | 0.17 | 0.36 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 15 | | | | | N |
| Buster Ck | Bu1 | 742 | R | 1 | 10 | | 0.18 | 0.35 | 0.53 | 6.5 | 6.0 | 60 | 10 | 80 | 10 | 0 | 0 | L | 8 | AR | H | 49 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 20 | | | | | N |
| Buster Ck | Bu1 | 752 | P | 1 | 13 | | 1.00 | 0.35 | 1.35 | 7.5 | 6.0 | 78 | 30 | 60 | 10 | 0 | 0 | L | 8 | AR | L | 48 | 1.30 | 0.18 | 1.12 | | Y | 0 | 0 | 0 | 0 | 18.0 | 0 | 1.67 | 90 | 0 | 110 | 25 | | | | EB, DW | N |
| Buster Ck | Bu1 | 765 | R | 1 | 24 | | 0.18 | 0.35 | 0.53 | 7.5 | 4.0 | 96 | 10 | 80 | 10 | 0 | 0 | L | 8 | AR | H | 79 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 20 | | | | | N |
| Buster Ck | Bu1 | 789 | P | 1 | 15 | | 0.58 | 0.2 | 0.78 | 5.8 | 3.6 | 54 | 30 | 60 | 10 | 0 | 0 | M | 8 | AR | L | 33 | 0.95 | 0.18 | 0.77 | | Y | 0 | 0 | 0 | 0 | 30.0 | 0 | 2 | 0 | 0 | 32.0 | 15 | | | | | N |
| Buster Ck | Bu1 | 804 | R | 1 | 4 | | 0.16 | 0.2 | 0.36 | 5.8 | 4.0 | 16 | 15 | 75 | 10 | 0 | 0 | L | 8 | AR | H | 12 | | | | | | 0 | 0 | 0 | 0 | 8.0 | 0 | 0 | 0 | 0 | 8.0 | 20 | | | | | N |
| Buster Ck | Bu1 | 808 | P | 1 | 18 | | 0.63 | 0.3 | 0.93 | 3.5 | 2.6 | 47 | 15 | 75 | 10 | 0 | 0 | L | 8 | AR | H | 36 | 0.80 | 0.16 | 0.64 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 7.69 | 0 | 0 | 9.7 | 10 | | | | | N |
| Buster Ck | Bu1 | 826 | O | 1 | 49 | | 0.65 | 0.5 | 1.15 | 3.0 | 2.6 | 127 | 60 | 30 | 10 | 0 | 0 | H | 8 | AR | L | 41 | 0.85 | 0.16 | 0.69 | | | 0 | 0 | 0 | 0 | 12.0 | 0 | 0 | 0 | 0 | 12.0 | 20 | SC | G | | | N |
| Buster Ck | Bu1 | 875 | O | 1 | 62 | | 0.62 | 0.5 | 1.12 | 6.0 | 4.6 | 285 | 70 | 20 | 10 | 0 | 0 | H | 8 | AR | L | 63 | 0.83 | 0.16 | 0.67 | | | 0 | 0 | 0 | 0 | 12.0 | 0 | 0 | 0 | 0 | 12.0 | 15 | SC | G | | MB, DW | N |
| Buster Ck | Bu1 | 937 | R | 1 | 24 | | 0.18 | 0.35 | 0.53 | 7.2 | 5.5 | 132 | 25 | 65 | 10 | 0 | 0 | M | 8 | AR | M | 88 | | | | | | 0 | 0 | 0 | 0 | | 0 | | | | 0.0 | | | | | | N |
| Buster Ck | Bu1 | 961 | P | 1 | 57 | | 0.69 | 0.35 | 1.04 | 9.1 | 8.3 | 473 | 30 | 60 | 10 | 0 | 0 | M | 8 | AR | L | 293 | 0.77 | 0.18 | 0.59 | | | 0 | 0 | 0 | 0 | 10.0 | 0 | 0 | 0 | 0 | 10.0 | 20 | | | | | N |
| Buster Ck | Bu1 | 1018 | R | 1 | 22 | | 0.17 | 0.35 | 0.52 | 10.4 | 6.1 | 134 | 25 | 65 | 10 | 0 | 0 | M | 8 | AR | M | 90 | | | | | | 0 | 0 | 0 | 0 | | 0 | | | | 0.0 | | | | | | N |
| Buster Ck | Bu1 | 1040 | P | 1 | 58 | | 0.72 | 0.35 | 1.07 | 11.5 | 6.7 | 389 | 30 | 60 | 10 | 0 | 0 | M | 8 | AR | L | 241 | 0.74 | 0.17 | 0.57 | | | 0 | 0 | 0 | 0 | 15.0 | 0 | 0 | 0 | 0 | 15.0 | 15 | | | | | N |
| Buster Ck | Bu1 | 1098 | O | 1 | 251 | | 0.79 | 0.3 | 1.09 | 12.0 | 12.0 | 3012 | 30 | 60 | 10 | 0 | 0 | M | 8 | AR | L | 1867 | 1.20 | 0.17 | 1.03 | | Y | 0 | 0 | 0 | 0 | 30.0 | 0 | 0 | 5 | 0 | 35.0 | 10 | SC | G | | | N |
| Buster Ck | Bu2 | 0 | P | 1 | 26 | 0.0 | 0.61 | 0.25 | 0.86 | 9.0 | 5.0 | 130 | 15 | 85 | 0 | 0 | 0 | M | 5 | AR | M | 111 | 0.94 | 0.17 | 0.77 | | Y | 0 | 0 | 0 | 0 | 25.0 | 0 | 2 | 0 | 0 | 27.0 | 20 | | | | DW | N |
| Buster Ck | Bu2 | 26 | G | 1 | 12 | 0.1 | 0.42 | 0.3 | 0.72 | 10.0 | 4.0 | 48 | 15 | 85 | 0 | 0 | 0 | M | 5 | AR | M | 41 | 0.52 | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 2 | | | | DW | N |
| Buster Ck | Bu2 | 38 | P | 1 | 5 | 0.0 | 0.54 | 0.3 | 0.84 | 10.0 | 2.8 | 14 | 15 | 85 | 0 | 0 | 0 | M | 5 | AR | M | 12 | 0.65 | 0.10 | 0.55 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 2 | | | | | N |
| Buster Ck | Bu2 | 43 | R | 1 | 8 | 0.3 | 0.09 | 0.3 | 0.39 | 10.0 | 6.0 | 48 | 10 | 90 | 0 | 0 | 0 | L | 5 | AR | H | 43 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 2 | | | | | N |
| Buster Ck | Bu2 | 51 | P | 1 | 10 | 0.0 | 0.42 | 0.25 | 0.67 | 7.0 | 5.0 | 50 | 20 | 80 | | 0 | 0 | M | 5 | AR | L | 40 | 0.88 | 0.09 | 0.79 | | Y | 0 | 0 | 0 | 0 | 30.0 | 0 | 0 | 0 | 0 | 30.0 | 20 | | | | DW | N |
| Buster Ck | Bu2 | 61 | R | 1 | 5 | 0.3 | 0.19 | 0.2 | 0.39 | 8.0 | 6.0 | 30 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 25 | | | | | | 0 | 0 | 0 | 0 | 25.0 | 0 | 0 | 0 | 0 | 25.0 | 30 | | | | DW | N |
| Buster Ck | Bu2 | 66 | P | 1 | 14 | 0.0 | 0.49 | 0.4 | 0.89 | 8.5 | 4.0 | 56 | 25 | 75 | 0 | 0 | 0 | M | 5 | AR | M | 42 | 0.78 | 0.19 | 0.59 | | Y | 0 | 0 | 0 | 0 | 20.0 | 0 | 0 | 0 | 0 | 20.0 | 20 | | | | DW | N |

Table D1.  Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$)[5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type[6] | Quality[7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
| Buster Ck | Bu2 | 80 | G | 1 | 37 | 0.1 | 0.30 | 0.5 | 0.8 | 4.7 | 4.0 | 148 | 20 | 78 | 2 | 0 | 0 | M | 5 | AR | M | 116 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 0 | 0 | 0 | 5.0 | 30 | | | | DW | N |
| Buster Ck | Bu2 | 117 | R | 1 | 22 | 0.2 | 0.15 | 0.25 | 0.4 | 5.5 | 5.0 | 110 | 5 | 90 | 5 | 0 | 0 | L | 5 | AR | H | 100 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 0 | 0 | 0 | 5.0 | 5 | | | | DW | N |
| Buster Ck | Bu2 | 139 | P | 1 | 10 | 0.0 | 0.39 | 0.25 | 0.64 | 4.8 | 3.2 | 32 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 27 | 0.56 | 0.15 | 0.41 | | Y | 0 | 0 | 0 | 0 | 30.0 | 0 | 0 | 0 | 0 | 30.0 | 30 | | | | DW | N |
| Buster Ck | Bu2 | 149 | R | 1 | 16 | 0.3 | 0.24 | 0.25 | 0.49 | 4.1 | 3.5 | 56 | 5 | 90 | 5 | 0 | 0 | L | 5 | AR | H | 51 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 0 | 0 | 0 | 5.0 | 5 | | | | DW | N |
| Buster Ck | Bu2 | 165 | P | 1 | 5 | 0.0 | 0.45 | 0.25 | 0.7 | 4.1 | 3.5 | 18 | 5 | 90 | 5 | 0 | 0 | L | 5 | AR | H | 16 | 0.55 | 0.24 | 0.31 | | | 0 | 0 | 0 | 0 | 10.0 | 0 | 0 | 0 | 0 | 10.0 | 30 | | | | DW | N |
| Buster Ck | Bu2 | 170 | R | 1 | 32 | 0.8 | 0.18 | 0.3 | 0.48 | 12.4 | 8.0 | 256 | 10 | 80 | 8 | 2 | 0 | L | 13 | AR | H | 209 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 2 | | | | MB, DW | N |
| Buster Ck | Bu2 | 202 | G | 1 | 16 | 0.1 | 0.26 | 0.2 | 0.46 | 8.5 | 4.0 | 64 | 5 | 85 | 8 | 2 | 0 | L | 13 | AR | H | 55 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 2 | 0 | 0 | 0 | 7.0 | 10 | | | | DW | N |
| Buster Ck | Bu2 | 218 | R | 1 | 14 | 0.3 | 0.18 | 0.2 | 0.38 | 7.0 | 3.2 | 44 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 36 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 0 | 0 | 0 | 5.0 | 20 | | | | DW | N |
| Buster Ck | Bu2 | 232 | P | 1 | 13 | 0.0 | 0.43 | 0.3 | 0.73 | 7.0 | 3.5 | 46 | 20 | 78 | 2 | 0 | 0 | M | 5 | AR | M | 36 | 0.80 | 0.18 | 0.62 | | Y | 0 | 0 | 0 | 0 | 5.0 | 0 | 17.1 | 0 | 0 | 22.1 | 20 | | | | DW | N |
| Buster Ck | Bu2 | 245 | R | 1 | 46 | 0.2 | 0.12 | 0.25 | 0.37 | 27.0 | 10.1 | 465 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 387 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | MB, MC, DW | N |
| Buster Ck | Bu2 | 291 | G | 1 | 42 | 0.1 | 0.16 | 0.15 | 0.31 | 15.0 | 9.0 | 378 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 315 | 0.40 | 0.12 | 0.28 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 0 | 2.0 | 0 | | | | MB, MC, DW | N |
| Buster Ck | Bu2 | 333 | R | 1 | 21 | 0.3 | 0.13 | 0.1 | 0.23 | 11.0 | 5.0 | 105 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 88 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 2 | 0 | 0 | 4.0 | 2 | | | | MB, MC, DW | N |
| Buster Ck | Bu2 | 354 | G | 1 | 14 | 0.1 | 0.24 | 0.1 | 0.34 | 11.0 | 3.0 | 42 | 25 | 68 | 7 | 0 | 0 | M | 5 | AR | L | 29 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 2 | 0 | 0 | 4.0 | 2 | SC | P | | MB, MC, DW | N |
| Buster Ck | Bu2 | 368 | R | 1 | 103 | 0.9 | 0.07 | 0.1 | 0.17 | 13.0 | 3.0 | 309 | 20 | 68 | 10 | 2 | 0 | M | 14 | AR | M | 216 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 2 | 0 | 0 | 6.0 | 2 | SC | P | | MB, MC, DW | N |
| Buster Ck | Bu2 | 471 | G | 1 | 9 | 0.1 | 0.11 | 0.2 | 0.31 | 11.0 | 4.8 | 43 | 30 | 60 | 10 | 0 | 0 | M | 5 | AR | L | 27 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | P | | MB, MC, DW | N |
| Buster Ck | Bu2 | 480 | R | 1 | 203 | 0.9 | 0.09 | 0.25 | 0.34 | 10.2 | 2.0 | 406 | 15 | 85 | 0 | 0 | 0 | L | 5 | AR | H | 345 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | SC | P | | MB, MC, DW | N |
| Buster Ck | Bu2 | 683 | G | 1 | 29 | 0.1 | 0.22 | 0.1 | 0.32 | 13.0 | 9.0 | 261 | 15 | 75 | 8 | 2 | 0 | L | 13 | AR | H | 200 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 2 | 0 | 0 | 6.0 | 2 | SC | P | | MB, DW | N |
| Buster Ck | Bu2 | 712 | R | 1 | 62 | 0.9 | 0.18 | 0.25 | 0.43 | 8.0 | 7.0 | 434 | 10 | 75 | 15 | 0 | 0 | L | 5 | AR | H | 339 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 2 | | | | MB, DW | N |
| Buster Ck | Bu2 | 774 | G | 1 | 9 | 0.1 | 0.16 | 0.15 | 0.31 | 45.0 | 6.0 | 54 | 25 | 55 | 20 | 0 | 0 | M | 5 | AR | L | 32 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 2 | 0 | 0 | 4.0 | 2 | | | | MB, DW | N |
| Buster Ck | Bu2 | 783 | R | 1 | 169 | 0.9 | 0.13 | 0.2 | 0.33 | 38.0 | 11.0 | 1859 | 10 | 73 | 15 | 2 | 0 | L | 15 | AR | H | 1413 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 0 | SC | P | | MB, MC, DW | N |
| Buster Ck | Bu2 | 952 | G | 1 | 13 | 0.1 | 0.24 | 0.25 | 0.49 | 14.0 | 7.0 | 91 | 15 | 75 | 10 | 0 | 0 | L | 5 | AR | H | 70 | 0.56 | 0.13 | 0.43 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 2 | 0 | 0 | 4.0 | 2 | | | | MB, DW | N |
| Buster Ck | Bu2 | 965 | R | 1 | 107 | 0.9 | 0.10 | 0.3 | 0.4 | 8.0 | 7.0 | 749 | 10 | 62 | 20 | 8 | 0 | L | 15 | AR | H | 494 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 8 | 0 | 0 | 0 | 10.0 | 2 | | | | | N |
| Buster Ck | Bu2 | 1072 | P | 1 | 19 | 0.0 | 0.58 | 0.3 | 0.88 | 9.0 | 3.3 | 63 | 25 | 70 | 5 | 0 | 0 | M | 5 | AR | L | 45 | 0.80 | 0.10 | 0.70 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 5 | 0 | 0 | 10.0 | 8 | | | | DW | N |
| Buster Ck | Bu2 | 1091 | R | 1 | 78 | 0.9 | 0.10 | 0.3 | 0.4 | 24.0 | 7.7 | 601 | 10 | 58 | 30 | 2 | 0 | L | 13 | AR | H | 384 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 2 | 0 | 0 | 6.0 | 2 | | | | MB, DW | N |
| Buster Ck | Bu3-RF | 0 | R | 1 | 21 | 1.0 | 0.07 | 0.3 | 0.37 | 11.0 | 5.3 | 111 | 10 | 80 | 10 | 0 | 0 | L | 13 | AR | H | 91 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 2 | | | | MB, DW | N |
| Buster Ck | Bu3-RF | 21 | G | 1 | 22 | 0.1 | 0.19 | 0.20 | 0.39 | 6.3 | 4.5 | 99 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 75 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 0 | 2.0 | 2 | | | | | |
| Buster Ck | Bu3-RF | 43 | R | 1 | 61 | 1.5 | 0.17 | 0.15 | 0.32 | 5.7 | 3.1 | 189 | 10 | 68 | 20 | 2 | 0 | L | 15 | AR | H | 136 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 5 | | | | DW | N |
| Buster Ck | Bu3-RF | 104 | P | 1 | 10 | | 0.53 | 0.15 | 0.68 | 3.7 | 2.9 | 29 | 10 | 90 | 0 | 0 | 0 | L | 5 | AR | H | 26 | 0.60 | 0.23 | 0.37 | | | 0 | 0 | 0 | 0 | 8.0 | 0 | 2 | 0 | 0 | 10.0 | 30 | | | | | N |
| Buster Ck | Bu3-RF | 114 | R | 1 | 34 | 1.5 | 0.23 | 0.15 | 0.38 | 3.0 | 2.0 | 68 | 20 | 75 | 5 | 0 | 0 | L | 5 | AR | M | 52 | | | | | | 0 | 0 | 0 | 0 | 8.0 | 0 | 2 | 0 | 0 | 10.0 | 30 | | | | | N |
| Buster Ck | Bu3-LF | 0 | R | 1 | 147 | 1.8 | 0.09 | 0.15 | 0.24 | 4.4 | 3.4 | 500 | 30 | 30 | 20 | 20 | 0 | M | 28 | AR | L | 170 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 20 | 0 | 0 | 2 | 22.0 | 2 | | | | | N |
| Buster Ck | Bu3-LF | 147 | G | 1 | 17 | | 0.26 | 0.15 | 0.41 | 4.5 | 3.5 | 60 | 30 | 30 | 30 | 10 | 0 | M | 25 | AR | L | 21 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 10 | 0 | 0 | 0 | 10.0 | 2 | | | | EB | N |
| Buster Ck | Bu3-LF | 164 | R | 1 | 27 | | 0.10 | 0.15 | 0.25 | 4.4 | 3.5 | 95 | 30 | 30 | 20 | 20 | 0 | M | 28 | AR | L | 32 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 20 | 0 | 0 | 0 | 20.0 | 2 | | | | EB | N |
| Buster Ck | Bu3-LF | 191 | P | 1 | 7 | | 0.40 | 0.2 | 0.60 | 3.7 | 1.9 | 13 | 20 | 60 | 20 | 0 | 0 | M | 13 | AR | M | 9 | 0.56 | 0.10 | 0.46 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | EB | N |
| Buster Ck | Bu3-LF | 198 | R | 1 | 16 | | 0.08 | 0.2 | 0.28 | 8.4 | 5.3 | 85 | 20 | 60 | 20 | 0 | 0 | M | 13 | AR | M | 54 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | | | | | EB | N |
| Buster Ck | Bu3-LF | 214 | P | 1 | 5 | | 0.44 | 0.2 | 0.64 | 3.5 | 1.5 | 8 | 15 | 70 | 15 | 0 | 0 | L | 10 | AR | H | 5 | 0.45 | 0.08 | 0.37 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 2 | 0 | 10 | 14.0 | 25 | | | | EB, MB, MC | N |
| Buster Ck | Bu3-LF | 219 | R | 1 | 176 | | 0.09 | 0.2 | 0.29 | 8.4 | 5.2 | 915 | 20 | 65 | 15 | 0 | 0 | M | 10 | AR | M | 622 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 20 | | | | EB | N |
| Buster Ck | Bu3-LF | 395 | P | 1 | 14 | 0.0 | 0.35 | 0.2 | 0.55 | 4.0 | 2.0 | 28 | 25 | 55 | 20 | 0 | 0 | M | 13 | AR | M | 17 | 0.45 | 0.09 | 0.36 | | | 0 | 0 | 0 | 0 | 8.0 | 0 | 2 | 0 | 5 | 15.0 | 25 | | | | EB | N |
| Dexter Ck | Dx1 | 0 | P | 1 | 5 | 0.0 | 0.31 | 0.13 | 0.44 | 2.8 | 2.0 | 9 | 20 | 70 | 10 | 0 | 0 | M | 25 | AR | M | 7 | 0.45 | 0.11 | 0.34 | | | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 8 | 16 | 40 | | | | | N |
| Dexter Ck | Dx1 | 5 | R | 1 | 4 | | 0.11 | 0.15 | 0.26 | 1.6 | 0.6 | 3 | 2 | 96 | 2 | 0 | 0 | M | 25 | AR | M | 2 | | | | | | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 2 | 12 | 90 | | | | MB | N |
| Dexter Ck | Dx1 | 9 | P | 1 | 5 | 0.0 | 0.73 | 0.15 | 0.88 | 7.0 | 4.0 | 20 | 20 | 75 | 5 | 0 | 0 | M | 5 | AR | M | 16 | 0.90 | 0.21 | 0.69 | | | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 | 10 | 2 | | | | EB | N |
| Dexter Ck | Dx1 | 14 | G | 1 | 5 | | 0.21 | 0.15 | 0.36 | 2.6 | 1.4 | 7 | 20 | 75 | 5 | 0 | 0 | M | 5 | AR | M | 5 | | | | | | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 | 10 | 5 | | | | | N |
| Dexter Ck | Dx1 | 19 | R | 1 | 12 | 0.2 | 0.68 | 0.20 | 0.88 | 4.0 | 1.2 | 14 | 20 | 75 | 5 | 0 | 0 | M | 5 | AR | M | 11 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 2 | | | | | N |
| Dexter Ck | Dx1 | 31 | P | 1 | 12 | 0.0 | 0.81 | 0.10 | 0.91 | 5.7 | 4.6 | 55 | 20 | 60 | 20 | 0 | 0 | M | 13 | AR | M | 35 | 0.95 | 0.25 | 0.70 | | | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 5 | 13 | 10 | | | | | N |
| Dexter Ck | Dx1 | 43 | G | 1 | 23 | 0.2 | 0.25 | 0.22 | 0.47 | 2.4 | 2.0 | 46 | 10 | 52 | 30 | 8 | 0 | H | 13 | AR | L | 27 | | | | | | 0 | 0 | 0 | 0 | 2 | 8 | 0 | 0 | 25 | 35 | 10 | | | | EB | N |
| Dexter Ck | Dx1 | 66 | R | 1 | 5 | 0.3 | 0.08 | 0.25 | 0.33 | 5.5 | 2.8 | 14 | 10 | 70 | 20 | 0 | 0 | M | 13 | AR | M | 10 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | | | | DW | N |
| Dexter Ck | Dx1 | 71 | G | 1 | 29 | 0.1 | 0.33 | 0.08 | 0.41 | 2.9 | 2.2 | 64 | 10 | 68 | 20 | 2 | 0 | M | 13 | AR | M | 46 | | | | | | 0 | 0 | 0 | 0 | 12 | 2 | 0 | 0 | 50 | 64 | 40 | | | | | N |

Table D1.  Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$)[5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type[6] | Quality[7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
| Dexter Ck | Dx1 | 100 | R | 1 | 14 | 0.3 | 0.10 | 0.15 | 0.25 | 2.4 | 1.8 | 25 | 20 | 58 | 20 | 2 | 0 | M | 13 | AR | M | 16 | | | | | | 0 | 0 | 0 | 0 | 8 | 2 | 0 | 0 | 40 | 50 | 10 | ALC | G | | | N |
| Dexter Ck | Dx1 | 114 | P | 1 | 8 | 0.0 | 0.57 | 0.10 | 0.67 | 6.2 | 4.8 | 38 | 30 | 65 | 5 | 0 | 0 | M | 5 | AR | M | 25 | 0.68 | 0.08 | 0.60 | | | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 50 | 62 | 10 | | | | | N |
| Dexter Ck | Dx1 | 122 | R | 1 | 9 | 0.6 | 0.08 | 0.10 | 0.18 | 3.4 | 1.3 | 11 | 20 | 52 | 20 | 8 | 0 | H | 13 | AR | L | 6 | | | | | | 0 | 0 | 0 | 0 | 2 | 8 | 0 | 0 | 2 | 12 | 5 | | | | EB | N |
| Dexter Ck | Dx1 | 131 | P | 1 | 10 | 0.0 | 0.26 | 0.80 | 1.06 | 3.6 | 2.0 | 20 | 20 | 55 | 20 | 5 | 0 | M | 13 | AR | M | 12 | 0.40 | 0.05 | 0.35 | | | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 20 | 27 | 5 | | | | DW | N |
| Dexter Ck | Dx1 | 141 | R | 1 | 6 | 0.6 | 0.05 | 0.10 | 0.15 | 4.3 | 3.0 | 18 | 10 | 30 | 30 | 30 | 0 | H | 30 | AR | L | 6 | | | | | | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 10 | 40 | 70 | | | | EB | N |
| Dexter Ck | Dx1 | 147 | G | 1 | 14 | 0.2 | 0.22 | 0.12 | 0.34 | 3.6 | 2.2 | 31 | 40 | 48 | 10 | 2 | 0 | H | 8 | AR | L | 15 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 50 | 52 | 10 | | | | EB | N |
| Dexter Ck | Dx1 | 161 | R | 1 | 15 | 0.6 | 0.11 | 0.15 | 0.26 | 2.8 | 1.9 | 29 | 10 | 58 | 30 | 2 | 0 | H | 13 | AR | L | 18 | | | | | | 0 | 0 | 0 | 0 | 15 | 2 | 0 | 0 | 5 | 22 | 90 | SC | G | 5 | EB, MB | N |
| Dexter Ck | Dx1 | 176 | G | 1 | 19 | 0.2 | 0.15 | 0.15 | 0.30 | 7.7 | 2.3 | 44 | 50 | 45 | 5 | 0 | 0 | H | 6 | AR | N | 20 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 25 | 2 | | | | | N |
| Dexter Ck | Dx1 | 195 | R | 1 | 8 | 0.4 | 0.07 | 0.25 | 0.32 | 7.7 | 3.1 | 24 | 40 | 45 | 15 | 0 | 0 | H | 12 | AR | N | 12 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | | | | | N |
| Dexter Ck | Dx1 | 203 | G | 1 | 12 | 0.2 | 0.16 | 0.25 | 0.41 | 8.7 | 3.1 | 37 | 50 | 35 | 15 | 0 | 0 | H | 12 | AR | N | 14 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | | | | DW | N |
| Dexter Ck | Dx1 | 215 | R | 1 | 5 | 0.4 | 0.07 | 0.25 | 0.32 | 7.2 | 2.2 | 11 | 28 | 40 | 30 | 2 | 0 | H | 20 | AR | N | 5 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | SC | G | 25 | MB, EB | N |
| Dexter Ck | Dx1 | 220 | P | 1 | 6 | 0.0 | 0.40 | 0.3 | 0.70 | 9.3 | 3.3 | 20 | 30 | 65 | 5 | 0 | 0 | H | 5 | AR | L | 13 | 0.62 | 0.09 | 0.53 | | Y | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 40 | 60 | 30 | | | | MB, DW | N |
| Dexter Ck | Dx1 | 226 | R | 1 | 18 | 0.3 | 0.09 | 0.3 | 0.39 | 14.0 | 12.0 | 216 | 10 | 10 | 35 | 45 | 0 | H | 35 | AR | N | 37 | | | | | | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 30 | 75 | 0 | | | | MB | N |
| Dexter Ck | Dx1 | 244 | O | 1 | 31 | 0.4 | 0.03 | 0.45 | 0.48 | 2.3 | 1.2 | 36 | 2 | 2 | 94 | 2 | 0 | N | 13 | AR | N | 7 | | | | | | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | | | | | N |
| Dexter Ck | Dx1 | 275 | R | 1 | 63 | 0.4 | 0.03 | 0.25 | 0.28 | 26.5 | 7.5 | 469 | 30 | 60 | 10 | 0 | 0 | M | 5 | AR | M | 291 | | | | | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 2 | | | | MB | N |
| Dexter Ck | Dx1 | 338 | G | 1 | 13 | 0.2 | 0.18 | 0.25 | 0.43 | 26.5 | 6.8 | 88 | 30 | 65 | 5 | 0 | 0 | M | 5 | AR | M | 58 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | SC | P | | | N |
| Dexter Ck | Dx1 | 351 | R | 1 | 143 | 0.4 | 0.08 | 0.25 | 0.33 | 5.5 | 3.3 | 468 | 30 | 26 | 20 | 24 | 0 | H | 30 | AR | L | 140 | | | | | | 0 | 0 | 0 | 0 | 2 | 24 | 0 | 0 | 2 | 28 | 2 | SC | G | | MB, EB | N |
| Basin Ck | Bas1 | 0 | O | 1 | 4 | | 0.00 | 0.5 | 0.5 | 6.0 | 0.0 | 0 | 15 | 55 | 28 | 2 | 0 | L | 13 | AR | H | 0 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 0 | | | | | Y |
| Basin Ck | Bas1 | 4 | P | 1 | 8 | 0.0 | 0.27 | 0.5 | 0.77 | 5.0 | 1.5 | 12 | 50 | 20 | 28 | 2 | 0 | H | 13 | AR | L | 3 | 0.35 | | | | | 0 | 0 | 0 | 0 | 20.0 | 2 | 3.45 | 0 | 70 | 95.4 | 30 | | | | | N |
| Basin Ck | Bas1 | 12 | G | 1 | 8 | 0.5 | 0.08 | 0.45 | 0.53 | 5.0 | 2.0 | 16 | 30 | 48 | 20 | 2 | 0 | M | 13 | AR | L | 8 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 2 | 0 | 20 | 24.0 | 2 | | | | EB | N |
| Basin Ck | Bas1 | 20 | O | 1 | 13 | 2.4 | 0.00 | 0.8 | 0.8 | 3.0 | 0.0 | 0 | 20 | 60 | 20 | 0 | 0 | H | 13 | AR | L | 0 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 0 | 2.0 | 2 | | | | | N |
| Basin Ck | Bas1 | 33 | R | 1 | 37 | 1.9 | 0.06 | 0.45 | 0.51 | 9.0 | 1.7 | 63 | 15 | 50 | 35 | 0 | 0 | M | 13 | AR | M | 36 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 2 | 0 | 0 | 4.0 | 2 | SC | N | | EB | N |
| Basin Ck | Bas1 | 70 | G | 1 | 13 | 0.5 | 0.15 | 0.25 | 0.4 | 5.2 | 1.4 | 18 | 10 | 30 | 58 | 2 | 0 | M | 13 | AR | M | 8 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 2 | 0 | 0 | 6.0 | 5 | | | | | N |
| Basin Ck | Bas1 | 83 | R | 1 | 9 | 0.4 | 0.09 | 0.5 | 0.59 | 3.4 | 2.9 | 26 | 10 | 30 | 58 | 2 | 0 | H | 13 | AR | L | 11 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 25 | | | | | N |
| Basin Ck | Bas1 | 92 | P | 1 | 9 | 0.0 | 0.62 | 0.35 | 0.97 | 2.8 | 2.7 | 24 | 10 | 20 | 70 | 0 | 0 | H | 13 | AR | L | 8 | 0.65 | 0.09 | 0.56 | | Y | 0 | 0 | 0 | 0 | 20.0 | 0 | 0 | 0 | 0 | 20.0 | 40 | | | | | N |
| Basin Ck | Bas1 | 101 | R | 1 | 29 | 2.2 | 0.10 | 0.45 | 0.55 | 4.2 | 3.3 | 94 | 10 | 30 | 58 | 2 | 0 | H | 13 | AR | L | 39 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 0 | 0 | 0 | 4.0 | 2 | | | | MB, MC, EB, DW | N |
| Basin Ck | Bas1 | 130 | R | 1 | 156 | 0.7 | 0.12 | 0.5 | 0.62 | 24.0 | 4.0 | 624 | 10 | 30 | 58 | 2 | 0 | H | 13 | AR | L | 260 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 0 | | | | EB | N |
| Basin Ck | Bas1 | 286 | P | 1 | 13 | 0.0 | 0.49 | 0.5 | 0.99 | 10.8 | 4.4 | 57 | 20 | 10 | 55 | 15 | 0 | H | 28 | AR | L | 12 | 0.58 | 0.12 | 0.46 | | Y | 0 | 0 | 0 | 0 | 25.0 | 15 | 0 | 0 | 20 | 60.0 | 20 | | | | | N |
| Basin Ck | Bas1 | 299 | O | 1 | 24 | 1.8 | 0.25 | 1.45 | 1.7 | 3.6 | 3.6 | 86 | 10 | 5 | 65 | 20 | 0 | H | 30 | AR | L | 16 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 20 | 0 | 0 | 0 | 20.0 | 0 | | | | | N |
| Basin Ck | Bas1 | 323 | R | 1 | 53 | 1.2 | 0.12 | 0.35 | 0.47 | 21.0 | 3.9 | 207 | 20 | 68 | 10 | 2 | 0 | M | 13 | AR | M | 145 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 2 | 0 | 0 | 4.0 | 2 | | | | DW, SC, EB | N |
| Hobson Ck | H1 | 0 | R | 1 | 23 | 1.0 | 0.23 | 0.35 | 0.58 | 14.0 | 8.0 | 184 | 30 | 48 | 20 | 2 | 0 | M | 13 | AR | L | 96 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 2 | 0 | 0 | 2 | 9.0 | 2 | | | | MB | N |
| Hobson Ck | H1 | 23 | O | 1 | 65 | 0.0 | 0.85 | 0.35 | 1.2 | | | 6955 | 50 | 45 | 5 | 0 | 0 | M | 6 | AR | L | 0 | 1.30 | 0.23 | 1.07 | BD | | | | | | 10.0 | 0 | 2 | 10 | 2 | 24.0 | 2 | SC | G | | BD | N |
| Hobson Ck | H2 | 88 | G | 1 | 29 | 0.6 | 0.33 | 0.15 | 0.48 | 7.5 | 7.0 | 203 | 25 | 60 | 13 | 2 | 0 | H | 13 | AR | L | 127 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 0 | 0 | 0 | 4.0 | 2 | | | | | N |
| Hobson Ck | H2 | 117 | P | 1 | 12 | 0.0 | 0.83 | 0.2 | 1.03 | 8.0 | 5.0 | 60 | 25 | 50 | 25 | 0 | 0 | H | 13 | AR | L | 33 | 1.10 | 0.23 | 0.87 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 2 | 40 | 0 | 47.0 | 2 | | | | EB | N |
| Hobson Ck | H2 | 129 | R | 1 | 13 | 0.5 | 0.22 | 0.7 | 0.92 | 8.0 | 7.0 | 91 | 20 | 65 | 15 | 0 | 0 | H | 13 | AR | L | 62 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 2 | | | | | N |
| Hobson Ck | H2 | 142 | P | 1 | 10 | 0.0 | 0.57 | 0.2 | 0.77 | 9.0 | 5.0 | 50 | 25 | 45 | 30 | 0 | 0 | H | 13 | AR | L | 26 | 1.00 | 0.22 | 0.78 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 5 | 32 | 0 | 42.0 | 5 | | | | | N |
| Hobson Ck | H2 | 152 | R | 1 | 12 | 1.1 | 0.22 | 0.3 | 0.52 | 7.5 | 7.0 | 84 | 10 | 45 | 43 | 2 | 0 | H | 13 | AR | L | 45 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 0 | | | | | N |
| Hobson Ck | H2 | 164 | G | 1 | 10 | 0.0 | 0.37 | 0.2 | 0.57 | 8.0 | 4.0 | 40 | 15 | 48 | 35 | 2 | 0 | H | 13 | AR | L | 22 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 2 | 0 | 0 | 4.0 | 40 | | | | | N |
| Hobson Ck | H2 | 174 | R | 1 | 39 | 2.5 | 0.22 | 0.45 | 0.67 | 10.5 | 9.0 | 351 | 5 | 50 | 43 | 2 | 0 | H | 13 | AR | L | 206 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 5 | | | | MB | N |
| Hobson Ck | H2 | 213 | P | 1 | 20 | 0.0 | 0.55 | 0.45 | 1 | 12.0 | 12.0 | 240 | 20 | 40 | 40 | 0 | 0 | H | 13 | AR | L | 115 | 0.80 | 0.22 | 0.58 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 2 | 0 | 0 | 7.0 | 5 | | | | | N |
| Hobson Ck | H2 | 233 | R | 1 | 24 | 2.8 | 0.22 | 0.15 | 0.37 | 11.2 | 10.8 | 259 | 20 | 35 | 40 | 5 | 0 | H | 17 | AR | L | 111 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 0 | | | | EB | N |
| Hobson Ck | H2 | 257 | P | 1 | 13 | 0.0 | 0.47 | 0.25 | 0.72 | 11.0 | 5.3 | 69 | 25 | 60 | 15 | 0 | 0 | H | 17 | AR | L | 43 | 0.60 | 0.17 | 0.43 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 6 | 0 | 0 | 11.0 | 25 | | | | | N |
| Hobson Ck | H2 | 270 | R | 1 | 168 | 0.5 | 0.17 | 0.3 | 0.47 | 10.0 | 9.0 | 1512 | 15 | 40 | 40 | 5 | 0 | H | 17 | AR | L | 726 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 17 | | | | MB | N |
| Hobson Ck | H2 | 438 | P | 1 | 6 | 0.0 | 0.43 | 0.3 | 0.73 | 8.5 | 3.5 | 21 | 10 | 50 | 35 | 5 | 0 | H | 17 | AR | L | 12 | 0.70 | 0.12 | 0.58 | | Y | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 50 | | | | | N |
| Hobson Ck | H2 | 444 | R | 1 | 15 | 0.4 | 0.13 | 0.3 | 0.43 | 13.0 | 12.0 | 180 | 13 | 40 | 45 | 2 | 0 | H | 17 | AR | L | 88 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 2 | | | | | N |
| Hobson Ck | H2 | 459 | P | 1 | 124 | 0.0 | 0.62 | 0.22 | 0.84 | 14.0 | 7.0 | 868 | 15 | 50 | 35 | 0 | 0 | H | 17 | AR | L | 495 | 0.75 | 0.12 | 0.63 | | | 0 | 0 | 0 | 0 | 8.0 | 0 | 2 | 0 | 0 | 10.0 | 8 | | | | | N |

Table D1. Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | Spawning Gravel | | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m)[1] Sampling Fraction[2] | Habitat type[3] | Habitat category[4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$)[5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type[6] | Quality[7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element[8] | Good holding pool?[9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type[10] | Access[11] | Length (m) | Channel Disturbances[12] | Barriers[13] |
| Hobson Ck | H2 | 583 | R | 1 | 674 | 2.0 | 0.35 | 0.08 | 0.43 | 7.0 | 6.5 | 4381 | 2 | 25 | 60 | 15 | 0 | H | 28 | AR | L | 1621 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 15 | 2 | 0 | 0 | 17.0 | 21 | | | | MB | N |
| Darling Ck | D1 | 0 | R | 1 | 9 | 0.4 | 0.08 | 0.45 | 0.53 | 4.5 | 3.7 | 33 | 30 | 68 | 2 | 0 | 0 | M | 5 | AR | L | 23 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 2 | 2 | 6.0 | 2 | | | | MB, MC | N |
| Darling Ck | D1 | 9 | P | 1 | 8 | 0.0 | 0.22 | 0.15 | 0.37 | 3.8 | 3.6 | 27 | 50 | 50 | 2 | 0 | 0 | H | 5 | AR | L | 14 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 10 | 0 | 0 | 15.0 | 10 | | | | | N |
| Darling Ck | D1 | 17 | R | 1 | 5 | 1.0 | 0.08 | 0.2 | 0.28 | 6.1 | 3.2 | 16 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 13 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | | N |
| Darling Ck | D1 | 22 | G | 1 | 39 | 0.1 | 0.07 | 0.25 | 0.32 | 6.5 | 2.8 | 109 | 40 | 58 | 2 | 0 | 0 | M | 5 | AR | L | 64 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | | N |
| Darling Ck | D1 | 61 | R | 1 | 13 | 0.1 | 0.08 | 0.2 | 0.28 | 5.8 | 4.0 | 52 | 15 | 80 | 5 | 0 | 0 | L | 5 | AR | H | 42 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 0 | 2.0 | 0 | | | | | N |
| Darling Ck | D1 | 74 | P | 1 | 11 | 0.2 | 0.14 | 0.23 | 0.37 | 5.5 | 2.2 | 24 | 40 | 58 | 2 | 0 | 0 | M | 5 | AR | L | 14 | 0.28 | 0.08 | 0.20 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | | N |
| Darling Ck | D1 | 85 | R | 1 | 5 | 0.4 | 0.06 | 0.15 | 0.21 | 6.9 | 4.6 | 23 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 19 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 5 | | | | | N |
| Darling Ck | D1 | 90 | G | 1 | 30 | 0.0 | 0.10 | 0.15 | 0.25 | 6.7 | 3.2 | 96 | 40 | 58 | 2 | 0 | 0 | M | 5 | AR | L | 56 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 2 | | | | | N |
| Darling Ck | D1 | 120 | R | 1 | 6 | 0.3 | 0.08 | 0.15 | 0.23 | 6.6 | 5.2 | 31 | 15 | 83 | 2 | 0 | 0 | H | 5 | AR | H | 26 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 5 | | | | | N |
| Darling Ck | D1 | 126 | P | 1 | 11 | 0.0 | 0.34 | 0.65 | 0.99 | 8.7 | 7.1 | 78 | 40 | 35 | 20 | 5 | 0 | M | 20 | AR | L | 30 | 0.54 | 0.08 | 0.46 | CV | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 0 | | | | | N |
| Darling Ck | D1 | 137 | O | 1 | 21 | 0.1 | 0.10 | 0.41 | 0.51 | 1.4 | 0.8 | 17 | | | | | | | | | | 0 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | | N |
| Darling Ck | D1 | 158 | R | 1 | 8 | 0.4 | 0.10 | 0.25 | 0.35 | 10.5 | 8.1 | 65 | 40 | 58 | 2 | 0 | 0 | M | 5 | AR | L | 38 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | | N |
| Darling Ck | D1 | 166 | P | 1 | 14 | 0.0 | 0.30 | 0.35 | 0.65 | 9.9 | 9.8 | 137 | 10 | 88 | 2 | 0 | 0 | L | 5 | AR | H | 121 | 0.55 | 0.10 | 0.45 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 0 | 2.0 | 0 | | | | DW | N |
| Darling Ck | D1 | 180 | R | 1 | 7 | 0.0 | 0.09 | 0.25 | 0.34 | 6.5 | 3.2 | 22 | 15 | 83 | 2 | 0 | 0 | L | 5 | AR | H | 19 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | | | | DW | N |
| Darling Ck | D1 | 187 | G | 1 | 13 | 0.0 | 0.09 | 0.25 | 0.34 | 5.9 | 2.1 | 27 | 40 | 58 | 2 | 0 | 0 | M | 5 | AR | L | 16 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 2 | 4.0 | 5 | | | | | N |
| Darling Ck | D1 | 200 | R | 1 | 10 | 0.2 | 0.05 | 0.2 | 0.25 | 7.2 | 5.4 | 54 | 35 | 63 | 2 | 0 | 0 | M | 5 | AR | L | 34 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 2 | 0 | 0 | 2.0 | 2 | WL | P | | | N |
| Darling Ck | D1 | 210 | G | 1 | 10 | 0.2 | 0.09 | 0.2 | 0.29 | 6.5 | 5.4 | 54 | 35 | 63 | 2 | 0 | 0 | M | 5 | AR | L | 34 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | | N |
| Darling Ck | D1 | 220 | R | 1 | 13 | 0.1 | 0.09 | 0.2 | 0.29 | 6.7 | 4.6 | 60 | 40 | 58 | 2 | 0 | 0 | M | 5 | AR | L | 35 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | WL | P | | | N |
| Darling Ck | D1 | 233 | P | 1 | 19 | 0.0 | 0.19 | 0.2 | 0.39 | 5.5 | 2.6 | 49 | 50 | 48 | 2 | 0 | 0 | M | 5 | AR | L | 24 | 0.36 | 0.09 | 0.27 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 2 | 0 | 0 | 4.0 | 8 | ALC | G | 10 | | N |
| Darling Ck | D1 | 252 | R | 1 | 4 | 0.5 | 0.11 | 0.28 | 0.39 | 4.5 | 3.5 | 14 | 25 | 73 | 2 | 0 | 0 | M | 5 | AR | M | 10 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | | N |
| Darling Ck | D1 | 256 | P | 1 | 10 | 0.0 | 0.34 | 0.4 | 0.74 | 5.9 | 2.0 | 20 | 50 | 45 | 5 | 0 | 0 | H | 5 | AR | L | 9 | 0.50 | 0.11 | 0.39 | | | 0 | 0 | 0 | 0 | 5.0 | 0 | 15 | 0 | 5 | 25.0 | 10 | | | | | N |
| Darling Ck | D1 | 266 | R | 1 | 16 | 0.2 | 0.09 | 0.2 | 0.29 | 6.0 | 2.9 | 46 | 45 | 45 | 10 | 0 | 0 | H | 13 | AR | L | 22 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 5 | | | | | N |
| Darling Ck | D1 | 282 | G | 1 | 10 | 0.3 | 0.20 | 0.25 | 0.45 | 6.0 | 2.8 | 28 | 40 | 58 | 2 | 0 | 0 | H | 5 | AR | L | 16 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | SC | G | 107 | | N |
| Darling Ck | D1 | 292 | R | 1 | 12 | 0.3 | 0.08 | 0.2 | 0.28 | 6.5 | 4.3 | 52 | 40 | 58 | 2 | 0 | 0 | H | 5 | AR | L | 30 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | | N |
| Darling Ck | D1 | 304 | G | 1 | 13 | 0.0 | 0.18 | 0.5 | 0.68 | 4.7 | 3.3 | 43 | 40 | 53 | 5 | 2 | 0 | H | 13 | AR | L | 23 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 2 | 4.0 | 23 | | | | | N |
| Darling Ck | D1 | 317 | R | 1 | 97 | 0.1 | 0.10 | 0.5 | 0.6 | 6.9 | 2.9 | 281 | 30 | 50 | 15 | 5 | 0 | M | 20 | AR | L | 149 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 2 | 7.0 | 2 | | | | | N |
| Darling Ck | D1 | 414 | P | 1 | 8 | 0.0 | 0.43 | 0.2 | 0.63 | 8.2 | 1.9 | 15 | 30 | 62 | 8 | 0 | 0 | M | 6 | AR | L | 9 | 0.55 | 0.10 | 0.45 | | | 0 | 0 | 0 | 0 | 0.0 | 8 | 0 | 0 | 0 | 8.0 | 25 | | | | | N |
| Darling Ck | D1 | 422 | R | 1 | 4 | 0.6 | 0.22 | 0.2 | 0.42 | 8.2 | 3.2 | 13 | 10 | 82 | 8 | 0 | 0 | H | 6 | AR | L | 11 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 8 | 2 | 0 | 0 | 10.0 | 10 | | | | RC | N |
| Darling Ck | D1 | 426 | P | 1 | 9 | 0.0 | 0.53 | 0.18 | 0.71 | 3.7 | 3.5 | 32 | 30 | 62 | 8 | 0 | 0 | M | 6 | AR | L | 20 | 0.75 | 0.22 | 0.53 | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 3.43 | 0 | 0 | 3.4 | 5 | | | | | N |
| Darling Ck | D1 | 435 | R | 1 | 42 | 2.5 | 0.16 | 0.22 | 0.38 | 5.0 | 4.1 | 172 | 2 | 80 | 8 | 0 | 0 | H | 6 | AR | L | 141 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 2 | | | | RC | N |
| Darling Ck | D1 | 477 | G | 1 | 3 | 0.5 | 0.28 | 0.5 | 0.78 | 4.0 | 3.4 | 10 | 30 | 63 | 5 | 2 | 0 | M | 6 | AR | L | 7 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 12 | | | | | N |
| Darling Ck | D1 | 480 | R | 1 | 8 | 2.0 | 0.08 | 0.22 | 0.3 | 7.7 | 6.7 | 54 | 20 | 78 | 2 | 0 | 0 | L | 6 | AR | M | 42 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 0 | ALC | G | 10 | EB, RC | N |
| Darling Ck | D1 | 488 | P | 1 | 8 | 0.0 | 0.37 | 0.3 | 0.67 | 7.7 | 1.5 | 12 | 20 | 10 | 70 | 0 | 0 | M | 20 | AR | M | 3 | 0.51 | 0.08 | 0.43 | | Y | 0 | 0 | 0 | 0 | 20.0 | 0 | 16.7 | 0 | 0 | 36.7 | 25 | | | | | N |
| Darling Ck | D1 | 496 | R | 1 | 20 | 2.5 | 0.24 | 0.27 | 0.51 | 2.8 | 2.6 | 52 | 10 | 48 | 34 | 8 | 0 | M | 20 | AR | M | 28 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 8 | 7.69 | 0 | 0 | 17.7 | 15 | | | | EB, RC | N |
| Darling Ck | D1 | 516 | P | 1 | 7 | 0.0 | 0.41 | 0.2 | 0.61 | 2.9 | 2.8 | 20 | 30 | 20 | 50 | 0 | 0 | M | 20 | AR | L | 6 | 0.50 | 0.24 | 0.26 | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 7.14 | 0 | 0 | 9.1 | 15 | | | | DW | N |
| Darling Ck | D1 | 523 | R | 1 | 40 | 3.0 | 0.17 | 0.2 | 0.37 | 3.6 | 3.1 | 124 | 8 | 40 | 40 | 12 | 0 | L | 26 | AR | H | 60 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 12 | 3.23 | 0 | 0 | 20.2 | 2 | | | | DW | N |
| Darling Ck | D1 | 563 | P | 1 | 7 | 0.0 | 0.33 | 0.2 | 0.53 | 4.8 | 1.8 | 13 | 20 | 55 | 25 | 5 | 0 | M | 20 | AR | M | 8 | 0.41 | 0.17 | 0.24 | | | 0 | 0 | 0 | 0 | 2.0 | 5 | 16.1 | 0 | 0 | 23.1 | 5 | | | | RC | N |
| Darling Ck | D1 | 570 | R | 1 | 48 | 2.5 | 0.19 | 0.27 | 0.46 | 4.0 | 3.8 | 182 | 10 | 78 | 10 | 2 | 0 | L | 13 | AR | H | 146 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 1.32 | 0 | 0 | 5.3 | 2 | | | | RC | N |
| Darling Ck | D1 | 618 | P | 1 | 4 | 0.0 | 0.39 | 0.3 | 0.69 | 4.8 | 3.3 | 13 | 10 | 78 | 10 | 2 | 0 | L | 13 | AR | H | 10 | 0.48 | 0.19 | 0.29 | | | 0 | 0 | 0 | 0 | 5.0 | 2 | 3.69 | 0 | 0 | 10.7 | 15 | | | | RC | N |
| Darling Ck | D1 | 622 | R | 1 | 15 | 2.5 | 0.18 | 0.25 | 0.43 | 4.6 | 3.3 | 50 | 10 | 80 | 10 | 0 | 0 | L | 13 | AR | H | 41 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 2 | | | | RC | N |
| Darling Ck | D1 | 637 | P | 1 | 11 | 0.0 | 0.47 | 0.3 | 0.77 | 6.2 | 3.2 | 35 | 10 | 80 | 10 | 0 | 0 | L | 13 | AR | H | 29 | 0.63 | 0.18 | 0.45 | | | 0 | 0 | 0 | 0 | 10.0 | 0 | 6.25 | 0 | 0 | 16.3 | 10 | | | | RC | N |
| Darling Ck | D1 | 648 | R | 1 | 19 | 2.5 | 0.21 | 0.3 | 0.51 | 4.9 | 3.0 | 57 | 10 | 40 | 40 | 10 | 0 | L | 25 | AR | H | 27 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 10 | 5 | 0 | 0 | 17.0 | 10 | | | | | N |
| Darling Ck | D1 | 667 | G | 1 | 10 | 0.5 | 0.19 | 0.2 | 0.39 | 5.8 | 4.8 | 48 | 20 | 53 | 25 | 2 | 0 | L | 20 | AR | M | 28 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 0 | 0 | 0 | 4.0 | 2 | | | | RC | N |
| Darling Ck | D1 | 677 | R | 1 | 71 | 2.5 | 0.30 | 0.2 | 0.5 | 3.1 | 2.8 | 199 | 10 | 20 | 50 | 20 | 0 | L | 25 | AR | H | 60 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 20 | 3.23 | 0 | 0 | 28.2 | 10 | | | | | N |
| Darling Ck | D1 | 748 | G | 1 | 102 | 0.5 | 0.18 | 0.2 | 0.38 | 7.6 | 5.1 | 520 | 10 | 68 | 20 | 2 | 0 | L | 20 | AR | H | 375 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 0 | 0 | 0 | 4.0 | 2 | SC | G | | MB, MC, RC | N |

Table D1.  Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m) [1] Sampling Fraction [2] | Habitat type [3] | Habitat category [4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$) [5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type [6] | Quality [7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element [8] | Good holding pool? [9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type [10] | Access [11] | Length (m) | Channel Disturbances [12] | Barriers [13] |
| Darling Ck | D1 | 850 | R | 1 | 150 | 2.5 | 0.18 | 0.2 | 0.38 | 7.3 | 4.0 | 600 | 10 | 35 | 40 | 15 | 0 | L | 25 | AR | H | 258 | | | | | | 0 | 0 | 0 | 0 | 10.0 | 15 | 0 | 0 | 0 | 25.0 | 20 | | | | | N |
| Darling Ck | D1 | 1000 | G | 1 | 19 | 0.5 | 0.20 | 0.27 | 0.47 | 6.6 | 4.2 | 80 | 10 | 70 | 20 | 0 | 0 | L | 20 | AR | H | 59 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | | N |
| Darling Ck | D1 | 1019 | P | 1 | 11 | 0.0 | 0.31 | 0.27 | 0.58 | 6.6 | 4.2 | 46 | 20 | 40 | 25 | 15 | 0 | M | 25 | AR | M | 21 | 0.40 | 0.20 | 0.20 | | | 0 | 0 | 0 | 0 | 0.0 | 15 | 0 | 0 | 0 | 15.0 | 0 | | | | | N |
| Darling Ck | D1 | 1030 | R | 1 | 122 | 2.5 | 0.18 | 0.3 | 0.48 | 6.6 | 4.2 | 512 | 20 | 40 | 25 | 15 | 0 | M | 25 | AR | M | 231 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 15 | 0 | 0 | 0 | 15.0 | 0 | | | | RC | N |
| Darling Ck | D1 | 1152 | R | 1 | 35 | 3.0 | 0.14 | 0.3 | 0.44 | 4.0 | 3.2 | 112 | 10 | 30 | 30 | 30 | 0 | M | 25 | AR | M | 40 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 30 | 0 | 0 | 0 | 32.0 | 2 | | | | | N |
| Darling Ck | D1 | 1187 | R | 1 | 81 | 3.0 | 0.16 | 0.2 | 0.36 | 8.7 | 5.5 | 446 | 10 | 35 | 30 | 25 | 0 | M | 25 | AR | M | 183 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 25 | 0 | 0 | 0 | 25.0 | 0 | | | | MB, MC, EB, | N |
| Darling Ck | D1 | 1268 | R | 1 | 98 | 3.0 | 0.24 | 0.3 | 0.54 | 4.1 | 2.9 | 284 | 2 | 15 | 43 | 40 | 0 | M | 25 | AR | M | 67 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 40 | 0 | 0 | 0 | 42.0 | 2 | | | | | N |
| Darling Ck | D1 | 1366 | R | 1 | 61 | 3.0 | 0.17 | 0.45 | 0.62 | 12.0 | 9.3 | 567 | 20 | 45 | 30 | 5 | 0 | M | 20 | AR | M | 289 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 0 | | | | | N |
| Darling Ck | D1 | 1427 | R | 1 | 84 | 3.0 | 0.17 | 0.6 | 0.77 | 7.4 | 4.6 | 386 | 20 | 45 | 30 | 5 | 0 | M | 20 | AR | M | 197 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 0 | | | | RC, EB | N |
| Darling Ck | D1 | 1511 | R | 1 | 36 | 3.0 | 0.20 | 0.3 | 0.5 | 5.3 | 4.2 | 149 | 2 | 10 | 70 | 20 | 0 | M | 25 | AR | M | 36 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 20 | 0 | 0 | 0 | 22.0 | 2 | | | | MB, MC, EB | N |
| Darling Ck | D1 | 1547 | R | 1 | 96 | 3.0 | 0.20 | 0.25 | 0.45 | 5.7 | 3.1 | 298 | 2 | 10 | 70 | 20 | 0 | M | 25 | AR | M | 71 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 20 | 0 | 0 | 0 | 20.0 | 0 | SP | | | | N |
| R. Mountain C | RM1 | 0 | R | 1 | 38 | 4.5 | 0.12 | 0.3 | 0.42 | 20.1 | 4.2 | 160 | 30 | 65 | 5 | 0 | 0 | M | 6 | AR | L | 105 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | | | | DW, EB | N |
| R. Mountain C | RM1 | 38 | P | 1 | 1 | 0.0 | 0.50 | 0.3 | 0.8 | 20.0 | 5.4 | 5 | 50 | 50 | 0 | 0 | 0 | H | 6 | AR | L | 3 | 0.70 | 0.12 | 0.58 | CV | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 0 | | | | DW, EB | N |
| R. Mountain C | RM1 | 39 | O | 1 | 22 | | 0.15 | 1.8 | 1.95 | 1.8 | 0.3 | 7 | | | | | | | | AR | | 0 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | | | | | | N |
| R. Mountain C | RM1 | 61 | R | 1 | 23 | 4.5 | 0.09 | 0.3 | 0.39 | 31.0 | 4.3 | 99 | 50 | 50 | 0 | 0 | 0 | H | 6 | AR | L | 49 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | MB, MC, EB | N |
| R. Mountain C | RM1 | 84 | G | 1 | 16 | 2.0 | 0.13 | 0.37 | 0.5 | 11.6 | 4.2 | 67 | 50 | 50 | 0 | 0 | 0 | H | 6 | AR | L | 34 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 0 | | | | DW, EB | N |
| R. Mountain C | RM1 | 100 | R | 1 | 14.0 | 6.0 | 0.08 | 0.5 | 0.58 | 5.5 | 2.5 | 35 | 20 | 58 | 20 | 2 | 0 | M | 13 | AR | M | 22 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 0 | 0 | 2 | 6.0 | 2 | SC | P | 40 | MB, MC, EB,DW | N |
| R. Mountain C | RM1 | 114 | G | 1 | 3.0 | 2.0 | 0.12 | 0.35 | 0.47 | 11.1 | 6.1 | 18 | 30 | 68 | 2 | 0 | 0 | M | 6 | AR | L | 13 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 0 | 0 | 0 | 0 | 2.0 | 0 | | | | | N |
| R. Mountain C | RM1 | 117 | R | 1 | 93.0 | 6.0 | 0.14 | 0.15 | 0.29 | 4.6 | 3.0 | 279 | 20 | 40 | 40 | 0 | 0 | M | 18 | AR | M | 134 | | | | | | 0 | 0 | 0 | 0 | 10.0 | 0 | 0 | 0 | 2 | 12.0 | 60 | | | | EB | N |
| Christian Ck | C1 | 0 | R | 1 | 21 | 1.5 | 0.08 | 0.35 | 0.43 | 21.2 | 11.1 | 233 | 20 | 73 | 5 | 2 | 0 | M | 6 | AR | M | 172 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 0 | SC | P | 50 | DW | N |
| Christian Ck | C1 | 21 | G | 1 | 34 | 0.1 | 0.14 | 0.4 | 0.54 | 9.9 | 5.3 | 180 | 20 | 76 | 2 | 2 | 0 | M | 6 | AR | M | 138 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 0 | SC | P | 20 | DW | N |
| Christian Ck | C1 | 55 | P | 1 | 33 | 2.0 | 0.14 | 0.25 | 0.39 | 9.2 | 6.4 | 211 | 20 | 40 | 38 | 2 | 0 | M | 13 | AR | M | 101 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 0 | SC | P | 10 | DW | N |
| Christian Ck | C1 | 88 | G | 1 | 13 | 1.0 | 0.21 | 0.15 | 0.36 | 9.4 | 5.0 | 65 | 20 | 40 | 38 | 2 | 0 | M | 13 | AR | M | 31 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 2 | SC | P | 60 | | N |
| Christian Ck | C1 | 101 | R | 1 | 39 | 6.0 | 0.09 | 0.5 | 0.59 | 8.9 | 5.7 | 222 | 20 | 50 | 28 | 2 | 0 | M | 13 | AR | M | 124 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 1 | 3.0 | 5 | | | | DW, EB | N |
| Christian Ck | C1 | 140 | P | 1 | 8 | 0.0 | 0.82 | 0.5 | 1.32 | 13.0 | 7.4 | 59 | 20 | 50 | 28 | 2 | 0 | M | 13 | AR | M | 33 | 1.30 | 0.09 | 1.21 | CV | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 65 | 0 | 67.0 | 0 | | | | EB | N |
| Christian Ck | C1 | 148 | O | 1 | 11 | | 0.12 | 1.45 | 1.57 | 1.5 | 0.8 | 8 | | | | | | | | AR | | 0 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | | N |
| Christian Ck | C1 | 159 | R | 1 | 19 | 5.0 | 0.14 | 0.5 | 0.64 | 17.5 | 4.6 | 87 | 30 | 65 | 5 | 0 | 0 | M | 6 | AR | L | 58 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 | 0.0 | 0 | | | | MB,EB, DW | N |
| Christian Ck | C1 | 178 | G | 1 | 10 | 2.0 | 0.16 | 0.25 | 0.41 | 6.1 | 3.5 | 35 | 20 | 75 | 5 | 0 | 0 | M | 6 | AR | M | 27 | | | | | | 0 | 0 | 0 | 0 | 10.0 | 0 | 0 | 0 | 5 | 15.0 | 30 | | | | DW, EB | N |
| Christian Ck | C1 | 188 | R | 1 | 136 | 7.0 | 0.19 | 0.65 | 0.84 | 5.3 | 3.3 | 442 | 20 | 38 | 35 | 5 | 2 | M | 13 | AR | M | 199 | | | | | | 0 | 0 | 0 | 0 | 5.0 | 5 | 2 | 0 | 5 | 17.0 | 30 | | | | DW, EB | N |
| Christian Ck | C1 | 324 | G | 1 | 6 | 1.0 | 0.13 | 0.21 | 0.34 | 5.9 | 3.4 | 20 | 20 | 68 | 10 | 2 | 0 | M | 13 | AR | M | 14 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 0 | | | | DW, EB | N |
| Christian Ck | C1 | 330 | R | 1 | 96 | 4.5 | 0.25 | 0.4 | 0.65 | 4.4 | 3.2 | 307 | 20 | 40 | 38 | 2 | 0 | M | 13 | AR | M | 146 | | | | | | 0 | 0 | 0 | 0 | 2.0 | 2 | 0 | 0 | 2 | 6.0 | 2 | SP | | | DW, EB | N |
| Christian Ck | C1 | 426 | G | 1 | 9 | 1.0 | 0.24 | 0.3 | 0.54 | 6.0 | 2.3 | 21 | 20 | 48 | 30 | 2 | 0 | M | 13 | AR | M | 11 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 0 | | | | DW | N |
| Christian Ck | C1 | 435 | R | 1 | 165 | 5.0 | 0.15 | 0.45 | 0.6 | 4.4 | 3.3 | 545 | 20 | 40 | 38 | 2 | 0 | M | 13 | AR | M | 259 | | | | | | 0 | 0 | 0 | 0 | 10.0 | 2 | 0 | 0 | 2 | 14.0 | 10 | | | | DW | N |
| Sulphur Ck | S1 | 0 | R | 1 | 3 | 2.5 | 0.14 | 0.3 | 0.44 | 8.3 | 3.2 | 10 | 20 | 30 | 48 | 2 | 0 | M | 13 | AR | M | 4 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 2 | | | | DW | N |
| Sulphur Ck | S1 | 3 | G | 1 | 10 | 0.5 | 0.21 | 0.7 | 0.91 | 7.0 | 2.0 | 20 | 20 | 58 | 20 | 2 | 0 | M | 13 | AR | M | 12 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 2 | 4.0 | 30 | | | | DW | N |
| Sulphur Ck | S1 | 13 | R | 1 | 34 | 2.0 | 0.09 | 0.7 | 0.79 | 6.0 | 3.7 | 126 | 10 | 40 | 45 | 5 | 0 | M | 13 | AR | M | 62 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 2 | | | | DW | N |
| Sulphur Ck | S1 | 47 | G | 1 | 8 | 0.8 | 0.23 | 0.6 | 0.83 | 4.9 | 3.2 | 26 | 20 | 58 | 20 | 2 | 0 | M | 13 | AR | M | 16 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 2 | | | | | N |
| Sulphur Ck | S1 | 55 | R | 1 | 85 | 3.0 | 0.11 | 0.65 | 0.76 | 7.4 | 3.0 | 255 | 20 | 40 | 38 | 2 | 0 | M | 13 | AR | M | 121 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 2 | | | | DW | N |
| Sulphur Ck | S1 | 140 | G | 1 | 7 | 1.0 | 0.22 | 0.5 | 0.72 | 5.1 | 2.9 | 20 | 20 | 40 | 38 | 2 | 0 | M | 13 | AR | M | 10 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 5 | | | | DW | N |
| Sulphur Ck | S1 | 147 | R | 1 | 17 | 2.0 | 0.14 | 0.65 | 0.79 | 5.5 | 2.9 | 49 | 20 | 40 | 38 | 2 | 0 | M | 13 | AR | M | 23 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 0 | | | | | N |
| Sulphur Ck | S1 | 164 | G | 1 | 8 | 1.0 | 0.15 | 0.5 | 0.65 | 6.3 | 2.9 | 23 | 20 | 40 | 38 | 2 | 0 | M | 13 | AR | M | 11 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 2 | | | | DW | N |
| Sulphur Ck | S1 | 172 | R | 1 | 11 | 2.0 | 0.09 | 0.5 | 0.59 | 6.6 | 4.4 | 48 | 10 | 40 | 40 | 10 | 0 | M | 13 | AR | M | 23 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 10 | 0 | 0 | 0 | 10.0 | 50 | | | | | N |
| Sulphur Ck | S1 | 183 | G | 1 | 14 | 0.5 | 0.14 | 0.35 | 0.49 | 9.2 | 3.3 | 46 | 20 | 40 | 38 | 2 | 0 | M | 13 | AR | M | 22 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 5 | | | | DW | N |
| Sulphur Ck | S1 | 197 | R | 1 | 108 | 3.0 | 0.14 | 0.35 | 0.49 | 7.5 | 3.8 | 410 | 20 | 40 | 38 | 2 | 0 | M | 13 | AR | M | 195 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 0 | 2.0 | 5 | | | | DW | N |
| Sulphur Ck | S1 | 305 | G | 1 | 12 | 1.0 | 0.16 | 0.45 | 0.61 | 7.2 | 4.0 | 48 | 20 | 35 | 40 | 5 | 0 | M | 13 | AR | M | 21 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 5 | 0 | 0 | 0 | 5.0 | 2 | | | | DW | N |
| Sulphur Ck | S1 | 317 | R | 1 | 85 | 3.0 | 0.08 | 0.35 | 0.43 | 8.3 | 1.9 | 162 | 20 | 40 | 38 | 2 | 0 | M | 13 | AR | M | 77 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 2 | 4.0 | 30 | | | | MB, MC | N |

Table D1.  Detailed habitat descriptions for selected reaches in Nome River watershed.

| | | | | | | | | | Bank Height (m) | | Mean Width (m) | | | Percent Bed Material (range in mm) | | | | | | | Spawning Gravel | | | Pools Only | | | | | Functional LWD Tally | | | | Cover | | | | | | | Off-channel Habitat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sub Basin | Reach | Reach location (m) [1] | Sampling Fraction [2] | Habitat type [3] | Habitat category [4] | Habitat length (m) | Gradient (%) | Mean depth (m) | Bankfull height (m) | Bankfull depth (m) | Bankfull width (m) | Wetted width (m) | Rearing Habitat Area ($m^2$) [5] | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bed rock | Compaction | D90 (cm) | Type [6] | Quality [7] | Amount ($m^2$) | Maximum depth (m) | Crest depth (m) | Residual depth (m) | Control element [8] | Good holding pool? [9] | Total LWD tally | 10 to 20 cm | 20 to 50 cm | >50 cm | Woody debris | Boulder | Cutbank | Deep pool | Instream veg. | Total instream cover | Overhanging veg. | Type [10] | Access [11] | Length (m) | Channel Disturbances [12] | Barriers [13] |
| Sulphur Ck | S1 | 402 | | G | 1 | 17 | 1.5 | 0.13 | 0.15 | 0.28 | 5.7 | 3.7 | 63 | 30 | 60 | 10 | 0 | 0 | M | 13 | AR | L | 39 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 2 | 2.0 | 40 | | | | EB, DW | N |
| Sulphur Ck | S1 | 419 | | R | 1 | 57 | 4.0 | 0.15 | 0.35 | 0.5 | 6.6 | 3.9 | 222 | 20 | 40 | 38 | 2 | 0 | M | 13 | AR | M | 106 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 2 | 0 | 0 | 2 | 4.0 | 50 | | | | | N |
| Sulphur Ck | S1 | 476 | | P | 1 | 10 | 0.0 | 0.28 | 0.2 | 0.48 | 13.0 | 5.3 | 53 | 20 | 20 | 10 | 50 | 0 | M | 35 | AR | M | 12 | | | | | | 0 | 0 | 0 | 0 | 0.0 | 50 | 0 | 0 | 0 | 50.0 | 0 | SC | P | 50 | EB, DW | N |

[1] Reach location denotes the distance upstream from the lower reach break.
[2] Sampling fraction is used to expand habitat measurements to the entire reach (e.g. $SF_p$ = 0.2 if only 1 in every 5th pool was sampled).
[3] Habitat types are: pool (P), riffle (R), glide (G), cascade (C), other (O).
[4] Habitat categories are: primary habitat type (1), side channel (2), tertiary scour pool (3).
[5] Habitat area is calculated for rearing salmonids as length multiplied by wetted width.
[6] Spawning gravel type codes are: suitable for anadromous salmon (A), suitable for resident trout and char (R), suitable for both salmon and trout (AR), not suitable (N).
[7] Spawning gravel quality codes are: low (L), moderate (M), high (H), none (N).
[8] Control element codes are: boulder (B), bedrock (R), wood (W), beaver dam (D), culvert (CV), other (O).
[9] A pool is classified as a good adult holding pool (Y) if the product of the maximum depth times the total overhead cover is >= 30.  Overhead cover is the sum of LWD, boulder, cutbank and overhanging vegetation.
[10] Off-channel habitat codes are: alcove (ALC), side channel (SC), slough (SL), pond (PD), wetland (WL), spring (SP), other (O).
[11] Off-channel access codes are: no access (N), high flow only (P), most flows (G).
[12] Disturbance indicator codes are: scour (SC), unvegetated bar (DW),  sediment wedge (WG), middle-channel bars (MB), extensive riffle zone (LR), road crossing thru creek at riffle crest or pool tailout (RC), multiple channels (MC), eroding banks (EB), back-channels (BC), LWD parallel to bank (PD), LWD jams (JM), avulsion (AV),  >50% silt content (E), other (O).
[13] Potential barrier codes are:  none (N), log jam (X), falls > 2 m (F), culvert (CV), bridge (BR), beaver dam (BD), land slide or bank failure (LS), cascade or chute (C), other (O).

Table D2. Area surveyed and percentage of each primary habitat type in Nome River watershed.

| Reach Number | Mean Bankfull Width (m) | Surveyed Length (m) | Surveyed Area ($m^2$) | Percent Habitat Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Pool | Riffle | Glide | Cascade | Other |
| N1 | 63.0 | 7426 | 325742 | 17.6 | 30.3 | 52.2 | 0.0 | 0.0 |
| N2 | 56.4 | 3582 | 123591 | 14.9 | 49.4 | 35.7 | 0.0 | 0.0 |
| N3 | 52.1 | 4728 | 108552 | 28.5 | 36.2 | 35.3 | 0.0 | 0.0 |
| N4 | 43.5 | 4150 | 105757 | 13.8 | 40.5 | 45.7 | 0.0 | 0.0 |
| N5 | 43.9 | 5982 | 113170 | 25.9 | 47.1 | 27.0 | 0.0 | 0.0 |
| N6 | 36.0 | 2940 | 67232 | 17.3 | 53.9 | 28.8 | 0.0 | 0.0 |
| N7 | 49.9 | 7360 | 217454 | 0.0 | 65.4 | 34.6 | 0.0 | 0.0 |
| Os1 | 19.7 | 3264 | 39251 | 9.6 | 43.4 | 47.1 | 0.0 | 0.0 |
| Bu1 | 7.3 | 1349 | 8626 | 27.8 | 12.8 | 6.3 | 0.0 | 53.1 |
| Bu2 | 12.2 | 1169 | 7008 | 5.8 | 78.1 | 16.1 | 0.0 | 0.0 |
| Bu3-RF | 5.9 | 148 | 496 | 5.8 | 74.2 | 19.9 | 0.0 | 0.0 |
| Bu3-LF | 5.2 | 409 | 1703 | 2.9 | 93.6 | 3.5 | 0.0 | 0.0 |
| Dx1 | 6.8 | 494 | 1818 | 9.0 | 71.7 | 17.4 | 0.0 | 2.0 |
| Bas1 | 7.9 | 376 | 1228 | 7.6 | 82.6 | 2.8 | 0.0 | 7.0 |
| H1 | 7.0 | 88 | 7139 | 0.0 | 2.6 | 0.0 | 0.0 | 97.4 |
| H2 | 9.7 | 1169 | 8409 | 15.6 | 81.6 | 2.9 | 0.0 | 0.0 |
| D1 | 6.0 | 1643 | 6560 | 7.9 | 76.3 | 15.5 | 0.0 | 0.3 |
| RM1 | 13.2 | 210 | 670 | 0.8 | 85.4 | 12.8 | 0.0 | 1.0 |
| C1 | 8.8 | 600 | 2436 | 11.1 | 75.4 | 13.2 | 0.0 | 0.3 |
| S1 | 7.2 | 486 | 1582 | 3.4 | 81.1 | 15.6 | 0.0 | 0.0 |

Table D3. Summary of cover attributes for Nome River watershed.

| Reach Number | Habitat Unit | Percent Instream Cover Types | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | LWD/ SWD | Boulder | Undercut Banks | Deep Pool | Instream Vegetation | Total Percent Instream Cover | Overhanging Vegetation |
| N1 | P | 1.3 | 0.0 | 1.1 | 27.5 | 1.0 | 30.8 | 0.5 |
| N1 | R | 0.1 | 0.1 | 3.0 | 0.0 | 2.3 | 5.4 | 1.3 |
| N1 | G | 0.0 | 0.0 | 4.4 | 0.1 | 3.3 | 7.4 | 1.8 |
| N1 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| N1 | All | 0.3 | 0.1 | 3.4 | 4.9 | 2.6 | 10.9 | 1.4 |
| N2 | P | 0.0 | 0.0 | 0.0 | 0.2 | 15.6 | 15.8 | 0.5 |
| N2 | R | 0.0 | 0.0 | 0.5 | 0.0 | 4.1 | 4.6 | 1.1 |
| N2 | G | 0.1 | 0.5 | 6.6 | 0.0 | 4.6 | 11.8 | 0.8 |
| N2 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| N2 | All | 0.0 | 0.2 | 2.6 | 0.0 | 6.0 | 8.8 | 0.9 |
| N3 | P | 0.4 | 0.0 | 11.3 | 16.1 | 4.3 | 32.1 | 1.9 |
| N3 | R | 0.6 | 0.2 | 6.3 | 0.2 | 3.8 | 11.7 | 1.1 |
| N3 | G | 0.1 | 0.5 | 11.1 | 0.6 | 11.3 | 23.6 | 3.3 |
| N3 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| N3 | All | 0.4 | 0.2 | 9.4 | 4.9 | 6.6 | 21.7 | 2.1 |
| N4 | P | 3.0 | 1.9 | 2.5 | 24.2 | 3.5 | 35.2 | 3.1 |
| N4 | R | 0.7 | 0.6 | 2.6 | 0.0 | 2.2 | 6.1 | 2.1 |
| N4 | G | 0.3 | 0.1 | 3.2 | 0.0 | 9.3 | 12.8 | 2.1 |
| N4 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| N4 | All | 0.8 | 0.5 | 2.8 | 3.3 | 5.6 | 13.2 | 2.2 |
| N5 | P | 1.5 | 0.9 | 5.5 | 15.2 | 2.4 | 25.4 | 2.2 |
| N5 | R | 0.6 | 1.0 | 3.1 | 0.0 | 1.7 | 6.3 | 1.5 |
| N5 | G | 0.7 | 0.3 | 2.2 | 0.0 | 1.4 | 4.6 | 1.5 |
| N5 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| N5 | All | 0.9 | 0.8 | 3.5 | 3.9 | 1.8 | 10.8 | 1.7 |
| N6 | P | 0.5 | 0.2 | 6.4 | 3.8 | 1.3 | 12.2 | 1.0 |
| N6 | R | 0.0 | 0.4 | 3.1 | 0.0 | 5.2 | 8.8 | 2.5 |
| N6 | G | 0.1 | 0.5 | 3.1 | 0.0 | 1.7 | 5.4 | 1.6 |
| N6 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| N6 | All | 0.1 | 0.4 | 3.7 | 0.7 | 3.5 | 8.4 | 2.0 |
| N7 | P | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| N7 | R | 0.0 | 3.7 | 1.1 | 0.0 | 0.2 | 5.0 | 1.8 |
| N7 | G | 0.0 | 2.7 | 0.0 | 0.0 | 0.4 | 3.1 | 1.7 |
| N7 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| N7 | All | 0.0 | 3.4 | 0.7 | 0.0 | 0.3 | 4.4 | 1.8 |

Table D3. Summary of cover attributes for Nome River watershed.

| Reach Number | Habitat Unit | Percent Instream Cover Types | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | LWD/ SWD | Boulder | Undercut Banks | Deep Pool | Instream Vegetation | Total Percent Instream Cover | Overhanging Vegetation |
| Os1 | P | 2.1 | 0.4 | 4.7 | 0.0 | 4.2 | 11.5 | 3.6 |
| Os1 | R | 2.0 | 1.3 | 0.0 | 0.0 | 2.3 | 5.6 | 2.0 |
| Os1 | G | 0.6 | 0.7 | 0.0 | 0.0 | 5.6 | 6.9 | 2.1 |
| Os1 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Os1 | All | 1.3 | 0.9 | 0.5 | 0.0 | 4.0 | 6.8 | 2.2 |
| Bu1 | P | 13.1 | 0.0 | 2.1 | 2.9 | 0.0 | 18.2 | 24.1 |
| Bu1 | R | 4.1 | 0.0 | 0.4 | 0.0 | 0.0 | 4.5 | 11.2 |
| Bu1 | G | 13.5 | 0.0 | 5.8 | 0.0 | 0.0 | 19.3 | 19.3 |
| Bu1 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Bu1 | All | 18.3 | 0.0 | 1.5 | 3.2 | 0.0 | 23.0 | 17.4 |
| Bu2 | P | 18.6 | 0.0 | 3.3 | 0.0 | 0.0 | 21.9 | 18.8 |
| Bu2 | R | 1.1 | 2.2 | 0.4 | 0.0 | 0.0 | 3.7 | 1.4 |
| Bu2 | G | 1.8 | 0.6 | 1.5 | 0.0 | 0.0 | 3.9 | 5.4 |
| Bu2 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Bu2 | All | 2.3 | 1.8 | 0.7 | 0.0 | 0.0 | 4.8 | 3.0 |
| Bu3-RF | P | 8.0 | 0.0 | 2.0 | 0.0 | 0.0 | 10.0 | 30.0 |
| Bu3-RF | R | 2.1 | 1.0 | 0.4 | 0.0 | 0.0 | 3.5 | 8.7 |
| Bu3-RF | G | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 |
| Bu3-RF | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Bu3-RF | All | 2.0 | 0.8 | 0.8 | 0.0 | 0.0 | 3.6 | 8.6 |
| Bu3-LF | P | 4.9 | 0.0 | 1.5 | 0.0 | 4.4 | 10.8 | 18.2 |
| Bu3-LF | R | 0.0 | 7.5 | 0.0 | 0.0 | 0.6 | 8.1 | 12.2 |
| Bu3-LF | G | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 | 10.0 | 2.0 |
| Bu3-LF | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Bu3-LF | All | 0.1 | 7.3 | 0.0 | 0.0 | 0.7 | 8.2 | 12.0 |
| Dx1 | P | 9.3 | 0.6 | 0.0 | 0.0 | 21.9 | 31.8 | 12.5 |
| Dx1 | R | 2.0 | 16.7 | 0.0 | 0.0 | 7.5 | 26.2 | 4.9 |
| Dx1 | G | 2.8 | 1.8 | 0.0 | 0.0 | 22.4 | 27.0 | 11.1 |
| Dx1 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Dx1 | All | 2.7 | 12.3 | 0.0 | 0.0 | 11.3 | 26.4 | 6.5 |
| Bas1 | P | 23.1 | 9.5 | 0.4 | 0.0 | 21.0 | 54.0 | 26.5 |
| Bas1 | R | 0.3 | 1.9 | 0.5 | 0.0 | 0.0 | 2.7 | 1.4 |
| Bas1 | G | 1.1 | 2.0 | 2.0 | 0.0 | 9.4 | 14.4 | 3.6 |
| Bas1 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Bas1 | All | 2.0 | 3.7 | 0.5 | 0.0 | 1.9 | 8.1 | 3.2 |
| H1 | O | 10.0 | 0.0 | 2.0 | 10.0 | 2.0 | 24.0 | 2.0 |
| H1 | R | 5.0 | 2.0 | 0.0 | 0.0 | 2.0 | 9.0 | 2.0 |
| H1 | G | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| H1 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

Table D3.  Summary of cover attributes for Nome River watershed.

| Reach Number | Habitat Unit | Percent Instream Cover Types | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | LWD/ SWD | Boulder | Undercut Banks | Deep Pool | Instream Vegetation | Total Percent Instream Cover | Overhanging Vegetation |
| H1 | All | 9.9 | 0.1 | 1.9 | 9.7 | 2.0 | 23.6 | 2.0 |
| H2 | P | 6.9 | 0.1 | 2.3 | 3.1 | 0.0 | 12.3 | 8.6 |
| H2 | R | 0.0 | 11.1 | 1.3 | 0.0 | 0.0 | 12.4 | 17.7 |
| H2 | G | 1.7 | 2.0 | 0.3 | 0.0 | 0.0 | 4.0 | 8.3 |
| H2 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| H2 | All | 1.1 | 9.1 | 1.4 | 0.5 | 0.0 | 12.1 | 16.0 |
| D1 | P | 2.0 | 2.5 | 3.6 | 0.0 | 0.2 | 8.3 | 5.1 |
| D1 | R | 1.9 | 12.9 | 0.4 | 0.0 | 0.1 | 15.4 | 3.8 |
| D1 | G | 1.1 | 1.2 | 0.1 | 0.0 | 0.3 | 2.7 | 2.6 |
| D1 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| D1 | All | 1.8 | 10.2 | 0.6 | 0.0 | 0.2 | 12.8 | 3.7 |
| RM1 | P | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| RM1 | R | 5.0 | 0.1 | 0.0 | 0.0 | 1.7 | 6.8 | 29.4 |
| RM1 | G | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| RM1 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| RM1 | All | 4.5 | 0.1 | 0.0 | 0.0 | 1.4 | 6.1 | 25.1 |
| C1 | P | 0.0 | 2.0 | 0.0 | 14.2 | 0.0 | 16.2 | 0.0 |
| C1 | R | 4.5 | 2.6 | 0.5 | 0.0 | 2.3 | 9.9 | 11.1 |
| C1 | G | 1.1 | 1.8 | 0.0 | 0.0 | 0.5 | 3.4 | 3.7 |
| C1 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| C1 | All | 3.5 | 2.4 | 0.4 | 1.6 | 1.8 | 9.7 | 8.9 |
| S1 | P | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 |
| S1 | R | 0.0 | 2.6 | 0.0 | 0.0 | 0.6 | 3.2 | 16.5 |
| S1 | G | 0.0 | 2.1 | 0.0 | 0.0 | 0.7 | 2.7 | 14.8 |
| S1 | C | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| S1 | All | 0.0 | 4.1 | 0.0 | 0.0 | 0.6 | 4.7 | 15.7 |

Table D4. Summary of bed material and spawning attributes for study area reaches.

| Reach Number | Bed Material Composition (%) | | | | | | |
|---|---|---|---|---|---|---|---|
| | <2 mm | 2-64 mm | 64-256 mm | >256 mm | Bedrock | Spawning Quantity ($m^2$) [1] | Spawning Quality [2] |
| N1 | 18.1 | 81.4 | 0.5 | 0.1 | 0 | 265548 | Fair |
| N2 | 16.7 | 82.6 | 0.8 | 0.2 | 0 | 102355 | Fair |
| N3 | 19.3 | 77.7 | 2.8 | 0.2 | 0 | 84491 | Fair |
| N4 | 22.1 | 73.8 | 3.3 | 0.5 | 0 | 78728 | Fair |
| N5 | 24.3 | 70.6 | 4.3 | 0.8 | 0 | 80917 | Fair |
| N6 | 23.3 | 70.3 | 6.0 | 0.3 | 0 | 48079 | Fair |
| N7 | 24.1 | 59.2 | 13.4 | 3.4 | 0 | 134445 | Fair |
| Os1 | 22.4 | 65.7 | 10.8 | 0.9 | 0 | 26622 | Fair |
| Bu1 | 27.9 | 63.9 | 8.1 | 0.0 | 0 | 5654 | Poor |
| Bu2 | 12.6 | 73.9 | 11.7 | 1.8 | 0 | 5343 | Good |
| Bu3-RF | 13.4 | 74.3 | 11.5 | 0.8 | 0 | 380 | Good |
| Bu3-LF | 23.9 | 51.1 | 17.6 | 7.3 | 0 | 931 | Fair |
| Dx1 | 25.4 | 43.3 | 18.9 | 12.3 | 0 | 856 | Poor |
| Bas1 | 13.0 | 34.7 | 48.6 | 3.7 | 0 | 545 | Good |
| H1 | 49.5 | 45.1 | 5.4 | 0.1 | 0 | 96 | Poor |
| H2 | 8.5 | 34.6 | 48.8 | 9.1 | 0 | 3732 | Poor |
| D1 | 16.6 | 46.2 | 26.6 | 10.2 | 0 | 3383 | Fair |
| RM1 | 30.1 | 49.8 | 18.9 | 0.1 | 0 | 359 | Poor |
| C1 | 20.3 | 48.2 | 28.4 | 2.4 | 0 | 1312 | Fair |
| S1 | 19.3 | 40.4 | 36.2 | 4.1 | 0 | 754 | Fair |

[1] Value = (%gravels (2-64 mm) + 20 % cobbles (64-256 mm))*length*wetted width (surveyed area only).

[2] Poor is fines (<2 mm) >25%, Fair if fines >15% and uncompacted, Good if fines < =15% and uncompacted.

Table D5. Summary of fish observations in Nome River watershed, by stream, reach, location and species.

| Sub-Basin | Reach Name | Reach Location [1] (m) | Habitat Type [2] | Survey Method [3] | Salmonids surveyed: Juv. Coho No. | Juv. Coho FL (mm) | Adult Chum No. | Adult Pink No. | Adult Sockeye No. | Arctic Graylin No. | Dolly Varden No. | Whitefish No. | Whitefish FL (mm) | Redds surveyed: Chum | Redds surveyed: Pink | Forage Fish: Sculpin No. | Forage Fish: Stickleback No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N1 | 0 to 0+077 | G | VO | ≈50 | 30-60 | | | | | | | | | | | |
| Nome Main | N1 | 0+504 | G | VO | 100+ | 30-60 | | | | | | | | | | | |
| Nome Main | N1 | 1+389 | G | VO | ≈50 | 30-60 | | | | | | | | | | | |
| Nome Main | N1 | 1+975-2+148 | G | VO | ≈50 | 30-60 | | | | | | | | | | | |
| Nome Main | N1 | 2+393 | G | VO | 100+ | 70-95 | | | | | | | | | | | |
| Nome Main | N1 | 2+486 | P | VO | 100+ | 70-95 | | | | | | | | | | | |
| Nome Main | N1 | 2+800 | SC | VO | 100+ | 70-95 | | | | | | | | | | | |
| Nome Main | N1 | 3+486 | P | VO | 100+ | 75-100 | | | | | | | | | | | |
| Nome Main | N1 | 4+791 | R | VO | | | 3 | | | | | | | | | | |
| Nome Main | N1 | 5+149 | R | VO | | | 1 | | | | | | | | | | |
| Nome Main | N1 | 5+738 | G | VO | 100+ | 50-60 | 1 | | | | | | | | | | |
| Nome Main | N1 | 6+350 | G | VO | 100+ | 30-50 | | | | | | | | | | | |
| Nome Main | N1 | 6+593 | R | VO | 100+ | 30+40 | | | | | | | | | | | |
| Nome Main | N1 | 6+593 | G | VO | | | 2 | | | | | | | | | | |
| Nome Main | N1 | 7+426 | R | VO | | | 1 | | | | | | | 1 | 18 | | |
| Nome Main | N1 | 7+7521 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 7+597 | R | VO | | | | | | | | | | | 4 | | |
| Nome Main | N1 | 7+673 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 8+051 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 8+173 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 8+432 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 8+886 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 9+086 | R | VO | 10 | 30-50 | 2 | | | | | | | | | | |
| Nome Main | N1 | 9+086 | SC | VO | 50 | 70-90 | | | | | | | | | | | |
| Nome Main | N1 | 9+126 | P | VO | 20 | 30-50 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 9+126 | SC | VO | 10 | 70-95 | | | | | | | | | | 1 | |
| Nome Main | N1 | 9+359 | R | VO | 20 | 30-50 | | | | | | | | | 25 | | |
| Nome Main | N1 | 9+463 | G | VO | | | 5 | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 9+494 | R | VO | | | | | | | | | | | 10 | | |
| Nome Main | N1 | 9+619 | G | VO | | | 1 | | | | | | | | 6 | | |
| Nome Main | N1 | 9+819 | R | VO | | | 3 | | | | | | | 1 | 50 | | |
| Nome Main | N1 | 9+901 | G | VO | 30 | 30-60 | 5 | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 9+901 | G | VO | 30 | 75-95 | | | | | | | | | | | |
| Nome Main | N1 | 9+995 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 10+040 | P | VO | | | 5 | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 10+286 | R | VO | 40 | 30-60 | | | | | | | | | 20 | | |
| Nome Main | N1 | 10+286 | R | VO | 10 | 75-95 | | | | | | | | | 50 | | |
| Nome Main | N1 | 10+342 | G | VO | | | | | | | | | | | 15 | | |
| Nome Main | N1 | 10+393 | R | VO | 50 | 30-60 | | | | | | | | 1 | TNTAC[4] | | |
| Nome Main | N1 | 10+393 | R | VO | 10 | 75-95 | | | | | | | | | 20 | | |
| Nome Main | N1 | 10+555 | G | VO | | | | | | | | | | 1 | | | |
| Nome Main | N1 | 10+812 | R | VO | | | | | | | | | | 1 | TNTAC[4] | | |
| Nome Main | N1 | 10+863 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 10+986 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 11+008 | P | VO | | | 1 | | | 1 | | | | | 50 | | |
| Nome Main | N1 | 11+142 | R | VO | | | | | | | | | | | 50 | | |

| Sub-Basin | Reach Name | Reach Location [1] (m) | Habitat Type [2] | Survey Method [3] | Salmonids surveyed: Juv. Coho No. | Juv. Coho FL (mm) | Adult Chum No. | Adult Pink No. | Adult Sockeye No. | Arctic Graylin No. | Dolly Varden No. | Whitefish No. | Whitefish FL (mm) | Redds surveyed: Chum | Redds surveyed: Pink | Forage Fish: Sculpin No. | Forage Fish: Stickleback No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N1 | 11+194 | G | VO | 30 | 30-60 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 11+194 | G | VO | 10 | 75-95 | | | | | | | | | | | |
| Nome Main | N1 | 11+320 | R | VO | 10 | 30-60 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 11+384 | P | VO | | | | | | | | | | | 30 | | |
| Nome Main | N1 | 11+486 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 11+506 | G | VO | | | 1 | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 11+673 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 11+732 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 12+008 | R | VO | | | | | | | | | | | 20 | | |
| Nome Main | N1 | 12+039 | P | VO | | | | | | | | | | | 5 | | |
| Nome Main | N1 | 12+088 | R | VO | | | 1 | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 12+096 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 12+550 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 12+594 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 12+646 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 12+708 | P | VO | 50 | 30-60 | 1 | | | | | | | | 20 | | |
| Nome Main | N1 | 12+793 | R | VO | | | | | | | | | | | | | |
| Nome Main | N1 | 12+811 | P | VO | | | | | | | | | | | | | |
| Nome Main | N1 | 12+839 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 12+954 | G | VO | | | | | | | | | | | | | |
| Nome Main | N1 | 12+974 | SC | VO | 100+ | 60-70 | | | | | | | | | | | |
| Nome Main | N1 | 13+146 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 13+246 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 13+292 | P | VO | | | | | | | | | | 1 | TNTAC[4] | | |
| Nome Main | N1 | 13+389 | R | VO | | | | | | | | | | | 30 | | |
| Nome Main | N1 | 13+402 | P | VO | 50 | 30-50 | | | | | | | | | 5 | | |
| Nome Main | N1 | 13+402 | P | VO | 2 | 80 | | | | | | | | | | | |
| Nome Main | N1 | 13+539 | R | VO | 30 | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 13+624 | G | VO | 30 | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 13+830 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 13+990 | G | VO | | | 3 | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 14+281 | R | VO | | | 2 | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 14+362 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 14+535 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 14+637 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 14+706 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 14+746 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 14+826 | R | VO | 20 | 30-60 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 14+856 | P | VO | 20 | 30-65 | | | | | | | | | | | |
| Nome Main | N1 | 14+901 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 14+924 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 14+966 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 15+001 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 15+061 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 15+099 | P | VO | 100+ | 35-65 | 1 | | | | | | | | 5 | | |
| Nome Main | N1 | 15+123 | R | VO | | | | | | | | | | | 0 | | |
| Nome Main | N1 | 15+412 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 15+560 | R | VO | | | | | | | | | | 1 | | | |

| Sub-Basin | Reach Name | Reach Location [1] (m) | Habitat Type [2] | Survey Method [3] | Salmonids surveyed: Juv. Coho No. | Juv. Coho FL (mm) | Adult Chum No. | Adult Pink No. | Adult Sockeye No. | Arctic Graylin No. | Dolly Varden No. | Whitefish No. | Whitefish FL (mm) | Redds surveyed: Chum | Redds surveyed: Pink | Forage Fish: Sculpin No. | Forage Fish: Stickleback No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N1 | 15+736 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 15+826 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 15+950 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 16+019 | P | VO | | | 1 | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 16+281 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 16+491 | P | VO | 600+ | 40-60 | 13 | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 16+491 | P | VO | 100+ | 65-100 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 16+664 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 16+766 | G | VO | | | | | | | | | | | TNTAC[5] | | |
| Nome Main | N1 | 16+791 | R | VO | | | | | | | | | | | TNTAC[6] | | |
| Nome Main | N1 | 16+815 | G | VO | | | | | | | | | | | TNTAC[7] | | |
| Nome Main | N1 | 17+034 | R | VO | 50+ | 40-60 | | | | | | | | | TNTAC[8] | | |
| Nome Main | N1 | 17+207 | R | VO | 30 | 80-100 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 17+297 | P | VO | | | 2 | | | | | | | | | | |
| Nome Main | N1 | 17+816 | R | VO | | | | | | | | | | | TNTAC[4] | 2 | |
| Nome Main | N1 | 17+864 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 18+011 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 18+062 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 18+800 | G | VO | | | | | | | | | | | TNTAC[5] | | |
| Nome Main | N1 | 18+836 | R | VO | 100+ | 40-60 | | | | | | | | | | | |
| Nome Main | N1 | 18+986 | G | VO | | | 5 | | | | 2 | | | | | | |
| Nome Main | N1 | 19+531 | G | VO | | | 7 | | | | | | | | | | |
| Nome Main | N1 | 19+666 | R | VO | 100+ | 40-60 | | | | | | | | | | | |
| Nome Main | N1 | 19+666 | R | VO | 50 | 75-100 | | | | | | | | | | | |
| Nome Main | N1 | 19+830 | G | VO | | | 1 | | | | | | | | | | |
| Nome Main | N1 | 19+864 | R | VO | 50 | 75-100 | | | | | | | | | | | |
| Nome Main | N1 | 19+944 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 20+377 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 20+657 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 20+688 | G | VO | | | 3 | | | | | 1 | ≈450 | | | | |
| Nome Main | N1 | 20+741 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N1 | 20+820 | P | VO | | | 5 | | | | | | | 12 | | | |
| Nome Main | N1 | 20+873 | R | VO | | | | | | | | | | | | | |
| Nome Main | N1 | 20+942 | P | VO | | | ≈20 | | | | | | | 18 | | | |
| Nome Main | N2 | 21+092 | R | VO | | | 8 | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 21+246 | G | VO | ≈50 | 40-60 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 21+406 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 21+430 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 21+552 | R | VO | | | 1 | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 21+626 | G | VO | | | | 25 | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 21+782 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 21+832 | G | VO | | | | 40+ | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 22+146 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 22+283 | P | VO | | | 1 | | | | | | | | | | |
| Nome Main | N2 | 22+324 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 22+346 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 22+900 | P | VO | 10 | 40-60 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 22+963 | R | VO | | | | | | | | | | | TNTAC[4] | | |

| Sub-Basin | Reach Name | Reach Location [1] (m) | Habitat Type [2] | Survey Method [3] | Salmonids surveyed | | | | | | | | | Redds surveyed | | Forage Fish | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Juv. Coho No. | Juv. Coho FL (mm) | Adult Chum No. | Adult Pink No. | Adult Sockeye No. | Arctic Graylin No. | Dolly Varden No. | Whitefish No. | Whitefish FL (mm) | Chum | Pink | Sculpin No. | Stickleback No. |
| Nome Main | N2 | 22+976 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+026 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+038 | P | VO | | | 1 | | | | | | | | | | |
| Nome Main | N2 | 23+128 | R | VO | 20 | 40-60 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+159 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+216 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+243 | G | VO | ≈50 | 75-100 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+368 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+397 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+483 | R | VO | ≈50 | 50-100 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+532 | P | VO | | | | | | | | | | | 6 | | |
| Nome Main | N2 | 23+557 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+585 | G | VO | | | 1 | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+689 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+738 | G | VO | | | | | | | | | | | | | |
| Nome Main | N2 | 23+822 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 23+868 | P | VO | | | | | | | | | | | 24 | | |
| Nome Main | N2 | 24+058 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 24+091 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 24+126 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 24+167 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 24+221 | R | VO | 2 | 75-100 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 24+276 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 24+322 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 24+434 | R | VO | | | | | | | | | | | 11 | | |
| Nome Main | N2 | 24+468 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 24+504 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 24+559 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 24+629 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N2 | 24+687 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 24+777 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 24+836 | G | VO | | | | | | | | | | | 6 | | |
| Nome Main | N3 | 24+876 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+004 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+036 | P | VO | | | 1 | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+046 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+061 | P | VO | 6 | 75-100 | | | | | | | | | | | |
| Nome Main | N3 | 25+134 | R | VO | | | 1 | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+185 | G | VO | | | | | | | | | | | 5 | | |
| Nome Main | N3 | 25+330 | R | VO | 30 | 75-100 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+391 | G | VO | 1 | 90 | 1 | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+463 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+484 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+537 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+564 | P | VO | | | 1 | | | | | | | | few | | |
| Nome Main | N3 | 25+668 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+693 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+790 | R | VO | | | 7 | | | | | | | TNTAC[4] | TNTAC[4] | | |

| Sub-Basin | Reach Name | Reach Location [1] (m) | Habitat Type [2] | Survey Method [3] | Salmonids surveyed: Juv. Coho No. | Juv. Coho FL (mm) | Adult Chum No. | Adult Pink No. | Adult Sockeye No. | Arctic Graylin No. | Dolly Varden No. | Whitefish No. | Whitefish FL (mm) | Redds surveyed: Chum | Redds surveyed: Pink | Forage Fish: Sculpin No. | Forage Fish: Stickleback No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N3 | 25+885 | G | VO | | | 1 | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+901 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 25+964 | P | VO | | | | | | | | | | | | | |
| Nome Main | N3 | 26+018 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 26+100 | G | VO | | | 3 | | | | | | | 1 | TNTAC[4] | | |
| Nome Main | N3 | 26+143 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 26+198 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 26+247 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 26+277 | P | VO | | | | | | | | | | | | | |
| Nome Main | N3 | 26+294 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 26+339 | P | VO | | | | | | | | | | | | | |
| Nome Main | N3 | 26+442 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 26+476 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 26+548 | P | VO | | | | | | | | | | | | | |
| Nome Main | N3 | 26+606 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 26+622 | P | VO | | | | | | | | | | | | | |
| Nome Main | N3 | 26+662 | R | VO | | | | | | | | | | | 5 | | |
| Nome Main | N3 | 26+681 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 26+733 | R | VO | | | | | | | | | | | | | |
| Nome Main | N3 | 26+836 | G | VO | | | | | | | | | | | 20 | | |
| Nome Main | N3 | 26+828 | R | VO | | | | | | | | | | | 20 | | |
| Nome Main | N3 | 27+036 | R | VO | 5 | 40-60 | | | | | | | | | 20 | | |
| Nome Main | N3 | 27+098 | P | VO | | | 5 | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 27+215 | R | VO | | | 1 | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 27+345 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 27+478 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 27+653 | G | VO | 3 | 40-60 | | | | | | | | | 5 | | |
| Nome Main | N3 | 27+784 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 27+832 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 27+868 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 28+017 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 28+148 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 28+163 | G | VO | | | | | | | | | | | few | | |
| Nome Main | N3 | 28+235 | R | VO | | | | | 1 | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 28+294 | P | VO | | | | | | | | | | | | | |
| Nome Main | N3 | 28+404 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 28+432 | P | VO | | | | | | | | | | | | | |
| Nome Main | N3 | 28+483 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 28+498 | G | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 28+525 | R | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 28+619 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 28+673 | R | VO | 10 | 40-60 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 28+689 | G | VO | 5 | 40-60 | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 29+039 | P | VO | | | | | | | | | | | TNTAC[4] | | |
| Nome Main | N3 | 29+348 | P | VO | | | 1 | | | | | | | TNTAC[4] | TNTAC[4] | | |
| Nome Main | N4 | 29+363 | R | VO | | | | | | | | | | TNTAC[4] | TNTAC[4] | | |
| Nome Main | N4 | 29+577 | R | VO | | | | | | | | | | TNTAC[4] | TNTAC[4] | | |
| Nome Main | N4 | 29+646 | P | VO | | | | | | | | | | | | | |

| Sub-Basin | Reach Name | Reach Location [1] (m) | Habitat Type [2] | Survey Method [3] | Salmonids surveyed: Juv. Coho No. | Juv. Coho FL (mm) | Adult Chum No. | Adult Pink No. | Adult Sockeye No. | Arctic Graylin No. | Dolly Varden No. | Whitefish No. | Whitefish FL (mm) | Redds surveyed: Chum | Redds surveyed: Pink | Forage Fish: Sculpin No. | Forage Fish: Stickleback No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N4 | 29+646 | SC | VO | 300+ | 40-60 | | | | | | | | | | | |
| Nome Main | N4 | 30+118 | P | VO | | | 15+ | | | | | | | | | | |
| Nome Main | N4 | 30+291 | R | VO | | | 2 | | | | | | | | | | |
| Nome Main | N4 | 30+442 | G | VO | <15 | 40-60 | | | | | | | | | | | |
| Nome Main | N4 | 30+746 | G | VO | 50+ | 40-60 | | | | | | | | | | | |
| Nome Main | N4 | 30+834 | SC | VO | 20+ | 70-90 | | | | | | | | | | | |
| Nome Main | N4 | 30+924 | P | VO | | | 2 (dead) | | | | | | | | | | |
| Nome Main | N4 | 31+398 | G | VO | 1 | 100 | | | | | | | | | | | |
| Nome Main | N4 | 31+443 | R | VO | | | | 5 | | | | | | | 15 - 20 | 2 | |
| Nome Main | N4 | 31+598 | G | VO | 2 | 70-90 | | | | | | | | | | | |
| Nome Main | N4 | 31+689 | G | VO | | | 5 | | | | | | | TNTAC[4] | | | |
| Nome Main | N4 | 32+158 | G | VO | | | 1 | | | | | | | | | | |
| Nome Main | N4 | 32+427 | G | VO | ~100 | 70-90 | | | | | | | | | | | |
| Nome Main | N4 | 32+613 | G | VO | | | 5 (dead) | | | | 2 | | | | | | |
| Nome Main | N4 | 33+158 | G | VO | | | 2 (dead) | | | | | | | | | | |
| Nome Main | N4 | 33+158 | R | VO | 1 | 75 | 6 | | | | | | | | | | |
| Nome Main | N4 | 33+491 | SC | VO | ~50 | 70-90 | | | | | | | | | | | |
| Nome Main | N5 | 33+699 | P | VO | | | ~20 dead | ~150 dead | | | | | | | | | |
| Nome Main | N5 | 33+904 | R | VO | | | ~20 dead | ~900 dead | | | | | | | | | |
| Nome Main | N5 | 33+699 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 33+699 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 33+699 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 33+852 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 33+701 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 34+090 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 34+165 | G | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 34+419 | P | VO | | | ~20 | 20 dead | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 35+757 | P | VO | | | 30 dead | 500+ dead | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 34+903 | G | VO | | | 1 | ~200 bright | | | | | | | | | |
| Nome Main | N5 | 35+059 | G | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 35+323 | P | VO | | | 1 | | | | | | | | | | |
| Nome Main | N5 | 35+395 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 35+473 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 35+877 | P | VO | 10 | 70-90 | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 35+940 | R | VO | | | | PNC[5] | | | | | | | ~20 | | |
| Nome Main | N5 | 35+953 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 36+003 | R | VO | | | | PNC[5] | | | | | | | 10 | | |
| Nome Main | N5 | 36+015 | P | VO | | | 1 | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 36+295 | R | VO | 20 | 70-90 | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 36+324 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 36+410 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 36+459 | P | VO | 50 | 70-90 | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 36+484 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 36+512 | G | VO | 5 | 70-90 | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 36+566 | SC | VO | 10 | 70-90 | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 36+615 | G | VO | | | | PNC[5] | | | | | | | <20 | | |
| Nome Main | N5 | 36+699 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 36+745 | P | VO | | | 1 | PNC[5] | | | | | | | TNTAC[4] | | |

| Sub-Basin | Reach Name | Reach Location [1] (m) | Habitat Type [2] | Survey Method [3] | Salmonids surveyed: Juv. Coho No. | Juv. Coho FL (mm) | Adult Chum No. | Adult Pink No. | Adult Sockeye No. | Arctic Graylin No. | Dolly Varden No. | Whitefish No. | Whitefish FL (mm) | Redds surveyed: Chum | Redds surveyed: Pink | Forage Fish: Sculpin No. | Forage Fish: Stickleback No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N5 | 36+800 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 36+820 | P | VO | | | 4 | PNC[5] | | | | | | 4 | TNTAC[4] | | |
| Nome Main | N5 | 36+885 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 36+935 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+098 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+153 | G | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+199 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+230 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+311 | R | VO | 2 | 70-80 | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+345 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+381 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+506 | R | VO | | | | PNC[5] | | | | | | | 6 | | |
| Nome Main | N5 | 37+537 | G | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+564 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+615 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+654 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+753 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+881 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 37+938 | P | VO | 6 | 70-90 | | | 3 | | | | | | | | |
| Nome Main | N5 | 38+011 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 38+062 | G | VO | | | | | | | | | | 6 | | | |
| Nome Main | N5 | 38+157 | R | VO | 30 | 70-90 | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 38+218 | G | VO | 1 | 70 | 1 | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 38+290 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 38+311 | P | VO | | | 3 | | | | | | | 4 | | | |
| Nome Main | N5 | 38+364 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 38+391 | P | VO | | | 1 | | | | | | | 2 | | | |
| Nome Main | N5 | 38+445 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 38+470 | R | VO | | | 7 | | | | | | | 4 | | | |
| Nome Main | N5 | 38+517 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 38+612 | G | VO | | | 1 | | | | | | | | | | |
| Nome Main | N5 | 38+628 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 38+745 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 38+870 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 38+925 | G | VO | | | 3 | PNC[5] | | | | | | 1 | TNTAC[4] | | |
| Nome Main | N5 | 38+974 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 39+004 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 39+021 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 39+119 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 39+225 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N5 | 39+339 | R | VO | | | | PNC[5] | | | | | | | 10 | | |
| Nome Main | N5 | 39+410 | R | VO | | | | PNC[5] | | | | | | | 5 | | |
| Nome Main | N5 | 39+463 | G | VO | | | | PNC[5] | | | | | | | 20 | | |
| Nome Main | N6 | 39+593 | P | VO | | | | PNC[5] | | | | | | | 20 | | |
| Nome Main | N6 | 609 | R | VO | | | | PNC[5] | | | | | | | 20 | | |
| Nome Main | N6 | 39+792 | R-SC | VO | 20 | 70-90 | | | | | | | | | | | |
| Nome Main | N6 | 39+872 | P | VO | | | 16 | | | | | | | TNTAC[4] | | | |
| Nome Main | N6 | 39+955 | G-SC | VO | 3 | 60-90 | | | | | | | | | | | |

| Sub-Basin | Reach Name | Reach Location [1] (m) | Habitat Type [2] | Survey Method [3] | Juv. Coho No. | Juv. Coho FL (mm) | Adult Chum No. | Adult Pink No. | Adult Sockeye No. | Arctic Graylin No. | Dolly Varden No. | Whitefish No. | Whitefish FL (mm) | Redds surveyed Chum | Redds surveyed Pink | Forage Fish Sculpin No. | Forage Fish Stickleback No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N6 | 40+080 | G | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 40+161 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 40+245 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 40+344 | G | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 40+425 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 40+440 | G | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 40+512 | R | VO | 5 | 70-90 | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 40+571 | P | VO | | | 9 | | | | | | | TNTAC[4] | | | |
| Nome Main | N6 | 40+631 | R | VO | 5 | 70-90 | | PNC[5] | | | | | | | 20 | | |
| Nome Main | N6 | 40+710 | R | VO | 1 | 70 | | | | | | | | | | | |
| Nome Main | N6 | 40+752 | R | VO | | | | PNC[5] | | | | | | | 20 | | |
| Nome Main | N6 | 40+846 | P | VO | | | | PNC[5] | | | | | | | 20 | | |
| Nome Main | N6 | 40+916 | G | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 40+987 | R | VO | | | | | | | | | | | 5 | | |
| Nome Main | N6 | 41+044 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 41+108 | G | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 41+171 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 41+349 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 41+446 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 41+459 | P | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 41+511 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 41+525 | G | VO | | | 3 | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 41+621 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 41+728 | R | VO | | | | PNC[5] | 1 | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 41+796 | G | VO | | | 1 | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 41+904 | R | VO | | | 7 | | | | | | | 4 | | | |
| Nome Main | N6 | 41+999 | G | VO | | | | | | | | | | 6 | | | |
| Nome Main | N6 | 42+065 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 42+123 | G | VO | | | 1 | | | | | | | 2 | | | |
| Nome Main | N6 | 42+173 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 42+212 | G | VO | | | 1 | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 42+265 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N6 | 42+354 | G | VO | 1 | 70 | | | | | | | | | | | |
| Nome Main | N7 | 42+435 | R | VO | 13 | 70-90 | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N7 | 42+508 | G | VO | | | | | | | | | | 4 | | | |
| Nome Main | N7 | 42+552 | R | VO | | | | PNC[5] | | | | | | | TNTAC[4] | | |
| Nome Main | N7 | 42+569 | G | VO | 6 | 70-90 | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 42+640 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 42+713 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 42+765 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 42+875 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 42+948 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+075 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+182 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+275 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+305 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+406 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+430 | R | VO | | | | PNC[5] | | | | | | | | | |

| Sub-Basin | Reach Name | Reach Location [1] (m) | Habitat Type [2] | Survey Method [3] | Salmonids surveyed: Juv. Coho No. | Juv. Coho FL (mm) | Adult Chum No. | Adult Pink No. | Adult Sockeye No. | Arctic Graylin No. | Dolly Varden No. | Whitefish No. | Whitefish FL (mm) | Redds surveyed: Chum | Redds surveyed: Pink | Forage Fish: Sculpin No. | Forage Fish: Stickleback No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N7 | 43+475 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+586 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+631 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+694 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+755 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+815 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+838 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+893 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+926 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 43+975 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 44+005 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 44+097 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 44+181 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 44+375 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 48+213 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 48+383 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 48+438 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 49+180 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 49+423 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 49+612 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 49+710 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 49+893 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 50+090 | pond | VO | | | | | 1 | | | | | | | | |
| Nome Main | N7 | 50+413 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 50+735 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 50+857 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 50+913 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 51+213 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 52+613 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 52+963 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 53+213 | G | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 53+303 | R | VO | | | | PNC[5] | | | | | | | | | |
| Nome Main | N7 | 54+807 | R | VO | | | | PNC[5] | | | | | | | 5 | | |
| Nome Main | N7 | 56+315 | O | VO | | | | 1 | | | | | | | | | |
| Nome Main | N8 | 60+502 | R | VO | | | | 16 | | | | | | | | | |
| Nome Main | N8 | 60+564 | G | VO | 1 | 80-100 | | | | | | | | | | | |
| Osborn Cr | Os1 | 120 | P | VO | 10 | 30-50 | | | | | | | | | | | |
| Osborn Cr | Os1 | 120 | OFF/C | VO | 50+ | 30-50 | | | | | | | | | | | |
| Osborn Cr | Os1 | 324 | R | VO | 11 | 30-50 | | | | | | | | | | | |
| Osborn Cr | Os1 | 488 | G | VO | 8 | 30-50 | | | | | | | | | | | |
| Osborn Cr | Os1 | 488 | G | VO | 2 | 60-90 | | | | | | | | | | | |
| Osborn Cr | Os1 | 1126 | r | | | | | | | | | | | | 1 | | |
| Osborn Cr | Os1 | 1187 | G | VO | | | | | | | | | | | 5 | | |
| Osborn Cr | Os1 | 1187 | OFF/C | VO | 12 | 30-50 | | | | | | | | | | | |
| Osborn Cr | Os1 | 1187 | OFF/C | VO | 3 | 60-90 | | | | | | | | | | | |
| Osborn Cr | Os1 | 1214 | P | VO | | | | 8 | | | | | | | | | |
| Osborn Cr | Os1 | 1288 | R | VO | | | | | | | | | | | 15 | | |
| Osborn Cr | Os1 | 1335 | G | VO | | | | | | | | | | | 12 | | |

| Sub-Basin | Reach Name | Reach Location [1] (m) | Habitat Type [2] | Survey Method [3] | Salmonids surveyed: Juv. Coho No. | Juv. Coho FL (mm) | Adult Chum No. | Adult Pink No. | Adult Sockeye No. | Arctic Graylin No. | Dolly Varden No. | Whitefish No. | Whitefish FL (mm) | Redds surveyed: Chum | Redds surveyed: Pink | Forage Fish: Sculpin No. | Forage Fish: Stickleback No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Osborn Cr | Os1 | 1379 | R | VO | | | | | | | | | | | 2 | | |
| Osborn Cr | Os1 | 1391 | ALC | VO | 30+ | 30-50 | | | | | | | | | 18 | | |
| Osborn Cr | Os1 | 1449 | R | VO | | | | | | | | | | | 2 | | |
| Osborn Cr | Os1 | 1468 | G | VO | | | | | | | | | | | 6 | 1 | |
| Osborn Cr | Os1 | 1530 | P | VO | | | | | | | | | | | 6 | | |
| Osborn Cr | Os1 | 1573 | R | VO | | | | | | | | | | | 10 | | |
| Osborn Cr | Os1 | 1572 | G | VO | | | | | | | | | | | 8 | | |
| Osborn Cr | Os1 | 1719 | R | VO | 19 | 30-50 | | | | | | | | | | | |
| Osborn Cr | Os1 | 1721 | P | VO | 26 | 30-50 | | | | | | | | | 2 | | |
| Osborn Cr | Os1 | 1837 | G | VO | 13 | 30-50 | | | | | | | | | 6 | | |
| Osborn Cr | Os1 | 1936 | G | VO | | | | | | | | | | | | | |
| Osborn Cr | Os1 | 1991 | R | VO | 11 | 30-50 | | | | | | | | | 36 | | |
| Osborn Cr | Os1 | 2054 | G | VO | | | | | | | | | | | 5 | | |
| Osborn Cr | Os1 | 2538 | G | V0 | | | | | | | | | | | | | |
| Buster Cr | Bus1 | 0 | P | VO | 50+ | 40-80 | | | | | | | | | 1 | | |
| Buster Cr | Bus1 | 28 | R | VO | | | | | | | | | | | 1 | | |
| Buster Cr | Bus1 | 41 | G | VO | 50+ | 40-80 | | | | | | | | | | | |
| Buster Cr | Bus1 | 63 | R | VO | | | | | | | | | | | 1 | | |
| Buster Cr | Bus1 | 77 | P | VO | 50+ | <60 | 4 | 11 | | | | | | | | | |
| Buster Cr | Bus1 | 77 | P | VO | 25+ | 60-90 | | | | | | | | | | | |
| Buster Cr | Bus1 | 77 | P | VO | 7 | 90-130 | | | | | | | | | | | |
| Buster Cr | Bus1 | 99 | P | VO | 100+ | <60 | | | | | | | | | | 1 | |
| Buster Cr | Bus1 | 99 | P | VO | 25+ | 60-90 | | | | | | | | | | | |
| Buster Cr | Bus1 | 99 | P | VO | 4 | 90-130 | | | | | | | | | | | |
| Buster Cr | Bus1 | 138 | O | VO | 100+ | 90-130 | | | | | 24 | | | TNTAC | TNTAC | | |
| Buster Cr | Bus1 | 234 | P | VO | 100+ | 90-130 | | | | | | | | | | | |
| Buster Cr | Bus1 | 234 | P | VO | 10+ | >130 | | | | | | | | | | | |
| Buster Cr | Bus1 | 382 | R | VO | | | | | | | | | | | 1 | | |
| Buster Cr | Bus1 | 394 | O | VO | 50+ | 90-130 | | | | | | | | | | | |
| Buster Cr | Bus1 | 394 | O | VO | 10+ | >130 | | | | | 5 | | | | | | |
| Buster Cr | Bus1 | 452 | R | VO | | | | 1 | | | | | | | 4 | | |
| Buster Cr | Bus1 | 680 | P | VO | | | | | | | | | | | 5 | | |
| Buster Cr | Bus1 | 752 | P | VO | | | | | | | | | | | 2 | | |
| Buster Cr | Bus1 | 875 | O | VO | 5 | >130 | | | | | | | | | | | |
| Buster Cr | Bu3-RF | 21 | G | VO | 1 | >130 | | | | | | | | | | | |
| Buster Cr | Bu3-LF | 395 | P | VO | 16 | 80-90 | | | | | | | | | | | |
| Dexter Cr | Dx1 | 0 | P | VO | 12 | 30-50 | | | | | | | | | | 2 | |
| Dexter Cr | Dx1 | 0 | P | VO | 9 | 60-90 | | | | | | | | | | | |
| Dexter Cr | Dx1 | 0 | P | VO | 2 | 100-125 | | | | | | | | | | | |
| Dexter Cr | Dx1 | 9 | G | VO | 14 | 30-50 | | | | | | | | | | | |
| Dexter Cr | Dx1 | 71 | G | VO | 5 | 30-50 | | | | | | | | | | | |
| Dexter Cr | Dx1 | 114 | G | VO | 8 | 30-51 | | | | | | | | | | | |
| Dexter Cr | Dx1 | 114 | G | VO | 6 | 60-90 | | | | | | | | | | | |
| Dexter Cr | Dx1 | 114 | G | VO | 1 | 100-125 | | | | | | | | | | | |
| Dexter Cr | Dx1 | 147 | G | VO | 2 | 60-90 | | | | | | | | | | | |
| Dexter Cr | Dx1 | 176 | G | VO | 5 | 30-50 | | | | | | | | | | | |
| Dexter Cr | Dx1 | 220 | P | VO | 7 | 60-90 | | | | | | | | | | | |
| Dexter Cr | Dx1 | 226 | R | VO | 8 | 30-50 | | | | | | | | | | | |

| Sub-Basin | Reach Name | Reach Location [1] (m) | Habitat Type [2] | Survey Method [3] | Salmonids surveyed: Juv. Coho No. | Juv. Coho FL (mm) | Adult Chum No. | Adult Pink No. | Adult Sockeye No. | Arctic Graylin No. | Dolly Varden No. | Whitefish No. | Whitefish FL (mm) | Redds surveyed: Chum | Redds surveyed: Pink | Forage Fish: Sculpin No. | Forage Fish: Stickleback No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dexter Cr | Dx1 | 226 | R | VO | 5 | 60-90 | | | | | | | | | | | |
| Dexter Cr | Dx1 | 226 | R | VO | 1 | 120 | | | | | | | | | | 1 | |
| Basin Cr | Bas1 | 300 | O | VO | | | | | | | 4 | | | | | | |
| Hobson Cr | H1 | 257 | P | VO | 1 | 90 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+000 | R | VO | 15 | 40-60 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+009 | P | VO | | | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+017 | R | VO | | | | | | | | | | | 5 | | |
| Darling Ck | Dar1 | 0+120 | R | VO | | | | | | | | | | | 1 | | |
| Darling Ck | Dar1 | 0+126 | P | VO | | | | | | | | | | | 4 | 1 | |
| Darling Ck | Dar1 | 0+158 | R | VO | | | | | | | | | | | 1 | | |
| Darling Ck | Dar1 | 0+166 | P | VO | 6 | 90-120 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+180 | R | VO | 1 | 90-120 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+233 | P | VO | 9 | 90-120 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+256 | P | VO | 11 | 50-80 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+256 | P | VO | 3 | >130 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+282 | SC | VO | 30 | 90-120 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+291 | R | VO | 30 | 50-80 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+304 | G | VO | 18 | 50-80 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+317 | R | VO | 9 | 50-80 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+414 | P | VO | 15 | 50-80 | | 1 carcass | | | | | | | | | |
| Darling Ck | Dar1 | 0+426 | P | VO | 12 | 50-80 | | 1 carcass | | | | | | | | | |
| Darling Ck | Dar1 | 0+516 | P | VO | 22 | 70-100 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+563 | P | VO | 18 | 70-100 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+618 | P | VO | 14 | 70-100 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+622 | R | VO | 24 | 70-100 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+637 | P | VO | 8 | 70-100 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+667 | G | VO | 9 | 70-100 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+677 | R | VO | 26 | 70-100 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+748 | G | VO | 48 | 70-100 | | | | | | | | | | | |
| Darling Ck | Dar1 | 0+850 | R | VO | 6 | 70-100 | | | | | | | | | | | |

[1]Sample location (in meters); denotes the distance upstream from base of reach.
[2]Habitat types are: P = pools (both scour and dammed pool); R = riffle; G = run; C = cascades; BP = beaver pond.
[3]Survey methods are: MT = minnow trap; E = electrofishing; VO = visual observation.
[4]TNTAC = too numerous to accurately count
[5]PNC= Species present (alive and dead specimens) but not counted

Table D6.  Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N1 | 13627 | G | 77 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 13704 | R | 92 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 13796 | G | 564 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 14360 | R | 34 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 14394 | P | 210 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 14604 | R | 65 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 14669 | G | 431 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 15100 | R | 239 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 15339 | G | 73 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 15412 | R | 129 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 15541 | G | 376 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 15917 | P | 58 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 15975 | G | 52 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 16027 | P | 102 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 16129 | R | 158 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 16287 | P | 24 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 16311 | R | 116 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 16427 | G | 160 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 16587 | R | 256 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 16843 | G | 80 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 16923 | R | 20 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 16943 | G | 110 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 17053 | R | 60 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 17113 | P | 430 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 17543 | G | 178 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 17721 | R | 82 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 17803 | G | 132 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 17935 | R | 143 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 18078 | G | 105 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 18183 | R | 70 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 18253 | G | 165 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 18418 | R | 35 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 18453 | G | 205 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 18658 | R | 36 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 18694 | G | 82 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 18776 | R | 62 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 18838 | G | 373 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 19211 | G | 86 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 19297 | R | 68 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 19365 | G | 278 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 19643 | R | 94 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 19737 | G | 68 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 19805 | R | 172 | 0 | S | SH | willow | dwarf birch |

Table D6. Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N1 | 19977 | G | 243 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 20220 | R | 72 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 20292 | G | 133 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 20425 | R | 80 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 20505 | G | 162 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 20667 | R | 53 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 20720 | G | 113 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 20833 | R | 24 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N1 | 20857 | G | 196 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 21053 | R | 95 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 21148 | G | 76 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 21224 | R | 76 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 21300 | G | 258 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 21558 | R | 56 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 21614 | G | 64 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 21678 | R | 48 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 21726 | G | 74 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 21800 | R | 161 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 21961 | P | 98 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 22059 | R | 166 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 22225 | P | 83 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 22308 | G | 60 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 22368 | R | 145 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 22513 | G | 200 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 22713 | R | 40 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 22753 | P | 233 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 22986 | R | 104 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 23090 | G | 31 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 23121 | R | 125 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 23246 | G | 200 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 23446 | R | 82 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 23528 | G | 94 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 23622 | R | 45 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 23667 | P | 246 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 23913 | R | 56 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 23969 | G | 51 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 24020 | R | 162 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 24182 | G | 257 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 24439 | R | 51 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 24490 | P | 123 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N2 | 24613 | R | 22 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 24635 | P | 134 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 24769 | R | 52 | 0 | S | SH | willow | dwarf birch |

Table D6. Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N3 | 24821 | G | 126 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 24947 | R | 64 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 25011 | P | 102 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 25113 | R | 20 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 25133 | G | 167 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 25300 | R | 59 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 25359 | P | 276 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 25635 | R | 31 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 25666 | P | 49 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 25715 | R | 8 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 25723 | G | 454 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 26177 | R | 44 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 26221 | P | 52 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 26273 | R | 62 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 26335 | P | 85 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 26420 | R | 18 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 26438 | P | 28 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 26466 | R | 115 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 26581 | G | 20 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 26601 | R | 172 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 26773 | G | 100 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 26873 | R | 46 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 26919 | P | 97 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 27016 | R | 13 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 27029 | P | 137 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 27166 | R | 85 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 27251 | G | 206 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 27457 | R | 160 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 27617 | G | 291 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 27908 | R | 81 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 27989 | G | 173 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28162 | R | 102 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28264 | G | 69 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28333 | R | 40 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28373 | G | 80 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28453 | R | 30 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28483 | P | 45 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28528 | R | 23 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28551 | G | 42 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28593 | R | 35 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28628 | P | 60 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28688 | R | 38 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28726 | P | 24 | 0 | S | SH | willow | dwarf birch |

Table D6. Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N3 | 28750 | R | 157 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28907 | P | 68 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 28975 | R | 64 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 29039 | P | 148 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 29187 | R | 24 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N3 | 29211 | P | 152 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 29363 | R | 90 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 29453 | G | 124 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 29577 | R | 69 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 29646 | P | 201 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 29847 | R | 61 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 29908 | G | 210 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 30118 | P | 173 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 30291 | R | 102 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 30393 | G | 25 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 30418 | R | 24 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 30442 | G | 219 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 30661 | R | 85 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 30746 | G | 88 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 30834 | R | 90 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 30924 | P | 335 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 31259 | R | 74 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 31333 | P | 35 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 31368 | R | 43 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 31411 | G | 32 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 31443 | R | 48 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 31491 | G | 147 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 31638 | R | 51 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 31689 | G | 250 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 31939 | R | 123 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 32062 | G | 77 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 32139 | R | 19 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 32158 | G | 179 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 32337 | R | 90 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 32427 | G | 36 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 32463 | R | 150 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 32613 | G | 201 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 32814 | R | 36 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 32850 | G | 69 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 32919 | R | 51 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 32970 | G | 40 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 33010 | R | 148 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 33158 | G | 135 | 0 | S | SH | willow | dwarf birch |

Table D6. Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N4 | 33293 | R | 164 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 33457 | G | 34 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N4 | 33491 | R | 22 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 33513 | G | 45 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 33558 | R | 13 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 33571 | G | 128 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 33699 | P | 83 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 33782 | R | 70 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 33852 | P | 52 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 33904 | R | 186 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34090 | P | 44 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34134 | R | 31 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34165 | G | 53 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34218 | R | 79 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34297 | P | 53 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34350 | R | 69 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34419 | P | 100 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34519 | R | 104 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34623 | G | 110 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34733 | R | 24 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34757 | G | 72 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34829 | R | 74 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 34903 | G | 106 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 35009 | R | 50 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 35059 | G | 86 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 35145 | R | 178 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 35323 | P | 72 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 35395 | R | 15 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 35410 | P | 41 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 35451 | G | 22 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 35473 | R | 404 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 35877 | P | 63 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 35940 | R | 13 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 35953 | P | 50 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36003 | R | 12 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36015 | P | 90 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36105 | R | 31 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36136 | P | 57 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36193 | R | 27 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36220 | G | 75 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36295 | R | 29 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36324 | P | 86 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36410 | R | 49 | 0 | S | SH | willow | dwarf birch |

Table D6.  Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length [3] | Canopy Code [4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N5 | 36459 | P | 25 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36484 | R | 28 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36512 | G | 54 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36566 | R | 49 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36615 | G | 84 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36699 | R | 46 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36745 | P | 55 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36800 | R | 20 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36820 | P | 65 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36885 | R | 19 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36904 | P | 31 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36935 | R | 33 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 36968 | G | 35 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37003 | R | 41 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37044 | G | 54 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37098 | R | 55 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37153 | G | 46 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37199 | R | 31 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37230 | P | 81 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37311 | R | 34 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37345 | P | 36 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37381 | R | 55 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37436 | G | 70 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37506 | R | 31 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37537 | G | 27 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37564 | R | 51 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37615 | P | 39 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37654 | R | 28 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37682 | P | 31 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37713 | G | 40 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37753 | R | 36 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37789 | P | 92 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37881 | R | 32 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37913 | P | 10 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37923 | R | 15 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 37938 | P | 73 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38011 | R | 51 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38062 | G | 95 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38157 | R | 61 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38218 | G | 72 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38290 | R | 21 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38311 | P | 53 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38364 | R | 27 | 0 | S | SH | willow | dwarf birch |

Table D6. Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N5 | 38391 | P | 54 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38445 | R | 25 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38470 | G | 47 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38517 | R | 95 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38612 | G | 16 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38628 | R | 63 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38691 | P | 54 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38745 | R | 82 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38827 | G | 43 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38870 | R | 55 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38925 | G | 49 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 38974 | R | 30 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 39004 | P | 17 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 39021 | R | 45 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 39066 | P | 53 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 39119 | R | 34 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 39153 | G | 72 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 39225 | P | 58 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 39283 | R | 16 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 39299 | P | 40 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 39339 | R | 19 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 39358 | P | 52 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 39410 | R | 53 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N5 | 39463 | G | 32 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 39495 | R | 98 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 39593 | P | 16 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 39609 | R | 30 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 39639 | P | 24 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 39663 | R | 62 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 39725 | P | 67 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 39792 | R | 80 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 39872 | P | 83 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 39955 | R | 125 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40080 | G | 81 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40161 | R | 48 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40209 | G | 36 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40245 | R | 99 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40344 | G | 81 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40425 | R | 15 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40440 | G | 72 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40512 | R | 59 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40571 | P | 60 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40631 | R | 28 | 0 | S | SH | willow | dwarf birch |

Table D6. Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N6 | 40659 | P | 51 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40710 | R | 15 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40725 | G | 27 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40752 | R | 94 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40846 | P | 54 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40900 | R | 16 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40916 | G | 71 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 40987 | R | 57 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41044 | P | 48 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41092 | R | 16 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41108 | G | 63 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41171 | R | 50 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41221 | P | 128 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41349 | R | 54 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41403 | P | 43 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41446 | R | 13 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41459 | P | 52 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41511 | R | 14 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41525 | G | 96 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41621 | R | 35 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41656 | G | 72 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41728 | R | 68 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41796 | G | 108 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41904 | R | 95 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 41999 | G | 66 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 42065 | R | 58 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 42123 | G | 50 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 42173 | R | 39 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 42212 | G | 53 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 42265 | R | 89 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N6 | 42354 | G | 81 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 42435 | R | 73 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 42508 | G | 44 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 42552 | R | 17 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 42569 | G | 71 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 42640 | R | 73 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 42713 | G | 52 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 42765 | R | 110 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 42875 | G | 73 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 42948 | R | 127 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43075 | G | 107 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43182 | R | 93 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43275 | G | 30 | 0 | S | SH | willow | dwarf birch |

Table D6. Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Nome Main | N7 | 43305 | R | 101 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43406 | G | 24 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43430 | R | 45 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43475 | G | 111 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43586 | R | 45 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43631 | G | 63 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43694 | R | 61 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43755 | G | 60 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43815 | R | 23 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43838 | G | 55 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43893 | R | 33 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43926 | G | 49 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 43975 | R | 30 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 44005 | G | 92 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 44097 | R | 84 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 44181 | G | 194 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 44375 | R | 200 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 48213 | R | 170 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 48383 | G | 55 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 48438 | R | 742 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 49180 | G | 243 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 49423 | R | 189 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 49612 | G | 98 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 49710 | R | 183 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 49893 | G | 520 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 50413 | R | 322 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 50735 | G | 122 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 50857 | R | 56 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 50913 | G | 300 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 51213 | R | 1400 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 52613 | G | 350 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 52963 | R | 250 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 53213 | G | 90 | 0 | S | SH | willow | dwarf birch |
| Nome Main | N7 | 53303 | R | 130 | 0 | S | SH | willow | dwarf birch |
| Osborn Ck | Os1 | 0 | G | 36 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 36 | R | 12 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 48 | G | 13 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 61 | R | 18 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 79 | G | 21 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 100 | R | 20 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 120 | P | 30 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 150 | R | 17 | 0 | S | SH | willow | |
| Osborn Ck | Os1 | 167 | G | 18 | 0 | S | SH | willow | |

Table D6. Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Osborn Ck | Os1 | 185 | R | 15 | 0 | S | SH | willow | |
| Osborn Ck | Os1 | 200 | G | 55 | 0 | S | SH | willow | |
| Osborn Ck | Os1 | 255 | P | 33 | 0 | S | SH | willow | |
| Osborn Ck | Os1 | 288 | G | 36 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 324 | R | 12 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 336 | G | 13 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 349 | R | 17 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 366 | G | 22 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 388 | R | 20 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 408 | P | 30 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 438 | R | 17 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 455 | G | 18 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 473 | R | 15 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 488 | G | 55 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 543 | P | 33 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 576 | R | 16 | 0 | S | SH | willow | |
| Osborn Ck | Os1 | 592 | G | 52 | 0 | S | SH | willow | |
| Osborn Ck | Os1 | 644 | R | 93 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 737 | G | 126 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 863 | P | 42 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 905 | R | 13 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 918 | G | 55 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 973 | R | 56 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1029 | G | 27 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1056 | P | 17 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1073 | R | 32 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1105 | G | 21 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1126 | R | 61 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1187 | G | 27 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1214 | P | 29 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1243 | G | 45 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1288 | R | 47 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1335 | G | 44 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1379 | R | 12 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1391 | G | 58 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1449 | R | 19 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1468 | G | 62 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1530 | P | 43 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1573 | R | 99 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1672 | G | 30 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1702 | P | 17 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1719 | R | 2 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1721 | P | 77 | 0 | S | SH/PS | willow | |

Table D6. Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Osborn Ck | Os1 | 1798 | R | 39 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1837 | G | 29 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1866 | R | 70 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1936 | G | 55 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 1991 | R | 63 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2054 | G | 41 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2095 | P | 15 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2110 | R | 62 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2172 | P | 32 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2204 | R | 97 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2301 | G | 24 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2325 | R | 76 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2401 | G | 60 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2461 | R | 4 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2465 | G | 36 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2501 | R | 37 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2538 | G | 126 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2664 | P | 20 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2684 | R | 30 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2714 | G | 32 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2746 | R | 126 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2872 | G | 55 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 2927 | R | 107 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 3034 | G | 56 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 3090 | R | 64 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 3154 | G | 41 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 3195 | R | 26 | 0 | S | SH/PS | willow | |
| Osborn Ck | Os1 | 3221 | G | 43 | 0 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 0 | P | 28 | 0 | S | IN/SH | willow | |
| Buster Ck | Bu1 | 28 | R | 13 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 41 | G | 22 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 63 | R | 14 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 77 | P | 13 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 90 | R | 9 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 99 | P | 13 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 112 | R | 3 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 115 | P | 12 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 127 | R | 7 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 134 | P | 4 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 138 | O | 84 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 222 | O | 12 | 2 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 234 | P | 123 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu1 | 357 | G | 25 | 1 | S | SH/IN | willow | |

Table D6.  Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Buster Ck | Bu1 | 382 | R | 8 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 390 | P | 4 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 394 | O | 58 | 1 | S | SH/PS/IN | willow | |
| Buster Ck | Bu1 | 452 | R | 39 | 0 | S | SH | willow | |
| Buster Ck | Bu1 | 491 | P | 16 | 0 | S | SH | willow | |
| Buster Ck | Bu1 | 507 | R | 16 | 0 | S | SH | willow | |
| Buster Ck | Bu1 | 523 | P | 10 | 0 | S | SH | willow | |
| Buster Ck | Bu1 | 533 | G | 40 | 0 | S | SH | willow | |
| Buster Ck | Bu1 | 573 | R | 19 | 1 | S | SH/PS/IN | willow | |
| Buster Ck | Bu1 | 592 | P | 22 | 1 | S | SH/PS/IN | willow | |
| Buster Ck | Bu1 | 614 | G | 61 | 2 | S | SH/PS/IN | willow | |
| Buster Ck | Bu1 | 675 | R | 5 | 1 | S | SH/PS/IN | willow | |
| Buster Ck | Bu1 | 680 | P | 62 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 742 | R | 10 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 752 | P | 13 | 0 | S | SH/PS/IN | willow | |
| Buster Ck | Bu1 | 765 | R | 24 | 0 | S | SH/PS/IN | willow | |
| Buster Ck | Bu1 | 789 | P | 15 | 0 | S | SH/PS/IN | willow | |
| Buster Ck | Bu1 | 804 | R | 4 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 808 | P | 18 | 4 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 826 | O | 49 | 0 | S | SH | willow | |
| Buster Ck | Bu1 | 875 | O | 62 | 0 | S | SH | willow | |
| Buster Ck | Bu1 | 937 | R | 24 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 961 | P | 57 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu1 | 1018 | R | 22 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu1 | 1040 | P | 58 | 0 | S | SH | willow | |
| Buster Ck | Bu1 | 1098 | O | 251 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 0 | P | 26 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 26 | G | 12 | 0 | S | SH/PS | willow | |
| Buster Ck | Bu2 | 38 | P | 5 | 0 | S | SH | willow | |
| Buster Ck | Bu2 | 43 | R | 8 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 51 | P | 10 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 61 | R | 5 | 1 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 66 | P | 14 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 80 | G | 37 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 117 | R | 22 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 139 | P | 10 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 149 | R | 16 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 165 | P | 5 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 170 | R | 32 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 202 | G | 16 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 218 | R | 14 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 232 | P | 13 | 0 | S | SH/IN/PS | willow | |
| Buster Ck | Bu2 | 245 | R | 46 | 0 | S | SH/IN | willow | |

Table D6.  Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Buster Ck | Bu2 | 291 | G | 42 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 333 | R | 21 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 354 | G | 14 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 368 | R | 103 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 471 | G | 9 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 480 | R | 203 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 683 | G | 29 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 712 | R | 62 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 774 | G | 9 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 783 | R | 169 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 952 | G | 13 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 965 | R | 107 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 1072 | P | 19 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu2 | 1091 | R | 78 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu3-RF | 0 | R | 21 | 0 | S | SH/PS | willow | |
| Buster Ck | Bu3-RF | 21 | G | 22 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu3-RF | 43 | R | 61 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu3-RF | 104 | P | 10 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu3-RF | 114 | R | 34 | 1 | S | SH/PS | willow | |
| Buster Ck | Bu3-LF | 0 | R | 147 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu3-LF | 147 | G | 17 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu3-LF | 164 | R | 27 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu3-LF | 191 | P | 7 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu3-LF | 198 | R | 16 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu3-LF | 214 | P | 5 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu3-LF | 219 | R | 176 | 0 | S | SH/IN | willow | |
| Buster Ck | Bu3-LF | 395 | P | 14 | 2 | S | SH/IN | willow | |
| Dexter Ck | Dx1 | 0 | P | 5 | 2 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 5 | R | 4 | 4 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 9 | P | 5 | 1 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 14 | G | 5 | 3 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 19 | R | 12 | 1 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 31 | P | 12 | 1 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 43 | G | 23 | 1 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 66 | R | 5 | 0 | N/S | IN/SH | willow | |
| Dexter Ck | Dx1 | 71 | G | 29 | 1 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 100 | R | 14 | 1 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 114 | P | 8 | 1 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 122 | R | 9 | 1 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 131 | P | 10 | 1 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 141 | R | 6 | 2 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 147 | G | 14 | 1 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 161 | R | 15 | 2 | S | SH/PS | willow | |

Table D6. Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Dexter Ck | Dx1 | 176 | G | 19 | 0 | S | SH/PS | willow | |
| Dexter Ck | Dx1 | 195 | R | 8 | 0 | N/S | SH/IN | willow | |
| Dexter Ck | Dx1 | 203 | G | 12 | 0 | N/S | SH/IN | willow | |
| Dexter Ck | Dx1 | 215 | R | 5 | 0 | N/S | SH/IN | willow | |
| Dexter Ck | Dx1 | 220 | P | 6 | 0 | N/S | SH/IN | willow | |
| Dexter Ck | Dx1 | 226 | R | 18 | 0 | N/S | SH/IN | willow | |
| Dexter Ck | Dx1 | 244 | O | 31 | 0 | N | IN | culvert | |
| Dexter Ck | Dx1 | 275 | R | 63 | 0 | N/S | SH/IN | willow | |
| Dexter Ck | Dx1 | 338 | G | 13 | 0 | N/S | SH/IN | willow | |
| Dexter Ck | Dx1 | 351 | R | 143 | 1 | N/S | SH/IN | willow | |
| Basin Ck | Bas1 | 0 | O | 4 | 0 | S | SH/PS | willow | |
| Basin Ck | Bas1 | 4 | P | 8 | 3 | S | SH/PS | willow | |
| Basin Ck | Bas1 | 12 | G | 8 | 1 | S | SH | willow | |
| Basin Ck | Bas1 | 20 | O | 13 | 0 | S | SH | willow | |
| Basin Ck | Bas1 | 33 | R | 37 | 0 | S | SH | willow | |
| Basin Ck | Bas1 | 70 | G | 13 | 1 | S | SH | willow | |
| Basin Ck | Bas1 | 83 | R | 9 | 2 | S | SH/PS | willow | |
| Basin Ck | Bas1 | 92 | P | 9 | 3 | S | SH/PS | willow | |
| Basin Ck | Bas1 | 101 | R | 29 | 0 | S | SH/IN | willow | |
| Basin Ck | Bas1 | 130 | R | 156 | 0 | S | SH/IN | willow | |
| Basin Ck | Bas1 | 286 | P | 13 | 0 | S | SH/IN | willow | |
| Basin Ck | Bas1 | 299 | O | 24 | 0 | N | IN | culvert | |
| Basin Ck | Bas1 | 323 | R | 53 | 0 | S | SH/IN | willow | |
| Hobson Ck | H1 | 0 | R | 23 | 0 | S | SH/PS | willow | |
| Hobson Ck | H1 | 23 | O | 65 | 0 | S | SH | willow | |
| Hobson Ck | H2 | 88 | G | 29 | 0 | S | SH/PS | willow | |
| Hobson Ck | H2 | 117 | P | 12 | 0 | S | SH | willow | |
| Hobson Ck | H2 | 129 | R | 13 | 0 | S | SH | willow | |
| Hobson Ck | H2 | 142 | P | 10 | 1 | S | SH/PS | willow | |
| Hobson Ck | H2 | 152 | R | 12 | 0 | S | SH | willow | |
| Hobson Ck | H2 | 164 | G | 10 | 2 | S | SH/PS | willow | |
| Hobson Ck | H2 | 174 | R | 39 | 0 | S | SH/PS | willow | |
| Hobson Ck | H2 | 213 | P | 20 | 0 | S | SH/PS | willow | |
| Hobson Ck | H2 | 233 | R | 24 | 0 | S | SH/PS | willow | |
| Hobson Ck | H2 | 257 | P | 13 | 2 | S | SH/PS | willow | |
| Hobson Ck | H2 | 270 | R | 168 | 2 | S | SH/PS | willow | |
| Hobson Ck | H2 | 438 | P | 6 | 3 | S | SH/PS | willow | |
| Hobson Ck | H2 | 444 | R | 15 | 2 | S | SH/PS | willow | |
| Hobson Ck | H2 | 459 | P | 124 | 1 | S | SH/PS | willow | |
| Hobson Ck | H2 | 583 | R | 674 | 2 | S | SH/PS | willow | |
| Darling Ck | D1 | 0 | R | 9 | 1 | S | SH | willow | |
| Darling Ck | D1 | 9 | P | 8 | 2 | S | SH | willow | |
| Darling Ck | D1 | 17 | R | 5 | 1 | S | SH | willow | |

Table D6. Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Darling Ck | D1 | 22 | G | 39 | 2 | S | SH | willow | |
| Darling Ck | D1 | 61 | R | 13 | 1 | S | SH | willow | |
| Darling Ck | D1 | 74 | P | 11 | 0 | S | SH | willow | |
| Darling Ck | D1 | 85 | R | 5 | 1 | S | SH | willow | |
| Darling Ck | D1 | 90 | G | 30 | 1 | S | SH/PS | willow | |
| Darling Ck | D1 | 120 | R | 6 | 2 | S | SH/PS | willow | |
| Darling Ck | D1 | 126 | P | 11 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 137 | O | 21 | 0 | N | IN | culvert | |
| Darling Ck | D1 | 158 | R | 8 | 0 | S | SH | willow | |
| Darling Ck | D1 | 166 | P | 14 | 0 | S | SH | willow | |
| Darling Ck | D1 | 180 | R | 7 | 0 | S | SH | willow | |
| Darling Ck | D1 | 187 | G | 13 | 1 | S | SH | willow | |
| Darling Ck | D1 | 200 | R | 10 | 1 | S | SH | willow | |
| Darling Ck | D1 | 210 | G | 10 | 1 | S | SH/PS | willow | |
| Darling Ck | D1 | 220 | R | 13 | 1 | S | SH/PS | willow | |
| Darling Ck | D1 | 233 | P | 19 | 2 | S | SH/PS | willow | |
| Darling Ck | D1 | 252 | R | 4 | 2 | S | SH/PS | willow | |
| Darling Ck | D1 | 256 | P | 10 | 0 | S | SH | willow | |
| Darling Ck | D1 | 266 | R | 16 | 1 | S | SH/PS | willow | |
| Darling Ck | D1 | 282 | G | 10 | 0 | S | SH | willow | |
| Darling Ck | D1 | 292 | R | 12 | 0 | S | SH | willow | |
| Darling Ck | D1 | 304 | G | 13 | 1 | S | SH/PS | willow | |
| Darling Ck | D1 | 317 | R | 97 | 1 | S | SH/PS | willow | |
| Darling Ck | D1 | 414 | P | 8 | 0 | S | SH | willow | |
| Darling Ck | D1 | 422 | R | 4 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 426 | P | 9 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 435 | R | 42 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 477 | G | 3 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 480 | R | 8 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 488 | P | 8 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 496 | R | 20 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 516 | P | 7 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 523 | R | 40 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 563 | P | 7 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 570 | R | 48 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 618 | P | 4 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 622 | R | 15 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 637 | P | 11 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 648 | R | 19 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 667 | G | 10 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 677 | R | 71 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 748 | G | 102 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 850 | R | 150 | 0 | S | SH/PS | willow | |

Table D6.  Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length[3] | Canopy Code[4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Darling Ck | D1 | 1000 | G | 19 | 1 | S | SH/PS | willow | |
| Darling Ck | D1 | 1019 | P | 11 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 1030 | R | 122 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 1152 | R | 35 | 0 | S | SH/PS | willow | |
| Darling Ck | D1 | 1187 | R | 81 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 1268 | R | 98 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 1366 | R | 61 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 1427 | R | 84 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 1511 | R | 36 | 0 | S | IN/SH | willow | |
| Darling Ck | D1 | 1547 | R | 96 | 0 | S | IN/SH | willow | |
| R. Mountain Ck | RM1 | 0 | R | 38 | 0 | S | SH | willow | |
| R. Mountain Ck | RM1 | 38 | P | 1 | 0 | S | SH | willow | |
| R. Mountain Ck | RM1 | 39 | O | 22 | 0 | N | IN | culvert | |
| R. Mountain Ck | RM1 | 61 | R | 23 | 0 | S | SH | willow | |
| R. Mountain Ck | RM1 | 84 | G | 16 | 0 | S | SH | willow | |
| R. Mountain Ck | RM1 | 100 | R | 14 | 0 | S | SH | willow | |
| R. Mountain Ck | RM1 | 114 | G | 3 | 0 | S | SH/PS | willow | |
| R. Mountain Ck | RM1 | 117 | R | 93 | 3 | S | SH | willow | |
| Christian Ck | C1 | 0 | R | 21 | 0 | S | SH | willow | |
| Christian Ck | C1 | 21 | G | 34 | 0 | S | SH | willow | |
| Christian Ck | C1 | 55 | P | 33 | 0 | S | SH | willow | |
| Christian Ck | C1 | 88 | G | 13 | 0 | S | SH | willow | |
| Christian Ck | C1 | 101 | R | 39 | 1 | S | SH | willow | |
| Christian Ck | C1 | 140 | P | 8 | 0 | S | SH | willow | |
| Christian Ck | C1 | 148 | O | 11 | 0 | N | IN | culvert | |
| Christian Ck | C1 | 159 | R | 19 | 0 | S | SH | willow | |
| Christian Ck | C1 | 178 | G | 10 | 2 | S | SH/PS | willow | |
| Christian Ck | C1 | 188 | R | 136 | 2 | S | SH/PS | willow | |
| Christian Ck | C1 | 324 | G | 6 | 0 | S | SH | willow | |
| Christian Ck | C1 | 330 | R | 96 | 1 | S | SH | willow | |
| Christian Ck | C1 | 426 | G | 9 | 0 | S | SH | willow | |
| Christian Ck | C1 | 435 | R | 165 | 0 | S | SH | willow | |
| Sulphur Ck | S1 | 0 | R | 3 | 0 | S | SH | willow | |
| Sulphur Ck | S1 | 3 | G | 10 | 2 | S | SH | willow | |
| Sulphur Ck | S1 | 13 | R | 34 | 0 | S | SH | willow | |
| Sulphur Ck | S1 | 47 | G | 8 | 0 | S | SH | willow | |
| Sulphur Ck | S1 | 55 | R | 85 | 0 | S | SH | willow | |
| Sulphur Ck | S1 | 140 | G | 7 | 0 | S | SH | willow | |
| Sulphur Ck | S1 | 147 | R | 17 | 0 | S | SH | willow | |
| Sulphur Ck | S1 | 164 | G | 8 | 0 | S | SH | willow | |
| Sulphur Ck | S1 | 172 | R | 11 | 2 | S | SH/PS | willow | |
| Sulphur Ck | S1 | 183 | G | 14 | 1 | S | SH/PS | willow | |
| Sulphur Ck | S1 | 197 | R | 108 | 1 | S | SH | willow | |

Table D6. Riparian condition assessment results for Nome River watershed

| Sub Basin | Reach | Reach Loc.[1] | Habitat Type[2] | Habitat Length [3] | Canopy Code [4] | Riparian Type[5] | Riparian Stage[6] | Species Dominant | Species Subdominant |
|---|---|---|---|---|---|---|---|---|---|
| Sulphur Ck | S1 | 305 | G | 12 | 1 | S | SH | willow | |
| Sulphur Ck | S1 | 317 | R | 85 | 2 | S | SH/PS | willow | |
| Sulphur Ck | S1 | 402 | G | 17 | 2 | S | SH/PS | willow | |
| Sulphur Ck | S1 | 419 | R | 57 | 3 | S | SH/PS | willow | |
| Sulphur Ck | S1 | 476 | P | 10 | 0 | S | SH | willow | |

[1] Reach location (in meters); denotes the distance upstream from the lower reach break.

[2] Habitat types are: pool (P), riffle (R), glide (G), cascade (C) and other (O).

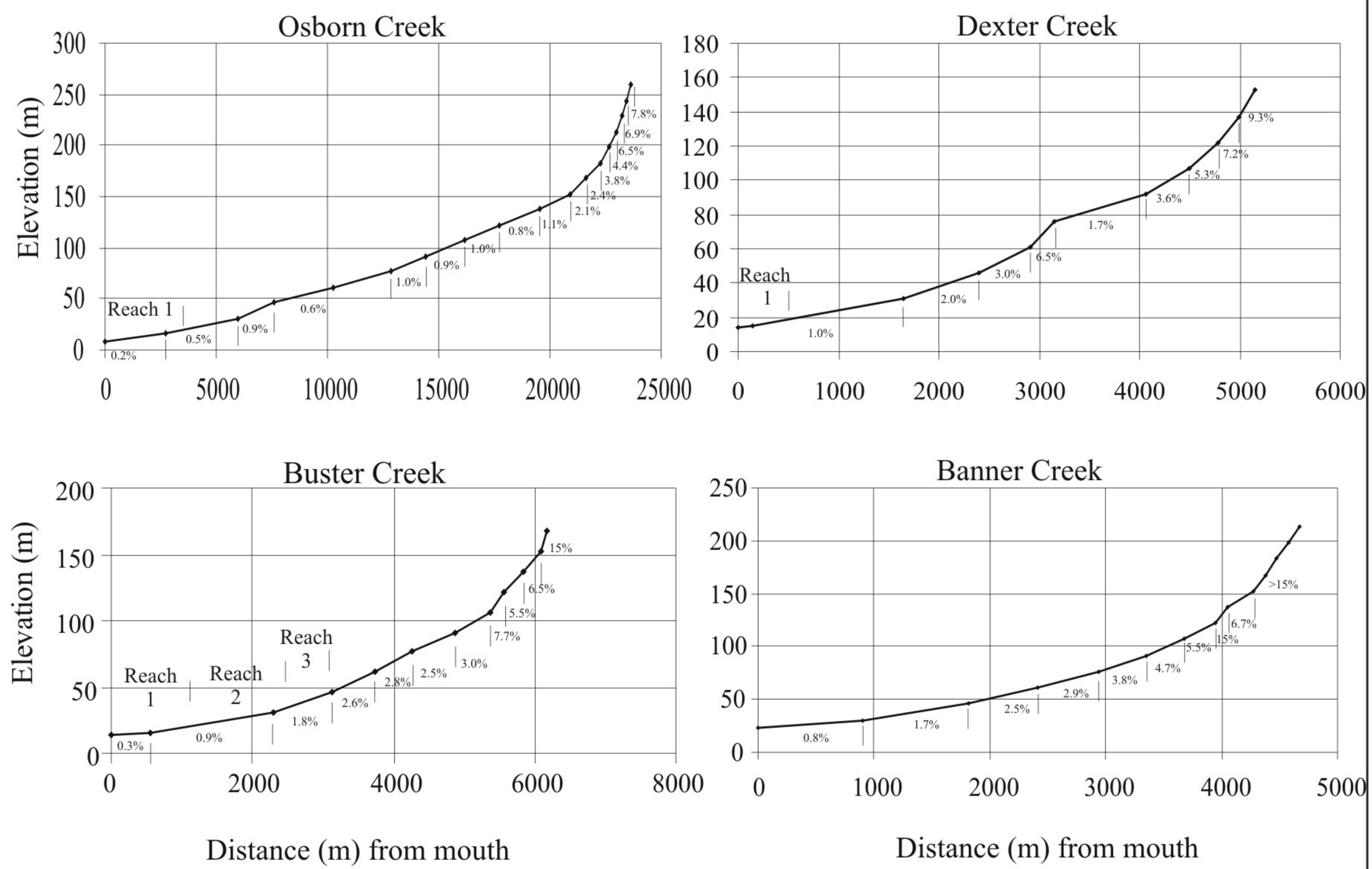
[3] Habitat length is the length (m) of the habitat unit being assessed.

[4] Canopy code is: 0 = 0%; 1 = 1-20%; 2 = 21-40%; 3 = 41-70%; 4 = 71-90%; 5 = > 90%.

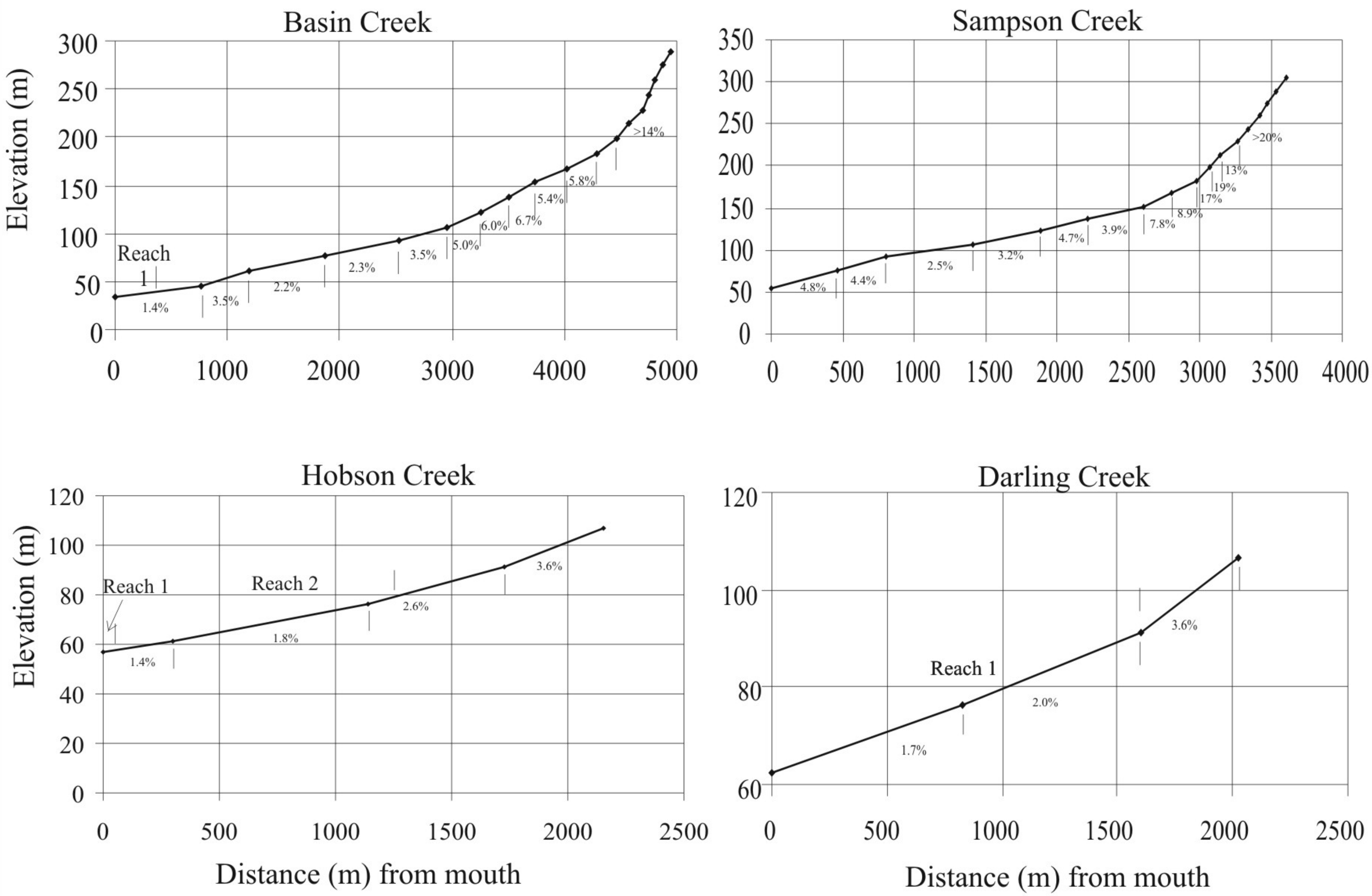
[5] Riparian Type: N=Barren ground, N/S=Barren ground & shrub, S=Shrub

[6] Riparian Stage: SH=Shrub, PS=Pole sapling, IN=Partially barren ground

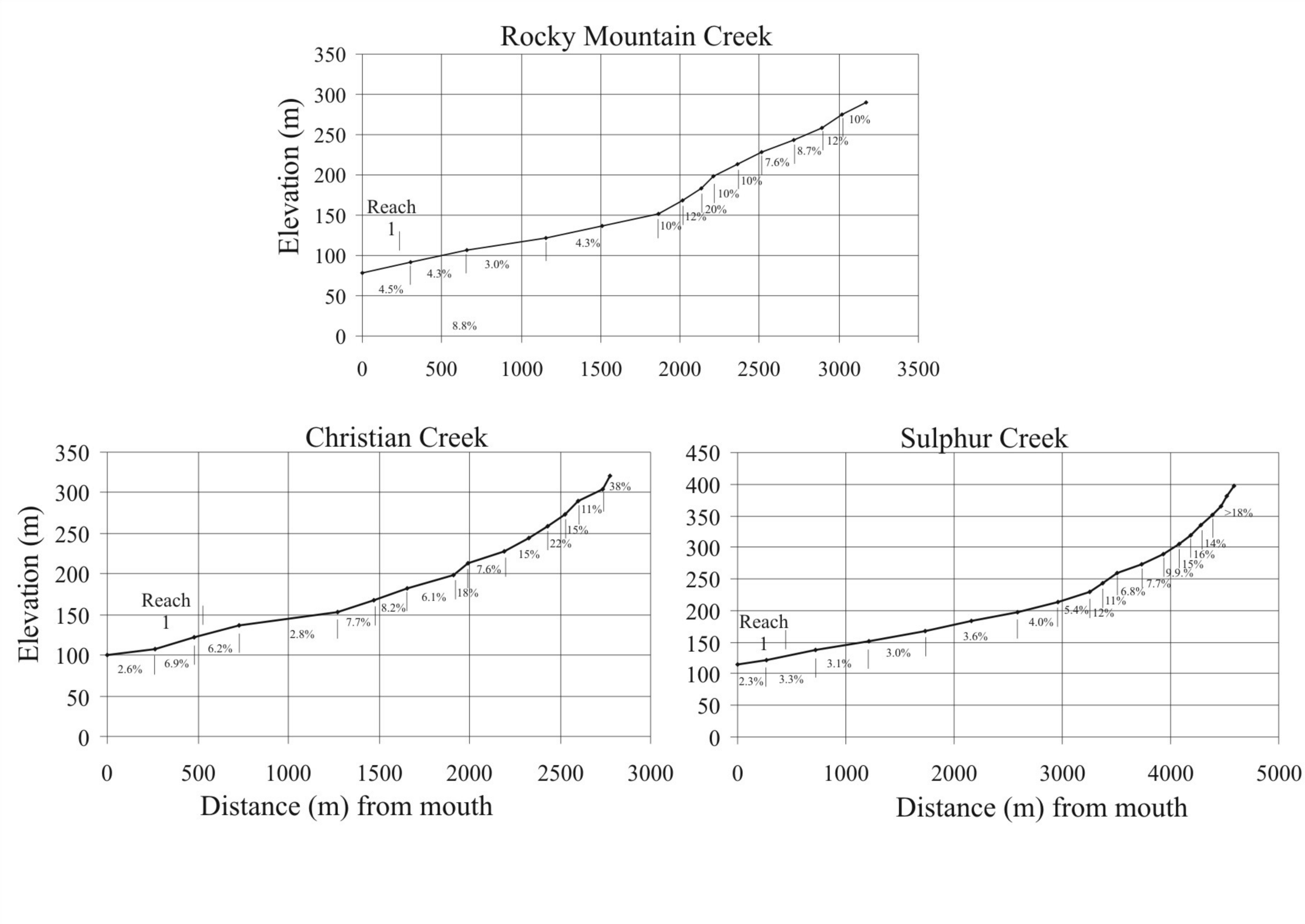
Appendix E.  Long profiles for tributaries of Nome River.




| Appendix E1. Long profiles for Nome River tributaries: Osborn, Buster, Dexter and Banner creeks. Gradients (%) based on 1:63,000 topographical contours are shown for channel sections. | LGL Limited |
|---|---|

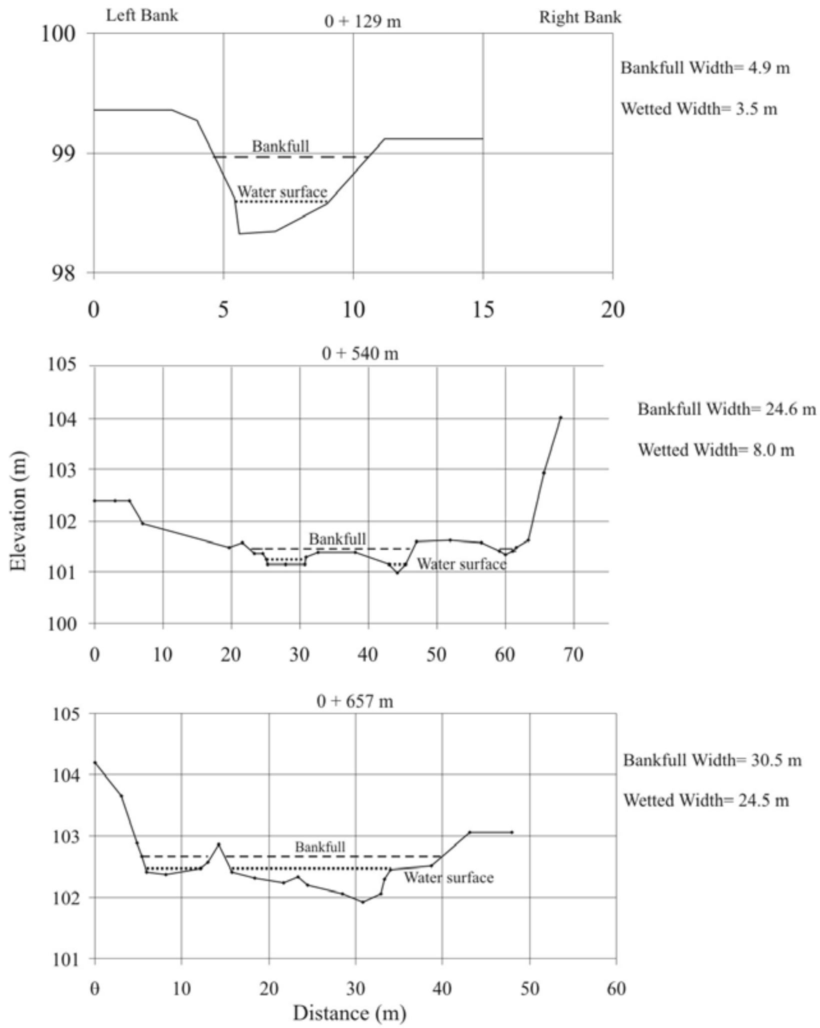



| | |
|---|---|
| Appendix E2. Long profiles for Nome River tributaries: Basin, Sampson, Hobson and Darling creeks. Gradients (%) based on 1:63,000 topographical contours are shown for channel sections. | LGL Limited |

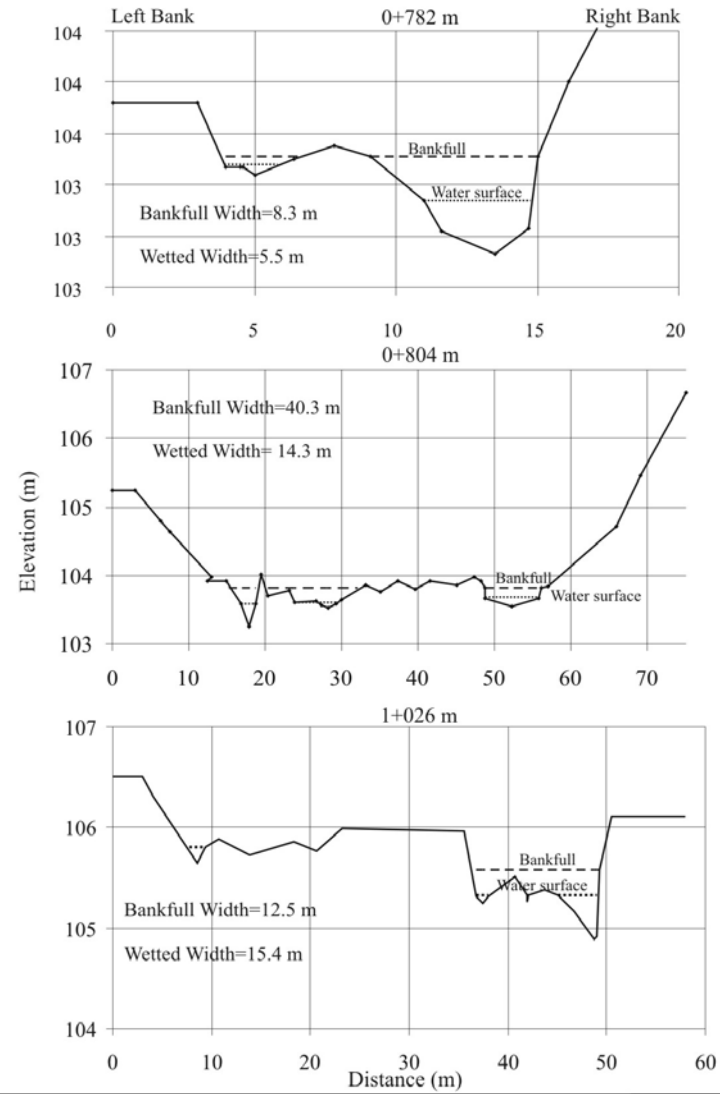



| | |
|---|---|
| Appendix E3. Long profiles for Nome River tributaries: Rocky Mountain, Christian and Sulphur creeks. Gradients (%) based on 1:63,000 topographical contours are shown for channel sections. | LGL Limited |

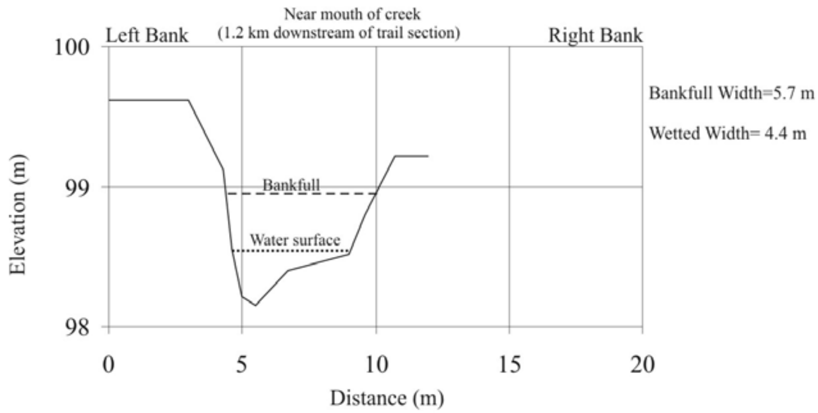
Appendix F. Level survey and stream substrate information for proposed restoration section in Buster Creek




| Appendix F1. Representative channel cross sections in Buster Creek, August 2004. | LGL Limited |
|---|---|

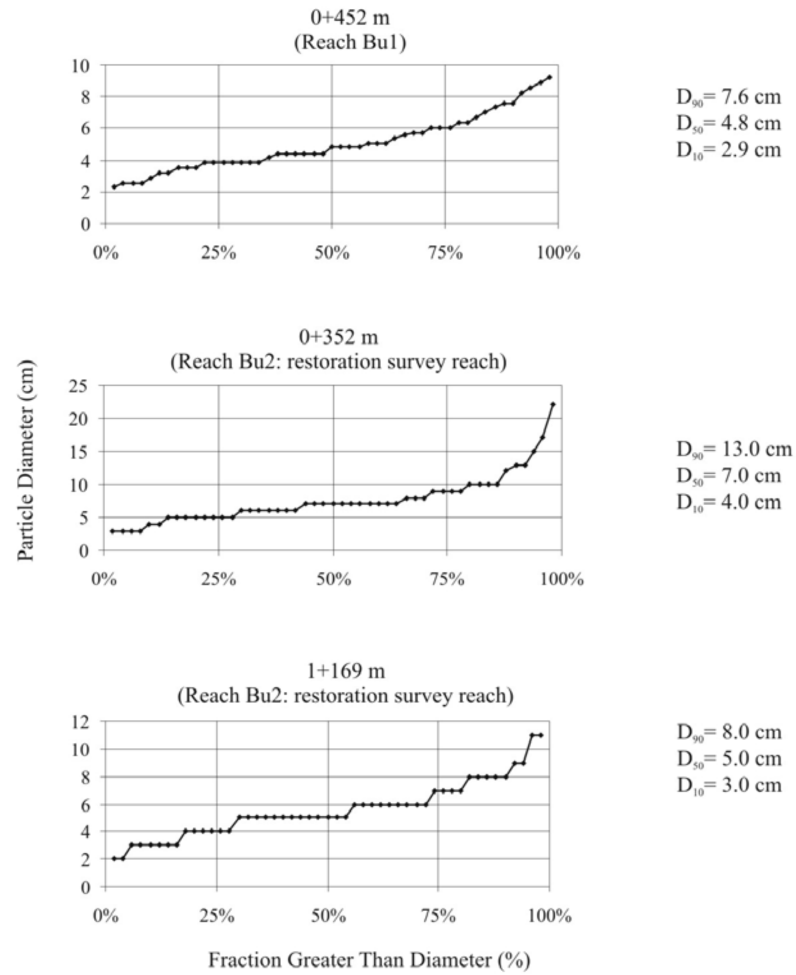



| Appendix F2. Representative channel cross sections in Buster Creek, August 2004. | LGL Limited |
|---|---|




Appendix F3. Representative channel cross sections in Buster Creek, August 2004.

LGL Limited

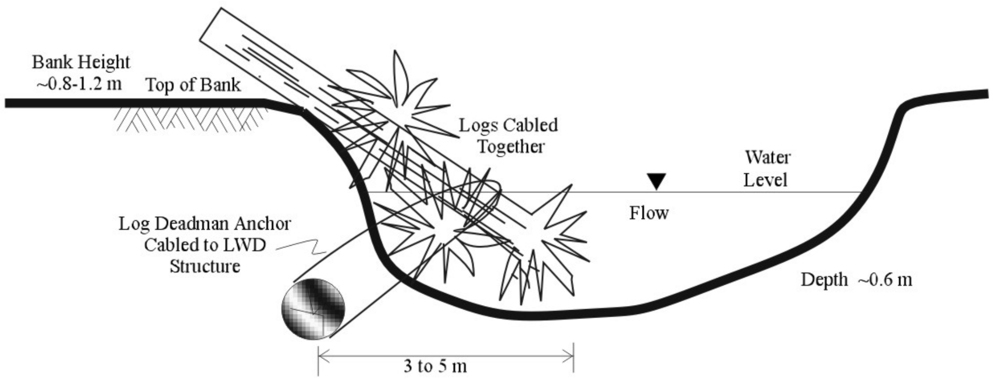



Appendix F4. Substrate characteristics from pebble counts in Buster Creek, August 2004.

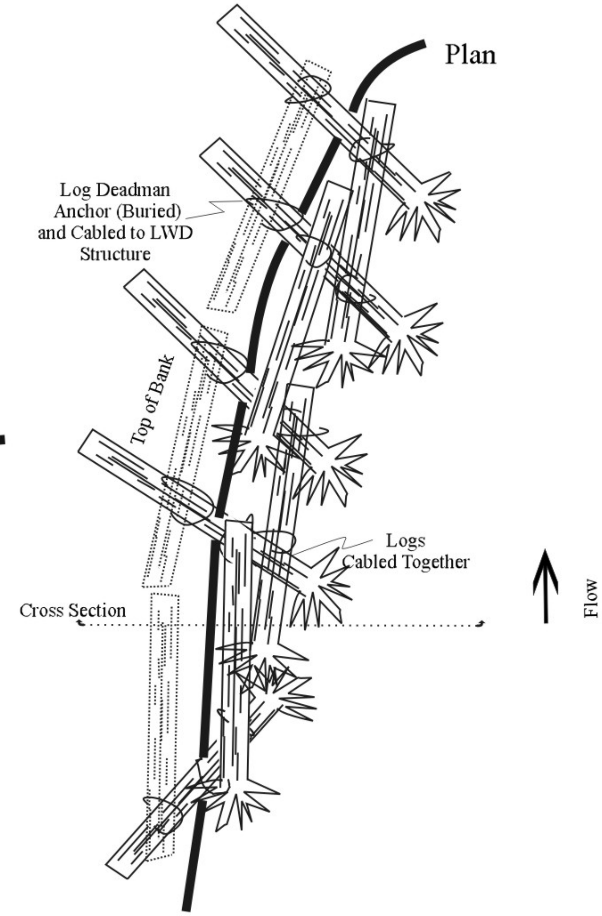
LGL Limited

Appendix G. Plan and cross section drawings of typical LWD structures, rock ballast specifications and detail sketch for attaching boulders to LWD.

Cross Section




Plan




Construction Notes:

1) LWD pieces should be between 8 and 10 m long x 0.3-0.5 m diameter.
2) Deadmen anchors should be 5 and 6 m long x 0.3-0.5 m diameter, and should be buried 1-2 m below the ground surface.
3) If using deadman anchors care should be given to the positioning of the anchors to not allow the LWD to shift downstream.
4) Logs with rootwads attached to be used where available.
5) Cable to stumps or live trees on banks where available

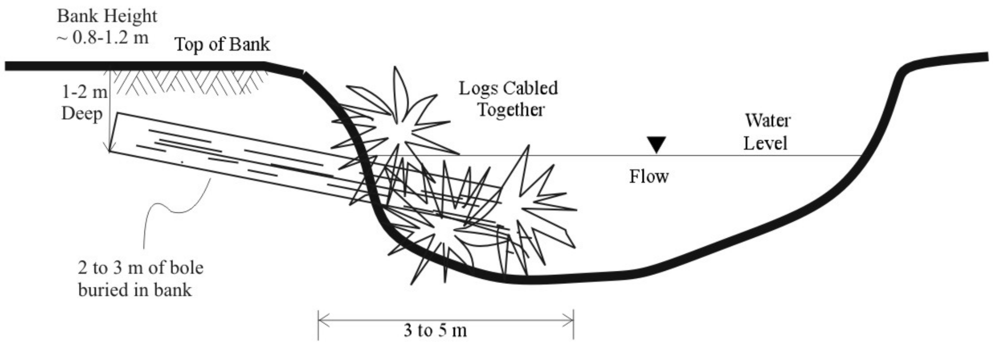
LWD Design: LT-52 With Deadmen

Appendix G1. Typical LWD Structure With Attached Rootwads Plan and Cross Section

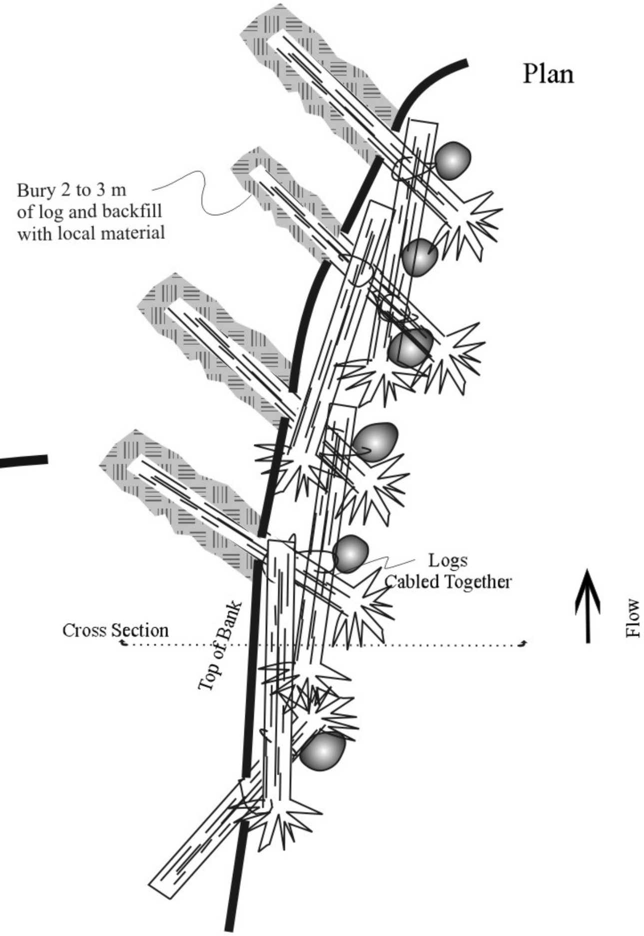
LGL Limited

Scale: Not to scale

## Cross Section



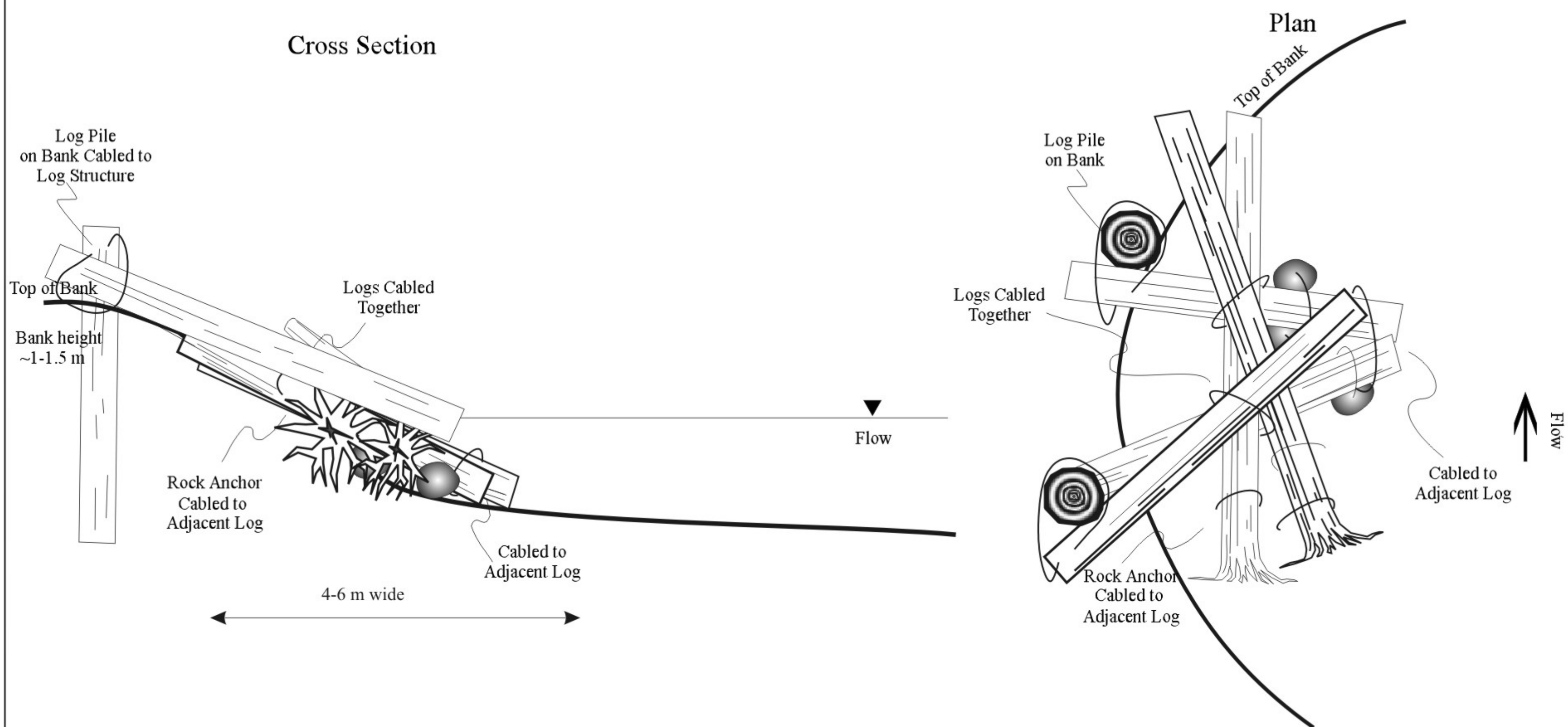

## Plan




Construction Notes:

1) LWD pieces may be between 8 and 10 m long x 0.3-0.5 m diameter.
2) If using duckbill or deadman anchors care should be given to the positioning of the anchors to not allow the LWD to shift downstream.
3) Logs with rootwads attached to be used where available.
4) Cable to stumps or live trees on banks where available
5) Number and size of rock anchors depends on predicted maximum flow, maximum flow velocity, extent of embedding or anchoring, and number and size of LWD used.

| | |
|---|---|
| | LWD Design: LT-52 Embedded |
| | Appendix G2. Typical LWD Structure With Attached Rootwads Plan and Cross Section |
| LGL Limited | Scale: Not to scale |




Construction Notes:

1) LWD pieces may be between 10 and 12 m long x 0.3-0.5 m diameter.
2) Number and size of rock anchors depends on predicted maximum flow, maximum flow velocity and number and size of LWD used.
3) Leave cable anchors slack so that rock anchors scour into stream bed.
4) Deadman anchors can be substituted for log piles on the bank. Deadman anchors should be 5-6 m long x 0.3-0.5 m diameter, and should be buried 1-2 m below the ground surface.

LWD Design: DJ-5

Appendix G3. Typical LWD Jam Structure, Plan and Cross Section.

LGL Limited

Scale: Not to scale

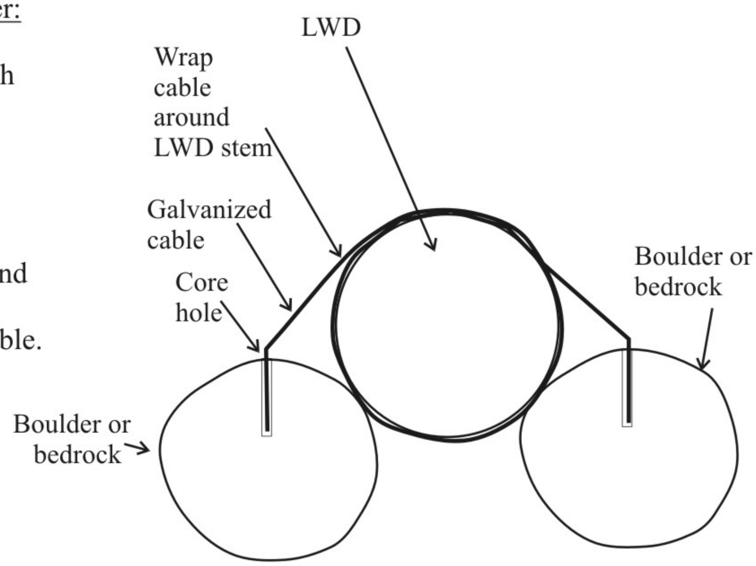
Appendix G4. Summary of materials required for a typical LWD structure including ballast requirements and boulder size options. Buoyancy and sliding safety factors > 1.5; ballast factor = 1; and specific gravity of LWD (SL) = 0.5. Modified after D'Aoust and Millar (1999).

| | | | LWD Ballast | | | | Log | | | Rootwad | | Number of Boulders of Specified Diameter (m) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Structure Type | LWD Required | LWD Diameter (m) | Boulders Required | Diameter (m) | Comments | Average Submerged Length of Each Log (m) | 0.3 @ 63 kg/m | 0.4 @ 110 kg/m | 0.5 @ 130 kg/m | 660 kg/log (2 x 3m) | Total Mass of Ballast Required (kg) | 0.3 @ 35 kg | 0.4 @ 90 kg | 0.5 @ 190 kg | 0.6 @ 300 kg | 0.7 @ 480 kg | 0.8 @ 700 kg | 0.9 @ 1000 kg | 1 @ 1400 kg |
| LT-52 | 9 | 0.3 | 7 | 0.8 | Five logs with rootwads; four logs without | 3 | 1701 | | | 3300 | 5001 | 143 | 56 | 26 | 17 | 10 | 7 | 5 | 4 |
| LT-52 | 9 | 0.3 | 11 | 0.8 | Nine logs with rootwads attached | 3 | 1701 | | | 5940 | 7641 | 218 | 85 | 40 | 25 | 16 | 11 | 8 | 5 |
| LT-52 | 9 | 0.4 | 9 | 0.8 | Five logs with rootwads; four logs without | 3 | | 2970 | | 3300 | 6270 | 179 | 70 | 33 | 21 | 13 | 9 | 6 | 4 |
| LT-52 | 9 | 0.4 | 13 | 0.8 | Nine logs with rootwads attached | 3 | | 2970 | | 5940 | 8910 | 255 | 99 | 47 | 30 | 19 | 13 | 9 | 6 |
| LT-52 | 9 | 0.5 | 10 | 0.8 | Five logs with rootwads; four logs without | 3 | | | 3510 | 3300 | 6810 | 195 | 76 | 36 | 23 | 14 | 10 | 7 | 5 |
| LT-52 | 9 | 0.5 | 14 | 0.8 | Nine logs with rootwads attached | 3 | | | 3510 | 5940 | 9450 | 270 | 105 | 50 | 32 | 20 | 14 | 9 | 7 |
| DJ-5 | 5 | 0.3 | 3 | 0.8 | Two logs with rootwads; three logs without | 3 | 945 | | | 1320 | 2265 | 65 | 25 | 12 | 8 | 5 | 3 | 2 | 2 |
| DJ-5 | 5 | 0.3 | 6 | 0.8 | Five logs with rootwads attached | 3 | 945 | | | 3300 | 4245 | 121 | 47 | 22 | 14 | 9 | 6 | 4 | 3 |
| DJ-5 | 5 | 0.4 | 4 | 0.8 | Two logs with rootwads; three logs without | 3 | | 1650 | | 1320 | 2970 | 85 | 33 | 16 | 10 | 6 | 4 | 3 | 2 |
| DJ-5 | 5 | 0.4 | 7 | 0.8 | Five logs with rootwads attached | 3 | | 1650 | | 3300 | 4950 | 141 | 55 | 26 | 17 | 10 | 7 | 5 | 4 |
| DJ-5 | 5 | 0.5 | 5 | 0.8 | Two logs with rootwads; three logs without | 3 | | | 1950 | 1320 | 3270 | 93 | 36 | 17 | 11 | 7 | 5 | 3 | 2 |
| DJ-5 | 5 | 0.5 | 8 | 0.8 | Five logs with rootwads attached | 3 | | | 1950 | 3300 | 5250 | 150 | 58 | 28 | 18 | 11 | 8 | 5 | 4 |

# Two Cabling Options

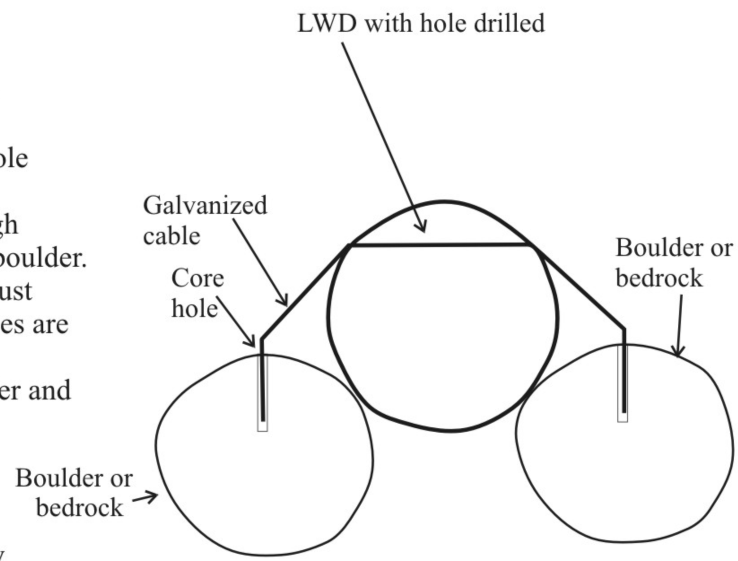
Attach cable to rock in following manner:

1- drill hole in rock 0.2-0.25 m deep with bit 1/16" larger in diameter than cable diameter (9/16" hole recommended).
2- clean holes thoroughly of dust using wire brush and water. Ensure holes are completely clean.
3- wrap cable (1/2" recommended) around LWD, and tighten.
4- squeeze epoxy into hole and insert cable.




Attach cable to rock in following manner:

1- drill a hole through the LWD using a hole diameter slightly larger than cable.
2- Pass the cable from one boulder, through the hole, and back down to the second boulder.
3- clean holes in boulders thoroughly of dust using wire brush and water. Ensure holes are completely clean.
4- squeeze epoxy into holes in each boulder and insert cable.



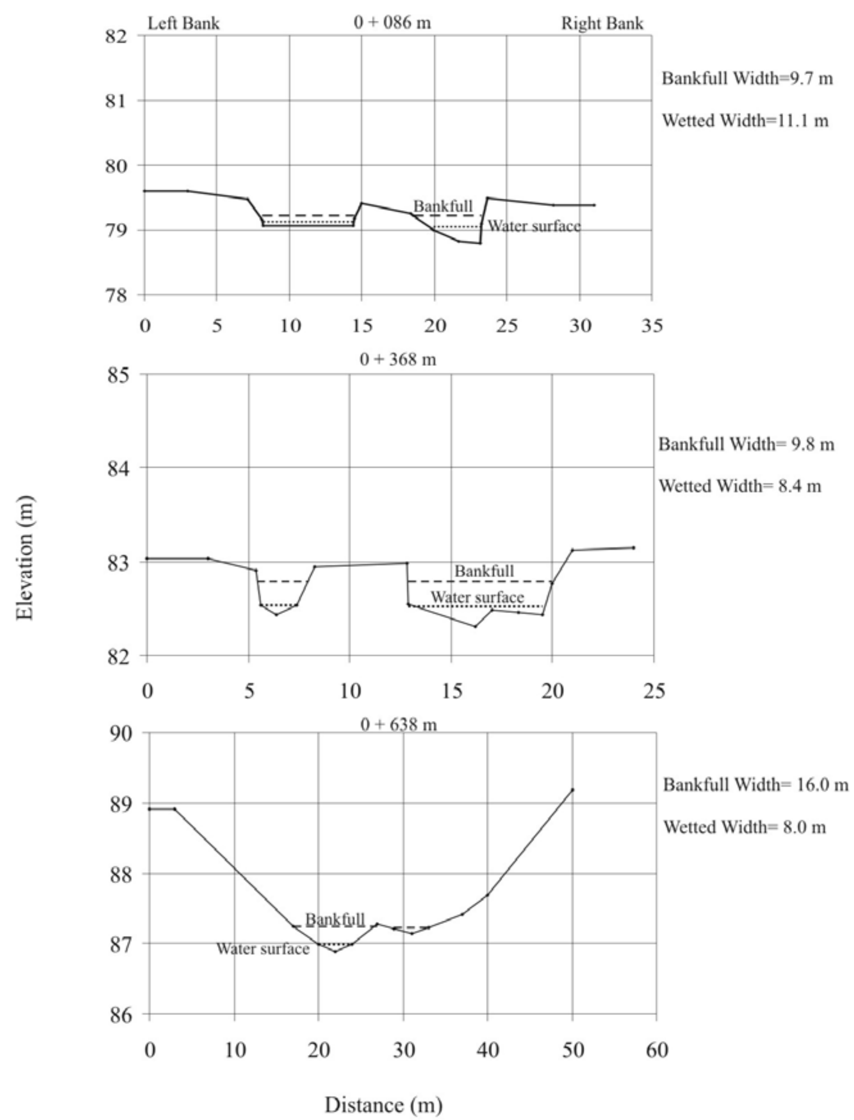

For additional information, refer to Slaney and Zaldokas (1997) WRP technical circular number 9, chapter 8, page 26.

Use Epcon Ceramic 6 epoxy or equivalent.

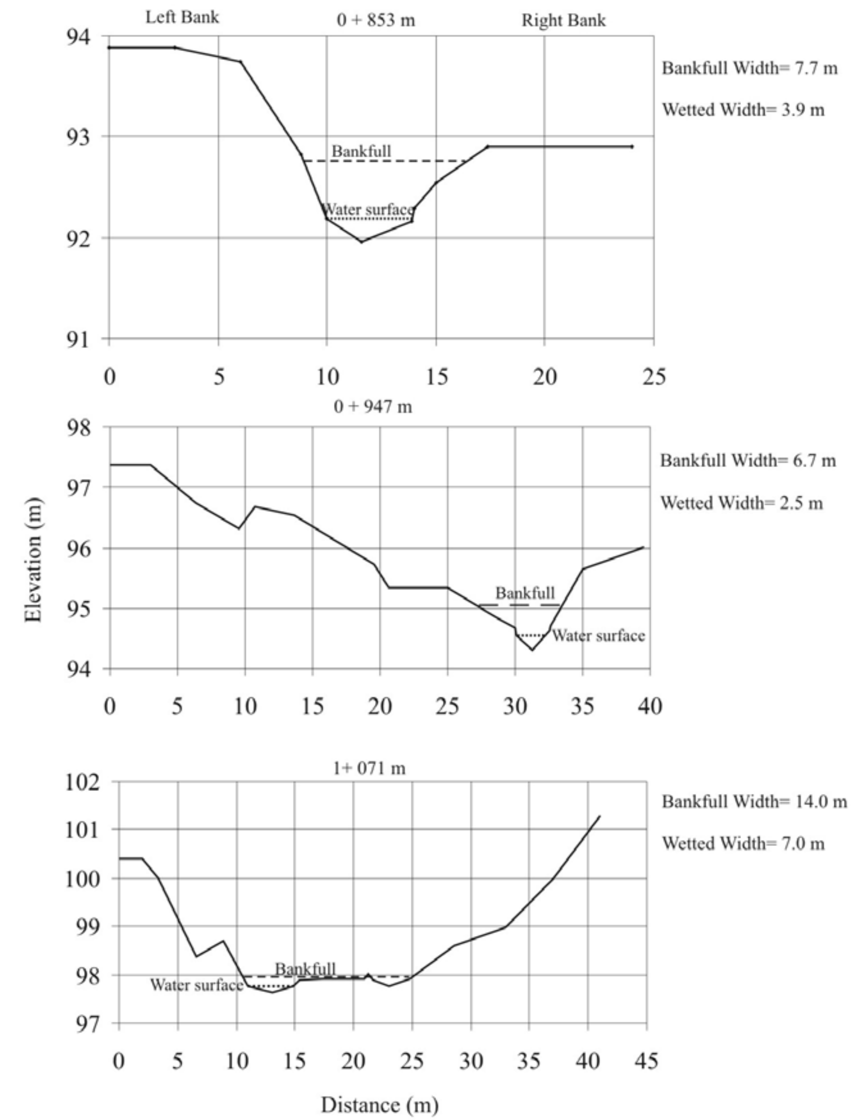
Appendix G5. Detail for attaching boulders to LWD.

| | |
|---|---|
| LGL Limited | Scale: Not to scale |

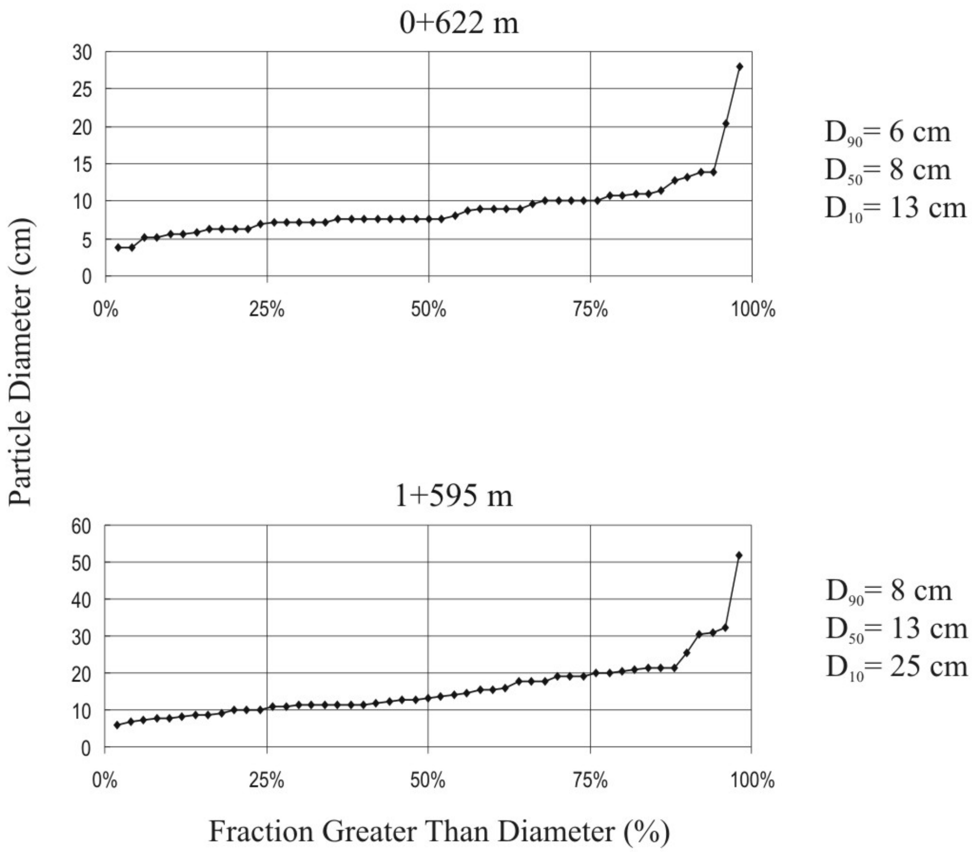
Appendix H. Level survey and stream substrate information for proposed restoration section in Darling Creek.




| Appendix H1. Representative channel cross sections in Darling Creek, August 2004. | LGL Limited |
| --- | --- |



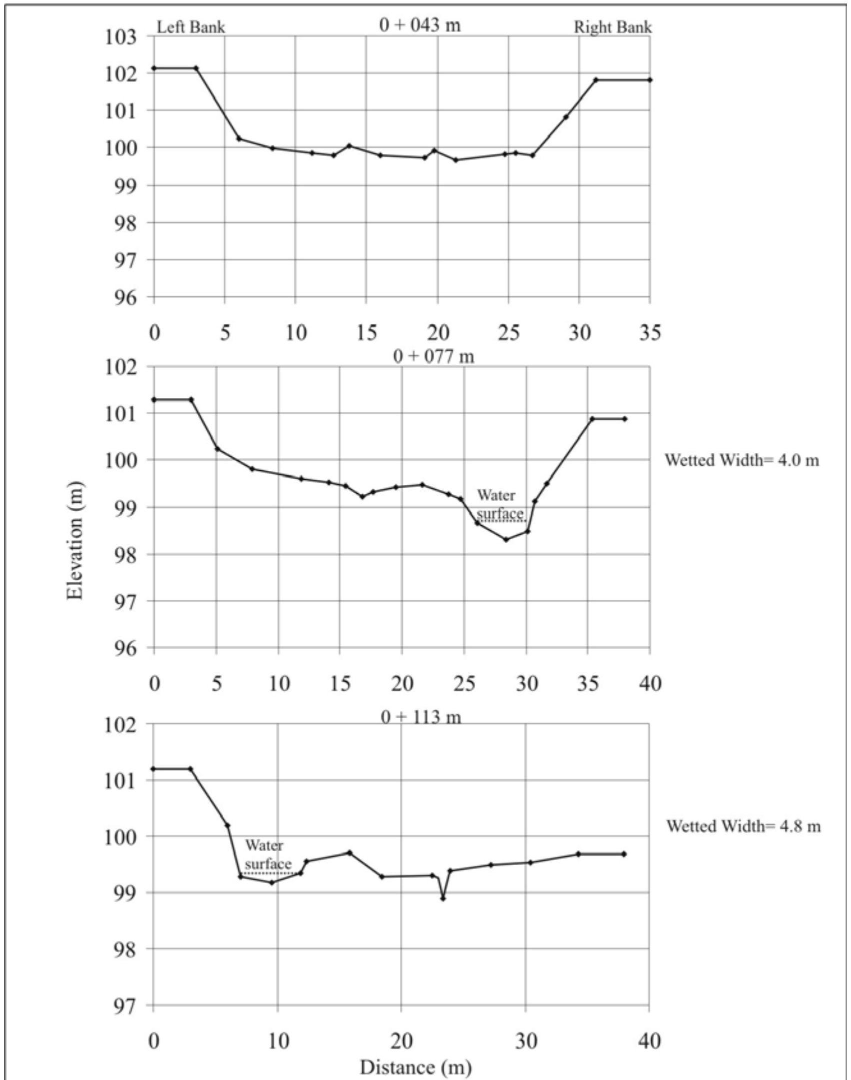

| Appendix H2. Representative channel cross sections in Darling Creek, August 2004. | LGL Limited |
| --- | --- |



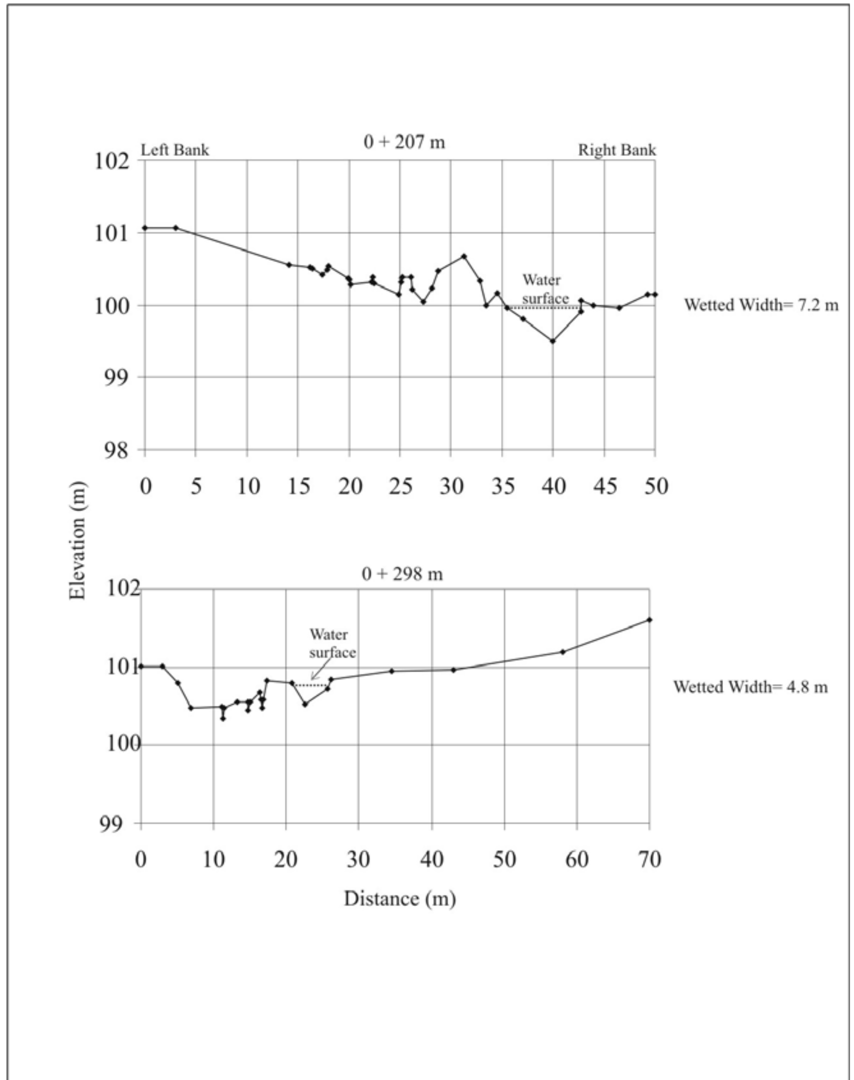

Appendix H3. Substrate characteristics from pebble counts in Darling Creek, Reach D1, August 2004.

LGL Limited

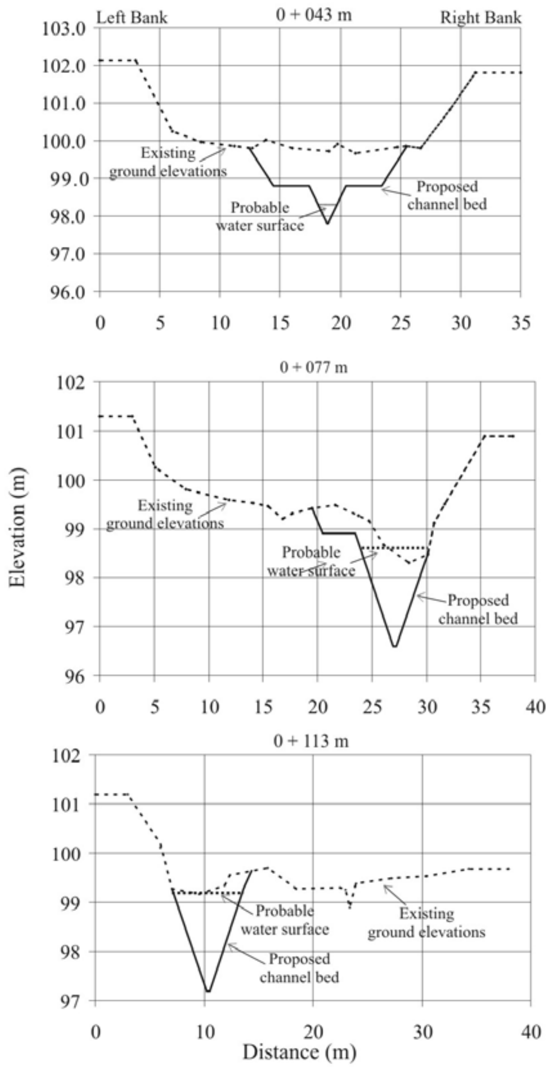
Appendix I. Level survey information and riffle construction drawing for proposed groundwater channel near Kink Pond.



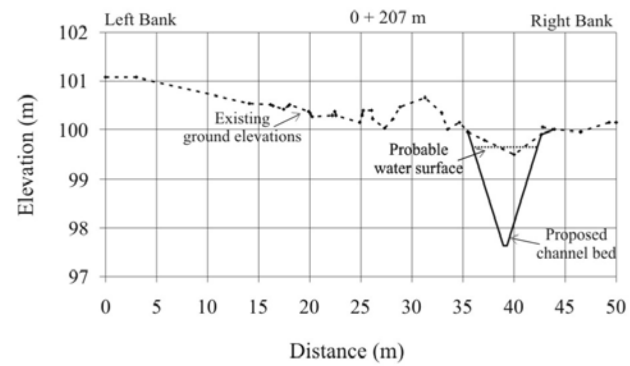

| Appendix I1. Representative channel cross sections of existing conditions in Kink Pond, August 2004. | LGL Limited |
|---|---|




| Appendix I2. Representative channel cross sections of existing conditions in Kink Pond, August 2004. | LGL Limited |
|---|---|

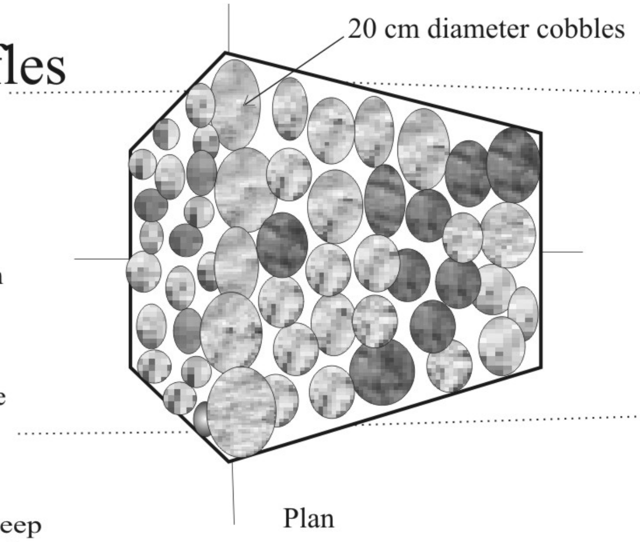



| Appendix I3. Typical channel cross sections of proposed restoration measures in Kink Pond, August 2004. | LGL Limited |
|---|---|




| Appendix I4. Typical channel cross sections of proposed restoration measures in Kink Pond, August 2004. | LGL Limited |
|---|---|

# Kink Pond Riffles



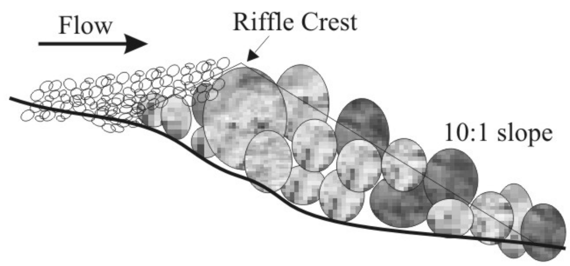

Plan

1. PLAN: build riffle crest across the channel with large diameter cobbles; back up with next largest stone downstream

2. PROFILE: construct downstream face of riffle at a shallow re-entry slope that mimics local natural riffles

3. PROPOSED GRAVEL PLATFORM: 2 m wide x 5 m long x 0.4-0.6 m deep with the following gradation by volume.

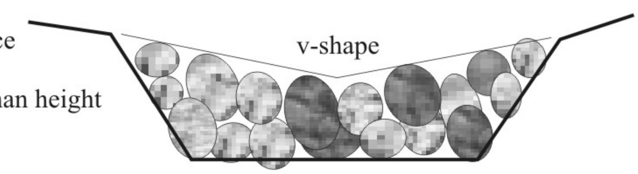
| Sieve Size | Percent by Volume |
|---|---|
| 100 mm | 0% |
| 75 mm | 5% |
| 50 mm | 15% |
| 37.5 mm | 20% |
| 19 mm | 30-35% |
| 9.5 mm | 10-20% |
| 6.3 mm | 0-15% |
| 4.7 mm | 0-5% |




Profile

4. SURFACE: place large cobbles randomly on the downstream face, 20 to 30 cm apart to dissipate energy and create low flow fish passage channels and back eddies

5. CROSS SECTION: V-shape the crest and face downwards to the centre of the riffle. Centre should be 0.3 to 0.6 m lower than height at the banks




Cross Section

6. BANKS: rip-rap both banks with embedded cobbles to the floodplain level

This drawing may be augmented for machine operators with notes on the placement of construction stakes and photographs of natural and well-constructed riffles (after Newbury et al. 1997).

Appendix I5. Schematic riffle construction drawing with spawning platform.

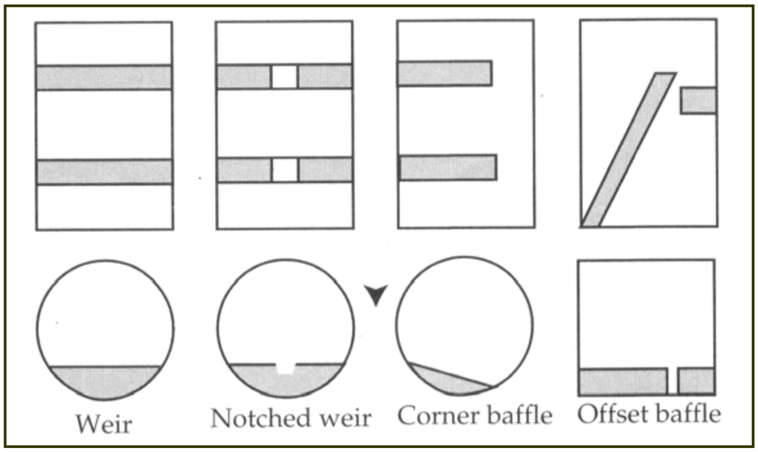
LGL Limited

Scale: Not to scale

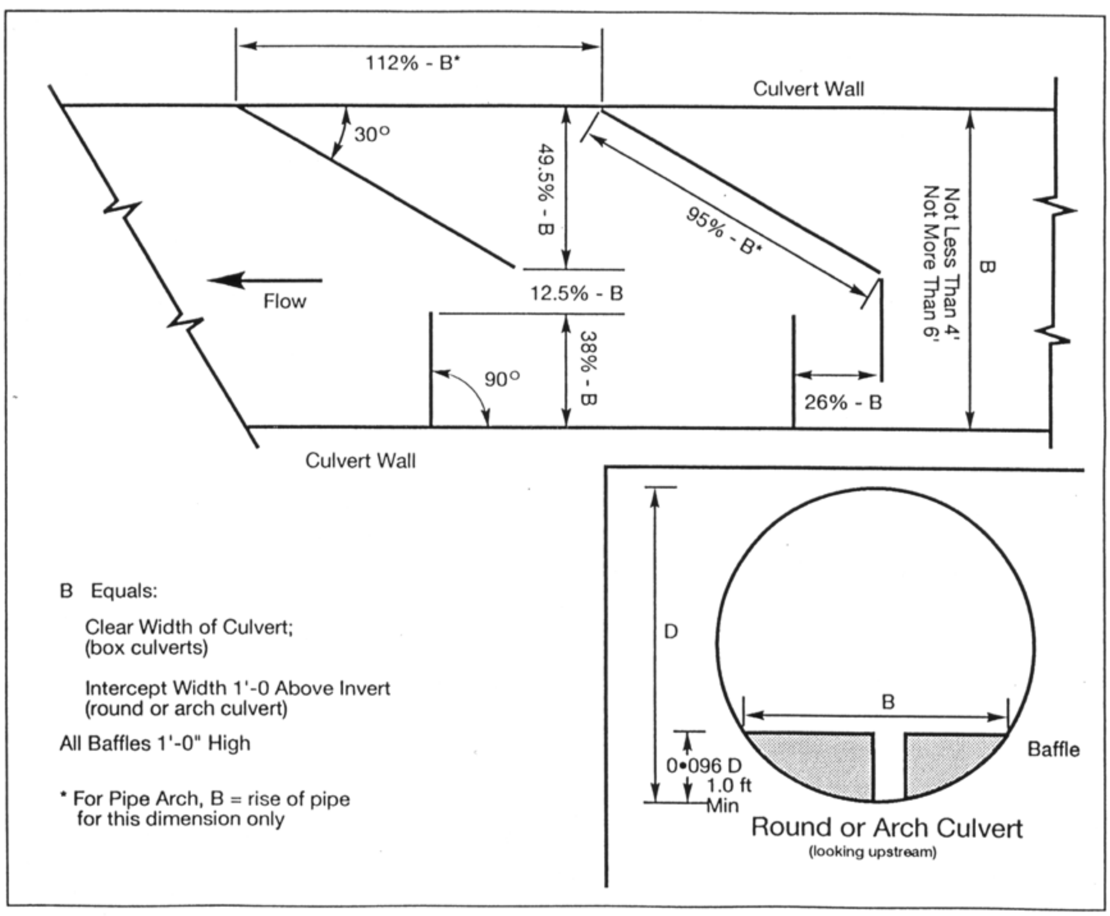
Appendix J. Design drawings for restoration project
at Banner Creek culvert.

Appendix J1. Typical baffled culverts showing: A - basic configurations used in metal culverts (after Poulin and Argent 1997), and B – design specifications (after McKinley and Webb 1956).

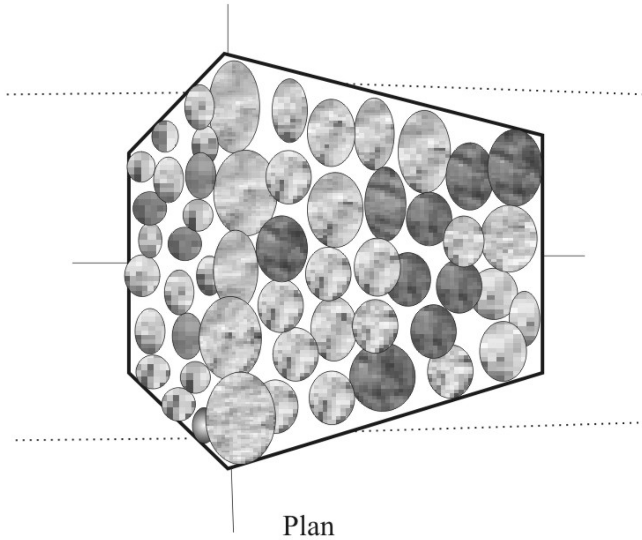
A




B



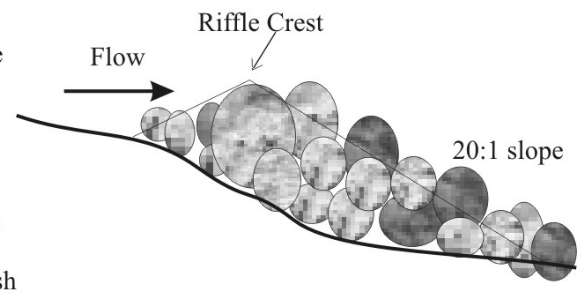
1. PLAN: build riffle crest across the stream with large diameter boulders; back up with next largest stone downstream



Plan

2. PROFILE: construct downstream face of riffle at a shallow re-entry slope that mimics local natural riffles

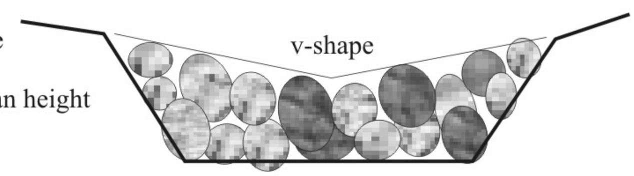
3. SURFACE: place large rocks randomly on the downstream face, 20 to 30 cm apart to dissipate energy and create low flow fish passage channels and back eddies




Profile

4. CROSS SECTION: V-shape the crest and face downwards to the centre of the riffle. Centre should be 0.3 to 0.6 m lower than height at the banks

5. BANKS: rip-rap both banks with embedded boulders and cobbles to the floodplain level




Cross Section

This drawing may be augmented for machine operators or hand labour crews with notes on the placement of construction stakes and photographs of natural and well-constructed riffles (after Newbury et al. 1997).

Appendix J2. Schematic riffle construction drawing.

| | |
|---|---|
| LGL Limited | Scale: Not to scale |

# PHOTO PLATES

Photo 6. Downstream view in Nome River Reach N1 from confluence of Hazel Creek.

Photo 7. View of excellent summer rearing habitat with overhead riparian cover in off-channel to Reach N1.

Photo 8. Riffle with spawned-out pink and chum salmon in Reach N2, 28 July 2005.

Photo 9. View of silt decomposition on potential spawning substrate on right side of channel in Reach N2 downstream of culvert run-off from Nome-Kougarok Road.

Photo 10. View of multiple redds and clean gravel along left side of Nome channel in Reach N2.

Photo 11. Upstream view in Reach N3 at Banner Creek subdivision in background.

Photo 10. Upstream view in Reach N3 with 13 mile bridge in background.

Photo 12. Downstream view in Reach N4. Old railway trestle in photo right background.

Photo 13. Downstream view of unconfined meander pattern and off-channel habitat in Reach N5.

Photo 14. Upstream view of typical deep meander bend pool in Reach N5.

Photo 15. View of chum salmon actively spawning in typical site close to overhanging vegetation escape cover in 0.6 - 0.8 m stream depth and velocity 0.5 – 0.7 m/s.

Photo 16. View of sockeye in off-channel in Reach N5.

Photo 17. View of off-channel habitat in Reach N5 with excellent cover for summer rearing coho.

Photo 18. View of juvenile coho age class 0+ and 1+ utilizing SWD, undercut bank cover, and overhanging vegetation cover in off-channel in Reach N5.

Photo 19. Upstream view of Nome mainstem Reach N6 from Nome-Kougarok Road.

Photo 20. Downstream view of Nome River Reach N7 from chainage 50+090 m illustrating aggraded channel with mid-channel bars and multiple channels (indicators of channel disturbance).

Photo 21. Downstream view in Reach N8 at chainage 60+502 m.

Photo 22. Upstream view in Osborn Creek at aggraded, over-widened channel with virtually no instream cover attributes.

Photo 23. Upstream view in Buster Creek Reach Bu1 illustrating good summer rearing habitat with cover provided by overhanging vegetation, undercut bank and SWD.

Photo 24. View of spawned out chum in shaded pool in Buster Creek, Reach Bu1.

Photo 25. View of Dolly Varden in Buster Creek, Reach Bu1.

Photo 26. View of disturbed over-widened channel Buster Creek Reach Bu2.

Photo 27. Downstream view of stream eroded tailings pile and bank erosion in Reach Bu3-LF, Buster Creek.

Photo 28. Upstream view of good summer rearing habitat for juvenile coho, Reach Bu3-LF, Buster Creek.

Photo 29. Downstream view of rearing pool with cover in Dexter Creek (Dx-1), downstream of Nome-Kougarok Road culvert.

Photo 30. Downstream view of a very disturbed channel in Dexter Creek upstream of culvert in Nome-Kougarok Road.

Photo 31. Downstream view of upper Dexter Creek.

Photo 32. Downstream view of aggraded channel in Banner Creek.

Photo 33. View of Mineral Creek off-channel complex from Nome-Kougarok Road.

Photo 34. View of channel from Nome River connecting Mineral Creek off-channel complex downstream of 13 mile bridge.

Photo 35. Upstream view at aggraded, over-widened channel in lower Basin Creek.

Photo 36. View from west bank of Basin Creek instream pond.

Photo 37. Upstream view at disturbed, over-widened channel in upper Basin Creek. Gravel extraction and placer mining operations are occurring in this reach.

Photo 38. Upstream view of natural substrate in culvert on Sampson Creek. This is a good example of a culvert placement that would provide fish passage.

Photo 39.  Downstream view of Sampson Creek channel approximately 100 m below culvert.

Photo 40.  Upstream view of beaver dam on lower Hobson Creek.

Photo 41. Upstream view of Hobson Creek (Reach H2) and road to hatchery.

Photo 42. View of tailing piles in Upper Hobson Creek upstream of hatchery building.

Photo 43. Upstream view in Darling Creek downstream of Nome-Kougarok Road culvert.

Photo 44. Downstream view showing instream vehicle trail in Darling Creek.

Photo 45. Pink salmon holding in cover of undercut bank and over-vegetation and SWD.

Photo 46. Upstream view in Rocky Mountain Creek at channel and canopy cover.

Photo 47. View of Kink Pond and SWD instream cover providing excellent cover for summer and winter rearing juvenile coho.

Photo 48. Spent sockeye carcass located in Kink Pond.

Photo 49. View from south end of Kink Pond at culvert connection to Nome River. Pond requires more overhead cover to enhance summer and winter rearing potential.

Photo 50. Upstream view of perched culvert (0.30 m drop) at Christian Creek.

Photo 51. Downstream view of undersized culvert at Christian Creek.

Photo 52. Upstream view in Christian Creek at chainage 0+300 m.

Photo 53. Upstream view in Sulphur Creek from chainage 0+200 m.

Photo 54. Downstream view in Sulphur Creek from chainage 0+400 m.