

Oceanic dispersal and behavioral of Chinook salmon in the Bering Sea

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Abstract:

Information about the oceanic migration and behavior of fishes is important for understanding population dynamics and informing fisheries management, yet little is known about Chinook salmon in the Bering Sea. To rectify this important gap in knowledge, we propose a proof-of-concept study in which large, immature Chinook salmon (>60 cm) will be captured by a chartered sport fishing vessel near Dutch Harbor, Alaska and tagged with pop-up satellite archival transmitting tags. Because this research idea has never been attempted, the specific project objectives are: 1. To determine the suitability of a sport fishing vessel as a tagging platform for Chinook salmon in the Bering Sea; 2. To determine the survivability of Chinook salmon that have been tagged with pop-up satellite archival transmitting tags; 3. To qualitatively describe the oceanic habits and environment of Chinook salmon in the Bering Sea. To accomplish these objectives, we will attempt to capture, tag and release Chinook salmon in Decembers 2013 and 2014. While externally attached to the fish, the tags will measure and record ambient light (for daily geoposition estimates), depth and temperature data. On a pre-programmed date during the following spring, the tags will release from the fish, float to the surface of the ocean and transmit the recorded data to overhead satellites which will then be retrieved by project investigators. To evaluate our objectives, we will monitor our catch of Chinook salmon while sport fishing, examine tag data records for fish mortality, and describe migration and depths and temperatures occupied by these fish in the Bering Sea. Based on similar studies on other salmonid species, we anticipate this methodology will be highly successful for providing new insights in the oceanic migration, behavior and environment of Chinook salmon in the Bering Sea, which may be useful in understanding its decline in western Alaska.

Project Objectives:

Objective 1: Test the feasibility of using a chartered sport fishing vessel from Dutch Harbor, Alaska for capturing large, immature Chinook salmon.

Objective 2: Test the survivability of large, immature Chinook salmon who have Pop-up Satellite Archival Transmitting tags externally attached to them.

Objective 3: Provide qualitative descriptions of the oceanic habits and environment of large, immature Chinook salmon in the Bering Sea, including dispersal, large-scale distribution, and depth and temperature occupancy.