INTRODUCTION

• The abundance of Chinook salmon in Alaska, particularly in the western part of the state, has declined.

• The decline is thought to be related to the ocean phase of this species, for which knowledge gaps exist, especially in the Bering Sea.

OBJECTIVE

• To conduct a proof-of-concept study in which large immature adult Chinook salmon are tagged with pop-up satellite tags in the Bering Sea to qualitatively examine their oceanic habits and environment.

METHODS

• Capture large immature adult Chinook salmon using:
  - Chartered sport fishing vessel in Dutch Harbor, AK (n=1, Dec ’13)
  - Japanese salmon survey vessel (n=6, June ’14) equipped with a mid-water trawl with a live-box cod end (fig. 1)

• Attach pop-up satellite tags to captured fish and release them (fig. 2)

• While at liberty, the tags measure and record occupied temperature and depth, and estimate daily gpos (fig. 4).

• On a programmed date, the tags “pop-up” to the surface and transmit archived data to satellites and provide an end location.

RESULTS

• One tag attached to a fish (85 cm) near Dutch Harbor in Dec. 2013 reported from central Gulf of Alaska in Apr. 2014 (fig. 3).

• Three behavioral phases are inferred from temperature (not shown) and depth data (fig. 4).

DISCUSSION

• PSAT tags appear effective for studying large Chinook salmon.

• Temperature and depth data provide valuable information about regional oceanic ecology of Chinook salmon.

• Six more tags scheduled to pop-up in Nov. and Dec. 2014.

• Additional tags will be deployed in Dec. 2014 and summer 2015.

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