**CRUISE REPORT**

Cruise Number: DY17-05

**Ship:**

 NOAA Ship Oscar Dyson

**Area of Operations:**

 Gulf of Alaska

**Itinerary:**

 **Date depart / port:** May 11, 2017 / Dutch Harbor, AK

 **Date arrive / port:** June 2, 2017 / Kodiak, AK

**Participating organizations:**

 NOAA - Alaska Fisheries Science Center (AFSC)

**Chief Scientist:**

 Annette Dougherty F / AFSC

 (206) 526-6523

 Annette.Dougherty@noaa.gov

**Personnel:**

 Alison Deary F / AFSC

 David Kimmel M / AFSC

 Jesse Lamb M / AFSC

 Adam Spear M / AFSC

**Cruise Objectives:**

The objectives of this cruise were to conduct an ichthyoplankton survey and process studies in the region between Unimak Pass and Shelikof Strait and then from the Kenai Peninsula to the east side of Kodiak Island so that we may estimate the abundance, transport, and other factors influencing the survival of larval walleye pollock, sablefish, Pacific cod, arrowtooth flounder, and Pacific Ocean perch. Sampling with the Sameoto neuston was used to specifically target sablefish in the surface layer. We also occupied six of the stations on Line 8 to continue our 28-year time series of environmental and biological conditions in Shelikof Strait. During this sampling, we deployed 2 satellite tracked drifters in patches of larval walleye pollock to determine transport at 40 meters. An additional 25 CalVET samples were conducted in the main grid area (historically high abundance area of larval walleye pollock) to determine the abundance of available food for larval fish. The rapid zooplankton assessment (RZA) was conducted on every survey line consisting of the 20/60 bongo array.

**Summary of Operations:**

 **Operation** **Tows**

 20cm bongo (20BON) 142

 60cm bongo (60BON) 269

 Neuston 80

 Seabird SeaCAT CTD (CAT) 296

 CalVET 28

 CTD without bottle samples (CTD) 2

 CTD with bottle samples (CTDB) 15

 Drifter – satellite tracked drifter 2

**Samples Collected** **Tows** **Number**

 SeaBird SeaCat (CAT) 296 296

 Extracted chlorophyll (Chlor) 7 42

 SeaBird CTD (CTD) 15 15

 Stimulated fluorescence collected during CTD casts (Fluor) 15 15

 Larval pollock collected for otolith analysis (L-Oto) 266 9602

 Microzooplankton samples preserved in formalin (MZ) 6 36

 Nutrient samples collected from CTD casts (Nut) 14 127

 Photosynthetically Active Radiation data collected during CTD casts 15 15

 (PAR)

 Quantitative tow preserved in formalin (QTowF) 512 561

 Rough count of pollock larvae (RCountL) 269 19274

 Rough count of zooplankton (RZA) 152 152

 Salinity sample 2 4

 Larvae for genetics (ADGEN) 260 3411

 Drifter deployment 2 2

 Pollock measured and frozen (SPFCM) 15 242

**Summary of Cruise:**

**Narrative:**

We left Dutch Harbor at 1500 on May 11 (GMT time) and arrived at our first grid station, GF105, at approximately 0540 on May 12. The ichthyoplankton survey was conducted from the Gulf side of Unimak Pass and through the Shumagin Islands. A break in operations was then necessary for medical evacuation for one of the crew members to Kodiak Island. The survey was resumed along the east side of Kodiak Island. We then worked our way along the north end of Kodiak Island, the Kenai Peninsula, down Shelikof Strait, and then occupied all six station at Line 8. Routine sampling then resumed between Line 8 and the Shumagin Islands, which had been delayed due to the medical evacuation. A total of 267 stations were occupied. The standard gear for this survey was 20/60-cm bongos (SOI 3.2.2) with 0.153/0.505-mm mesh netting. A FastCat was mounted above the bongo to provide depth, temperature, and salinity data. Tows were deployed to 100 meters or 10 meters off the bottom where water depth was shallower. The samples collected from the 60-cm bongos were processed in the following manner. Net 1 was preserved in 1.8% formaldehyde, buffered with sodium borate, and boxed for shipment at the end of the survey for quantitative analysis. Net 2 samples were sorted for all fish larvae and preserved in 100% ethanol and/or frozen in the -80 °C freezer. Net 1 of the 20-cm and Net 1 and Net 2 of the 60-cm bongo samples collected from Line 8 were preserved in 1.8% formaldehyde and buffered with sodium borate. When larvae were collected for the pollock condition study, a CalVET tow was conducted to collect small zooplankton. All gear was prepared and off-loaded in Kodiak for storage or shipment to Seattle the morning of June 2.

**Days Lost to Weather:**

 1 day (1 storm event)

 2 days for medical evacuation

**Days Lost to Equipment Failure:**

 None

**Recommendations:**

 None

**Acknowledgments:**

 The scientific party would like to acknowledge the hard work and support of the officers and crew of the Oscar Dyson. We would especially like to commend the deck crew which assisted us in improving the performance of the neuston gear.

**Attachments:**

Figure 1. Station Map

