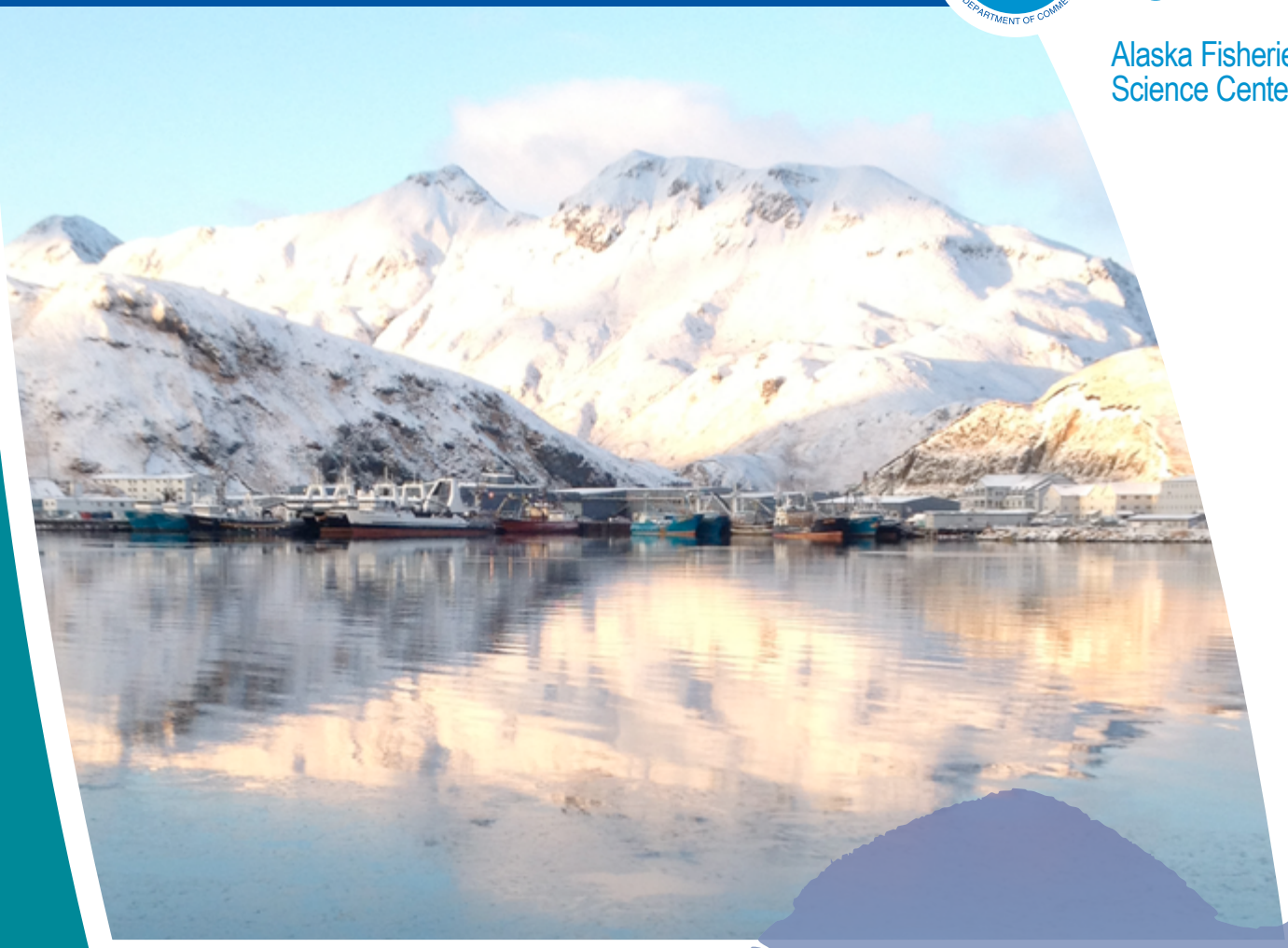
2020 IN REVIEW

FMA Fisheries Monitoring and Analysis

NOAA FISHERIES

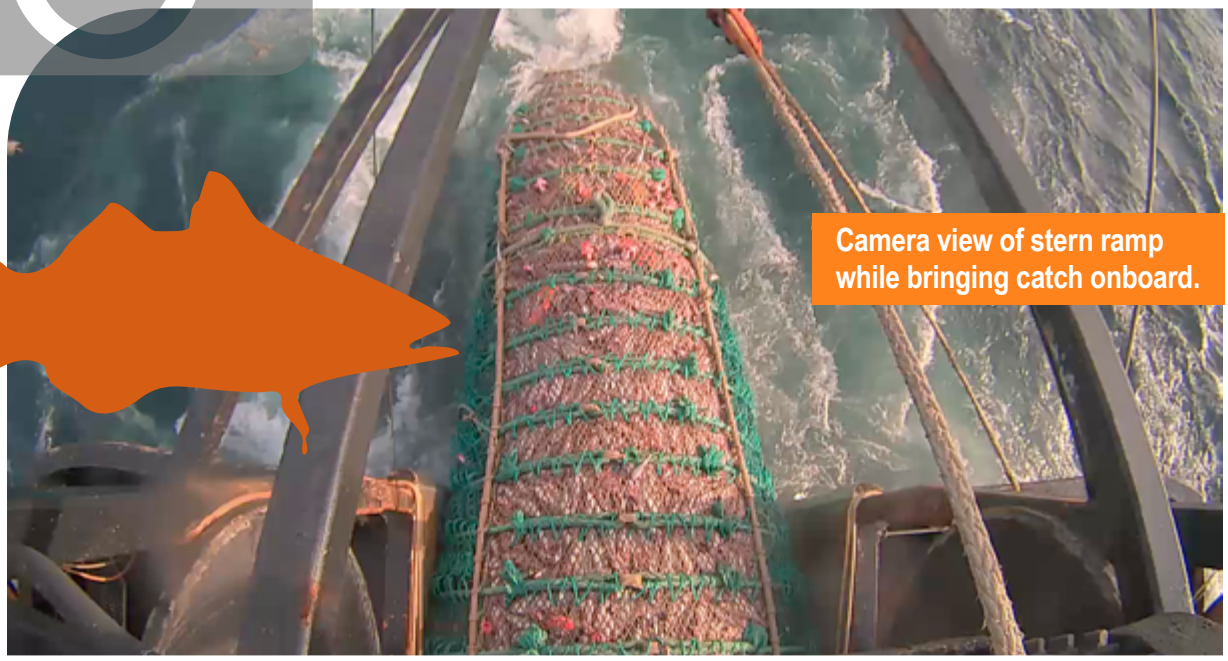
Alaska Fisheries Science Center



The Alaska Fisheries Science Center's Fisheries Monitoring and Analysis Division (FMA) monitors groundfish and halibut fishing activities in the federal fisheries off Alaska and conducts research associated with sampling commercial fishery catches, estimation of catch and bycatch mortality, and analysis of fishery-dependent data. We are responsible for training, briefing, debriefing, and oversight of observers who collect catch data onboard fishing vessels and at onshore processing plants and for quality control/assurance of the data provided by these observers. Division staff process data and make it available to the Sustainable Fisheries Division of the Alaska Regional Office for quota monitoring, and to scientists in other Alaska Fisheries Science Center divisions and at other agencies for stock assessment, ecosystem investigations, and an array of research investigations.

2020 Highlights

Location and view of aft deck camera on trawl vessel.



Camera view of stern ramp while bringing catch onboard.

Collaboration on an Electronic Monitoring Exempted Fishing Permit (EFP)

We worked with the Alaska Regional Office and fishing industry representatives to implement a project allowing a select number of catcher vessels targeting Alaska pollock in the Bering Sea/Aleutian Islands and Gulf of Alaska to use onboard cameras to monitor fishing operations in lieu of observers on the vessels. The permit required the vessels to use mid-water trawl gear and limit at sea discards. This allowed shore-based observers to collect scientific information that previously was collected at sea. We created and implemented new sampling protocols for shoreside observers to collect data necessary for in-season management of the fishery and to meet the needs of stock assessment and ecosystem scientists at the Alaska Fisheries Science Center.

Once the fishing trip is completed, the videos are sent to the Pacific States Marine Fisheries Commission where skilled electronic monitoring reviewers document any discard and verify industry reports of catch and discard.

We developed programming logic to merge the observer data with the landings data for the catch accounting systems at the NOAA Fisheries Alaska Regional Office. We were also responsible for data quality control, and providing real-time feedback to the Regional Office and industry representatives on issues related to data collection.

Remote observer training on the Google Meet platform.

Cold water survival training.

Atlas software main screen.

Hands-on laboratory training to identify fish specimens.

Redesigning the At-Sea Observer Data Entry and Transmission System

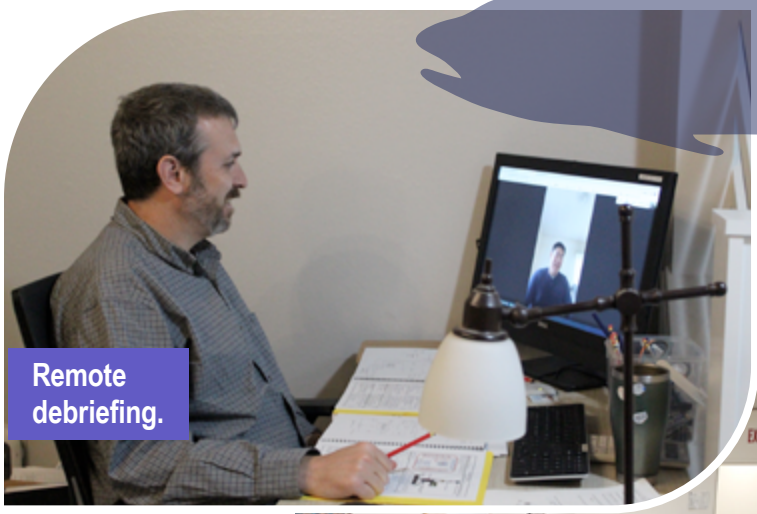
We redesigned the at-sea observer software (ATLAS) from Java and Java Swing to Oracle APEX. Near real-time observer data are vital for fisheries management in the North Pacific. Data collected by observers are entered directly into the ATLAS software onboard vessels or at shoreside plants. These data are then transmitted directly to our Oracle database at the Alaska Fisheries Science Center, where they are available to fisheries managers. Moving this application to Oracle Apex allows for more functionality and for more flexibility in the future, and presents a more user-friendly interface for observers. The redesign also involved changing the transmission of observer data from email to Oracle REST data services. Using REST data services allows the ATLAS software to make a direct secure data connection to the AFSC Oracle database. This, in turn, allows for data to be accessed in a more timely manner by all users.

Reimagining Observer Training for a Virtual World

In response to the COVID-19 pandemic, the FMA Observer Training Program paused their 3-week initial observer training for one month to redesign the class to be conducted using remote tools and to minimize in-person interactions.

The class was reformatted to consist of 10 days of remote instruction using the Google Meet platform. After successful completion of this remote section, trainees travelled to Seattle for 4 days of hands-on training at the NOAA Western Regional Campus. There they completed the training subjects that cannot be learned remotely, including cold water survival and species identification and dissection.

The hands-on training was carefully designed to meet safety guidance for in-person gatherings. Trainees worked in very small groups, maintained physical distance, and wore face coverings except for when they were in the water. Activities were conducted outside when feasible. Indoor activities were limited to wet labs and a single large classroom. Indoor areas were equipped with clear Plexiglass barriers to further separate the trainees and instructors.



Remote debriefing.

Data quarantine.

Observers checking in after deployment.

Reengineering Observer Debriefing — Maintaining Data Quality Control Remotely

Our support for observers doesn't end after training. We interact with them continuously throughout their deployments, and conduct thorough interviews and data quality control checks when they return from the field. This last step is referred to as "debriefing," and is usually done in person in our Seattle or Anchorage offices. In response to the pandemic, we began debriefing observers remotely via phone and/or internet.

Observer check-in protocols were also altered to keep observers and staff safe. In order to maintain proper distancing and minimize people at our facilities the number of check-in appointments were limited to 6 a day. Prior to the pandemic we had 18 appointments.

Once the observers were done completing all their check-in duties, each data set and the corresponding specimens were placed in individual baskets and quarantined in a storage room for a minimum of 3 days. At the end of the 3 day quarantine, staff were then permitted to handle the data for distribution.

When debriefers were ready to pick up a data set, data exchanges were coordinated in a manner similar to curb-side delivery used by libraries and stores. The data exchanges were contactless as the debriefers were instructed to open the door/trunk of their car for the data to be placed in by check-in staff. Even though staff kept their distance, and data exchanges took place outdoors, everyone wore masks at all times.

With the data set now in hand, debriefers could conduct all the data checks and debriefing interviews from home. Interviews are done via phone or through the internet using the Google Meet platform.

After a few debriefings, staff return to the office and complete post debriefing duties to finalize data sets. This includes organizing specimens, filing away data sets, scanning otoliths, and uploading species identification forms. The number of staff accessing campus is closely monitored and all COVID-related precautions are strictly adhered to.

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