PACIFIC REGION SCIENCE -POST CRUISE REPORT

**NAME OF SHIP/PLATFORM:**  F/V Seacrest

**DATE:** **FROM:** 06-July-2017 **TO:** 19-July-2017

**SCIENCE CRUISE NUMBER:** 2017-42 **SHIP’S PATROL NUMBER:**

**CHIEF SCIENTIST[S]:** Jackie King

**AREAS OF OPERATION:** Vancouver Island Continental Shelf: Queen Charlotte Sound (Cook Bank and off Queen Charlotte Strait) and West Coast Vancouver Island (Scott Islands to Nootka Sound)

**INTRODUCTION/**

**PROGRAM BACKGROUND:**

Fisheries and Oceans, Canada (DFO) has initiated a pilot survey designed to study the structure and function of the pelagic ecosystem on the Vancouver Island Continental Shelf (< 200 m). The survey is intended to sample the major fish components of the pelagic ecosystem, providing relative catch compositionand catch rates, biological information, and predator/prey information. In addition, zooplankton sampling and oceanographic monitoring will be included. This year the survey will serve as a transition year from a historic daytime salmon-centric survey to integrating into a revised night-time pelagic survey. Comparisons between juvenile salmon catches during daylight hours and during nighttime hours are required to ensure that historic data can be interpreted in the context of future nighttime only surveys.

**CRUISE OBJECTIVE/OBJECTIVES:**

The primary task of the survey is to execute random surface and 15 m midwater trawl tows following a standardized fishing protocol. For 2017, the target number of blocks to complete is 70– with each block fished during daylight hours and again during nighttime hours for a total target of 140 fishing tows. The science staff shall note all details of fishing locations and times as well as determining species composition of the catch and selecting the appropriate species for biological sampling. All species are likely to be sampled.

**DAYS OF OPERATION:** 14

**DAYS LOST DUE TO WEATHER:** 0

**DAYS LOST DUE TO MECHANICAL ISSUES:** 0

**DELAYS [OTHER THAN**

**WEATHER]:**

Loading of scientific equipment delayed past working hours due to fouled fuel and welding work to be completed. This resulted in land-based staff working overtime to complete loading and that the electronic data acquisition system was not completely installed and tested prior to departure. Minor issues with electronic data acquisition system installation were not corrected prior to departure and caused operational difficulties for the first 3 days at sea until resolved via phone with land-based staff on the first available office day when staff returned from leave.

**Radioisotope Use:**  N/A

**PROBLEMS [SCIENTIFIC GEAR**

**AND OPERATIONS]:**

Vessel power reliability issues might have caused problems with the electronic data acquisition system and the acoustic data archiving. The scientific gear issues were resolved with complete network reboot, and the acoustic data archiving was re-established after system reboot and reinstalling the data hard drive.

A line on the trawl net became undone during normal fishing operations. Crew attempted to repair, but could not do so at sea and satisfactorily resolved the issue with tie back of the tail. There was no loss of operational time or loss of catchability due to the net damage.

The electronic data acquisition system (EDAS) had numerous errors and difficulties, which ended up being minor but existed because loading was delayed due to vessel repairs and land-based staff could not stay past office hours to finish complete system installation and checking. The EDAS issues included incorrect laptop time format which meant TimeSync with the server was offset each hour and needed to be manually corrected, the footprint loaded for the platform scale was the incorrect one and needed to be modified, the network driver for the system was missing so the printer could not be used, the haul card laptop and one of the biosampling laptops continuously switched scale identifications, the haul card laptop made modifications to the GFBioField frontend-despite reinstallation of the front end. The issues were eventually resolved by day 4 with correct time formatting, modifying the available footprint and switching out the Haul Card laptop with a backup, and the EDAS worked well for the remainder of the survey. The printer could not be used, since it was not possible to download the required driver while at sea. The RAID backup drive was missed with initial installation, and backup of the database began on day 3 when it was noticed.

**SUCCESSES [SCIENTIFIC]:**

This was a successful survey. Most tows (32 of the target 35 stations in both day and night) were completed and the necessary data were gathered to meet the many scientific objectives of the survey. Two stations were not visited due to travel logistics between sets of random blocks, one tow was not completed due to weather and the early end to fishing on one shift.

**PROBLEMS [SHIP’S EQUIPMENT/**

There seemed to be some power surge issues or brown outs that were impacting some of the scientific electronic equipment. In the bridge, the main GFserver required frequent rebooting perhaps because of power inconsistencies.

**OPERATIONS/PLATFORM SUITABILITY]:**

This vessel worked for this type of survey, although some large swells off the west coast made sampling difficult due to the small area available and awkwardness of storage location. There is suitable tie down for oceanographic equipment. Space is limited for storage of scientific gear, but still adequate and a closet in one of the cabins was used for dry, accessible storage. The pelican cases for scales and electronic measuring boards being used did not remain on the ship, creating more storage space. The accessibility to the science freezer is a consideration; the hatch to the freezer is heavy and difficult to lift and is also used throughout the day for gear storage. The crew was accommodating, allowing science to temporarily store samples in a small kitchen freezer until a single, daily visit to the science freezer was made.

The vessel does not have net mensuration gear, which is a preference for the estimation of species’ biomass from this survey but not a condition of the contract. The vessel could provide head rope depth and door spread, but not wingspread. It had been requested that pockets be installed on the net’s wings to allow use of sensors to estimate wingspread, but it could not be completed prior to departure.

The vessel had enough cabin and bunk space for 6 science staff and all accommodation and washroom facilities were clean. Healthy and abundant food were available for staff throughout the day. Staff were able to do laundry midway through the survey.

A large work area was available to the Chief Scientist on the bridge. A network cable was available from the bridge to the sampling area so that we could connect our server computer to a wireless router near the lab.

**SUCCESSES [SHIP]:**

The vessel crew were outstanding and it was their enthusiasm and accommodating approach which compensated for any difficulties encountered. The Captain was able to provide flexible logistic planning for each day of fishing with helpful recommendations on fishing locations based on weather, running time between stations, tide or other considerations. Periodically the gear proved to be difficult to fish at required depths, but the Captain worked hard to provide the best results possible. The Captain ensured that no fishing time was lost due to refueling needs at Coal Harbour. The Crew were approachable for resolution of sampling area setup, or periodic needs of the science crew. The Crew assisted in sorting catch, lifting baskets of fish, repairing damage to the trawl net, deploying scientific sensors on the trawl net, and the deployment and processing of CTD, water and zooplankton samples. The Cook was flexible in meal hours, and provided outstanding meals that helped all staff shift to nighttime fishing. Overall, the fishing operations spanned day and nighttime hours and the Captain and Crew all ensured that this difficult work shift went as smoothly as it possibly could.

**SAFETY CONCERNS:**

Lifting the hatch cover to access the freezer and extra storage space is difficult and offers some hazards, especially in swells. Stepping from the deck to the sampling area is also a concern in swells – staff fell off the aft step, and also got their foot caught in the space between the bottom step and the floor. However, no injuries occurred.

The Captain ensured that all vessel and science crew wore PFD and hard hats while on deck at all times.

Science staff were provided with a ship’s familiarization prior to departure. Science staff were also provide with a safety briefing by the Chief Scientist for lab sampling activities and general hazards on vessels.

**HAZARDOUS OCCURRENCES:**

None from scientific staff.

**EVENT LOG:**

July 6 - load scientific equipment and fishing gear beginning at 08:30. Vessel unavailable between 10:30-14:30. Completed loading by 19:00. Departure from PBS between midnight-01:00.

July 7 – Departure from PBS between midnight-01:00; travel to Port Hardy. Completed EDAS installation and setup; sorted gear to more efficiently store.

July 8-Refueled Port Hardy, departure delayed so Science could maintain cellphone coverage to resolve some EDAS issues. Began fishing in Queen Charlotte Strait at 17:00. 5 tows completed.

July 9-Fishing operations in southern Queen Charlotte Sound. 6 tows completed.

July 10- Fishing operations on Cook Bank. Able to reach land-based science staff, remaining EDAS issues resolved. 7 tows completed.

July 11- Fishing operations off Scott Islands. 6 tows completed.

July 12- Fishing operations off Scott Islands. 6 tows completed.

July 13-Fishing operations south of Scott Islands. 6 tows completed. Refuel in Coal Harbour.

July 14-Fishing operations off Quatsino Sound. 6 tows completed.

July 15- Fishing operations north of Brooks Peninsula. 5 tows completed.

July 16- Fishing operations south of Brooks Peninsula. 6 tows completed.

July 17-Fishing operations Esperanza Inlet. 6 tows completed.

July 18- Fishing operations off Nootka Sound. 6 tows completed.

July 19-Science crew change in Ucluelet at 13:30. This portion of survey completed.

**SUMMARY/FINAL COMMENTS:**

We would like to thank and commend the Captain and Crew for their professionalism and commitment to the science program objectives and the science crew well-being.