2020 Kodiak and Alaska Peninsula Cruise Report

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This report documents the sampling that was conducted during the third annual survey of age-0 Pacific cod in the western Gulf of Alaska.

Sampling was conducted from the 45' vessel *Galactic* between 2 July and 8 August, 2020. Beach seines were the primary sampling method. A total of 75 beach seine sets were made in 14 different bays on Kodiak Island, the Alaska Peninsula, and the Shumagin Islands (Fig. 1). For each set, habitat information, temperature, and salinity were recorded. In addition, a CTD cast was made in each study bay to record temperature and salinity profiles.

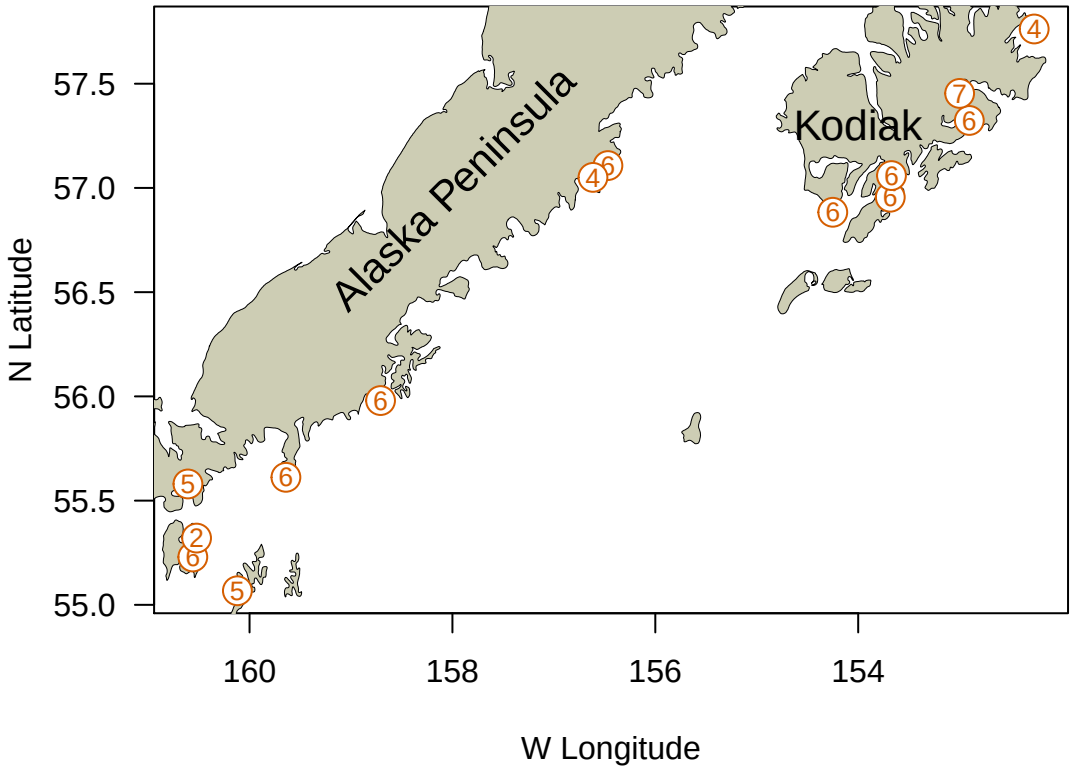

Fig.1 Beach seine sampling locations. Numbers inside circles indicate the total number of sets in each bay.

A total of 27,992 individuals of 47 fish species were captured in beach seines. Pacific cod and walleye pollock were the most common species (Fig. 2). All Pacific cod and pollock captured were young of the year.

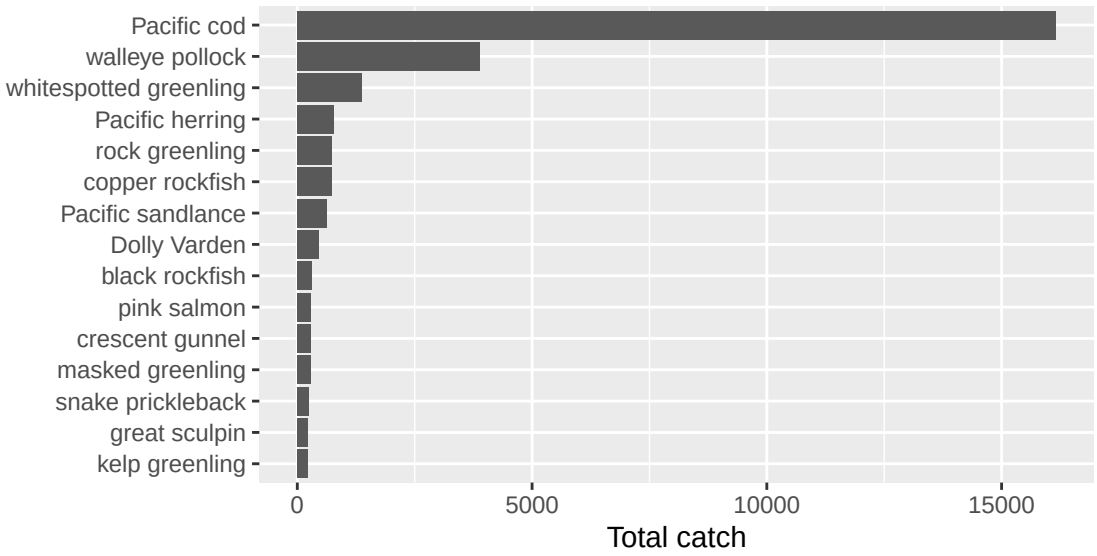

Fig.2 Total catch (# of fish) for the 15 most abundant species captured in beach seines.

Abundances of Pacific cod and walleye pollock were markedly higher this year than in 2019, and were similar to the large 2018 cohorts (Fig. 3).

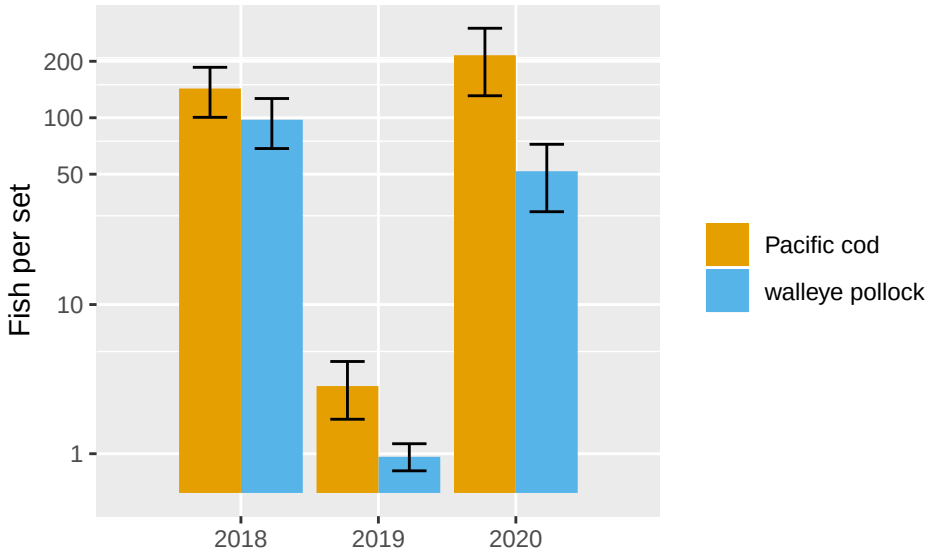

Fig. 3 Catch per unit effort (mean ± approximate 95% CI) for Pacific cod and walleye pollock in 2018-2020. Note log scale.

We measured 2,219 Pacific cod (Fig. 4). We retained ~1,400 of these for a variety of laboratory studies, including analysis of body condition, diets, lipid profiles, otolith microchemistry, and otolith reading to infer hatch phenology and daily growth increments. We also took 642 fin clips for genetic studies.

Additionally, we conducted a baited camera survey for age-1 Pacific cod, consisting of 40 camera sets in 12 bays (Fig. 5).

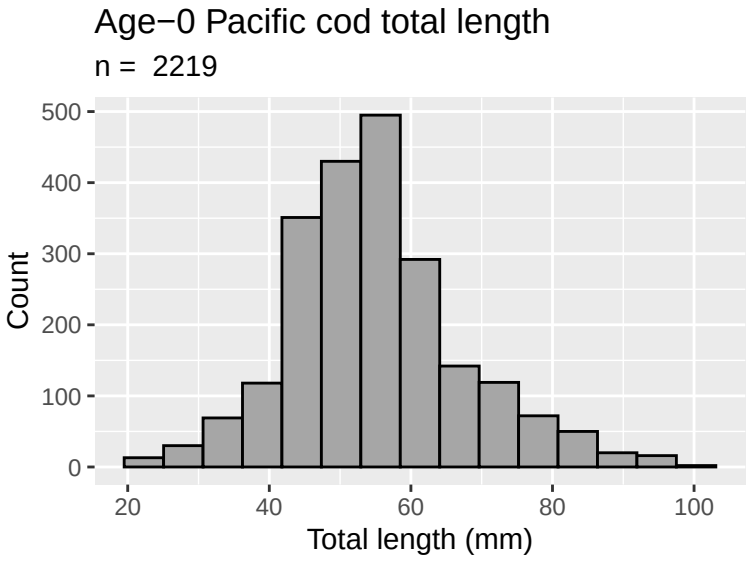

Fig. 4 Length distribution for sampled age-0 Pacific cod.

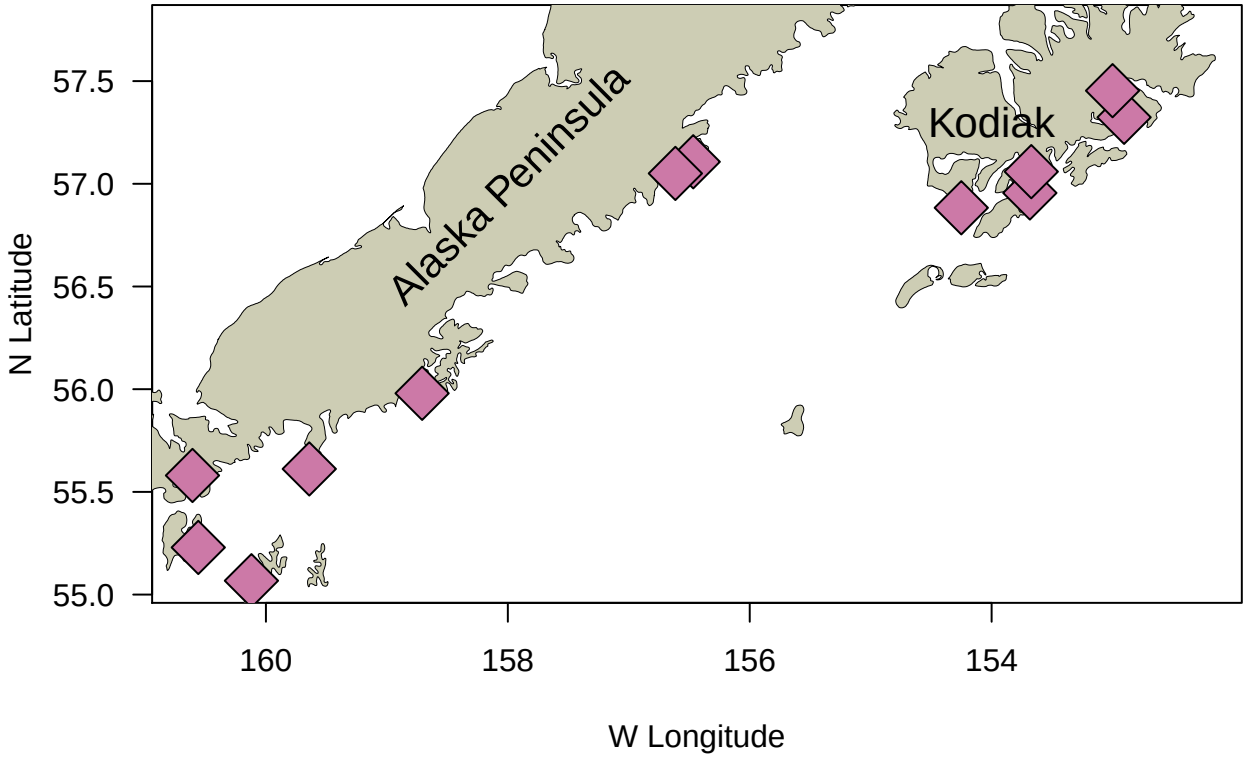

Fig. 5 Bays sampled with baited camera to assess age-1 Pacific cod abundance.

Finally, we retained a variety of samples to support other studies, including ~100 age-0 pollock for lipid analysis (Louise Copemen, NOAA), ~100 Pacific sandlance for saxitoxin analysis (Julie Matweyou, UAF and Steve Kibler, NOAA), 60 juvenile black rockfish for early life history studies (Carrie Worton, ADF&G), and samples of 13 species of fish for an Aleutian tern diet study (Jill Tengeres, OSU and Robin Corcoran, USFWS).