

Monitoring Fish Use and Size of Eelgrass Meadows in Southeastern Alaska

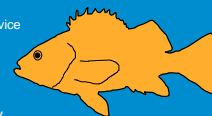
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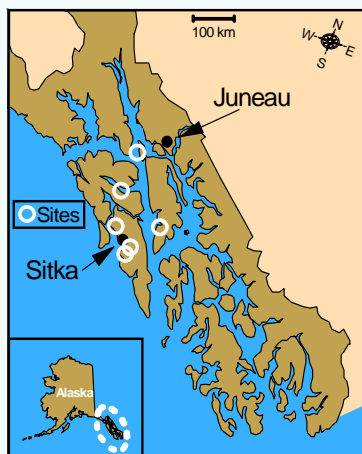
Why study eelgrass?

Although seagrasses are widely recognized as an important nearshore habitat, fish use of eelgrass (*Zostera marina*) in Alaska is poorly understood. Worldwide, seagrass beds are declining at an alarming rate, but the extent and magnitude of eelgrass loss in Alaska is unknown, as is the total acreage of eelgrass throughout the state. Major threats to eelgrass include shoreline development and global climate change.

Objective

Establish a baseline of information on seasonal fish use and size of several eelgrass meadows in southeastern Alaska. Periodically resample sites to track changes in fish communities and habitat that may result from human disturbance or climate change.

Study Sites



6 sites (Funter Bay, Crab Bay, Chaik Bay, Nakwasina Sound, Sandy Cove, Pirates Cove)

All sites sampled in spring 2001, 2002, and 2003

4 sites sampled in winter 2003

Fish sampled by beach seine

Eelgrass area mapped

Beach seining

2 hauls at each site

Fish catch

ID, count, measure length

Map eelgrass area with GPS

Total catch = 58,902 fish in 44 seine hauls; 45 species

Abundant species

Chum salmon

Mean FL = 58 mm

Pacific herring

Mean FL = 100 mm

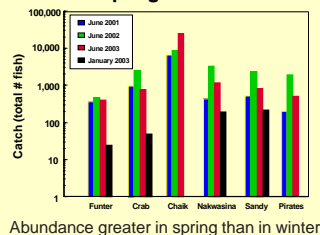
Pacific sand lance

Mean FL = 84 mm

Mostly juveniles captured

Fish catch

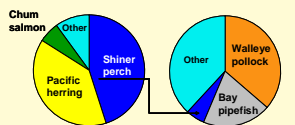
Spring vs. Winter



Species Composition

Nakwasina Sound

Spring 2001-2003 Winter 2003



20 spp. found in eelgrass are included in a federal fisheries management plan for Alaska

Change in meadow size

Nakwasina Sound

Fringing meadow

absent in 2002

0 50 m

2002 = 0.46 ha

2003 = 0.58 ha

+27% increase



Size of eelgrass meadows varied annually; max. change in area ranged from -13% to +27%

Copper rockfish



Significance related to development or climate change

Baseline established to track long-term and large-scale changes in:

- fish distribution, species composition, and abundance
- eelgrass meadow size (increasing or decreasing?)

Monitor potential effects on commercially important and forage fish species