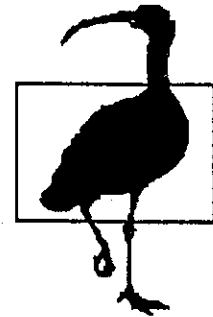




UNITED STATES DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
BIOLOGICAL RESOURCES DIVISION
200 S.W. 35TH STREET
CORVALLIS, OREGON 97333
TEL. (503) 754-4388
FAX (503) 754-4711
INTERNET: ronj@mail.cor.epa.gov



2 December 1996

Jeff Haas
U.S. Fish and Wildlife Service
3704 Griffen Lane S.E.
Suite 102
Olympia, WA 98501-2192

Ed,
FYI
Ron

Dear Jeff:

Enclosed is a partial summary of the results from our sub-tidal survey between Cape Flattery and the mouth of the Sekiu River. Only sea urchin data are given because they seem to be the species of immediate interest at present. Each site includes 20, 1/4m² quadrats. Mike Kenner of our project pulled the data together and I think the tables are self explanatory.

As you can see mean density of red sea urchins (*Strongylocentrotus franciscanus*) was one to two orders of magnitude greater at west sites 1 and 2, near Tatoosh Island, than anywhere else. They occurred at 57% of the sample sites west of Neah Bay. Three sites were within the Makah exclusive fishing zone (46, 50, and 52). Urchins were present, at relatively low densities, at sites 46 and 50, but were absent from 52. East of Neah Bay red urchins were present at several sites (58%) but at low densities. East site number 43, just east of Rasmussen Creek, had the highest density at 0.50

Purple sea urchins (*S. purpuratus*) and green sea urchins (*S. droebachiensis*) were found at relatively low densities west of Neah Bay, but east of Neah Bay green urchins were absent. I don't believe either of these species are being harvested commercially in Washington at this time. Both species can occur at densities of hundreds per m².

If you have any questions regarding this summary please don't hesitate to contact me.

Sincerely,

Ronald J. Jameson
Research Wildlife Biologist

cc Ed Bowlby, Research Coordinator, OCNMS

BENTHIC SURVEY SITES COMPLETED SUMMER 1996

NEAH BAY WEST

Site Coordinates

1	48°23.341N 124°42.715W
2	48°23.647N 124°43.983W
15	48°23.341N 124°42.715W
16	No GPS Coordinates Available
23	48°23.395N 124°41.895W
24	No GPS Coordinates Available
30	48°23.578N 124°40.444W
33	48°23.523N 124°39.929W
36	48°23.566N 124°39.616W
39	48°23.608N 124°39.161W
46	48°23.203N 124°37.904W
50	48°22.988N 124°37.604W
52	48°22.733N 124°37.620W
54	48°23.172N 124°35.983W

NEAH BAY EAST

Site Coordinates

1	48°22.463N 124°35.328W
2	48°22.507N 124°35.120W
5	48°22.351N 124°34.800W
7	48°22.226N 124°34.270W
16	48°21.590N 124°32.750W
17	48°21.572N 124°33.075W
30	48°20.866N 124°31.043W
43	48°19.882N 124°28.713W
66	48°18.568N 124°25.766W
68	48°18.418N 124°25.258W
70	48°18.240N 124°24.914W
73	48°18.055N 124°24.530W