



Executive Summary

During the summer and fall of 1997, the students and instructors of an Oregon State University Zoology class (Zoology 401/Research) searched for the presence of the European Green Crab (*Carcinus maenas*) in Coos, Winchester, Yaquina and Siletz Bays, Oregon and also took inventories of common intertidal species. Our goals were twofold:

1. To take an inventory of the common intertidal species BEFORE *Carcinus maenas* becomes established and
2. To devise a sampling protocol for monitoring the spread of *Carcinus maenas* and documenting its effect on native species.

The techniques we used for collecting crabs were quadrat sampling, rock turning, baited minnow traps, and molt searches. For all crabs sampled we noted species, carapace width and sex. We trapped one adult male green crab at Pony Point in Coos Bay on October 26, 1997. This crab measured 86.5 mm in carapace width and represents the largest specimen so far collected in Oregon. All the green crabs retrieved in Coos Bay have been large adults between 58 and 86 mm. We searched gravel substrates below boulders and algal blades, but never recovered any young-of-the-year-green crabs in Coos, Winchester, Yaquina or Siletz Bays. These findings suggest that one year class (perhaps 1995) established itself in Coos Bay, but at present is not abundant enough to perpetuate itself.

Of the species inventories we took, the size frequency data of native crabs may hold the most promise for monitoring the effect of the green crab. We found healthy populations of the following crab species: *Cancer antennarius*, *Cancer magister*, *Cancer productus*, *Pachygrapsus crassipes*, *Hemigrapsus nudus* and *Hemigrapsus oregonensis*. Since the salinity tolerances of the two *Hemigrapsus* species are similar to that of *Carcinus maenas*, their presence can indicate how far up an estuary the green crab can penetrate.

In Yaquina Bay we carried out a number of diverse studies. We measured salinity along the estuary and found that the diversity of intertidal species and the apparent health of the brown alga, *Fucus*, decreased down a salinity gradient. We measured abundance of common intertidal species at four sites and found that barnacles, limpets and littorine snails may be good focal species for community monitoring efforts because they are likely to be readily abundant prey. We learned that artificial shelters such as stepping stones or plywood boards can be used as standardized habitat for sampling crabs.

