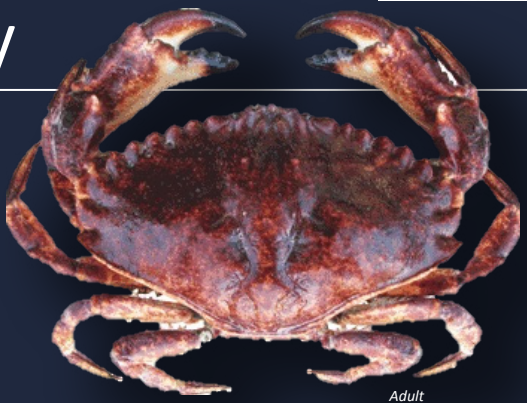
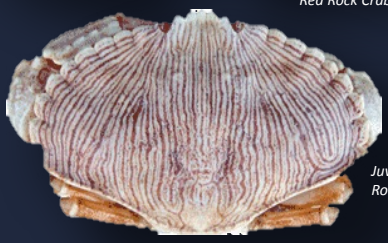
Red Rock Crab in the Coos Estuary

Summary:

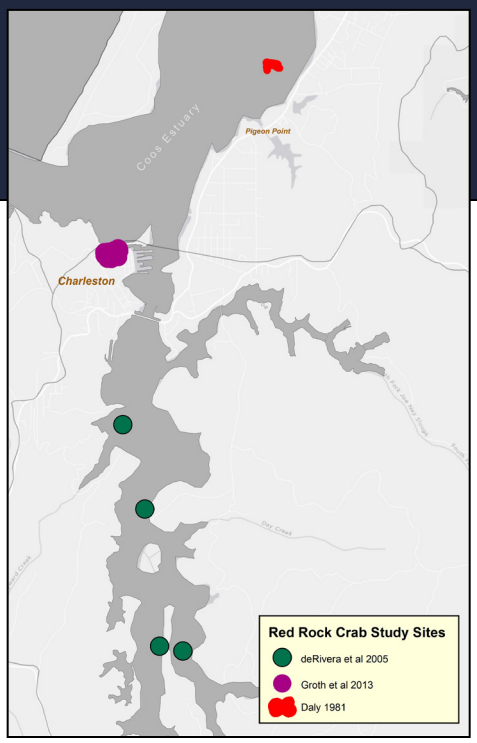
- *The population of red rock crab appears stable in the Coos estuary but more data are needed to understand the population dynamics of this species.*



Adult Red Rock Crab



Juvenile Red Rock Crab



Location of red rock crab study sites.

Evaluation

Populations appear stable, although these crabs have been minimally studied in the Coos system.

DATA GAP

What's happening?

Oregon Department of Fish and Wildlife (ODFW) regulates the harvest of red rock crab (*Cancer productus*) less rigorously than Dungeness crab, allowing any size or sex to be taken and a limit of 24 crabs per person per day. Despite this, scientists think red rock crab populations may be relatively stable in the Coos estuary. Preliminary results from a crab tagging study by Groth et al. (2013) show relative stability in Coos Bay's red rock crab's size distributions compared with those of Dungeness crab, though Groth urges caution on this point because the results may simply be highlighting red rock crab's high site fidelity (S. Groth, pers. comm., 2014). He also found that all red rock crab age classes are found year round within the estuary,

which differs from Dungeness crabs (larger crabs are found inside the estuary in the fall and smaller crabs in the spring and summer) (Figure 1). This work suggests, at minimum, the importance of the estuary as a year-round habitat for red rock crabs.

Distribution in the Coos Estuary

Red rock crab adults are found among rocks and hard bottom substrates. They're found mostly in estuarine habits and infrequently outside estuaries (e.g., nearshore ocean bottom, where Dungeness crabs are abundant) (S. Groth, pers. comm., 2013).

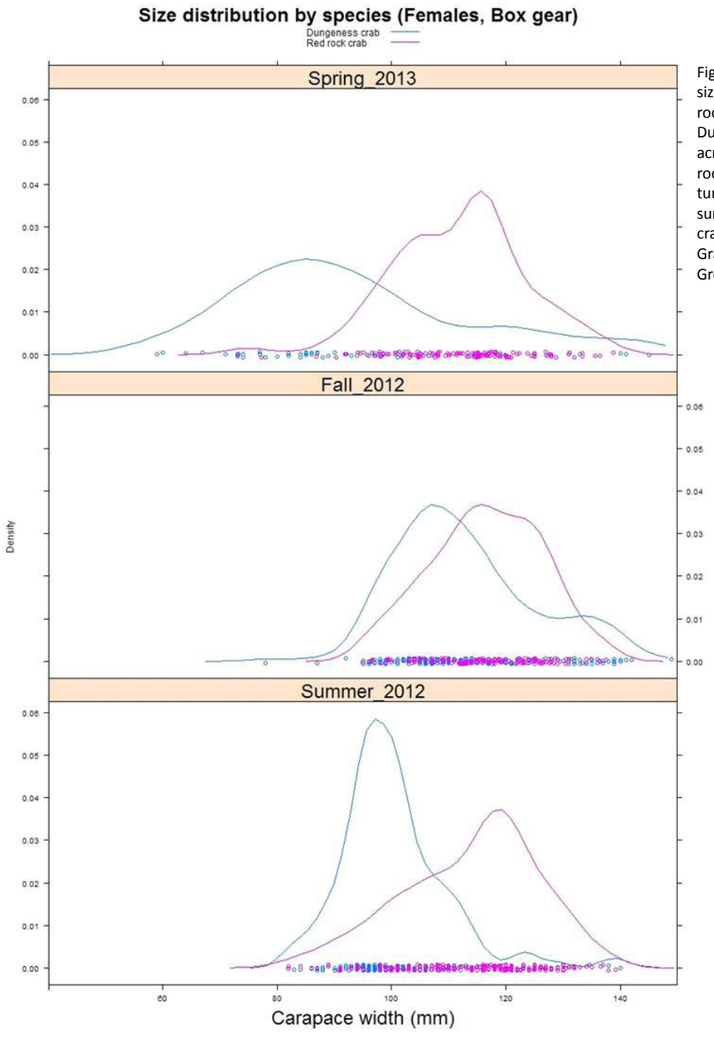


Figure 1. Density of different size classes of female red rock crab compared to Dungeness crab, shown across three seasons. Red rock crab population structure is similar spring, fall and summer, while Dungeness crab sizes shift seasonally. Graph (preliminary data): Groth et al. 2013.

Red rock crabs do not burrow and tend to avoid sandy substrates as they lack any straining apparatus for sand removal (Rudy et al. 2013). They have been found at Crown and Collver Points in South Slough (deRivera et al. 2005) as well as the inner boat basin in Charleston (S. Groth, pers. comm., 2013). deRivera et al. (2005) found the highest numbers of red rock crabs closest to the mouth of the South Slough and found them conspicuously absent at their Winchester Creek and Sengstacken Arm study sites in the upper South Slough estuary, possibly due to lack of suitable habitat (Figure 2).

Red rock crabs are often found at the rocky dredge spoils areas north of Pigeon Point, in the greater Coos bay (Daly 1981) and have been found as far up the Coos estuary as McCullough Bridge in North Bend, even in wintertime when they prefer to stay in the deeper, more saline water (S. Groth, pers. comm., 2013). Because red rock crabs are osmoconformers whose body fluids match surrounding sea water salinity, they cannot tolerate brackish or fresh water for any length of time (Carroll and Winn 1989). Consequently, red rock crab distribution is influenced by tidally-driven salt water concentrations and are thus more commonly found in lower regions of the bay in times of large freshwater input (i.e., winter) and further up the bay during dryer periods (Daly 1981). During periods of high salinity in the upper estuary, red rock crabs outcompete both *Hemigrapsus* shore crab species for prime intertidal habitat (Daly 1981).

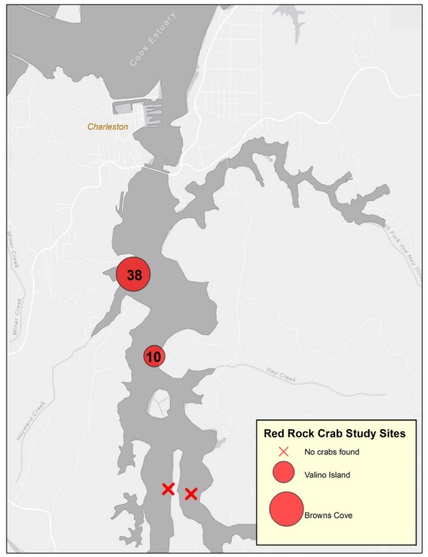


Figure 2. deRivera et al. (2005) study locations. Size of red circles represent relative abundance of red rock crab found. Numbers in symbols represent total number of red rock crabs caught at each site during a single trapping event.

An inventory of the abundance and spatial distribution of red rock crabs in the Coos estuary would be very useful to better understand this ecologically important species.

References

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