13. Habitat Partitioning, Densities, Population Structures, Reproduction, and Growth in Five Species of Spider Crabs (Brachyura: Majidae) in a Central California Kelp Forest. ANSON H. HINES, University of California, Santa Cruz, CA.

Pugettia richii, P. producta, Mimulus foliatus, Scyra acutifrons, and *Loxorhynchus crispatus* are the dominant Brachyurans in the kelp forest off Hopkins Marine Station, Pacific Grove, California. *P. richii* occurs primarily on *Cystoseira* and coralline algae, *Mimulus* in *Macrocystis* holdfasts, *Scyra* in low folliose red algae and cracks, *Loxorhynchus* in cracks and on invertebrate-encrusted rock, and *P. producta* on *Macrocystis* stipes and canopy. Four species have shown a gradual increase in numbers over the last year to present densities per m^2 of about: *P. richii* = 2.5; *Mimulus* = 2.5; *Scyra* = 1.5; *Loxorhynchus* = 0.2. Density of *P. producta* is too low to quantify accurately, perhaps due to predation by sea otters. Size-frequency distributions show that the population structures of the crabs have been stable over the past year, with no distinct age-classes present and reflecting their year-round reproduction. All except *Mimulus* show a continuously high brooding frequency of about 75%; *Mimulus* has a fall period of reduced brooding to about 25%. All of the species have a remarkably constant molt increment of 36% and a terminal puberty molt. The implications of this constancy with respect to trade-offs between growth and reproduction are compared for the size-spectrum from tiny *Scyra* to very large *Loxorhynchus*.

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