Fenberg P. B., M. E. Hellberg, L. Mullen, and K. Roy Genetic diversity and population structure of the size-selectively harvested owl limpet, *Lottia gigantea*. Marine Ecology, in press.

Size-selective harvesting can elicit a genetic response in target species through changes in population genetic subdivision, genetic diversity and selective regimes. While harvest-induced genetic change has been documented in some commercially important species through the use of historic samples, many commonly harvested species, such as coastal molluscs, lack historic samples and information on potential harvest induced genetic change. In this study, we have genotyped six microsatellite markers from populations across much of the California mainland range of the size-selectively harvested owl limpet (*Lottia gigantea*) to explore the genetic structure and diversity of this species. We found no significant genetic structure or differences in genetic diversity among populations of *L. gigantea*. Our results suggest high gene flow among populations and that differences in life history, demography, and body size previously observed between protected and exploited populations is largely due to phenotypic plasticity. From a conservation perspective, if proper actions are taken to curb harvesting, then exploited populations should be able to return to their pre-impact state given sufficient time.