

# **Guild structure of carnivorous intertidal fishes of the Chilean coast: implications of ontogenetic dietary shifts**

Alejandro A. Muñoz & F. Patricio Ojeda

## **Abstract**

Although ontogenetic changes in resource use within species are common in animals, these changes have not been widely considered in studies of guild structure within communities. The occurrence of one or more shifts in resource use in an individual of a given species during its life should mean that it would also belong to different guilds at different life stages. We specifically addressed this issue by describing the feeding habits of ten species of carnivorous fishes occurring in tidepools in rocky intertidal areas along the coast of central Chile. Most of these species undergo clear ontogenetic dietary shifts and a feeding guild structure of this group of fishes was established that takes these dietary shifts into account. Each species was divided into a number of size classes. Dietary overlap values between both intraspecific and interspecific size-class pairs in the entire group of ten species were used to construct a phenogram of dietary similarity through an UPGMA cluster analysis. Numbers of guilds and their memberships were established objectively by applying a bootstrapping procedure. Four “ontogenetic” feeding guilds (OFGs), each consisting of size-classes of species, were recognized. The majority of species belonged to more than one guild. Interestingly, when the bootstrapping procedure was applied to a phenogram based on the diets of “taxonomic” or complete species, only one significant guild was found. The implications of these ontogenetic dietary shifts for interspecific interactions are substantial because the identity of the species with which each fish species shares resources change through their lives. The usefulness of taxonomic species for investigating potential competitive interactions in this assemblage is greatly undermined.