



Photo credit: Glenn VanBlaricom.

KEY INFORMATION

Area(s) of Concern

California, USA, and Baja California, Mexico

Year Identified as "Species of Concern"
1999

Factors for Decline

- Overfishing
- Disease due to withering syndrome
- Poaching
- Destruction of intertidal habitat
- Natural predation
- Competition for resources

Conservation Designations

IUCN: Critically Endangered

Current Status:

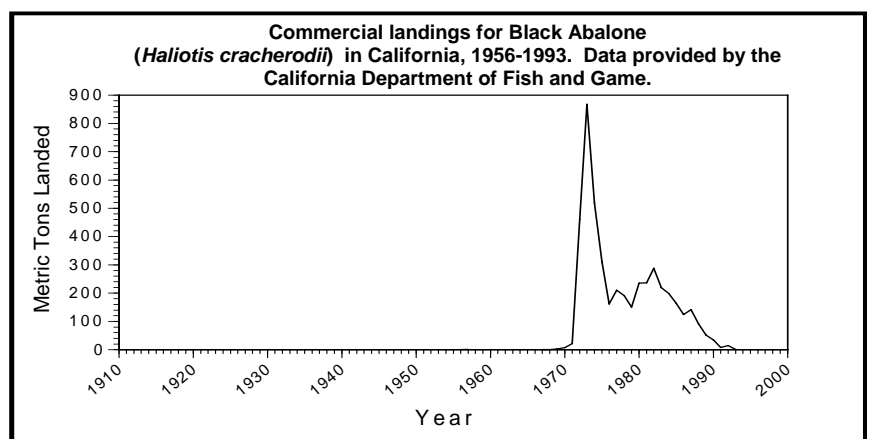
Demographic and Diversity Concerns:

Black abalone has experienced population decline due to **overfishing** and disease (i.e., **withering syndrome**) throughout its range and has gone locally extinct in most locations south of Point Conception, California, USA. Withering syndrome was first evidenced at the northern Channel Islands in 1985 (Richards and Davis 1993; Friedman et al. 1997). Full manifestation of disease became more prevalent in the southern portion of its range (South of Point Conception) where water temperatures are relatively higher. Die-offs also occur in habitats north of Point Conception where water temperatures have become elevated due to anthropogenic activities (Alstatt et al. 1996).

It is believed that declines in population abundance have resulted in repeated recruitment failure due to risks associated with the **Allee effect** (Allee et al. 1949). The Allee effect describes a situation whereby a decrease in population size leads to decreases in reproduction and survival of individuals. In the case of black abalone, this effect is likely due to increasing distance among potentially spawning males and females, leading to **reproductive failure**, as the population density decreases. Evidence of genetic differentiation among remaining populations, localized recruitment (Chambers et al. 2005; Chambers et al. 2006), and decreasing population size have also raised concerns about **genetic inbreeding**.

Existing Protections and Conservation Actions:

The National Marine Fisheries Service (NMFS) status review is underway and is expected to be complete by autumn 2007. Transect surveys are conducted by the Multi-Agency Rocky Intertidal Network (MARINE), Glenn van Blaricom, Alan and Susanne Miller, National Park Service, Brian Tissot, Tenera Environmental, and Pete Raimondi.





Species of Concern

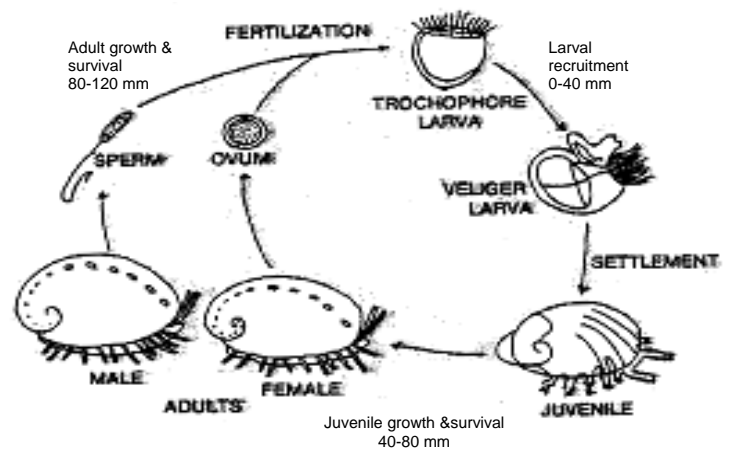
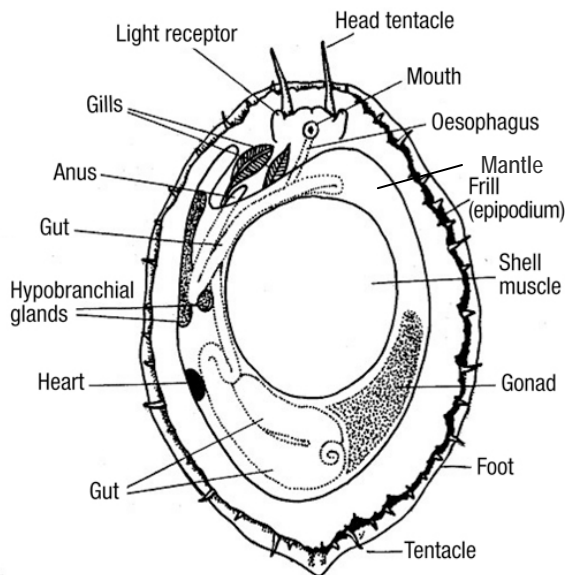
NOAA National Marine Fisheries Service

Brief Species Description:

Black abalone range from Cabo San Lucas, Baja California Sur, Mexico, north to Mendocino County, California, USA, (California Department of Fish and Game 1986). These marine gastropods can typically be found wedged into crevices, cracks, and holes of intertidal rocks during low tide.

The smooth shell of the black abalone is black or slate blue on the outside with a pearly white interior. Both the mantle and foot are black. Five to nine open flush pores (respiratory pores) can be found on the left side of the shell, and spiral growth lines are evident on the posterior.

Black abalone are herbivorous, feeding mostly on kelp and drift algae. Tentacles surrounding the foot and extending out of the shell sense food and predators. The species' exhibits separate sexes, and individuals spawn primarily during the summer months (Hamm and Burton 2000).



Contact Information

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References:

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- Alstatt et al. 1996. Mar. Ecol. Prog. Ser. 142:185.
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