

## WHAT IS BEING DONE TO SAVE OUR ABALONE?

- Fishing for abalone in Washington State has been illegal since 1994.
- Abalone are being raised in hatcheries in order to better understand abalone reproduction and in order to produce sufficient numbers of abalone to supplement and to restore natural populations.
- Abalone studies are on-going to understand the best methods by which hatchery-raised animals can/should be outplanted into the wild.
- Scientists are studying the genetics of abalone in Washington State to identify the best methods to maintain animal / population health throughout the outplanting process.
- We are teaming up with groups like the Seattle Aquarium, the Marine Resources Committees, dive clubs, the Port Townsend Marine Science Center and others to educate the public.



Jordan Watson



Josh Bouma

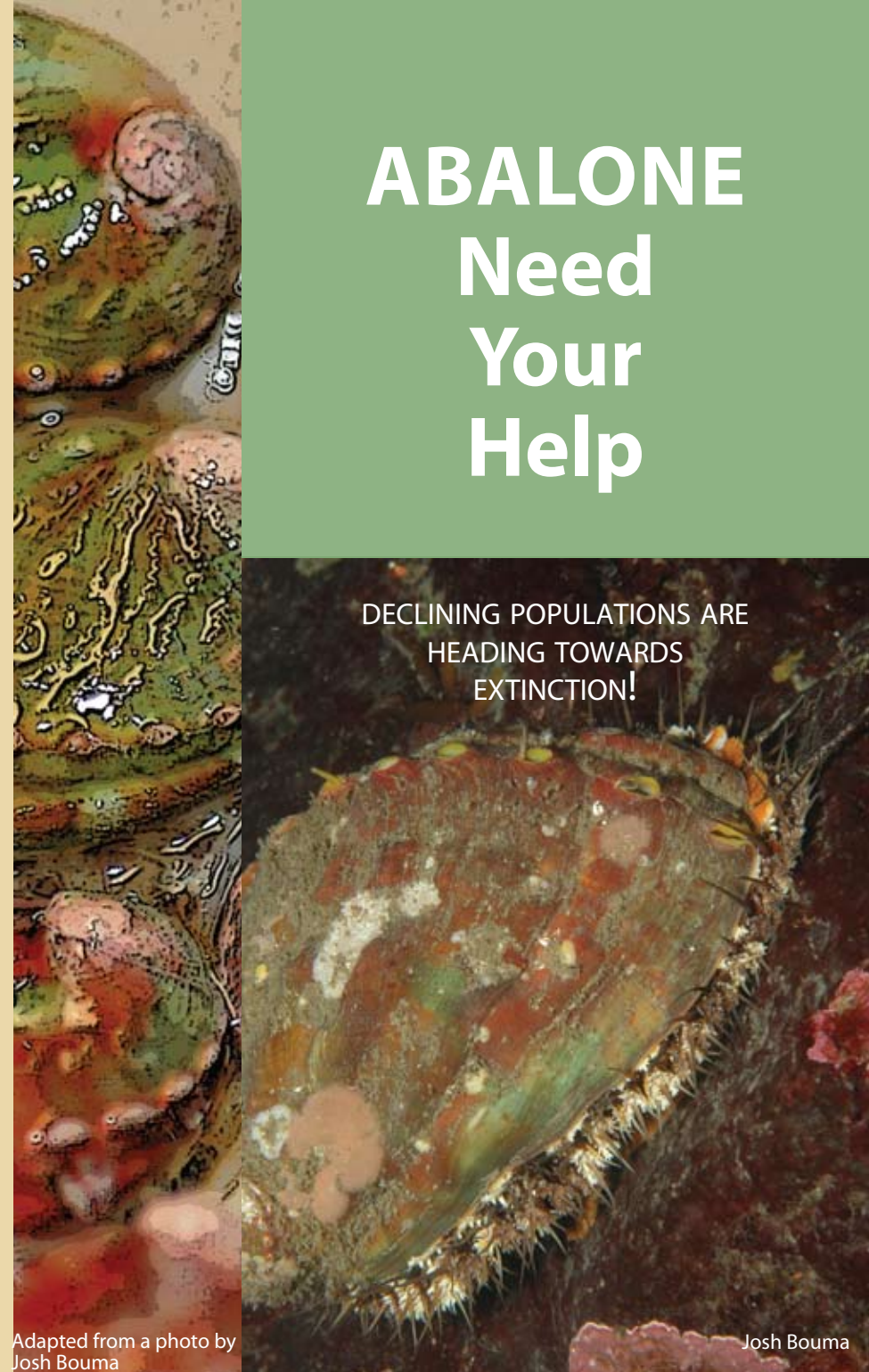
## WHO IS WORKING TO SAVE OUR ABALONE?

In addition to concerned citizens like you, several organizations are working to save our abalone, including universities, state & federal agencies and local non-profits:

- Baywater, Inc.
- Puget Sound Restoration Fund
- NOAA / Washington Sea Grant
- Northwest Straits Initiative
- Port Townsend Marine Science Ctr
- The Russell Family Foundation
- SeaDoc Society
- Seattle Aquarium
- Shannon Point Marine Center
- University of Washington
- Washington Department of Fish and Wildlife

# ABALONE Need Your Help

DECLINING POPULATIONS ARE  
HEADING TOWARDS  
EXTINCTION!



Adapted from a photo by  
Josh Bouma

Josh Bouma

# SAVE OUR ABALONE

Since 1992, abalone populations in Washington State have declined by as much as 77%.

## WHAT IS AN ABALONE?

Abalone are marine snails (gastropod molluscs), known worldwide for their beautiful, mother-of-pearl shell and their large muscular foot, a prized delicacy.



## WHERE DO ABALONE LIVE?

More than 60 abalone species are found worldwide but pinto, or northern, abalone is the only species found in Washington and British Columbia. Pinto abalone range from California to Alaska, and are generally found in relatively shallow water. They prefer nearshore, rocky habitats with large macroalgae, or kelp, and crustose coralline algae (the hard, thin pink layer seen in the photo above).



## WHAT EATS ABALONE?

Abalone's natural predators include *Pycnopodia*, (a voracious sea star, also known as the sunflower star

[above]), sea otters and certain predatory fish, like cabezon. But humans are abalone's most significant predator.



## WHAT DO ABALONE EAT?

Abalone use a file-like tongue, or radula, to scrape away at macroalgae, or kelp (*Nereocystis* or *Macrocystis*). When abalone are young, this radula is used to scrape diatoms, or microalgae, off of rocks. As they mature and begin to eat red and brown colored kelp, their shells become colored with pigments from this new diet. In the photo above, hatchery-raised abalone exhibit this recent switch in their diet.

## HOW DO ABALONE PROTECT THEMSELVES?

The abalone's strong muscular foot (right) holds it firmly onto rocks while its shell acts as a protective shield against predators and the harsh environment. Abalone spend much of their lives hidden in crevices and under ledges. As they grow, their shells become covered in algae, bryozoans or other hitchhiking organisms, making them especially well-camouflaged (photo, next page).



## HOW DO ABALONE REPRODUCE?

Abalone are broadcast spawners. Males and females release sperm and eggs (gametes) into the water and these gametes must find each other in order to fertilize successfully. This requires individuals to be close together and in sufficient numbers in order for populations to be sustainable. As population densities in Washington decline, successful reproduction becomes more difficult.



## HOW MANY ABALONE ARE THERE?

Abalone are difficult to count because they hide so well, but a special dive team from the Washington Department of Fish and Wildlife spends several months each year counting abalone. These divers have discovered that surveyed populations in Washington have declined by nearly 80% since 1992. If abalone continue to decline at such rates, they may become extinct from Washington in just a few more years.