



SANCTUARY HABITAT: THE ROCKY INTERTIDAL



Along the coast of the Gulf of the Farallones and Monterey Bay National Marine Sanctuaries lies a special habitat where the land meets the sea—the rocky intertidal. This rocky area between the low and high tides is biologically rich, supporting a diverse assemblage of plants and animals. Organisms living here face many challenges that are unique to living at the edge of the sea, where changing tides and pounding waves prevail. Inhabitants of the rocky intertidal have adapted to these conditions in many special ways.

DETERMINING FACTORS . . .



WATER LOSS

As the tide goes out, water loss becomes a problem for residents of the intertidal zone. Mobile animals prevent drying out (desiccation) by hiding under wet algae and rocks or in crevices or tidepools. Less mobile organisms close up, like a mussel pulling together its valves or a limpet tightening down its shell onto the rock. Seaweed can lose up to 90% of its moisture and survive until the tide rises again.



WAVE ACTION

Organisms must deal with the physical pounding of waves. Many rocky intertidal inhabitants anchor firmly and hold tight to the rocks as limpets do with their muscular foot, mussels with their byssal threads, and seaweed with their holdfasts. Body design, such as being flexible or very flat and close to the rocks, also minimizes the impact of waves. Some organisms, like tube-building worms, build their dwellings so that the seawater flows around them with the least resistance. Others avoid injury by staying close to protected surfaces, or hiding in cracks and under ledges.



sea palms



photo by Joe Heath

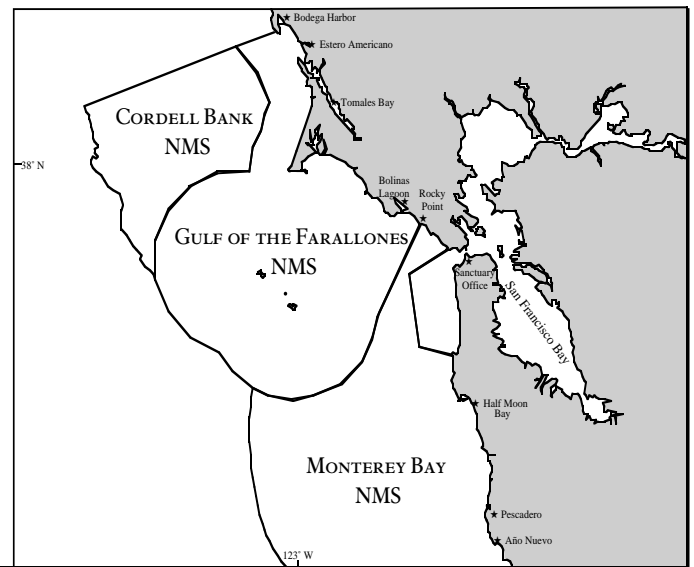
Our local Sanctuaries offer many opportunities for tidepool discoveries.

LIMITED SPACE

The rocky intertidal has a limited amount of surface area, especially in the lower zones, for the many organisms which dwell there. Organisms cope with limited space either by growing on each other, bulldozing others out of their territory, or growing quickly to out-compete their neighbors.



continued on reverse



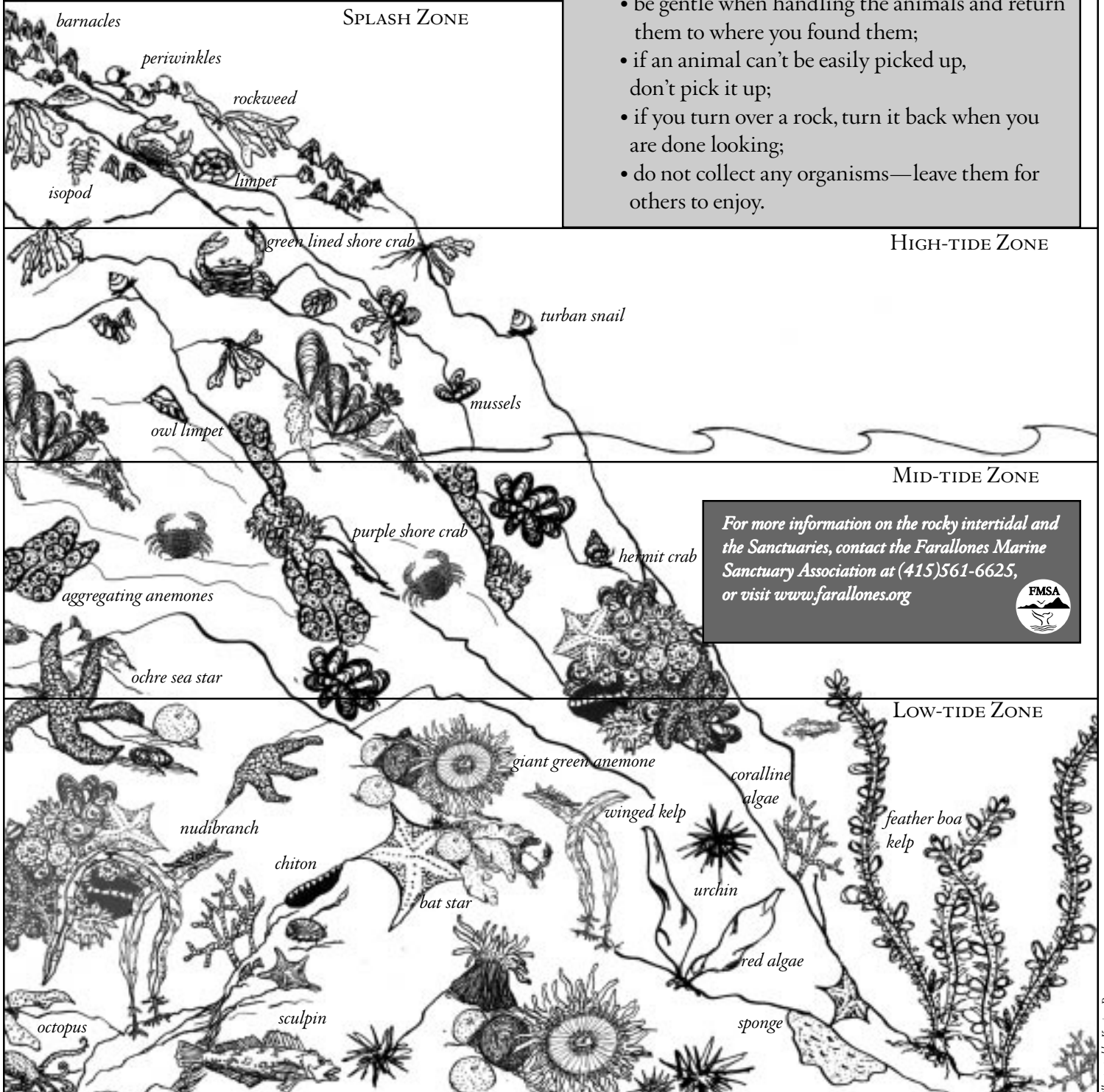
INTERTIDAL ZONATION ...

The rocky intertidal is divided into distinct horizontal bands resulting from the interaction between physical and biological factors. These zones are identified as the splash zone and the high, middle, and low tide zones. An organism's ability to tolerate physical and biological factors determines where they live. The upper zones are characterized by organisms that can tolerate extreme changes in desiccation, salinity, and temperature whereas the lower zones tend to be colonized by those that are better at dealing with biological pressures such as predation and competition for space.

TIDEPooling ETIQUETTE:

While exploring the rocky intertidal and getting acquainted with some of the inhabitants of the Sanctuaries, please follow these guidelines:

- wet your hands before handling anything;
- be gentle when handling the animals and return them to where you found them;
- if an animal can't be easily picked up, don't pick it up;
- if you turn over a rock, turn it back when you are done looking;
- do not collect any organisms—leave them for others to enjoy.



For more information on the rocky intertidal and the Sanctuaries, contact the Farallones Marine Sanctuary Association at (415)561-6625, or visit www.farallones.org

