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TITLE: Chile: Environmental Status and Future Perspectives

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ABSTRACT:

The coast of mainland Chile extends from 18°S to about 56°S, and is about 4200 km long. In the north, the coast is characterized by continuous, regular, and wave-exposed shores, while to south of 40°S it is highly fragmented, with extensive fjords and small archipelagos with many wave-protected zones. The Humboldt Current System (HCS) determines oceanographic and ecological processes in the northern part, with persistent upwelling fronts and episodic 'El Niño' events. In the southern part the southward-flowing Magellan Current is important. Coastal upwelling along the HCS sustains a diverse pelagic and benthic food web structure. Rocky coastal habitats are dominated by large kelp forests and filter-feeding species like reef-forming mussels and tunicates. The main coastal habitats along the coast of Chile are rocky shores, sandy beaches, coastal wetlands, and dunes. The main populated zones are concentrated between 33°S to 35°S in central Chile, with economically important trading ports. Sewage discharges from large cities have the potential to increase nutrients levels in nearshore habitats causing localized eutrophication. Mining activities in northern Chile contaminate coastal waters, while in the south intensive aquaculture affects the fjord ecosystem. Also, subsistence harvesting (of kelps, molluscs, fish) is dramatically reducing the abundance of top consumers or habitat-forming species. The diverse and productive coastal marine ecosystems are used by different socioeconomic activities and exposed to interventions which are potentially harmful. Ecosystem services should be managed, and necessary interventions carefully planned. Achieving sustainable use of natural marine resources and coastal ecosystem integrity is challenging, and a basic understanding of ecosystem responses to direct human impacts and global climate change require better monitoring strategies. The establishment of a marine reserve 'Humboldt Current System' would be a major step toward this goal.

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