

# Leeuwin current



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A naturally occurring environmental phenomenon that derives from the Pacific Ocean's eastern part close to South America, El Niño has the capability to greatly alter and disturb the weather patterns of the world (" El Niño," 1998). With the English translation of " The Child", El Niño poses a great deal of disruption to fishing for a lengthy time. While the waters of Australia's western region appears to be quite a distance away from South America's coast, the El Niño has its striking effects on the local fishing catches of Australian fisherman. The reason behind such a striking effect even at such a great distance is largely because of the Leeuwin Current, the tropical current that flows in the south.

The Leeuwin Current is responsible for transporting tropical water that is warm towards the south near the continental shelf of the Western Australian coastal region (" The Leeuwin Current," 2005). The current is also accountable for the subsistence of coral reefs as well as the manifestation of tropical species at the island of Rottnest as well as the area of the southern coast.

The rest of the currents traversing the Pacific as well as the Atlantic Oceans in the eastern side of the southern hemisphere differ to that of the Leeuwin Current. The Leeuwin Current varies to those of the Benguela and Humboldt Currents in the sense that the latter bring to the north cold waters from the south. Since the Leeuwin Current is composed of clear, low-nutrient and warm water that do not support the creation of huge numbers of finfish, the current results to the production of huge numbers of invertebrate animals which include prawns as well as rock lobsters.

During the months of winter and autumn from April to September, the Leeuwin Current's flow is at its peak where the temperature of the surface of the sea are shown in the National Oceanic and Atmospheric Administration (NOAA) satellite images as a warm flow of water to the south reaching up to the speeds of more than 3 knots and with the average speed running at about 1 knot.

El Niño periods have a direct impact on the strength of the Leeuwin Current which correspondingly affects the biological diversity and fisheries of Western Australia (Caputi, Fletcher, Chubb, Joll, & Pearce, 1997). More specifically, the Leeuwin Current influences the degree of catches of western rock lobsters since the current directly affects the 11 month journey of these lobsters during their early stage as planktons drifting in the currents of the ocean that settle on the inshore coastal regions after.

For the duration of an El Niño time, tropical rains typically focused over Indonesia move towards the east, swaying atmospheric wind schemes globally (Diaz & Markgraf, 1994). Probable effects consist of a changing of the jet stream, hurricane tracks and heavy shower, creating unseasonable weather conditions in numerous areas of the world.

Hence, as atmospheric wind patterns and oceanic water flows are altered by the El Niño, the Leeuwin Current is directly affected as well. The major alteration is evident in the shifting of the flow of the Leeuwin Current, thus, correspondingly changing the proliferation and the emergence of numerous aquatic animals dependent on the current. Some of these include the western rock lobsters, scallops, western king prawn, pilchards, whitebait, and the Australian salmon and herring (Holloway, 1995). All of these marine

animals are abundant in the fisheries of Western Australia. Thus, an alteration in the Leeuwin Current caused by El Niño greatly affects the population of these aquatic animals in the western region of Australia.

Since biological diversity entails the balance and the interrelation among the various species of animals, a change such as an increase or a decrease in the population of a specific species of marine animals within the region of Western Australia causes an imbalance in the overall marine biological diversity.

#### References

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