Value of Hawai‘i's Coral Reefs Pegged at $10 Billion, Economic Benefits Estimated at $360 Million a Year, Says International Reef Expert
Research Funded by the Hawai‘i Coral Reef Initiative Research Program

HONOLULU - Hawai‘i's coral reefs generate $360 million a year for Hawai‘i's economy, based on reef-related tourism and fisheries activities, while the overall value of the state's 410,000 acres of potential reef area is estimated at $10 billion.

That's according to Dr. Herman Cesar, a noted international reef expert who has just completed an extensive study of the economic value of Hawai‘i's coral reefs for the Hawai‘i Coral Reef Initiative Research Program, a joint program of the University of Hawai‘i and Department of Land and Natural Resources. Cesar is the principal of Cesar Environmental Economics Consultants and a researcher at Vrije Universiteit in Amsterdam. He has done similar studies for the World Bank and other international organizations.

"The conclusion of our project is that Hawai‘i's coral reefs are an invaluable economic asset, not only as a major attraction for the visitor industry, but as a valuable fisheries resource," said Cesar. "At the same time, these reefs are very fragile and, if not properly protected and managed, could turn into an incalculable financial and environmental loss for the people of Hawai‘i," he added.

Dr. Cesar based his economic estimates on a host of statistics and survey data, including annual spending of $540 million by tourists and residents attributed to coral reefs, based on direct expenditures for dive and snorkel trips and on expenditures engaging in these activities; the value of reef-associated fisheries estimated at $2.5 million a year; related scientific research funding calculated at around $10 million annually; and non-use (preservation) value and multiplier effects. Cesar did not include such factors as reefs providing a natural barrier against wave erosion and coastal hazards, cultural values, and other intangible benefits which are difficult to measure in monetary terms.
Despite its value, the quality of coral reefs in Hawai’i is declining. A variety of human practices threaten reef health: nutrient overload, sedimentation, tourism, invasive algae, and over-fishing. Cesar said the traditional ahupua'a concept, which once ensured that impacts of land-based activities on coral reefs were taken into account, has been eroding due to modern land use planning and a cash economy. Noted Cesar, "Economic valuations, such as what we've done, can help to re-instill the idea that everything in nature is interdependent by stressing the importance of coral reef functions in monetary terms and communicating the importance of reefs to policy-makers and the public."

In addition to the statewide economic valuation study, Cesar also examined issues surrounding three specific reef-related issues in Hawai’i.

Educational Value of Coral Reefs at Hanauma Bay: Among Cesar's conclusions were: (a) the total value of Hanauma Bay as an asset is over $1 billion; (b) the $13 million investment in the Marine Education Center will eventually result in an annual benefit of $44 million, less approximately $2 million in operating expenses; and (c) visitors are willing to pay more for their Hanauma Bay experience than the current $3 admission. In regard to the last point, a survey taken earlier this year at the bay revealed that visitor spent an average of $38 per visit to the bay, of which the entry fee was only $3. About 85 percent of the respondents went snorkeling or diving. When queried about the value of their experience, only 13 percent felt they had spent too much. In fact, on average the respondents were willing to pay $5 more than they actually did. When asked how much more they would be willing to pay, if a significant share of that additional money was used for conservation, the response was $8 more.

Amenity Value of Coral Reefs at Kihei: Algae is a significant nuisance to condominium owners and tourists in North Kihei, Maui. The cause of the algae problem is not entirely known, but based on the conclusions of recent studies, potential contributing sources include injection wells, wastewater discharge, storm water and agricultural runoff, and golf course runoff. Some Kihei residents associate the build-up with oceanographic changes from man-made and coastal processes. Economic estimates of the aggregate negative impact of algae on property values and loss in rental income, as well as clean-up costs, were pegged at $72 million. Cesar noted that upgrading the sewage treatment plant in Kihei is a positive step in solving this problem.

Economic Value of Aquarium Fisheries on the Kona Coast: Estimates indicate that aquarium fisheries are one of the most valuable nearshore fisheries in terms of value added. With a total benefit value of $2 million a year, aquarium fisheries still are modest compared to reef-related recreational activities. Along the Kona Coast, which supplies nearly 60 percent of the state total, the government-imposed Fisheries Replenishment Areas (FRA) have decreased conflicts between aquarium fishers and other reef users over the past few years. Evidence is showing that rare fish species in the area are replenishing. Meanwhile, aquarium fish catch along the Kona Coast have been relatively stable over the last few years. Reef related tourism spending, recreational activities by residents and the preservation (non-use) value of the Kona coast total about $8.3 million.

The Hawai’i Coral Reef Initiative Research Program (HCRI-RP) was established in 1998
to support monitoring and research activities to build capacity in managing Hawai`i's coral reef ecosystems. The Program is currently in its fourth year of operation and has grown to fund several diverse research projects all aimed at managing and protecting Hawai`i's coral reefs. HCRI-RP is cooperatively managed by the State Division of Aquatic Resources and the University of Hawai`i. Further data is available at the Hawai`i Coral Reef Initiative Research Program's web site at http://www.hawaii.edu/ssri/hcri. For more information, please contact the Hawai`i Coral Reef Initiative Research Program office at 808-956-7479.

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