

GOAL 4: **UNDERSTAND SOCIAL AND ECONOMIC FACTORS**

KEY THREATS ADDRESSED

Understanding the value and human use of coral reefs (i.e. social and economic factors) is critical to reducing threats to coral reef ecosystems. The figure below is a general summary of the relative importance (H = high, M = medium, L = low) of this goal in addressing the impacts of key threats. A higher ranking suggests that activities under this goal are considered more important to addressing the threat. Lower rankings suggest that although activities under this goal may make significant contributions, they may currently be less important to addressing the threat. The rankings are a summary of input shown in Table 2. The actual importance of this goal to addressing threats to reefs will depend on location and other factors (see Tables 3 and 4 for regional comparisons).

THREATS	Global Warming/ Climate Change	Diseases	Hurricanes/ Typhoons	Extreme Biotic Events	Overfishing	Destructive Fishing Practices	Habitat Destruction	Invasive Species	Coastal Development	Coastal Pollution	Sedimentation & Runoff	Marine Debris	Overuse from Tourism	Vessel Groundings	Vessel Discharges
Understand Social and Economic Factors	H	L	L	L	H	H	H	M	H	H	H	L	M	L	L

RATIONALE FOR ACTION

Coral reef ecosystem managers must balance sustainable use and conservation; therefore, understanding the relations between human behavior and reef ecosystems is critical. Coral reef ecosystems in nearshore waters are particularly vulnerable to the effects and impacts of human activities, both through direct exploitation of reef resources, and through the indirect impacts of adjacent land-based activities such as polluted runoff from coastal development. The converse is also true – the livelihoods and prosperity of people living in coastal tropical areas depend on, and influence, the condition of the marine resources. Therefore, coral reef ecosystem uses, management, and ecology can not be considered in isolation. Coastal activities and their eventual impacts on reefs, are inextricably woven into the social, cultural, and economic fabric of regional coastal communities. Consequently, meaningful reductions in human impacts on reefs will require a greater understanding of, and management attention to, the underlying motivations

and beliefs that influence our commitment to conserving healthy coral reef ecosystems.

Understanding the socioeconomic context of the reef stakeholders is essential for assessing, predicting, and managing reef use. To balance sustainable use and protection, the reef manager needs to know the people that use and affect the reef, including their use patterns, perceptions of reef management, and characteristics. This human dimension, which is crucial to the long-term success of management strategies, is often overlooked. It is particularly important among many of the U.S. Islands, in which traditional uses of coral reef resources, including subsistence fishing, have been an integral part of locally managed sustainable use for generations.

SOCIOECONOMIC STRATEGY

The strategy to achieve this goal is outlined in the U.S. National Action Plan to Conserve Coral Reefs and related documents of the Social and Economic Subgroup of the U.S. Coral Reef Task Force. For more detailed information see <http://coralreef.gov/>. In recognition of the fundamental importance of the human dimension to successful coral reef conservation, the social, economic and cultural dimensions of coral reef issues are also integrated into other goal areas. The strategy outlines three objectives to meet the goal of increasing understanding the social and economic factors necessary for effective coral reef conservation:

- Objective 1: Assess the social and economic uses of coral reef systems, and monitor human communities that use/depend on coral reef ecosystems.
- Objective 2: Assess the social and economic impacts of reef management on human communities.
- Objective 3: Assess the social, economic and cultural value of reef resources.

SUMMARY OF ACCOMPLISHMENTS (2001)

The following is a partial summary of recent accomplishments by federal and non-federal members of the U.S. Coral Reef Task Force to achieve the goal and objectives. For more detailed information see <http://coralreef.gov/>.

Objective 1 Accomplishments:

- Began a survey of commercial trap fishermen, collecting socioeconomic information to assist in decisions on whether to limit the number of traps in reef fisheries in the U.S. Caribbean. (NOAA and Partners)
- Implemented monitoring program for artificial reef use in Florida. (Florida)

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- Conducted socioeconomic assessment surveys with community groups in USVI. (USVI)

Objective 2 Accomplishments:

- Supported the Global Coral Reef Monitoring Network in its effort to provide critical information and data on socioeconomic aspects of coral reef ecosystems.

Objective 3 Accomplishments:

- Conducted reef valuation study in Guam. (Guam)
- Incorporated socioeconomic materials into draft “toolbox” for use in developing/reviewing National Environmental Policy Act (NEPA) documents. (NOAA)
- Initiated literature review and developed format for centralized socioeconomic database.
- Published the *Socioeconomic Manual for Coral Reef Managers*, a major new resource to help managers and communities assess social and economic value and other aspects of coral reef ecosystems. Made the manual available via the Web at <http://wcpa.iucn.org/biome/marine/socioecon.html> (NOAA and Partners)
- Develop regional economic valuations of coral reef ecosystems and incorporated findings into regional management strategies, priorities and decisions. (NOAA)

Implementation Plan 2002-2003

The Social and Economic subgroup of the U.S. Coral Reef Task Force, working with many partners, has identified some priority actions in FY 2002 and 2003 to achieve the goal and objectives outlined in this strategy. Successful implementation of the strategy is contingent on funding and other factors and relies on efforts by a variety of partners. The following is a partial summary of key actions needed from government and non-governmental entities in 2002-2003 to help fulfill the objectives. More detailed information is available from the subgroup and member organizations of the U.S. Coral Reef Task Force (<http://coralreef.gov/>).

To Address Objective 1:

- Incorporate socioeconomic mapping into existing biophysical mapping projects to strengthen coral reef management and ensure effective decision-making.
- Evaluate examples of traditional and community-based coral reef conservation efforts on coral reefs, particularly in the U.S. Islands, and transfer the lessons learned to other management programs.

To Address Objective 2:

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- Continue monitoring and comparisons of artificial reef habitats vs. natural habitats and user values in Florida.
- Continue research on social and economic costs and benefits of coral reef marine protected areas (e.g., Florida Keys coral reef ecosystem and others).

To Address Objective 3:

- Continue regional assessments and economic valuation work in Florida and other areas.
- Complete database of socioeconomic information and start to implement use of database in regional management decisions.
- Complete socioeconomic portion of pilot “toolbox” for federal agency use in developing/reviewing (NEPA) documents related to coral reefs.

E. ACTION THEME 2: REDUCING HUMAN IMPACTS

The most severe of the growing number of threats to coral reefs stem directly from human activities. Human impacts on reefs range from direct exploitation of specific natural resources (e.g. fishing, coral and live rock extraction, and sand mining), to more diffuse degradation of large reef tracts caused by runoff of sediment or polluted waters from urban areas, mangrove deforestation, coastal development or other upland activities. These impacts are exacerbated by degradation of the overall marine environment due to global climate change.

While the nature and magnitude of human impacts vary tremendously among reefs domestically and internationally, in the U.S., many of the underlying activities are authorized and regulated under law and therefore can be managed or mitigated using existing federal and state authorities and programs tailored to local needs. In addition, human impacts stemming from lands under private ownership can be minimized through voluntary implementation of various model conservation measures. On a broader scale, consumer and life style choices made every day by Americans and others around the world contribute to global warming, pollution, overexploitation and other stresses on coral reefs worldwide.

To a very real extent, the future of U.S. coral reefs depends on our capacity to reduce or eliminate avoidable human impacts, both domestically and internationally. To that end, this portion of the strategy focuses on reducing human impacts on coral reef ecosystems. It builds on 9 of the critical conservation goals adopted by the U.S. Coral Reef Task Force in its National Action Plan. This strategy is designed to reduce or eliminate the most significant and tractable threats to coral reefs through the action towards the following goals:

- Goal 5: Improve the Use of coral reef marine protected areas;
- Goal 6: Reduce Impacts of Fishing and Other Extractive Uses;
- Goal 7: Reduce Impacts of Coastal Uses;
- Goal 8: Reduce Pollution;
- Goal 9: Restore Damaged Reefs;
- Goal 10: Improve Outreach and Education;
- Goal 11: Reduce Threats To International Coral Reefs;
- Goal 12: Reduce Impacts From International Trade; and
- Goal 13: Improve Coordination and Accountability.