State of U.S. Coral Reef Ecosystems: 2005

What the report is:
- Product of broad collaboration among Federal, State/Territory, academic, and private partners
- First use of spatially-explicit quantitative monitoring data to assess condition of U.S. coral reef ecosystems
- Addresses requirements outlined in the *National Coral Reef Action Strategy* and the Coral Reef Conservation Act of 2000

Why the report is important:
- Tool for increasing management effectiveness
- Advances integration and coordination of reef monitoring efforts
- Promotes coral reef observing systems
Key Messages from the Report

What the report provides:
• Descriptions of threats to reef ecosystems
• Inventory of monitoring programs by jurisdiction
• Summarized results of monitoring efforts
• Review of recent current conservation management activities
• Conclusions and recommendations
• National summary
• Standardized GIS maps—key locations, storm paths, monitoring sites, benthic habitats

What the report doesn’t provide:
• A quantitative national-level assessment comparable across jurisdictions
• Complete integration of monitoring data
• Direct cause and effect relationships between stressors and resource condition
• Comprehensive comparison of historical data to current reef ecosystem condition

Monitoring locations in Palau

A crown-of-thorns sea star
• Coral reef ecosystem condition varies within and among jurisdictions
• Differences in monitoring techniques prevent comparisons among jurisdictions
• Some threats intensifying while others are decreasing. Key threats include: fishing, land-based pollution, diseases, storms, vessel groundings, and climate variability
• Reefs near population centers and industrial areas generally have greater impacts from fishing pressure, sedimentation, land-based pollution, and recreational use
• Quantitative data available for many metrics of coral ecosystem condition
• More tools available for effective management (e.g., digital habitat maps)
• Moving towards an integrated national coral reef ecosystem monitoring network
Monitoring programs most frequently target:
- seafloor community composition
- coral cover and diversity
- prevalence of disease
- fish abundance

Coral reef protected areas contribute to increased fish biomass and abundance.

Example jurisdictional results:
- In the U.S. Caribbean and parts of Florida, ‘coral rubble overgrown with algae’ is now the dominant habitat type.
- The uninhabited Northwestern Hawaiian Islands and Pacific Remote Islands support robust fish communities.
- Fish assemblages near populated areas are often far less abundant with few large fish and apex predators.
- Alien algae have proliferated on many Hawaiian reefs and pose a significant threat to Hawaii’s unique native marine biodiversity.
• National Summary table presents the relative level of ‘perceived threat’ for each jurisdiction in 2002 and 2004

• Changes in perceived threat value are presented for each threat and jurisdiction

• Information is based on the expert opinion of writing teams in each jurisdiction
### Report Conclusions—National Summary

#### Key parameters monitored in each jurisdiction.

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<th>Jurisdiction</th>
<th>WATER QUALITY</th>
<th>BENTHOS</th>
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Looking Ahead—The Way Forward

- Regional monitoring workshops planned for Spring 2006
- Bulk of writing targeted for 2007 to enable publication in Spring 2008 and distribution at ICRS
- Threat section updates to characterize how threats may be changing and identify emerging issues
- Incorporate additional monitoring data sets
- Addition of data collected in 2004-2006
- Broader collaboration among scientists and managers
- Suggestions for improving process, communication, and stronger support for writing teams
- Expanded National Summary chapter
- Potential outline modifications to better incorporate human dimensions, socio-economic and cultural aspects
Digital (Adobe PDF) files of the entire report and individual chapters are available at: