

Coral Reef Information System (CoRIS): A One Stop Shop for Coral Information

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Abstract. As a coral reef ecosystem manager, one may be overwhelmed with the range of threats encountered on a daily basis. “How do I diagnose coral diseases?” “Which invasive species may inhabit my reef area?” Scientists and students may also find themselves perplexed over the answers to these same questions. “What is being done to combat these issues?” “Where can I find discussions on coral related topics?” The answers to these questions, and many more, may be found in the National Oceanic and Atmospheric Administration’s (NOAA’s) Web-enabled Coral Reef Information System (CoRIS). CoRIS data discovery tools provide access to metadata, data, and information from the NOAA Coral Reef Conservation Program (CRCP) and other coral reef projects. CoRIS offers original essays that describe coral biology and physiology, reef structure, and types of reefs, among other topics. The CoRIS Library enables searching and browsing through a growing collection of NOAA’s coral ecosystems-related publications, reports, Web sites, educational materials, and digital images. One of the most popular features of CoRIS, the Glossary, defines thousands of terms used in coral reef science and management. Whatever your coral reef data and information needs may be, you can begin your search at the CoRIS website.

Key Words: Coral Reef Conservation Program, Metadata, Data.

Introduction

Destructive fishing practices, increases in sea surface temperatures, habitat destruction, diseases, and invasive species: such are the trials and tribulations in the life of a coral reef. The world’s coral reefs are threatened and in decline. It is estimated that 10 percent are now beyond recovery, 30 percent are in their critical stages and may die in the next 10-20 years, and 60 percent may die by the year 2050 (USCRTF 2000).

As a coral reef ecosystem manager, one may be overwhelmed with the range of threats encountered on a daily basis. “How do I diagnose coral diseases?” “What are others doing about habitat destruction so that I can learn from their work?” “Which invasive species may inhabit my reef area?” Scientists and students may also find themselves perplexed over the answers to these same questions. “What is being done to combat these issues?” “Where can I find discussions on coral related topics?” The answers to these questions, and many more, may be found in the National Oceanic and Atmospheric Administration’s (NOAA’s) Web-enabled Coral Reef Information System (CoRIS).

Background

In 1998, the Presidential Executive Order #13089 was issued to preserve and protect U.S. coral reef ecosystems, and the United States Coral Reef Task Force (USCRTF) was established. In turn, NOAA

formed the Coral Reef Conservation Program (CRCP) to guide NOAA’s coral efforts.

The USCRTF created the National Action Plan to Conserve Coral Reefs, which called for Web-enabled access to Federal agency coral data and information. In response, the CRCP and NOAA’s National Oceanographic Data Center developed and maintain the Web-based CoRIS.

CoRIS is designed to provide a single point of access to NOAA data and information for the management and preservation of the United States’ coral reefs. The data and information are primarily derived from NOAA’s CRCP. Other goals of CoRIS are to meet the information needs of NOAA managers in the preparation of biennial assessments on the status and trends in U.S. coral reef ecosystem conditions, support NOAA’s contribution to the USCRTF National Action Plan to Conserve Coral Reefs, and to facilitate archiving and preserving NOAA’s coral reef data and information.

Features

CoRIS provides access to over 18,000 coral ecosystem data and data products by way of more than 2,000 metadata records through the “Discover NOAA’s Data” section. Users can access the information in several ways:

1) a Google-Maps based search (Fig. 1) which allows users to search for data and information by geographic

area or by specific data types (such as aerial photos, satellite imagery, habitat maps, reef locations, etc.);

- 2) a Regional Portal search (Fig. 2) which provides access to all available CoRIS data and information by searching specific regions;
- 3) a text-based search; and,
- 4) a metadata browse page which provides a list of all available data from the Web site.

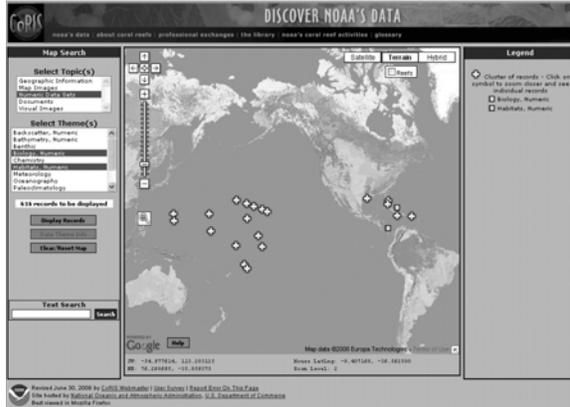


Figure 1: The Google-Maps based search application

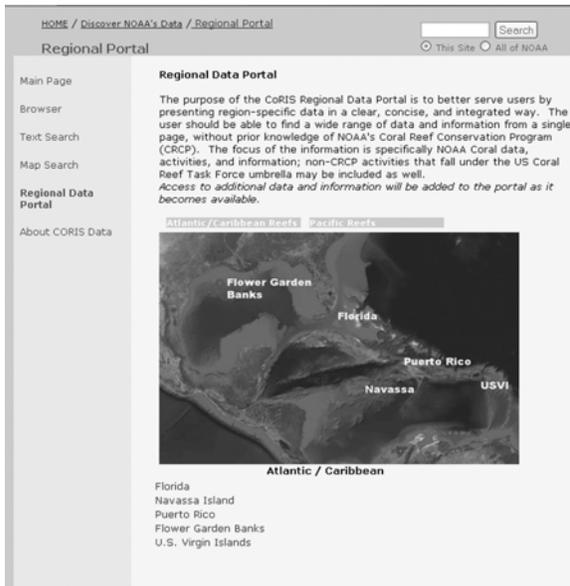


Figure 2: The Regional Portal Search

CoRIS houses a Library collection of over 1,500 publications, reports, journal article citations, Web sites, and more. CoRIS provides direct links to such reports as:

- the “NOAA’s Coral Reef Ecosystem Research Plan for Fiscal Years 2007 to 2011” (Puglise and Kelty 2007)
- the “Reef Manager’s Guide To Coral Bleaching” (Marshall and Schuttenberg 2006)
- “The State of Deep Coral Ecosystems of the United States: 2007” (Lumsden et al. 2007)

- “The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008” (Waddell and Clarke 2008)

Users can search the Library collection, including NOAA Central Library coral ecosystem publications, through a simple and advanced text search, as well as specific browse lists, for available publication information. There are also direct links to the NOAA Photo Library, and both NOAA and non-NOAA coral related Web sites.

CoRIS also provides access to a collection of coral reef essays on a variety of topics including coral biology, deep water corals, coral diseases, and more. There are also ecosystem essays on areas such as the Northwestern Hawaiian Islands and Navassa, and a collection of professional exchanges on pressing coral topics and issues. CoRIS also has an illustrated glossary containing over 5,000 coral ecosystem related terms, as well as information and links to other coral reef activities throughout NOAA.

Some of the types of data and information available from CoRIS include:

- *in situ* biological, chemical, geological, and physical environmental data collected by divers, remotely operated vehicles, moored buoys, current meters, and other types of oceanographic instruments
- Advanced Very High Resolution Radiometer sea surface temperature products and other remotely sensed imagery products
- coastal aerial photographs
- paleoclimatology data derived from coral core analyses
- nautical charts and tidal data
- coastal bathymetry
- digital video and photographs
- benthic habitat maps
- coral bleaching reports

All of the CoRIS search engines rely on metadata files that describe collections of data sets and products. Metadata provide descriptions of the data, when and where the data were collected, who collected the data, direct links to the data when available, and how to obtain a copy of it. Metadata descriptions use the format for the Content Standard for Digital Geospatial Metadata set by the Federal Geographic Data Committee (FGDC 1998), as well as the standards of the National Biological Information Infrastructure for descriptions of biological data sets containing taxonomic names for organisms (FGDC and USGS 1999). To support the data and information discovery process, CoRIS uses a set of standardized keywords to describe thematic topics, geographic areas, and taxonomic names of organisms.

Conclusion

The NOAA Coral Reef Information System provides access to coral reef ecosystem data and information through a variety of discovery and access tools in order to help managers, researchers, students, and others to better protect and preserve the world's coral reef ecosystems. CoRIS has a wealth of data, information, and other resources to offer. Whatever your coral reef data and information needs may be, you can begin your search at the CoRIS website (CoRIS 2008).

References

- CoRIS (2008) Coral Reef Information System. <http://www.coris.noaa.gov>
- Federal Geographic Data Committee (1998) Content Standard for Digital Geospatial Metadata, FGDC-STD-001-1998. Federal Geographic Data Committee, Washington, DC, 78 p
- FGDC Biological Data Working Group, USGS Biological Resources Division (1999) Content Standard for Digital Geospatial Metadata - Biological Data Profile, FGDC-STD-001.1-1999. Federal Geographic Data Committee, Washington, DC, 54 p
- Lumsden SE, Hourigan TF, Bruckner AW, Dorr G (eds) (2007) The State of Deep Coral Ecosystems of the United States. NOAA Technical Memorandum CRCP-3. Silver Spring, MD, 365 p
- Marshall PA, Schuttenberg HZ (2006) A Reef Manager's Guide to Coral Bleaching. Great Barrier Reef Marine Park Authority, Australia, 163 p
- Puglise KA, Kely R (eds) (2007) NOAA Coral Reef Ecosystem Research Plan for Fiscal Years 2007 to 2011. NOAA Technical Memorandum CRCP 1. NOAA Coral Reef Conservation Program, Silver Spring, MD, 128 p
- United States Coral Reef Task Force (2000) The National Action Plan to Conserve Coral Reefs. Washington, DC, p 3
- Waddell JE, Clarke AM (eds) (2008) The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008. NOAA Technical Memorandum NOS NCCOS 73. NOAA/NCCOS Center for Coastal Monitoring and Assessment's Biogeography Team, Silver Spring, MD, 569 p