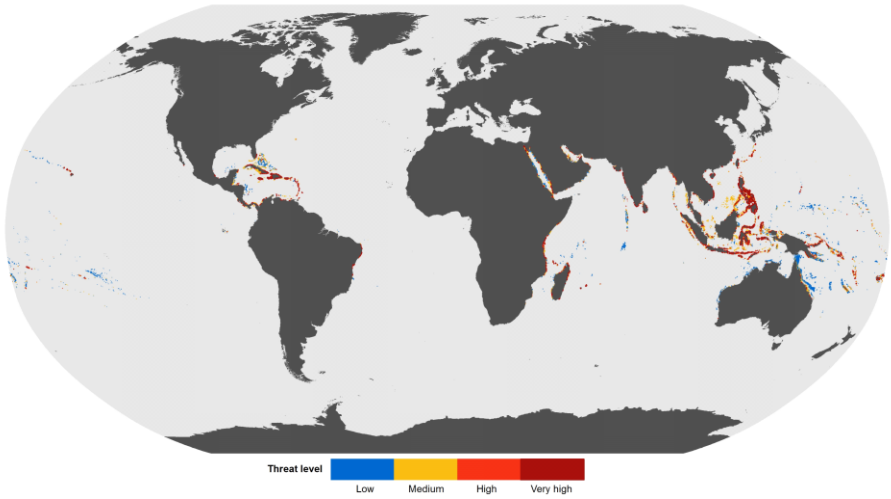
Dataset ID: WRI-002

Reefs at Risk Revisited (2011)



Description: Reefs at Risk Revisited (2011) is a high-resolution update of the original global analysis, Reefs at Risk: A Map-Based Indicator of Threats to the World's Coral Reefs, 1998. Reefs at Risk Revisited uses a global map of coral reefs at 500-m resolution, which is 64 times more detailed than the 4-km resolution map used in the 1998 analysis, and benefits from improvements in many global data sets used to evaluate threats to reefs (most threat data are at 1 km resolution, which is 16 times more detailed than those used in the 1998 analysis).

The Reefs at Risk Revisited report provides a detailed assessment of the status of and threats to the world's coral reefs. It evaluates threats to coral reefs from a wide range of human activities, and includes an assessment of climate-related threats to reefs. It also contains a global assessment of the vulnerability of nations and territories to coral reef degradation.

Citation(s): Burke L, Reytar K, Spalding M and Perry A (2011). Reefs At Risk Revisited. Washington (USA): World Resources Institute. 130 pp. URL: http://www.wri.org/publication/reefs-risk-revisited.

Temporal range: 2011

Geographical range: Global

Supplementary information: GIS Data Sets (links available from URL: http://www.wri.org/publication/reefs-risk-revisited):
- Base Data: Data and GIS Base Data: Metadata
- Global Threats: Data and GIS Global Data: Metadata
- Local Threats: Data and GIS Local Threats Data: Metadata
- Local Threats (Vector Only): Data and GIS Local Threats (Vector Only) Data: Metadata

KML Data Sets (links available from URL: http://www.wri.org/publication/reefs-risk-revisited):
- Files to be used in Google Earth and other map applications that support KML.
- Local & Global Threats in 2050 (3.1 Mb)
- Local & Global Threats in 2030 (3.1 Mb)
- Local Threats: Present (3.1 Mb)

Global, Atlantic, Australia, Indian Ocean, Middle East, Pacific and Southeast Asia

factsheets (PDF) are available from the website.

Purpose of creation:

This is the first Reefs at Risk project to incorporate data on global-level threats. These data not only enable estimations of current and imminent reef condition, but also to project trends well into the future. For the global-level threats, new models were not developed, but rather incorporated existing data from partner organizations on past thermal stress, future thermal stress, and ocean acidification. These data have enabled considerations of impacts to date and the potential future effects of ocean warming and acidification on reefs to 2030 and 2050 using climate projection scenarios.

Creation methodology:

Reefs at Risk Revisited brings together data on the world's coral reefs in a global analysis designed to quantify threats and to map where reefs are at greatest risk of degradation or loss. More than 50 data sources were incorporated into the analysis -- including data on bathymetry, land cover, population distribution and growth rate, observations of coral bleaching, and location of human infrastructure. These data were consolidated within a geographic information system (GIS), and then used to model several broad categories of threat from human activities, climate change, and ocean acidification. In the absence of complete global information on reef condition, this analysis represents a pragmatic hybrid of monitoring observations and modelled predictions of reef condition.

Local threats addressed in the analysis were: coastal development; watershed-based pollution; marine-based pollution and damage; and overfishing and destructive fishing. Global threats addressed were: thermal stress (warming sea temperatures, which can induce coral bleaching) and ocean acidification (driven by increased CO2, which can reduce coral growth rates).

The four local threats to coral reefs were modelled separately, and later combined in the Reefs at Risk integrated local threat index. The modelling approach is an extension and refinement of that used in previous Reefs at Risk analyses, and benefited from the input from more than 40 coral reef scientists and other experts. For each local threat, sources of stress that could be mapped were identified and combined into a proxy indicator that reflected the degree of threat. These "stressors" include human population density and infrastructure features such as location and size of cities, ports, and hotels, as well as more complex modelled estimates such as sediment inputs from rivers. For each stressor, distance-based rules were developed, such that threat declines as distance from the stressor increases. Thresholds for low, medium, and high threats were developed using available information on observed impacts to coral reefs.

For more detailed information regarding the methodology, please visit: http://www.wri.org/sites/default/files/technical_notes.pdf.

Version: 2011

Data lineage: This is an update from Reefs at Risk: A Map-Based Indicator of Threats to the World's Coral Reefs (1998), available at: http://www.wri.org/publication/reefs-risk.

Category: Ecological status and impact

Dataset ID: WRI-002

Keywords:	coral reefs, climate change, ecosystem services, fisheries, oceans, water		
Similar datasets:	WCMC-008, WRI-001		
Limitations:	Detailed information can be found in the Technical Notes on Modeling Threats to the World's Coral Reefs, found at URL: www.wri.org/sites/default/files/technical_notes.pdf.		
Maintenance frequency:	Data are not being updated.		
Main access/use constraint:	Creative Commons Attribution 3.0 Unported (CC BY 3.0). See http://creativecommons.org/licenses/by/3.0/ for details. Free to (1) copy/distribute/transmit the work, (2) adapt the work, and (3) make commercial use of the work.		
Other access/use constraints:	For full listing of conditions and exceptions, please visit http://www.wri.org/publications/permissions-licensing.		
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Data format(s):	KML, Tabular (.xls, .csv, or .tab), Vector (polygon; .shp)		
Distribution format(s):	KML, Tabular (.xls, .csv, or .tab), Vector (polygon; .shp)	Dataset size (uncompressed):	Variable
Webpage and/or download:	http://www.wri.org/publication/reefs-risk-revisited		
Other webpage:			
Web map service:	https://gis.unep-wcmc.org/arcgis/rest/services/marine/WRI002_ReefsAtRiskRevisited_2011/MapServer		
Factsheet:	http://www.wri.org/sites/default/files/factsheet_reefs_main.pdf		
Resolution, scale:		Reference system:	Unknown
West bounding:	-180.0	East bounding:	180.0
South bounding:	-50.0	North bounding:	50.0
Metadata standard:	UNEP-WCMC Specific	Date of metadata:	23/04/2016