

The Coral Reef Genomic Biodiversity Archive (CRGBA):

Preserving, recording, and sharing the genetic diversity of coral ecosystems

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exploring, preserving, and protecting the genetic diversity of the world's oceans

<http://www.oglf.org>



What is Ocean Genome Legacy (OGL) ?

OGL is a nonprofit 501 (c)(3) publicly supported research institute and biological repository

MISSION: *to explore, preserve, and protect the genetic biodiversity of the oceans through biobanking*

Goals:

- Create a network of permanent public archives documenting and preserving genetic materials and associated data for research
- Perform basic research exploring marine diversity and conservation
- Promote public awareness and action to protect the precious bioresources of the sea

The Ocean Genome Resource (OGR)



Why archive DNA and tissues from marine organisms?
A genome resource archive can:

- document and preserve genomic diversity from threatened organisms and communities
- improve access to high quality biomaterials for basic non-commercial and academic research
- reduce negative impacts of repetitive sampling on environmentally sensitive species and sites
- provide molecular references/vouchers for taxonomy, systematics, and comparative research
- provide baseline data and a reservoir of biomarkers for conservation and management research
- create a forum for collaboration through sharing of research materials and data
- preserve material for retrospective research as molecular methods improve
- improve funding prospects for participating researchers

How the Ocean Genome Resource works:

Collection & Identification



OGL provides custom-designed tissue preservation kits (tubes, fixative, datasheet) and simple protocols to each donor

Preservation & Storage of Tissue



Highly curated sample and data accession,
Optical barcode sample tracking, LIMS
Secure sample storage facility, backup power, 24/7/365 monitoring

DNA extraction



Robotic DNA extraction
Extensive quality control

Preservation & Storage of Genomic Extracts



Optical barcode sample tracking, LIMS
Secure sample storage facility, backup power, 24/7/365 monitoring

Distribution



Genomic material is made available to the research community at cost (subject to legal restrictions and donor agreements)

The Coral Reef Genomic Biodiversity Archive (CRGBA)

CRGBA is a publicly operated and funded open access biological collection

The AIMS of CRGBA are to:

- Collect and preserve genomic DNA and tissues representing endangered biodiversity of the world's coral reefs
- Provide long-term archival storage of genomic resources and associated metadata
- Provide open access to genome resources and data for research programs that address basic science and/or critical conservation and management issues



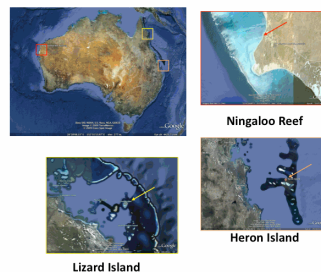
CRGBA Campaigns:

- The CRGBA project is organized as a series of campaigns, each designed to focus on a single geographic region
- Each campaign incorporates efforts of scientific collaborators, research institutions, local communities and funding organizations

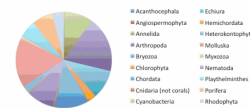
First campaign: CRGBA - Australia



- In collaboration with Census of Marine Life/Census of Coral Reef Ecosystems
- 37 taxonomists, from 20 institutions and 8 nations
- Four collection trips: 2008-2010
- Three locations (Heron Island, Lizard Island (Great Barrier Reef), Ningaloo Reef (Western Australia))
- 4746 samples collected, identified, and deposited to date, representing 20 phyla



Taxonomic Distribution of Phyla Found Within the Australian Reefs in OGR



How can the CRGBA help conservation and management in the Florida Keys Marine Sanctuary?

No marine sanctuary has yet created a comprehensive archive of its genomic biodiversity. We now have the opportunity to make the Florida Keys National Marine Sanctuary the first.

A genomic biodiversity archive for the Florida Keys Sanctuary would provide:

- A comprehensive collection of biomaterials and contextual metadata for future genetic diversity studies
- A documented baseline of existing genetic biodiversity
- Reference genomes for comparative studies of genomics, genetics, taxonomy, systematics, biogeography, etc.
- A deep reservoir of potential biomarkers for conservation and management research

OGL POLICIES

- Document vouchers, sources, habitat, donors, provenance, permits, geo-references, and taxonomic IDs
- Secure prior informed consent and benefit sharing agreements before sample deposit
- Require Material Transfer Agreements for sample distribution
- Develop nation-specific agreements for international collection
- Provide options for embargo and restricted use of archived material
- Does not distribute materials for commercial research
- Does not receive revenue from intellectual property or commercial use

Second Campaign: CRGBA - Florida Keys



Join us to help to build the CRGBA collection from the Florida Keys!

• OGL is seeking scientific collaborators with the expertise to collect, identify, and deposit specimens representing the diversity of the Florida Keys ecosystems to the CRGBA

• We will provide collection kits with all necessary materials, fixatives, labels, tubes, packaging, protocols and Education/Outreach text for your next proposal

• You supply your expertise, samples, and desire to support this community effort and willingness to join as partners in future grant submissions.



CENSUS OF MARINE LIFE



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