

To advance our understanding of interactions between geologic, oceanic and atmospheric processes that give rise to the complex physical dynamics of the Indian Ocean region, and to determine how those dynamics affect climate, extreme events, marine biogeochemical cycles, ecosystems and human populations.

Valuing Australia's new Gascoyne Marine Park

A major survey of parts of the eastern Indian Ocean will take place aboard Australia's national research vessel the RV Investigator in 2022. Largely unexplored, and one of Australia's newest marine parks, the Gascoyne Marine Park (GMP) extends from about 100 to 5500 m depth at the edge of Australia's EEZ close to longitude 110° E which has already been revisited as part of the IIOE-2 with the RV Investigator. Most of the ecological knowledge in the GMP is hitherto limited to the shallow areas of the shelf along the Ningaloo Reef while the majority of the GMP covers abyssal habitats and the dramatically steep, rugged habitats that link the two. The GMP includes 200 km of mesophotic reefs to about 400 m depth along the Ningaloo reef tract, the Ningaloo and Cloates canyons from 1000 m to 3000m depth and perpendicular to the coast (explored in 2020 with the RV Falkor) and, parallel to the coast, a steep 50-km wide transition from the Exmouth Plateau at 1000 m down the Cape Range Escarpment to the 5500 m Cuvier Abyssal Basin.

Associated with this dramatic topography, the Gascoyne MP has arguably some of the most representative and diverse biological communities of the north-west Australian margin due to its broad depth range and associated ecological niches. Despite some localised deep-sea surveys, our understanding of deep-sea habitats and communities remain limited at the broader scale in the GMP. Benthic communities include rhodolith beds, coral bommies and sponge gardens common along the shelf, canyon habitats with localised dense communities of suspension feeders, and abyssal communities typical of cosmopolitan deep-sea plains (e.g., deep-sea infauna, detritivores and demersal fishes). Like much of Australia's offshore north-west province, the biodiversity of all but the shallow coral reef systems is poorly known and this voyage seeks to address that important gap.

The objectives of the voyage are to:

- Quantify fish and invertebrate biodiversity of the Gascoyne MP from depths of 100 m to over 5000 m with the expectation of discovery of new species of marine animals.
- Describe the types and distribution of benthic habitats across the range of depth regions and in each of three marine park zoning categories (IUCN II, IV, VI).
- Determine the extent and importance of vulnerable marine ecosystems in the GMP, particularly complex filter feeder habitats and the fish and invertebrate assemblages that use these habitats.
- Refine the bioregionalisation boundaries of the slope provinces and bathomes of north-west Australia and resolve debate around the importance of a stated Key Ecological Feature of the region concerning levels of endemism of continental slope demersal fishes.

Surveys will transverse the main geomorphic features in the GMP and the range of habitat types considered most important across its vast area:

- the “shallow” (100 – 1000 m depth) narrow shelf area extending from 21.5°–24°S where mesotrophic reefs occur seaward of the Ningaloo Reef.

- the northern and western parts of the Park targeting the transition from the Exmouth Plateau at about 1000 m depth and down the steep slope of the Cape Range Escarpment descending from 2000 to 5000 m depth onto the Cuvier Abyssal Basin at 5000–5500 m.
- the Cloates Canyon from 5000 m depth up to where it intrudes close to the shelf at about 1000 m.

The survey will be undertaken by scientists primarily from the CSIRO and the Western Australian Museum and is supported by funding from Parks Australia.

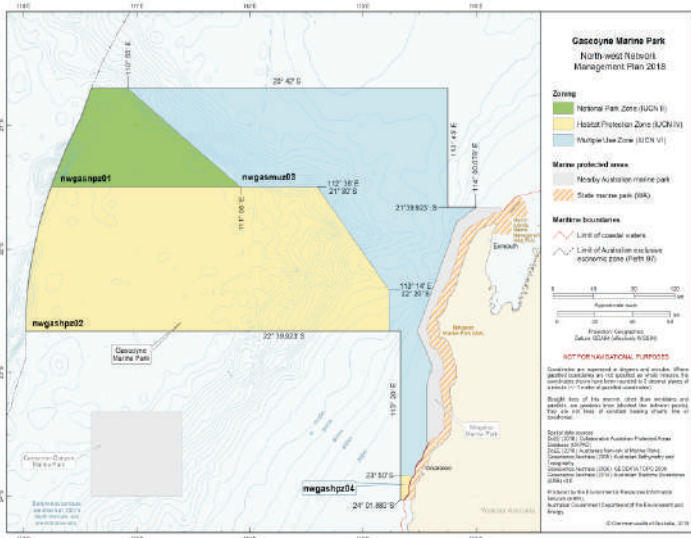


Figure: Map Showing extent and bathymetry of the Gascoyne Marine Park

Figure: RV Investigator which will be used for the exploration of the Gascoyne Marine Park in 2022

[Report Courtesy: Dr. John Keesing, CSIRO, Perth, Western Australia. E-mail: John.Keesing@csiro.au]

Fishes from Bassas Da India Atoll in the Mozambique Channel

Bassas da India is a remote, uninhabited coral atoll in the West Indian Ocean. Its inaccessibility had historically precluded study of its ichthyofauna until a small group of scientists from the Oceanographic Research Institute in South Africa undertook a two-week biodiversity survey in 1991. Since then, the discourse on climate change has taken on a higher relevance, calling for protection and study of biodiversity hotspots such as Bassas da India. The survey recorded 309 fish species, including a number of vulnerable teleosts and elasmobranchs. As the only published information on the biodiversity of this remote small island, it is intended that this dataset will contribute to increased relevance as an ecological baseline for detecting impacts relating to climate change in the South West Indian Ocean. Each species is listed in terms of its individual abundance, IUCN status as well as its museum and photographic record. Comparisons are made with survey results of other small coral islands in the region, notably Europa Island, revealing several distinct differences in fish diversity. There is evidence that giant groupers will replace sharks as apex predators when there is no local exploitation. A total of 86 species were photographed to confirm identity, and a further 84 species were provided to the South African Institute for Aquatic Biodiversity museum in Grahamstown and also to several international species experts.

This is the first publication about the fishes from the Bassas Da India atoll in the Mozambique channel.

Citation: Van der Elst, Rudy; Chater, Simon; King, Dennis (2021): Fishes from Bassas Da India Atoll in the Mozambique Channel. Atoll Research Bulletin, No. 629.

<https://doi.org/10.5479/si.15173064>

[Report Courtesy: Rudy Van Der Elst, Simon Chater and Dennis King, Oceanographic Research Institute, Marine Parade, South Africa. E-mail: rudyvanderelst@gmail.com]

Launch of the Status of Coral Reefs of the World Report: 2020

The launch of the Sixth Edition of Global Coral Reef Monitoring Network (GCRMN) Status of Coral Reefs of the World Report: 2020 (<https://gcrmn.net/2020-report/>) was held on the 5th October 2021.

This flagship product of the GCRMN describes the status and trends of coral reefs worldwide including areas of the Indian Ocean. This sixth edition is the first since 2008, and the first based on the quantitative analysis of a global dataset compiled from raw monitoring data contributed by more than 300 members of the network. The global dataset span more than 40 years from 1978 to 2019, and consist of almost 2 million observations from more than 12,000 sites in 73 reef-bearing countries around the world.

The Executive Summary, Global Analysis and Regional Chapters are now all available to download at <https://gcrmn.net/2020-report/>

A short animation is available at https://www.youtube.com/watch?v=IKxdKx_ci90

UNEP has created a dynamic data visualization that distils the report findings for non-scientists in all UN languages, plus Portuguese, Bahasa Indonesia and Swahili with an aim to: generating increased media coverage in regions; getting coverage in more mainstream media outlets; and wider interest from the public.

[Report Courtesy: Lynnath Beckley, Murdoch University, Western Australia, E-mail: L.Beckley@murdoch.edu.au]

IIOSC-2020 Conference rescheduled to 14-18 March, 2022 Call for Abstracts- Last date extended upto 15 November, 2021

International Indian Ocean Science Conference (IIOSC) 2020 was postponed due to COVID-19 pandemic situation. We are happy to inform that the conference is now rescheduled to March 14-18, 2022 as IIOSC-2022 conference. We are hoping to have an in-person conference in Goa, India (with an option to join online) in the hope that COVID situation eases by then. In the event that the travel situation does not improve, IIOSC-2022 will still go ahead as an online event.

You are encouraged to submit new abstract/s of your research for presentation in IIOSC-2022. The abstracts can be submitted at <https://iiosc2020.incois.gov.in/IIOSC2020/Abstracts.jsp>

Further, if you are the author of an abstract that was selected for oral/poster presentation for the IIOSC 2020 conference, you may choose to edit/ continue/ withdraw the abstract. You are requested to confirm the same at .

<https://iiosc2020.incois.gov.in/IIOSC2020/editabstracts.jsp>

Post confirmation only, the abstracts will be considered for reevaluation for IIOSC-2022 conference. The last date for submission of abstract for various technical sessions is extended up to **November 15, 2021**. We look forward to receiving your abstracts, and to your participation in the IIOSC-2022.

IMPORTANT DATES

Abstract Submission Opens: 01 September, 2021

Abstract Submission Closes : 15 November, 2021

Abstract Acceptance : 15 December, 2021

Registration opens on : 01 October, 2021

Early Bird Registration : 31 December, 2021

Last Date for Registration : 15 January, 2021

Conference Website: <https://iiosc2020.incois.gov.in/>



**INSPIRE
INNOVATE
SUSTAIN**



OCEANS
CONFERENCE & EXPOSITION

February 21-24, 2022 | IIT Madras Research Park, Chennai

Institution of Electrical and Electronic Engineers Oceanic Engineering Society (IEEE OES) and Marine Technology Society (MTS) are organizing the world's largest Ocean conference, Oceans 2022 Chennai for the first time in India. The event is jointly organized by the pioneers of India in the field of Ocean Technology, the Indian Institute of Technology (IIT) Madras, and the National Institute of Ocean Technology (NIOT), Chennai, and is scheduled during February 21-24, 2022, both in-person and virtual. The main theme of the conference, INSPIRE-INNOVATE-SUSTAIN, is expected to attract about 1000 delegates with 500 papers being planned for presentation with a good number of plenary sessions with talks from leading personalities around the globe contributing to the field of Ocean Engineering and technology.

With Technical paper presentations, Tutorials, social and networking opportunities, professional field trips, etc. IEEE OCEANS 2022 will provide the delegates an insight on evolving technology and knowledge in the areas of:

- UN Decade of Ocean Science for Sustainable development
- Underwater Acoustics and Acoustical Oceanography
- Sonar signal/image processing and communication
- Ocean Observing Platforms; systems and instrumentation
- Remote Sensing
- Ocean Data Visualization, Modelling, and Information Management
- Marine Environment, Oceanography and Meteorology
- Optics, Imaging, Vision and EM Systems
- Marine Law, Policy, Management, and Education
- Offshore Structures and Technology
- Ocean Vehicles and Floating Structures
- Petroleum Engineering

Some of the top plenary speakers are Dr. Margaret Leinen, Director, Scripps Institute of Oceanography, Dr. Sathesh Reddy, Secretary Department of Defence R&D and Chairman DRDO, Dr. Peter Haugan, Former Chair Intergovernmental Oceanographic Commission, UNESCO; Programme Director at Institute of Marine Research, Professor at the Geophysical Institute, University of Bergen, Norway; Dr. Shailesh Nayak, Former Secretary, Ministry of Earth Sciences to name a few. A panel discussion on the current topics of interest like Global warming with leading speakers also is planned. A student poster session featuring outstanding projects from around the globe is another event. Student Hackathon competition and other student activities will also be at the conference. A plethora of exhibitors showcasing their latest innovations will be another event.

All are welcome to register and attend the conference. Now that Covid restrictions are eased out, please attend in person. All safety precautions will be in place. For complete details visit <https://chennai22.oceansconference.org/>.

[Report Courtesy: M. A. Atmanand, Visiting Professor, Indian Institute of Technology, Chennai, India, E-mail: atmanandma@hotmail.com]



Endorse your projects in IIOE-2

Don't miss the opportunity to network, collaborate, flesh out your research project and participate in IIOE-2 cruises!!

The endorsement of your scientific proposal or a scientific activity focusing on the Indian Ocean region is a recognition of the proposal's or activity's alignment with the mission and objectives of IIOE-2, of its potential for contributing to an increased multi-disciplinary understanding of the dynamics of the Indian Ocean, and of its contribution to the achievement of societal objectives within the Indian Ocean region. Over 45 international, multi-disciplinary scientific projects have already been endorsed to date by the IIOE-2. Yours could be the next one!

Visit <https://iioe-2.incois.gov.in/IIOE-2/EndorsementForm.jsp> for further details and for projects already endorsed by IIOE-2 https://iioe-2.incois.gov.in/IIOE-2/Endorsed_Projects.jsp.

CLIVAR October 2021 Bulletin is available online



The International CLIVAR Project Office distributes a monthly bulletin with announcements, funding opportunities, meeting notifications relevant to the ocean/climate science community.

The latest CLIVAR Bulletin October, 2021 is available at:

<https://mailchi.mp/clivar.org/clivar-october-2021-bulletin>

Call for Contributions

Informal articles/short notes of general interest to the IIOE-2 community are invited for the next (November-end) issue of the IIOE-2 Newsletter. Contributions referring IIOE-2 endorsed projects, cruises, conferences, workshops, "plain language summary" of published papers focused on the Indian Ocean etc. are welcome. Articles may be up to 500 words in length (Word files) accompanied by suitable figures, photos.(separate.jpg files).

Deadline: **25 November, 2021**



Access the latest issue of Indian Ocean Bubble-2

<https://iioe-2.incois.gov.in/IIOE-2/Bubble.jsp>



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