



National Centre for Polar & Ocean Research
(Ministry of Earth Sciences, Govt. of India)
Headland Sada, Vasco-da-Gama, Goa - 403 804



Invites Nominations from Scientists/Researchers for forthcoming IODP expedition

IODP-India invites nominations in a prescribed format along with detailed bio-data and research experience, from geoscientists/researchers working in established national institutions/organizations and universities, to participate in the forthcoming International Ocean Discovery Program (IODP) **Expedition 389: Hawaiian Drowned Reefs** aboard a Mission Specific Platform (MSP). NCPOR will provide the requisite financial support to the selected candidates towards their participation in the said expedition. However, it will be the responsibility of the candidates to obtain the necessary Visas / permissions from the countries of embarkation and disembarkation on their own. A scientific plan is mandatory for a successful nomination.

Further details and format can be obtained at www.ncpor.res.in or by email to iodp.india@ncpor.res.in

Last date by which IODP- India/NCPOR receives nominations for Expedition 389: 23rd Sep 2022

For and on behalf of NCPOR
Group Director (IODP-India)

Complete nominations may kindly be emailed to iodp.india@ncpor.res.in

Information on forthcoming IODP Expedition aboard a Mission Specific Platform (MSP):

Expedition 389: Hawaiian Drowned Reefs (Sept. – Oct. 2023)

Expedition 389 is based on IODP Proposal #716 'Hawaiian Drowned Reefs'. The overall goal of the drilling campaign is to sample a unique succession of drowned coral reefs around Hawaii now at -134 to -1155 m below sea level. As a direct result of Hawaii's rapid (2.5-2.6/kyr) but nearly constant subsidence, a thick (100-200 m) expanded sequence of shallow coral reef dominated facies is preserved within the reefs. These reefs span important periods in Earth climate history, either not available or highly condensed on stable (Great Barrier Reef, Tahiti) and uplifted margins (Papua New Guinea, Barbados) due to a lack of accommodation space and/or unfavourable shelf morphology. Specifically, these data show that the reefs grew (for ~90-100 kyrs, albeit episodically) into, during and out of the majority of the last five to six glacial cycles.

Therefore, scientific drilling through these reefs will generate a new record of sea-level and associated climate variability during several controversial and poorly understood periods over the last 500 kyr.

The project has four major objectives:

- 1) To define the nature of sea level-change in the central Pacific over the last 500 kyr, construct a new, more complete sea level curve from the drowned Hawaiian reefs that will allow: a) more detailed testing of Milankovitch climate theory predictions and; b) improved constraints on millennial-scale sea-level changes over the last 500 kyr.
- 2) To identify critical processes that determine paleoclimate variability of the central Pacific over the last 500 kyr: (a) reconstruct the mean and seasonal/interannual climate variability from massive coral samples; and (b) use these records to investigate how high latitude climate (e.g., ice sheet volume), pCO₂, and seasonal solar radiation impact subtropical Pacific climate. This approach can be used to test theoretical predictions of climate response and sensitivity to changes in boundary conditions and climate forcing.
- 3) To establish the geologic and biologic response of coral reef systems to abrupt sea-level and climate changes: (a) establish the detailed stratigraphic and geomorphic evolution of the reefs in response to these changes; (b) test ecologic theories about coral reef resilience and vulnerability to extreme, repeated environmental stress over interglacial/glacial to millennial time scales; and (c) establish the nature of living and ancient microbial communities in the reefs and their role in reef building.

- 4) To elucidate the subsidence and volcanic history of Hawaii: (a) refine the variation through space and time of the subsidence of Hawaii, and; (b) improve the understanding of the volcanic evolution of the island.

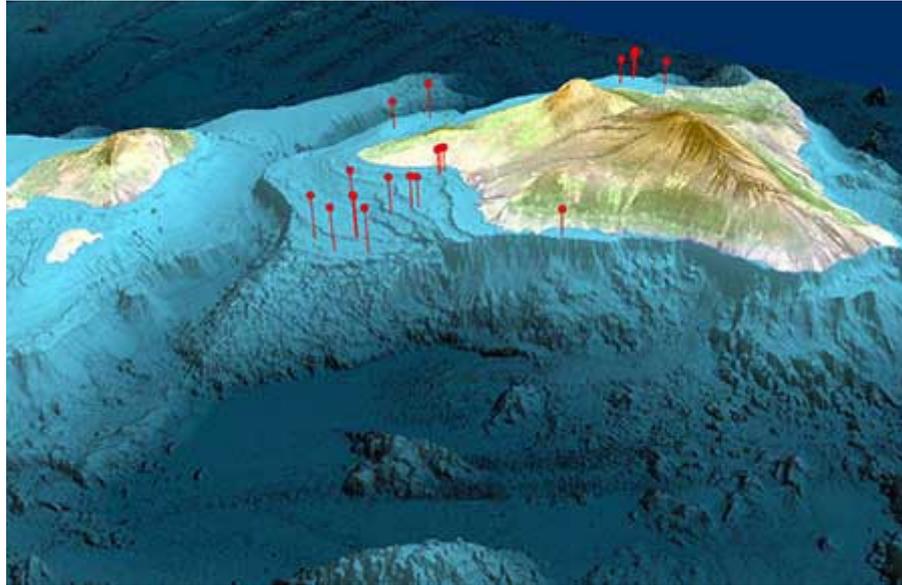


Figure: Location map

The full proposal describing the primary drill sites, as well as up-to-date expedition information, can be found on the Expedition 389 webpage <https://www.ecord.org/expedition389/>.

Expertise sought

Opportunities exist for researchers in all specialties. While other expertise may be considered, specialists in the following fields are required: carbonate sedimentology, corals, sedimentology, paleontology, palynology, organic geochemistry, inorganic geochemistry, structural geology, paleomagnetism, microbiology, ancient DNA (aDNA), physical properties, geophysics, geodynamics, glacial isostatic adjustment, stratigraphic correlation and downhole logging. For the offshore phase of the expedition, particularly looking for the following fields: carbonate sedimentology, corals, sedimentology, paleontology, organic geochemistry, inorganic geochemistry, microbiology, ancient DNA (aDNA), physical properties, and petrophysics/downhole logging.

Important Notes:

1. For more information on IODP Expedition 389 please visit www.iodp.org and use the link iodp.tamu.edu/scienceops/.
2. Applications in the prescribed format are available on the website www.ncpor.res.in shall be considered.
3. **Last date by which IODP- India/ NCPOR receives nomination for IODP Expedition 389: 23rd Sep 2022**
4. A scientific plan is mandatory for a successful nomination. Once nominated candidates will have to submit a detailed science plan along with a sample data request which may also form a basis for collaborative research programs between their host organization and NCPOR.