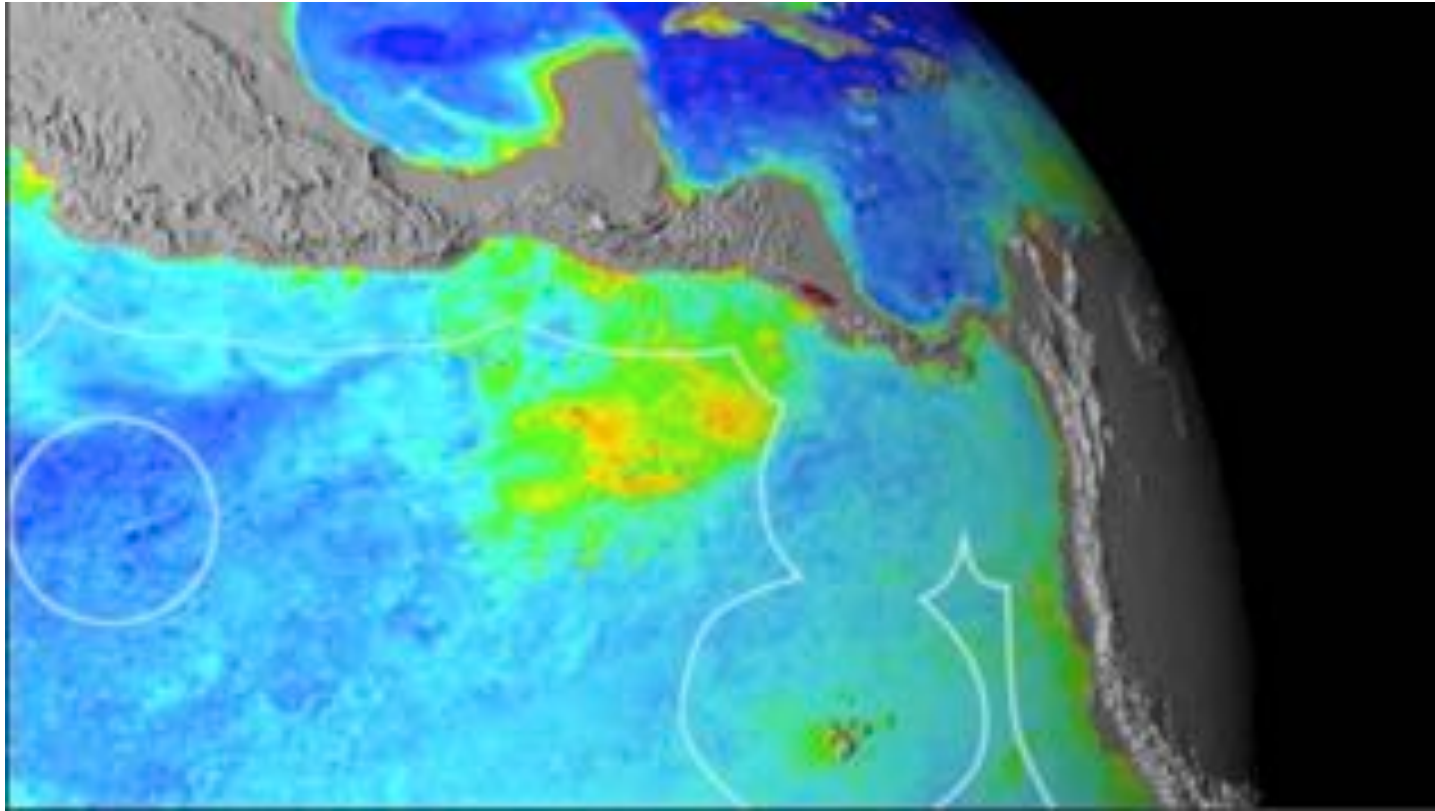


The Costa Rica Thermal Dome: An Upwelling off the Central America Pacific coast



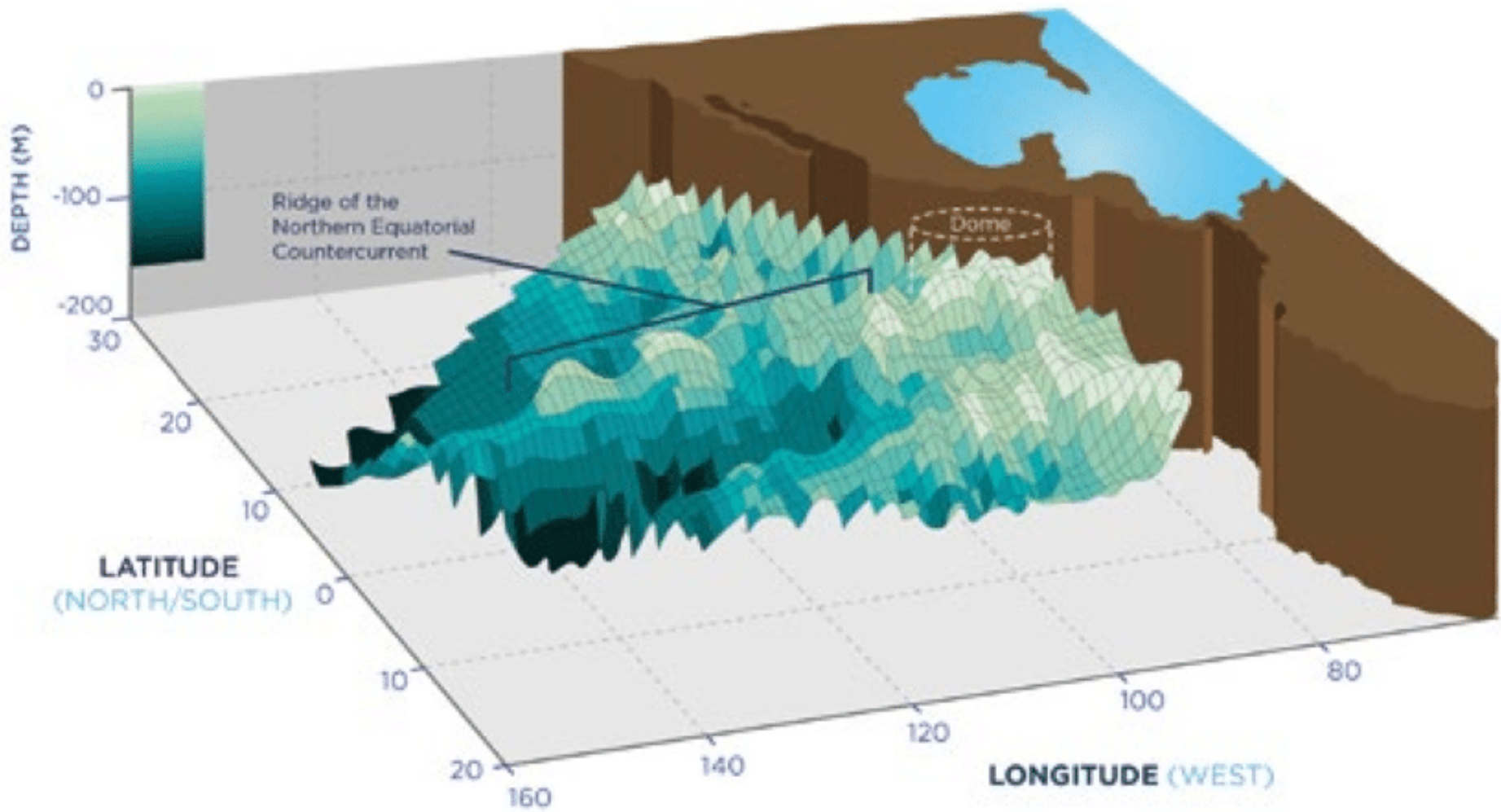
Upwellings: the CRTD case

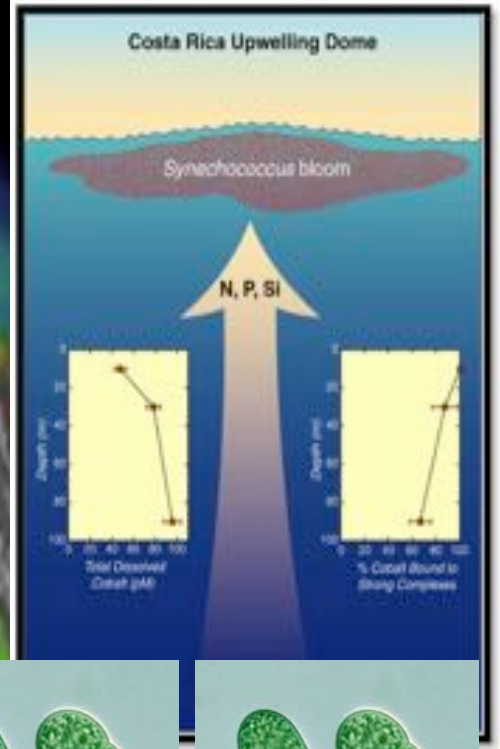
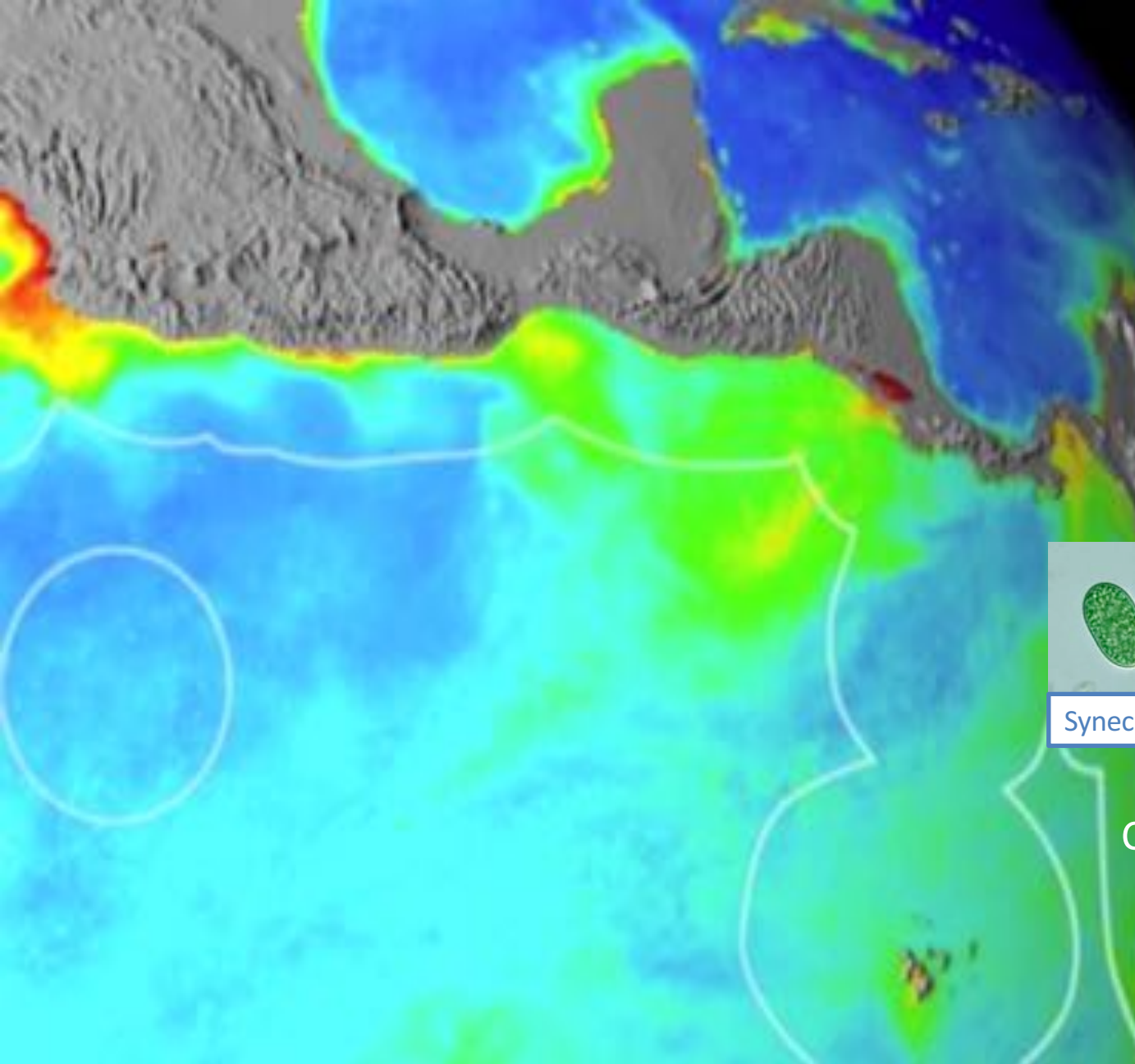
Upwelling occurs in the open **ocean** and along coastlines. ... Water that rises to the surface as a result of **upwelling** is typically colder and is rich in nutrients. These nutrients “fertilize” surface waters, meaning that these surface waters often have high biological **productivity**.

oceanservice.noaa.gov



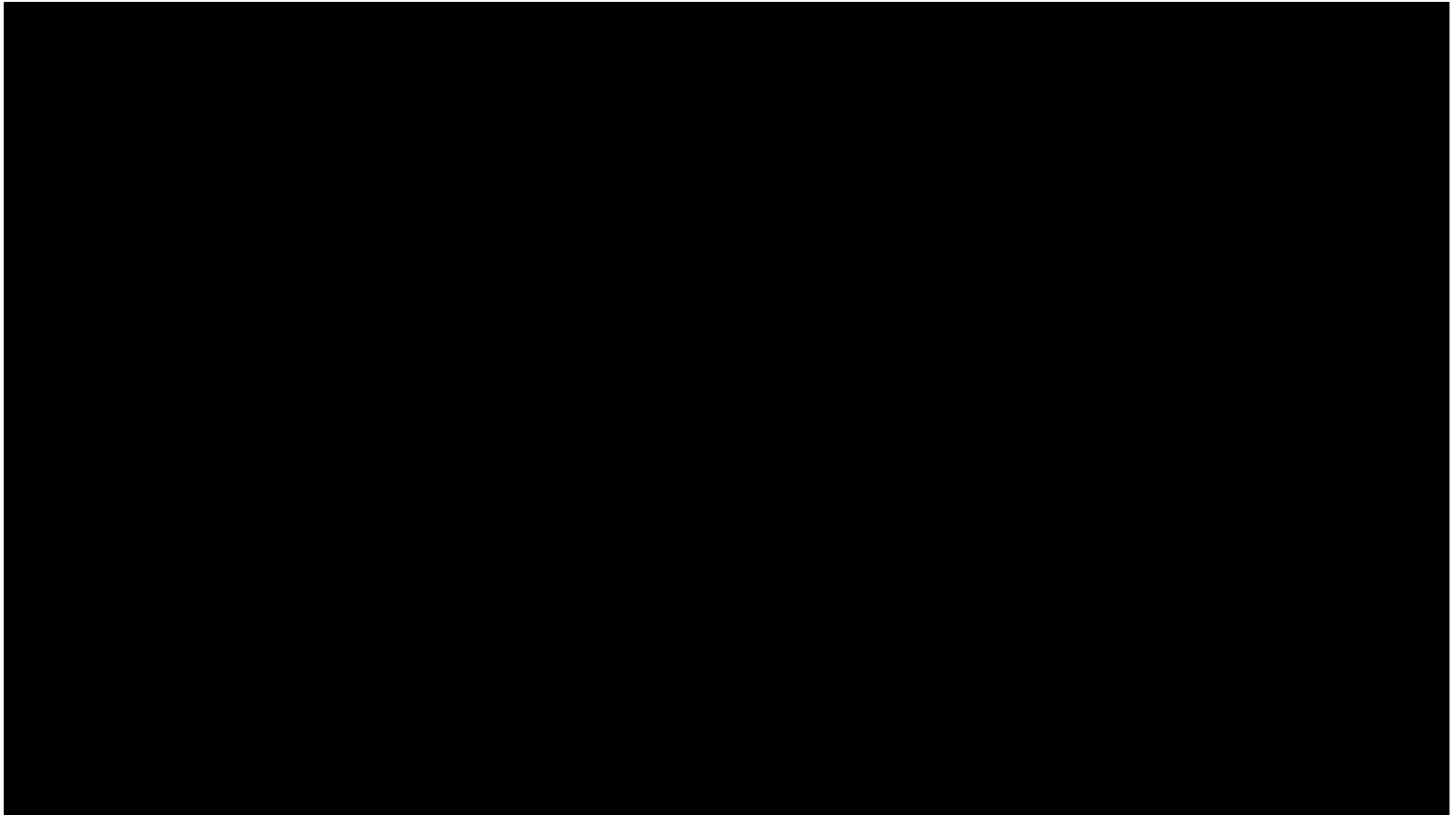
Riding the Ridge



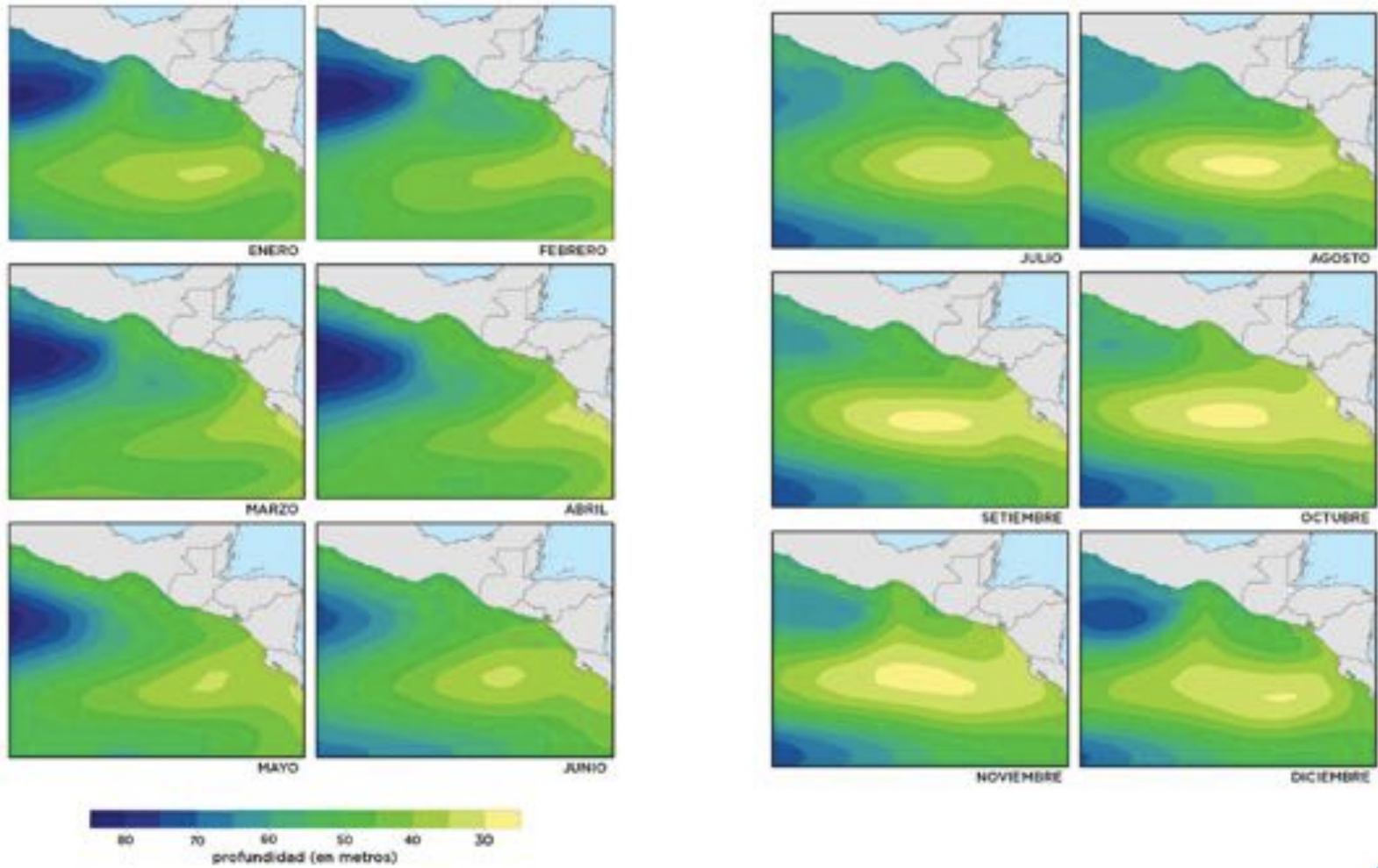


Carbon Fixation

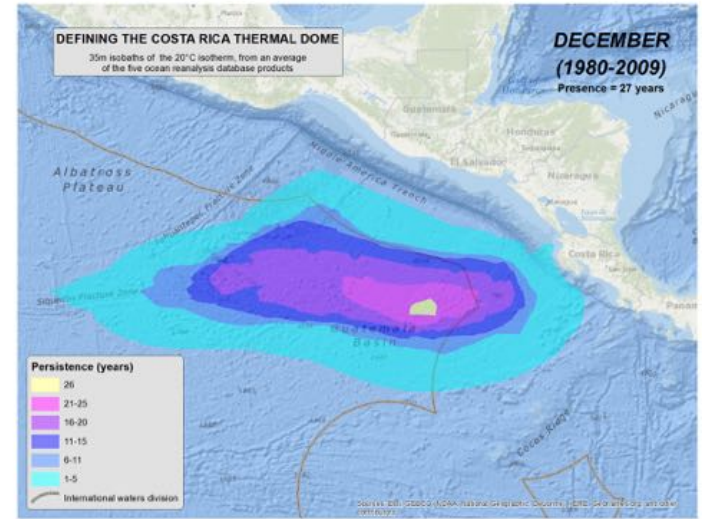
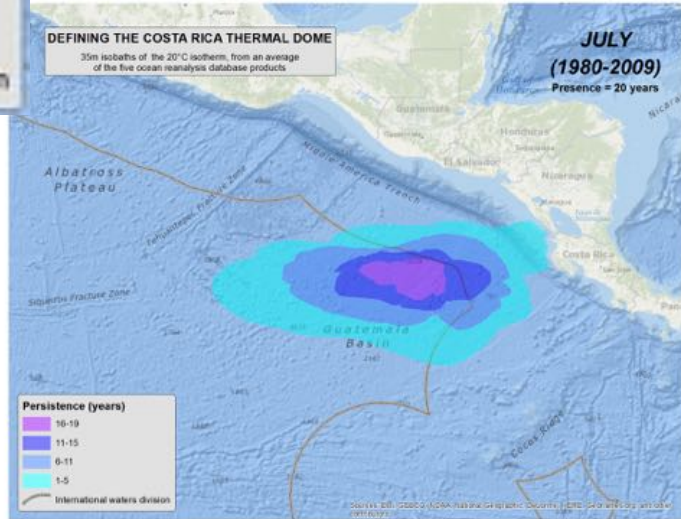
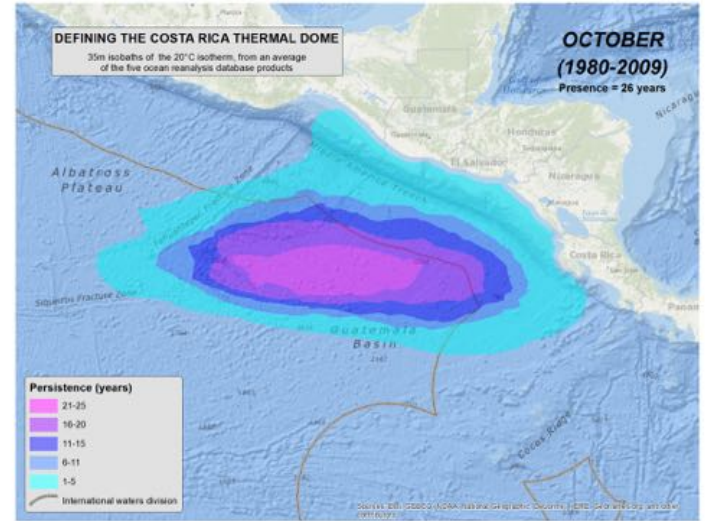
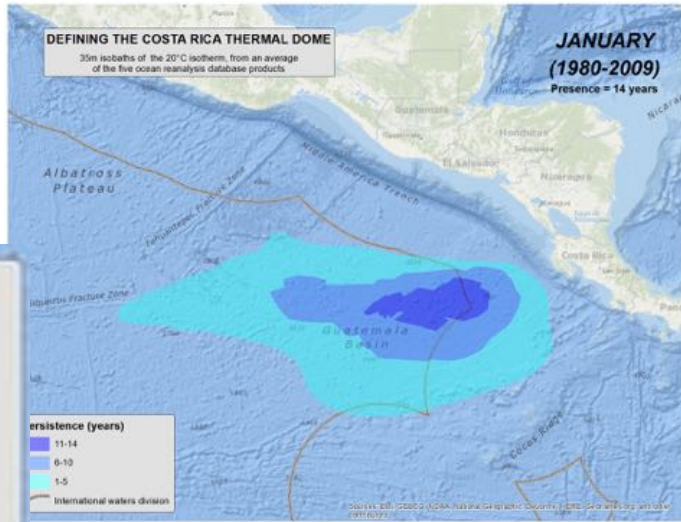
A Fluid Dynamic Feature



A Dynamic Process

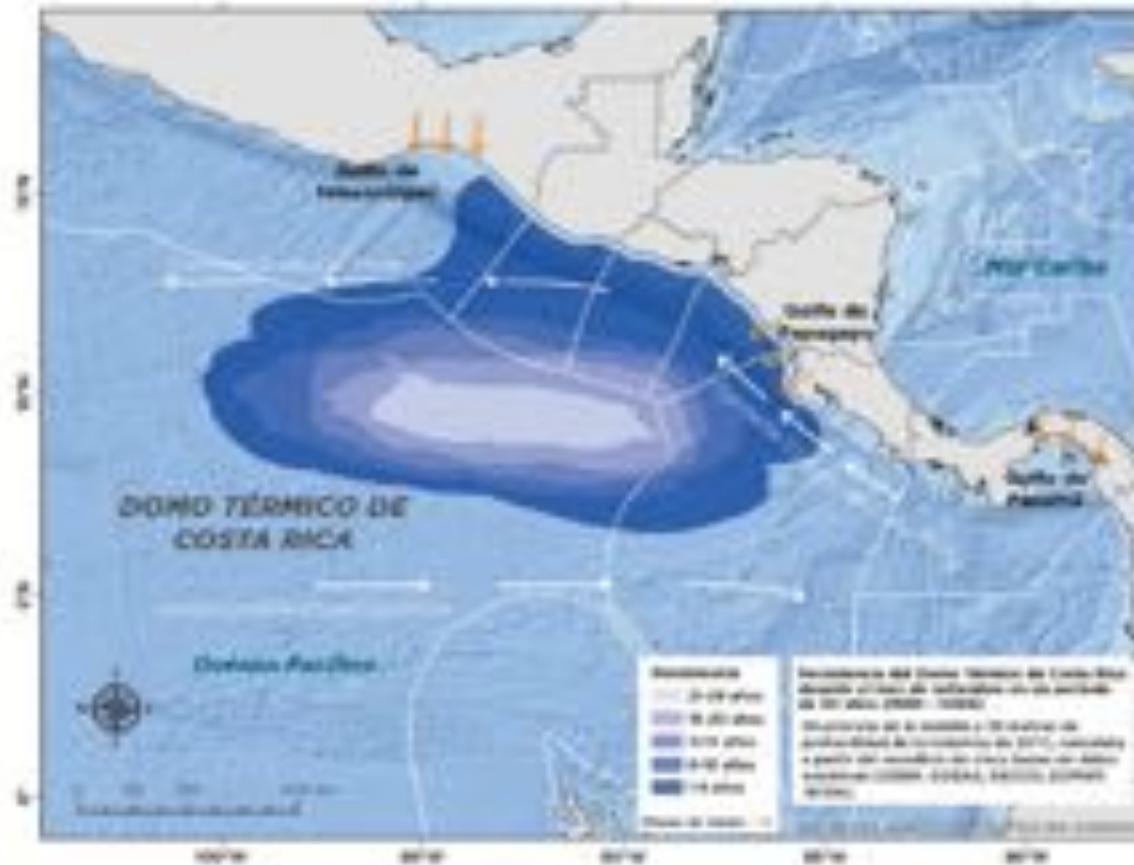


Dynamic but Persistent Process

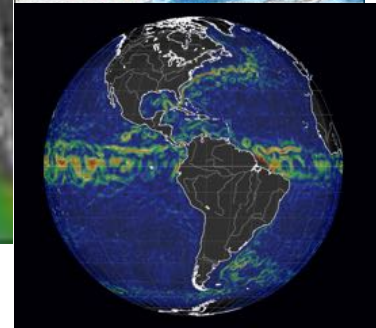
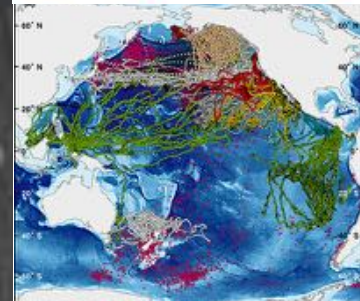
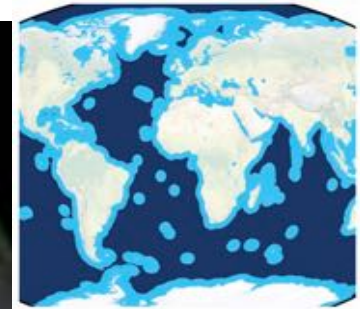
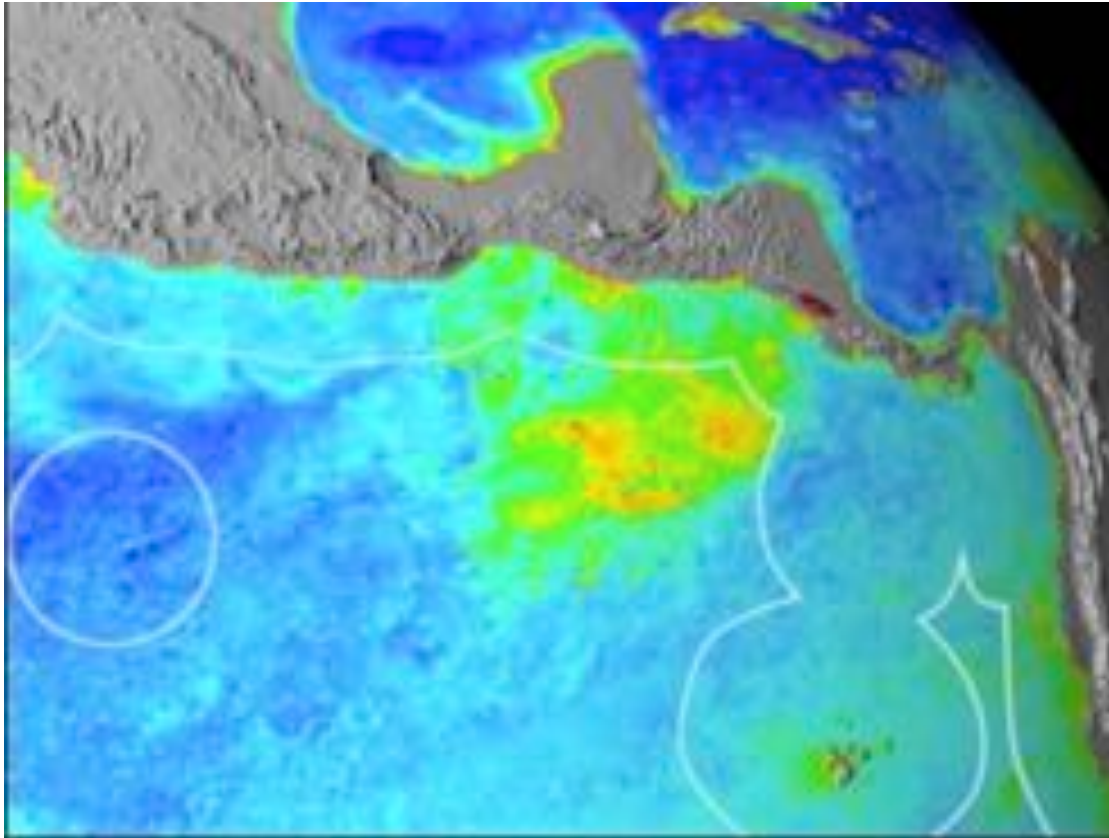


20 °C at less than 35 m depth

Jurisdictional Challenges



Geographical Proximity = Opportunity

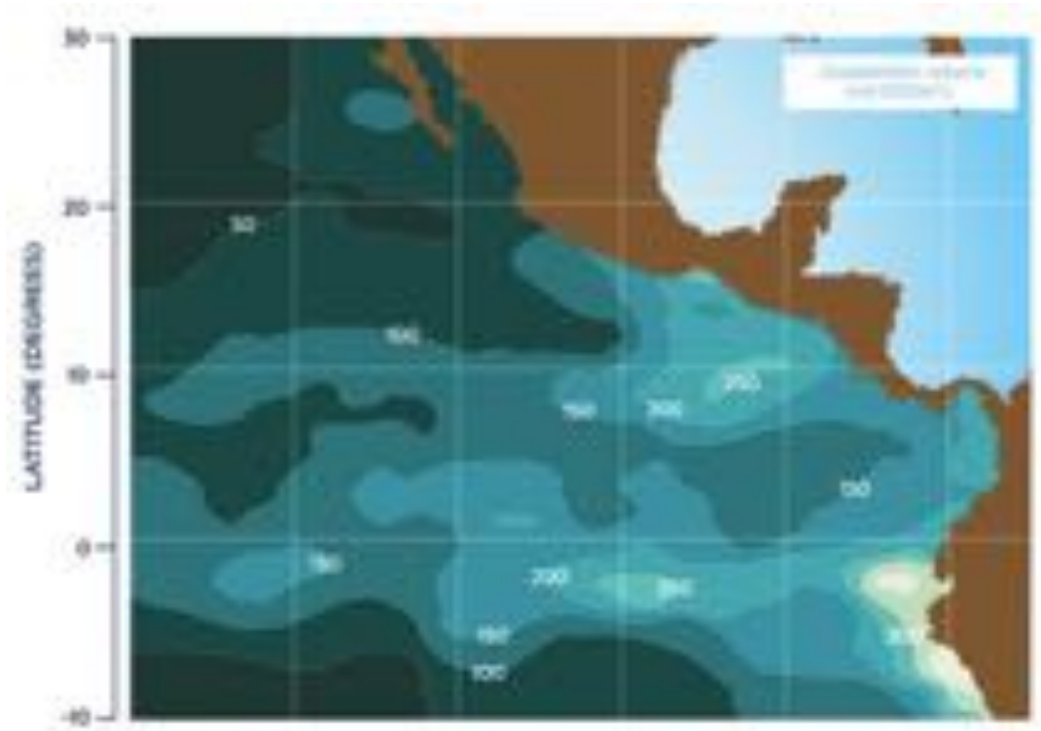


A Hybrid Model where Adjacent States will have influence on management decisions for that site.

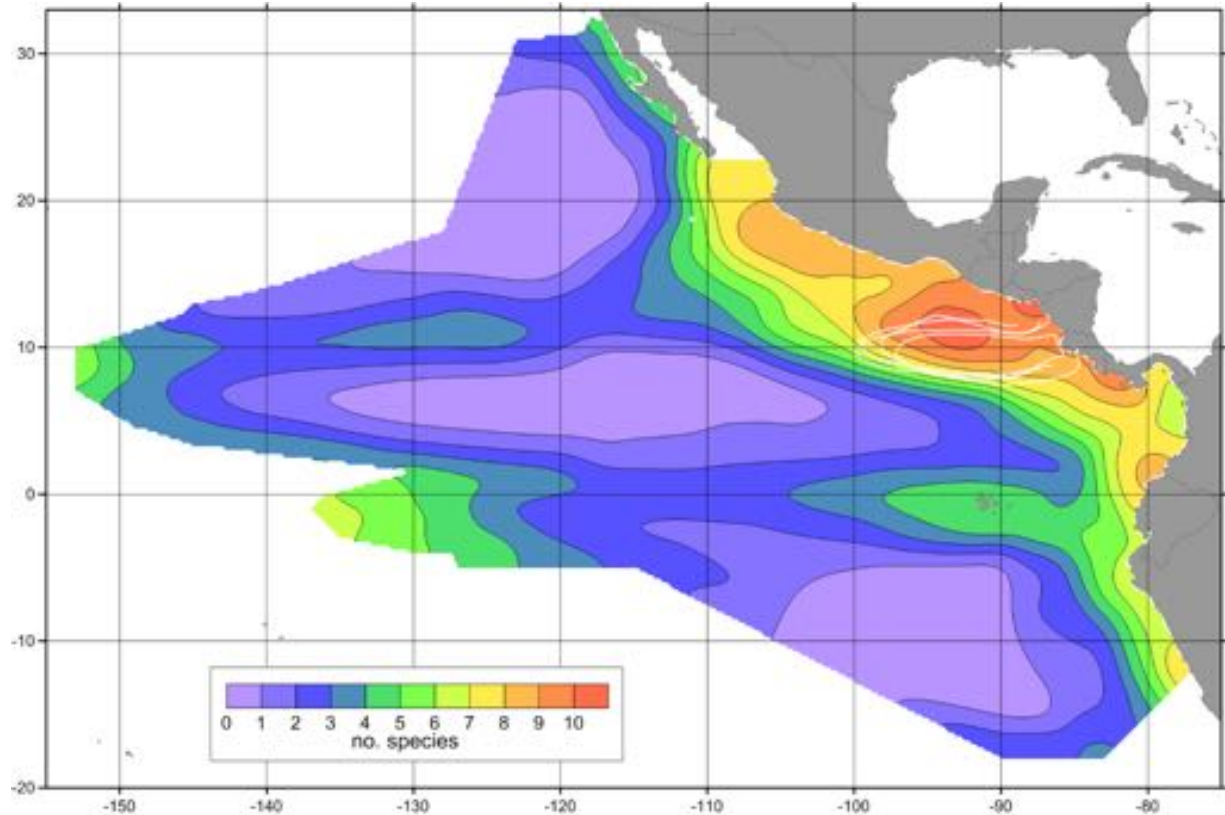
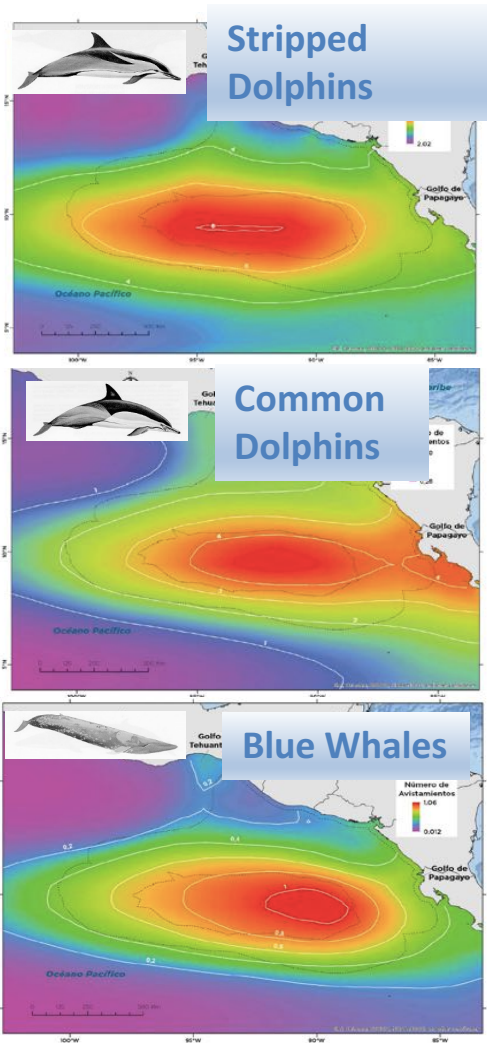
Zooplankton Concentrations

Average biomass of zooplankton in the Dome (250-300 ml/1000 m³) is as high or higher than that of the equatorial upwelling zone and 1.7-2.1 times greater than in non upwelling areas of the ETP

(Sameoto 1986, Segura et al., 1992, Fernández-Álamo and Faber-Lorda, 2006).

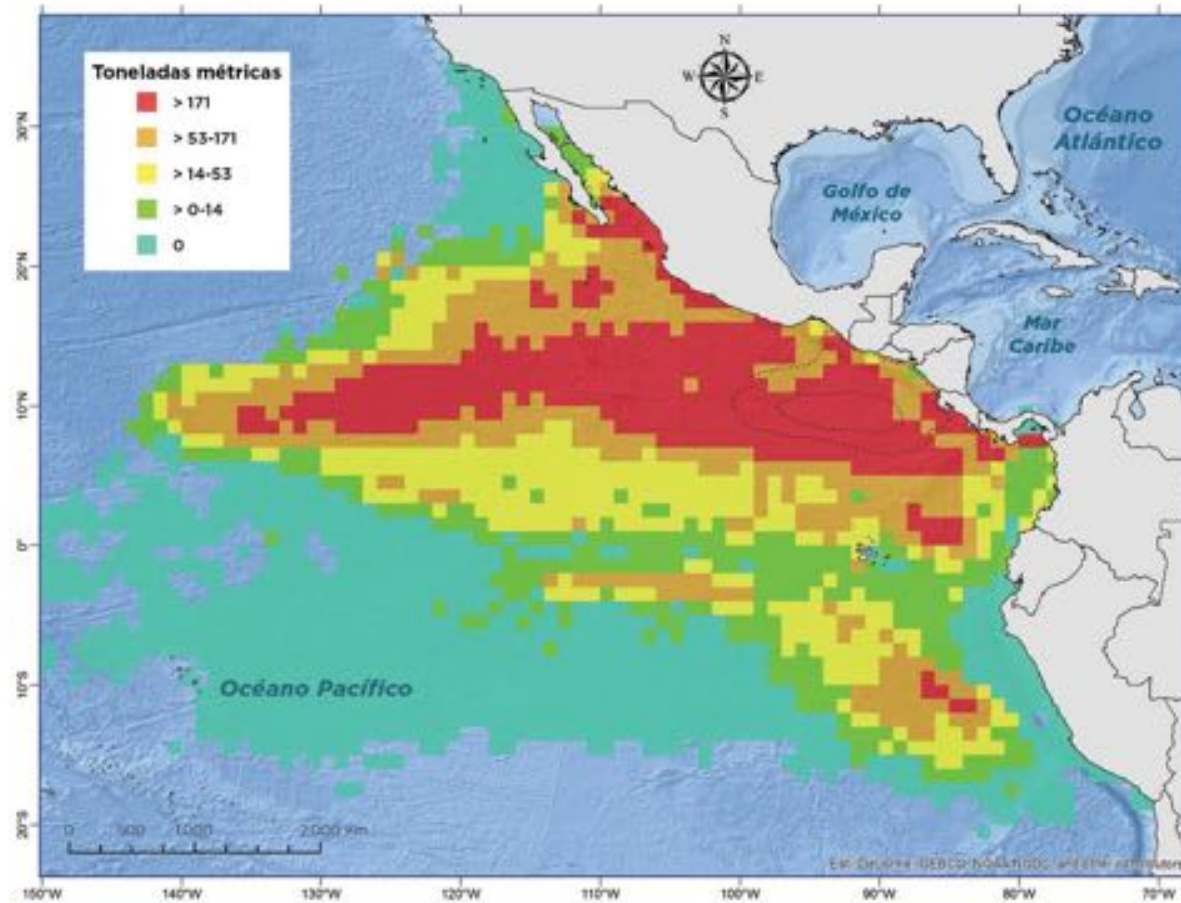


A Cetaceans Hot Spot

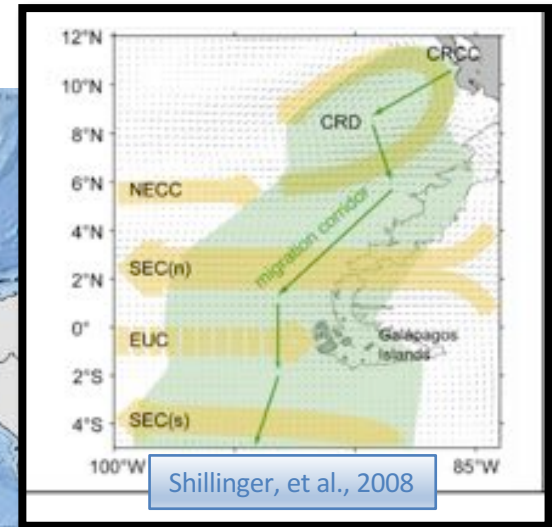
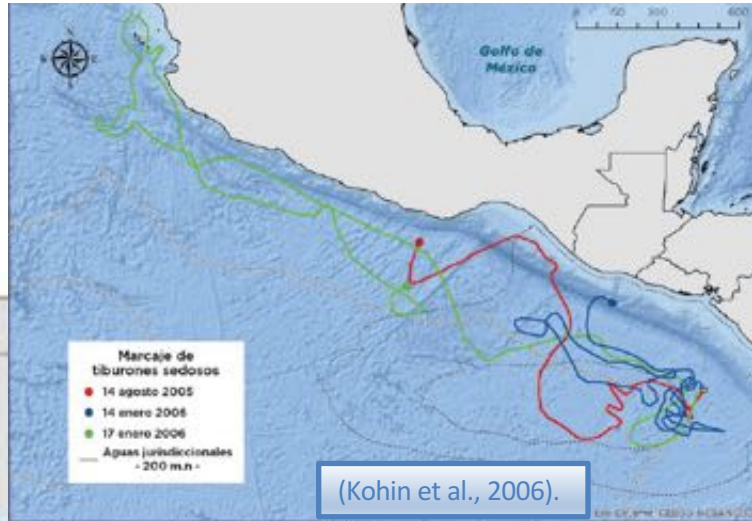
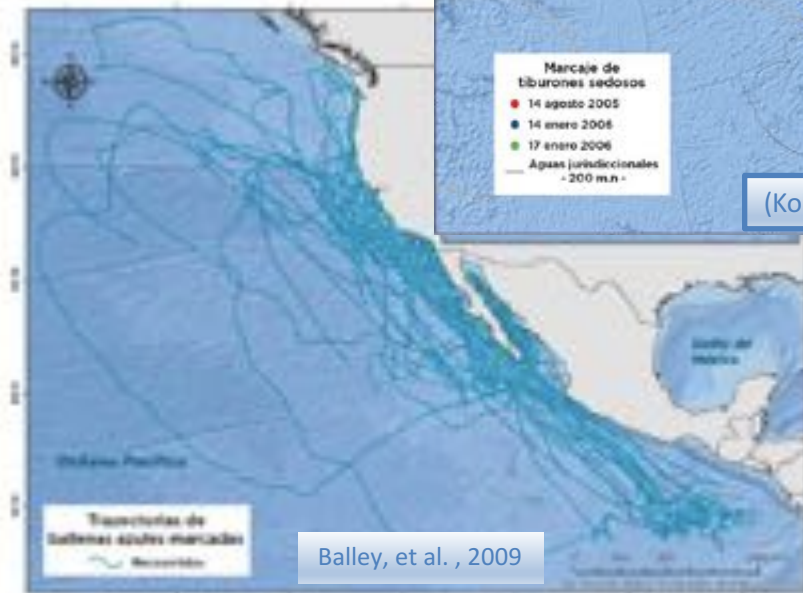


Adapted from
Fidler et al, 2017

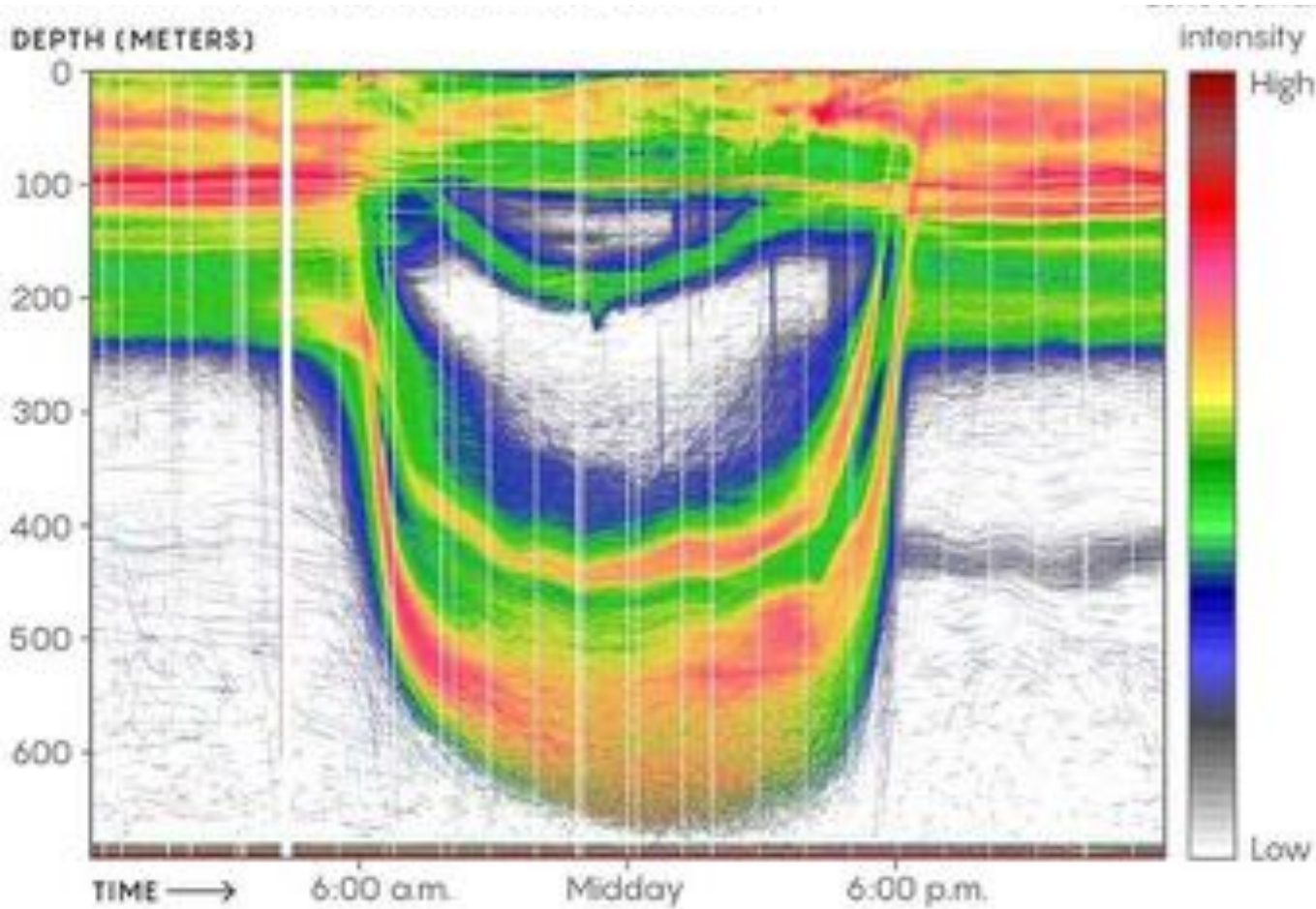
Fisheries Hot Spot



Migrations-Linking Dome with coast and other regions

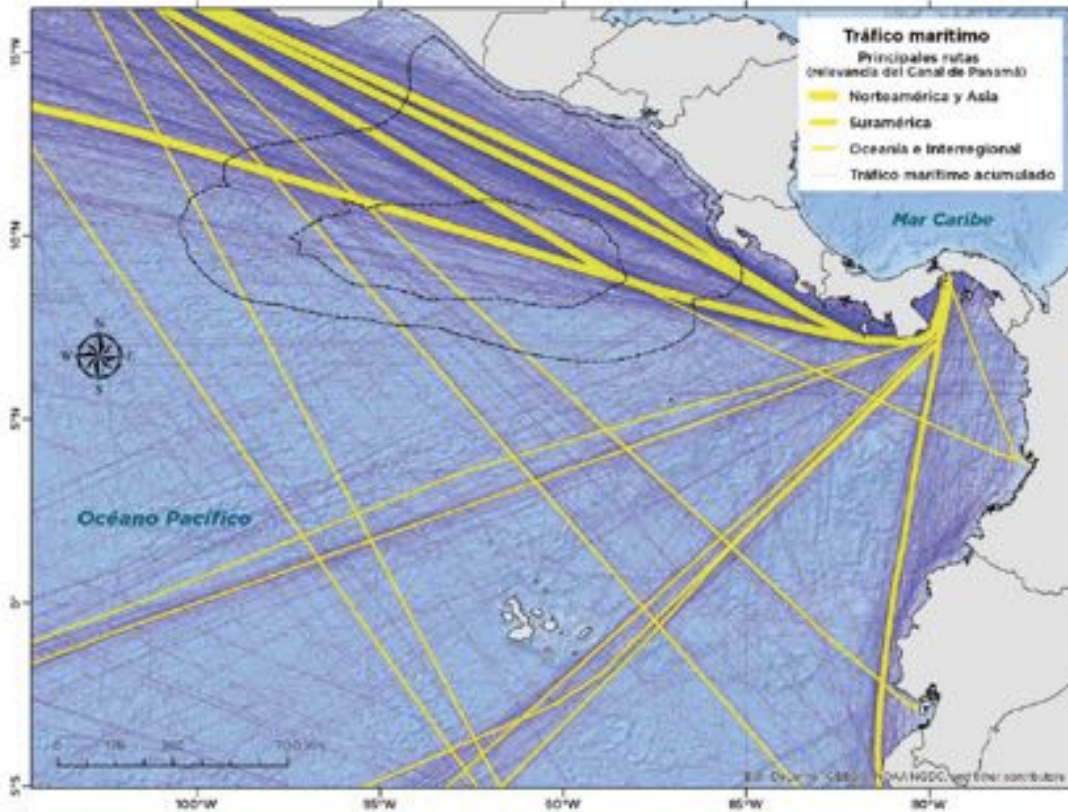


Diurnal Vertical Migration (Zooplankton, Mesopelagic Fishes)



Threats

Maritime Traffic



@5% world maritime traffic



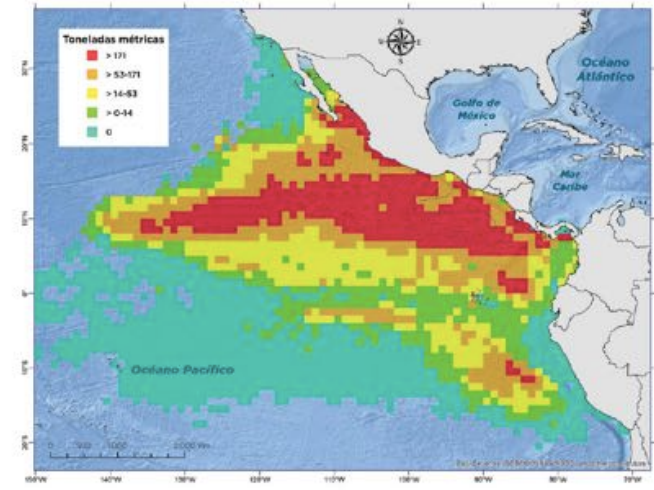
Noise



Ship strikes



IMO: Implementation Opportunity



Awareness

MAR VIVA

Ordenar las actividades humanas en el mar ayuda a proteger nuestros recursos marinos

Gobi

Síguenos en:

MAR VIVA

La ballena azul, gigante de los mares, visita el Domo Térmico de Costa Rica

Gobi

Síguenos en:



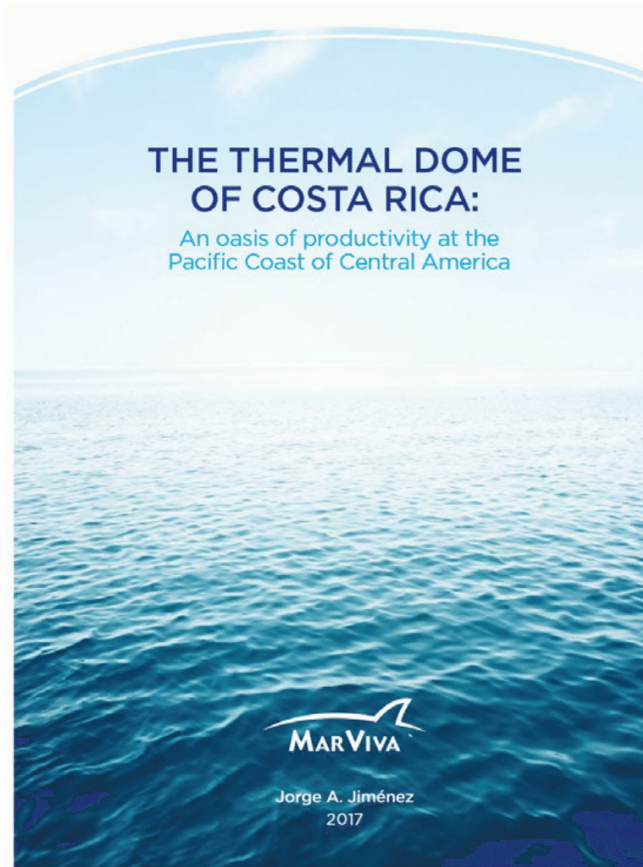
MAR VIVA

Domo Térmico de Costa Rica: fuente de riqueza en recursos pesqueros

Gobi

Síguenos en:

Technical Publications

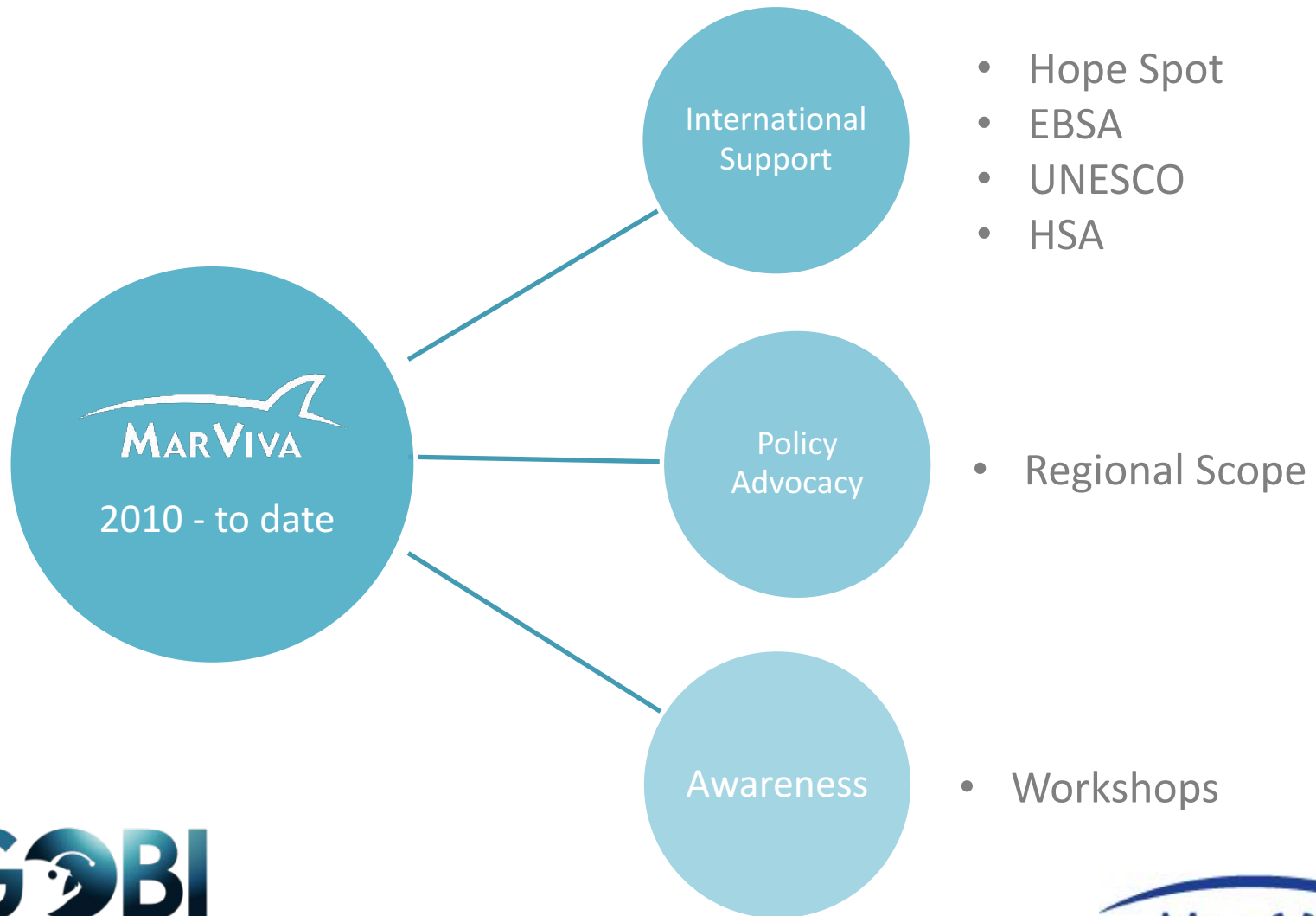


105 pp.

English Version

http://marviva.net/sites/default/files/documentos/atlas_domo_termico_in_les_marviva_web.pdf

Towards a High Seas Governance Scheme for CRTD



Towards a High Seas Governance Scheme for CRTD



I. Hope Spot

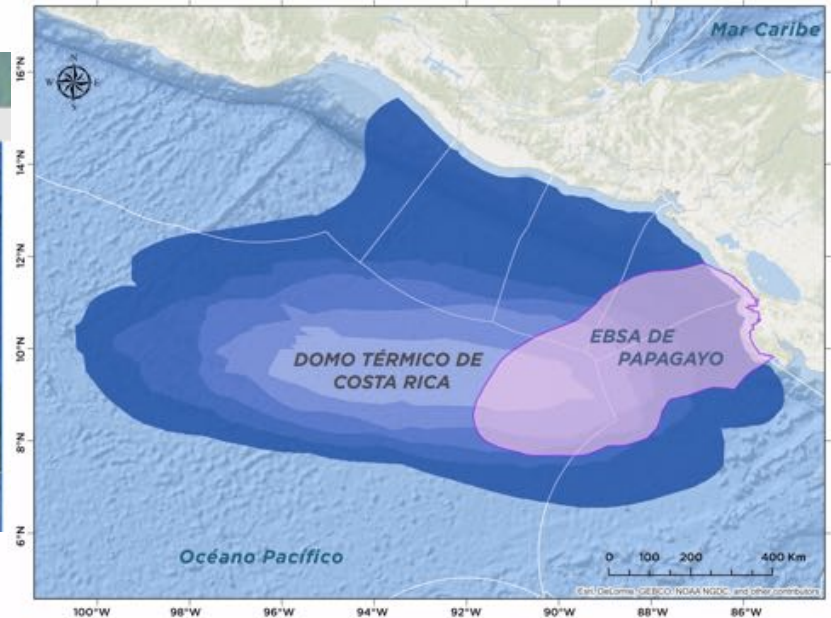
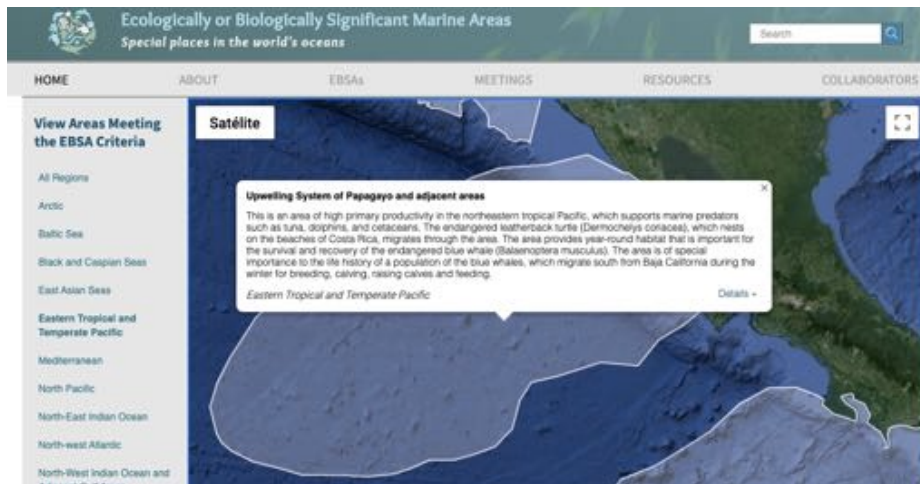


"In 2013, Dr. Sylvia Earle and Mission Blue declared The Costa Rica Dome a "Hope Spot," designating it as a special area critical to the health of the ocean. Some Hope Spots are protected, while others, such as the Costa Rica Dome, still need to be safeguarded with laws ensuring their sustainable use.



Towards a High Seas Governance Scheme for CRTD

II. EBSA (CBD)

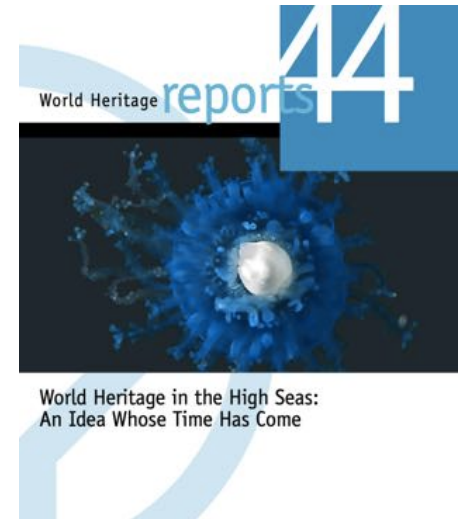


Towards a High Seas Governance Scheme for CRTD

III. UNESCO – WHS in the High Seas



- 1. The Lost City Hydrothermal Field
- 2. The Costa Rica Thermal Dome
- 3. The White Shark Café
- 4. The Sargasso Sea
- 5. The Atlantis Bank



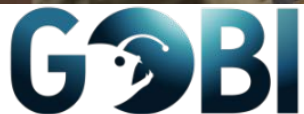
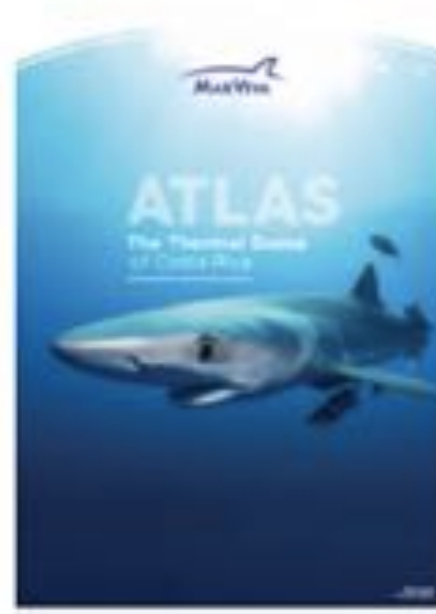
World Heritage in the High Seas:
An Idea Whose Time Has Come



Towards a High Seas Governance Scheme for CRTD

IV. High Seas Alliance

Identification of a Model High Seas MPAs (BBNJ Negotiation)



Towards a High Seas Governance Scheme for CRTD

I. Regional Policy Advocacy

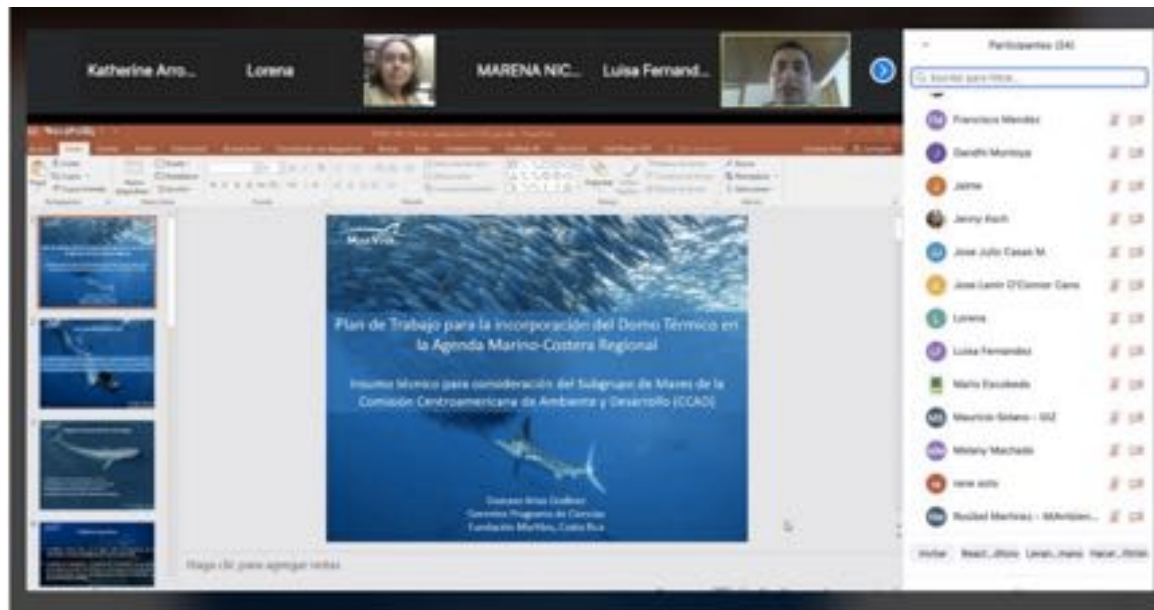


- Signed Agreements
- Workshops
- CRTD within the Marine Regional Agenda



Towards a High Seas Governance Scheme for CRTD

I. Regional Policy Advocacy



Regional virtual work sessions to present and validate with CCAD the proposed “Regional Work Plan towards the consolidation of a governance model for areas beyond national jurisdiction of the Thermal Dome” (June – September 2020)

Towards a High Seas Governance Scheme for CRTD

I. Regional awareness workshops (biodiversity, governance, fisheries, maritime transport)

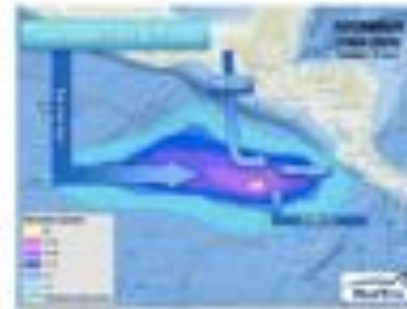


Towards a High Seas Governance Scheme for CRTD

I. Regional awareness workshops
(biodiversity, governance, fisheries, maritime transport)

Taller sobre la Conservación y Uso Sostenible de los Recursos Marinos del Domo Térmico en las Áreas Fuera del Jurisdicción Nacional

En atención a invitación formulada por la COCATRAM adquirió el compromiso de Fundación MARVIVA la Dirección Ejecutiva promovió la iniciativa del Domo Térmico en la que COCATRAM participó en dicho taller que el marco de sus actividades programáticas incluyó en los temas de agenda entre otros en particular durante la V Reunión Extraordinaria de los siguientes: Biodiversidad del Domo Térmico de la COCATRAM-CA y la XXVII Reunión: Modelos de Gobernanza, Importancia del Ordenamiento del Directorio realizadas en la Conferencia Transfronteriza, Área Marítima Colombia e Islas de la Serranía Protegidas en Alta Mar, Mamíferos Marinos, Peces, Hongos, respectivamente durante el mes de Marzo.



En dicha actividad participaron en representación del Sistema de la Integración Centroamericana SICA, tanto la CCAO como OPIESCA, quienes junto a COCATRAM presentaron la visión institucional de sus mandatos. Considerando que el Domo Térmico es un fenómeno natural que existe características regionales debe promoverse con un enfoque adecuado.

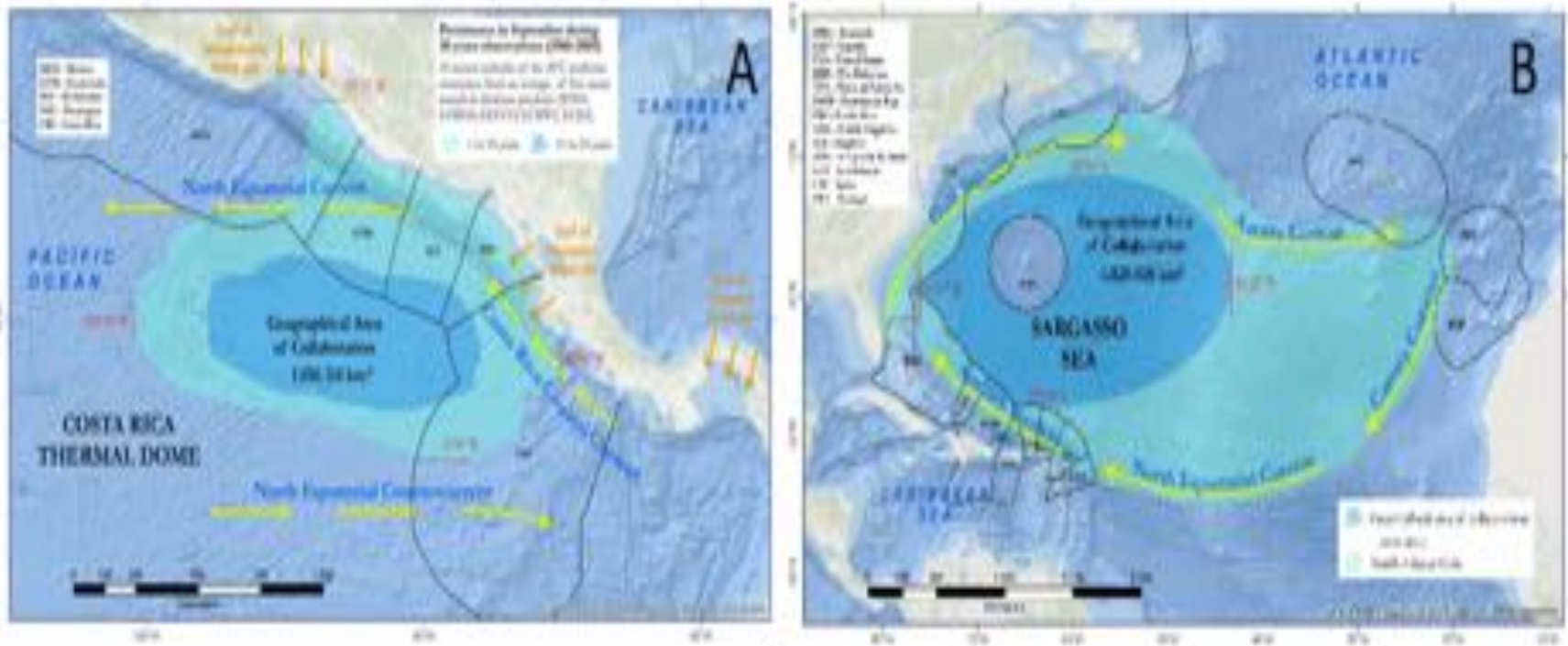


<http://www.dome.marviva.net/>



Contribute to hybrid governance to protect and manage remarkable areas by high seas: Thermal Dome and Sargasso Sea

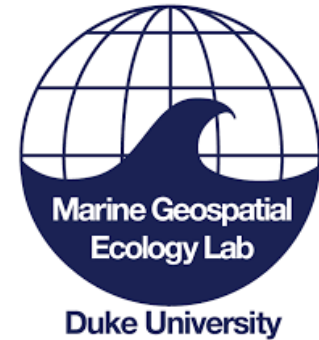
SARGADOM: 2021-2026. 3 million euros



Partners

Duke University's Geospatial Ecology Laboratory (MGEL)

- Application of geospatial technologies to issues of marine ecology, resource management and ocean conservation.



Global Fishing Watch (GFW)

- Monitor with new satellite and radar observation tools fishing activities, shipping, historical and real-time ocean use.



CCAD (*Comisión Centroamericana de Ambiente y Desarrollo*), part of the SICA (*Central America Integration System*).

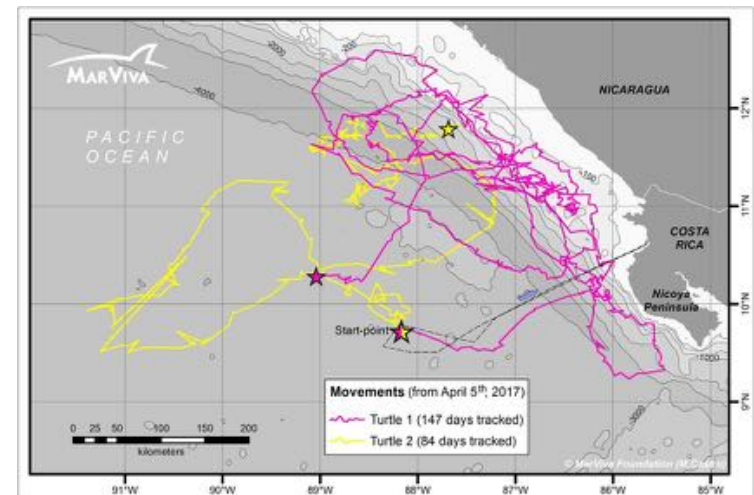
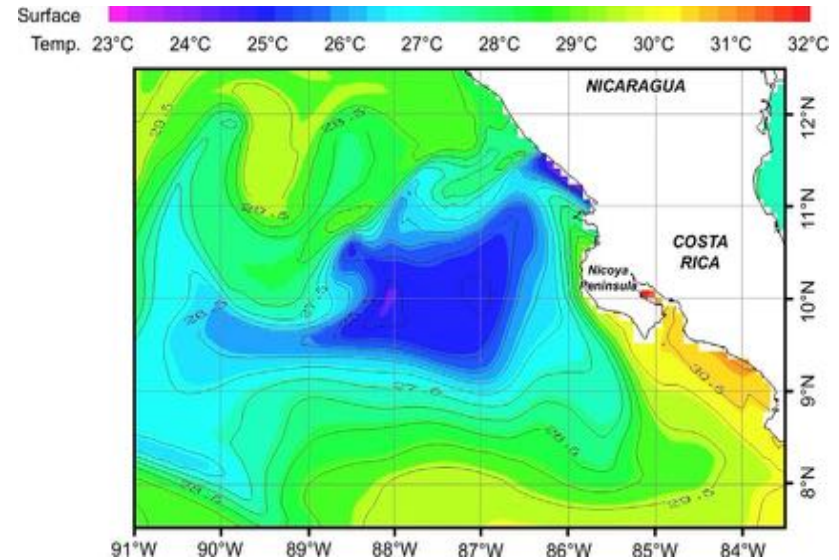
- Inter-governmental body that brings its Technical Committee for the Sea and Biodiversity for the protection of the Thermal Dome.



Objectives

1-Review, update and gap analysis for physical, biochemical and ecological variables

- Identify priorities for data acquisition
- Provide minimum elements for the designation of the sites
- To inform political strategies
- Support the development of management measures.



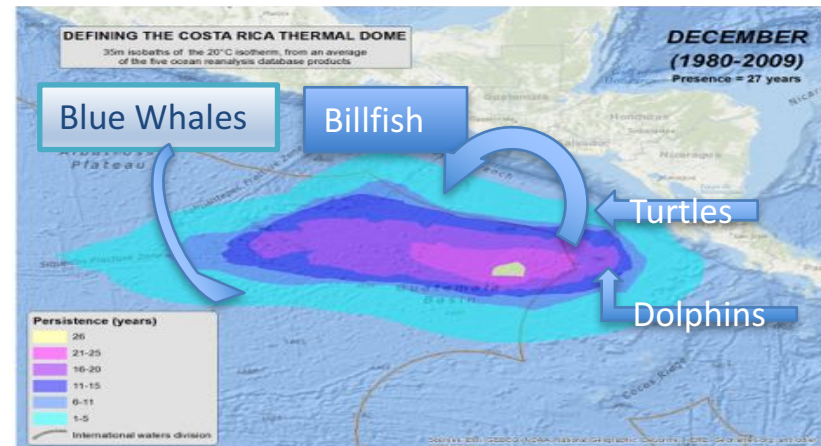
Objectives

2- Review update and gap analysis for socio economical data

Socio-economic data-target sectors:

- **Maritime traffic** (freight transport and cruises)
- **Fishing** (professional and recreational fishing)
- **Tourism** (yachting, diving, cetacean watching, etc.)

3-Ecological- Socioeconomic Connectivity between Dome-Coastal Sites



Objectives

3-Definition of the boundaries of the socio-ecosystem taking into account ecological, biochemical, physical, economic, regulatory, institutional, sociological aspects.

4-Definition of hypothetical strategies to improve the sustainability of the socio-ecosystem (Responses) based on management measures

5-Strategies for the acquisition of missing data on environmental, biodiversity conservation, and socio-economic aspects.



Objectives

5- Propose governance models for ecosystem-based management considering dynamic ocean management aspects

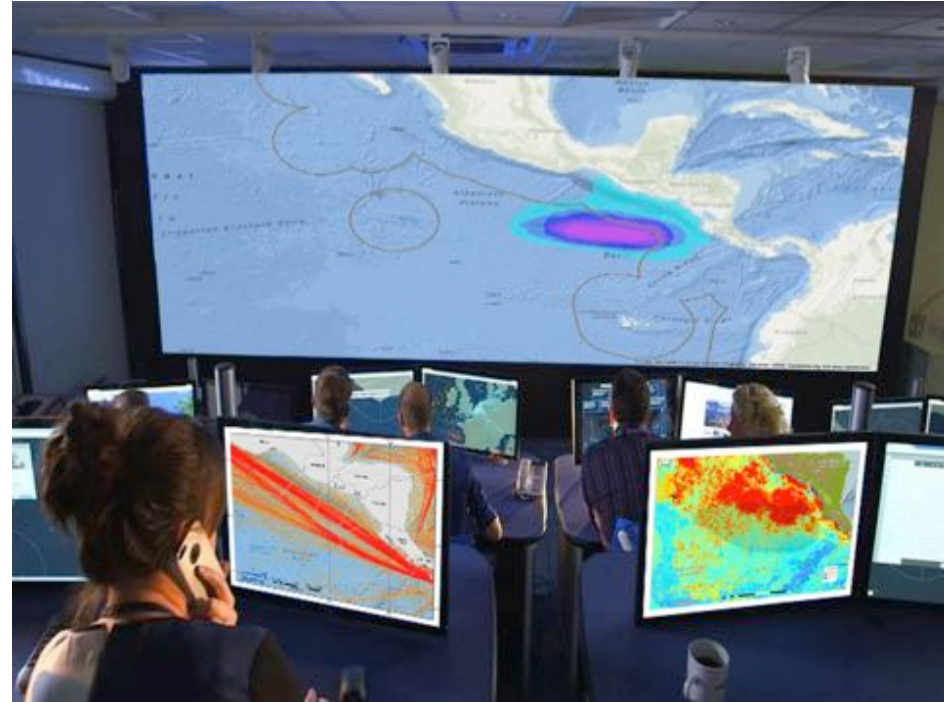
Identification of sustainability issues within the system (e.g. fish catches and fisheries management, maritime traffic and pollution, other human activities, climate change).

6-Capacity building and knowledge transfer, capitalisation and communication



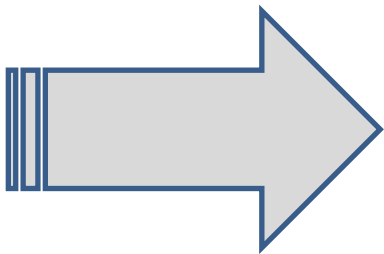
A demonstrative platform

- Dynamic data management
- Ecosystem-based fisheries management,
- Creation of interfaces between multiple data sources
- Data formatting accessible to managers and decision-makers.
- Alternative governance models



Governance Models for Ecosystem-Based Management

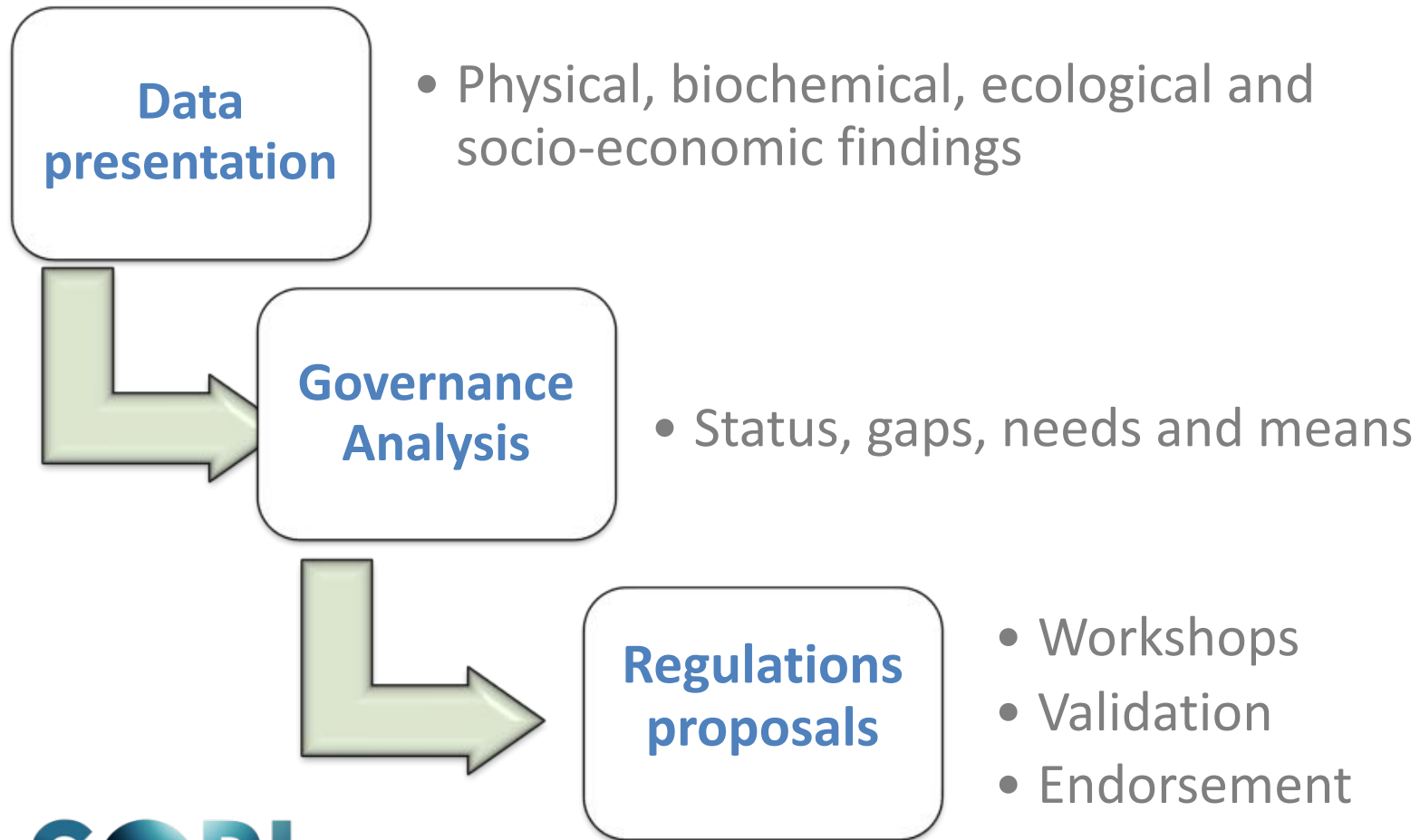
Objective: to contribute to the development of **appropriate governance models for the conservation and sustainable management** of the CRTD, in accordance with **UNCLOS**, in the framework of an **Ecosystem-Based Approach**



- Science-Based
- Participatory-driven and inclusive
- Political endorsement (CCAD Regional Marine Agenda)
- Hybrid model



Governance Models for Ecosystem-Based Management



Governance Models for Ecosystem-Based Management

Regulations proposals



Governance Models for Ecosystem-Based Management



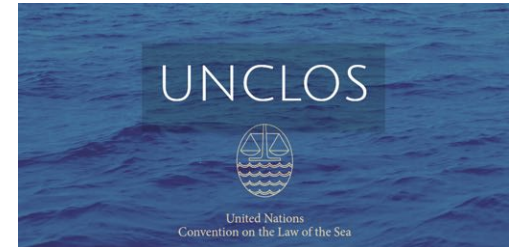
Comisión Centroamericana
de Transporte Marítimo



Drafting

Presentation

Hybrid
model
scheme





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