

THE THERMAL DOME, an area of great ecological and economic importance for the region



The Thermal Dome (the Dome) is an area of high primary productivity of great ecological and economic importance. Critical habitats for multiple species depend on it, as well as economic activities in the Central American region.

The Dome serves as a habitat for cetaceans, such as the endangered blue whale, the humpback whale, and the gray whale; therefore, it has been declared an Area of Importance for Marine Mammals.

The Dome is an important area for species of sea turtles, such as the ridley and the leatherback sea turtles, listed in the Red List of the International Union for Conservation of Nature (IUCN) as vulnerable and critically endangered respectively.

The Dome supports large populations of sharks and rays, several in danger of extinction such as the great hammerhead shark, which is why it has been declared an Area of Importance for sharks and rays.

The Dome is an area of economic importance for the region due to its influence on populations of species of commercial and sporting interest such as marlins and tunas. Many of the species associated with the Dome enable economic activities such as diving, as well as whale and sea turtle watching.

In Guatemala, sport fishing revenue is estimated to be approximately US\$25 million per year (Villagrán, 2015). In Costa Rica, the University of Costa Rica estimated the contribution of sport fishing to the national economy at US\$599 million per year (Yong-Chacon et al., 2010). Meanwhile, in Panama, sports fishermen contribute US\$170.4 million annually to the local economy (Southwick et al., 2013). Atlas, Costa Rica Thermal Dome. MarViva, 2019. Page 56.

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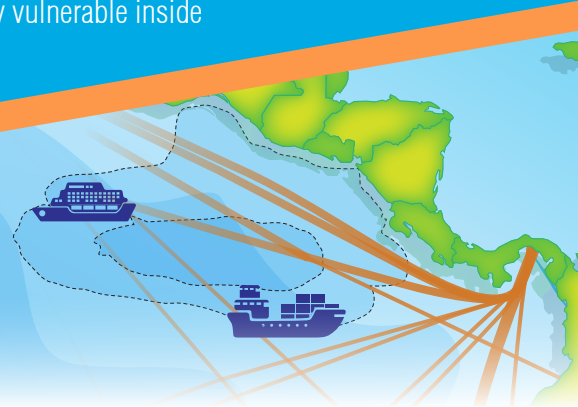


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Challenges and threats to the THERMAL DOME

Marine Traffic

The Thermal Dome is an area with high marine traffic due to its proximity to the Panama Canal, which connects some of the most important transportation routes in the world. This maritime traffic coincides with important migratory routes for species such as blue, gray and humpback whales and leatherback turtles (Lute). Whales are especially vulnerable inside the Dome due to the risk of collision with boats and their exposure to underwater noise pollution (90% of anthropogenic noise in the ocean is caused by ship propulsion).



Governance

The Dome is mostly found in areas beyond national jurisdiction (ABNJ), but its dynamic nature causes it to expand into the jurisdictional waters of countries such as Costa Rica, Nicaragua, Guatemala, and El Salvador. This represents a challenge for their governance, especially in the absence of a comprehensive strategy to protect Biodiversity Beyond National Jurisdictions (BBNJ).

The jurisdiction overlaps and the governance fragmentation approaches between international organizations make it difficult to achieve comprehensive governance in the area. For now, initiatives can be applied sector by sector, making it difficult to implement measures to address various activities together such as fishing, navigation, or mining - for example, it is necessary to regulate maritime transport through the International Maritime Organization (IMO) and fishing through Regional Fisheries Management Organizations (RFMOs).

Solutions and opportunities

The IMO has the legal mandate to regulate the maritime sector and implement precautionary measures to address navigation threats in ABNJ, as well as in the jurisdictional waters of adjacent Central American countries. Among the regulatory tools available to the IMO, the declaration of Particularly Sensitive Sea Areas (PSSA) stands out.

A particularly sensitive marine area (PSSA) is: "one that needs special protection through by IMO, because of its significance for recognized ecological or socio-economic or scientific reasons and which may be vulnerable to damage by international maritime activities" Resolution A.982 (24).

- The PSSA **designation is applicable to an ABNJ**, so it could be applied to the Dome.
- When declaring an PSSA, the **“appropriate protective measure (s)”** should be designated to prevent, reduce, or eliminate the threat or vulnerability detected in the marine space.
- PSSA function as an “umbrella” designation under which **various protective measures can be included**. In this case, for example, speed reductions or redirection of maritime traffic could be designated to prevent collisions between ships and cetaceans.

The recent adoption in March 2023 of the Agreement on Biodiversity Beyond National Jurisdictions (BBNJ Agreement), a comprehensive and legally binding instrument for biodiversity conservation in ABNJs, could serve as a framework for the governance of the Dome. However, its entry into force and implementation may take several years.

