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**Information Paper on  
"Protecting Blue Corridors"  
An international collaborative project co-designing  
marine connectivity conservation strategies and  
solutions for whales with opportunities for the Wider  
Caribbean Region**

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# Information paper on "Protecting Blue Corridors", an international collaborative project co-designing marine connectivity conservation strategies and solutions for whales with opportunities for the Wider Caribbean Region.

## Summary

The purpose of this information paper is to present the global collaborative project and report '*Protecting Blue Corridors*' from a collective of international marine mammal science, conservation, and policy communities exploring marine connectivity conservation strategies and solutions, and to propose considering applying this approach for marine mammal conservation in the Wider Caribbean Region (WCR).

The *Protecting Blue Corridors* report<sup>1</sup> presents a collaborative analysis of 30 years of scientific data contributed by more than 50 research groups on the global main migration routes of whales, also known as whale superhighways, and outlines how whales are encountering multiple and growing threats along these routes and their breeding and feeding habitats. It introduces the concept of the Blue Corridors conservation approach to address these mounting threats and safeguard whales, through enhanced cooperation from local to regional to international levels in particular on the whale superhighways.<sup>2</sup>

This information paper proposes to consider implementing this approach for the conservation and management of marine mammals in the Wider Caribbean Region (WCR) and intends to follow-up on recommendations of the *Scientific and Technical Analysis of the Implementation of the Action Plan for the Conservation of Marine Mammals (MMAP) in the Wider Caribbean*, hereafter termed "MMAP Technical Report"<sup>3</sup>, as well the *Update Of The Action Plan For The Conservation Of Marine Mammals In The Wider Caribbean Region*" hereon "Update MMAP WCR"<sup>4</sup>, and the *Draft Work Plan for The Specially Protected Areas and Wildlife (Spaw) Sub-Programme for the 2023 – 2024 Biennium*, hereafter termed "Draft SPAW Sub-Pogramme 2023-2024."<sup>5</sup>

We propose to take a regional, collaborative approach to designing marine connectivity conservation strategies and solutions, implementing a marine mammal *Blue Corridors Approach*, to serve to meet the identified objectives of the SPAW Protocol and the SPAW-RAC to enhance regional collaboration and communication on marine mammal conservation and management based on connectivity by identifying migratory routes of whales and dolphins in the WCR.

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<sup>1</sup> The full report can be downloaded here: <https://zenodo.org/record/6196131#.Y8AWjC9Q2Td>

<sup>2</sup> Johnson, C. M., Reisinger, R. R., Palacios, D. M., Friedlaender, A. S., Zerbini, A. N., Willson, A., Lancaster, M., Battle, J., Graham, A., Cosandey-Godin, A., Jacob, T., Felix, F., Grilly, E., Shahid, U., Houtman, N., Alberini, A., Montecinos, Y., Najera, E., & Kelez, S. (2022). *Protecting Blue Corridors - Challenges and solutions for migratory whales navigating national and international seas*. WWF International, Switzerland. <https://doi.org/10.5281/ZENODO.6196131>

<sup>3</sup> SPAW-RAC. (2021). *Implementation of the Action Plan for Marine Mammals in the Wider Caribbean Region: A Scientific and Technical Analysis*. Authored by Vail, C. and Borobia, M. UN Environment, Caribbean Environment Programme, Specially Protected Areas and Wildlife Regional Activity Centre. 165 pp.

<sup>4</sup> UNEP(DEPI)/CARWG.43/INF.31. (2021). *Update of the Action Plan for The Conservation of Marine Mammals in The Wider Caribbean Region*.

<sup>5</sup> UNEP(DEPI)/CAR WG.43/3. (2022). *Draft Work Plan for The Specially Protected Areas and Wildlife (Spaw) Sub-Programme for the 2023 – 2024 Biennium*.

### ***Protecting Blue Corridors - a collaborative conservation approach***

Protecting Blue Corridors is a report by WWF, University of California Santa Cruz, Oregon State University, and University of Southampton visualizing the satellite tracks of over 1000 migratory whales of eight species worldwide based on 30 years of data from 50 research groups.

It provides a comprehensive look at whale migrations and maps the main global migration routes, so called whale superhighways (Figure 1), and the threats they face across these superhighways. The report highlights how the cumulative impacts from industrial fishing, ship strikes, pollution, habitat loss, and climate change are creating a hazardous journey. Areas covered in depth in the report include the eastern Pacific Ocean, Indian Ocean, Southern Ocean, Mediterranean Sea and southwest and north Atlantic Ocean. Importantly, information gathered for these areas attempts to identify where migratory routes and key areas overlap with a range of emerging and cumulative threats from human activities, helping inform how we can better protect and manage their critical ocean habitats worldwide (Figure 2).

Cetaceans rely on different critical ocean habitats – areas where they feed, mate, give birth, nurse young, socialize or migrate – for their survival<sup>6</sup>. Whale superhighways are the main migration pathways for marine megafauna such as whales. The report outlines how the Blue Corridor Approach as a science based, collaborative conservation approach can identify the most critical habitats for whales in order to assist the development of local, national, regional and global management measures to safeguard whales throughout their migratory pathways and to mitigate threats.<sup>7</sup> The approach encompasses the idea that marine megafauna move among different but ecologically interconnected areas, and that movements between critical habitats are essential to their survival.

### **Marine connectivity conservation strategies for marine mammals**

The Protecting Blue Corridors report draws on the practice of “connectivity conservation” which is already widely used on land but applies it to the world’s seas and in particular on whales, which are considered “umbrella species” – that is, representatives of the biodiversity of the complex ecosystems they inhabit. Put simply, this means conserving whales across their entire range will also help many other species.<sup>6</sup>

Connectivity conservation is a concept that recognizes that species survive and adapt better when their habitats are managed and protected as large, interconnected networks. Marine protected areas (MPAs) are conservation tools intended to protect biodiversity, promote healthy and resilient marine ecosystems, and provide societal benefits<sup>8</sup>. Safeguarding Blue Corridors for whales introduces an integrated strategy to bring these tools together through engaging international and regional organizations involved with a range of areas, such as the International Whaling Commission, and the International Maritime Organization, industries (e.g. fisheries and shipping), regional fisheries management organizations and regional fisheries bodies like WECAFC and ICCAT, and international conservation agreements such as the Commission for the Conservation of Antarctic Marine Living Resources and the SPAW Protocol under the Cartagena Convention.

<sup>6</sup> Hoyt, E. (2011). *Marine Protected Areas for Whales, Dolphins, and Porpoises: A world handbook for cetacean habitat conservation and planning* (2nd ed.). London: Earthscan.

<sup>7</sup> Johnson, C. M., Reisinger, R. R., Palacios, D. M., Friedlaender, A. S., Zerbini, A. N., Willson, A., Lancaster, M., Battle, J., Graham, A., Cosandey-Godin, A., Jacob, T., Felix, F., Grilly, E., Shahid, U., Houtman, N., Alberini, A., Montecinos, Y., Najera, E., & Kelez, S. (2022). *Protecting Blue Corridors - Challenges and solutions for migratory whales navigating national and international seas*. WWF International, Switzerland. <https://doi.org/10.5281/ZENODO.6196131>

<sup>8</sup> Grorud-Colvert, K., Sullivan-Stack, J., Roberts, C., Constant, V., Horta E Costa, B., Pike, E. P., Kingston, N., Laffoley, D., Sala, E., Claudet, J., Friedlander, A. M., Gill, D. A., Lester, S. E., Day, J. C., Gonçalves, E. J., Ahmadi, G. N., Rand, M., Villagomez, A., Ban, N. C., ... Lubchenco, J. (2021). *The MPA Guide: A framework to achieve global goals for the ocean*. *Science*, 373(6560), eabf0861. <https://doi.org/10.1126/science.abf0861>

In that respect, the concept of Blue Corridors is not completely new to the Wider Caribbean Region as the importance of connectivity between MPAs has been identified and recognized as strategically important to ensure the protection of marine habitats and species beyond their geographical borders<sup>9 10</sup>. Rather, the Blue Corridors Approach is a strategy that can be applied to achieve the existing objectives of, and recommendations stipulated in the MMAP Technical Report and the Update MMAP WCR report.<sup>8</sup>

### **Opportunities for marine mammals in the Wider Caribbean Region (WCR) by identifying whale superhighways through the Blue Corridor Approach.**

Taking into consideration the importance of cetaceans in the WCR region<sup>11</sup>, their transboundary nature, and the valuable on-going cooperation among five existing marine mammal sanctuaries, there is a need for strengthened regional collaboration<sup>9 10</sup>. This need for enhanced regional coordination and collaboration between countries to address emerging environmental issues, in particular the need for sharing of resources is also highlighted in the Draft SPAW Sub-Programme 2023-2024.<sup>9 10</sup>

The Blue Corridors Approach provides a collaborative methodology to help shape coordination and guide a multilateral approach and regional network as recommended by the MMAP. As a first step to consider implementing a Blue Corridors Approach, we propose mapping whale superhighways for the Wider Caribbean Region by compiling migratory routes and other critical habitats based on existing marine mammal data. This Blue Corridors Approach can serve as a framework to support the creation of a network of MPAs and/or Sister Sanctuaries along migratory routes as identified by the MMAP.

Implementing the Blue Corridors Approach also offers opportunities for synergies with the recently announced Caribbean Marine Megafauna and Anthropogenic Activities (CAMAC) project. Both aim to fill knowledge gaps, build collaboration on a regional scale, assess impacts, and provide stakeholders with tools and recommendations for marine mammal conservation based on connectivity. A Protecting Blue Corridors report specific for the WCR could be a deliverable for the first year of the CAMAC project.

Assessing Blue Corridors can also assist in the identification of Important Marine Mammal Areas developed by the Marine Mammal Protected Areas Task Force of the IUCN Species Survival Commission and World Commission on Protected Areas<sup>12</sup>. These have not been identified for the WCR yet<sup>13</sup>.

As Blue Corridors demonstrate the transoceanic nature of whale movement implementation inside and outside the WCR, the creation of a Protecting Blue Corridor report for the WCR would also contribute to collaboration outside the region, such as with the International Whaling Commission where an information paper on Blue Corridors has also been welcomed<sup>14</sup>. In addition, there are opportunities to explore this collaborative approach for other migratory megafauna.

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<sup>9</sup> UNEP(DEPI)/CARWG.43/INF.31. (2021). Update of the Action Plan for The Conservation of Marine Mammals in The Wider Caribbean Region.

<sup>10</sup> UNEP(DEPI)/CAR WG.42/INF.10 (2021). Developing an Ecological Network Among the Spaw-Listed MPAs Of the Wider Caribbean

<sup>11</sup> See for example, "Whale Watching Worldwide, Tourism numbers, expenditures and expanding economic benefits IWC/61/14, June 2009"

<sup>12</sup> Hoyt, E. & Notarbartolo di Sciara, G. (2021) Important Marine Mammal Areas: a spatial tool for marine mammal conservation. *Oryx* 55, 330.

<sup>13</sup> <https://www.marinemammalhabitat.org/imma-eatlas/>

<sup>14</sup> SC/68D/HIM/13, JOHNSON, R. REISINGER, D. PALACIOS, A. FRIEDLAENDER, A. WILLSON, A. ZERBINI, M. LANCASTER, J. BATTLE, A. GRAHAM, A. COSANDEY-GODIN, T. JACOB, F. FELIX, E. GRILLY, U. SHAHID, N. HOUTMAN, A. ALBERINI, Y. MONTECINOS, E. NAJERA AND S. KELEZ Protecting Blue Corridors – a collaborative international report highlighting the challenges and solutions for migratory whales navigating national and international seas

**Proposed SPAW STAC Recommendation(s)**

The STAC is invited to consider the above context and the recommendations below for endorsing the need to explore the possibilities to enhance regional protection of whales as stipulated in the MMAP through the Blue Corridor Approach.

1. The SPAW Contracting Parties acknowledge the need of mapping whale superhighways in the Wider Caribbean Region and support the mapping of these whale superhighways in a 'Blue Corridors for the Wider Caribbean Region' report by committing to make available any required and existing cetacean data.
2. The SPAW Contracting Parties consider implementing Blue Corridors Approach as conservation approach based on the whale superhighways.

**WHALE SUPERHIGHWAYS**

For the first time, we present a global view of blue corridors for whales, combining satellite tracking data from over 1000 tags from 50 researchers. They help uncover the migration patterns of whales and their critical habitats.

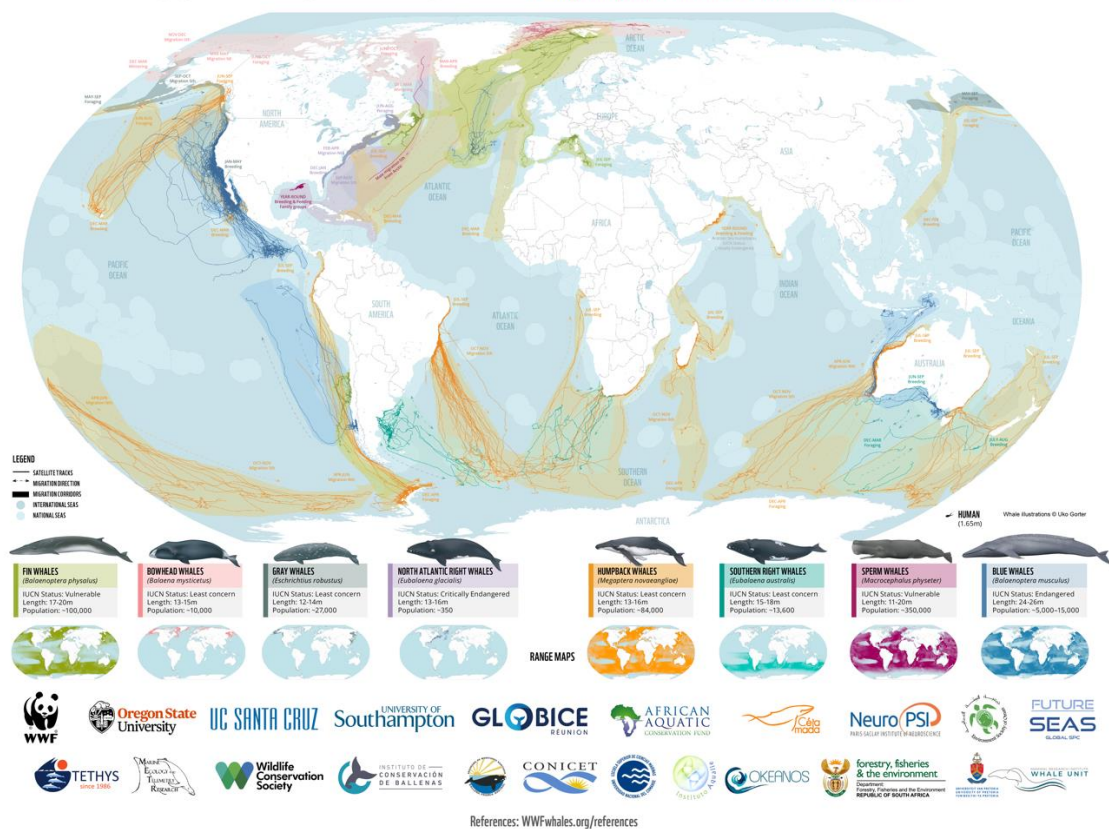


Figure 1. Main infographic from the *Protecting Blue Corridors* report. This map displays satellite tracking data from over 1000 tags of eight whale species from 50 research groups worldwide. The aim is to better visualize migration patterns of whales and their critical habitats.

# NORTH ATLANTIC OCEAN

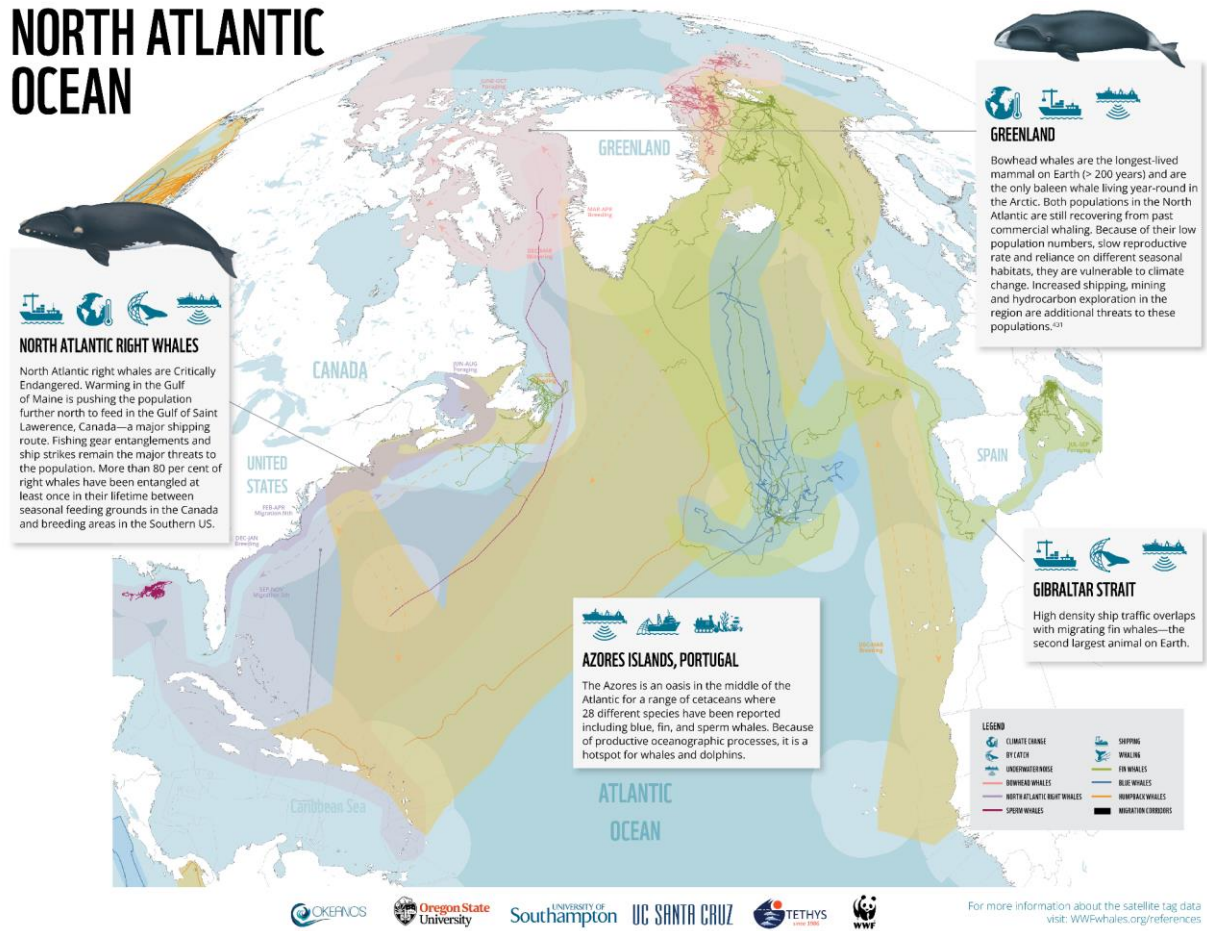


Figure 2. The *Protecting Blue Corridors* report provides regional case studies, displaying threats and highlighting solutions including throughout the North Atlantic Ocean. The infographic above shows available tracking data for blue, fin, sperm, humpback, and North Atlantic whales in the context of known threats.