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Whales and ship collisions

Collision hotspots across the globe and measurments that can lower whale collisions

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A growing shipping industry puts the great whales at risk

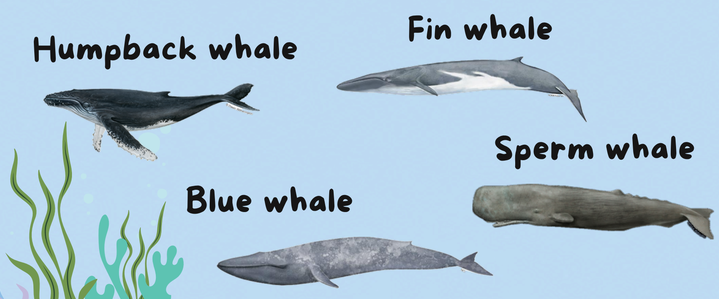
Shipping traffic is growing rapidly, and ship collisions have become a primary threat to large whales. Where the risk is highest remains unknown across most of the world's oceans.

This study maps global collision risk for blue, fin, humpback and sperm whales, and examines which highest-risk areas are protected today.

Method

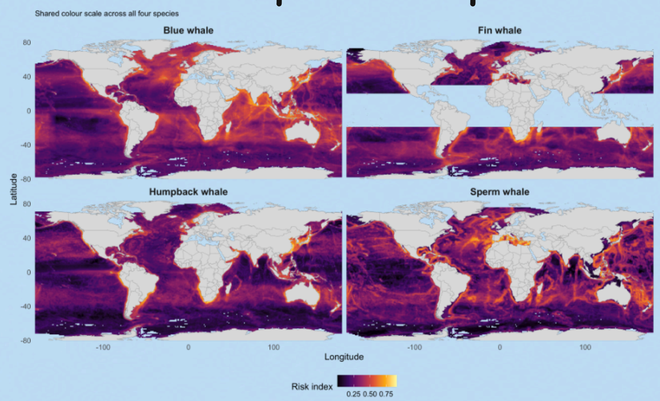
- Analysed and visualised in R
- Included modelled whale distributions, shipping activity and collision risk
- Calculated area-weighted mean risk and management overlap
- Assessed management across the four species combined modelled ranges.

The whale species



Results

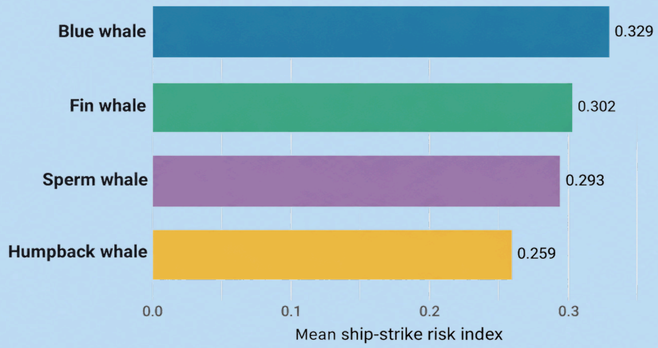
Global distribution of predicted ship-strike risk



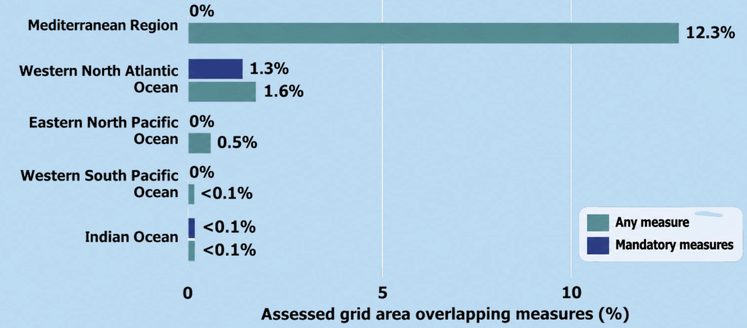
Predicted ship-strike risk varied geographically and among species. Blue whales had the highest area-weighted mean risk index (0,329), followed by fin whales (0,302), sperm whales (0,293) and humpback whales (0,259). Recorded management measures overlapped with 12,3% of assessed whale-range grid area in the Mediterranean region, compared with 1,6% in the western North Atlantic and less than 1% in all other regions. These percentages describe grid-cell overlap with measures, rather than full protection of those areas.

Our results indicate high predicted whale-ship collision risk in parts of the North Atlantic and Indian Ocean.

Mean predicted ship-strike risk by whale species



Ship-strike management by ocean region



Understanding Collision Risks

- Ship traffic overlaps with whale ranges across most of the ocean, creating a high potential of collisions.
- Very few protective measurements are in place (<7%), despite the large-scale impact (92%)
- The small additional area needed for protection (2,6%) shows that closing the gap is feasible and could greatly reduce the risk.
- Lower ship speed, planned shipping routes, and protected areas are effective strategies to reduce ship whales collisons

Conclusion

- Ship collisions are a threat to whales.
- Targeted conservation efforts could significantly reduce ship–whale collisions.
- Protecting key hotspots and improving shipping practices are essential for whale conservation.

References:
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