

Science to Conserve Ocean Resources



Session 1 Sustainable Marine Resources

EUROCEAN 2019



Vlaams Instituut voor de Zee vzw
Flanders Marine Institute

Chromodoris kuniei ransoni, a Polynesian endemic sea slug, Tikehau, Tuamotu Islands Author [Paulay, Gustav](#)

EUROCEAN, Paris, 11 June 2019

Atlantic bluefin tuna



©C.Roberts. Unnatural History of the Sea

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Could big-game fishing return to the UK?

By Rob Byrne
BBC News Critic

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DutchNews.nl
Bluefin tuna return to North Sea waters after 50-year absence

Undercurrent NEWS
GLOBAL FISHERY FORUM 2019 & SEAFOOD EXPO July 10-11, 2019
Bluefin back in North Sea

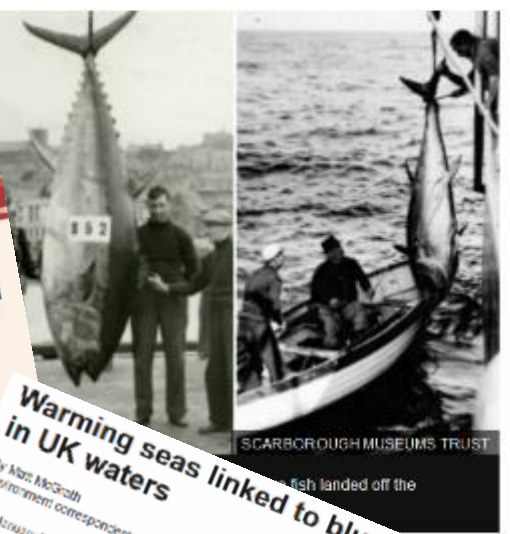
Warming seas linked to bluefin tuna surge in UK waters
By Alan McGrath
Environment correspondent
© 2 January 2019

RESEARCH ARTICLE | ECOLOGY

Atlantic Multidecadal Oscillations drive the basin-scale distribution of Atlantic bluefin tuna

Robin Faillietaz^{1,2}, Grégory Beaugrand¹, Eric Goberville² and Richard R. Kirby^{1,3}
+ See all authors and affiliations

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Vol. 5, no. 1, earr6993
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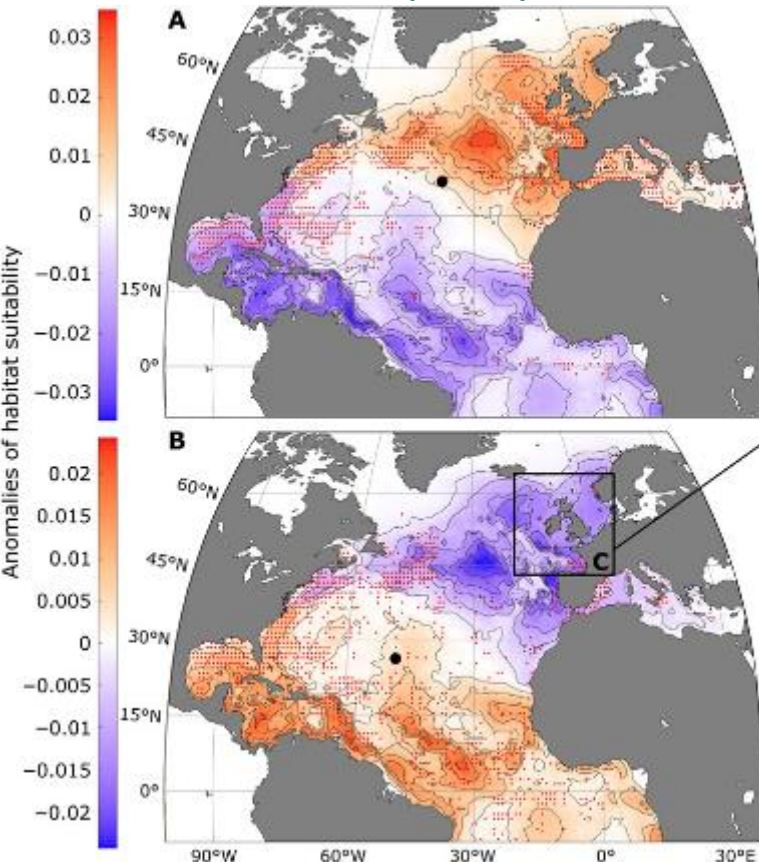


SCARBOROUGH MUSEUMS TRUST

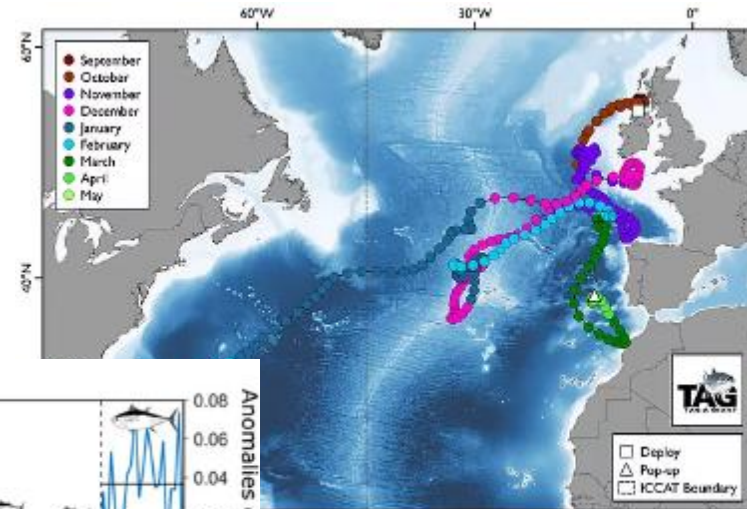
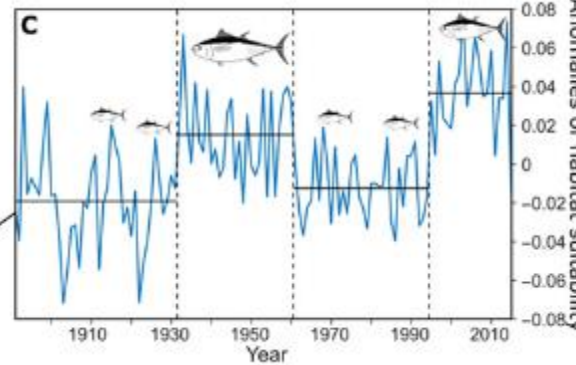
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OCEAN SCIENCE TO UNDERSTAND DYNAMIC OCEAN

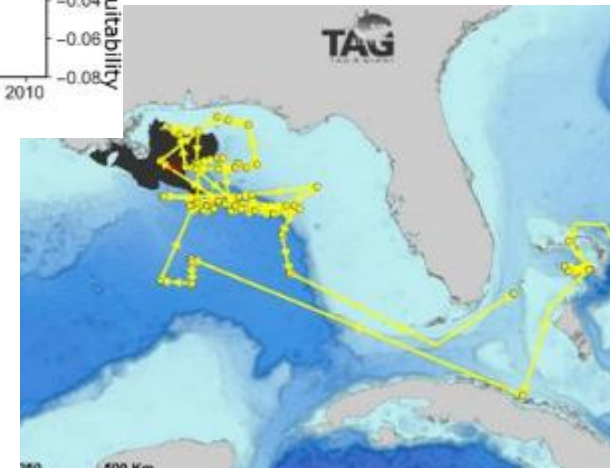
- Driver-Response relations and Tipping points
- Connectivity and Variability in space and time
- Multiple stressors and their cumulative effects:
temperature, anoxia and dead zones, acidification, pollution
- Multi/Transdisciplinary approaches to address complexity



Faillertaz et al. 2019. Science Advances, Jan. 2019



Tag-A-Giant Project TAG



The political biogeography of migratory marine predators

Autumn-Lynn Harrison^{1,2*}, Daniel P. Costa¹, Arliss J. Winship^{3,4}, Scott R. Benson^{5,6}, Steven J. Bograd⁷, Michelle Antolos¹, Aaron B. Carlisle^{8,9}, Heidi Dewar¹⁰, Peter H. Dutton¹¹, Salvador J. Jorgensen¹², Suzanne Kohin¹⁰, Bruce R. Mate¹³, Patrick W. Robinson¹, Kurt M. Schaefer¹⁴, Scott A. Shaffer¹⁵, George L. Shillinger^{8,16,17}, Samantha E. Simmons¹⁸, Kevin C. Weng¹⁹, Kristina M. Gjerde²⁰ and Barbara A. Block⁸

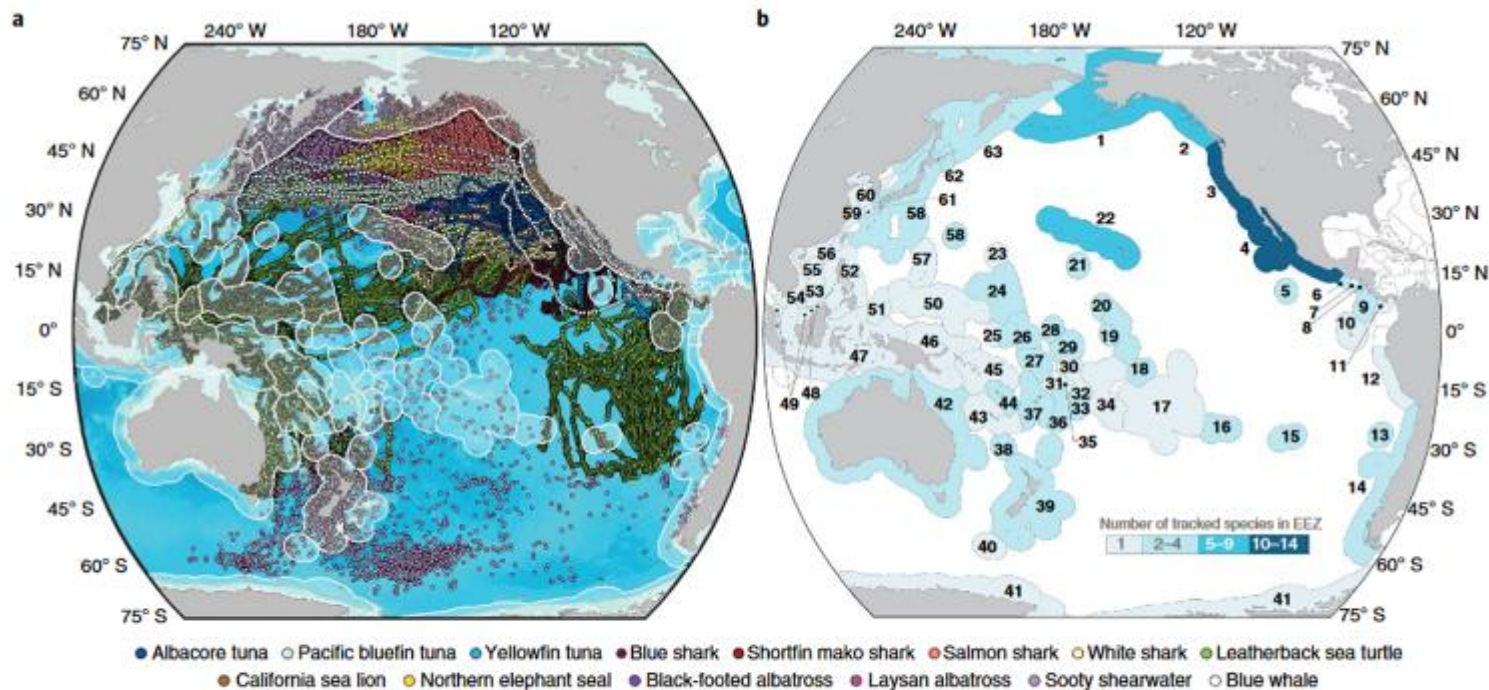


Fig. 1 | Daily locations of marine predators electronically tracked within EEZs and the high seas of the Pacific Ocean. a, State-space-modelled daily locations of 14 marine predator species electronically tracked (2000–2009) in EEZs (transparent overlay) and the high seas (ocean water falling outside the transparent overlay). Adapted with permission from ref. ¹, Springer Nature Ltd. **b**, Key to visited EEZs. EEZ boundaries from the VLIZ Maritime Boundaries Geodatabase (2016); some are disputed. Refer to official records for all claimants and alternative geographies. 1, Alaska (USA); 2, Canada;

OCEAN SCIENCE IN SUPPORT OF SUSTAINABLE USE

Multiple roles

- Understand (human) drivers and effects in changing ocean
- Translate scientific knowledge to inform science policy and develop policy advice
- Co-design effective measures for sustainable management of marine resources
- Monitor human impact at appropriate scale in space and time
- Develop new frameworks for assessing impact of multiple stressors
- Develop innovative technologies and novel management frameworks: adaptive, dynamic & real-time resource management in ecosystem approach (4D-Connected Ocean)
- Feed governance mechanisms at different scales (sea basin, regional seas, global..)



UN DECADE OF OCEAN SCIENCE FOR SUSTAINABLE DEVELOPMENT

2021-2030

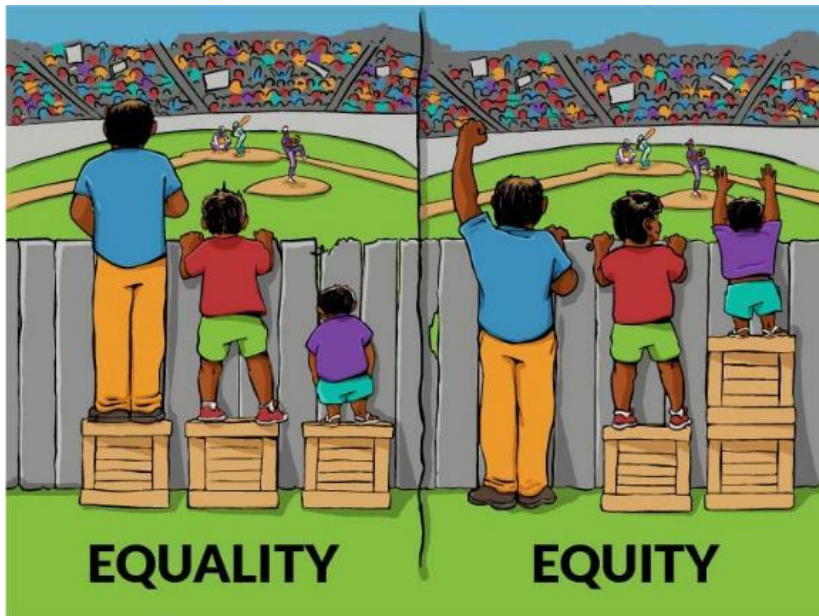
A Safe Ocean
A Clean Ocean
A Predicted Ocean
A Healthy and Resilient Ocean
A Sustainable and Productive Ocean
A Transparent and Accessible Ocean



A Transparent and Accessible Ocean

Ocean Data and Information

- Ocean Data is a **Public Good**: key to achieve SDG
- **Leave no Ocean Data behind**
- Develop global and internationally recognized **Ocean Data Policy**: FAIR, QA
- Engage +20 UN Agencies in data sharing, engage Ocean economy actors
- Invest in Sustained Ocean Observing Systems, incl biological variables



Capacity Development

- Needs-driven
- Regional differences, diversity
- Access to Ocean Knowledge is Human Right
- **Equal Access-Equitable Access**
- Develop global access point with regional portals- access to training opportunities
- Engage in collaboration and sharing

UN DECADE OF OCEAN SCIENCE FOR SUSTAINABLE DEVELOPMENT



Knowledge gaps and ocean science priorities for the 2030 Agenda
Existing relevant partnerships/networks/initiatives and gaps
Priorities in capacity-development/training
Priority topics and themes
Potential partners



- Acknowledge the role of Ocean ecosystem diversity & functioning in Earth system
- Embrace complexity of Ocean: New system thinking – transdisciplinarity
- Develop innovative (Ocean Observing, Modelling, Analytics) technologies & Develop novel (governance and collaboration) frameworks for Conserving ocean ecosystems as a basis for sustainable use

THANK YOU

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