

# The biodiversity perspective

**Abigail J. Lynch**

*U.S. Geological Survey*

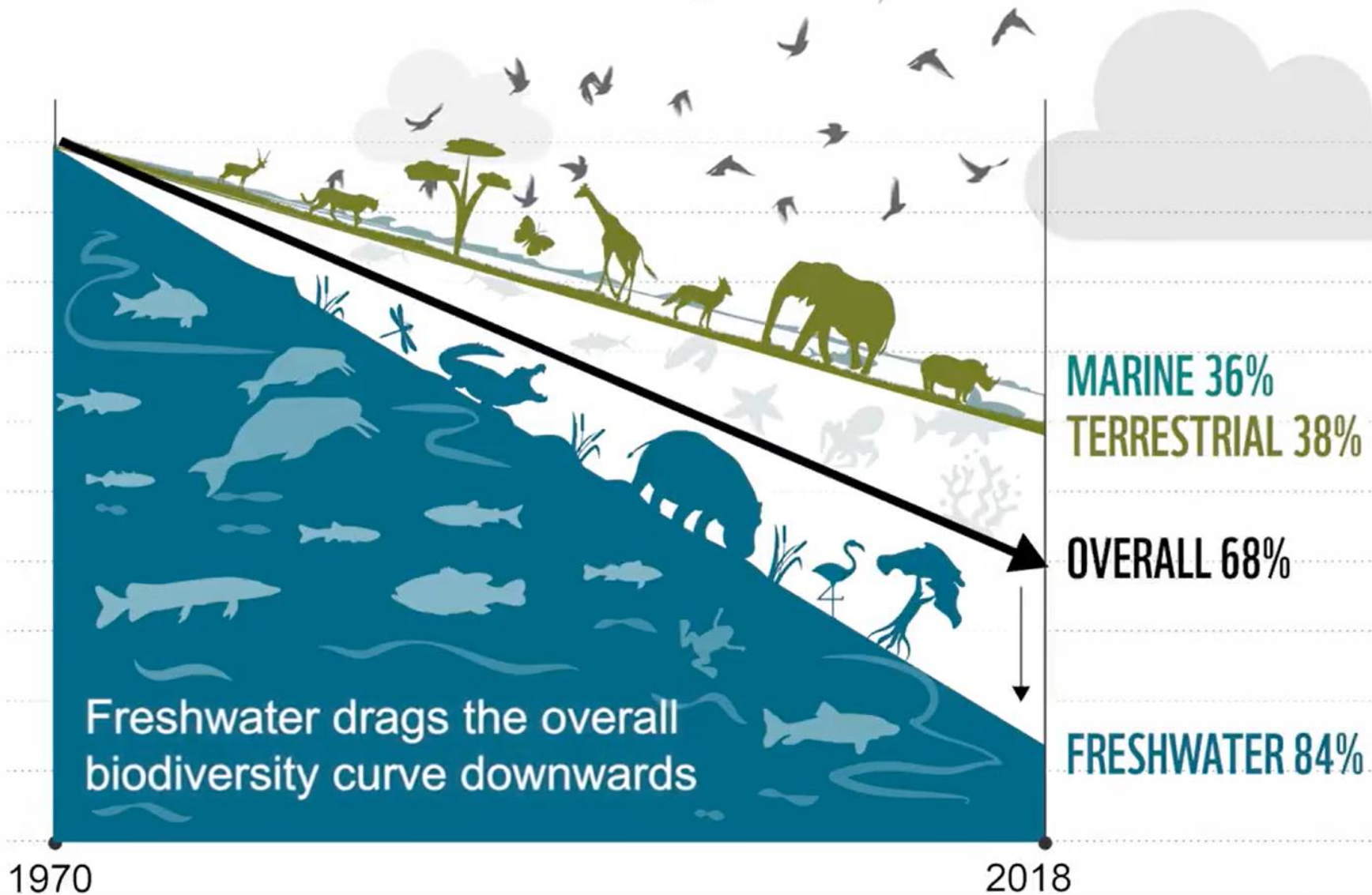
National Climate Adaptation Science Center



Freshwater ecosystems cover less than 1% of Earth's surface, yet are home to at least 10% of Earth's species.



# Global decline in biodiversity since 1970



Statistics from Living Planet Index: Freshwater & Overall (2018), Marine & Terrestrial (2012)



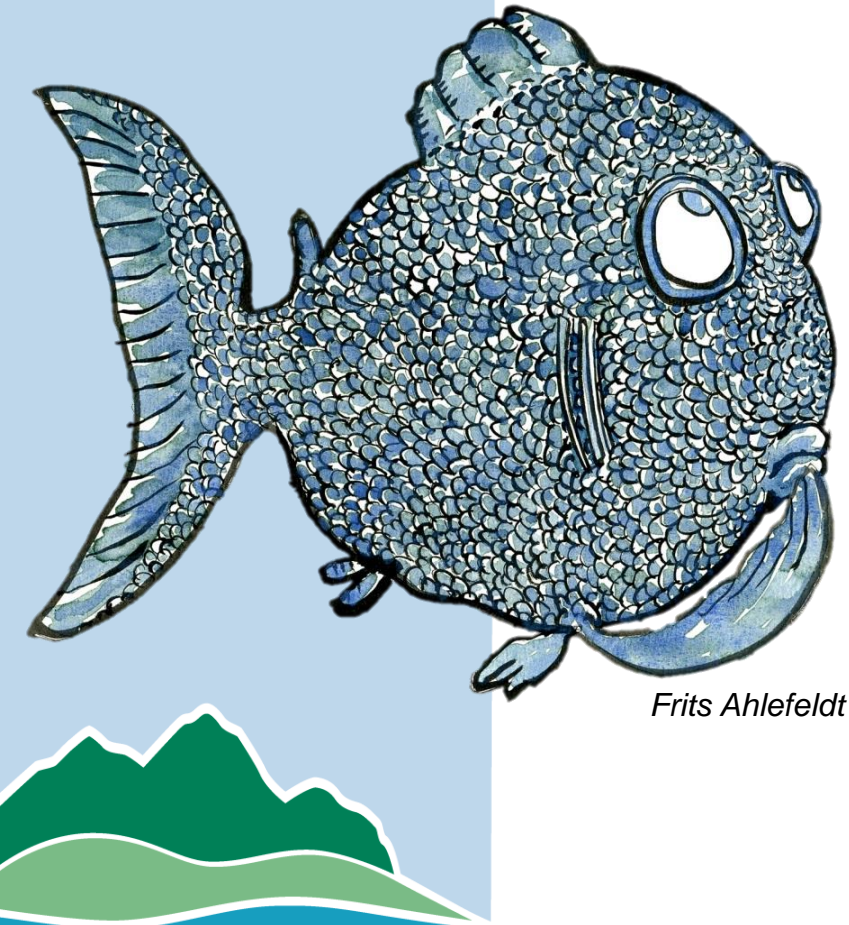
■ Material

■ Non-material

■ Regulating

*Lynch et al. 2023*

# Why is biodiversity **under-represented** in river health programs?



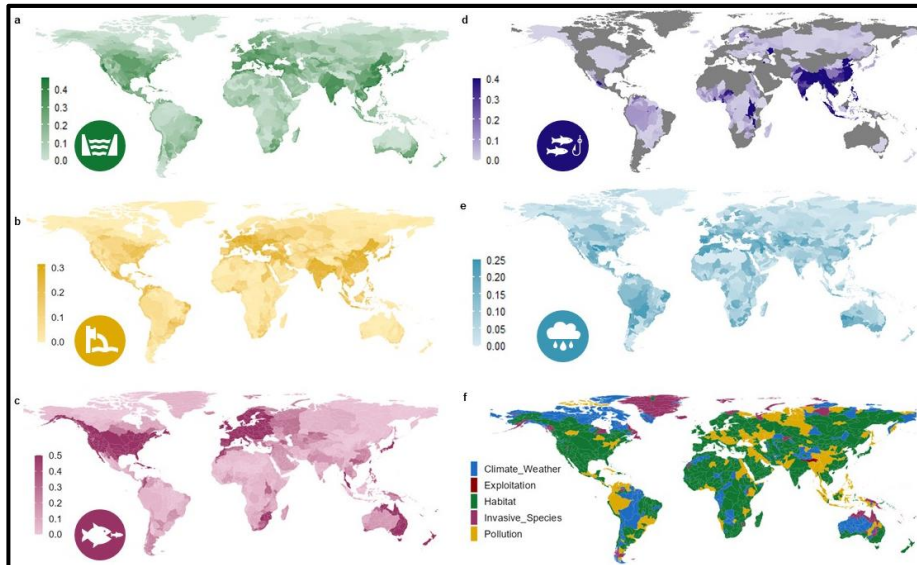
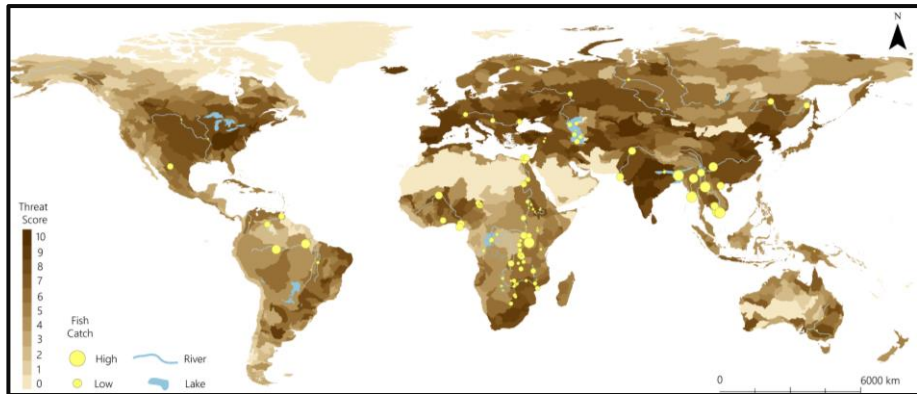
*Frits Ahlefeldt*

- **Logistical** constraints
  - Biodiversity data are broadly lacking
  - Some programs rely on a few simple indicators
    - Water quality is often easier / more inexpensive to monitor
- **Regulatory** constraints
  - Existing policies may not prioritize biodiversity

We need to think **outside**  
the fish bowl.



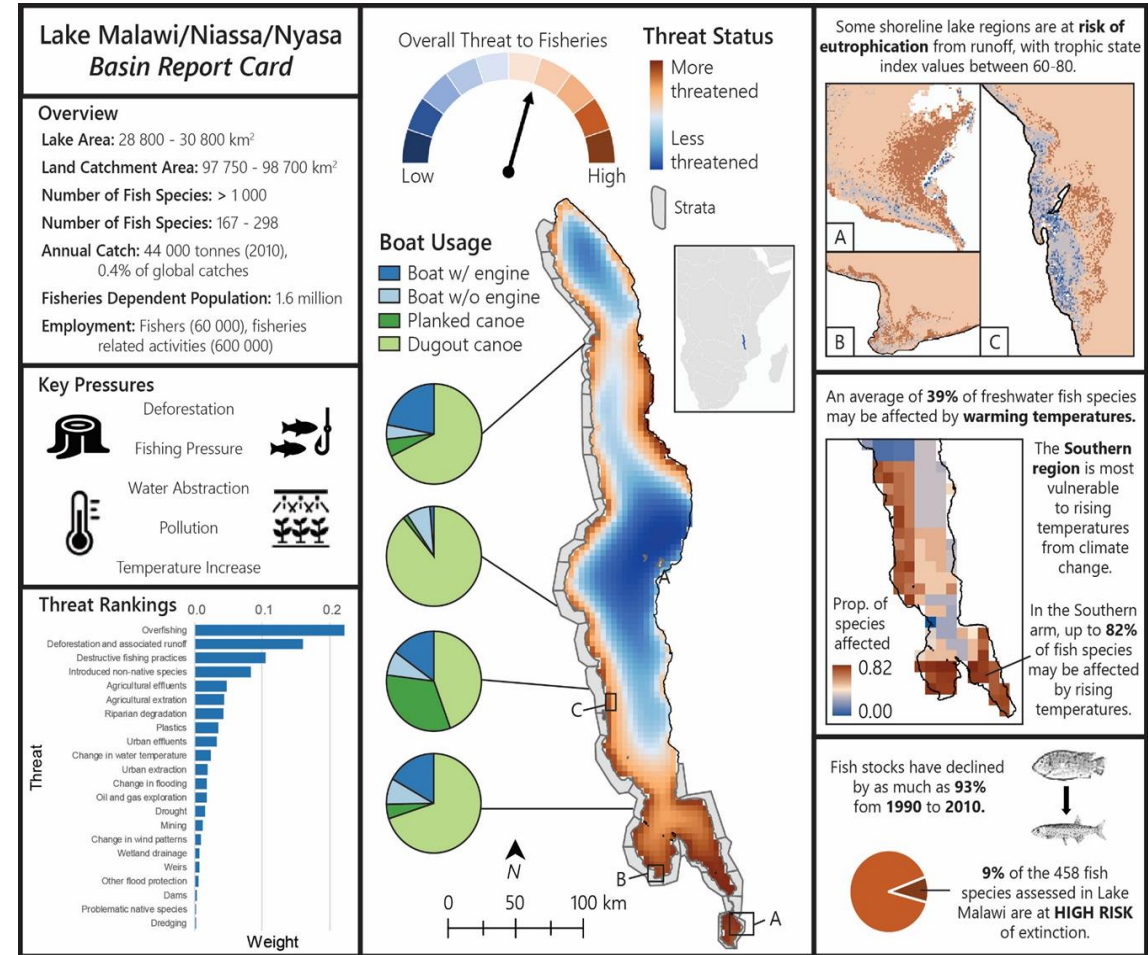
# A basin approach to assessing the world's inland fisheries



Global threat map

Basin report card

Threats by category

















A photograph of a wet dog, possibly a Weimaraner, shaking water off its back. The dog is captured in a dynamic pose, with its body arched and its tail pointing upwards. Water is splashing around the dog, creating a sense of motion. The background is a lush, green, out-of-focus landscape with various plants and trees. The overall scene is bright and natural.

Thank you!















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# Icon Bank

Icon	Image	Link	Icon	Image	Link
Award		<a href="https://thenounproject.com/icon/ribbon-1199/">https://thenounproject.com/icon/ribbon-1199/</a>	Federal Gov		<a href="https://thenounproject.com/icon/congress-12741/">https://thenounproject.com/icon/congress-12741/</a>
Partnership		<a href="https://thenounproject.com/icon/partner-712688/">https://thenounproject.com/icon/partner-712688/</a>	State/Local Gov		<a href="https://thenounproject.com/icon/map-pins-1024335/">https://thenounproject.com/icon/map-pins-1024335/</a>
Map		<a href="https://thenounproject.com/icon/map-1854989/">https://thenounproject.com/icon/map-1854989/</a>	Committee/Group of people		<a href="https://thenounproject.com/icon/users-791122/">https://thenounproject.com/icon/users-791122/</a>
Connection		<a href="https://thenounproject.com/icon/network-625372/">https://thenounproject.com/icon/network-625372/</a>	Student		<a href="https://thenounproject.com/icon/grad-cap-3838288/">https://thenounproject.com/icon/grad-cap-3838288/</a>
History		<a href="https://thenounproject.com/icon/history-1551540/">https://thenounproject.com/icon/history-1551540/</a>	Tribal/Tribe/Indigenous Peoples		<a href="https://thenounproject.com/icon/dreamcatcher-1605299/">https://thenounproject.com/icon/dreamcatcher-1605299/</a>
University		<a href="https://thenounproject.com/icon/university-106794/">https://thenounproject.com/icon/university-106794/</a>	Calendar		<a href="https://thenounproject.com/icon/calendar-6536895/">https://thenounproject.com/icon/calendar-6536895/</a>
Announcement		<a href="https://thenounproject.com/icon/megaphone-192273/">https://thenounproject.com/icon/megaphone-192273/</a>	Search		<a href="https://thenounproject.com/icon/magnifying-glass-152497/">https://thenounproject.com/icon/magnifying-glass-152497/</a>

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Money/Funding		<a href="https://thenounproject.com/icon/money-6442938/">https://thenounproject.com/icon/money-6442938/</a>	Great lakes		<a href="https://thenounproject.com/icon/great-lakes-61977/">https://thenounproject.com/icon/great-lakes-61977/</a>
Research/STEM		<a href="https://thenounproject.com/icon/research-6459475/">https://thenounproject.com/icon/research-6459475/</a>	Pacific Islands		<a href="https://thenounproject.com/icon/palm-tree-6534988/">https://thenounproject.com/icon/palm-tree-6534988/</a>
Ecosystem		<a href="https://thenounproject.com/icon/ecosystem-3761566/">https://thenounproject.com/icon/ecosystem-3761566/</a>	Wave		<a href="https://thenounproject.com/icon/wave-4983613/">https://thenounproject.com/icon/wave-4983613/</a>
Flowchart/Decision-Making		<a href="https://thenounproject.com/icon/flow-chart-1154193/">https://thenounproject.com/icon/flow-chart-1154193/</a>	Gulf Coast		<a href="https://thenounproject.com/icon/seagull-3193819/">https://thenounproject.com/icon/seagull-3193819/</a>
Publication/Journal		<a href="https://thenounproject.com/icon/book-4661948/">https://thenounproject.com/icon/book-4661948/</a>	Beach/Coastline		<a href="https://thenounproject.com/icon/beach-1110755/">https://thenounproject.com/icon/beach-1110755/</a>
Data		<a href="https://thenounproject.com/icon/data-6547477/">https://thenounproject.com/icon/data-6547477/</a>	Drought		<a href="https://thenounproject.com/icon/drought-5557218/">https://thenounproject.com/icon/drought-5557218/</a>
Alaska/Arctic		<a href="https://thenounproject.com/icon/snowflake-1979028/">https://thenounproject.com/icon/snowflake-1979028/</a>	Fire		<a href="https://thenounproject.com/icon/fire-131591/">https://thenounproject.com/icon/fire-131591/</a>

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Climate Change		<a href="https://thenounproject.com/icon/climate-change-5604299/">https://thenounproject.com/icon/climate-change-5604299/</a>	Migratory wildlife		<a href="https://thenounproject.com/icon/deer-track-142449/">https://thenounproject.com/icon/deer-track-142449/</a>
Flood		<a href="https://thenounproject.com/icon/flood-2043944/">https://thenounproject.com/icon/flood-2043944/</a>	Fish		<a href="https://thenounproject.com/icon/fish-1164600/">https://thenounproject.com/icon/fish-1164600/</a>
Non-Native Species		<a href="https://thenounproject.com/icon/plant-2754751/">https://thenounproject.com/icon/plant-2754751/</a>	Wildlife Management		<a href="https://thenounproject.com/icon/moose-145927/">https://thenounproject.com/icon/moose-145927/</a>
Global		<a href="https://thenounproject.com/icon/earth-1585344/">https://thenounproject.com/icon/earth-1585344/</a>	Goal/Projection		<a href="https://thenounproject.com/icon/goal-6454488/">https://thenounproject.com/icon/goal-6454488/</a>
Diversity/Inclusion		<a href="https://thenounproject.com/icon/foundation-6002956/">https://thenounproject.com/icon/foundation-6002956/</a>	Case Study		<a href="https://thenounproject.com/icon/case-study-3688379/">https://thenounproject.com/icon/case-study-3688379/</a>
Disease		<a href="https://thenounproject.com/icon/virus-4531748/">https://thenounproject.com/icon/virus-4531748/</a>	Water (non ocean)		<a href="https://thenounproject.com/icon/river-4991005/">https://thenounproject.com/icon/river-4991005/</a>
Forest/Tree		<a href="https://thenounproject.com/icon/forest-1060524/">https://thenounproject.com/icon/forest-1060524/</a>	Artificial Intelligence		<a href="https://thenounproject.com/icon/artificial-intelligence-4407443/">https://thenounproject.com/icon/artificial-intelligence-4407443/</a>