

Top Story Putting Emotion on the Agenda in Marine Governance Research + **In the Field with...** Katja Metfies: Continuing 25 Years of Arctic Long-term Observation + **HIFMB inside** Postdoc Perspectives + **Research** Top Recent Publications + **Editorial** View from Northwest #21 + **Fun Fact**



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TOP STORY

Putting Emotion on the Agenda in Marine Governance Research

Marine Governance is shaped by geopolitical and societal structures

In June 2023, governments adopted the so-called 'BBNJ Agreement', an internationally binding agreement under the United Nations Convention on the Law of the Sea (UNCLOS, 1982) aimed at the conservation and sustainable use of marine biodiversity in Areas Beyond National Jurisdiction (ABNJ).

Marine governance is largely viewed as a bureaucratic, technocratic exercise; a rational process of using the best available science to arrive at solutions for depleting ocean biodiversity and the seas in crisis. This recent article concerns emotion and the place of emotions in marine governance. Building on recent work that takes the concept of 'emocean' (coined by Emma McKinley et al., 2023) seriously, a new paper contends that emotional dimensions are essential to governing our seas: how we feel about the ocean can be a catalyst for governance and change.

The presence of emotion in marine governance is not a new phenomenon. Far from being unemotional, governance has always been saturated with emotion, even in the development of the United Nations Convention on the Law of the Sea (UNCLOS). By tracing the ways emotion has long been present in marine governance decision-making, we make a case for why the analysis and understanding of emotion should be enrolled in decision-making (rather than ignored in efforts to present governance as a neutral, value-free process).



» If we do not take emotion seriously, we may risk forms of governance that at best are out of touch with local realities and at worst actively marginalise and silence much-needed voices. «

*Soli Levi,
Interdisciplinary Geographer*

→ Studies of marine governance currently focus heavily on the how and who of governing practices: how we govern (using which tools) and who governs (which governmental and non-governmental organisations, agencies, bodies, individuals, and so on). Our research argues we also need to ask why we govern – and why governance has come to be as it is. We argue emotion is the crucial missing factor to consider in asking this ‘why’ question.

Indeed, in tracing the development of UNCLOS through conducting secondary analysis of speeches (including Arvid Pardo’s famous oratory arguing for a law of the sea in at the United National General Assembly in 1967) and other sources, notably related to the contribution of Elisabeth Mann Borgese to the constitution for the oceans, it becomes apparent that emotion is a factor – but that some emotions were taken more seriously than others. Indeed, governance does not emerge in a vacuum; there are always politically-charged forces that shape and enable the emergence of particular forms of governance. This is why it is important to ask why governance emerges as it does.

In the twenty-second session of the United Nations General Assembly, held on 1st November 1967, Arvid Pardo delivered a speech that was said to be emotionally charged in kickstarting the development of UNCLOS. Around the same time, a woman, Elisabeth Mann Borgese, had a similar dream. Mann Borgese was working towards a constitution for the oceans based on principles of freedom, cooperation, and the common heritage of mankind (CHM). However, Pardo is remembered as ‘the Father of the Law of the Sea,’ while Mann Borgese’s equally important role is often overlooked. Why?



At the geopolitical level, the combination of Cold War tensions, the newly-gained independence of many former colonies after WWII, the conflict between coastal and non-coastal states in UNCLOS negotiations, and shifting trends in global values worked to overshadow Mann Borgese’s work on peace, cooperation and participation. At the individual level, Pardo was a prominent politician and diplomat; his position as Maltese ambassador afforded him a level of visibility, regard, access, and influence – as well as lasting symbolic status – that was not available to Mann Borgese. While Mann Borgese was an activist and practitioner, she was not heavily involved in International Relations circles. Additionally, her work follows a trajectory taken by many women in the 20th century who found academia unwelcoming, turning instead to other spaces in which to develop and share their work. Arguably, hegemonic global memory, largely conditioned by patriarchal dominance and sexism, has played a role in enshrining Pardo as a passionate, driven man while filing Mann Borgese under ‘yet another emotional woman.’

Our paper engages the story behind UNCLOS – why it came to be as it did (and is remembered as it is). The paper shows that marine governance has been, and continues to be, shaped by geopolitical and societal structures (e.g., sexism, racism, colonialism) which work to legitimise and privilege certain emotions while delegitimising and silencing others. If we do not take emotion seriously, we may risk forms of governance that at best are out of touch with local realities and at worst actively marginalise and silence much-needed voices. Recognising emotion thus becomes not simply a matter of ticking a box but a matter of politics and of justice, because whose emotions become political matters is always a political matter.

Levi S, Peters K. (2024). Concerning emotions: Feminist contributions to reflexive marine governance. *Journal of Environmental Policy & Planning*, 1-13.
doi.org/10.1080/1523908X.2024.2395862

Let's Get Rid of Invasive Language



Since the beginning of human travel and commerce, we - deliberately or accidentally - transported species from one region to another, overcoming distances that are beyond the natural spread of these species. Introduced species can lead to massive and permanent alterations of the recipient ecosystems' biodiversity, properties or processes, as was already noted in Charles Elton's seminal book¹ "The Ecology of Invasions by Animals and Plants". These changes often go along with economic losses and negative consequences for nature conservation, and they are notoriously difficult to manage, let alone reverse. The scientific attention to such potentially harmful species has steadily increased, resulted in thousands of papers, multiple textbooks, the foundation of topical journals (Biological Invasions in 1999, Invasive Plant Science and Management in 2008) and a specific global report on 'Invasive Alien Species and their Control' published by IPBES in 2023².

As old as the scientific interest in 'invasive' species is the discussion about their naming. The negative connotation of "alien" or "invasive" has been criticized as valuing of species by their origin and using unwarranted military jargon. Most recently, this criticism has been renewed by a bibliometric analysis indicating that non-native species were "negatively framed" irrespective of the knowledge of whether they actually do harm³. This analysis was quickly countered by experts in the field, stating that such bias claims reflect a persistent negative framing of "invasion science" instead⁴, ignoring a "scientific consensus" that in fact most introduced species are invasive as they have harmful consequences in their new habitats.

I am a little bit of an outsider to this field and I am not in the position to evaluate the claims on bias versus consensus. Still, I wonder why the field itself clings so much to its twisted terminology, whereas there exist at least "five reasons why" to abandon it. Just to make this explicit: All of these reasons are linguistic and do not affect our need to study introduced species and their effects, which is and shall continue to be an important research effort.

1) The words 'invasion' or 'invasive' misleadingly have a military "intentional" connotation. However, species do not actively invade, they proliferate because they have opportunistic traits (e.g., fast growth rates), they are released from the enemies they encounter in their home range, they arrive in ecosystems already transformed by humans, etc. The phrase "introduced species become invasive" is almost apologetic of the human aspect of the dilemma: yes, we introduced it but who could know the "mischievous" character of the species?

2) Even if introduced species have more negative impacts than species spreading naturally, the terminology continues a long-lasting division of life in good and bad. The term "invasive species", but even alternatives such as "non-indigenous species" or "exotic alien species" clearly differentiate species belonging here from those who do not. If, as many in the field argue, the main argument for such a classification is the potential damage inflicted by these species, it would be easy to name them "potentially harmful species" (as e.g. is done with harmful algal blooms).

3) The distinction between us and them, belonging and not-belonging, good and bad cannot be disconnected from present societal discussions. I strongly believe (and hope) that most of the scientists studying the consequences of species introductions are appalled by the connection, but the language used is easily picked up

1 Elton CS. The ecology of invasions by animals and plants. London: Methuen; 1958.

2 IPBES. Thematic Assessment Report on Invasive Alien Species and their Control of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Bonn, Germany: IPBES Secretariat; 2023.

3 Pereyra PJ, de la Barra P, Amione LLD, Arcángel A, Marelló Buch BM, Rodríguez E, et al. Systematic and persistent bias against introduced species. *BioScience*. 2024;74(1):44-53.

4 Simberloff D, Bortolus A, Carlton JT, Courchamp F, Cuthbert RN, Hulme PE, et al. Systematic and persistent bias against invasion science: Framing conservation scientists. *BioScience*. 2024;74(5):312-4.

by extreme political parties as it fits their ideology on natives and aliens. As a scientist I cannot change their wording, but I could change mine. Scientists must become reflective of the fact that Elton coined this term in the political climate of the 1930s and that most papers in the field are published by authors from developed countries on species introduced from developing countries. One has to be utterly naïve to negate whose fire you are fueling by adding wood.

4) Climate change shuffles species distributions on our planet, with leading edges of latitudinal and altitudinal ranges moving faster than trailing edges, i.e. immigrations faster than extinctions⁵. This reshuffling of biodiversity will continue and become even more important in the future⁶ until a point where the question of “nativeness” becomes obsolete. First voices already ask for a different view on species introductions as a rescue for climate-affected ecosystems⁷, which we will not be able to conserve in a state before climate change anyway.

5) The analysis of harmful introduced species has led to a subdiscipline of ecology called ‘invasion biology’ or more recently “invasion science”. From a science theory perspective, this is worthy a discussion as well as it incurs the idea that “invasive” species have a different biology than others and that a (methodologically? philosophically?) different approach is needed to study them. To paraphrase Elton’s book title, it is important to study “the ecology of invasions”, but it is not a different ecology. Introduced species follow the same needs to cope with limiting resources through functional and numerical responses, density dependence, competition, or predator presence. I study diatoms and am fascinated by their specific biology, but I do not do “diatom science”.

Introduced species warrant our scientific attention as their introduction can harm nature conservation, economy, and human well-being. Communicating about his research warrants our linguistic attention as the current terminology can harm our science and how it is picked up in policies and politics.

Sincerely, Helmut Hillebrand
Director – Professor of Pelagic Ecology
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⁵ Lenoir J, Bertrand R, Comte L, Bourgeaud L, Hattab T, Murienne J, et al. Species better track climate warming in the oceans than on land. *Nature Ecology & Evolution*. 2020;4(8):1044-59.

⁶ Hodapp D, Roca IT, Fiorentino D, Garilao C, Kaschner K, Kesner-Reyes K, et al. Climate change disrupts core habitats of marine species. *Global Change Biology*. 2023;19:3304-17.

⁷ Reise K, Buschbaum C, Lackschewitz D, Thielges DW, Waser AM, Wegner KM. Introduced species in a tidal ecosystem of mud and sand: curse or blessing? *Marine Biodiversity*. 2023;53(1):5.

RESEARCH

Top Recent Publications

Müller OJ, Gross T, Peters K. (2024). Disrupted immobilities: giving space and time to the discussion of immobility dynamics in transport shipping. *Mobilities*.
doi.org/10.1080/17450101.2024.2389849

Eren AM, Delmont TO. (2024). Bioprospecting marine microbial genomes to improve biotechnology. *Nature*.
doi.org/10.1038/d41586-024-02661-6

Strack T, Jonkers L, Rillo MC, Baumann KH, **Hillebrand H**, Kucera M. (2024). Coherent response of zoo- and phytoplankton assemblages to global warming since the Last Glacial Maximum. *Global Ecology and Biogeography*.
doi.org/10.1111/geb.13841

Roik A, Wall M, Dobelmann M, Nietzer S, Brefeld D, Fiesinger A, Reverter M, **Schupp PJ**, Jackson M, Rutsch M, **Strahl J.** (2024). Trade-offs in a reef-building coral after six years of thermal acclimation. *Science of The Total Environment*.
doi.org/10.1016/j.scitotenv.2024.174589

Whittaker GR, Peters K, van Opzeeland I. (2024). Oceans sing, are you listening? Sounding out potentials for artistic audio engagements with science through the Polar Sounds project. *Marine Policy*.
<https://doi.org/10.1016/j.marpol.2024.106347>

+ More on Google Scholar:
scholar.google.de/citations?user=uCoLTyAAAAAJ&hl=en

Katja Metfies: Continuing 25 Years of Arctic Long-term Observation

How do Arctic marine ecosystems work and how are they impacted by global change? Temperatures in the Arctic are rising about twice as fast as the global mean, the extent and thickness of Arctic sea ice has decreased dramatically over the past 50 years, and first species shifts and changes in the life cycles of phytoplankton and other organisms have been observed in recent years, affecting marine food webs and carbon cycles.

Having this in mind, on July 12th 2024 I headed off to Fram Strait as chief scientist of expedition PS143/2 of RV Polarstern with the aim to continue the long-term observation program HAUSGARTEN/FRAM. I am a molecular biologist at AWI in the section Polar Biological Oceanography and one of the funding PIs of HIFMB. In 2009, I started my eDNA based observations of plankton biodiversity and since then I am involved in the long-term observations of AWI in Fram Strait. Arctic marine long-term observations are crucial for characterizing the impact of global change on this special ecosystem, particularly with regard to ecosystem functionality, and they are essential for the development of models to predict future changes in the Arctic Ocean. In 1999, the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI) established the Long-Term Ecological Research (LTER) site HAUSGARTEN in Fram Strait, acknowledging that climate change is progressing faster in the Arctic than in many other regions of the world. The observatory comprises 21 permanent stations where the same parameters are captured annually at different depths from the surface to the deep sea floor according to standardized protocols. In 2014, the observational program was extended by the FRAM Observatory, enabling year-round automated

assessments of physical, chemical, biological and biogeochemical parameters of seawater, sinking particles, and deep-sea benthos. Over the past 25 years, these interdisciplinary long-term observations provided groundbreaking information on physical, biological and biogeochemical processes and natural variability in the ecosystem.

Among other important insights into the Arctic marine system of Fram Strait, our eDNA based long-term observations provided key insights into linkages between sea ice melt and ecosystem functionality. Different studies suggest that meltwater stratification significantly affects the composition and distribution of phytoplankton, with impact on pelagic and benthic communities, due to changes in bloom phenology or carbon flux. Sea-ice melt related stratification can lead to higher and longer contributions of ice-associated diatoms in the upper water column, impacting higher trophic levels and carbon flux. Furthermore, in Fram Strait, sea-ice melt could act as a barrier for the immigration of species from temperate latitudes to the Arctic.

The second cruise leg of PS143 was focused on the exchange of year-round installations, and refining our understanding of progressing sea-ice melt on ambient ecosystems. This involved the exchange of moorings equipped with sensors, water-samplers and sediment-traps, and two extended transects from the Svalbard shelf-break to the Greenland shelf-break at 79.56°N

and 78.56°N, to capture the physics, chemistry and biology with high spatial resolution based on an array of different underway-measurements.

Photos: Katja Metfies



Sea-ice observed during PS143/2 in Fram Strait.



Deployment of long-term sediment traps as part of long-term moorings in Fram Strait.

Postdoc Perspectives

My name is Janina Brakel. I joined HIFMB in 2022 as one of five postdocs in the integrative postdoc pool (HIPP) under the theme "Biodiversity of Anthropocene Oceans". This theme closely fits my research interests: I investigate biogeography of seaweeds and their parasites in the context of growing global seaweed aquaculture.



Photo: private

I am interested in the domestication of marine organisms and its implication for the seascape. Using molecular techniques, I explore cryptic seaweed species, centres of genetic diversity of domesticated seaweeds and anthropogenically driven extensions in species' distributions.

I am fascinated by the diversity of seaweeds, but worried at the same time. Some seaweed diversity has not yet been described but is nonetheless disappearing in the face of global change.

Given my research interests, I happily joined a project developing a strategy for improved ex-situ conservation of seaweed genetic resources on a European level. During my HIPP postdoc, I had the opportunity to collaborate with scientists from the University of Oldenburg and from AWI. I also was able to build and maintain collaborations internationally, and thereby working in different teams with amazing people. Internally at HIFMB, I enjoy the community, especially of PhD students and postdocs.

Apart from developing my research profile, I also had the opportunity to gain professional experience outside the academic sector. Through the Helmholtz Career Development Centre at AWI, I was lucky to participate in a 3-month internship at the Regional Authority for Environment of Schleswig-Holstein (LfU SH). During my internship I gained many insights into how nature conservation is implemented in Germany. I've had a lot of fun learning new things and getting a different perspective on conservation. These experiences will help me to both improve my science and to build my future career.

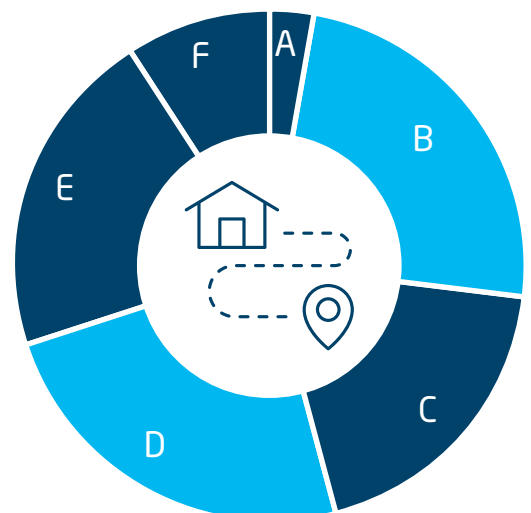
My time at the HIFMB ends this month. After that I will start a position at the Federal Agency for Nature Conservation (BfN) in the department for marine protected areas within the exclusive economic zone of Germany. There I will be contributing to the implementation of the marine strategy framework directive in relation to biodiversity.

HIFMB TEAM

Fun Fact*

Six weeks after the move into our new building I feel ...

- A 3 % ... relieved - everything worked out with the move.
- B 24 % ... still lost - looking for things and colleagues.
- C 19 % ... relaxed - atmosphere like in a Finnish sauna, beautiful flower beds, almost like a wellness area.
- D 24 % ... curious - new rooms and labs open new opportunities.
- E 21 % ... happy and dusty - great to see the rest of the construction work taking shape.
- F 9 % ... homesick.



* answered by HIFMB employees

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