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Practitioner Perspectives on Arctic Marine Mammals in Environmental News Reporting

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Abstract: The conservation and environmental policy literature suggests that featuring charismatic megafauna or flagship species—large animals with which humans are fascinated—in environmental communications helps to raise awareness and create public and political support for the protection of ecosystems or species. While a considerable body of literature is dedicated to such species, scholars have paid comparatively little attention to the human practitioners creating these flagship-based communications. To fill the literature gap, this article draws on agenda-setting theory and empirical evidence concerning the Arctic—the fastest-warming region on Earth—and its charismatic marine mammals. Through interviews and informal conversations with journalists, researchers, and policy-makers, the study asks 1) why these practitioners contribute to flagship-based news coverage, 2) how they interact with other practitioners in this process, and 3) how they view the content of the news coverage. The article highlights practitioners' motivation to harness human fascination with Arctic marine mammals to draw attention to broader environmental issues, most notably the climate crisis. At the same time, the article outlines trends in flagship-based news coverage that practitioners perceived as problematic, including the representation of polar bears, human perspectives, and different systems of knowledge. Practitioners also discussed challenges hindering accurate and nuanced Arctic environmental news reporting, including budget, personnel, and time constraints. Through its analysis of first-hand practitioner accounts, the article provides valuable insights and practical information for researchers, journalists, and policy-makers seeking to engage with and improve environmental news reporting concerning Arctic marine mammals, as well as related conservation efforts.

Introduction

On April 1st, 2023, the civil and environmental engineer Jay Fuhrman tweeted images, graphs, figures, and brief summaries about a new article entitled "A whale of a climate tale: Integrated assessment modeling of marine mammal carbon cycle in net-zero emissions future" (Fuhrman, 2023). According to Fuhrman, he and his co-authors Patrick O'Rourke, David Ho, Zeke Hausfather, Glen Peters, G. Page Kyle, Pralit Patel, and Haewon McJeon "developed a global dataset of whale carbon stocks and fluxes, which we then used to parametrize new technologies for cetacean-mediated carbon removal" (Fuhrman, 2023). In other words, the article suggested that whale bodies provided a viable site for carbon dioxide removal (CDR), referring to the removal of CO_2 from the atmosphere as a way of mitigating the climate crisis. By April 5th, one of the tweets about the paper already had 131,700 views (Fuhrman, 2023). The research paper, however, was entirely fictitious, as was the journal of *nature climat chage* [sic], modelled after the renowned journal *Nature Climate Change* (Nature Climate Change, 2023). It was an April Fool's joke.

Yet, as confirmed in personal communications with some of the jokesters, "there is an element of truth" to this April Fool's joke (G. Peters, personal communication [pers. comm.], 3 April 2023). The scientists behind the spoof journal article explain that it "builds off some misguided ideas around whales as natural carbon removal that [have] circulated around the media over the past few years" (H. McJeon, pers. comm., 5 April 2023; J. , pers. comm., 12 April 2023; Hausfather, pers. comm., 3 April 2023).[1] While framed in a humorous manner, the April Fool's joke is based on serious concerns and frustrations regarding the fascination in environmental news reporting with charismatic megafauna, and potential misrepresentations of related scientific research and climate realities. To further investigate these sentiments, this study asked 1) what motivates journalists, scientists, and, to a lesser extent, policy-makers, to engage in science communication and journalism concerning charismatic megafauna in the first place, 2) how do they interact with one another when engaging in these practices, and 3) how do they perceive the content of environmental news reporting on charismatic megafauna.[2]

For this purpose, the following section begins by discussing the types of charismatic megafauna, namely Arctic marine mammals (AMMs), that this study and the practitioners contributing to it are concerned with, and the agenda-setting based theoretical understanding underpinning AMM-themed communications. Next, the article briefly outlines its methodological approach, followed by an overview and discussion of the results assessing 1) practitioners'

motivations, 2) interactions between practitioners, and 3) practitioners' perceptions of news coverage. The latter is divided into three areas of particular concern for practitioners, beginning with 1) the prevalence of polar bears in AMM-based communications, followed by 2) the representation of humans in animal-focused communications, and 3) the different systems of knowledge included in flagship-based news reporting. Finally, the article discusses practitioners' suggestions to improve polar news reporting, and a brief conclusion summarizes the article's findings and suggests potential avenues for future research.

Communicating Science: Setting the Agenda on Arctic Marine Mammals

Similar to the April Fool's jokesters, this article specifically focuses on communications concerning charismatic megafauna. Here, the term charismatic megafauna refers to "large animals with high public appeal that ... receive considerable research attention and policy coverage" (Thompson & Rog, 2019, p. 9). In conservation literature, these animals are also referred to as "flagship species," implying that such charismatic species "are able to galvanize interest and action in ways that the majority of other species cannot" (Jepson & Barua, 2015, p. 95). As Barney, Mintzes, and Yen note,

> Environmental educators and advocates of all stripes have long recognized the value of particularly appealing animal (and plant) species as mechanisms for capturing the imagination and directing public attention toward conservation and preservation of the natural environment. (Barney et al., 2005, p. 41)

Building on conceptualizations of charismatic megafauna and flagship species as reflected in environmental news reporting, this article examines how practitioners perceive this news coverage, including their motivation to create, contribute, and interact with it.

This article is specifically concerned with practitioners who communicate from and about the Arctic, the fastest-warming region on Earth, whose charismatic megafauna are often cast as metaphors for the impacts of the climate crisis. Arctic marine mammals (AMMs)—such as polar bears, seals, walruses, and whales—are often at the centre of science communication and journalism efforts to raise awareness of the environmental issues impacting these animals and the region at large (Keller & Wyles, 2021; Owen & Saisgood, 2011; Ragen et al., 2008), and will thus be the focus of this study.

The polar bear, in particular, is a popular symbol of the effects of the climate crisis facing the Arctic, and the world more broadly (Born, 2021). While studies have examined the effectiveness of communicating information about

environmental concerns with reference to polar bears (Swim & Bloodhard, 2015), scholars have largely refrained from interacting with the practitioners issuing these communications about Arctic marine mammals. Furthermore, studies regarding the science–policy or science–diplomacy interface often do not consider the role of journalism, thus ignoring not just the contribution of journalists but also scientists who contribute to this agenda-setting activity (cf. Karcher et al., 2022).

Even in cases when the perspective of these practitioners is considered, interpretations often focus on overarching (geo-)political interests, rather than the respective practitioners' individual motivations and actions. In her study of diplomatic practices, Kuus notes "the narrow lens of national interest—the interest of the diplomat's state—" (2016, p. 548) that is imposed on diplomatic analyses. While "interstate power politics" (Kuus, 2016, p. 548) certainly play a crucial role in studies of practitioners, such as political decision makers and journalists, who embody and shape the representation of states or regions, scholars suggest that there is more to these practices (see also Gricius, 2024; Kuus, 2008, 2023; Medby, 2018).

In the case of AMM-based communications, academic accounts frequently rely on the familiar narratives of Cold War conflict and interstate power competition in the polar region, highlighting the interconnectivity of polar conservation initiatives with the institutionalization of and tensions inherent in Arctic geopolitics (Gehrke, 2023, 2024; Meek, 2011). While these dynamics play a critical role in informing our understanding of the discourses surrounding Arctic (marine) conservation, they are no substitute for direct interactions with the practitioners engaged in these discourses. Such interactions, currently missing from the polar flagship species literature, allow for a greater focus on the individual motivations, actions, and perceptions that shape the collective practices of science communication, journalism, policy, and diplomacy, which have, in turn, been analyzed at the regional and international level of polar (geo)politics (see e.g., Epstein, 2008; Gehrke, 2023, 2024; Lipscy, 2020; Meek, 2011). As this article illustrates, these interactions can serve to highlight not just the national interests that practitioners may represent or embody, but also draw attention to the institutional, organizational, professional, epistemological, cultural, and personal contexts that practitioners engaging in AMM-based communications inhabit.

To fill this knowledge gap concerning direct interactions with practitioners, the author interviewed a wide variety of science communication, journalism, and policy practitioners concerning their motivations and experiences of contributing to AMM-based news reporting, and their perceptions of this reporting. In doing so, the researcher sought to investigate the underlying assumption in the existing literature that practitioners use charismatic megafauna in their environmental communications because the animal's popular appeal is thought to draw attention

to related conservation concerns (Jepson & Barua, 2015; Leader-Williams & Dublin, 2000; Shiffman et al., 2021). If the study found evidence for the latter hypothesis, this would imply that practitioners' communication activities are based on agenda-setting theory (albeit perhaps subconsciously), explained in the following section.[3]

Agenda-Setting Theory

In the context of environmental news reporting, agenda-setting implies that the extent of news coverage on a certain topic and its framing has implications for public and political awareness, perception, and willingness to act on a topic (see Downs, 1972; Guber & Bosso, 2013; McCombs & Shaw, 1972; Scheufele & Tewksbury, 2007). Though the literature on marine and flagship species more often cites than explicitly discusses agenda-setting theory, scholars note how news coverage concerning flagship species can inform and attract attention to the protection of the animals and environments in question (cf. Jarić et al., 2023, p. 1; Jepson & Barua, 2015, p. 102; Shiffman et al., 2021, p. 3).

This reading of agenda-setting theory thus builds on constructivist conceptualizations of public discourse, referring to "a comprehensive ensemble of ideas, concepts, and categorizations about a specific object that frame that object in a way and, therefore, delimit the possibilities for action in relation to it" (Epstein, 2008, p. 2). In other words, "what is said about whales [or other AMMs] is intimately tied to what is done with them" (Epstein, 2008, p. 5); whether an Arctic marine mammal is framed in the news discourse as the target of hunting or fishing activities, or as a wonder of the natural world, will have a direct impact on material human behaviour towards these animals.

Such media effects of news coverage are predominantly characterized as a positive force for raising awareness and creating public support or even political momentum for environmental and conservation policy, with Tichenor and Neuzil going so far as to claim: "Any media reporting of an environmental issue is advocacy, in the sense that media coverage draws attention to that issue" (Tichenor & Neuzil, 1996, p. 41; see also Kovarik, 2021, p. 36). In this context, Arctic marine mammals are thus considered attention magnets, helping to raise awareness of the threat posed to them by the respective environmental issue discussed in the news, potentially drawing in news consumers who may have otherwise dismissed the reporting in question, and invigorating environmentally conscious consumers' willingness to act (Freedman et al., 2021; Jepson & Barua, 2015; Leader-Williams & Dublin, 2000).[4]

This assumption is also reflected by policy entrepreneurs and advocates seeking to build public support and political momentum to advance environmental regulations for protecting the animals and environments in

question (Kingdon, 1995). These entrepreneurs and advocates include state actors, such as policy-makers and science diplomats, as well as "boundary organizations connecting marine science with policy and management" (Cvitanovic et al., 2024, p. 1), such as members of non-governmental organizations (NGOs) who lobby, advocate, advise, and sometimes even co-create conservation policies in collaboration with other political and scientific actors.

As the following methods section highlights, it is important to note that practitioners often take on multiple roles involved in different stages within the agenda-setting process. This occasionally reflects the Arctic's "small world" characteristic, where practitioners, who often know one another, may fulfill multiple roles in professional fields and regional settings with comparatively few people working in highly specialized areas (Kuus, 2023). At other times, the multiplicity of professional roles is inherent in the context of environmental news reporting; for instance, the politically appointed commissioners of the United States Marine Mammal Commission, an independent agency of the government, fulfill a political role while also being scientists who engage in and with science communication and journalism. This combination of multiple practices that is sometimes embodied in a single practitioner further highlights the need to study the interactions between practitioners who contribute to the creation of, and interaction with, environmental news about Arctic marine mammals. To investigate the latter, the following section details how the first-hand accounts of practitioners were generated and analyzed.

Methods

The empirical contributions of this article are based on a textual analysis of qualitative semi-structured interviews and informal conversations with practitioners in the fields of science communication, journalism, and policy. The objective was to learn practitioners' perspectives on Arctic marine mammals in environmental news reporting, including their contribution to this news coverage and their related interactions with other practitioners.

In total, the analysis is based on thirty-four interviews and six informal conversations, all of which were held in 2023. Interviews and conversations were conducted in person as well as online. Potential interview and conversation partners were identified via an online search for practitioners in the fields of science communication, journalism, and policy who specialize in Arctic marine mammal affairs, sometimes tracing them based on their involvement in a news publication concerning AMMs. Additionally, the study employed the snowball method of asking practitioners for recommendations regarding potential interview and conversation partners. While this method may introduce sampling bias, its limited application kept this to a minimum. Furthermore, on several

occasions, interviewees recommended other potential interviewees that the author had already contacted or interviewed, highlighting the overlap between the potential bias in snowball sampling and the limited size and close-knit character of the epistemic communities (see the *Practitioner Interactions* and *Practitioner Perspectives* sections below). Overall, the practitioners interviewed for this study are from a variety of professions, and many of them are engaged in multiple practices (e.g., scientists who also serve as political decision makers).

The author asked all interview and conversation partners about the three principal concerns of the study—1) why they contribute to AMM news coverage, 2) how they interact with other practitioners in relation to this news coverage, and 3) how they view the content of the news coverage. The semi-structured nature of the exchange allowed the author to ask follow-up questions and tailor additional questions to the respective individual's professional experience (e.g., asking scientists about their experience contributing to a specific news article in which they were quoted or mentioned as a source).

Interviews and conversations predominantly focused on the medium of newspaper coverage (online and, to a lesser extent, print). When asked about news coverage concerning Arctic marine mammals, practitioners most frequently discussed their contributions to newspapers, though many of them also had experience engaging with a host of other media, from television news to documentary filmmaking. While other media outlets and channels, such as documentary films or social media, were also discussed, interviews and informal conversations nonetheless predominantly revolved around practitioners' experiences with newspaper coverage.

Furthermore, while interviewees originate from a wide range of countries, the study largely focused on the North American context (Canadian and American) due to a limitation to English speakers and English language based institutions (e.g., newspapers published in English). While this language limitation has advantages with regard to comparability, it also replicates a bias towards English-language communications and the North American news context that is reflected in the professional settings in which the interviewed practitioners operate, be that in the news landscape, or in the realm of scientific publication and polar policy communications (see Alhasnawi, 2021; Wilson Rowe, 2013).

While conducting informal conversations, the author took notes in the form of keywords that summarized practitioners' statements, whereas interviews were recorded and later transcribed. In addition, the author took notes during each interview. In the text analysis, the author thus analyzed interview transcripts as well as informal conversations and interview notes. Following McKee's (2003), Fairclough's (2003), and Krippendorff's (2019) work on qualitative textual analysis, the author began with a preliminary round of coding in which all

relevant statements regarding the three research foci (motivations, interactions, and perception of news content) were coded and potentially relevant statements flagged for further analysis. Second, based on the patterns developed through the initial round of coding, the texts were re-coded. Finally, the results of this coding process were thematically organized based on the identified patterns for the presentation and discussion of the textual analysis.

Before discussing the findings in the following section, it is important to note that the study treats interviewee accounts as pseudo- or fully anonymous, only providing contextual descriptors chosen by the respective interviewees, and omitting other information.[5] Consequently, while the article features accounts of several Indigenous Knowledge Keepers, they are at times not attributed as such or referenced using a pseudo-anonymous descriptor chosen by the respective interviewee (e.g., Inuk journalist) to honour the respective individual's wishes and preserve their anonymity (cf. Younging, 2018).

Results and Discussion

The following presentation of results is based on the article's three guiding questions: 1) motivations, 2) interactions between practitioners, and 3) perceptions of news content. Each section discusses both original insights based on an analysis of first-hand practitioner accounts, while also contextualizing these against the backdrop of existing literature.

Motivations: Arctic Climate Crisis Communication

When practitioners were asked what motivated them to create or contribute to environmental news reporting on Arctic marine mammals and the threats facing them, policy-makers, researchers, and journalists predominantly attributed their engagement to the desire to communicate the potential and already existing impacts of the climate crisis. As one practitioner illustrated:

> [Arctic marine mammals are] a symbol of the Arctic. They're … the charismatic megafauna species that's going to be so impacted by climate change. And … animals are often the canaries in the coal mines … what happens to their populations is indicative of the health of the Arctic at large. So, whether that's species that are beginning to disappear, like polar bear populations or, you know, southern species shifting into the Arctic Ocean, it's kind of a symbol of what's happening in the environment itself that people can relate to. (Interviewee #11, 2 April 2023)

Practitioners explained that they rely on Arctic marine mammals because these animals not only act as symbols of the region and environmental crises, but their inherent charisma qualifies them as ambassadors above other, lesser-known flora and fauna. One practitioner illustrated this, stating "it's more resonant if you're talking about polar bears than if you're talking about freshwater fish" (Interviewee #8, 7 April 2023). This idea of environmental ambassadorship—raising awareness and public and/or political concern for a species or environment by getting people to visit or view these places or species in person or through media—not only features in the conservation literature on Arctic marine mammals (Shiffman et al. 2021), but has also long been a trope of sustainable tourism research, including polar tourism studies (see Alexander et al., 2019; Cajao et al., 2022; Miller et al., 2020). The idea of environmental ambassadorship also reflects the interviewees' awareness of the agenda-setting processes they are contributing to by engaging in and with science communication and journalism, including a recognition of the power of Arctic marine mammals' charismatic appeal in influencing these processes.

The above-outlined motivation of practitioners to engage in AMM-based environmental news reporting in order to communicate the importance and impacts of the climate emergency, can be interpreted as a reflection of the type of advocacy that Tichenor and Neuzil (1996) accused all media of undertaking in coverage of environmental issues. When an Arctic journalist was asked whether this sentiment resonated with them, they stated, "at its core, all journalism is advocacy journalism" (Interviewee #22, 17 March 2023). The practitioner, however, qualified their statement, highlighting the importance of journalistic values:

> Now, what distinguishes good journalists from bad journalism, is that a good journalist understands that he has advocacy journalism, that he comes from that position, and that there is a system—editorial system—to check for those biases …, to check the accuracy of the information, and to make sure that the other points of view that contradict the bias that you bring are represented. Neutrality, objectivity, balance, and accuracy. So, once you have those mechanisms …, that work distinguishes propaganda from journalism. (Interviewee #22, 17 March 2023)

Similarly, other journalists argued that, though they report on the impacts of the climate crisis on Arctic marine mammals, they are merely motivated to do so because they perceive it as part of reporting on the news of the day. Some scientists equally distanced themselves from advocacy work, noting that other individuals in their respective organizations or institutions engage in this work in their stead. At the same time, they also stressed the importance of telling Arctic

marine mammal stories, and highlighting the interconnectedness of the species' fate with that of environmental issues such as climate change.

Yet, some scientists did not shy away, but instead leaned into the perceived advocacy inherent in their professional activities. Going back to agenda-setting theory, this advocacy function can be interpreted as an expression of policy entrepreneurship whereby practitioners champion issues and push for potential solutions. When asked about their motivation to communicate about the threats AMMs are facing, one researcher noted that their scientific research "provides a backbone and a platform to use this science for advocacy, to use this science for education" (Interviewee #3, 5 April 2023). Another scientist explained their calculated engagement in AMM-based environmental news reporting to communicate the issue of climate change:

> I don't think I really have the podium to do that [influence public opinion on the climate crisis]. I would if I could. What I try to do, I guess, through my work, because I work with charismatic megafauna, is bring it home to things they [the public/policy-makers] should care about, or I hope they can care about. So, nobody cares about ice floes. Nobody cares about phytoplankton … People don't even care about Arctic fish populations … Those are going to be the things which fundamentally change our climate. If we wipe out the walruses—this sounds crass—that's minor as far as ecological change, but people might care about wiping out the walruses. What you got to do is to find something that the public will care about. (Interviewee #14, 17 April 2023)

Similarly, a number of practitioners described their engagement in this climate-based environmental news reporting on Arctic marine mammals not simply as a motivation to raise public and political awareness of environmental threats, but rather as a duty of sorts to their respective professions, to the Arctic, and even to humankind. As a former environmental journalist and policy advocate explained,

> Yes, we believe climate change to be the largest existential threat for future polar bear populations. What could we do about it? Well, I mean apart from the obvious—fix climate change altogether— … we certainly did our part in trying to explain the impacts of climate change on the Arctic [i.e., contributing to environmental news reporting on AMMs, thus seeking to raise public and political awareness]. (Interviewee #8, 7 April 2023)

In summary, this and other interview accounts reflect practitioners' overall motivation to draw attention to the climate crisis and its effects on Arctic animals, potentially enabling or legitimizing policy responses to this environmental emergency.

Having established why practitioners engage in environmental news reporting on Arctic marine mammals, the following section discusses how practitioners perceive their interactions with one another in this process.

Practitioner Interactions

When asked about their interactions with other practitioners in connection to their work on or contribution to AMM-based environmental news reporting, two recurring statements stood out: 1) the positive impact of interconnected Arctic professional networks, and 2) the cautiousness with which scientists approach their interactions with journalists—the latter being more prominent in interviewee statements. First, many practitioners stressed their personal relationships and familiarity with other practitioners, attributing these to the "small world" of the Arctic region and overlapping professional networks. The interviewees highlighted the advantages of these close networks for environmental news reporting, such as, for instance, allowing policy-makers and scientists more access to journalists compared to other regional settings. When asked about their interactions with other practitioners, journalists described their communications with some Arctic scientists and policy-makers almost as reminiscent of a bygone era, where contact oftentimes still occurs via conventional phone calls, sources are recommended by word of mouth, and relationships are built over time, often decades, particularly when journalists are given the resources to engage in long-term travel or life in the North.

Second, scientists' cautiousness concerning interactions with journalists is also built over time, with many citing incidents in their or their colleagues' earlier career stages in which journalists were perceived as misrepresenting or oversimplifying scientific information concerning Arctic marine mammals, which the researchers had communicated. Such caution and preconceptions concerning scientists' interactions with journalists, including science journalists, are well documented in the science communications literature as well as in the literature for science, technology, and society studies, which examine interactions between journalists and scientists (see Nelkin, 1995). When asked about researchers' apprehensions, journalists acknowledged them as valid concerns, with one interviewee noting:

> There's a real difficulty in finding a way, finding a common ground where researchers can feel like their research is adequately seen, and understood, and not oversimplified, or kind of spoken about reductively. And I absolutely sympathize with that … the last thing we [as journalists] want to do is misrepresent something. (Interviewee #24, 11 April 2023)

Here, it is critical to note that scientists who had a better understanding of the pressures and realities of journalism also tended to express a more positive outlook about their interactions with journalists. Examples of such information that researchers were aware of included the time pressures, editorial constraints, or the likelihood of journalists other than their contact point contributing to the news story (including copyeditors and journalists who write headlines). Similarly, policy-makers who had a qualified understanding of the journalistic process, particularly those who once were journalists themselves, were more attuned to trends in AMM-based news reporting that other practitioners viewed critically.

Having discussed practitioners' interactions concerning environmental news reporting on Arctic marine mammals, the following section focuses on how practitioners perceive the news content.

Practitioner Perspectives on AMM News Reporting

This section discusses the three most notable patterns in practitioners' perceptions of environmental news reporting concerning the Arctic, identified through the textual analysis of interviews and informal conversations beginning with the prominence of polar bears in Arctic media coverage, then the perceived absence of humans in such environmental news reporting, and finally, the representation of different knowledge systems therein.

Polar Bear Prominence

What do you picture when you think about the Circumpolar North? Practitioners interviewed for this research project appeared to agree that they, and the general public, "typically always" think of polar bears (Interviewee #11, 2 April 2023). Practitioners noted that this fascination with polar bears, even above other Arctic marine mammals, was a distinct feature in Arctic and environmental news reporting, with polar bears cast as representatives of both the region and the climate crisis (cf. Born, 2021; Owen & Swaisgood, 2008). A Norwegian journalist noted the longevity of the media's fascination with polar bears, remembering newspaper coverage concerning the polar region in decades past: "the main focus ... was climate issues, it was polar bear stories [about the impacts of climate change on the animals]" (Interviewee #19, 5 June 2023). Another observed of contemporary

news coverage, that "they've [polar bears] kind of become a bit of a flashpoint for how the media covers the changing Arctic and climate change in general" (Interviewee #11, 2 April 2023). The image of a forlorn polar bear on a drifting ice floe—physically and metaphorically "on thin ice"—has become a media shorthand for the climate emergency (see for example Boyle, 2020; Carrington, 2020; see also Born, 2021). The idea of visible effects of the climate crisis on polar bear well-being in particular appear to have contributed to them being cast as the "poster child" of the crisis. For example, many recall the infamous video footage of a starving polar bear produced by wildlife photographers Paul Nicklen and Christina Mittermeier, though some experts—including several interviewees—have questioned the condition of that particular polar bear, positing that it was perhaps suffering from a parasite instead (Stevens, 2017).

When asked how they view the prominence of polar bears in Arctic environmental news reporting, some practitioners perceived it as a force for good, drawing attention to environmental issues affecting the region. Polar bears "tend to capture human imagination, right? So, I think that people are always curious about the animals in these environments," suggested a Canadian environmental journalist (Interviewee #11, 2 April 2023). A science program coordinator with Environment and Climate Change Canada, a federal government department, confirmed, "Polar bears are very charismatic" (Interviewee #18, 18 April 2023). According to journalists, the polar icons provide an "easy way in and … they resonate with readers, … and even editors always want polar bear details" (Interviewee #11, 2 April 2023).

The latter highlights the importance of editorial influence in environmental reporting, which also contributes to the prominence of polar bears in AMM-based reporting. It is important to note here, that even if the journalists working on this reporting may be closely familiar with the Arctic—have travelled to or lived there—the editors who have the final say on whether an article is published, or a story is even pursued in the first place and awarded the potentially necessary travel and funding, may be unfamiliar with the region. They may thus be more likely to support environmental journalism focused on these charismatic species rather than less "appealing" polar and environmental issues or lesser-known Arctic species, such as phytoplankton, because "polar bear stories tend to, again, they do well. Like you're likely [to] have a lot of interest for polar bear stories" (Interviewee #11, 2 April 2023).

However, when asked about their perception of the prominence of polar bears in environmental news reporting, some practitioners also cautioned of "the perils and pitfalls of using polar bears as symbols of the environment" (Interviewee #8, 7 April 2023). One American journalist noted, "If you want to use polar bears

as, you know, kind of your messenger or your image of climate change, there's nothing wrong with it, but just do it well" (Interviewee #10, 19 May 2023). When asked for clarification, what "doing it well involved," the journalist explained, "being accurate … it's a simple answer. Figure out why polar bears are relevant to climate change. Write about it. And mostly that's gonna have to do with the environmental aspects" (Interviewee #10, 19 May 2023).

Conversely, reports that are inaccurate or that misrepresent this close association between polar bears and the climate crisis—which researchers likened to climate denialism or pseudoscience in extreme cases (see Harvey et al., 2018; Pongiglione & Martini, 2022)—raise concerns among scientists, journalists, and policy-makers alike. In the specific context of polar bear-based communications, multiple practitioners discussed the example of the *Polar Bear Science* blog by Susan Crockford. While it is not the only example, by far, of polar bear content considered problematic by practitioners, interviewees and researchers noted that Crockford's blog features misrepresentations of scientific research regarding the effects of climate change and related environmental issues on polar bears (Harvey et al., 2018; Pongiglione & Martini, 2022, p. 431). Moreover, a journalist remembers publishing a story about polar bears in a prominent environmental publication upon which,

> [Crockford] contacted the editor of that publication saying that I had made up a bunch of stuff or something. And it was completely factually inaccurate what she was saying. But it kind of had freaked the editors out … she is the first SEO[6] result when you look up polar bears often. So, people get misled by going to her website. (Interviewee #11, 2 April 2023).

Scientists also noted concern about having their work misrepresented. One polar bear researcher worried, "she's [Crockford] feeding a lot of disinformation to people … that has implications" (Interviewee #13, 17 April 2023), indicating the potential impacts of mis- and disinformation on public opinion regarding climate change and polar bear conservation (Harvey et al., 2018). However, when asked about their personal reaction to having their work misrepresented, the researcher laughingly noted, "it kind of felt like a badge of honour [to have one's work included on the blog alongside renowned polar bear scientists, like Andrew Derocher[7]]. Because I was like, wow, I'm a big enough name that she cares" (Interviewee #13, 17 April 2023).

As the above example demonstrates, the closer that communications about a specific environmental issue, such as climate change, or a region, like the Arctic, are tied to one specific flagship species, the more susceptible public perception

becomes to misinformation or even more nuanced communication of scientific realities. In the case of polar bears, instances of misinformation can be found in the example of the blog misrepresenting polar bear research (see Harvey et al., 2018; Pongiglione & Martini, 2022). Examples of a desire for more nuanced communication, on the other hand, can be observed in recent news articles arguing for more sophisticated news reporting concerning polar bears (Adkins, 2023; Greenfield, 2023). For instance, with reference to how different polar bear subpopulations that are confronted with different environmental settings and changes are able to cope with these to varying extents (Aars, 2021), a Norwegian polar bear scientist cautions, "it is very important to communicate that that doesn't mean that it's not bad for polar bears, that the habitat change[s], it just means that polar bears are good at coping with changes within limits" (Interviewee #12, 25 August 2023).

In summary, this section has highlighted practitioners' understandings of public interest in polar bears and their prominence in Arctic environmental news reporting. In doing so, it illustrates practitioners' awareness of the potential use of flagship species to draw the public's attention to environmental threats endangering AMMs, potentially facilitating their rise on the media agenda. While this section focused on a particular flagship species that is very heavily represented—perhaps even overrepresented, according to some practitioners—the following section discusses the missing human component in AMM-based media coverage of the Arctic region.

The Human Perspective

Much of the flagship species literature discusses which animals are best suited to become ambassadors of their respective ecosystems, and how focusing on one species may draw attention away from other flora and fauna (Jepson & Barua, 2015; Leader-Williams & Dublin, 2000; White et al., 1997). However, the literature less often discusses the comparative lack of attention regarding humans when discussing flagship species. This may be due to the omnipresence of humans in discussions of environmental issues, as many of these issues, including the climate crisis, are caused by human activities. Similarly, the appeal of many charismatic species is inherently linked to their interactions with humans, such as stories of dolphins rescuing humans from sharks, orcas, or from being lost at sea (Barney et al., 2005; Colby, 2018).

Yet, practitioners' accounts highlight how dangerous it can be to overrely on assuming that news audiences are aware of the presence and role of human beings in the ecosystem, especially with respect to settings that may be perceived

as remote, or considered "wilderness," as is often the case with the Arctic region (Gricius, 2022). When asked about the potential challenges or implications of environmental news reporting focused on flagship species, a local Arctic news reporter explained:

> people are not centred in this [news reporting], in a lot of these representations of the North. That by centring an animal, when people think of the Arctic ... [from] outside of the region, if the first thing that comes to mind is a polar bear or a whale or a seal or a walrus, then I don't know that necessarily deletes [sic] local inhabitants from the mind, but it doesn't put them first. … We're not going to think about the people [when consuming solely AMM-focused content]. (Interviewee #20, pers. comm. , 19 May 2023)

The perceived omission of people in environmental news reporting about the Arctic and its charismatic megafauna is particularly striking with regard to the Indigenous Peoples living in the region. When asked about their perception of AMM-based media coverage, some practitioners stated that they believe news stories to increasingly incorporate mentions of the importance of Arctic marine mammals to Indigenous culture and subsistence lifestyles, but stressed the need for greater, more nuanced, and authentic representation that not only mentions, but quotes or is authored by members of Indigenous Arctic communities. As one interviewee noted, "You're not preserving the bears and the whales and the seals just to preserve bears, whales, and seals, but also because they're integral to Inuit culture and society" (Interviewee #8, 7 April 2023). Another interviewee emphasized the importance and persistence of the latter, stating, "We are not going anywhere. The Arctic is our home, and like Indigenous people everywhere, we believe our homeland and waters are the most precious and sacred place on earth" (Interviewee #21, 25 August 2023).

In response to questions about challenges associated with AMM-based news reporting, interviewees often highlighted examples of past harm inflicted on Indigenous communities based on the ways in which Arctic marine mammals and related subsistence hunting have been problematized in the news. As a veteran Arctic journalist and policy advocate explained,

> Inuit, in particular, have a very different relationship with polar bears that includes a consumptive relationship. And they had a history also of major social destruction due to the use of seals as potent symbols used by the environmental movement. So, … particularly European-based anti-sealing work that was done by particular organizations … caused major disruption to Inuit communities. (Interviewee #8, 7 April 2023)

The interviewee was referring to the 1983 European Economic Community and 2009 European Union bans on the import of seal products following anti-sealing campaigns led by environmental non-governmental organizations, like Greenpeace, and related international news coverage that often lacked Indigenous perspectives (Gehrke, 2024). Subsequent analyses of the public discourse surrounding the seal product bans highlighted the importance of reporting on the cultural and economic relevance of subsistence hunting practices in Indigenous communities (Dauvergne & Neville, 2011; Marland, 2014). This emphasis on further inclusion of societal implications was also reflected in practitioners' responses when asked how they would like to see perceived shortcomings in AMM-based reporting addressed. For example, one interviewee wished for "a more holistic view of the environment" in AMM-based reporting (Interviewee #8, 7 April 2023).

Moreover, reflecting increasing awareness of the potentially negative effects of public discourse concerning AMMs and the comparative exclusion of the region's human inhabitants therein, a number of journalists and policy advocates noted that they now "explicitly … [do] not use … animals, like whales and polar bears, for their conservation messaging" (Interviewee #8, 7 April 2023). Others continue to see the value in flagship species-based communications to draw attention to the region and related environmental issues, though they, too, seek to place greater emphasis on animal–human relations. These relations emphasize the interconnectedness of human and animal fates in the age of the Anthropocene, stressing the impact of the climate crises on both, as well as preventing the colonially coded misrepresentation of the Circumpolar North as *terra nullius* (Lat. land that belongs to nobody).

While this section has highlighted the importance of acknowledging the existence and lived experience of humans at home in and visiting the Arctic, the following section discusses how these individuals' varied knowledges are taken into account with regard to environmental news reporting on Arctic marine mammals.

Space, Time, and Knowledge

Overall, there are four broad systems of knowledges discussed in environmental news reporting on Arctic marine mammals: 1) conventional, scientific, or Western knowledge, 2) Traditional Ecological or Indigenous Knowledge, 3) local knowledge, and 4) citizen science. The terminology applied to these knowledges varies and has distinct social and political connotations (see Onyancha, 2022).[8] While conventional scientific knowledge refers to information generated through observations by individuals trained and affiliated with scientific institutions, Indigenous Knowledge (IK) "integrates observations of the environment, animals,

and human health that have been shared and evaluated over generations of continual habitation in focused spatial regions" (Moore & Hauser, 2019, p. 2). The latter definition similarly applies to local knowledge, though varying definitions include or exclude IK, suggesting an exclusive focus on knowledge generated by non-Indigenous local people (Onyancha, 2022). Political communications and interviewee accounts often mentioned Indigenous Knowledge and local knowledge in the same statement or even sentence. Finally, citizen science refers to the involvement of lay individuals, who normally would not be part of the scientific or local observation process, generating knowledge—such as in the case of whale watching tourists being asked to count and describe whale sightings (Alexander et al., 2020).

When asked about the types of knowledges reflected in AMM-based reporting, practitioners agreed that conventional scientific knowledge is the most prominent form of information about Arctic marine mammals represented in environmental news reporting. The other three types of knowledge defined above were perceived as less prominent in the news coverage, as found in other studies of environmental journalism concerning Arctic marine mammals (Gehrke, 2024; Boyd et al., 2019), which reflects the difficulty and cost of the exchange and the joint use of different knowledge types (Karcher et al., 2022). However, practitioners made a concerted effort to emphasize the need for greater representation of local knowledge and IK in AMM-based news coverage.

Highlighting the importance of these systems of knowledge, the director of a marine mammal organization noted, "Indigenous Knowledge reminds us that our health and well-being depend on the health and well-being of other [sic] living with us, the whales, walrus, seals, … all things; and if we don't treat them properly with respect and care, then we are not deserving of them [and] will suffer" (Interviewee #21, 25 August 2023).

Sue Moore, a research scientist and one of three commissioners of the US Marine Mammal Commission, emphasizes the complementary nature of conventional research and multigenerational IK, noting that for conventional scientific data, "if we're lucky we have a decade, sometimes occasionally we have two or three decades and we think that's an amazing time series"; "it's a lifetime, it's not multiple lifetimes, but it has breadth" (Interviewee #23, 22 June 2023). To this effect, Sue Moore and Donna Hauser invite readers of their 2019 *Environmental Research Letter* to consider Indigenous Knowledge as "time" and "generationally" deep "but spatially small, local," and conventional science as "spatially deep" but temporally limited (Interviewee #23, 22 June 2023).

When asked how the challenge of IK underrepresentation in AMM-based environmental news reporting could be addressed, practitioners were eager for greater representation of Indigenous and local knowledge, though they also

cautioned of the required 1) resources, as discussed in the following subsection, 2) work of Indigenous Knowledge Keepers, and 3) care required of those charged with communicating these types of knowledge. To this end, Indigenous interviewees also noted the toll that their contribution to the public discourse on Arctic marine mammals can take, with one interviewee commenting, "I don't have a PR team, and I'm not interested in always adding an Indigenous perspective to every opportunity" (Interviewee #21, 25 August 2023). Correspondingly, non-Indigenous journalists and science communicators described the steps they take to ensure that they are adequately communicating IK and local knowledge. For instance, a science program coordinator with Environment and Climate Change Canada explained:

> there's also a certain sensitivity related to the polar bear 'file' because of the strong importance of polar bear to Inuit as a harvested species … there's [sic] some sensitivities there too for me to be aware of when I'm communicating out that research [to the public or other parts of the Canadian government]. And it will depend on who the audience is for sure. But … those researchers [working on polar bear studies] have very strong relationships … established with northern and Inuit communities. And so, I know that by working closely with them, and by running my messaging past them, … we'll ensure that … whatever we're saying is appropriate and accurate. So, I am, you know, relying heavily on their expertise and their experience, but also learning a lot. (Interviewee #18, 18 April 2023)

In summary, practitioners communicating about the environmental issues threatening Arctic marine mammals are tasked with juggling a variety of knowledges, which requires significant resources, effort, and care. This also requires the potential involvement of the respective Knowledge Holders and practitioners in order to produce accurate reporting that does not neglect the influences of certain systems of knowledge in favour of others.

The following section discusses the resources and work required to ensure a greater representation of different knowledge systems and to potentially improve environmental news reporting concerning Arctic marine mammals.

Towards Better Environmental News Reporting on Arctic Marine Mammals: (Local) Journalism for Global Problems

The above discussion of practitioners' perceptions of environmental news reporting concerning Arctic marine mammals highlights three trends that practitioners considered challenging—polar bear prominence, the missing human perspective, and underrepresentation of different knowledges. When asked what they perceived is the cause of these trends, practitioners often attributed the challenges to a lack of resources: "you don't have the resources being put towards environmental reporting and especially Arctic environmental reporting as there should be with marine mammals" (Interviewee #11, 2 April 2023). The implications of this lack of resources are manifold, affecting the quality and quantity of environmental journalism and the activities that inform it, including scientific polar research. Additionally, these resource constraints are further exacerbated by the difficulty accessing certain parts of the Arctic. One Canadian journalist provides a tangible example of how these resource and access constraints can affect environmental news reporting on polar bears: "probably most of the polar bear stories are about the polar bears in southern and western Hudson Bay because it's the southernmost populations." Svalbard polar bears are comparatively underrepresented, according to the journalist, "because it's expensive to get to those polar bears. It requires a lot of time and resources" (Interviewee #11, 2 April 2023).

In particular, practitioners argued that a "lack of local reporters" (Interviewee #20, 2023) and underrepresentation of Indigenous news reporters in AMM-based news coverage contributed to the above-detailed trends. According to practitioners, local and Indigenous reporters would be more attuned to the trends in news coverage they consider problematic, such as an awareness of humans living in the Arctic and their varied relationships with animals. As one Inuit journalist noted, "They're missing out on getting local people involved in local media" (Interviewee #7, 23 March 2023). This criticism concerning the limited involvement of local and Indigenous journalists is reflected in the institutional structures of the news organizations involved in Arctic environmental news reporting. A Canadian journalist explained,

> having bureaus ... that are actually in the Arctic [would improve news reporting on the region]. I don't know of any news organization—large international news organization—that staffs an Arctic outpost. [There are] those [in] the Nordics, but that's like Oslo, you know, Helsinki, Reykjavik, but … having a news bureau in Longyearbyen would be amazing. And in the Russian Arctic as well. (Interviewee #11, 2 April 2023)

The lack of news access to the Russian Arctic has become a particular topic of contention in the aftermath of the communication breakdown following Russia's invasion of Ukraine. As the calls for a resumption of scientific exchange and "track II diplomacy" between Russian scientists and other polar researchers and institutions grow louder amid the ongoing war in Ukraine (Dziatkowiec, 2023), interviewed scientists, journalists, and policy-makers highlighted the implications for AMM-based news reporting, most notably a lack of information about the Russian Arctic marine mammals and of exchange with their Russian counterparts, which some already considered incomplete or lacking before the invasion. As one journalist noted:

> it's gonna be a big question moving forward as to what information is coming out of there [Russia], … not just for scientists, but also for journalists. Journalists used to be able to get access. Western journalists could kind of get access, albeit heavily monitored and regulated, but they could still do things in the Russian Arctic. And now we've also lost access to a lot of that. (Interviewee #11, personal communication, 2 April 2023)

As these developments are ongoing, future research should examine the continued impacts of geopolitical conflicts and tensions on environmental news reporting about Arctic marine mammals, including the research informing news coverage of them. The following section suggests further avenues for research and summarizes the article's findings.

Conclusion

Arctic marine mammals are charismatic flagship species. Equipped with the exceptional capacity to capture people's attention, they occupy a unique space in polar and environmental imaginaries. In the context of overlapping ecological crises threatening these species and their Arctic habitats, this research study sought to investigate the assumption that practitioners use charismatic megafauna when creating, contributing to, or engaging with environmental news reporting because the animals' popular appeal is thought to draw attention to related conservation concerns. Reflecting an implicit understanding of agenda-setting theory, the study found that practitioners are indeed motivated to include AMMs in their environmental communications in order to draw attention to larger ecological concerns, including the climate crisis.

Furthermore, when asked about their interactions with other practitioners in the context of AMM-based environmental news reporting, practitioners praised

their close-knit professional networks enabling cooperation between practitioners. At the same time, they signalled researchers' cautiousness concerning interactions with journalists, informed by instances in which researchers felt their knowledge or research was misrepresented in news coverage. Interviewees perceived several trends in environmental news reporting about Arctic marine mammals as potentially problematic, such as the underrepresentation of different systems of knowledge, which may result from a lack of engagement with different researchers and Knowledge Holders. Additionally, interviewees identified the prominence of polar bears above other Arctic marine mammals, and the comparative lack of the human perspective in environmental news reporting on AMMs, as potentially problematic in light of the news coverage's agenda-setting function. Consequently, practitioners noted the need for further investment in Arctic journalism and better engagement with different systems of knowledge to combat these trends. While many practitioners were cognizant of the above-described trends, with some even noting potential strategies to counteract them, several interviewees maintained that their engagement in AMM-based environmental communications was purely motivated by professional duties (e.g., a journalist reporting on an AMM-related story because it happened to be the news of the day).

Overall, practitioners appear to hold higher opinions concerning their interactions with other practitioners and related AMM-based environmental news reporting when they had a better understanding of newsmaking processes. This may suggest that teaching practitioners about the realities of newsmaking may improve practitioner interactions, which may, in turn, contribute to improving the quality of news coverage. Future research should further investigate this observation. Additionally, further research may examine practitioner perspectives in different regional settings or concentrate on different flagship species since the insights gained in this article focus specifically on the Arctic context. Furthermore, this article is limited to discussing the perspectives of English-language speakers based in the North American and Scandinavian Arctic countries. Consequently, future research should consider the perspectives of non-English speakers based in other parts of the Arctic and non-Arctic.

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Notes

1. Multiple authors of the April Fool's article independently recommended the *Breakthrough* article "Negative-Emission Whales" by Trembath and Wang (2019), which debunks articles "touting the economic value of breeding and maintaining whale populations, [which] is neither a reasonable carbon sequestration strategy nor a well-founded monetary valuation." As Haewon McJeon notes, Whale CDR is "so far out there that none of us [April Fool's jokers] would actually ever think it'll happen at scale" (personal communication, 5 April 2023). And Trembath and Wang (2019) recommend that the "next time you hear impressive-sounding claims about managing soils, forests, or whales as a large-scale carbon capture solution, be sure to look at the fine print."
2. This article uses the terminology of "practices" to refer to science communication, journalism, and so on, and "practitioner" to discuss those engaging in these practices. This language was chosen based on the article's connection to the expertise literature that employs these terms (Kuus, 2008, 2016), as well as using the latter as a substitute for the colonially charged language of rights holders and stakeholders (see Sarkki et al., 2021).
3. Conversely, if this study found a lack of evidence for the hypothesis, this could suggest that practitioners are unaware, disinterested, or deliberately ignorant of the potential (political) implications of AMM-based news reporting, evoking past notions of "objective" journalists and "apolitical" scientists (Nelkin, 1995).
4. Jepson and Barua (2015) reflect this agenda-setting process in their theory of flagship-species action (though their writing largely omits the language of agenda-setting). The authors suggest that when a flagship species progresses through this process, it "becomes re-framed (or reinvigorated) as a cultural asset speaking for a wider nature, publics and political agenda" (Jepson & Barua, 2015, p. 102).
5. The only exception to this are interviews and informal conversations regarding specific texts authored by the respective interviewees or informal conversation partners.
6. SEO stands for Search Engine Optimization. In this context, the interviewee is referring to the order in which links to websites appear in online search engines, e.g., when one googles "polar bear science."
7. Andrew Derocher is a professor of biological sciences at the University of Alberta and veteran polar bear researcher, having studied the species over the past four decades.

8. The above-listed terms used for the purposes of this article are based on practitioner statements; by no means do these present a comprehensive list of the types and systems of knowledge practiced across the Circumpolar North, but rather a selection of the most relevant practices with regard to AMM-based environmental news reporting.

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