# How European journalists cover marine issues

**Bruno Pinto and Ana Matias**

**Abstract**

Keeping citizens informed about the sea is important because it can motivate collective actions to address threats to coastal and marine sustainability. In this article, we wondered how European science and environmental journalists cover marine issues in the print media. We conducted 26 interviews with press journalists in 13 European countries and asked about topics, triggers, and sources to write marine-related news. We found that climate change, marine pollution, and biodiversity are the most important issues and that good working relationships with both scientists and NGOs are key for this media coverage.

**Keywords**

Environmental communication; Professionalism, professional development and training in science communication; Science and media

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## Introduction

News about scientific and environmental issues related to the sea is important for promoting public engagement in decision-making processes, justifying investments in marine management and research, and increasing interest in these topics [e.g., Thompson-Saud, Gelcich & Barraza, 2018; Gelcich et al., 2014]. When a journalist decides (or is asked) to write about marine issues in the press, there are two main aspects to how this will be done: what to write about and where to find the relevant information about it. These will be addressed in this research insight from the perspective of the journalists who write about the sea in Europe.

There is limited research on the media coverage of marine issues [e.g. Jönsson, 2011; Thompson-Saud et al., 2018]. Nevertheless, a preference in the media for topics concerning marine pollution was found in other studies, particularly oil spills. This was noticed in the Swedish public TV channel between 1961 and 2010 [Djerf-Pierre, 2013], and more recently in a Portuguese quality newspaper between October 2002 and December 2010 [Pinto, Costa & Cabral, 2020]. Quality newspapers are defined as aiming to provide comprehensive coverage and analysis of international and national news of the day together with informed comments on economic, political, and social issues [Entwistle & Hancock-Beaulieu, 1992].

Personal interests can also play a part in the choice of topics, according to Rosen, Guenther and Froehlich [2016]; a conclusion that was also observed in other activities of science communication [e.g., Brown & Scholl, 2014; Kirby, 2003; Pinto, Marçal & Vaz, 2015]. From the point of view of European audiences, the two areas with higher public concern regarding marine issues have been pollution and overfishing [European Commission, Directorate-General for Environment, 2017; European Commission, Directorate-General for Research and Innovation, 2021; Gelcich et al., 2014; Potts, Pita, O'Higgins & Mee, 2016]. A study across 21 countries in North America, Europe, Africa, and Asia with more than 32 000 respondents also identified pollution and fishing as the two most important threats to the marine environment [Lotze, Guest, O'Leary, Tuda & Wallace, 2018].

Regarding journalists' sources, in a study conducted in New Zealand, science journalists from national newspapers reported that they normally use public relations materials, such as press releases, just as a starting point for their news [Ashwell, 2016]. The interaction between different actors involved in science journalism has been studied in New Zealand by Kolandai-Matchett et al. [2021] based on a survey with 63 marine scientists and 69 journalists covering marine issues. They found that the amount of information, its interpretation, and timeframes required to produce news were important factors in disagreements between scientists and journalists. For instance, constraints to journalists' activities such as newsworthiness, limitations of time and space for publishing, and media immediacy may not be familiar to marine scientists. Also in New Zealand, Ashwell [2016] found that scientists and science communication advisors considered that most national science reporting was poor. Other sources for science news mentioned by Maiden, Zachos, Franks, Wells and Stallard [2020] were scientific publications and science news platforms, social networks, and mainstream media.

The current research insight is intended to explore how European science and environmental journalists cover marine issues in the quality print media. Our two main research questions were: 1) which topics about the sea are covered in the press? and 2) what are the main sources and triggers for marine-related news?

## Methods

Data was collected through 26 semi-structured interviews with science and environment journalists from 13 European countries between February and May 2021. During this period, Europe and the rest of the World were facing the COVID-19 pandemic. The countries selected aimed to cover four different regions of Europe: Northern, Southern, Western, and Eastern (Table 1). We decided to choose journalists who published in quality newspapers in paper and digital formats, in each of the selected countries. Their news is usually a reference point to the national news agenda [Boykoff, 2009; Nisbet & Lewenstein, 2002; Cushion, Kilby, Thomas, Morani & Sambrook, 2018]. National newspapers for each country were analyzed to identify journalists that published recently (last 5 years) about the ocean. Respondents were recruited through direct contact with journalists and editors, and indirectly through newspaper contacts and journalist associations.

The main objectives of the interviews were to gather information about the topics that are more frequently covered about marine and/or coastal issues; the diverse sources and triggers that are used; and the relationships between journalists and scientific institutions or researchers. Questions asked included the following: what

**Table 1**. Data from interviewed journalists. Adapted from Pinto and Matias [2023].

| | | |
|---|---|---|
| *Country* | Bulgaria | 1 |
| | Croatia | 3 |
| | Denmark | 2 |
| | England | 1 |
| | France | 2 |
| | Germany | 4 |
| | Italy | 3 |
| | Norway | 2 |
| | Poland | 2 |
| | Portugal | 2 |
| | The Netherlands | 1 |
| | Spain | 1 |
| *Gender* | Male | 14 |
| | Female | 12 |
| *Age* | Average | 47 |
| | Range | 25–64 |
| *Training** | No degree | 1 |
| | Journalism degree | 10 |
| | Science, environment & technology degree | 12 |
| | Social sciences & humanities degree | 7 |
| *Career status* | Newspaper staff | 18 |
| | Freelancer | 8 |

* Some journalists have graduations in more than one area.

sources do you usually use to write this news? What are the most common topics in your news coverage about the sea? The full description of the protocol is available in Pinto and Matias [2022]. Interviewees were asked to consider their activities beyond the period of the COVID-19 pandemic.

All participants provided written informed consent for participation. Interviews were done remotely using an Internet video call program, lasting between 20 and 60 minutes. Both authors were involved in conducting the interviews, which were digitally recorded, later transcribed in full, and de-identified. After reading all the interviews, the two authors defined the key topics. The obtained data were coded using the software NVivo (version 1.5.1; QSR International) and then grouped and analyzed qualitatively according to the defined list of key topics [as described in e.g., Braun & Clarke, 2012; Bryman, 2012]. In some cases, it was necessary to add topics that were not in the original list. During cross-check analysis, there were differences in the classification between the two authors, which were resolved through discussion until reaching a consensus. In some cases, this resulted in changing or merging codes.

## Results

Interviewees' age spanned 25 and 64 years, with an average of about 47 years; 14 were male and 12 were female. It included journalists at different stages of their careers, including both journal staff and freelance professionals (Table 1). Almost half of the journalists ($n = 12$, 46%) had initial academic training in science,

environment, and technology, with 10 mentioning an undergraduate or postgraduate qualification in journalism. It was decided to include journalists at different stages of their careers, including both journal staff ($n = 18$, 69%) and freelance professionals (Table 1). Four senior interviewees worked as both journalists and editors of the science and/or environmental section.

### *The topic of climate change is key, but marine pollution and biodiversity are also important*

Climate change was mentioned by almost all the interviewees ($n = 24$, Figure 1), including both the scientific and the environmental perspectives. Within this broad theme, there was a noticeable interest in specific national issues such as sea-level rise in the Netherlands. Many journalists also considered that the multiple threats to the marine environment were often on the news. For example, when asked about the main topics, an interviewee answered:

> *"(. . . ) the influence of climate change on the seas. Overfishing, water quality, pollution, maritime accidents. . . Plastics. Biodiversity. Loss of species (. . . )"* (J21)

Marine pollution by plastics ($n = 19$) and pollution non-specified ($n = 15$), were often mentioned as topics in the news. These subjects can be approached from a

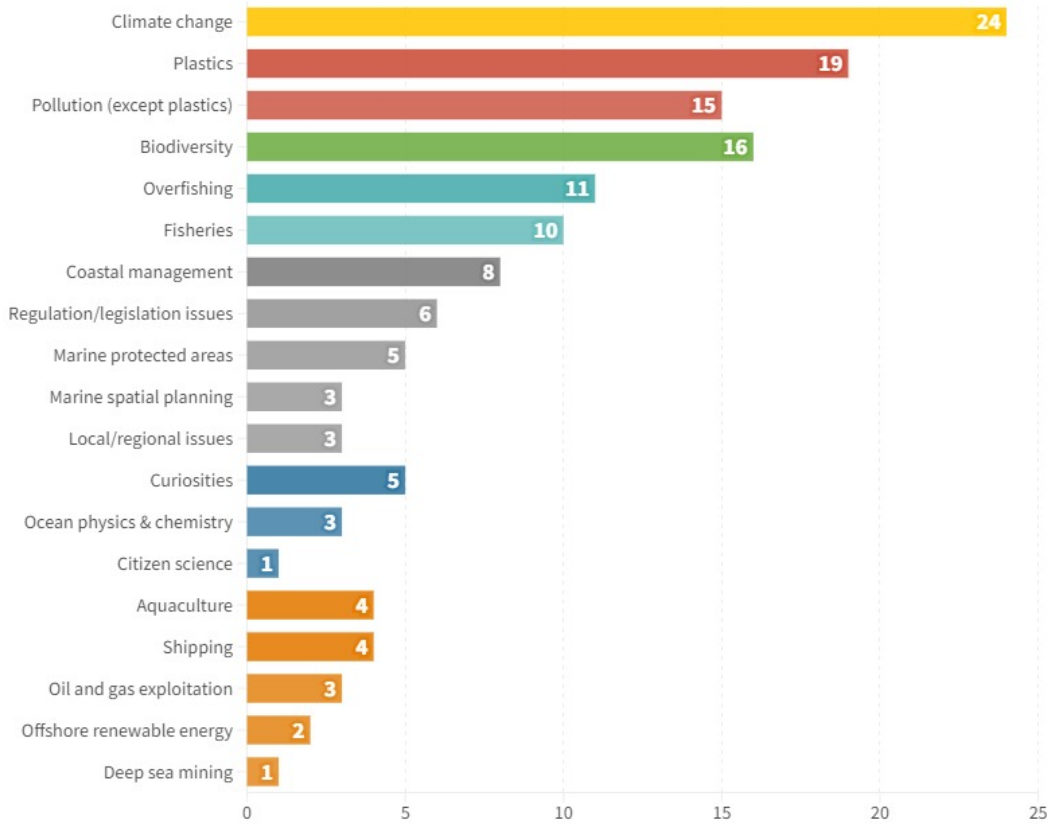


**Figure 1**. Frequency of topics mentioned by interviewees; climate change (color yellow); pollution (color red); biodiversity (color green); fisheries (color light blue); marine management (color grey); ocean properties (color dark blue), and economic activities (except fisheries; color orange).

scientific angle; however, it was clear during the interviews that environmental concerns were the main drive to write about pollution. For example, a journalist stated:

> *"Plastic pollution is a big subject and has been for a couple of years. And the more and more we know about it, the more frightening it is."* (J5)

Interviewees frequently mentioned 'biodiversity' ($n = 16$, Figure 1), including their experience in reporting aboard scientific cruises for species inventory and/or studies of specific phenomena. Under the biodiversity umbrella, mentions were made to news about endangered species, new species, fish species variations, marine mammals, corals, and plankton. Journalists often mentioned overfishing and fisheries as a threat. News on this subject can also be related to fisheries regulations, fish stocks, quotas, etc.; yet some interviewees said they did not cover fisheries because this was done by another news desk such as economy or local.

Management of the sea was also mentioned, including coastal management, regulation/legislation issues, and Marine Protected Areas. In some cases, management was connected to climate change and tourism. These topics were mentioned mostly by interviewees that considered themselves or their desk as covering environmental news, rather than science news.

Finally, subjects less commonly mentioned in the set of interviews (Figure 1), were curiosities ($n = 5$; e.g., species with peculiar characteristics) and ocean physics and chemistry ($n = 3$; e.g., changes in ocean circulation), as well as issues related to economic activities including aquaculture, shipping, oil and gas exploitation, and offshore renewable energy. This is the result when considering all interviews as a whole; nevertheless, some journalists extensively cover these topics, particularly when they are of regional or national interest.

### *Maintaining trustful relations with scientists and NGOs*

When asked about preferred sources and triggers to write news, the relationships between journalists and scientists were often the main issue ($n = 23$). If this connection is established, communication can happen in both ways through direct contact by phone or email, but also indirectly through social media platforms such as Twitter or Facebook. Indeed, several journalists talked about scientists reaching out to them when new research is published or data collection at sea is about to occur. Moreover, interviewees talked about the advantages of having a network of diverse scientists to enable a broader coverage of science/environmental issues and the rotation of sources. In some cases, there were also references to personal long-lasting relationships, some dating back to graduation times, hanging out together with scientists during fieldwork or other events. For instance, it was mentioned that:

> *"( . . . ) I have a great network of scientists, and many of them are our friends. So, if ( . . . ) something happens in the lab, I'm the first to get to know because they pick up the phone and tell me ( . . . )"* (J26)

Associated with this, research institutes and universities are also viewed as important sources of news ($n = 16$). In some cases, journalists talked about the role of communication offices that produce press releases and facilitate contact with scientists. Also, science news platforms such as *Eurekalert!* and *AlphaGalileo*, and scientific journals such as *Nature* and *Science* are considered good sources for news about the sea.

On the one hand, journalists mentioned that scientists can distrust the media, sometimes are too busy to read and/or comment on a scientific study, and are hard to reach, particularly in the case of access to scientists from foreign countries. On the other hand, interviewees reinforced the importance of overcoming these boundaries and building a trusted and lasting connection with scientists and/or research groups. For example, it was said that:

> *"(. . .) it is more difficult to establish a network of scientists that are accessible to you. Because many scientists are afraid of the media. They are afraid their research or what they say will be misunderstood (. . .) And you have to get their trust (. . .)"* (J20)

Another source of information is the NGOs ($n = 11$), in some cases reinforcing the importance of trustful relations. International organizations such as the IPCC (Intergovernmental Panel on Climate Change) or the ICES (International Council for the Exploration of the Seas) and technical/scientific reports are relevant sources of information, while conferences/meetings were also mentioned as triggers for news. Governmental institutions and other stakeholders connected to marine issues are contacted by some journalists ($n = 8$), when relevant. Additionally, some journalists talked about their contacts with fishers ($n = 3$) and their networks of colleagues and friends (who can be researchers, environmental activists, etc.) as a first step to writing news about the sea. NGOs were seen as media-friendly and willing to provide contacts of other sources; however, both NGOs and governmental institutions were considered by some journalists as potentially biased because they can have political agendas.

Interviewees also talked about other triggers to write news: accidents in the sea (e.g., oil spills), strange events (e.g., unusual numbers of dead or injured animals), legal and regulatory changes (e.g., management of coastal and/or marine protected areas, fishing rules), request of editors to cover specific issues and trends in the international press.

## Discussion

This article aims to assess the main topics, sources, and triggers of European journalists that write press news about the sea. Besides the importance of available resources and interests of journalists recently found in previous research [Pinto & Matias, 2023], the writing of news is also conditioned by the international and national relevance of topics. Even in European newspapers with fewer resources, in which journalists did not express a particular interest in the sea, there was still marine-related news connected to hot topics.

Climate change is the prime example of this, with some journalists referring to it not as "a" topic but as "the" topic. This argument was also mentioned to convince editors to publish more news about science and environmental issues. It coincides

with the high public interest in this theme expressed in two recent Eurobarometer studies [European Commission, Directorate-General for Environment, 2017; European Commission, Directorate-General for Research and Innovation, 2021]. Moreover, communication about climate change has been of high interest for research, especially since the turn of the millennium [e.g., Comfort & Park, 2018; Sampei & Aoyagi-Usui, 2009; Schmidt, Ivanova & Schäfer, 2013]. Therefore, the media, the audiences, and the scientific community are all interested in climate change, and it seems to also include topics on climate change that are related to marine issues.

Marine pollution (with and without plastics) was also often mentioned by journalists, thus confirming previous research in which it was considered one of the most serious threats to the marine environment in both European [Gelcich et al., 2014; Potts et al., 2016] and global scales [Lotze et al., 2018]. This was also evident in the peaks of news about oil spills on Swedish television [Djerf-Pierre, 2013] and the Portuguese quality press [Pinto et al., 2020]. There is not much research on the rise of news and buzz in social media about plastic pollution in the sea, which may be due to its recent media visibility.

About sources in writing news about the sea, one dominant finding emerged: the importance of maintaining trustful relations with scientists and NGOs. Journalists confirmed the importance of these connections with scientists, talking also about the two-way communication with this professional group [as identified earlier e.g., by Kolandai-Matchett et al., 2021; Davies et al., 2021; Massarani, Entradas, Neves & Bauer, 2021; Rosen et al., 2016]. In some cases, this seems to be done indirectly through social media platforms [Dunwoody, 2014]. Interviewees also mentioned the willingness of individual scientists, universities, and scientific institutions to promote public communication [confirming the findings of Dunwoody, 2014; Schäfer, 2017]. Although some interviewees mentioned the advantages of contacting public relations staff in research institutions, most reinforced the idea that the key issue was a good working relationship between journalists and scientists [Kolandai-Matchett et al., 2021].

Despite the similarities of sources often referred to in previous studies such as peer-review articles, search engines for articles, press releases, social networks, or conferences [Bauer, Howard, Romo Ramos, Massarani & Amorim, 2013; Massarani et al., 2021; Rosen et al., 2016; Maiden et al., 2020], we also found additional sources of information such as NGOs, governmental institutions or fishers. Part of the explanation for this is perhaps the inclusion of news on environmental issues in the analysis, for which such sources have more value. Another explanation is that some scientific and environmental issues go together. For example, climate change was identified in this study as the most important theme, with scientific data and social and ecological threats being considered. In this and other cases, it is very difficult to trace a line. Therefore, journalists that cover climate change can consult typical science journalism sources but also reach sources associated with the social and environmental dimensions.

In what concerns the implications of this research, our results reinforce the idea that journalists attribute high value to personal contacts and networks of marine scientists and NGOs [Kolandai-Matchett et al., 2021; Pinto et al., 2020]. For instance, newspaper editors have mentioned that the loss associated with the

retirement of a science journalist is not only the loss of news reporting but also the disappearance of their network of contacts with other professionals (including those in academia, NGOs, etc.). Furthermore, scientists working on marine issues have mentioned a lack of training in media-related matters [Kolandai-Matchett et al., 2021]. Therefore, journalists could participate in or lead actions of media training, workshops, or community-based projects concerning marine issues. These seem like good opportunities to enhance the contact between professional groups and enable a greater understanding of working methods, needs, and constraints [Kolandai-Matchett et al., 2021; Pinto et al., 2020]. Additionally, marine scientists, NGOs, or journalists could take the initiative of establishing initial contacts with the purpose of building relationships. When reaching a journalist to challenge them to write a news article about the sea, several factors can be relevant to pique their interest. From our qualitative research, timing is an issue, because events or political initiatives can open doors to report about the sea, even if unrelated. Interviewed journalists consider good marine stories the ones that deal with topics that affect people's lives (e.g., human health, coastal erosion, energy projects) and the ones that relate to nature protection and conservation (e.g., endangered species, marine parks, pollution, accidents leading to animal fatalities). In addition, many good stories are the ones that feed curiosity, bring fresh intelligible scientific news, and unveil the mysterious world of the deep sea.

## Limitations and future research

One of this study's main limitations was that, in four cases, only one journalist per country was interviewed (Spain, England, the Netherlands, and Bulgaria). Although an overview is possible, there are less detail and diversity of testimonies than in the other countries. In addition, considering the lack of information about science and environmental journalism in Europe and other regions of the World, it was difficult to compare our results with previous research.

Since interviews were done during the second global COVID-19 lockdown, differences in the conditions of interviewees may have varied (due to factors such as workload, home-schooling, etc.). Future research about chosen topics, sources, triggers, and other factors related to the activities of science and environmental journalists in both Europe and other regions of the World would be useful to compare results [Massarani et al., 2021; Pinto & Matias, 2023].

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## Ethical declaration

This work involved research with humans. All participants are volunteers that accepted to be interviewed, after being informed about the objectives of the research, the nature of the interview, and its expected duration. Anonymity and

confidentiality were assured. The compliance with the General Data Protection Regulation (EU) 2016/679 of the European Parliament was verified by the University of Algarve Data Protection Office.

## References


Ashwell, D. J. (2016). The challenges of science journalism: the perspectives of scientists, science communication advisors and journalists from New Zealand. *Public Understanding of Science 25* (3), 379–393. doi:10.1177/0963662514556144

Bauer, M. W., Howard, S., Romo Ramos, Y. J., Massarani, L. & Amorim, L. (2013). *Global science journalism report: working conditions & practices, professional ethos and future expectations*. SciDev.Net, London School of Economics, Museu da Vida. London, U.K. Retrieved from http://eprints.lse.ac.uk/id/eprint/48051

Boykoff, M. T. (2009). We speak for the trees: media reporting on the environment. *Annual Review of Environment and Resources 34*, 431–457. doi:10.1146/annurev.environ.051308.084254

Braun, V. & Clarke, V. (2012). Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf & K. J. Sher (Eds.), *APA handbook of research methods in psychology. Vol. 2: Research designs: quantitative, qualitative, neuropsychological, and biological* (pp. 57–71). doi:10.1037/13620-004

Brown, P. & Scholl, R. (2014). Expert interviews with science communicators: how perceptions of audience values influence science communication values and practices. *F1000Research 3*, 128. doi:10.12688/f1000research.4415.1

Bryman, A. (2012). *Social research methods* (4th ed.). Oxford, U.K.: Oxford University Press.

Comfort, S. E. & Park, Y. E. (2018). On the field of environmental communication: a systematic review of the peer-reviewed literature. *Environmental Communication 12* (7), 862–875. doi:10.1080/17524032.2018.1514315

Cushion, S., Kilby, A., Thomas, R., Morani, M. & Sambrook, R. (2018). Newspapers, impartiality and television news. *Journalism Studies 19* (2), 162–181. doi:10.1080/1461670x.2016.1171163

Davies, S. R., Franks, S., Roche, J., Schmidt, A. L., Wells, R. & Zollo, F. (2021). The landscape of European science communication. *JCOM 20* (03), A01. doi:10.22323/2.20030201

Djerf-Pierre, M. (2013). Green metacycles of attention: reassessing the attention cycles of environmental news reporting 1961–2010. *Public Understanding of Science 22* (4), 495–512. doi:10.1177/0963662511426819

Dunwoody, S. (2014). Science journalism: prospects in the digital age. In M. Bucchi & B. Trench (Eds.), *Routledge handbook of public communication of science and technology* (2nd ed., pp. 27–39). doi:10.4324/9780203483794

Entwistle, V. & Hancock-Beaulieu, M. (1992). Health and medical coverage in the UK national press. *Public Understanding of Science 1* (4), 367–382. doi:10.1088/0963-6625/1/4/002

European Commission, Directorate-General for Environment (2017). *Attitudes of European citizens towards the environment. Special Eurobarometer 468*. doi:10.2779/84809

European Commission, Directorate-General for Research and Innovation (2021). *European citizens' knowledge and attitudes towards science and technology. Special Eurobarometer 516*. doi:10.2775/071577

Gelcich, S., Buckley, P., Pinnegar, J. K., Chilvers, J., Lorenzoni, I., Terry, G., … Duarte, C. M. (2014). Public awareness, concerns, and priorities about anthropogenic impacts on marine environments. *Proceedings of the National Academy of Sciences 111* (42), 15042–15047. doi:10.1073/pnas.1417344111

Jönsson, A. M. (2011). Framing environmental risks in the Baltic Sea: a news media analysis. *AMBIO 40* (2), 121–132. doi:10.1007/s13280-010-0124-2

Kirby, D. A. (2003). Scientists on the set: science consultants and the communication of science in visual fiction. *Public Understanding of Science 12* (3), 261–278. doi:10.1177/0963662503123005

Kolandai-Matchett, K., Armoudian, M., Thrush, S., Hillman, J., Schwendenmann, L., Jakobsson, J., … Lear, G. (2021). Marine ecosystem science and the media: exploring ways to improve news coverage through journalist-scientist working relations. *Aquatic Conservation: Marine and Freshwater Ecosystems 31* (11), 3034–3055. doi:10.1002/aqc.3708

Lotze, H. K., Guest, H., O'Leary, J., Tuda, A. & Wallace, D. (2018). Public perceptions of marine threats and protection from around the world. *Ocean & Coastal Management 152*, 14–22. doi:10.1016/j.ocecoaman.2017.11.004

Maiden, N., Zachos, K., Franks, S., Wells, R. & Stallard, S. (2020). Designing digital content to support science journalism. In *NordiCHI '20: Proceedings of the 11th Nordic Conference on Human-Computer Interaction: Shaping Experiences, Shaping Society*. doi:10.1145/3419249.3420124

Massarani, L., Entradas, M., Neves, L. F. F. & Bauer, M. W. (2021). *Global Science Journalism Report 2021. Working conditions and practices, professional ethos and future expectations*. SciDev.Net. Retrieved from https://www.scidev.net/global/learning-series/global-science-journalism-report-2021-2/

Nisbet, M. C. & Lewenstein, B. V. (2002). Biotechnology and the American media: the policy process and the elite press, 1970 to 1999. *Science Communication 23* (4), 359–391. doi:10.1177/107554700202300401

Pinto, B., Costa, J. L. & Cabral, H. (2020). What news from the sea? Assessing the presence of marine issues in the Portuguese quality press. *Ocean & Coastal Management 185*, 105068. doi:10.1016/j.ocecoaman.2019.105068

Pinto, B., Marçal, D. & Vaz, S. G. (2015). Communicating through humour: a project of stand-up comedy about science. *Public Understanding of Science 24* (7), 776–793. doi:10.1177/0963662513511175

Pinto, B. & Matias, A. (2022). Protocol for qualitative data collection with science journalists about the sea and the coast. *figshare*. doi:10.6084/m9.figshare.21288153

Pinto, B. & Matias, A. (2023). European journalists and the sea: contexts, motivations, and difficulties. *Public Understanding of Science 32* (4), 459–469. doi:10.1177/09636625221137036

Potts, T., Pita, C., O'Higgins, T. & Mee, L. (2016). Who cares? European attitudes towards marine and coastal environments. *Marine Policy 72*, 59–66. doi:10.1016/j.marpol.2016.06.012

Rosen, C., Guenther, L. & Froehlich, K. (2016). The question of newsworthiness: a cross-comparison among science journalists' selection criteria in Argentina, France, and Germany. *Science Communication 38* (3), 328–355. doi:10.1177/1075547016645585

Sampei, Y. & Aoyagi-Usui, M. (2009). Mass-media coverage, its influence on public awareness of climate-change issues, and implications for Japan's national campaign to reduce greenhouse gas emissions. *Global Environmental Change 19* (2), 203–212. doi:10.1016/j.gloenvcha.2008.10.005

Schäfer, M. S. (2017). How changing media structures are affecting science news coverage. In K. Hall Jamieson, D. M. Kahan & D. A. Scheufele (Eds.), *The Oxford handbook of the science of science communication* (pp. 50–59). doi:10.1093/oxfordhb/9780190497620.013.5

Schmidt, A., Ivanova, A. & Schäfer, M. S. (2013). Media attention for climate change around the world: a comparative analysis of newspaper coverage in 27 countries. *Global Environmental Change 23* (5), 1233–1248. doi:10.1016/j.gloenvcha.2013.07.020

Thompson-Saud, G., Gelcich, S. & Barraza, J. (2018). Marine environmental issues in the mass media: insights from television, newspaper and internet searches in Chile. *Ocean & Coastal Management 165*, 154–160. doi:10.1016/j.ocecoaman.2018.08.015

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