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Does the 'snot' of the oceans matter? Engaging with the public on gelatinous zooplankton. Lessons learned from The Danish Eel Expedition 2014.

Line Reeh (1), Cornelia Jaspers (1), Sune Riis Sørensen (1), Mads Christoffersen (1), Torkel Gissel Nielsen (1) and Peter Munk (1).
(1) National Institute of Aquatic Resources, Technical University of Denmark, Charlottenlund Castle, 2920 Charlottenlund, Denmark. Presenter contact details: lre@aqua.dtu.dk, +45 40 48 09 39

Summary
The diversity and ecological importance of gelatinous zooplankton organisms are not well recognized, and it can be a challenge to attract funding and general support for gelatinous zooplankton research - beyond the obvious focus on bio-invasion or jelly blooms taking over the ocean. Yet, the impact of the public outreach and media coverage of The Danish Eel Expedition 2014 illustrate that it is indeed possible to engage the public in the basic scientific quest to understand the role, position, and importance of gelatinous zooplankton organisms in a marine ecosystem. This expedition was led by DTU Aqua to the Sargasso Sea in March-May 2014 to investigate climate-related changes in the eel's spawning ground. Through a well-planned communication strategy focusing on social media, press work and an on-board communication officer, the expedition was successful in reaching both print, electronic and social media with the additional message that gelatinous zooplankton are fascinating, fun to study, and constitute an important part of the oceanic ecosystem.

Introduction
Jellyfish are often neglected among ocean researchers, and in society they are mostly assigned attention as a nuisance in coastal habitats when people want to spend recreational time at the beach. Making a literature search targeting the word fish versus jellyfish in articles from Danish print and online news media (Infomedia) during the period start of June to the end of August 2014, confirms that fish get considerably more attention. Whereas the word fish is mentioned in 8874 articles, only a total of 242 articles mention the jellyfish *Aurelia aurita*, which is very common in Danish waters and bloomed this summer. This number corresponds to 2.7% of the number of articles dealing with fish. When making a search for the general term jellyfish, the number is even lower, namely 111 articles, or 1.2 percent of the number of articles about fish. Journalists and editors generally decide if a story is newsworthy based on a number of 'news criteria' (Impact, Actuality, Proximity, Sensation, and Conflict). Fish is important to industry and hence of economic importance to society (Impact) – as well as being something that we eat (Proximity). Jellyfish mostly make headlines when they are casted as the villain (Sensation) – invading new habitats and being a potential threat to local fish stocks – or taking over the oceans in general. If one investigates the scientific literature, the same picture emerges. A search in *Web of Science*, a research search engine, for the topic fish versus jellyfish in the time period from 2000-2014, shows that the number of published articles dealing with jellyfish, sum up to 1% of the articles dealing with fish. Apparently much more effort is put into fish research, irrespectively of the observation that jellyfish are becoming more dominant in certain ecosystems. Yet there is much more to study, write and be fascinated about when it comes to gelatinous zooplankton. This we set out to prove as part of the communication strategy for the Danish Eel Expedition 2014.

Materials and Methods
The Danish Eel Expedition 2014, which was funded by the Danish Centre for Marine Research and the Carlsberg Foundation, was an intensive, international research expedition to the European eel's spawning grounds and the potential areas of larval drift back to Europe. More than 20 research projects were established, including a project carried out by a group of gelatinous zooplankton experts

to investigate the oligotrophic plankton community. This included studies of its composition and carbon cycling with potential links to the distribution of larvae. A target was marine snow including its vertical distribution and flux as potential food source for eel larvae in the Sargasso Sea.

The communication strategy of the cruise included a strong public outreach component, targeting the Danish public, journalists and funding agencies (good media coverage of the expedition was an explicit goal of the Expedition and of the funder Danish Centre for Marine Research). A communication Officer was in charge of planning and heading the communication effort, supported by the relevant scientists (all interviews included scientists and all information was checked by scientists before being sent out). To aid the communication effort a number of products were produced: An expedition website in Danish and English, a daily updated Facebook site (in Danish), fact-page for journalists, press photos, press releases in Danish and English, press briefing on board at the end of the cruise, continuous contact to a number of journalists and media, as well as contact with communication colleagues at partner institutions. To secure the largest possible impact, the communication plan also included a partnership with a national Danish newspaper, and a close collaboration with the largest aquarium in Denmark.

Results and Discussion

The effort resulted in (at least) 79 articles in the press, among these also non-Danish (e.g Science), 3 radio-interviews, 2 TV interviews (including the national evening news), 2 Radio/TV-programmes, 1 film about the expedition (shown at *Science in the City*, ESOF 2014 and available online), participation in an exhibition on eel at the Aquarium Blue Planet, and more than 1000 + people following the expedition on Facebook and sharing comments and posts from it with their network, allowing us to reach a whole new audience – including stakeholders such as fishermen, NGO's, fellow scientists and funding agencies.

The celebrity of the communication was the eel, but gelatinous zooplankton was a very close runner up. The focus was on the role that gelatinous zooplankton, such as appendicularians, play in the eco system, and the indication that gelatinous zooplankton could be part of the hitherto unknown diet of the eel during its infancy. An example is a 2/3 full page story in a Danish national newspapers Sunday edition, equaling 20.000 Euro if this space would have been sold as an advert. The article featured interviews with gelatinous zooplankton researchers on board, describing their work and the quest to find out if gelatinous zooplankton is part of the early diet of eel larvae. It was also illustrative to see that a rather nerdy Facebook post about the work of a jelly-expert on board ("*What is a jellyfish expert doing on an eel expedition?*", 24. March 2014) could reach as much as 67.2 percent of the fanbase. That is a very high number compared to the average across Facebook which is 16 percent.

In conclusion, this illustrates that an important and interesting group of organisms, the jelly plankton, can be promoted and directed a high impact in societal awareness and interest by being carried to the top of the news stream using a main story of a broadly known fish species such as the eel. It emphasizes that the extent of public as well as research awareness and interest is not necessarily formed by the topic, but by the way it is being disseminated and perceived.

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