

## ***Interactive comment on “Biogeography of jellyfish in the North Atlantic, by traditional and genomic methods” by P. Licandro et al.***

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As all reviewers, of course I went to check if my work is cited. It is human. It is not. There are several articles that should deserve consideration and are not cited. Here they are:

Boero F. 2001. Adriatic ecological history: a link between jellyfish outbreaks, red tides, mass mortalities, overfishing, mucilages, and thaliacean plankton? In: Gelatinous Zooplankton outbreaks: theory and practice. CIESM Workshop Series, 14: 55-57. Boero F., Briand F. 2001. Executive summary. In: Gelatinous Zooplankton outbreaks: theory and practice. CIESM Workshop Series 14: 7-22. Boero F., E. Bonsdorff. 2007. A conceptual framework for marine biodiversity and ecosystem function-

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ing. Marine Ecology-An evolutionary perspective 28 (Suppl. 1): 134-145 Boero F., Bouillon J., Gravili C., Miglietta M.P., Parsons T., Piraino S. 2008. Gelatinous plankton: irregularities rule the world (sometimes). Marine Ecology Progress Series 356: 299-310 Piraino S, Aglieri G, Martell L, Mazzoldi C, Melli V, Milisenda G., Scorrano S, Boero F. 2014. *Pelagia benovici* sp.nov. (Cnidaria, Scyphozoa): a new jellyfish in the Mediterranean Sea. Zootaxa 3794 (3): 455-468. Aglieri G, Papetti C, Zane L, Milisenda G, Boero F, Piraino S. 2014. First Evidence of Inbreeding, Relatedness and Chaotic Genetic Patchiness in the Holoplanktonic Jellyfish *Pelagia noctiluca* (Scyphozoa, Cnidaria). Plos One. 9(6): e99647. doi: 10.1371/journal.pone.0099647 De Donno A, A Idolo, F Bagordo, T Grassi, A Leomanni, F Serio, M Guido, M Canitano, S Zampardi, F Boero and S. Piraino 2014. Impact of stinging jellyfish proliferations along south Italian coasts: human health hazards, treatment and social costs. International Journal of Environmental Research and Public Health 11 (3): 2488-2503. Boero F. 2013. Observational articles: a tool to reconstruct ecological history based on chronicling unusual events [v1; ref status: indexed, <http://f1000r.es/1kg>] F1000Research 2013, 2:168 (doi: 10.12688/f1000research.2-168.v1) Boero F, Belmonte G, Bracale R, Frascchetti S, Piraino S, Zampardi S. 2013. A salp bloom (Tunicata, Thaliacea) along the Apulian coast and in the Otranto Channel between March-May 2013 [v1; ref status: awaiting peer review, <http://f1000r.es/1ok>] F1000Research 2013, 2:181 (doi: 10.12688/f1000research.2-181.v1) Canepa A, Fuentes V, Sabatés A, Piraino S, Boero F, Gili JM 2014. *Pelagia noctiluca* in the Mediterranean Sea. in: KA Pitt and CH Lucas (eds) Jellyfish Blooms. Springer Science + Business Media Dordrecht, 237-266 Boero F. 2013. Review of jellyfish blooms in the Mediterranean and Black Sea. GFCM Studies and Reviews 92: 53 pp. Boero F., Putti M., Trainito E. Prontera E., Piraino S. 2009. First records of *Mnemiopsis leidyi* (Ctenophora) from the Ligurian, Thyrrenian and Ionian Seas (Western Mediterranean) and first record of *Phyllorhiza punctata* (Cnidaria) from the Western Mediterranean. Aquatic Invasions 4 (4): 675-680.

Not to speak about the large monograph on the Hydrozoa of the world: Bouillon J., Gravili C., Pagès F., Gili J-M., Boero F. 2006. An Introduction to Hydrozoa. Mémoires

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du Muséum national d'Histoire naturelle. PARIS: Muséum National d'Histoire Naturelle (FRANCE) 194, 598 pp.

that is often the basis for the names of the Hydrozoa for many authors and whose terminology is not used here.

Of course I would like the authors to have a look at these papers, since they contain ideas and information that are relevant for this review.

Besides this, there is something I must stress. The "claimed" regime shift from fish to jellyfish is reported since 1999, as rightly cited here. The analyzed data are taken in a recent period (2009-2012) so it is not so easy to assess if there has been an increase in jellyfish or not. It is a fact that Pelagia destroyed salmon farms in Ireland and Scotland in recent years, and this is reported in the press. The same is true for the thousands of people who are stung in the Mediterranean since a decade, something that before was episodic. The jellyfish are patchy and irregular in occurrence and there is not a guarantee that a regular sampling will report about them. The citizen science exercise that I am leading since 2008 led to the detection of many species previously unrecorded from the Mediterranean sea and also to the discovery of a new species. These were not recorded by traditional sampling. Jellyfish were not reported in the press before, not much anyway. Now they are. They block power plants, destroy salmon farms, sting swimmers. While doing so they end up in newspapers. But often not in the scientific literature. The absence of these records in the scientific literature has been taken as a proof that the rise of the jellies is unsubstantiated, as if the media were inventing this news, or that they were not reporting them in previous years. This is simply nonsense. So, if you want to know if there are jellyfish around, the media are more accurate than the scientific literature. This article is not cited: Jean-Paul Roux, Carl D van der Lingen, Mark J Gibbons, Nadine E Moroff, Lynne J Shannon, Anthony DM Smith, and Philippe M Cury 2013 JELLYFICATION OF MARINE ECOSYSTEMS AS A LIKELY CONSEQUENCE OF OVERFISHING SMALL PELAGIC FISHES: LESSONS FROM THE BENGUELA. BULLETIN OF MARINE SCIENCE. 89(1):249–284 they even

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introduce a new word: jellyfication. In this paper: Hans Ulrik Riisgård & Per Andersen & Erik Hoffmann 2012. From Fish to Jellyfish in the Eutrophicated Limfjorden (Denmark). Estuaries and Coasts DOI 10.1007/s12237-012-9480-4 this sentence in this paper is very explanatory for the lack of jellyfish records: Environmental monitoring in the years 1978–2009 has provided insight into the effects of eutrophication and thus shows the strength of a long-term monitoring programme, but the rigid/routine collection of data without supplementary studies has also demonstrated weaknesses. The important former commercial fishing of plaice, cod, eel and flounder has been replaced by a countless number of commercially 'useless' jellyfish, but no monitoring data have systematically been collected in order to document and to understand the undesirable change within the ecosystem substituting fish with jellyfish as top-predators.

The data provided in this paper are alright and they are good to know. But they are not sufficient to test the hypothesis that jellyfish have been on the rise or not in the recent years. It might be relevant, for the sake of discussion, to cite at least some of the not cited papers that I have listed. The list is much much longer and I do not understand this bias in the cited literature. The discussion, as far as I can see, does not address the issue of answering the question: are jellyfish on the rise or not? Some claim they are, some claim that they are not. What is the answer?

Even if I hate to cite myself, the answer is that irregularities rule the world (sometimes), as reported in the title of a review of this phenomenon that the authors retained not worth being cited. The situation described by Riisgård et al is probably very common. Jellyfish are simply unrecorded.

Overall, the data reported here are fine, but the paper lacks answering the question that generated it: are jellies on the rise? I would like to see this answer in a clearer and more explicit way. And I would like to see some more relevant papers cited. Not necessarily mine. But, at least, those of Roux and of Riisgard. And I would like to see some reference to the holocaust of salmon in Ireland and Scotland.

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