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COMMENT

Walk the talk, don't eat it: a call for sustainable seafood leadership from marine scientists

Fisheries stocks are rapidly declining around the world. A reduction in the consumption of unsustainable seafood may help curb this decline, however, the consumption of sustainable seafood is not commonplace, even within the marine science and conservation community. Our own observations on the frequent serving of unsustainable and/or unlabelled seafood at marine science and conservation meetings motivated this enquiry. We obtained information about the species served at mealtimes and where they were caught/farmed for seven marine ecology and conservation meetings held in Australia, attended by *c.* 4000 people from around the world. We then assessed the sustainability of each menu item according to the relevant sustainable seafood guide, which considered stock status and impact of fishing/aquaculture method. We found that seafood was served at all the meetings; four meetings served at least one unsustainable species, and only two meetings served a sustainable species. To achieve positive conservation outcomes, marine scientists, especially conservationists, urgently need to turn science into action, lead by personal example, and ensure that sustainable seafood is served, not only at such meetings but also more widely.

Globally, the state of oceans (Halpern *et al.* 2012) and fisheries is grim (Pauly *et al.* 2002; Worm *et al.* 2006). Ocean conservation is promising, but requires a range of actions, including effective fisheries management and implementation of functioning marine protected areas. Limiting consumption of seafood, especially unsustainable seafood, is one of the most direct ocean conservation actions, and a choice that is available to the majority of the global population, which is not reliant upon seafood to survive. Numerous sustainable seafood guides have been developed (Roheim 2009; Micheli *et al.* 2014), and are freely available to help consumers choose seafood that is harvested with minimal impact. Similarly, restaurants and chefs are increasingly promoting sustainable seafood. However, sustainable seafood is not yet commonplace, and efforts to achieve public awareness requires leadership from marine scientists and conservationists.

Seafood is a popular menu item for many, and is almost always featured at environmental science and conservation meetings. Surprisingly, unsustainable seafood and/or unlabelled species of seafood are often served at such meetings. For example, at the world's largest international meeting of coral reef scientists and conservationists, we observed that seafood was served frequently and buffet item labelling was often ambiguous (for example 'reef fish'). We thus decided to make further enquiries about the sustainability of the seafood consumed at such meetings.

We focused on meetings held in Australia, and used the most relevant seafood guide (Australian Marine Conservation Society 2012) to assess sustainability. This guide is available as a mobile application and wallet card, which categorizes seafood as a 'better', 'think' or 'no' choice based on stock status and fishing or aquaculture impact. We obtained information about the species served and where they were caught/farmed for seven marine ecology or marine conservation meetings held in 2012 or 2013, attended by *c.* 4000 people from around the world.

All seven meetings served seafood at some point during the conference, and over half of the meetings served an unsustainable ('no' choice) species. Only two meetings served a sustainable ('better' choice) species. Examining all menu items containing seafood that were served, more species were categorized as unsustainable (24%; 'no' choice) than sustainable (17%; 'better' choice). The others were categorized as a 'think' choice (54%) or were unknown (5%, but either 'no' or 'think') as insufficient information was available from the caterers. The most popular seafood served was prawns (various *Penaeus* and *Melicertus* species) and Tasmanian-farmed Atlantic salmon (*Salmo salar*), both of which are a 'no' choice, although some prawn species caught or farmed in particular places are a 'think twice' choice.

Additional leadership by marine scientists and conservationists is urgently required. At a minimum, they should influence what is served at the meetings they organize and attend. Where seafood is served at such meetings, sustainability and labelling data are needed to inform consumers. We acknowledge that sustainable seafood guides can provide conflicting and/or misleading advice (Ward 2008; Jacquet *et al.* 2010; Klein & Ferrari 2012), making them difficult to rely upon. With minimal effort, it is possible to determine if the seafood is clearly unsustainable (for example orange roughy, *Hoplostethus atlanticus*) or sustainable (for example squid, *Sepioteuthis australis*), based on its life history traits and/or fishing method. If a species' sustainability is uncertain, it should not be selected.

We found that many conference organizers had requested that all seafood served be sustainable. However, our findings indicate that simply requesting sustainable seafood is not enough; caterers and restaurants need to be held accountable and may require guidance on sustainable seafood.

Serving sustainable seafood at meetings alone is unlikely to substantially impact the conservation status of marine

organisms. However, through this leadership, caterers and restaurants may shift towards providing more sustainable seafood options to all of their customers, which could have an impact. Shifting to sustainable seafood can be a smart business decision (Koldewey *et al.* 2009; Australian Marine Conservation Society 2013). Because demand drives the market (King & Venturini 2005), this is especially true where demand is high: (1) where ecologically mindful residents (such as in Santa Barbara, California, USA) are attracted to 'green' consumerism; and (2) where tourism and scientific conventions are based on their natural assets (for example near the Great Barrier Reef). Shifting to sustainable seafood does not mean sacrificing taste or cost-effectiveness; some of the most popular seafood items can be sourced from more sustainable fisheries, including prawns (Australian Marine Conservation Society 2012). It is not only caterers and restaurants that need to change to make an impact; an even greater conservation outcome can be achieved if sustainable seafood is made available to a greater range of people, through large grocery stores and sustainable seafood boxes (Community Seafood 2014).

Scientists, especially conservation scientists, need to turn science into action in order to effectively influence the conservation of biodiversity (Arlettaz *et al.* 2010). With such leadership, we hope that catering companies and restaurants may be encouraged to move towards providing sustainable seafood, both at conferences and other occasions, especially when involved in nature education and conservation (Koldewey *et al.* 2009). Without such leadership, we are facing another seafood stewardship crisis (Jacquet *et al.* 2010).

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