



Letter to the Editor

Selecting marine invertebrate flagship species: Widening the net

Conservation efforts tend to overly focus on terrestrial vertebrates but this bias can be reduced by raising awareness about other species. A recent article by Guerra and colleagues (2011) has highlighted the importance of raising the conservation profile of marine invertebrates, as these species are a critical component of the Earth's biodiversity but largely ignored by the media. In particular, Guerra et al. developed the concept of an emblematic species, which combines the widely used surrogate concepts of indicator and flagship species, and propose the giant squid *Architeuthis* as an emblematic species for marine invertebrate conservation. Their article contains a wealth of supporting evidence on why they selected the giant squid but we think their selection process could be improved by including lessons learnt from identifying flagship species.

A flagship species acts "as the focus of a broader conservation marketing campaign based on its possession of one or more traits that appeal to the target audience" (Veríssimo et al., 2011), and the first part of choosing a flagship is to define the marketing campaign's goal. In their article, Guerra et al. seek a species that will both raise awareness about marine invertebrates and act as an indicator for marine ecosystem health. However, caution is needed when merging these roles. Flagship campaigns based on species that are easily monitored and reflect changes in broader biodiversity can be very powerful marketing tools. Thus, it may be more effective to use the flagship that most appeals to the target audience and then include other monitoring data in the campaign to help communicate how and why the species is threatened. For example, the polar bear has been used as a very successful flagship species for climate change but data on greenhouse gas levels and ice cover are much better indicators of our success in tackling climate change than changes in their population size.

The next steps in developing a flagship campaign should involve identifying the target audience and collecting empirical data on their species preferences. Guerra et al. present useful trend data on museum visitor numbers, articles published and investment in scientific research that illustrate the general public's interest in the giant squid *Architeuthis*. However, caution is needed when interpreting these data as they may be affected by confounding variables, such as broader changes in interest or funding for marine ecosystems. Thus, such data should be supplemented with studies that specifically ask the target audience about their preferences and these are best done by questioning them on which species and/or traits they prefer. Moreover, such research can provide information on how these preferences vary with the conservation context (Barua et al., 2011) and cultural and socio-economic conditions (Veríssimo et al., 2011) and allows researchers to identify when raising the profile of poorly known species is likely to be effective.

In conclusion, we think that the article by Guerra et al. (2011) is an important first step in developing marine invertebrate flagship species but more research is needed to confirm the suitability of giant squid. The authors have already highlighted the potential flagship role of corals and we suggest the next stage would be to work with other marine conservation stakeholders to produce an initial list of taxa that could then be tested for audience support. This would produce important data, as attitudes towards invertebrates are poorly understood, but it could also generate wider benefits if the process was well publicised. Such publicity could create a wider media event that could explain the importance of marine invertebrates and promote a more inclusive approach for tackling marine conservation issues.

References

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