



From arts to marine conservation: a response to Blanford and Stoehr

Blanford and Stoehr raised an interesting point regarding our letter (*Front Ecol Environ* 2011; 9[7]: 374–75): fishers notoriously exaggerate and distort the truth about their catch, and thus past artistic representations of fishing and fish may not be completely trusted. Although we recognize that their letter was written with a more humorous intent, we felt compelled to respond.

From our experience with diverse fishing communities in California, Mexico, the Caribbean, the central Pacific, and the Mediterranean, we recognize that many fishers from these settings are extremely valuable sources of information about characteristics and fluctuations in their catches. Fishers are unique witnesses to and recounters of oceanic productivity. For example, the reported “best day” of catch and largest fish caught by fishers in the Gulf of California, Mexico, have significantly decreased between middle-aged and younger fishers (Sáenz-Arroyo *et al.* 2005). Any purported distortion of the truth by *all* fishers would have eliminated the clear trend of depletion emerging from the fishers’ accounts.

As for the notion that ancient artists based their depictions solely on fishers’ accounts, we believe that direct observation of and experience with the actual subjects most commonly inspired and guided the artists’ work. Examination of many artistic depictions of marine subjects – from Roman mosaics to more modern works, including Giuseppe Arcimboldo’s famous 16th-century painting entitled “Water” – clearly reveals that the models used were living or dead animals. For instance, some fish (eg sciaenids) show characteristic profiles after death because rigor mortis induces an unnatural opening of their mouths. In some cases, these fish are represented in their natural environment (eg underwater) the way they appear when they are dead. The artists *must* have seen the captured fish to reproduce these details. Also, while conclusions based on a single work of art could be misleading, replication – examining many mosaics and paintings – and corroboration through multiple lines of evidence are essential in analyzing ancient art. This is a crucial basis for our conclusions: many mosaics depict large groupers. Some of the works are clearly creative interpretations of reality, such as a mosaic in which harnessed groupers are depicted towing Roman chariots. However, when

many pieces are considered together, we see that when Roman artists wanted to represent a big fish (including a “sea monster”) they frequently selected groupers as the subject. This is an indication that very large groupers – depicted in mosaics – were likely common in nature.

Thus, when information from multiple sources (works of art, archeo-zoologists, ancient historians) converges to the same picture, we can have greater confidence that current sizes of and habitat use by groupers have shifted. Finally, the issues raised by Blanford and Stoehr indicate that our article has satisfied at least one of its original goals: to stimulate debate about the use of non-traditional sources of information, including ancient art, to reconstruct baselines for marine ecosystems and assess change.

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Sáenz-Arroyo A, Roberts CM, Torre J, *et al.* 2005. Rapidly shifting environmental baselines among fishers of the Gulf of California. *P R Soc B* 272: 1957–62.

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