



INTRODUCTION

Moral, ethical and scientific aspects of welfare in aquatic organisms

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Large-scale commercial production of aquatic animals has accelerated during the past decade, both in terms of total biomass produced and diversity of organisms cultured. As a result, the husbandry practices applied to these animals—and the welfare states associated with their use—are emerging issues in national and international science programs, organizations concerned with the treatment of animals, and amongst consumers. The welfare of aquatic organisms held captive for public display, or caught in capture or recreational fisheries, has also become an issue. Until recently, however, very little information was available on the general behaviour, stress levels, discomfort/pain, anxiety/fear, 'comfort' conditions, etc. of aquatic animals in these situations. This kind of data is required to inform discussions, and to guide policy development.

The absence of empirical evidence on welfare-related issues, and the lack of clarity over our ethical and moral responsibilities to aquatic animals, has resulted in an often confusing debate. For example, discussions surrounding cognition, sentience, emotions/feelings, pain, and suffering in aquatic animals have often straddled and strained the line between science and ethics/philosophy.

This DAO Special brings together a range of perspectives on aquatic animal welfare, from pragmatic empirical science to ethics, philosophy, and animal rights activism. Authors were asked to prepare their contributions with the goal of alerting a broad readership to the key issues, as they see them. Since these issues are difficult and often controversial, we encouraged authors to express their views openly, without strict peer-review; only the Editors of this special issue commented upon the manuscripts, with the sole goal of improving the clarity of the arguments.

Contributors were asked to provide overviews of the most recent empirical data, and to address questions such as: (1) What are the different views of our moral and ethical responsibility towards farmed animals? (2) Should different ethical and moral principles be applied to wild versus cultured aquatic animals, and to the capture and/or recreational fisheries vs. farming activities? (3) What is the basis for the view that farmed animals should be provided with a stress-free environment (when this is far from what they encounter in the wild)? (4) What is the basis for ascribing the ability to feel pain, and/or to suffer, to aquatic organisms? (5) How can we best define the welfare of aquatic organisms and how should this information be applied to arrive at a balanced and pragmatic approach that could be implemented by fishers and farmers?

While there is a consensus in these contributions that concerns about the welfare of aquatic organisms are valid, there is less clarity over how their welfare status might be defined and, therefore, how to create for them a high-welfare environment. The latter is a key challenge for future research. Unfortunately, contributors did not address issues surrounding the welfare of aquatic organisms in capture or recreational fisheries, although this is just as relevant as it is for farmed animals. Further, there was little discussion of religious and cultural differences in people's views of welfare. We hope that these issues will receive more attention in the future.

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