

# Editorial

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Climate change, ocean acidification, invasive species, toxic algal blooms, pathogenic microbes and other coastal contaminants have been the subject of media interest for some years now and reflect a resurgence of public interest in our coasts, seas and oceans.

The *JMBA* has published several special issues that have focused on this topical research. In 2005 we published major reviews that covered climate change and its impact on organism distribution, behaviour and physiology (*JMBA* 2005, 85, *JMBA* 2010, 90, 1153).

The marine organisms highlighted ranged from gelatinous plankton to marine mammals (*JMBA* 2009, 89) and have covered other related issues, including invasive species (Crocetta, 2012; Pancucci-Papadopoulou *et al.*, 2012), physiology and adaptive variation in environmental gradients (Crabbe, 2012; Fuentes *et al.*, 2012; Moreno *et al.*, 2012; Oliveira *et al.*, 2012; Pereira & D’Incao, 2012) global sea and ocean temperature oscillations (Garcia-Soto & Pingree, 2012; Henderson *et al.*, 2012; Reid & Beaugrand, 2012; van den Brink *et al.*, 2013) and flooding (Conde *et al.*, 2013). Most of these topics are in ‘traditional’ areas of our interest. However, there is a necessity to be more proactive and expand our readership and remit to ensure we cover as many relevant aspects of emerging areas of interest in the marine environment as possible, whilst remaining in touch with the needs of society.

We are conscious that in order to address these issues that are so vital to the sustainability of our environment and the well-being of the world’s population, we need to expand our editorial board to include some of the leading figures in this field.

A key feature of this is an interdisciplinary approach. Not only do we need the fundamental sciences of biology, chemistry, physics, ecology and systematics, but also the social sciences. Moreover, we are all aware of the demands from grant-awarding agencies that we should provide evidence of the societal relevance of what we do. In most instances this refers to socio-economic matters including, for example, ‘blue-flag’ beaches, cleaner coasts and sustainable food and fisheries. However, until now, somewhat overlooked are the human well-being aspects of our coasts. Since the 18th Century and even before, ‘taking the waters’ either as medicine or immersion was promoted as being beneficial to health (Granville & Martin, 1971; Hembry, 1997).

We are now seeing the emergence of terms such as ‘Green Gym’ and ‘Blue Gym’, coined to describe the sometimes-indefinable benefits to be obtained from experiencing proximity to marine environments. Indeed, special centres that deal with such issues are being established—for example, ‘The European Centre for Environment and Human Health’ that is part of the University of Exeter and Peninsula Medical Schools (<http://ecehh.wireworksdigital.co.uk/>). A recent publication from this group (Wheeler *et al.*, 2014) showed that there is a clear increase in ‘self-reported’

good health with increasing proximity to the coast, with the quite simple take-home message that better access to a high quality environment is often as important as other better known factors in determining health outcomes.

A key caveat here is that this benefit seems to be especially pronounced in more deprived populations. The relationship between human health/well-being, the coasts and climate change is multi-faceted, particularly in the less-developed areas of the globe, where impacts on fisheries, socio-economic status, food and nutritional security are particularly acute.

While ‘marine scientists’ in their widest sense now embrace environmental microbiology and toxicology, including the study of human pathogenic contaminants in the marine environment, the discipline remains fragmented. A key enabling action needed to overcome this fragmentation is to expose marine scientists to the extensive literature surrounding ‘health promotion’ and other cognate areas of public health. There is a substantial body of knowledge that seeks to address the crucial impact that environment and behaviour have on human health and well-being.

It is now some time since the WHO proposed that one of the key principles of health promotion action was to create supportive environments, recognizing that ‘the inextricable link between people and their environment constitutes the basis for a socio-ecological approach to health’ (Ottawa Charter for Health Promotion, WHO, 1986). Health is determined by the interaction of many factors, referred to as ‘layers of influence’ (Dahlgren & Whitehead, 1991). Increasingly health outcomes can be directly linked to environment, be that physical, social, working, living or leisure; those ‘places’ where everyday lives are enacted and which ultimately impact life chances. *Place* and *space* have become central considerations in health promotion—terms which refer to far more than geographical location; rather the spatial context in which lives are lived. Included here is the way in which human experience interacts with the natural environment and how environmental or structural factors determine human behaviour.

The recent FPH<sup>1</sup> report (‘The Great Outdoors; How our Natural Health Service uses Green Space to improve well-being’) emphasized how ‘access to nature can significantly contribute to our mental capital and well-being’ and cites evidence demonstrating how green (and ‘blue’) space is an important beneficial factor in tackling health and social problems—obesity, mental ill health, anti-social behaviours, health inequality. The subsequent development of ‘Green Gyms’ further encourages people to connect and actively engage with their surrounding natural environment. Here then we can see how the ‘Blue Gym’ (noted above) has become a natural extension of the ‘Green Gym’. As any scientific concept develops it is important that there is a vehicle for

<sup>1</sup>[http://www.fph.org.uk/uploads/r\\_great\\_outdoors.pdf](http://www.fph.org.uk/uploads/r_great_outdoors.pdf). Faculty of Public Health, 4 St Andrews Place, London NW1 4LB, UK.

the publication of research and learned articles that underpin and engage with its community, particularly in a new and emerging cross-disciplinary field. *JMBA* therefore hopes to provide a platform for scholarly articles that address the ancient and complex interactions between man and the sea.

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