



Published on *Marine Ecosystems and Management (MEAM)* (<https://meam.openchannels.org>)

Tundi's Take: Is the link between ocean health and human health the sleeping dragon?

By Tundi Agardy, MEAM Contributing Editor (tundiagardy@earthlink.net)

The link between the condition of marine ecosystems and the human condition is deep and opaque, like the sea itself. It is probably safe to say that the majority of us believe that marine degradation will broadly affect humankind, but exactly how, and to what degree, is not well understood.

This we know for sure, however: degraded ecosystems are less productive and more prone to instability than healthy, diverse ecosystems. Declining ocean health thus stresses humankind by affecting livelihoods, threatening food security, increasing the potential for conflict, and taxing our spiritual and emotional health. Marine environmental degradation also affects humans more directly: bathing in polluted waters or eating tainted seafood can cause sickness and death. And disease outbreaks are more frequent and more pronounced when marine ecosystems lose biodiversity or when global warming effects occur – and especially when biodiversity loss and climate change effects occur simultaneously.

But even more alarming is what we don't yet know about the links between stressors, ocean condition, and human health/public health. Take for example the largest recorded marine disease outbreak ever: sea star wasting disease, currently affecting invertebrates along the Pacific coast of the USA. Why the sea stars are dying, and what this portends for human health for those who are exposed to the same ocean and coast and its resources, is totally unknown (though a soon to be published *Science* article by Drew Harvell and colleagues may shed some light on this mystery).

Scant attention paid to the ocean health / human health link

But for all the interest in recognizing the value of, and safeguarding, marine ecosystem services and all the emphasis on the economic costs of degradation (see for instance the recent UN report on the billions of dollars of costs borne to global society by microplastic pollution of the sea: www.unep.org/pdf/ValuingPlastic), there has been scant attention to the ocean health / human health link. We seem terribly preoccupied with overfishing – though this is a relatively simple threat to tackle. And we seem quick to establish very large marine “protected” areas, often without tackling the main stressors that affect the health of those protected ecosystems. Pollution is hard to deal with, especially when we are dealing with non-point source toxins, and cumulative stressors are harder still.

Controlling run-off, removing combined storm and sewer outflows, preserving wetlands, and using less fertilizer, pesticides, and herbicides in industry and at home – these are the hard things. Take the recent mess in Lake Erie (in the US), where a drinking water crisis for the city of Toledo, Ohio, has resulted from an algal bloom fed largely by agricultural fertilizers. It is simple to point the blame for ocean decline at the fishing industry; easy to propose vast hard-to-manage MPAs far from our shores; and convenient to raise the specter of the mystery of ocean acidification as the cause of our impending doom. This is perhaps why the wealthiest and most technologically advanced countries in the world seem unable to restore their most polluted and unhealthy marine areas. Given that a recent study found that over half the aquatic systems in Europe were highly contaminated by toxins, it is not surprising that the sink areas for all those rivers and streams, such as the Baltic, would be suffering so mightily.

And when the alarm bells really ring loud, some are quick to point the blame for everything on overpopulation. But the link between sheer numbers of people living on and using the coast and the condition of those coastal and marine ecosystems is not linear. Without factoring in consumption and behavior, our attempt to point the finger of blame on rapidly growing populations (especially those in the developing world) is misguided. Unless we articulate the true drivers of environmental degradation, prioritize the threats that most affect ocean health, and tailor our solutions to address those threats, we remain in peril. Declining ocean health may just be the sleeping dragon that takes us most by surprise.

BOX: New study: Economic growth, more than population growth, is main driver of China's coastal degradation

Since China instituted sweeping economic reforms in 1978, the country's economy has grown by orders of magnitude. A new study in the journal *Scientific Reports* concludes that this economic growth has been the main driver in the significant degradation of China's coastal ecosystems, as measured by habitat loss, declining biodiversity, harmful algal blooms, pollution, and more. In a twist on previous research elsewhere on coastal degradation, the study's authors argue that population growth in China's coastal areas has not been a significant driver of the ecosystem declines. The study is available for free at <http://bit.ly/ChinaCoastStudy>. A blog post by the study's lead author Qiang He is at <http://bit.ly/ChinaCoastBlog>.

Source URL: <https://meam.openchannels.org/news/meam/tundi%E2%80%99s-take-link-between-ocean-health-and-human-health-sleeping-dragon>