Humans Are Destroying Earth's Coral Reefs ...

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In a major review of the status of earth's coral reefs and their prospects for the future, Riegl *et al*. (2009) write that "20% of the world's coral reefs are already lost, 24% under imminent risk of collapse, and another 26% in grave danger of irreparable damage," based on the results of the survey report of Wilkinson (2006). And, of course, they pay politically-correct homage to the role that the ongoing rise in the air's CO_2 concentration may be playing in this regard. But is it really the case that the burning of fossil fuels is responsible for the dire straits in which the world's coral reefs currently find themselves?

The five U.S. researchers begin their analysis of the subject by noting that "coral reefs, similar to those we know today, have existed for approximately 215 million years (and, in another taxonomic guise, for about 500 million years)," even surviving the turmoil that brought about "the extinction of the dinosaurs and the climate changes of the ice ages," which *known facts* would seem to suggest, in their words, that earth's corals possess a "remarkable evolutionary resilience," which "would certainly suggest," as they describe it, that "there is scope for ecological resilience as well." So why are earth's coral reefs in so much trouble today?

Clearly, all forms of life on earth are subject to various environmental challenges that periodically threaten their existence on a large spatial scale; and corals are no exception. Tectonic upheavals, asteroid impacts, *natural* climate changes, disease pandemics and predator outbreaks: all of these challenges and many others confront earth's biosphere on a variety of different time scales and to a greater or lesser degree. So what is the cause of the *current* coral crisis?

The problem, as we and many others see it, is a whole set of what Riegl *et al*. describe as "smaller-scale, localized, and entirely man-made threats," among which they list "runoff, sedimentation, and nutrient enrichment; coastal construction leading to smothering of habitat and creation of high turbidity around coasts; overfishing and destructive fishing." In a study designed to reconstruct multi-century histories of fourteen coral reefs from various places around the world, for example, Pandolfi *et al*. (2003) found that "all reefs were substantially degraded long before outbreaks of coral disease and bleaching." In fact, they determined that the "degradation of coral reef ecosystems began centuries ago," when the world was in the midst of the Little Ice Age and the air's CO_2 concentration was a hundred

parts per million less than it is today. It is our belief, therefore, that this long-term degradation has severely weakened the ability of many of earth's corals to adequately cope with the challenges of temperature-induced bleaching and potential ocean acidification.

So how far down the slippery slope that leads to extinction were the world's coral reefs at the start of the current century? Pandolfi *et al.*'s analysis revealed that the 14 reefs they studied were fairly evenly distributed between just under 30% to just under 80% of the way from what they call "pristine" to "ecologically extinct," and that "recent widespread and catastrophic episodes of coral bleaching and disease have distracted attention from the chronic and severe historical decline of reef ecosystems."

In describing the practical implications of their findings, Pandolfi *et al.* concluded that "coral reef ecosystems will not survive for more than a few decades unless they are promptly and massively protected from human exploitation," which is what we have advocated from the very beginning of this discussion on our website (see, for example, our Editorials of 1 Jan 1999 and 26 Mar 2003).

To claim that we must drastically reduce anthropogenic CO2 emissions to save earth's corals from extinction, as most climate alarmists contend we must do, is to *look beyond the mark*, and to therefore likely *fail* to implement the more mundane (but absolutely necessary) *local* protective measures that must be put in place *now*. Taking the other course may well give people who have been misled by the likes of Al Gore and James Hansen a warm fuzzy feeling, but their woefully misguided efforts to dramatically cut fossil fuel consumption will effectively *consign earth's corals to oblivion*. We cannot afford to be distracted by tilting at windmills when a clear and present danger is staring us right in the face.

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