

Sea sore: Coasts, estuaries degraded by humans

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Severe resource depletion and ecosystem destruction of coasts and estuaries began during Roman and Medieval times but have rapidly accelerated over the last 150-300 years, according to a new study in *Science*.

Dr Roger Bradbury, Adjunct Professor in the Resource Management in Asia-Pacific Program at ANU (Australian National University), was part of a research team that measured the changes in 12 temperate estuarine and coastal ecosystems since human settlement in Europe, North America and Australia.

The four-year study found exploitation and habitat destruction caused by human activities had depleted 91 per cent of marine species, of which 31 per cent were rare and seven per cent were extinct. Human activity was also responsible for degrading 65 per cent of seagrass and wetland habitat, significantly degrading water quality, and accelerating species invasion.

The researchers say that the decline had been fastest during the market-colonial development period and continued into the “global” periods, between the years 1900-1950 and 1950-2000.

They say the continued degradation of coastal areas and estuaries “poses potential for disaster, as demonstrated by numerous fisheries collapses and the recent impacts of the 2004 Asian tsunami and 2005 Hurricane Katrina that were exacerbated by historical losses of mangroves and

wetlands”.

More positively, the study found that conservation efforts in the 20th Century had “led to a partial recovery of 12 per cent and substantial recovery of two per cent of the species”.

The authors also noted that conservation efforts in developed countries had slowed or in some instances reversed degradation trends in the late 20th Century, but warned that expected population growth associated with growing coastal pressures may increase degradation in developing countries.

A reduction of exploitation and habitat destruction should be the focus of environmental management efforts, the research team recommends. They say species invasions and climate change may have a stronger impact on coasts and estuaries in future.

The research was led by Heike Lotze from Dalhousie University in Halifax, Canada, and included researchers from the University of California, Bates College, the Smithsonian Tropical Research Institute, the University of Chicago, the University of Florida and the University of North Carolina.

Source: Australian National University

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