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### **“Aerosol Impacts on Marine Ecosystems”**

ABSTRACT: From 2004 to present there have been numerous major and great earthquakes around the world well-recorded by new global seismic, geodetic, and tsunami networks, allowing detailed faulting characteristics to be revealed. Complex rupture processes, interactions between nearby faults, and unexpected rupture environments have been unveiled by studies of the diverse observations. About 60% of the recent great earthquakes have involved interplate ruptures on megathrusts, mainly in regions that were identified as seismic gaps. The 40% of intraplate ruptures have included the largest deep earthquake and largest strike-slip earthquake yet recorded, along with intraplate rupture have triggered interplate thrusting. Surprising aspects of the recent great earthquakes will be discussed, along with curious observations associated with major earthquakes during the past year which have struck in shallow, intermediate and deep earthquake zones including Nepal, the Aleutian slab, the Bonin Slab, the Hindu Kush slab, and central Chile.