



Sightings of the Oceanic oarfish *Regalicus spp* (Teleostei, Lampridiformes) are primarily found in the region of tectonic plate boundaries

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The oceanic oarfish of the genus *Regalicus* comprises two species (*R. glesne* and *R. russellii*) and is sighted infrequently, usually singly or in pairs. The relative infrequency of sightings relates to the depth at which the species normally resides (up to 1000m). While single or paired sightings are not in themselves rare events, somewhat rarer are so called “spates” of sightings in shallow water or strandings where three or more oarfish are found within a month or so. Almost all sightings of oarfish are in shallow water near coastlines or stranded on beaches and are almost never sighted alive or in their natural habitat. Japanese legend has long associated the appearance of these fish with earthquakes and recent oarfish spates in seismic regions such as Japan, the Philippines and California appear to support this view, but no empirical testing of the earthquake hypothesis has been carried out to date. In the initial part of our study on the possible link between oarfish and earthquakes a biogeographic study was carried out. Records of more than 300 oarfish sightings from 1900 to the present were collected in a database, with their co-ordinates, and these were plotted using ARCGIS with an oceanographic base layer overlaid with tectonic plate boundaries. The distance from oarfish sightings to plate boundaries was calculated and used as a predictor variable in regression analysis, with number of oarfish sighted as the response variable. There was a strong association between the location of sightings and plate boundaries. Where sightings did not occur on plate boundaries their location suggests that they could have conceivably drifted on ocean currents to the nearest available beach. The reason for the association of oceanic oarfish strandings with plate boundaries is unknown, but could be caused by gasses or ionisation released from earthquake preparation zones. If this is the case, the sightings could prove useful for future short-term earthquake prediction. Research is currently ongoing to model the risk of moderate to large earthquakes based on oarfish sightings combined with other indicators.