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TITLE: Marine Biodiversity of Aotearoa New Zealand

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ABSTRACT:

The marine-biodiversity assessment of New Zealand (Aotearoa as known to M?ori) is confined to the 200 nautical-mile boundary of the Exclusive Economic Zone, which, at 4.2 million km(2), is one of the largest in the world. It spans 30 degrees of latitude and includes a high diversity of seafloor relief, including a trench 10 km deep. Much of this region remains unexplored biologically, especially the 50% of the EEZ deeper than 2,000 m. Knowledge of the marine biota is based on more than 200 years of marine exploration in the region. The major oceanographic data repository is the National Institute of Water and Atmospheric Research (NIWA), which is involved in several Census of Marine Life field projects and is the location of the Southwestern Pacific Regional OBIS Node; NIWA is also data manager and custodian for fisheries research data owned by the Ministry of Fisheries. Related data sources cover alien species, environmental measures, and historical information. Museum collections in New Zealand hold more than 800,000 registered lots representing several million specimens. During the past decade, 220 taxonomic specialists (85 marine) from 18 countries have been engaged in a project to review New Zealand's entire biodiversity. The above-mentioned marine information sources, published literature, and reports were scrutinized to give the results summarized here for the first time (current to 2010), including data on endemism and invasive species. There are 17,135 living species in the EEZ. This diversity includes 4,315 known undescribed species in collections. Species diversity for the most intensively studied phylum-level taxa (Porifera, Cnidaria, Mollusca, Brachiopoda, Bryozoa, Kinorhyncha, Echinodermata, Chordata) is more or less equivalent to that in the ERMS (European Register of Marine Species) region, which is 5.5 times larger in area than the New Zealand EEZ. The implication is that, when all other New Zealand phyla are equally well studied, total marine diversity in the EEZ may be expected to equal that in the ERMS region. This equivalence invites testable hypotheses to explain it. There are 177 naturalized alien species in New Zealand coastal waters, mostly in ports and harbours. Marine-taxonomic expertise in New Zealand covers a broad number of taxa but is, proportionately, at or near its lowest level since the Second World War. Nevertheless, collections are well supported by funding and are continually added to. Threats and protection measures concerning New Zealand's marine biodiversity are commented on, along with potential and priorities for future research.

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