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TITLE: Enhanced seamount location database for the western and central Pacific Ocean: Screening and cross-checking of 20 existing datasets

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ABSTRACT:

Seamounts are habitats of considerable interest in terms of conservation and biodiversity, and in terms of fisheries for bentho-pelagic and pelagic species. Twenty previously compiled datasets including seamount/underwater feature lists, bathymetric maps and emerged feature maps from different sources (ship-derived and satellite altimetry-derived) at different spatial scales (from individual cruise to worldwide satellite data) were gathered in order to compile an enhanced list of underwater features for parts of the western and central Pacific Ocean (WCPO). The KL04 dataset [Kitchingman, A., and Lai, S., 2004. Inferences on potential seamount locations from mid-resolution bathymetric data. Fisheries Centre Research Reports 12 (5), 7?12], listing seamount positions and depths as calculated from satellite altimetry-derived bathymetry, provided the baseline data for this study as it covered the entire region of interest and included summit depth information. All KL04 potential seamounts were cross-checked with other datasets to remove any atolls and islands that had been incorrectly classified as seamounts, to add seamounts undetected by KL04, to update the overall database (geolocation, depth, elevation, and name) and to compile a 12-class typology of the different types of underwater features. Of the 4626 potential seamounts identified in KL04, 719 were multiple identifications of the same large underwater features and 373 (10%) were actually emerged banks, atolls and islands, leaving 3534 actual underwater features. Conversely, 487 underwater features were documented in other datasets but not registered by KL04. The screening of all the potential WCPO seamounts produced a final list of 4021 underwater features with agreed upon position and information. This enhanced list should have many applications in oceanography, biodiversity conservation and studies of the influence of seamounts on pelagic ecosystems and fisheries.

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