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# Reconstruction of lead inputs into the western Pacific using coral skeletons

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Anthropogenic lead (Pb) has been considered to be one of the most severe contaminants for the environments. Especially, Pb emission from the East and the South-East Asia, which are considered to be one of the biggest sources of industrial Pb, would affect the surface of the western Pacific. Moreover, in some countries around the western Pacific, unleaded gasoline had been introduced very recently. In order to examine distribution of Pb in the western Pacific, we determined Pb contents together with Pb isotopic compositions in coral skeletons collected from several sites in the western Pacific from Hainan Island, China to Phonpei Island, Micronesia in addition to three samples collected along a inshore-offshore transect line in the Jakarta Bay. We also investigated temporal records of Pb inputs into the western Pacific using coral skeletons from Hainan, Ogasawara Island, Japan and Jakarta Bay. All measurements of this study were conducted using inductively coupled plasma mass spectrometry (ICP-MS). As a result, the spatial distribution of Pb showed a clear dilution pattern of Pb from China to the open ocean. Also the similar trend was found in the Java Sea from Jakarta to the offshore. In addition to the spatial distribution, Pb concentration in the western Pacific has gradually increased during last 108 years. It may be attributed to Pb emission mainly from coal combustion in China. Lead contents in the coral skeleton from Jakarta Bay also increased during last 70 years, although Pb contents in the coral from Jakarta Bay were lower than that in Ogasawara coral and showed a little increase. Hainan coral, which provided 10 years record of Pb, showed a remarkable decline around 1997 due to the introduction of unleaded gasoline in China. It is further required to examine the Pb concentrations in the surface of the western Pacific because unleaded gasoline has been introduced in China and also in Indonesia very recently. Data in this study would be valuable for such studies and environmental assessment.