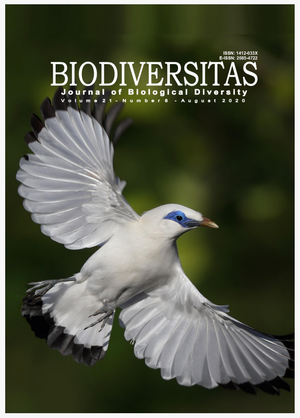
Heavy metals contaminants in the eggs and temperatures of nesting beaches of sea turtles in Kaimana, West Papua, Indonesia



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Articles

Abstract

Abstract. *Tapilatu RF, Wona H, Siburian RHS, Saleda ST. 2020. Heavy metals contaminants in the eggs and temperatures of nesting beaches of sea turtles in Kaimana, West Papua, Indonesia. Biodiversitas 21: 4582-4590.* Etna Bay and Venu Island in Kaimana, West Papua, Indonesia are two of many areas that sea turtles use during the nesting season. Here, we report data on heavy metals contaminants from a sample of eggs of green (*Chelonia mydas*) and hawksbill (*Eretmochelys imbricata*) turtles collected from a subset of two nests during the 2016 nesting season at Venu Island, Kaimana, West Papua, Indonesia. Three heavy metals contaminants (i.e. mercury, cadmium, arsenic) found in eggs exceeded the established safety limits for human consumption. Other contaminants such as lead, zinc, manganese, iron, and copper were found below the established safety standards. There is an implication of the containment of heavy metals in sea turtle eggs to human health in Kaimana when it is consumed. It is highly recommended that the harvesting of turtle eggs and adults of all of sea turtles at Kaimana be totally prohibited. In addition, overall, beach temperatures in Lakahia fluctuated at a larger range between 26.5° and 33.8°C than at Venu island that fluctuated between 25.9° and 30.2°C. Mean daily temperatures of in-situ nests during the middle third of the incubation period were above the pivotal temperature of 29.0°C for temperature-dependent sex determination suggesting a female bias may already exist. The chemical contamination found in the eggs of *C. mydas* and *E. imbricata* at Venu Island is thought to assist sea turtle conservation initiatives in the area. The conservation program at the prime nesting habitat for green and hawksbill turtles on the small islands west of Kaimana such as Venu Island should be intensified to reverse the decline and increase population size of nesting sea turtle species. It is recommended that education and outreach be implemented in surrounding communities in Kaimana to raise awareness about marine turtle conservation.

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