ABSTRACT

Little is known about the Nile crocodile (*Crocodylus niloticus)* population in Madagascar; however, its population is believed to be in decline resulting from hunting and habitat loss. This study maps the distribution of the Nile crocodile population in the Mariarano River in Northwestern Madagascar during the dry season (May-October) using the maximum entropy model Maxent. Four biophysical factors are included in the first model and the second model includes two additional anthropogenic factors of distance from roads and distance from villages to observe the effect of humans on suitable habitat for crocodiles. Data were collected in June- August 2011 and 2012. Model performance was assessed using the Receiving Operating Curve (ROC) and Area under the Curve (AUC), using 10 replicates of both models. Both models adequately predicted species occupancy using the test data: the anthropogenic model receiving model performance rating of excellent and the biophysical factor-only model receiving a rating of average. While the results initially indicated that the distance from roads was the most important variable to the model, other possible anthropogenic influences such as boat activity on the river and mangrove destruction were not included. The distribution map produced for the model can be used as a baseline for Nile crocodile distribution within the river and aid in conservation management decisions about the Nile crocodile in the region.