

## Robotic Turtle Pushing Technology, Science

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Andrea Moore - All Headline News Staff Reporter

New York, NY (AHN) - A robotic turtle could help engineers build better autonomous underwater vehicles and answer fundamental questions about how prehistoric underwater creatures swam. The robot, called Madeleine, is already helping researchers understand when it is best to swim with four flippers and when to use two.

Madeleine is similar in size and weight to a Kemp's Ridley or Olive Ridley sea turtle, measuring 80 centimetres by 30 cm and weighing 24 kilograms. The robot also has a comparable power output, between 5 and 10 watts per kilogram, depending on how hard it is working.

The robot's polyurethane flippers have the same stiffness as a real turtle's, but are operated by electric motors connected to an onboard computer. These motors rotate each flipper so that its back lifts up, before sweeping down again to generate propulsion. The robot is controlled remotely but has several sensors including video cameras, sonar and altimeter and accelerometer.

John Long, one of Madeleine's makers from Vassar College, in New York says that by imitating the design of a turtle, the researchers hope to build more efficient ocean robots.

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