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BIOENERGY AND GREEN TECHNOLOGY: CHALLENGES AND OPPORTUNITIES [ORA-2016]**

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BIOLOGICAL 'CLOCK' DISCOVERED IN SEA TURTLE SHELLS

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Abstract

Sea turtle(Hawksbill) is an endangered species and belongs to the order omnivorous (Testudines). Sea turtle is an important organism in marine bio-technology. To enhance its population, several researches are going on. In that, one of the developing and important researches is biological 'clock' discovered in Hawksbill shells. The sea turtles appeared to have been omnivorous as recently as the 1980s. Now, they appear to be primarily herbivores. Such a dramatic decline in their food supply could delay growth and maturity, and may reflect ecosystem changes that are quite ominous in the long term for hawksbill populations in Hawaii. The scientists were able to estimate each turtle's approximate age by comparing the bomb-testing radiocarbon accumulated in its shell. In this research the scientists of Duke University worked on specimens of sea turtle shells of Hawksbill population in Hawaii. Radiocarbon dating of atomic bomb fallout found in sea turtle shells can be used to reliably estimate the ages, growth rates and reproductive maturity of sea turtle populations. Hard tissue from the shells of 36 deceased hawksbill sea turtles collected and analyzed. In order to determine the age of an organism is based on its carbon-14 content. US government conducted some serious atomic bomb testing above the waters of the Pacific Ocean. As a result, the corals there accumulated a lot of nuclear fallout into their structures. But the coral wasn't the only sea creature to take radioactive material onboard -- hawksbill sea turtles incorporated the material into their shells as well. The harvest of hawksbill sea turtles for the global tortoiseshell trade was enormous, with some estimates that 30,000 turtles were trafficked annually from 1950 to 1992. Thus this study result revealed that , age, growth rates and sexual maturity of Hawksbills was determined by atomic radiocarbon present in the shells.

Key words:Hawksbill, Biological 'clock'.Radiocarbon, Turtle population.

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