Taxonomic debates are important

But they should not detract from conserving biodiversity in all its dimensions

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Many years ago, Stephen Jay Gould wrote an essay titled "What, if anything, is a zebra?" In this piece, he tried to explore whether some zebras were more closely related by descent to horses than they were to other zebras? He argued that since the three species of zebras did not comprise a group with a single ancestor (that gave rise to them alone and not to any other species of horse) there was in fact no such thing as a zebra in the evolutionary sense. There has been similar debate over the status of green and black sea turtles, with added confusion for the layperson since most green turtles aren't even green. Named for the colour of their fat, these turtles occur worldwide and are considered grazers of the sea. Their large numbers in many regions are believed to have shaped eco-systems.

Today, however, green turtles (*C mydas*) are in decline in many parts of the world and require serious conservation efforts. In the East Pacific, there is a darker, smaller form of the turtle, long known as the East Pacific green turtle or the black turtle. There has been considerable debate over whether this should be classified as a separate species (taxonomists name it as *Chelonia agassizii*) or if it should be a subspecies of the green turtle (*C mydas agassizii*). Those who believe it should be considered a separate species argue that the East Pacific green turtle looks very different: most of them have a dark carapace, which also differs in shape and size from that of other green turtles. Critically, however, genetic analysis showed that the black turtle was only a part of the genetic sub-group of the green turtle native to the Pacific Ocean. In fact, the major sub-division is between a Pacific Indian Ocean group and an Atlantic-Mediterranean group. This meant that if sub-species or species were to be named, these groups would have to be classified first before any further splitting was possible.

A similar dilemma exists with ridley sea turtles. Long considered a small unique population, the Kemps ridley on the east coast of Mexico has garnered all the conservation attention among the ridleys. The olive ridley, a close relative, has been considered widely distributed and common. Our work on the east coast of India (published in *Molecular Ecology*, 2004) showed that the ridley population in India was the closest relative of the Kemps ridleys, and the Indian population may have been ancestors of the ridleys in the Pacific and Atlantic oceans. The difference between the two was no more than the difference between Pacific and Atlantic green or leatherback turtles, which are widely considered as single species. Additionally, the variation between different populations of ridleys was found to be fairly significant, indicating that an exclusive focus on Kemps ridleys as unique and conservation-worthy is not the best way to protect the genetic diversity of this group.

Proponents of species status for these two species argue this can enhance their conservation. However, as scientists, we should be consistent in our description of the natural world, so that the interpretation of patterns is not subjective. Further, the focus has been on whether particular sub-populations should be designated as species or not, when the issue was the conservation of the diversity of the entire group.

The craving to describe new species can only be described as a taxonomic hangover from a period when exploration of the natural world and a discovery of its inhabitants was the principal concern of naturalists. Today, the description of species has important outcomes. A sub-group described as a species could find itself on the IUCN Red List, making it attractive for conservation donors. Areas with large numbers of species are designated biodiversity hotspots and attract significant conservation attention and funding. But these should not distract from fundamental issues of conserving biological diversity in all its dimensions. ■

Should the conservation of the green turtle in the Pacific or Indian oceans be linked to their conservation?

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