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Endangered languages encode plant and animal knowledge

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Gaia Vince, San Francisco

Saving indigenous languages from extinction is the only way to preserve traditional knowledge about plants and animals that have yet to be discovered by Western scientists, says a linguist and cultural expert.

More than half of the world's 7000 languages are endangered, because they consist of an unsustainably small – and declining – speaker base. Each language death represents a significant erosion of human knowledge about local plant and animal life that was acquired over many centuries, says David Harrison at Swarthmore College in Pennsylvania, US.

Information about local ecosystems is so intricately woven into these languages that it cannot be replaced simply through translation, he explains. The indigenous taxonomy alone can provide a huge range of information about species, which young speakers in these tribes acquire instantly through learning the name.

For example, the Siberian Todzhu tribe has many different and complex names for reindeer, according to the animals' life stages. What is called a "chary" by the Todzu, would be translated in English as "a two-year-old male, un-castrated, rideable reindeer".

Trout or salmon?

Other indigenous taxonomy includes important detail about the genetic relationships between species of agricultural value, animal behaviour and other ethnobotanic or zoologic knowledge.

Scientists wishing to learn more about species in remote places should liaise with the people who have lived alongside them for centuries, Harrison says. The information contained in the words used to describe and group them might take many years to determine in the lab, he adds.

For example, two types of trout-like fish, called steelhead trout and cutthroat trout in English, are labelled as being types of salmon in the language of the Halkomelem Musqueam tribe of British Columbia in Canada. Genetic analysis has shown that they are in fact of the salmon genus, and not trout at all.

Cryptic species

Only around 20% of the world's plant and animal life has been officially classified, according to Edward O Wilson, at Harvard University in Massachusetts, US. But much of the remaining 80% is known, he believes - just not to scientists in the West.

Some of these "unknown" species include so-called cryptic species, in which one species turns out

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to be many more. An example of this is the neotropical skipper butterfly, *Astrartes fulgerator*, which despite looking identical, turned out to be 10 distinct species after DNA analysis (*Proceedings of the National Academy of Sciences*, vol 101, p 14812). The language of the local Costa Rican tribe where the butterfly is found, has a different name for the larvae of each of the 10 species, Harrison points out.

David Harrison spoke at the American Association for the Advancement of Science meeting in San Francisco, California, on Saturday.

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