Study finds major gap between ecological problems, research emphasis

by Bend Weekly News Sources

A 20-year survey of conservation science shows a disturbing disconnect between the worldâ€™s most pressing ecological issues and what researchers are actually studying, with some less serious problems getting the most attention while more critical concerns get largely ignored.

The study, conducted by scientists from Oregon State University and 10 other universities or agencies, was recently published in Frontiers in Ecology and the Environment, a professional journal.

It showed that conservation biologists tend to study things close to home that they like and are familiar with â€“ birds and mammals living in the temperate forests of North America and Europe. But the most imminent threats to biodiversity are in places like South America, Southeast Asia and the Arctic tundra, and to species such as amphibians or freshwater fish that get surprisingly little attention.

â€œItâ€™s easier, cheaper, and more funding is available to study your own backyard,â€• said Joshua Lawler, a research associate in the OSU Department of Zoology. â€œAnd researchers also study what they like, what they are familiar with. Itâ€™s not easy to shift the focus of oneâ€™s research program, or to start studying different ecosystems thousands of miles away. But to some degree thatâ€™s whatâ€™s needed.â€•

Brazil, for instance, has 13 percent of the worldâ€™s â€œpriority conservation areas,â€• but was the site of only 1 percent of the studies reviewed by Lawler and colleagues. Globally, 31 percent of known amphibian species are at risk of extinction, making them the most threatened of the documented groups of organisms. Yet, they are one of the most poorly studied groups â€“ only 4 percent of the studies that addressed at-risk species involved amphibians.

â€œTo protect a species or ecosystem you need to understand it,â€• Lawler said. â€œOur study shows that conservation biologists arenâ€™t concentrating their efforts on the most threatened systems. In some of these systems, we donâ€™t even know what species are there let alone how to preserve them.â€•

The findings were based on a review of 628 papers published in 14 journals over the past two decades, trying to determine whether the field of conservation biology has adequately tracked emerging threats and issues, and whether research emphasis tended to follow the biggest threats.

The results were not encouraging. Forests of North America and Europe were by far the most heavily studied ecosystems, while deserts, shrublands and tundra were poorly studied all over the world. And even though the incredible biodiversity of some tropical ecosystems has been known for some time, it has not translated into heavy amounts of research done there.

Marine concerns also were understudied. The planet is 71 percent covered by water, but just 7 percent of the studies addressed marine ecosystems, a proportion that has not increased in 20 years.

In terms of what gets studied, there almost appears to be an inverse relationship between what is most threatened and what gets the most attention â€“ despite laws such as the Endangered Species Act that one might assume would address that issue.

Forty percent of the published conservation papers that examined species at risk of extinction in the United States were done on mammals, although only about 7 percent of U.S. mammals are at risk of extinction. Birds have a similarly disproportionate level of interest â€“ 30 percent of the studies, 7 percent at risk. By comparison, amphibians and freshwater fish facing much higher levels of risk receive almost no attention.

There is no indication that this mismatch in threat status and research effort is decreasing over time, the study authors said in their report.

When considering the greatest threats to species and ecosystems, there was a slightly better correlation between the real risks and the level of attention they received. Habitat loss, the single issue causing the most concern for at-risk species, also was the subject of the highest percentage of ecological studies. The over-exploitation of species actually received more study than the problems attributable to it.

But vastly underestimated across the board is the threat of invasive species, the researchers said.

â€œOne of our biggest problems is exotic species, which are the second greatest threat to biodiversity in the world,â€• Lawler said. â€œBut they are very poorly studied and receive comparatively little funding, even though the problem is already severe and projected to increase.â€•

An obvious concern, Lawler said, is the ethnocentrism of countries and funding agencies that tend to support research largely within their borders. But many pressing ecological concerns of the day â€“ climate change, invasive species, pollution â€“ are global by definition and must be approached that way.

The report recommended that this disconnect between problems and research emphasis be made more clear to funding agencies, that conservation biologists take their own personal responsibilities more seriously to address the most important issues, and that problems with the time lag in publishing conservation research be

reduced.

â€œWe have to learn to study the most important and most pressing problems, not just our pet projects or the systems and species with which weâ€™re most familiar,â€• Lawler said. â€œAnd we have to help agencies that support us to recognize the critical issues and where more conservation research is needed.â€•

The study authors said in their report that progress with this problem has been far too slow, and that â€œin a crisis-driven applied science, there is no room for delay.â€•

Study finds major gap between ecological problems, research emphasis by Bend Weekly News Sources