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By Steve Gorman

LOS ANGELES (Reuters) - Earth's various ecosystems, with all their plants and animals, will need to shift about a quarter-mile (.42 km) per year on average to keep pace with global climate change, scientists said in a study released on Wednesday.

How well particular species can survive rising worldwide temperatures attributed to excess levels of heat-trapping "greenhouse" gases emitted by human activity hinges on those species' ability to migrate or adapt in place.

The farther individual species -- from shrubs and trees to insects, birds and mammals -- need to move to stay within their preferred climate, the greater their chance of extinction.

The study suggests that scientists and governments should update habitat conservation strategies that have long emphasized drawing boundaries around environmentally sensitive areas and restricting development within those borders.

A more "dynamic" focus should be placed on establishing wildlife corridors and pathways linking fragmented habitats, said research co-author Healy Hamilton of the California Academy of Sciences.

"Things are on the move, faster than we anticipated," she told Reuters. "This rate of projected climate change is just about the same as a slow-motion meteorite in terms of the speed at which it's asking a species to respond."

The new research suggests that denizens of mountainous habitats will experience the slowest rates of climate change because they can track relatively large swings in temperature by moving just a short distance up or down slope.

Thus, mountainous landscapes "may effectively shelter many species into the next century," the scientists wrote in the study, which is to be published in Thursday's issue of the journal *Nature*.

This is especially crucial for plant species, which due to their being rooted in the ground cannot migrate at nearly the pace of animals in response to habitat changes.

Climate change will be felt most swiftly by inhabitants of largely flat landscapes, such as mangroves and prairie grasslands, where the rate of warming may more than double the quarter mile (.42 km) per year average calculated for ecosystems generally, the study found.

Nearly a third of the habitats studied in the report face climate change rates higher than even the most optimistic plant migration estimates.

Lowland deserts are likewise subject to a higher velocity of climate change, although the trend toward protecting large swaths of desert may ease the problem there.

By contrast, much of the world's forest habitats and grasslands already have been severely fragmented by development, making mitigation of climate change in those landscapes harder and leaving their species more vulnerable.

The velocities charted in the report were based on the "intermediate" level of projected greenhouse gas emissions assumed over the next century by the U.N.'s Intergovernmental Panel of Climate Change.

(Editing by Mary Milliken and Bill Trott)

Source: http://thestar.com.my/news/story.asp?file=/2009/12/24/worldupdates/2009-12-24T064646Z_01_NOOTR_RTRMDNC_0_-449589-1&sec=Worldupdates