

Biodiversity loss hurts drug discovery, says medical book

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By Neil Chatterjee

SINGAPORE, April 23 (Reuters) - A new generation of drugs made from nature, from antibiotics to treatments for cancer, may be lost unless the world acts to stop biodiversity loss, according to a new book.

These developments could come from chemicals made by frogs, bears and pine trees, but the authors of "Sustaining Life" warned that species loss from climate change and pollution would hit the future of medicine and the pharmaceutical industry.

The book highlights many examples of potential drugs. The southern gastric brooding frog, found in Australian rainforest in the 1980s, raised their young in the female's stomach using enzymes that preliminary studies showed could be used to treat human ulcers. But the frogs became extinct. "The valuable medical secrets they held are now gone forever," said Eric Chivian and Aaron Bernstein, the key authors of the book from the Center of Health and the Global Environment of the Harvard Medical School, in a statement released by the United Nations on Wednesday.

The book picks seven groups that could be particularly valuable to medicine: amphibians, bears, cone snails, sharks, primates, horseshoe crabs and gymnosperms that include pines and the ginkgo tree. The authors say the book's conclusions should not be used as an excuse to harvest wildlife, but as a spur for greater conservation.

Treatments from frogs alone include toxins from the Panamanian Poison Frog that could be useful for heart disease, painkillers from the Ecuadorian Poison Frog, anti-bacterial compounds from the skin of the African Clawed Frog, and compounds from the Chinese Large-Webbed Bell Toad that

dilate blood vessels and so could treat high blood pressure. Frog glue could repair cartilage and other tissue tears in humans, but climatic changes have led to habitat loss and mutations in frogs.

The United Nations is leading talks for a new climate pact to limit emissions of heat-trapping gases. "Amphibians are particularly sensitive," said Achim Steiner of the U.N. Environment Programme, in a press conference at an environment summit in Singapore.

A peptide from cone shells, which mostly live in coral reefs, is thought to be 1,000 times more potent than morphine and in clinical trials, has provided pain relief for advanced cancer and AIDS patients. Another peptide from horseshoe crabs has shown promise in treating prostate and breast cancer. People lose bone mass when bed-ridden but hibernating bears produce new bone, by using a substance that may have uses in fractures and osteoporosis. The ginkgo tree could counter Alzheimer's and shark livers could produce antibiotics.

The U.N is hoping for an agreement on conservation at the Convention on Biological Diversity in Bonn in May.

"You can invest in conservation -- deals can be made in favor of nature," said Steiner.

(Editing by Valerie Lee)