Tinkering with the Tao of pandas

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This image shows a panda eating in China's Wolong Nature Reserve. Pandas habitat choices center around the ready availability of bamboo -- lots of bamboo. Credit: Sue Nichols, Michigan State University

Good news on the panda front: Turns out they're not quite as delicate - and picky - as thought.

Up until now, information gleaned from 30 years worth of scientific literature suggested that pandas were inflexible about habitat. Those conclusions morphed into conventional wisdom and thus have guided policy in China. But a Michigan State University (MSU) research associate has led a deep dive into aggregate data and emerged with evidence that the endangered animal is more resilient and flexible than previously believed.

Vanessa Hull is a postdoctoral research associate at MSU's Center for Systems Integration and Sustainability (CSIS). She has spent three years stalking giant pandas in China's Wolong Nature Reserve. Given the pandas' elusive nature, Hull had a lot of down time.

So she bided her time plowing through literature on panda habitat selection, discovering inconsistencies and lack of consensus on matters crucial as scientists and policymakers struggle to protect the estimated 1,600 remaining wild giant pandas in the 21,300 square kilometers to which the animals have been relegated.

"Panda habitat selection is a complex process that we are still trying to unravel," said Jianguo "Jack" Liu, Rachel Carson Chair in Sustainability and CSIS director. "Pandas are a part of coupled human and natural systems where humans have changed so much in their habitat."

Newer forest growth can still provide good living conditions for giant pandas under the right conditions. Credit: Vanessa Hull, Michigan State University

It has been thought pandas demanded a forest with fairly gentle slope (easier to mosey around in while seeking bamboo) at a certain elevation in original, old forest, an abundance of bamboo, and plenty of distance from people. These recommendations, Hull said, come from often-scant research because pandas are difficult animals to study.

"Pandas are difficult to observe and follow in the wild, we're always 10 steps behind them," Hulls said. "We don't know why they're there - or where they were before and after. There's a lot of guesswork."

Vanessa and her colleagues drew up analysis of all the research projects and sought to separate studies that focus on where pandas live from

studies that examine what kind of choices pandas make when multiple types of habitat are available. They discovered that pandas may not be as picky as thought.

The research shows, for instance, that pandas are willing to live in secondary forests - forests that have been logged and have regrown. They also don't seem as selective about slope, and are willing to climb depending on which of the many varieties of bamboo is growing, or what type of forest it was in. Same for elevation, and the amount of sunshine that hits a piece of panda home.

That's good news. Indications that forests once cut clean by timber harvesting can return to acceptable panda habitat validate current bans on forest harvesting.

They also found that there is a complex relationship between trees and bamboo. Pandas choose different forest types as places to spend their time, as long as bamboo is available.

Hull said consensus would be helpful for future panda habitat research, since the future guarantees change.

"It's exciting to see the flexibility pandas have, or at least see that pandas are choosing areas I didn't think could support them", Hull said. "It gives you hope. They've survived throughout many challenges over so many millions of years, it would be sad to think humans came along and threw it all away. This also suggests we should stay on board and try to make things better for them."

More information: The paper, "A synthesis of giant panda habitat selection," is published in *Ursus*, the journal of the International Association for Bear Research and Management.