# [***SPECIES DIVERSITY PROMOTES ECOSYSTEM STABILITY BIODIVERSITY LOSS MAY ACCELERATE ECOSYSTEM DESTABILIZATION***](https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:6BKY-3JG1-JCBF-S16X-00000-00&context=1516831)

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The following information was released by McGill University:

What maintains stability within an ecosystem and prevents a single best competitor from displacing other species from a community? Does ecosystem stability depend upon the presence of a wide variety of species, as early ecologists believed, or does diversity do the exact opposite, and lead to instability, as modern theory predicts?

Resolving a long-standing debate among ecologists

A new study from McGill University and the Max Planck Institute and published recently in Science suggests an answer to this question that has stood unanswered for half a century among ecologists.

The researchers approached the question of population growth using a model that, so far, had not been used in this context though it aligns with conventional wisdom and the way that people have traditionally modelled individual growth (from birth to maturity).

The researchers used data about population abundance, growth and biomass from a variety of species including insects, fish and mammals from across the globe, collected over the past 60 years. Their results, based on extensive analysis, suggests that, contrary to contemporary ecological theory, species diversity leads to ecosystem stability, as early ecologists had believed.

Growth in populations slows with density

"While nearly all prior theory assumes that populations grow exponentially, there is growing evidence that species actually follow a slightly different course, one in which exponential growth continuously slows down. It's a bit like the law of diminishing returns in economics." says Ian Hatton, a research associate in the Department of Earth and Planetary Sciences, at McGill University and the corresponding author on the paper.

"What's amazing is that such a small difference in population growth can have such a large effect on community interactions, completely reversing the predictions from decades of theory."

Dangers of disturbing the balance

Their findings raise alarming questions about the potential large-scale impacts of ***biodiversity*** ***loss***.

"This research is becoming increasingly urgent given the current rates of species extinction and ***loss*** of ***biodiversity***," says Hatton. "In addition to better aligning theory with data, the model makes an unsettling prediction: ***losses*** in ***biodiversity*** can further destabilize an ecosystem and prevent them from recovering after a disturbance."

About McGill University

Founded in Montreal, Quebec, in 1821, McGill University is Canada's top ranked medical doctoral university. McGill is consistently ranked as one of the top universities, both nationally and internationally. It is a world-renowned institution of higher learning with research activities spanning three campuses, 11 faculties, 13 professional schools, 300 programs of study and over 39,000 students, including more than 10,400 graduate students. McGill attracts students from over 150 countries around the world, its 12,000 international students making up 30% of the student body. Over half of McGill students claim a first language other than English, including approximately 20% of our students who say French is their mother tongue.

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