

Native tribes' traditional knowledge can help US adapt to climate change

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New England's Native tribes, whose sustainable ways of farming, forestry, hunting and land and water management were devastated by European colonists four centuries ago, can help modern America adapt to climate change.

That's the conclusion of more than 50 researchers at Dartmouth and elsewhere in a special issue of the journal [Climatic Change](#). It is the first time a peer-reviewed journal has focused exclusively on [climate change](#)'s impacts on U.S. tribes and how they are responding to the changing environments. Dartmouth also will host an Indigenous Peoples Climate Change Working Group meeting Nov. 4- 5.

The special issue, which includes 13 articles, concludes that tribes' traditional ecological knowledge can play a key role in developing scientific solutions to adapt to the impacts. "The partnerships between tribal peoples and their non-tribal research allies give us a model for responsible and respectful international collaboration," the authors say.

Dartmouth assistant professors Nicholas Reo and Angela Parker, whose article is titled "Re-thinking colonialism to prepare for the impacts of rapid environmental change," said New England settlers created a cascade of environmental and human changes that spread across North America, including human diseases, invasive species, deforestation and overharvest.

The researchers identified social and ecological tipping points and

feedback loops that amplify and mitigate [environmental change](#). For example, prior to the arrival of Europeans, old growth deciduous forests were rich with animal and plant resources and covered more than 80 percent of New England. Native peoples helped to sustain this bountiful biodiversity for centuries through their land practices.

"But when indigenous communities were decimated by disease and eventually alienated from their known environments, land tenure innovations based on deep, local ecological knowledge, disappeared," the researchers say. "Colonists, and their extractive systems aimed at key animal and plant species, became the new shapers of cultural landscapes. Rapid ecological degradation subsequently ensued, and New Englanders created a difficult project of stewarding a far less resilient landscape without help from indigenous land managers who would have known best how to enact ecological restoration measures."

Today's tribal members who work with natural resources, such as fisherman, farmers and [land managers](#), can play key roles in devising local and regional strategies to adapt to climate change, the researchers say.

Provided by Dartmouth College

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