



David Tilman

David Tilman's research focuses on the causes, consequences and conservation of earth's biodiversity, and on how managed and natural ecosystems can sustainably meet human needs for food, energy and ecosystem services. David Tilman is Regents' Professor and McKnight Presidential Chair in Ecology at the University of Minnesota, and is Director of the University's Cedar Creek Ecosystem Science Reserve. He is an elected member of the American Academy of Arts and Sciences and the National Academy of Sciences, was the Founding Editor of the journal *Ecological Issues* and has served on editorial boards of nine scholarly journals, including *Science*. He serves on the Advisory Board for the Max Planck Institute for Biogeochemistry in Jena, Germany. He has been a Member of the Institute for Advanced Study in Princeton and a Fellow of the National Center for Ecological Analysis and Synthesis.

He has received the Ecological Society of America's Cooper Award and its MacArthur Award, the Botanical Society of America's Centennial Award, the Princeton Environmental Prize and was named a J. S. Guggenheim Fellow. He has written two books, edited three books, and published more than 200 papers in the peer-reviewed literature, including more than 30 papers in *Science*, *Nature* and the *Proceedings of the National Academy of Sciences USA*. The Institute for Scientific Information designated him as the world's most highly cited environmental scientist of the decade for 1990-2000 and for 1996-2006.

His multifaceted interests in biodiversity have given his research a broad focus, including

- (1) The forces that have allowed numerous competing species to evolve, coexist and persist in natural and managed ecosystems,
- (2) The ways that human actions threaten this biodiversity,
- (3) The impacts of the loss of biodiversity on ecosystem functioning and on ecosystem services of benefit to society, and
- (4) The benefits that the preservation and restoration of biodiversity can provide.

His current research explores ways to use biodiversity as a tool for biofuel production and climate stabilization through carbon sequestration. His work on biodiversity and stability of grassland ecosystems (published in *Nature* in 1994) challenged the established paradigm and led the discipline to re-examine how diversity affects the productivity, stability and nutrient efficiency of ecosystems. His biodiversity field experiments and related mathematical theory, reported in a series of papers in *Science*, *Nature* and other journals, are providing a more rigorous foundation for managing ecosystems to maximize the ecosystem services that can provide to society.

His work on sustainable agriculture and renewable energy has critically examined the full environmental, energetic and economic costs and benefits of grain crops, of current food-based biofuels and of biofuels made from diverse mixtures of prairie grasses and other native plants growing on already-degraded lands. He showed that restored native high-diversity grasslands could provide more energy per hectare than corn grain ethanol or soybean biodiesel, be far better for the environment through carbon sequestration, and prevent competition between food crops and biofuel crops for fertile land. Recent work has shown that biofuel production based on clearing and/or converting old growth forests could become a major global threat to biodiversity, have greater greenhouse gas impact than gasoline, and compromise global food supplies.

David Tilman has also dedicated much of his career to communicating with the public, politicians and the managers of earth's ecosystems so that they might be better informed about environmental science and its relevance to society and to sustaining, for the long-term, the quality of human life on earth.

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