

# Iowa Academy of Science

STATEMENT OF THE POSITION OF THE IOWA ACADEMY OF SCIENCE  
ON BIODIVERSITY—BRIEF



The economic, aesthetic, and physical well-being of Iowans depend upon a great number of living species. There are about 1.7 million species of organisms that have been described worldwide, but biologists estimate the total number may be in the tens of millions. The Earth supports a variety of organisms and systems that perform essential tasks such as fixing energy from the sun, distributing energy, and recycling nutrients. Ecosystems function because many species, from microscopic to the large plants and animals, play interrelated and complex roles. Increasingly, we realize that living systems are also important for ecosystem stability, moderation of severe environmental disasters, and cures for diseases. These ecosystem services are dependent on a wealth of living species known as biodiversity.

Thus, biodiversity is important to each of us. Just how many species are needed to maintain the functioning of ecosystems is unknown. One biologist compared the number of species to rivets in an airplane wing and then asked how many of those rivets could be removed before the wing comes apart and the plane crashes. Surely not every one of the rivets is immediately necessary, but how many might the wing lose before the passengers have reason to become concerned? Species are becoming extinct, both locally and globally, as humans destroy natural habitat through activities such as human settlement, forest clearing, agriculture, pollution, and the introduction of invasive species and diseases. We do not know how many species can be lost before the vital interests of humans are endangered.

The Iowa Academy of Science supports the conservation of biodiversity in three ways:

- 1. Advancing education that informs citizens of Iowa (of all ages) regarding the importance of biodiversity and its conservation**  
The Iowa Academy of Science supports formal and non-formal education concerning all aspects of biodiversity at all levels in public and private schools, and colleges and universities. Ecological field experiences and field-oriented education are important methodologies that must be encouraged.
- 2. Advancing public policy that protects and enhances natural habitats in the State of Iowa**  
Public policies and laws should protect and enhance existing bits of natural habitat and native populations, should reduce all kinds of human-made pollution, and should avoid the introduction of invasive species.
- 3. Encouraging scientific research that contributes to our understanding and preservation of genetic, species, and ecosystem biodiversity**  
The Iowa Academy of Science urges funding agencies, universities, and individual investigators to give priority to understanding the role various species play in ecosystems, including their role in the soil of our farms, potential for pollution remediation, and flood control mechanisms.

*An extended version of this position statement, including bibliography, is available at [www.iacad.org](http://www.iacad.org).*

## Iowa Academy of Science

UNI - 175 Baker Hall  
2607 Campus St.  
Cedar Falls, IA 50614-0508  
Phone: 319.273.7486  
Fax: 319.273.2807  
E-mail: [iascience@uni.edu](mailto:iascience@uni.edu)