Audubon International

Fact Sheet

Conserving the Spectacular Variety of Life

Biodiversity refers to the spectacular variety of life forms on our planet. It includes the range of ecosystems, from deserts to tropical rainforests; the different species of organisms in those ecosystems; and even the different combinations of genes found in the same species from location to location. But the simplest way to think about biodiversity is just to consider how many different kinds of plants and animals are in our environment. And, unfortunately, there are a lot fewer now than there were a hundred years ago.

The fox squirrel is among Florida's many unique wildlife species that Audubon International members are striving to conserve through habitat improvement projects.

The number of species on Earth is constantly changing. Over millions of years, natural forces cause some species to die out and new ones to be formed. Every now and then, the planet suffers a major catastrophe that wipes out a large number of species. That appears to have happened several times in the 4 billion-year history of life on the planet— most recently about 65 million years ago when a large comet or small asteroid hit the Earth and the resulting climatic change wiped out the dinosaurs.

Accelerating Extinction

Today, scientists estimate that species are dying off even faster than they did after that asteroid plunged our planet into darkness 65 million years ago. The difference is that this time, there is no natural disaster to blame. Indeed, the cause of the current wave of extinctions appears to be the rapid increase in the human population.

Just 100 years ago, between one and two billion people populated the planet. Today, that number has grown to more than 7 billion. This exponential increase has had a major impact on the surface and functioning of this planet.

The primary impact has been the conversion of natural habitats to human uses. We've not only reduced the amount of natural area for plants and animals, we've also changed large open spaces into smaller isolated fragments. Just sit by the window on your next plane trip to see what this looks like!

Why is Biodiversity Important?

Scientists have long studied the effects of biodiversity on ecosystem function, including the relationship between diversity and ecosystem productivity, and the relationship between diversity and community stability. Biologically diverse communities also appear to be more stable in the face of disturbances. For example, a larger number of plant species means a greater variety of crops; greater species diversity ensures natural sustainability for all life forms; and healthy ecosystems can better withstand and recover from a variety of disasters, diseases, and disturbances.

Furthermore, a healthy biodiversity provides a number of services and resources that benefit everyone[1]:

- **Ecosystem services:** Ecosystem services are processes provided by nature that support all life. These services include the decomposition of waste, pollination, water purification, moderation of floods, and renewal of soil fertility. Ecosystem processes are often overlooked, and are not generally valued as part of the economy until they cease to function.
- **Biological resources**: Biological resources are those products that we harvest from nature. These include food, fibers, medicinal resources and pharmaceutical drugs, wood products, ornamental plants, diversity in genes, species and ecosystems
- **Social benefits**: Throughout most of human history, conservation has involved protecting nature for its intrinsic worth—that is, conserving nature for its aesthetic and recreational value. Biodiversity conservation is also important from a research and education point of view.

The value of honey bee pollination to US agriculture is estimated at more than $18 billion annually[2]

Considering that we get these services and goods free from the Earth, it makes economic sense to use and manage them responsibly.

Taking an Ecosystem-Based Management Approach to Conservation

Ecosystem-Based Management considers the whole ecosystem, including humans and the environment, rather than managing one issue or resource in isolation. Key aspects include integrating ecological, social, and economic goals and recognizing humans as key components of the ecosystem; considering ecological boundaries, instead of just political ones; engaging multiple stakeholders in a collaborative problem solving process; and using an adaptive management approach in the face of resulting uncertainties.

Taking a Landscape Approach to Conservation

Audubon International works side by side with property owners and managers who want to manage their properties to benefit the natural world. One of our primary goals is to protect biological diversity so that people, wildlife, and the natural ecosystems on which we all depend are healthy and thriving long into the future. Our motto – helping people help the environment – reflects our belief that people can minimize the negative impact of human resource use and development through proper stewardship.

One way to approach biodiversity conservation is to pay attention to the landscape. This means not only looking at individual properties, but also taking a big picture perspective to see how various landscapes fit together. Because more than 70% of the United States is privately owned—we all need to be involved for conservation efforts to be truly successful. Audubon International encourages all property owners to maximize the amount of natural area left on their property. By setting aside portions of natural habitat, and landscaping with native plant species, we will help conserve the unique biodiversity of our local ecosystem. Likewise, it is important to retain habitat corridors between properties in order to combine smaller habitat fragments on individual properties into larger, regional green spaces.

Audubon International believes that people can make a difference. Through the small actions of the many of us who appreciate the spectacular variety of life on earth, the result can be the sustainable preservation of our rich natural heritage.

Sources:
[1] Kearns, C. (2010) Conservation of Biodiversity. Nature Education Knowledge 3(10):7
[2] Losey, J. E. & Vaughan, M. The economic value of ecological services provided by insects. Bioscience 56, 311-323 (2006).