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# Chapter 1

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Individuals in every generation must decide what they will preserve for those who follow. Some hope to leave fortunes, homes, or works of art. Others want to pass on peace, freedom, or religious faith. Today, growing numbers of people are trying simply to save the other living things that populate our planet. They want their children to know whooping cranes and blue whales, Esopus Spitzenburg apples and Hopi blue corn (33).

The human species has the dubious distinction of being able to modify and manipulate its habitat and that of other species that share it more profoundly than any other taxon. Notwithstanding, humans remain inextricably linked to the natural world. We rely on it for food, fiber, and other vital products such as medicines and pharmaceuticals (39,47). In addition, these ecosystems govern, support, or strongly moderate essential ecological processes such as moderating climate; concentrating, fixing, and recycling nutrients; producing and preserving soils; controlling pests and diseases; and degrading wastes and pollutants

(18,55,78). Finally, natural systems and their component species provide humans with esthetic pleasure, emotional well-being, and spiritual enlightenment (17,57). Though these contributions are more difficult to measure, they are no less noteworthy.

In recent years, there has been a growing concern over an accelerating loss of biological diversity on the planet. Biological diversity is the variety and variability within and among living organisms and the ecological complexes in which they occur. Biological diversity is indispensable to the ecological processes described above. It supplies raw materials and ideas for scientific and technical advancement. Genetic diversity is basic to the breeding programs which protect and improve cultivated plants and domesticated animals. For these reasons, the maintenance of biological diversity is generally perceived as both a matter of insurance and investment as well as a matter of moral principle (31).

### IMPORTANCE OF AND MOTIVATIONS FOR GRASSROOTS ACTIVITIES

The benefits from maintaining biological diversity such as improvements in agriculture and the ecological processes that support life accrue to all individuals though they seldom pay for them. The public nature of these benefits makes it impossible for the private sector to assume full responsibility for protecting biological diversity. Private commercial interests maintain a limited amount of diversity by preserving germplasm from some commercially important plants, animals, or micro-organisms. Other private citizens also have assumed responsibility for maintaining biological diversity. They preserve anything from a particular breed of livestock to an entire ecosystem for personal reasons, but their contributions cannot be expected to cover the broad range of spe-

cies and ecosystems which biological diversity encompasses.

The major responsibility for maintaining biological diversity in the United States, therefore, falls on the public sector. The national network of forests, parks, refuges, and related protected areas comprise some 400 million acres. The Federal Government, through the National Plant Germplasm System (NPGS), also has responsibility for collecting, storing, and disseminating germplasm of agricultural crop species.

Nonetheless, private sector activities—e.g., those described in this report—complement Government efforts in important ways. The activities of some individuals or groups may

backup national programs and, thus, reduce vulnerability through duplication of those efforts. In other cases, private activities maintain biological diversity in ways that the public sector does not, cannot, or will not. The range in scope and effectiveness, as well as the sheer numbers of activities undertaken by private individuals and groups make it difficult to measure, in any quantitative sense, the full extent of grassroots contributions.

There are many reasons why people conserve biological resources. Some people collect diverse kinds of livestock, seeds, or wildflowers for reasons similar to those who collect stamps, coins, matchbooks, baseball cards, or seashells. Although their activities result in the preservation of biological diversity, this may not be the stated goal. Other people want to preserve a simpler or older way of life. The strength of this motive is evident in the proliferation of "living historical farms" where plants and animals typical of an earlier era are seen in their original settings. For many, the determination to preserve a personal heritage leads to a larger work preserving biological diversity.

Conservation is linked to a religious or cultural heritage in some communities. Mormons, Mennonites, Hispanic, and native Americans have persisted in local exchange and preser-

vation of seed and livestock which generally are not commercially available (26,41). The fields and gardens of native American communities, for example, are considered one of the richest potential sources of genetic resources in the United States (41,75).

Groups can be driven by concern for environmental integrity. Members of such organizations frequently champion organisms or environments which might be overlooked by the broad mandates of a government agency or call attention to perceived consequences of threatening developmental activities. Groups may also emerge to integrate, support, or challenge the varied and sometimes conflicting goals of government agencies that administer large tracts of public lands.

Although the contributions of many grassroots groups to the maintenance of biological diversity are a consequence of other complementary activities, some are motivated by a desire to maintain the diversity of life forms per se. Some individuals or groups begin with this focus, others evolve into it as they become aware of the biological diversity issue. Their efforts span the full range of on-site and off-site activities and from individual species to ecosystems.

## SCOPE OF BACKGROUND PAPER

This Office of Technology Assessment (OTA) background paper was prepared in support of a broader study which will identify available and emerging technologies to maintain biological diversity. In assessing national efforts to maintain biological diversity, emphasis inevitably is placed on large government programs and agencies responsible for preserving the Nation's natural heritage. When nongovernmen-

tal efforts are examined, attention is almost exclusively focused on large environmental organizations such as the National Audubon Society, the National Wildlife Federation, The Nature Conservancy, and the Sierra Club. While these groups play a vital role in maintaining biological diversity in the United States, their high visibility often overshadows the important contributions of a more dispersed

sector—those individuals and small groups not affiliated with large national or public institutions.

For the purposes of this background paper, these contributions will be referred to as “grassroots activities.” For the most part, these activities are undertaken by individuals or groups whose essential focus and base of support are local and regional. They do not include government agencies, intergovernmental coordinating councils or government-appointed advisory commissions, diploma or degree-granting educational institutions, or private research institutions.

Grassroots groups vary in size, professionalism, permanence, and affiliation. They range from individual efforts or small, ad hoc collections of amateurs that operate independent of any larger body to sizable, long-established organizations staffed by professionals and af-

filiated with national organizations. Their activities may include maintaining an obscure breed of horses, maintaining a diversity of heirloom vegetables, or acquiring and managing natural areas.

The bulk of this background paper highlights and assesses specific “showcase” examples of grassroots individuals and groups maintaining biological diversity in the United States. A concluding section elucidates the major issues that stem from their activities. The individuals and groups were chosen to represent a range in scope, size, and geographic location. Their actions differ significantly in ideology; methodology and style; willingness and ability to coordinate their activities with government agencies, national organizations or other grassroots efforts; level and security of financial support; stability and longevity; and level of professionalism and access to talent [43].