

States of the Union: Ranking America's Biodiversity

April 2002



A NatureServe Report
Prepared for



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NatureServe is a non-profit organization dedicated to providing the scientific knowledge that forms the basis for effective conservation action.

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Executive Summary

Pride in place is a powerful impulse. And with its dazzling array of wild species and natural habitats, America has much to be proud of. Indeed, to find world-class biodiversity we need not look to foreign shores—it is right here in our own backyard. But while the concept of biodiversity has global connotations, conservation is a quintessentially local activity. To place conservation efforts in context, *States of the Union: Ranking America's Biodiversity* offers new information on state patterns of biological wealth and risk—where our wild plants and animals are found, and how they are faring.

Each of America's 50 states maintains an important part of the nation's biological heritage. Taking best advantage of conservation opportunities, however, requires an understanding of the varying roles each state can play. *States of the Union* offers a striking picture of the “state of the states,” based on an analysis of more than 21,000 plant and animal species. Providing new insights into the scale of the nation's conservation challenges and opportunities, these analyses find that **in one out of every four states, more than ten percent of native species are at risk.**

Our rankings of the 50 states and the District of Columbia focus on several key biological characteristics: diversity of species; levels of rarity and risk; distinctiveness of the flora and fauna, termed endemism; and number of species already lost to extinction. The top-ranking states for these measures are:

RANK	DIVERSITY	RISK	ENDEMISM	EXTINCTIONS
1	California	Hawaii	California	Hawaii
2	Texas	California	Hawaii	Alabama
3	Arizona	Nevada	Texas	California
4	New Mexico	Alabama	Florida	Texas
5	Alabama	Utah	Utah	Georgia

Four states in particular emerge from these analyses as having exceptional levels of biodiversity—**California, Hawaii, Texas, and Alabama**. Looking at specific groups of plants and animals, however, reveals some surprising nuances. For instance, while freshwater fishes are most diverse in the rain-drenched southeastern United States, Arizona—a state more commonly associated with cacti—leads the nation in proportion of at-risk fish species.

The condition of nature in America reflects an interplay between natural history and human history. And it is the breadth and intensity of this interaction that tends to define a geography of risk for wild species. As *States of the Union* demonstrates, each state has a vital role to play in sustaining America's plants and animals for future generations. But for the many U.S. species that are at risk of extinction, time is running out. With sufficient knowledge, resources, and commitment, the nation's remarkable biodiversity can be safeguarded, leading to a more perfect union.

State of the States

The United States harbors a dazzling variety of life. From Maine's Great North Woods to California's giant redwoods, and from Hawaii's tropical peaks to the Florida Everglades' "river of grass," the 50 states feature an unparalleled spectrum of wild places and wild species.

While efforts to protect America's natural treasures began in earnest more than 130 years ago with the establishment of Yellowstone National Park, the pace of environmental change over recent decades has sparked a renewed commitment to conserving our remaining natural lands and waters. As a nation we have also achieved a deeper understanding of the complexity and fragility of our ecosystems, and for the wild species they sustain. Even the term *biodiversity*, which celebrates a scientifically inclusive view of life on Earth, was coined within the past two decades. This improved understanding is proving essential for increasing the effectiveness of conservation efforts and for targeting actions towards areas of greatest ecological significance.

Although the concept of biodiversity has global connotations, conservation is a quintessentially local activity. To place these conservation efforts in context, *States of the Union: Ranking America's Biodiversity* offers new information on state patterns of biological wealth and risk—where our wild plants and animals are found, and how they are faring. We rank the 50 states and the District of Columbia based on analyses of several key species measures: diversity, risk, endemism, and extinctions. This newly updated information from NatureServe's scientific databases offers a striking picture of the state of the states.

Riches in Our Backyard

Two years ago NatureServe and The Nature Conservancy published a comprehensive assessment of the condition of America's biological riches in the book *Precious Heritage: The Status of Biodiversity in the United States*.¹ This critically acclaimed volume documented the full breadth and complexity of life in America, and considered what will be needed to protect these living resources into the future.

Key findings from that study include:

- Scientists have documented more than 200,000 species from the United States, representing more than 10% of formally described species worldwide.
- The United States is a global center of diversity for many groups of organisms, especially those that rely on aquatic systems such as salamanders, freshwater mussels, and freshwater turtles.
- About one-third of species in the best-known groups of plants and animals are at risk, and more than 500 U.S. species are already extinct or are missing.
- Habitat destruction and degradation are the leading threats to U.S. biodiversity, followed by the spread of harmful alien species.

Wild plants and animals are not distributed uniformly across the landscape, but rather concentrations of species are found in certain regions, termed biodiversity hotspots. Nonetheless, important species and ecosystems are found across the country, and each

state has a crucial role to play in efforts to protect the nation's rich biological heritage. By considering the distribution and condition of more than 21,000 plant and animal species—2,200 more than were included in our previous analyses—*States of the Union* provides new insights into the scale of the nation's conservation challenges and opportunities.

NatureServe: Exploring Our Natural Heritage

NatureServe is a non-profit organization dedicated to providing the scientific knowledge that forms the basis for effective conservation action. Working together with a network of biological inventory programs in all 50 states—natural heritage programs—NatureServe has compiled comprehensive scientific databases on the condition and distribution of U.S. species and ecosystems. Established in 1999, NatureServe represents a new institutional home for the scientific exploration and biodiversity information activities previously carried out by The Nature Conservancy. Thus, while new as an organization, NatureServe's databases, methods, and expertise reflect more than a quarter-century of experience. NatureServe and its natural heritage program members are now regarded as the leading source for detailed information on rare and endangered species and threatened ecosystems. Public access to much of this vast data resource is available over *NatureServe Explorer* (www.natureserve.org/explorer), a web site with conservation information on more than 50,000 U.S. and Canadian species and ecological communities.

The figures reported here are derived from NatureServe's central databases, and are the product of continual scientific data development, analysis, review, and refinement. These databases synthesize information from the published scientific literature, from scientific collections maintained by natural history museums, botanical gardens, and universities, and from field work carried out by NatureServe staff, natural heritage biologists, and other collaborators.

Assessing Conservation Status

Assessing the conservation status of individual species is key to understanding the overall condition of the flora and fauna and setting priorities for conservation. Conservation status assessments are designed to reflect the relative risk of extinction facing a particular plant or animal species. While many wild species may have stable population numbers and be at little or no risk of extinction, the viability of others may be compromised by their intrinsic rarity, by loss of the habitat they need to survive, or by other threats leading to their decline.

The scientific staff of NatureServe and its member programs use a consistent and rigorous methodology for assessing extinction risk that is based on evaluation of multiple factors.² Evaluation criteria include: the number and condition of populations and individuals; the area or range occupied by the species; population trends (that is, whether numbers are increasing, stable or declining); and known threats. Biologists assess each species against these multiple risk factors based on the best available scientific information and assign the appropriate conservation status rank (*Table 1*).

Table 1. Definition of Conservation Status Ranks

RANK	CONSERVATION STATUS	DEFINITION
GX	Presumed Extinct	Not located despite intensive searches; virtually no likelihood of rediscovery.
GH	Possibly Extinct	Missing; known only from historical occurrences but still some hope of rediscovery.
G1	Critically Imperiled	At very high risk due to extreme rarity (often 5 or fewer populations or very few individuals), declines, threats, or other factors.
G2	Imperiled	At high risk due to very restricted range, very few populations (often 20 or fewer), few individuals, declines, threats, or other factors.
G3	Vulnerable	At moderate risk due to a restricted range, relatively few populations (often 80 or fewer) or individuals, declines, threats, or other factors.
G4	Apparently Secure	Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5	Secure	Common; widespread and abundant.

Assessments of conservation status have been carried out comprehensively for many of the best known groups of plants and animals. The analyses in this report are based on assessments of the nearly 16,200 native vascular plant species found in the United States, the nation’s approximately 2,550 native vertebrate animal species (including mammals, birds, reptiles, amphibians, and freshwater fishes), and a broad selection of invertebrate animals. These invertebrates include all 2,600 species in the following groups: freshwater mussels; freshwater snails; crayfishes; large branchiopods; butterflies and skippers; underwing moths; tiger beetles; and dragonflies and damselflies.

NatureServe and its member programs document not only the global conservation status of these species—that is, the species’ condition across its entire range—but also their state-level distributions and status within each state. The natural heritage programs take this further still. These state-level biological inventories map all known localities for those species in their states that are at risk and of conservation interest. The scientific databases of NatureServe and its member programs include nearly a half-million localities of rare and endangered species. This information is used extensively to inform conservation and land-use decisions made by government agencies, industry, and environmental organizations. The *New York Times* has even called NatureServe’s databases on species and ecosystems “...the country’s leading source of biological information for conservation planners, government agencies and land managers.”³

Nature Across America: Ranking the States

Stretching from above the Arctic Circle to below the Tropic of Cancer, and from the edge of the Atlantic to the middle of the Pacific Ocean, the United States encompasses a vast and varied landscape. The way in which life evolved and inhabited the nation's lands and waters has been influenced primarily by patterns in climate, landform, and geological history. The biological wealth of a region expresses the interaction between these physical features and the distinctive evolutionary histories of particular organisms. Adding to this complexity is the intersection between natural history and human history. Indeed, the breadth and intensity of this interaction tends to define a geography of risk for natural ecosystems and wild species.

Of course, nature is not limited by lines on a map, and state boundaries are merely artificial constructs superimposed on an ecologically complex landscape. From both a biological and conservation perspective, characterizing the landscape based on state boundaries has serious shortcomings, including the enormous disparity in size between states like Rhode Island and Alaska. Nonetheless, these geographic units are embedded in our culture and consciousness in a way that more ecologically sensible units—whether ecoregions, watersheds, or biomes—are not. And because of the way in which scientific data historically has been gathered, state-based assessments allow us to consider patterns for the broadest array of species, both rare and common.

Assessing biological condition and ecological health is a complex endeavor. Ideally one would consider both species and ecosystems, and the degree to which their composition, structure, and function compares to original conditions. Unfortunately, most of the data that would allow this idealized assessment on a state-by state basis does not exist. Instead, we focus here on four characteristics that provide more limited but still useful measures of the biological condition of the states, and for which we have consistent and comparable information: diversity, risk, endemism, and extinctions.

- **Diversity**
The number of different native species—or species “richness”—is the most prevalent measure of diversity and provides a general measure of biological wealth.
- **Risk**
The percentage of a state's plants and animals that are at risk of extinction due to rarity or other factors provides a measure of the scale of the conservation challenge. This measure includes species with a conservation status of extinct, imperiled, or vulnerable (GX through G3).
- **Endemism**
The number of species endemic—or unique—to a particular state provides a measure of its biological distinctiveness. Because these endemic species are found nowhere else in the world, their fate rests exclusively with conservation efforts carried out in that state.
- **Extinctions**
The number of species that are presumed or possibly extinct (GX and GH) measures the amount of diversity already lost. This measure includes only those species that

are globally extinct—that is, have disappeared from their entire former range—and does not include species that have disappeared from one state but still exist elsewhere.

Overall Biodiversity Patterns

For an overall perspective on the biological condition of the 50 states and the District of Columbia, Appendix Tables A through D present complete state rankings for diversity, risk, endemism, and extinctions. These overview assessments are based on analyses of the status and distribution of 21,395 plant and animal species, representing all species groups for which NatureServe currently has complete state-level distributional data. The state-level analyses presented here build on the work originally presented in *Precious Heritage*, but incorporate newly developed data on nearly 2,200 additional species.

Summarizing the top ranking states for each of these measures highlights several key patterns (Table 2).⁴ State size clearly matters for some measures such as diversity. Another pattern relates to the general tendency for species richness to increase towards the tropics, and most of the highly ranked states occupy positions along the nation’s southern border. Four states in particular stand out as having exceptional levels of biodiversity as measured by these four factors: California, Hawaii, Texas, and Alabama.

Table 2. Overall Top-Ranking States

RANK	DIVERSITY	RISK	ENDEMISM	EXTINCTIONS
1	California	Hawaii	California	Hawaii
2	Texas	California	Hawaii	Alabama
3	Arizona	Nevada	Texas	California
4	New Mexico	Alabama	Florida	Texas
5	Alabama	Utah	Utah	Georgia

California

California is a remarkable state biologically, ranking highly in each of these categories. Often referred to as an ecological island, separated by high mountains from the rest of the continent, California’s diversity is the product of the state’s variability of landforms, climate, and soil types. This physical complexity has fostered development of an array of specialized habitat types and has been the principal driver in the evolution of a highly distinctive flora and fauna. Along with this rich biota, the state supports a \$1.2 trillion economy, the world’s seventh largest, and an ever increasing flood of humanity. Many of the state’s species and natural habitats have been severely depleted due to conversion of vast stretches of land to housing, agriculture and transportation, and to large-scale exploitation of water, timber, and mineral resources.

Hawaii

Hawaii’s mid-oceanic isolation has created conditions allowing for the evolution of one of the world’s most distinctive biotas. Although few species were able to naturally colonize the archipelago, those that did won a biological sweepstakes. Faced with few competitors, these colonists evolved into a host of unique life forms. Because Hawaii’s native species developed in isolation, however, they have been particularly sensitive to the many changes brought about by human colonization of the islands, first by

Polynesians and later by westerners. Ironically, Hawaii ranks last among states in diversity of native species, yet those that it has pack a punch. The state leads in both percentage of species at risk and number of extinctions. Hawaii also has extraordinary levels of endemism, and were this expressed as a proportion of the total biota, rather than absolute number of endemic species, the state would also rank first in that category.

Texas

Looming large in both popular imagination and in biological diversity, Texas ranks highly in diversity, endemism, and number of extinctions. Occupying a central position along the nation’s southern border, this vast state overlaps several major ecological regions, including the southwestern deserts, the Great Plains, the humid Gulf Coast, and, at the state’s southern tip, the Mexican subtropics. As a result, many species reach distributional limits in Texas, and a strange blend of eastern and western species commingle within the state. Certain unusual landforms contribute to the state’s high rankings, including the Edwards Plateau, a limestone region that supports some of the rarest species in the nation.

Alabama

A state long overlooked from a conservation perspective, Alabama emerges from this analysis as the leading eastern state for species diversity, levels of risk, and numbers of extinct species. The state is home to an exceptionally rich freshwater fauna, thanks to an ancient and complex geological terrain and more than 235,000 miles of waterways spanning three major river basins. The state was also spared from the direct effects of the Pleistocene glaciers, enabling its flora and fauna to continue diversifying even during this unsettled geological period. Unfortunately, many of the state’s rivers and streams have now been dammed and otherwise severely altered, leading to the high levels of risk and extinction among Alabama’s diverse species.

Rankings by Plant and Animal Group

Looking at specific groups of plants and animals can reveal distinctive, and at times strikingly different, patterns from those seen in the overview of all 21,000 species. For a more detailed view of diversity and rarity patterns, Appendix Tables E through J present analyses for six key groups of organisms: vascular plants, mammals, birds, reptiles, amphibians, and freshwater fishes. Summarizing these findings, Table 3 lists top-ranking states for diversity in these taxonomic groups, while Table 4 lists top-ranking states for risk levels.

Table 3. Diversity: Top-Ranking States

RANK	PLANTS	MAMMALS	BIRDS	REPTILES	AMPHIBIANS	FISHES
1	California	California	Texas	Texas	North Carolina	Alabama
2	Texas	Texas	New Mexico	Arizona	Georgia	Tennessee
3	Arizona	New Mexico	Arizona	New Mexico	Virginia	Georgia
4	New Mexico	Oregon	California	Florida	Tennessee	Kentucky
5	Oregon	Arizona	Florida	California	Texas	Mississippi

Diversity for plants and mammals is highest in the southwest, where many of the states are large and have numerous specialized habitat types. In contrast, amphibians and freshwater fishes reach their highest levels of diversity in the southeastern United States. Indeed, with its combination of Appalachian highlands and humid coastal lowlands, this region is a global center for freshwater diversity. Bird and reptile diversity are more geographically mixed with both eastern and western states represented in the top tier. Texas, straddling east and west, leads all other states for both groups.

Table 4. Risk: Top-Ranking States

RANK	PLANTS	MAMMALS	BIRDS	REPTILES	AMPHIBIANS	FISHES
1	Hawaii	Hawaii	Hawaii	Hawaii	California	Arizona
2	California	Florida	Alaska	Massachusetts	Oregon	Hawaii
3	Utah	California	California	Florida	Nevada	Utah
4	Nevada	Alaska	Florida	Maine	Washington	Nevada
5	Arizona	Georgia	Washington	California	Arizona	California

Levels of rarity and risk highlight the precarious condition of Hawaii’s distinctive flora and fauna, and the state is tops for most taxonomic groups (with the major exception of amphibians, which do not naturally occur in Hawaii). Risk patterns for amphibians and freshwater fishes display an interesting contrast to diversity patterns in those same groups. Whereas southeastern states have the most species, the highest percentage of rare and at-risk fishes and amphibians are found in western states. Arizona, for example, an arid state more commonly associated with cacti, ranks highest for at-risk freshwater fishes. Alaska illustrates another interesting placement. This huge and still ecologically intact state has relatively few species overall due to its northern location, yet for rare birds ranks second only to Hawaii. The surprisingly high reptile rankings for Massachusetts and Maine are skewed by the inclusion of sea turtles in this analysis, all six species of which are considered to be at risk.

A More Perfect Union

The United States represents a remarkable political achievement, the result of stitching together state and federal interests into a self-sustaining union. Each state has representation in the governance of the whole, and each state contributes to the union’s overall success. So too, does each state maintain in trust a part of the nation’s overall biological heritage. And each plays a vital role in safeguarding America’s wild species for future generations.

But with more than 500 U.S. species already extinct or missing and several thousand more at risk, all is not well with the union. And while more than 200,000 species are known from the United States, scientific understanding of most of these is rudimentary. Yet just as we depend on clean water, clean air, and fertile soils for our well being, we depend on this diversity of life, both the well-known and charismatic, and the still unnamed and microscopic. As Harvard biologist Edward O. Wilson eloquently asserts, “surely the rest of life matters.”⁵

Pride in place is a powerful impulse, and an essential ingredient in engaging communities in successful conservation efforts. Taking best advantage of conservation opportunities, however, requires an understanding of the varying roles each state can play. *States of the Union* helps bring these roles into focus and places conservation opportunities into context. And while some states—such as California, Hawaii, Texas, and Alabama—may have special responsibilities, every state will need to be part of the overall conservation portfolio.

As with politics, all conservation ultimately is local. Efforts to protect our remaining natural lands and waters are now the focus of unprecedented interest and activity. A whole new generation of land and wildlife protection activities are being carried out by public and private sector institutions, ranging in size from major organizations, such as The Nature Conservancy, to the grassroots land trusts and watershed councils that have sprouted across the country. Taking local conservation action, however, requires localized information and knowledge. NatureServe and its network of natural heritage program members, with a presence in all 50 states, are dedicated to supporting the entire conservation community by providing needed scientific information and expertise about what exists, how it is doing, and where it is found.

Although we still have a great deal to learn about the nature of life in America, what we know already confirms just how extraordinary it is. Indeed, finding world-class biodiversity doesn't require that we look to foreign shores—we can find it in our own backyard. For the many U.S. species that are at risk of extinction, though, time is running out. America has demonstrated time and again that it can rise to and overcome daunting challenges. We are confident that given sufficient knowledge, resources, and commitment, the nation's remarkable biodiversity can be safeguarded, leading to the creation of a more perfect union.

Appendix: State Ranking Tables

The state-ranking tables on the following pages are based on analyses of the status and distribution of 21,395 plant and animal species drawn from the NatureServe Central Databases. A publicly accessible version of these databases is available through the NatureServe Explorer web site (www.natureserve.org/explorer). These analyses include all species groups for which NatureServe currently has complete data for state-level distributions and global conservation status. The tables include all native U.S. species of vascular plants, all native vertebrate animal species (excluding marine fishes), and native species in the following invertebrate groups: freshwater mussels; freshwater snails; crayfishes; large branchiopods; butterflies and skippers; underwing moths; tiger beetles; and dragonflies and damselflies. The figures reflect full taxonomic species only and do not include infraspecific taxa, such as subspecies or varieties. To provide a more complete picture of extinctions across America, Table D, Extinctions, draws from the entire NatureServe central database, and includes presumed or possibly extinct species from some invertebrate groups not listed above.

Table A. Species Diversity by State

RANK	STATE	# OF SPECIES
1	California	6,717
2	Texas	6,273
3	Arizona	4,759
4	New Mexico	4,583
5	Alabama	4,533
6	Georgia	4,436
7	Florida	4,368
8	Oregon	4,136
9	North Carolina	4,131
10	Utah	3,892
11	Nevada	3,872
12	Virginia	3,803
13	Tennessee	3,772
14	South Carolina	3,701
15	Oklahoma	3,616
16	Colorado	3,597
17	Mississippi	3,580
18	Louisiana	3,495
19	Arkansas	3,415
20	Washington	3,375
21	Missouri	3,340
22	New York	3,333
23	Kentucky	3,258
23	Illinois	3,258
25	Idaho	3,205
26	Wyoming	3,184
27	Ohio	3,152
28	Maryland	3,148
29	Michigan	3,135
29	Pennsylvania	3,135
31	Indiana	3,098
32	New Jersey	3,022
33	Montana	2,921
34	West Virginia	2,873
35	Wisconsin	2,869
36	Minnesota	2,817
37	Kansas	2,778
38	Massachusetts	2,765
39	Nebraska	2,587
40	Iowa	2,533
41	Connecticut	2,497
42	South Dakota	2,406
43	Maine	2,352
44	New Hampshire	2,327
45	Vermont	2,274
46	Delaware	2,244
47	Rhode Island	2,078
48	District of Columbia	1,909
49	North Dakota	1,889
50	Alaska	1,835
51	Hawaii	1,418

Source: NatureServe Central Databases, April 2002

Table B. Risk Levels by State

RANK	STATE	% AT RISK
1	Hawaii	62.7%
2	California	28.5%
3	Nevada	15.8%
4	Alabama	14.8%
5	Utah	14.7%
6	Florida	14.3%
7	Arizona	13.6%
8	Georgia	12.9%
9	Oregon	10.9%
10	Tennessee	10.3%
11	New Mexico	10.1%
11	Texas	10.1%
13	North Carolina	9.9%
14	Colorado	9.1%
15	South Carolina	8.6%
16	Alaska	8.0%
16	Virginia	8.0%
18	Washington	7.3%
19	Kentucky	7.0%
19	Mississippi	7.0%
21	Wyoming	6.8%
22	Idaho	6.7%
23	Arkansas	6.4%
24	Missouri	5.4%
25	Louisiana	5.2%
26	Montana	5.1%
27	Indiana	4.9%
27	New York	4.9%
27	West Virginia	4.9%
27	Illinois	4.9%
31	Oklahoma	4.5%
32	Pennsylvania	4.3%
32	Ohio	4.3%
34	Michigan	4.0%
35	Maryland	3.9%
36	Maine	3.8%
37	Massachusetts	3.7%
38	New Jersey	3.6%
39	Iowa	3.3%
40	Wisconsin	3.2%
41	Vermont	3.0%
42	Connecticut	2.9%
43	New Hampshire	2.8%
43	Rhode Island	2.8%
43	Minnesota	2.8%
43	Delaware	2.8%
47	Kansas	2.7%
48	Nebraska	2.2%
49	District of Columbia	2.0%
51	North Dakota	1.6%
51	South Dakota	1.6%

Source: NatureServe Central Databases, April 2002

Table C. Endemism by State

RANK	STATE	# OF SPECIES
1	California	1,295
2	Hawaii	1,011
3	Texas	340
4	Florida	269
5	Utah	182
6	Nevada	173
7	Alabama	144
8	Arizona	135
9	Oregon	106
10	Colorado	93
11	New Mexico	90
12	Georgia	63
13	Washington	53
14	Idaho	51
15	Tennessee	49
16	Arkansas	33
17	Wyoming	32
18	Alaska	26
19	North Carolina	24
20	Mississippi	23
21	Virginia	21
22	Montana	17
23	Missouri	16
24	Kentucky	14
25	West Virginia	13
26	Michigan	10
27	New York	9
28	Louisiana	8
29	South Carolina	7
30	Connecticut	6
30	Massachusetts	6
30	Oklahoma	6
33	New Hampshire	5
33	Ohio	5
33	Pennsylvania	5
36	Illinois	3
36	Indiana	3
36	Maine	3
36	Nebraska	3
36	Rhode Island	3
41	Maryland	2
41	Minnesota	2
41	Vermont	2
41	Wisconsin	2
45	South Dakota	1
51	Delaware	0
51	District of Columbia	0
51	Iowa	0
51	Kansas	0
51	New Jersey	0
51	North Dakota	0

Source: NatureServe Central Databases, April 2002

Table D. Extinctions by State

RANK	STATE	TOTAL EXTINCT	PRESUMED EXTINCT (GX)	POSSIBLY EXTINCT (GH)
1	Hawaii	217	27	190
2	Alabama	90	25	65
3	California	53	12	41
4	Texas	27	3	24
5	Georgia	26	4	22
6	Florida	23	5	18
7	Tennessee	22	13	9
8	Virginia	20	7	13
9	Kentucky	18	15	3
10	Ohio	15	11	4
11	Illinois	13	7	6
11	Nevada	13	6	7
13	Arkansas	12	5	7
13	New Mexico	12	2	10
13	North Carolina	12	4	8
13	Oregon	12	2	10
17	Colorado	11	2	9
17	Mississippi	11	3	8
17	Utah	11	4	7
20	Indiana	10	8	2
20	New York	10	3	7
22	Maryland	8	2	6
22	Oklahoma	8	2	6
24	Louisiana	7	2	5
25	Iowa	6	3	4
25	Michigan	6	2	4
25	Minnesota	6	2	4
25	New Jersey	6	2	4
25	Pennsylvania	6	2	4
30	South Carolina	5	3	2
30	West Virginia	5	2	3
32	District of Columbia	4	1	3
32	Kansas	4	2	2
32	Missouri	4	2	2
32	Wyoming	4	1	3
36	Arizona	3	0	3
36	Connecticut	3	1	2
36	Maine	3	1	2
36	Montana	3	1	2
40	Nebraska	3	2	1
40	North Dakota	3	1	2
40	Washington	3	0	3
40	Wisconsin	3	2	1
44	Alaska	2	0	2
44	Delaware	2	1	1
44	Massachusetts	2	1	1
44	New Hampshire	2	1	1
44	Rhode Island	2	1	1
44	South Dakota	2	2	0
44	Vermont	2	1	1
51	Idaho	1	1	0

Source: NatureServe Central Databases, April 2002

Table E. Vascular Plant Diversity and Risk

RANK	STATE	# SPECIES
1	California	5,418
2	Texas	4,509
3	Arizona	3,512
4	New Mexico	3,305
5	Oregon	3,161
6	Florida	3,038
7	Georgia	2,994
8	Utah	2,966
9	Alabama	2,902
10	Nevada	2,875
11	North Carolina	2,771
12	South Carolina	2,582
13	Virginia	2,580
14	Colorado	2,550
15	Washington	2,476
16	Idaho	2,438
17	Tennessee	2,407
18	Louisiana	2,385
19	Mississippi	2,369
20	Oklahoma	2,355
21	Wyoming	2,286
22	Montana	2,239
23	Maryland	2,234
24	New York	2,215
25	Arkansas	2,202
26	Pennsylvania	2,202
27	Illinois	2,155
28	Michigan	2,097
29	Missouri	2,095
30	Kentucky	2,085
31	New Jersey	2,074
32	Indiana	2,063
33	Ohio	2,062
34	Massachusetts	1,958
35	West Virginia	1,897
36	Wisconsin	1,890
37	Connecticut	1,823
38	Minnesota	1,809
39	Kansas	1,778
40	New Hampshire	1,631
41	Vermont	1,622
42	Maine	1,601
43	Delaware	1,598
44	Iowa	1,583
45	Nebraska	1,561
46	South Dakota	1,504
47	Rhode Island	1,392
48	Alaska	1,354
49	District of Columbia	1,314
50	Hawaii	1,249
51	North Dakota	1,201

RANK	STATE	% AT RISK
1	Hawaii	64.3%
2	California	30.7%
3	Utah	16.6%
4	Nevada	15.7%
5	Arizona	15.3%
6	Florida	14.1%
7	Colorado	11.2%
8	New Mexico	11.1%
8	Georgia	11.1%
10	Oregon	11.0%
11	Texas	9.4%
11	Alabama	9.4%
13	North Carolina	9.2%
14	South Carolina	8.2%
15	Alaska	8.0%
16	Washington	7.6%
17	Wyoming	7.3%
18	Idaho	7.0%
19	Tennessee	6.6%
20	Virginia	6.0%
21	Montana	5.1%
21	Mississippi	5.1%
23	Louisiana	4.2%
24	Kentucky	3.8%
25	Arkansas	3.7%
25	New York	3.7%
27	West Virginia	3.6%
28	Maryland	3.4%
29	Missouri	3.3%
30	New Jersey	3.1%
30	Delaware	3.1%
30	Oklahoma	3.1%
33	Maine	3.0%
34	Pennsylvania	2.9%
35	Michigan	2.7%
36	Massachusetts	2.6%
37	Indiana	2.5%
37	Illinois	2.5%
39	Connecticut	2.4%
40	Vermont	2.3%
41	Ohio	2.2%
41	Wisconsin	2.2%
43	New Hampshire	2.1%
43	Rhode Island	2.1%
45	Kansas	1.9%
45	Iowa	1.9%
47	District of Columbia	1.8%
48	Minnesota	1.7%
49	Nebraska	1.3%
51	South Dakota	0.9%
51	North Dakota	0.9%

Source: NatureServe Central Databases, April 2002

Table F. Mammal Diversity and Risk

RANK	STATE	# SPECIES
1	California	195
2	Texas	159
3	New Mexico	154
4	Oregon	150
5	Arizona	138
6	Colorado	133
7	Washington	127
8	Utah	126
9	Nevada	123
10	Wyoming	109
11	North Carolina	107
12	Idaho	105
13	Montana	104
13	Oklahoma	104
15	Alaska	96
15	South Carolina	96
17	Georgia	92
18	New York	91
19	South Dakota	90
20	Maryland	88
21	Florida	86
22	North Dakota	85
23	Nebraska	83
24	Kansas	82
25	Minnesota	80
25	Virginia	80
27	Tennessee	76
28	Massachusetts	74
29	Maine	73
30	Missouri	72
31	New Jersey	71
32	Kentucky	70
33	Arkansas	69
34	Indiana	68
34	Iowa	68
34	Pennsylvania	68
34	West Virginia	68
38	Illinois	67
38	Michigan	67
38	Wisconsin	67
41	Ohio	66
42	New Hampshire	64
43	Alabama	63
44	Connecticut	62
45	Louisiana	59
45	Vermont	59
47	Mississippi	56
48	Delaware	54
49	Rhode Island	53
50	District of Columbia	43
51	Hawaii	7

RANK	STATE	% AT RISK
1	Hawaii	28.6%
2	Florida	18.6%
3	California	16.4%
4	Alaska	14.6%
5	Georgia	14.1%
6	South Carolina	13.5%
7	Alabama	12.7%
8	Massachusetts	12.2%
9	Texas	10.7%
10	Kentucky	10.0%
11	Maine	9.6%
12	Rhode Island	9.4%
13	Tennessee	9.2%
14	Indiana	8.8%
14	Virginia	8.8%
16	Arkansas	8.7%
16	Oklahoma	8.7%
18	Missouri	8.3%
19	North Carolina	7.5%
19	Illinois	7.5%
21	Mississippi	7.1%
21	New Mexico	7.1%
21	Washington	7.1%
24	Louisiana	6.8%
25	New York	6.6%
26	Ohio	6.1%
27	West Virginia	5.9%
28	New Jersey	5.6%
29	Connecticut	4.8%
30	Pennsylvania	4.4%
31	Oregon	4.0%
32	Kansas	3.7%
33	Maryland	3.4%
33	Vermont	3.4%
35	Nevada	3.3%
36	Arizona	2.9%
37	Wyoming	2.8%
38	Nebraska	2.4%
38	Utah	2.4%
38	North Dakota	2.4%
41	District of Columbia	2.3%
42	South Dakota	2.2%
43	Montana	1.9%
43	Delaware	1.9%
45	New Hampshire	1.6%
46	Colorado	1.5%
46	Michigan	1.5%
46	Iowa	1.5%
49	Minnesota	1.3%
50	Idaho	1.0%
51	Wisconsin	0.0%

Source: NatureServe Central Databases, April 2002

Table G. Bird Diversity and Risk

RANK	STATE	# SPECIES
1	Texas	477
2	New Mexico	447
3	Arizona	435
4	California	415
5	Florida	386
6	Washington	372
7	Colorado	371
8	North Carolina	360
9	Nebraska	346
9	Oklahoma	346
11	Kansas	341
12	New Jersey	340
13	South Dakota	339
14	Oregon	338
15	Georgia	328
16	New York	327
17	Alabama	326
18	Louisiana	322
18	Virginia	322
20	North Dakota	318
21	South Carolina	313
22	Arkansas	312
23	Illinois	311
23	Missouri	311
25	Minnesota	308
26	Maryland	305
27	Massachusetts	303
27	Michigan	303
29	Mississippi	301
30	Nevada	299
31	Utah	296
32	Delaware	295
32	Wyoming	295
34	Maine	293
35	Montana	285
36	Idaho	284
36	Kentucky	284
38	New Hampshire	283
39	Ohio	280
40	Wisconsin	279
41	Tennessee	278
42	Rhode Island	277
43	Indiana	275
44	Iowa	274
45	Connecticut	273
46	Alaska	269
47	Pennsylvania	267
48	District of Columbia	241
49	Vermont	240
50	West Virginia	237
51	Hawaii	115

RANK	STATE	% AT RISK
1	Hawaii	42.6%
2	Alaska	5.6%
3	California	4.8%
4	Florida	3.1%
5	Washington	3.0%
6	Texas	2.9%
6	Oklahoma	2.9%
8	Georgia	2.7%
8	Nevada	2.7%
10	North Carolina	2.5%
10	Kentucky	2.5%
12	Oregon	2.4%
13	Kansas	2.3%
14	Arkansas	2.2%
14	Louisiana	2.2%
14	Tennessee	2.2%
17	Utah	2.0%
17	Nebraska	2.0%
17	Mississippi	2.0%
20	Illinois	1.9%
20	Missouri	1.9%
20	Colorado	1.9%
20	Pennsylvania	1.9%
20	Virginia	1.9%
25	Alabama	1.8%
25	Arizona	1.8%
25	Iowa	1.8%
25	Indiana	1.8%
25	Wisconsin	1.8%
25	Ohio	1.8%
25	South Dakota	1.8%
25	Montana	1.8%
33	Wyoming	1.7%
34	South Carolina	1.6%
34	North Dakota	1.6%
34	New Mexico	1.6%
37	New Jersey	1.5%
38	New Hampshire	1.4%
38	Maine	1.4%
40	Massachusetts	1.3%
40	Maryland	1.3%
40	Minnesota	1.3%
40	West Virginia	1.3%
44	New York	1.2%
45	Connecticut	1.1%
45	Rhode Island	1.1%
47	Michigan	1.0%
48	District of Columbia	0.8%
49	Idaho	0.7%
49	Delaware	0.7%
51	Vermont	0.4%

Source: NatureServe Central Databases, April 2002

Table H. Reptile Diversity and Risk

RANK	STATE	# SPECIES	RANK	STATE	% AT RISK
1	Texas	149	1	Hawaii	100.0%
2	Arizona	102	2	Massachusetts	20.7%
3	New Mexico	98	3	Florida	20.0%
4	Florida	90	4	Maine	19.0%
5	California	86	5	California	16.3%
6	Alabama	85	6	Rhode Island	16.0%
7	Georgia	83	7	Georgia	14.5%
8	Mississippi	82	8	New York	14.3%
9	Oklahoma	80	9	Texas	14.1%
10	Louisiana	78	10	Mississippi	13.4%
11	South Carolina	72	11	Alabama	11.8%
12	North Carolina	68	12	South Carolina	11.1%
13	Missouri	67	13	Maryland	10.9%
14	Arkansas	64	14	New Hampshire	10.5%
14	Kansas	64	15	Pennsylvania	8.1%
16	Illinois	60	16	Arizona	7.8%
16	Virginia	60	17	Louisiana	7.7%
18	Indiana	58	18	Michigan	7.4%
19	Tennessee	55	18	North Carolina	7.4%
20	Kentucky	52	20	New Mexico	6.1%
20	Nevada	52	21	Indiana	5.2%
22	Utah	50	22	Illinois	5.0%
23	Colorado	49	22	Ohio	5.0%
24	Iowa	47	22	Virginia	5.0%
24	Nebraska	47	25	Washington	4.8%
26	Maryland	46	26	Iowa	4.3%
27	New Jersey	42	27	Colorado	4.1%
28	Ohio	40	28	Kentucky	3.8%
29	West Virginia	39	28	Nevada	3.8%
30	Delaware	37	30	Connecticut	3.7%
30	Pennsylvania	37	31	Tennessee	3.6%
32	New York	35	32	Minnesota	3.4%
32	Wisconsin	35	33	District of Columbia	3.2%
34	Oregon	32	34	Kansas	3.1%
35	District of Columbia	31	34	Oregon	3.1%
35	South Dakota	31	36	Missouri	3.0%
37	Massachusetts	29	37	Wisconsin	2.9%
37	Minnesota	29	38	Delaware	2.7%
39	Connecticut	27	39	Oklahoma	2.5%
39	Michigan	27	40	New Jersey	2.4%
41	Rhode Island	25	41	Nebraska	2.1%
42	Idaho	23	42	Arkansas	1.6%
43	Wyoming	22	51	Alaska	0.0%
44	Maine	21	51	Idaho	0.0%
44	Washington	21	51	Montana	0.0%
46	New Hampshire	19	51	North Dakota	0.0%
47	Vermont	18	51	South Dakota	0.0%
48	Montana	17	51	Utah	0.0%
49	North Dakota	15	51	Vermont	0.0%
50	Hawaii	4	51	West Virginia	0.0%
51	Alaska	0	51	Wyoming	0.0%

Source: NatureServe Central Databases, April 2002

Table I. Amphibian Diversity and Risk

RANK	STATE	# SPECIES
1	North Carolina	84
2	Georgia	77
3	Virginia	74
4	Tennessee	72
5	Texas	71
6	Alabama	68
7	South Carolina	66
8	Mississippi	58
9	California	57
10	Florida	56
11	Kentucky	53
12	Louisiana	51
12	Oklahoma	51
14	Arkansas	49
15	West Virginia	47
16	Missouri	42
17	Maryland	40
18	Illinois	39
18	Ohio	39
20	Indiana	38
21	Pennsylvania	36
22	New York	32
23	New Jersey	31
23	Oregon	31
25	Kansas	29
26	Delaware	27
27	New Mexico	26
28	Arizona	25
28	Washington	25
30	District of Columbia	24
31	Iowa	23
31	Michigan	23
33	Connecticut	22
34	New Hampshire	21
34	Vermont	21
36	Massachusetts	20
36	Minnesota	20
38	Wisconsin	19
39	Rhode Island	18
40	Colorado	17
40	Maine	17
42	Utah	16
43	South Dakota	15
44	Montana	14
45	Nebraska	13
45	Nevada	13
45	Wyoming	13
48	Idaho	12
48	North Dakota	12
50	Alaska	6
51	Hawaii	0

RANK	STATE	% AT RISK
1	California	49.1
2	Oregon	38.7
3	Nevada	38.5
4	Washington	32.0
5	Arizona	24.0
6	North Carolina	22.6
7	Texas	21.1
8	Tennessee	20.8
9	Georgia	19.5
10	Alabama	17.6
11	New Mexico	15.4
12	South Carolina	13.6
13	Virginia	13.5
14	West Virginia	12.8
15	Florida	12.5
15	Utah	12.5
17	Mississippi	10.3
18	Arkansas	10.2
19	Idaho	8.3
20	Wyoming	7.7
21	Montana	7.1
22	Pennsylvania	5.6
23	Indiana	5.3
24	Ohio	5.1
25	Maryland	5.0
26	Louisiana	3.9
26	Oklahoma	3.9
28	Kentucky	3.8
29	New York	3.1
30	Illinois	2.6
31	Missouri	2.4
32	Alaska	0.0
32	Colorado	0.0
32	Connecticut	0.0
32	Delaware	0.0
32	District of Columbia	0.0
32	Iowa	0.0
32	Kansas	0.0
32	Maine	0.0
32	Massachusetts	0.0
32	Michigan	0.0
32	Minnesota	0.0
32	Nebraska	0.0
32	New Hampshire	0.0
32	New Jersey	0.0
32	North Dakota	0.0
32	Rhode Island	0.0
32	South Dakota	0.0
32	Vermont	0.0
32	Wisconsin	0.0
n/a	Hawaii	

Source: NatureServe Central Databases, April 2002

Table J. Freshwater Fish Diversity and Risk

RANK	STATE	# SPECIES
1	Alabama	284
2	Tennessee	283
3	Georgia	250
4	Kentucky	230
5	Mississippi	209
6	North Carolina	206
7	Arkansas	203
8	Virginia	202
9	Missouri	200
10	Indiana	189
11	Illinois	188
12	Texas	175
13	Oklahoma	171
14	Pennsylvania	163
15	Louisiana	160
16	New York	159
17	West Virginia	151
18	Ohio	148
19	Wisconsin	146
20	Iowa	139
21	Michigan	137
22	Florida	136
23	Minnesota	135
24	Kansas	121
25	South Carolina	120
26	Maryland	89
26	South Dakota	89
28	Nebraska	87
28	North Dakota	87
30	Vermont	81
31	New Jersey	67
32	District of Columbia	65
32	Oregon	65
34	California	62
34	Delaware	62
36	Montana	56
36	Wyoming	56
38	Maine	54
38	New Mexico	54
40	Washington	51
41	New Hampshire	50
42	Colorado	48
42	Nevada	48
44	Connecticut	46
44	Massachusetts	46
46	Alaska	44
47	Idaho	42
48	Rhode Island	37
49	Arizona	28
49	Utah	28
51	Hawaii	5

RANK	STATE	% AT RISK
1	Arizona	85.7%
2	Hawaii	80.0%
3	Utah	60.7%
4	Nevada	56.3%
5	California	50.0%
6	New Mexico	48.1%
7	Oregon	29.2%
8	Texas	23.4%
9	Tennessee	21.6%
10	Idaho	19.0%
10	Alabama	19.0%
12	Colorado	18.8%
13	Georgia	16.8%
14	Wyoming	16.1%
15	Kentucky	14.8%
16	Virginia	14.4%
17	Arkansas	14.3%
18	North Carolina	13.6%
19	Indiana	11.1%
20	Missouri	11.0%
21	Ohio	10.1%
22	Illinois	9.6%
22	Mississippi	9.6%
22	Florida	9.6%
25	Louisiana	9.4%
25	Oklahoma	9.4%
27	West Virginia	9.3%
28	Montana	8.9%
29	Michigan	8.8%
30	Kansas	8.3%
31	Pennsylvania	8.0%
32	Washington	7.8%
33	New York	7.5%
34	Iowa	7.2%
35	Nebraska	6.9%
35	North Dakota	6.9%
37	Minnesota	6.7%
37	South Carolina	6.7%
39	Wisconsin	6.2%
40	New Hampshire	6.0%
41	South Dakota	5.6%
41	Maine	5.6%
43	Rhode Island	5.4%
44	Alaska	4.5%
44	Maryland	4.5%
46	Connecticut	4.3%
46	Massachusetts	4.3%
48	District of Columbia	3.1%
49	New Jersey	3.0%
50	Vermont	2.5%
51	Delaware	1.6%

Source: NatureServe Central Databases, April 2002

U.S. Natural Heritage Programs

NatureServe represents a network of member programs comprising 75 independent centers that collect and analyze data about the plants, animals, and ecological communities of the Western Hemisphere. These natural heritage programs are found in all 50 U.S. states, ten Canadian provinces, and 12 countries and territories of Latin America and the Caribbean, where they are called conservation data centers. Most U.S. natural heritage programs are state government agencies; others are housed in universities or within Nature Conservancy field offices.

A directory of links to websites for these programs can be found via the NatureServe website at http://www.natureserve.org/nhp/us_programs.htm.

Alabama Natural Heritage Program
Montgomery, Alabama
334-834-4519

Alaska Natural Heritage Program
Anchorage, Alaska
907-257-2783

Arizona Heritage Data Management System
Phoenix, Arizona
602-789-3618

Arkansas Natural Heritage Commission
Little Rock, Arkansas
501-324-9761

California Natural Diversity Database
Sacramento, California
916-324-1414

Colorado Natural Heritage Program
Fort Collins, Colorado
970-491-1150

Connecticut Natural Diversity Database
Hartford, Connecticut
860-424-3589

Delaware Natural Heritage Program
Smyrna, Delaware
302-653-2880

District of Columbia Natural Heritage Program
/National Capital Region Conservation Data Center
Washington, D.C.
202-342-1443

Florida Natural Areas Inventory
Tallahassee, Florida
850-224-8207

Georgia Natural Heritage Program
Social Circle, Georgia
706-557-3032

Great Smoky Mountains National Park
Gatlinburg, Tennessee
865-430-4743

Hawaii Natural Heritage Program
Honolulu, Hawaii
808-956-2501

Idaho Conservation Data Center
Boise, Idaho
208-334-3402

Illinois Natural Heritage Database Program
Springfield, Illinois
217-785-8774

Indiana Natural Heritage Data Center
Indianapolis, Indiana
317-232-4078

Iowa Natural Areas Inventory
Des Moines, Iowa
515-281-8524

Kansas Natural Heritage Inventory
Lawrence, Kansas
785-864-3453

Kentucky Natural Heritage Program
Frankfort, Kentucky
502-573-2886

Louisiana Natural Heritage Program
Baton Rouge, Louisiana
225-765-2823

Maine Natural Areas Program
Augusta, Maine
207-287-8045

Maryland Natural Heritage Program
Annapolis, Maryland
410-260-8572

Massachusetts Natural Heritage
& Endangered Species Program
Westborough, Massachusetts
508-792-7270

Michigan Natural Features Inventory
Lansing, Michigan
517-373-7565

Minnesota Natural Heritage & Nongame Research
St. Paul, Minnesota
651-297-2276

Mississippi Natural Heritage Program
Jackson, Mississippi
601-354-7303

Missouri Natural Heritage Database
Jefferson City, Missouri
573-751-4115

Montana Natural Heritage Program
Helena, Montana
406-444-3019

Navajo Natural Heritage Program
Window Rock, Arizona
520-871-7068

Nebraska Natural Heritage Program
Lincoln, Nebraska
402-471-5569

Nevada Natural Heritage Program
Carson City, Nevada
775-687-4245

New Hampshire Natural Heritage Inventory
Concord, New Hampshire
603-271-3623

New Jersey Natural Heritage Program
Trenton, New Jersey
609-984-0097

New Mexico Natural Heritage Program
Albuquerque, New Mexico
505-277-3822

New York Natural Heritage Program
Albany, New York
518-402-8948

North Carolina Natural Heritage Program
Raleigh, North Carolina
919-715-8697

North Dakota Natural Heritage Program
Bismarck, North Dakota
701-328-5370

Ohio Natural Heritage Database
Columbus, Ohio
614-265-6472

Oklahoma Natural Heritage Inventory
Norman, Oklahoma
405-325-1985

Oregon Natural Heritage Program
Portland, Oregon
503-731-3070

Pennsylvania Natural Diversity Inventory - East
Middletown, Pennsylvania
717-948-3959

Pennsylvania Natural Diversity Inventory - Central
Harrisburg, Pennsylvania
717-783-0383

Pennsylvania Natural Diversity Inventory - West
Pittsburgh, Pennsylvania
412-281-1487

Rhode Island Natural Heritage Program
Providence, Rhode Island
401-222-2776

South Carolina Heritage Trust
Columbia, South Carolina
803-734-3930

South Dakota Natural Heritage Database
Pierre, South Dakota
605-773-4227

Tennessee Valley Authority Regional Natural Heritage
Norris, Tennessee
865-632-1661

Tennessee Division of Natural Heritage
Nashville, Tennessee
615-532-0437

Texas Conservation Data Center
San Antonio, Texas
210-224-8774

Texas Wildlife Diversity Program
Austin, Texas
512-389-4771

Utah Natural Heritage Program
Salt Lake City, Utah
801-538-4716

Vermont Nongame & Natural Heritage Program
Waterbury, Vermont
802-241-3718

Virginia Division of Natural Heritage
Richmond, Virginia
804-786-4554

Washington Natural Heritage Program
Olympia, Washington
360-902-1661

West Virginia Natural Heritage Program
Elkins, West Virginia
304-637-0245

Wisconsin Natural Heritage Program
Madison, Wisconsin
608-266-3369

Wyoming Natural Diversity Database
Laramie, Wyoming
307-766-3027

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This report is based on analysis of information from NatureServe's scientific databases, which reflect the work of hundreds of people over nearly three decades. Much of the state-level information derives from NatureServe's natural heritage program members, and has been gathered and analyzed by hundreds of biologists and information managers working in those programs. We are indebted to these programs and individuals for their steadfast commitment to improving our understanding of the nation's species and ecosystems.

Overall responsibility for NatureServe's central scientific databases rests with the NatureServe zoology and botany groups, who have specific responsibility for developing and maintaining rangewide information on species taxonomy, distribution, and conservation status. NatureServe's chief zoologist, Larry Master, oversees development and quality assurance of the animal data with other NatureServe staff including Geoff Hammerson, Dale Schweitzer, Syd Cannings, Margaret Ormes, and Nicole Capuano. NatureServe's North American botanist, Larry Morse, oversees development and quality assurance of the botanical data, with much of the taxonomic and distributional information based on data from John Kartesz of the Biota of North America Program. NatureServe staff assisting in the botanical work include Gwen Davis, Nancy Benton, Leah Oliver, and Kat Maybury.

Bruce Stein wrote and edited this report. Lynn Kutner and Margaret Ormes carried out the data analysis. Heather Freas assisted with data analysis and production. Rob Riordan helped develop the concept and designed the report.

Notes

- ¹ Stein, B.A., L.S. Kutner, and J.S. Adams eds. 2000. *Precious Heritage: The Status of Biodiversity in the United States*. New York: Oxford University Press.
- ² Master, L.L. 1991. Assessing threats and setting priorities for conservation. *Conservation Biology* 5: 559-563; see also www.natureserve.org/explorer/ranking.htm.
- ³ Stevens, W.K. 2000. U.S. found to be a leader in its diversity of wildlife. *New York Times*, March 16, 2000, sec. A, p.18.
- ⁴ For a more thorough discussion of the ecological and evolutionary factors behind these geographic patterns, see Stein et al. 2000, pages 119-157.
- ⁵ Wilson, E.O. 2002. *The Future of Life*. New York: Knopf.