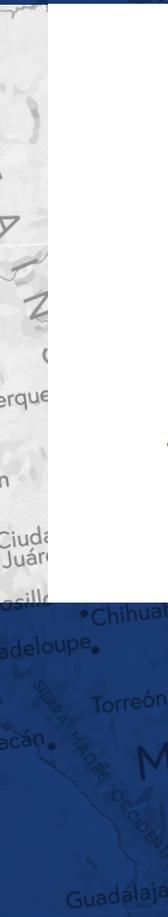# NatureServe
SCIENCE • DATA • TECHNOLOGY • CONSERVATION

Strategic Plan

2022–2026

Introduction

For those of us working in conservation, the news can be deeply concerning. The more we learn, the worse the threats to biodiversity seem. The climate emergency has progressed to the point that we are now witnessing the predicted cataclysmic events such as ever more powerful hurricanes, unimaginably vast wildfires, inexorable sea level rise, and changes in rainfall and temperature patterns. At the same time, the wildlife trade and the destruction of habitats have led to a rise in zoonotic diseases that imperil human health, and destruction in the Amazon has peaked again. Hardly a week goes by without news of another group of plants or animals in steep decline—each report providing new details about how the Sixth Extinction will unfold.

Despite this concerning news, we at NatureServe are eternal optimists, and we have good reasons to be hopeful.

COVER:

Tallulah Falls, Georgia.
Photo by Sean Pavone Photography.

ABOVE:

Brown bear
(*Ursus arctos*).
NatureServe
Global Status:
Apparently Secure (G4).
Photo by Brett Sayles.

Governments, the private sector, and the public have renewed attention toward mitigating the causes of climate change, and nearly every nation on Earth has signed the Paris Agreement. Global policy efforts for biodiversity conservation are being catalyzed with the establishment of the post-2020 Global Biodiversity Framework. Moreover, an ambitious, international, 30×30 initiative (called Conserving and Restoring America the Beautiful in the United States) could prompt the leap needed to make meaningful progress on landscape-scale conservation. Nature-based solutions are becoming more mainstream, and technological advances are providing new tools to monitor biodiversity status and better target conservation strategies. We see these bright spots as innovation opportunities that can bring together experts, science, data, and technology to help solve one of the most important environmental challenges of our time, the mass extinction of untold numbers of species. In this context, NatureServe has committed to playing an even greater role in protecting biodiversity while becoming a more robust and sustainable organization.

As an apolitical, nonprofit conservation science and technology organization, NatureServe serves all who need high-quality scientific knowledge about biodiversity. We assemble robust data on species and ecosystem locations and conditions collected by biodiversity experts from the NatureServe Network and other partners.

With these partnerships, NatureServe is unique in our ability to deliver high-quality, comprehensive data that support the conservation of biodiversity. Our scientists turn those data into maps, models, and metrics that document and predict distributions, evaluate threats, assess extinction risks, document trends, and identify priority conservation areas. Using cloud technology, integrated applications, and compelling visualizations, we deliver the expert knowledge needed to maintain species diversity and sustain healthy ecosystems. We adhere to an ethic of reducing conflict in conservation by working with environmental groups, governments, scientists, the public, and industry. We believe that by engaging early and with sound science, we can achieve the best outcomes for biodiversity.

To maximize our effectiveness and increase our impact, NatureServe will modernize our integrated technology and collaborative science activities to streamline data delivery. We are reimagining our enterprise as a more agile organization that can accommodate and analyze near real-time updates of biodiversity data from our Network and other partner data sources. We will automate the transformation and standardization of data to quickly deliver ready-to-use, decision-quality information and analyses that inform conservation action. We will strive to provide open data in a way that protects sensitive species. We will reorient our funding model and communications and marketing strategies to ensure that NatureServe is financially secure and can communicate the importance of our work to decision-makers, funders, and the public. Core to who we are as an organization is our staff and our respect for them as well as for nature. In this plan, NatureServe commits to playing an even greater role in protecting biodiversity by providing the best available science, data, and technology to support biodiversity conservation.

> **In this plan, NatureServe commits to playing an even greater role in protecting biodiversity by providing the best available science, data, and technology to support biodiversity conservation.**

Northern Tallgrass Prairie. NatureServe Global Status: Critically Imperiled (G1). *Photo by Marilena.*

Vision

NatureServe envisions a world in which the best available science informs conservation and stewardship decisions so that biodiversity thrives.

Mission

We leverage the power of science, data, and technology to guide biodiversity conservation and stewardship.

Panther Falls, Georgia.

Photo by Sean Pavone Photography.

NatureServe's Values

Commitment to Biodiversity Conservation

The underlying motivation for our efforts is a belief that Earth's biodiversity represents a rich natural heritage that is essential to human health, and it must be sustained.

Scientific Integrity and Excellence

We hold ourselves to the highest scientific standards and act with integrity in analyzing and communicating our science and data. We report known shortcomings in the information we provide but affirm that imperfect information is better than no information.

Relict leopard frog (*Lithobates onca*). NatureServe Global Status: Critically Imperiled (G1).
Photo by Renee Grayson.

Open Data

Greater access to information is ultimately in the interest of biodiversity conservation. We strive to make our data openly available in a way that protects sensitive species and ecosystems.

Innovation

We value innovation, learning, mentoring, creativity, initiative, and curiosity. We question assumptions, challenge one another, and are willing to try new things. We recognize that change is essential to success. We take calculated risks.

Collaboration

We depend on collaboration with biodiversity experts from across the NatureServe Network, as well as collaboration with other partners across the globe, to deliver on our mission and protect biodiversity. We recognize that we are more effective when we collaborate across the organization and with partners that complement our skills and capacity.

Justice, Equity, Diversity, and Inclusion

We strive to attract and retain a diverse workforce, treat employees equitably, and create environments in which all feel welcomed and supported. NatureServe's contribution to biodiversity conservation is strengthened by the diverse voices and perspectives that guide our mission.

## Transparency, Trust, and Respect

We treat one another, our Network, and other partners with dignity and respect. We strive for a culture of transparency and trust through regular formal and informal communication and active listening. We encourage each other and assume positive intent. We support our staff by providing opportunities for professional development and promote work-life balance.

Fiduciary and Environmental Responsibility

We must be financially strong or we are not effective in conservation. We use financial and environmental resources wisely and strive to minimize negative impacts on the planet.
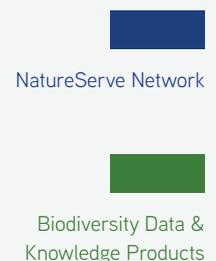
Bald-cypress - Tupelo Floodplain Forest at Cache River, IL. NatureServe Global Status: Apparently Secure (G4).
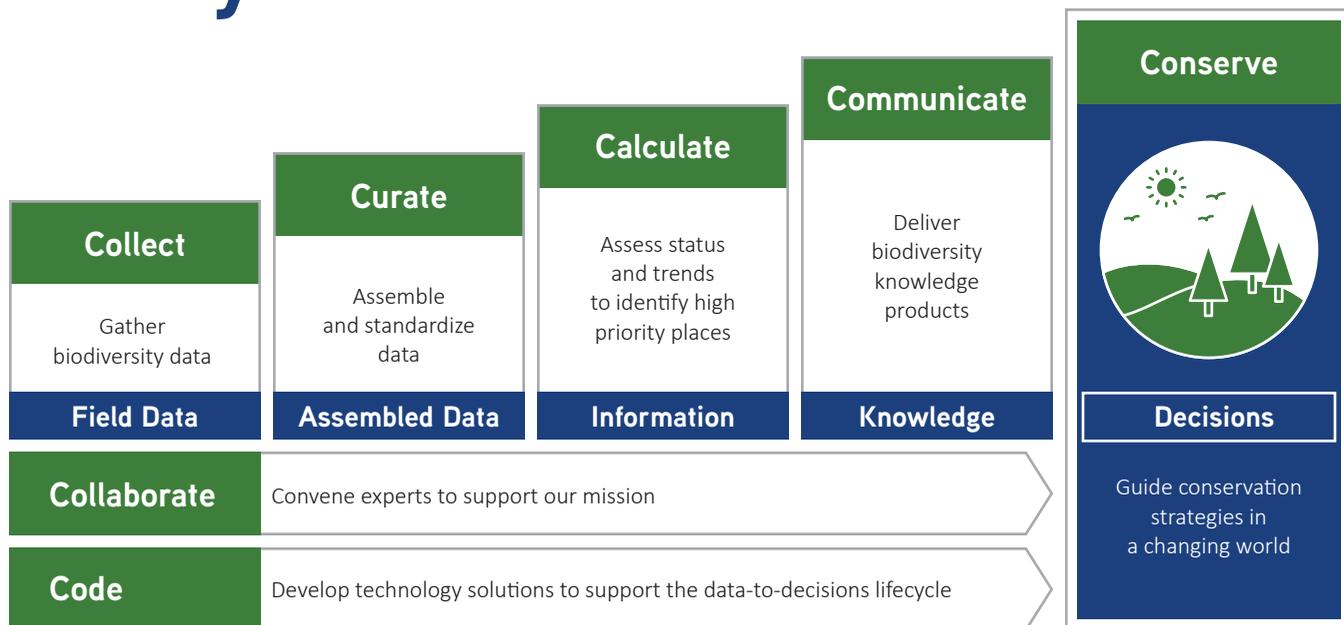*Photo by Erica La Spada.*
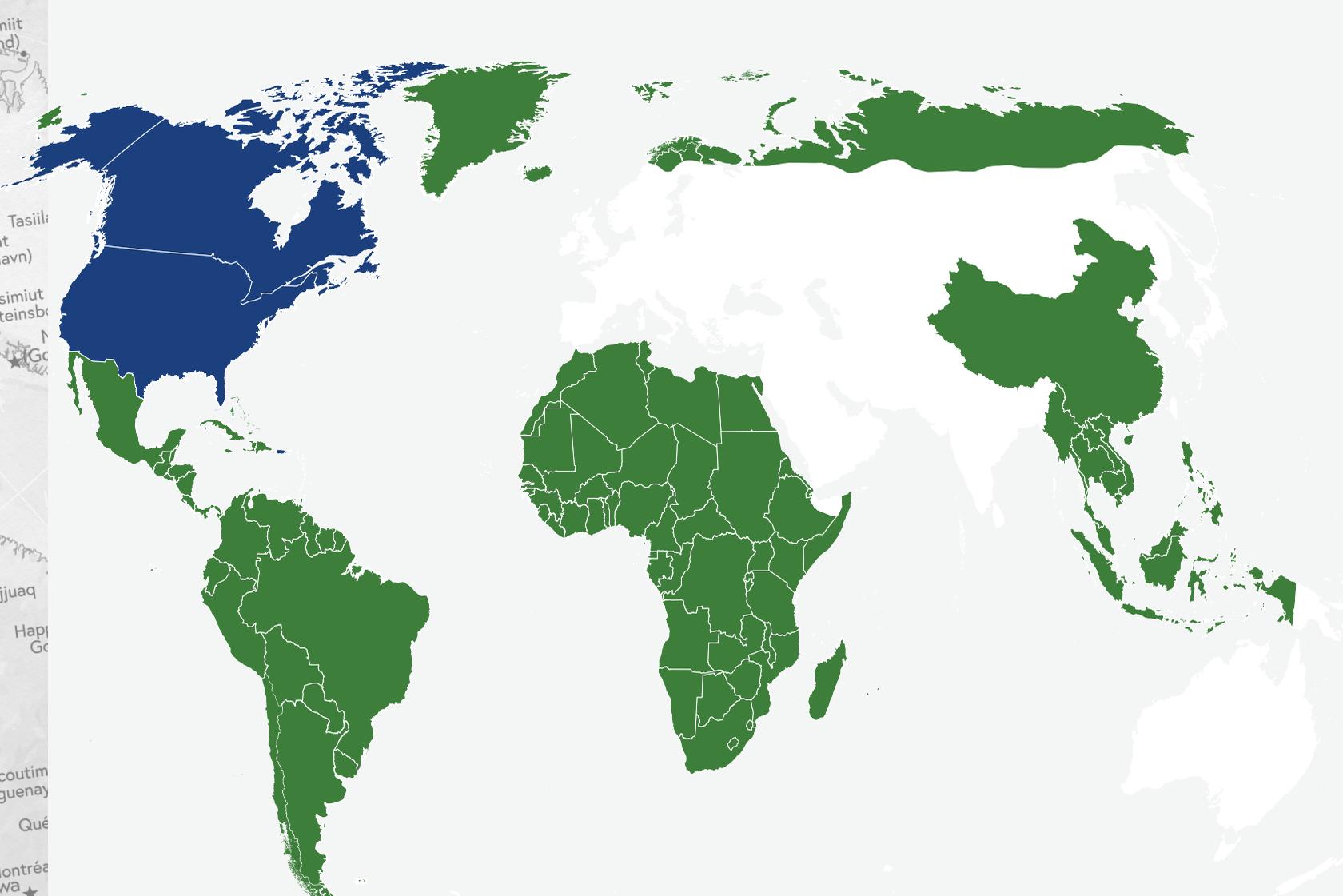
The NatureServe Network

In the United States and Canada, more than 60 NatureServe Network member programs collect, manage, analyze, and deliver data about plants, animals, and ecosystems using the same methods and a rigorous set of standards. The NatureServe Network is the leading source of information on the precise locations and conditions of at-risk species and threatened ecosystems. Network member program staff—over 1,000 strong—are experts in their fields and include some of the most knowledgeable field biologists in North America. Collectively, we have documented over a million locations that contribute to the long-term survival of about 100,000 species and ecosystems in North America.

In the rest of the world, NatureServe works with an extensive set of partners to develop foundational biodiversity knowledge products, implement biodiversity dashboards to visualize data, and support regions and nations in measuring the effectiveness of their conservation activities.

NatureServe Network

Biodiversity Data & Knowledge Products

The Data-to-Decisions Lifecycle

Collect	Curate	Calculate	Communicate	Conserve
Gather biodiversity data	Assemble and standardize data	Assess status and trends to identify high priority places	Deliver biodiversity knowledge products	
Field Data	**Assembled Data**	**Information**	**Knowledge**	**Decisions**

Guide conservation strategies in a changing world

Collaborate	Convene experts to support our mission
Code	Develop technology solutions to support the data-to-decisions lifecycle

NatureServe turns data into the knowledge needed for effective conservation decision-making. Our work is guided by the data-to-decisions lifecycle.

Collect: With our Network and partners, we collect and manage the fundamental information needed to conserve species and ecosystems.

Curate: We assemble, standardize, and assess the quality of data from our Network and partners to create a high-quality aggregated data set that documents the locations and conditions of species and ecosystems across their ranges.

Calculate: We assess conservation status and trends in the face of threats and identify high priority places to protect.

Communicate: We communicate scientific knowledge so that it can be understood and applied.

Collaborate: We convene, coordinate, and support the Network and other biodiversity organizations and experts that help us deliver on all aspects of the data-to-decisions lifecycle.

Code: We develop and apply technology solutions to support our mission.

Conserve: We apply our knowledge to guide conservation strategies and help manage biodiversity in a changing world.

Strategies

To maximize our impact, we will make significant advancements in seven focus areas:

Effective Partnerships

State-of-the-Art Conservation Science

Decision-Quality Data

Integrated Technology

Compelling Communication

Sustainable Funding

Robust Organizational Systems

Effective Partnerships

Engage and support a cohesive Network and an expanded set of partners that collaborate to provide high-quality, standardized biodiversity information and share skills, knowledge, and innovations to deliver on our common goals

GOAL Develop a strong, collaborative, and effective Network by facilitating engagement, improving communication, sharing best practices, and delivering value to all partners

GOAL Amplify our conservation impact by expanding partnerships with scientists, data providers, industry, and technology firms

A burrowing crayfish (*Cambarus fetzneri*). NatureServe Global Status: Vulnerable (G3). *Photo by Chris Lukhaup.*

Effective Partnerships

Key Performance Indicators

- Secure a functioning and engaged Network member program in each U.S. state and Canadian province by 2026

- Develop metrics to track Network health and evaluate member programs annually by 2023

- Complete three high conservation impact projects by establishing new or expanding existing partnerships in science, data, and/or technology by 2023; implement between one and three similar projects annually thereafter

Tactics

- Improve collaboration and knowledge transfer between Network member programs and NatureServe through a comprehensive plan to support struggling member programs, improve mechanisms for sharing information across member programs, and facilitate meetings at Network-wide, regional, or topical levels

- Create a new partnership framework between NatureServe and the Network to support data delivery to decision-makers via Explorer Pro, generate a steady stream of revenue for the member programs and NatureServe, and facilitate data flow

- Bolster Network participation from all U.S. states and Canadian provinces and territories by establishing a new position to support member programs within their jurisdictions, developing a plan to improve the capacity of existing member programs, and entering new partnerships with complementary organizations as needed

- Deliver "Network first" customer service by responding as promptly as possible to requests for technology, data management, and science and programmatic support

- Deepen and expand partnerships across U.S. federal agencies to build capacity and support federal conservation efforts

- Expand our partnerships with technology firms, other data aggregators, industry, and academic institutions to reach new audiences, increase uptake of our data, and leverage new sources of data and expertise

- Maintain and build on our commitment to global partnerships that develop and deliver biodiversity knowledge products that are essential to conservation policy
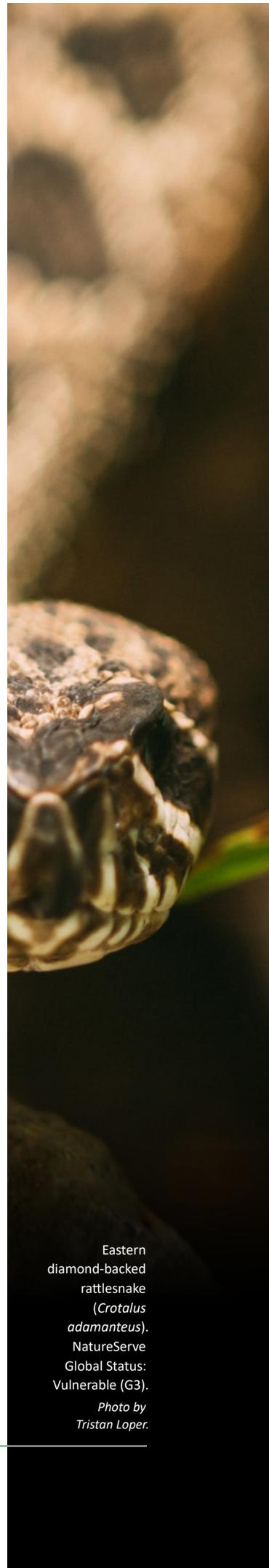
Eastern diamond-backed rattlesnake (*Crotalus adamanteus*). NatureServe Global Status: Vulnerable (G3).

Photo by Tristan Loper.

State-of-the-Art Conservation Science

Develop and deliver innovative analyses, dynamic models, and intuitive visualizations that guide conservation and resource management strategies and inform policies that advance the conservation of biodiversity

GOAL Provide global leadership in developing foundational data on the distribution and conservation status of species and ecosystems by leveraging NatureServe Network's data and expertise

GOAL Analyze information on global change trends to detect, predict, and report on their effects on biodiversity through the development and application of innovative methods and tools

GOAL Report on the effectiveness of conservation actions by developing, visualizing, and communicating critical indicators of biodiversity status and trends

GOAL Identify the critical places necessary to conserve biodiversity effectively through integrative analyses of diverse data sources

Monarch butterfly (*Danaus plexippus*). NatureServe Global Status: Apparently Secure (G4).
Photo by Twenty 20 Photography.

**State-of-the-Art
Conservation Science**

Key Performance Indicators

– Release a report on U.S. species and ecosystems status and trends annually beginning in 2022

– Reflect climate change scenarios in species and ecosystem modeling to project change over time by 2024

– Incorporate NatureServe data and analyses into strategies for achieving national and global 30x30 targets by 2025

– Use NatureServe data and analyses to develop biodiversity indicators for use by finance, corporate, and government sectors to evaluate and guide actions that support sustainability by 2026

Tactics

– Design, develop, and implement a cloud-based, scalable computational infrastructure for efficient, dynamic, and collaborative habitat modeling that engages and supports member programs and generates improved distribution information for management and conservation of species at risk

– Develop NatureServe's library of unparalleled, well-documented, peer-reviewed habitat models and range maps for imperiled species and terrestrial ecosystems in the United States

– Leverage NatureServe data, expertise, and scientific capacity to develop integrative biodiversity analyses for custom applications in sectors such as forestry, infrastructure, and resource management

– Advance the data, methods, and application of climate change vulnerability assessments of species and ecosystems

– Produce assessments of at-risk species and ecosystems in the United States that inform state, regional, and federal biodiversity management plans

– Use NatureServe data and expertise to identify priority sites for conservation that contribute to national and international conservation goals such as the global 30x30 conservation campaign and the Key Biodiversity Areas Partnership

– Advance the development, implementation, and visualization of flexible, scalable time-series biodiversity indicators for diverse sectors, including national governments and industry

– Scope a biodiversity-monitoring and change detection program that leverages multiple data sources, including element occurrences, citizen science, remote sensing, and other data sources using artificial intelligence, to detect changes in species and ecosystem distributions and conservation status

– Maintain our reputation as a leader in conservation science by publishing our work in respected scientific journals

Central Rocky Mountain Interior Rainforest. NatureServe Global Status: Apparently Secure (G4).
Photo by Don Faber-Langendoen, NatureServe.

Decision-Quality Data

Develop and deliver the best available data on the location and conservation status of species and ecosystems to meet the conservation and management decision-making needs of a wide audience of users

GOAL Improve the accuracy and completeness of our species and ecosystem data through better standards and methods, collaborative science, and application of enhanced technology

GOAL Expand our ready-to-use, decision-quality biodiversity data by assembling a diverse array of spatial data products from the Network and a wider set of partners

GOAL Ensure that our data are up to date and delivered in near real time by making improvements in the ways we collect, curate, and serve data

Venus' flytrap (*Dionaea muscipula*). NatureServe Global Status: Imperiled (G2).
Photo by Eleanor Dietrich.

Decision-Quality Data

Key Performance Indicators

– Revise benchmark standards for data accuracy and completeness by 2022 and ensure that 90% of metrics meet benchmark standards by 2026

– Serve existing occurrences, habitat models, and range maps for G1 and G2 species and ecosystems via NatureServe Explorer by 2023; add data annually so that the full spectrum of spatial data are available for all G1 and G2 taxa by 2026

– Establish ongoing bidirectional data exchange for all member programs that use Biotics by 2022 and exchange data annually with all member programs that do not use Biotics by 2023

Tactics

– Reestablish and maintain an up-to-date taxonomic classification backbone for species and ecosystems; improve our taxonomic alignment services to facilitate data aggregation from the Network and other sources

– Engage Network scientists and additional experts and improve processes to enhance our capacity to keep global ranks current, and continue to provide leadership in the development of International Union for Conservation of Nature (IUCN) Red List Assessments

– Develop standards, methods, and tools to efficiently collect, process, and deliver the full spectrum of spatial data (*e.g.*, observations, element occurrences, ecosystem and landscape models, species and ecosystem range maps, species habitat models) from NatureServe, the Network, and other sources such as citizen science and data aggregators

– Develop the data and data structures that allow comprehensive reporting on species by the ecosystems in which they occur

– Advance our ecological integrity assessment methods by using remote sensing and rapid and intensive methods to provide rigorous and repeatable ecosystem element location ranking

– Review, revise, and implement a process to regularly assess and prioritize improvements to our data

– Improve the data exchange process to automate bidirectional near real-time flow and standardization of data between NatureServe and Network member programs with Biotics; establish repeatable procedures for exchanging data annually with programs that do not use Biotics

Rusty-patched bumble bee (*Bombus affinis*). NatureServe Global Status: Imperiled (G2).
Photo by Jessica Petersen.

Integrated Technology

Develop and deploy cutting-edge technology to streamline every phase of the data-to-decisions lifecycle

GOAL Design a scalable, secure, reliable, efficient, and cost-optimized foundation for NatureServe's next-generation solutions by establishing a technology architecture guided by industry best practices

GOAL Aggregate dynamic, diverse data sets from current and new sources by deploying agile and efficient big data management solutions that scale to meet the pace of global change

GOAL Automate the transformation of data into information products with powerful analytics and visualization tools that communicate biodiversity status and trends and the effectiveness of conservation actions

American bison
(*Bison bison*).
NatureServe Global
Status: Apparently
Secure (G4).
Photo by Jesse Kraft.

Integrated Technology

Key Performance Indicators

– Retire all on-premises servers and move all technology infrastructure to the cloud by 2023

– Complete requirements for Biotics 6 by 2022 and prototype architecture alternatives by 2023; transition to full production by 2024

– Incorporate artificial intelligence into NatureServe Explorer and other biodiversity dashboards to visualize and communicate biodiversity status and trends by 2025

Tactics

– Develop the next generation Biotics data management system as a cloud-native application to support collecting and managing the full spectrum of biodiversity data

– Design cloud-based analytics services and visualization tools that leverage artificial intelligence to generate geospatial products and time-series indicators

– Expand NatureServe Explorer to add a dashboard that displays biodiversity status and trends, user-friendly descriptions, maps, photos, and video so that NatureServe Explorer becomes the authoritative and widely used source of information about species and ecosystems

– Implement Explorer Pro as a secure online portal for all users who need access to high-resolution integrated spatial data products

– Deploy online conservation and environmental review tools to streamline state regulatory processes in the United States

– Optimize the delivery of configurable dashboards to maximize uptake around the world as governments execute the post-2020 global biodiversity framework

Saguaro (*Carnegiea gigantea*). NatureServe Global Status: Secure (G5). Sonoran Paloverde - Mixed Cacti Desert Scrub. NatureServe Global Status: Apparently Secure (G4).

Photo by Daniel Ramirez.

Compelling Communication

Become well known as the source for the best available biodiversity data, science, and technology to support decision-making and conservation action

GOAL   Increase NatureServe's overall brand awareness and impact through traditional and digital marketing, public relations, and corporate partnerships

GOAL   Enhance our reputation as a respected source of conservation science and data by publishing relevant content on a consistent basis via respected channels

GOAL   Expand comprehension and appreciation of the Network and our mission through compelling storytelling

Snowy owl
(*Bubo scandiacus*).
NatureServe Global
Status: Apparently
Secure (G4).
*Photo by
R. Taylor Images.*

Compelling Communication

Key Performance Indicators

– Increase overall reach and engagement metrics across all platforms by 2026

» 20% growth annually on Twitter (10,000 followers by 2026)

» 30% growth annually on Instagram (5,000 followers by 2026)

» 30% growth annually on the website (500,000+ users by 2026)

» 10% growth annually on Facebook (50,000+ followers by 2026)

» 10% growth annually on LinkedIn (5,000+ followers by 2026)

» 5% annual growth in podcast listens (250 listens within the first month of release by 2026)

– Receive at least 50 high-quality media hits annually by 2023

– Secure a celebrity endorsement/spokesperson by 2023

Tactics

– Build visibility through social media marketing and outreach/relationship-building with mainstream media; increase media coverage of our activities

– Cultivate influencer/celebrity endorsements by featuring them as guests on our podcast series or through other externally facing media

– Communicate the value of NatureServe and the Network to our state and federal partners

– Disseminate high-quality data analyses and visualizations that document biodiversity status and trends in North America

– Produce compelling, shareable content that communicates the value and impact of NatureServe and the Network on a regular basis through channels such as press releases, social media, articles, podcasts, newsletters, and annual reports

– Promote NatureServe staff as recognized thought leaders and ambassadors for biodiversity science on a national scale

Western Joshua tree (*Yucca brevifolia*). NatureServe Global Status: Vulnerable (G3). Mojave Mid-Elevation Mixed Desert Scrub. NatureServe Global Status: Vulnerable (G3). *Photo by Sundry Photography.*

Sustainable Funding

Build sustainable, balanced, and diverse revenue streams
to support our core mission

GOAL Establish a robust and sustainable philanthropic revenue stream by implementing an integrated programmatic fundraising plan and cultivating a culture of philanthropy across the organization

GOAL Develop and implement a government relations strategy that secures sustained investment from the U.S. government in developing and delivering biodiversity information

GOAL Increase earned revenue through expert conservation services, software as a service (SAAS), and data subscriptions with government, private industry, and nongovernmental organizations that leverage our data and scientific expertise

Georgia dwarf trillium (*Trillium georgianum*). NatureServe Global Status: Critically Imperiled (G1). *Photo by Jim Fowler.*

Sustainable Funding

Key Performance Indicators

– Increase revenue to $15 million annually by 2026, at least $2 million of which will be set aside to support core Network, science, and data functions

Tactics

Philanthropic Revenue

– Build an individual giving program with a primary focus on major gifts

– Build a strategic corporate and foundation relations program

– Identify and create case statements for key funding priorities

– Build a comprehensive donor communications strategy

– Increase Board of Directors engagement in fundraising activity

– Create a planned giving program

Government Relations

– Engage a government relations firm to secure appropriations and federal agency partnerships that support NatureServe and the Network

– Engage with partner organizations in supporting biodiversity-friendly legislation that will support NatureServe and Network activities

Earned Revenue

– Increase our expert conservation services to government agencies and the private sector to support the application of our data, tools, and scientific expertise for effective conservation and resource management, regulatory compliance, and risk abatement

– Initiate partnerships with and generate revenue from corporations by developing indicators and pursuing data licensing opportunities to help them evaluate their biodiversity impacts as a component of environmental, social, and governance (ESG) reporting

– Expand SAAS products such as Environmental Review Tools

– Increase demand for biodiversity location data by restructuring our pricing and Network revenue-sharing model and by delivering data and products via Explorer Pro, Esri Marketplace, and custom data requests

Dry-Mesic Loamy Longleaf Pine Woodland in Weymouth Woods State Park, North Carolina.
Photo by bobistraveling.

Robust Organizational Systems

Implement operating procedures and establish a culture
that maximizes our ability to deliver our mission

GOAL   Advance workforce diversity and attract and retain high-quality staff by establishing recruiting procedures that focus on equity, diversity, and inclusion and by promoting a culture that makes NatureServe an ideal place to work

GOAL   Grow the overall size of the organization and increase staff capacity by investing in crucial new positions, continuing to improve personnel management procedures, and providing professional development and training

GOAL   Improve our organizational effectiveness by developing and implementing efficient back-office systems and project management procedures

Cave salamander
(*Eurycea lucifuga*).
NatureServe Global
Status: Secure (G5).
Photo by Peter Paplanus.

**Robust
Organizational Systems**

Key Performance Indicators

– Evaluate and replace the organization's financial and accounting software stack by 2022

– Implement project management workflows and effective use of new project management software by 2022

– Improve applicant pool diversity to better reflect society and increase the number of black, indigenous, people of color, and LGBTQIA+ staff members by 25% by 2026

– Measure staff morale annually; maintain and improve the level of staff morale as measured by staff survey metrics

Tactics

– Develop human resources policies and procedures to identify the most qualified people from diverse candidate pools

– Invest in new staff positions that enable us to realize our strategic goals

– Promote and model NatureServe's values through day-to-day communication, value-driven decision-making, and visible reminders

– Improve the employee experience through recognition, coaching, and an effective feedback structure

– Provide regular teambuilding and leadership development opportunities

– Improve training of personnel and supervisors to provide opportunities for professional growth, development, and promotion within the organization

– Model transparent communication with staff by convening frequent town hall meetings and consistently delivering strategic operational and financial updates

– Acquire and implement modern project management systems and improve staff training to make project management more effective and efficient

– Improve our financial systems and budgeting and accounting procedures to provide standardized and transparent reports, accurate forecasts, and critical analytics for projects and budgeting

– Evaluate our human resources, payroll, and benefits platforms regularly to ensure current services provide maximum value

Mogoll deathcamas (*Zigadenus mogollonensis*). NatureServe Global Status: Critically Imperiled (G1).

Photo by Daniela Roth, New Mexico State Forestry. All rights reserved.