

Ecological Divisions of the United States

Ecological divisions are major landscapes that reflect climate and biogeography. Source for division boundaries: *NatureServe*, adapted from U.S. Forest Service.

Pacific Maritime
Dense coniferous forests of western red cedar, spruce, and giant Douglas fir—among the largest trees on Earth—dominate the steep rugged ranges that stretch from central Oregon to southern Alaska. The ocean moderating influence and the high coastal mountains produce a damp climate with mild winters and cool summers. The foothills give way to a narrow coastal plain punctuated by slender bays, alluvial fans, and tidal estuaries and deltas. The ecological and cultural value of the regions most famous fish have led some to call this land “salmon nation.”

Mediterranean California
A Mediterranean-style climate—with rainy mild winters and dry summers—coupled with an eclectic geologic history has produced a greater variety of plant and animal species in this region than anywhere else in the nation. Referred to as “an island called California” for its distinctive ecology, the Golden State harbors more than 1,200 unique species. Rampant development has consumed large areas of native habitat, imperiling dozens of these plants and animals.

Warm Desert
Cutting a vast swath across the nation's Southwest, each of the warm desert—Mojave, Sonoran, and Chihuahuan—has its own distinct vegetation and character. The region includes the iconic “sky islands”—isolated mountain ranges rich in biological diversity. Through modern engineering marvels—dams, irrigation systems, and air conditioning—our society has defied the desert and built upon it a series of boomtowns (Las Vegas, Phoenix, Tucson). With increasing population and water scarcity, can this lifestyle survive as the taps run dry?

Intermountain Basins
This vast and topographically diverse space is bounded on the east by the Rockies and on the west by the Cascades and the Sierra Nevada. In this basin and range landscape, geology is made visible as an ever-present force that has written Earth's history layer upon layer. The Intermountain Basins include the dramatic red rock canyons of the Colorado Plateau, the Great Salt Lake, thousands of square miles of sagebrush terraces, and some of the nation's greatest wilderness areas and national parks.

Rocky Mountains
Meriwether Lewis, upon first sighting the spine of the continent on May 26, 1805, wrote: “These points of the Rocky Mountains were covered with snow and the sun shone on it in such manner as to give me the most plain and satisfactory view.” Visitors have marveled ever since at these jagged, peaked ranges separated by glacier-carved valleys. Ponderosa pine forests at lower elevations, montane grasslands, subalpine forests of spruce fir or lodgepole pine, and alpine tundra are all characteristic of this greatest North American range.

Madrean Semidesert
Covering south Texas and a substantial part of northern Mexico, the Madrean Semidesert is a landscape of hot, dry scrublands where spiny grasses, cacti, and thorny shrubs such as mesquite are the dominant vegetation. The desert is home to many birds, reptiles, and amphibians rarely seen in the U.S., but common in Mexico and Central America. Even in this lightly populated region, small farms and development along the Rio Grande have left little habitat truly intact.

Western Great Plains
Despite the promises of boosters, rain did not follow the plow to these open prairie parklands. In fact, evaporation usually exceeds precipitation in these semiarid plains, where drought, wildfires, and grazing help curb the spread of woodlands. Prairie pastures in the northern plains serve as the continent's waterfowl factory. Towards the west, burrowers like prairie dogs and the black-footed ferrets that prey on them, share the short grass prairie with North America's fastest land animal, the pronghorn.

Eastern Great Plains
Wheat, corn, and soy row dominate the gently rolling plains and deep black soils where tallgrass prairie once touched the bellies of buffalo. American westward expansion cleared the nation's grainery, here converting to agriculture a blanket of bluestem grasses and wildflowers that extended from east Texas to the Canadian border. Efforts to preserve remaining fragments offer allow wildlife to burn and cattle to graze, mimicking natural patterns that maintain the grasslands' open character.

Laurentian and Acadian
Autumns are gorgeous and winters harsh in this region that extends in a broad arc from the northern Great Lakes through Pennsylvania's Allegheny highlands, upstate New York, northern New England, and adjacent parts of Canada. The retreat of the glaciers is revealed in the uncounted thousands of small lakes that define the landscape. These cooler northern forests, often dominated by conifers, are dotted with marshes, northern white-cedar swamps, and other wetlands.

Central Interior and Appalachian
The ancient Appalachians, rounded and folded by 300 million years of geologic history, define much of this region. Often dominated by oak and hickory, the Eastern deciduous forests are a highly diverse mix of tree species and habitat types. As these forests have receded over the past century to what the rich wildlife they shelter—black bears, wild turkey deer. The southern Appalachian include a remarkable diversity of freshwater species and the greatest collection of salamanders on Earth. Despite three centuries of settlement, surprising pockets of wilderness remain.

Gulf and Atlantic Coastal Plain
Stretching from Cape Cod south through Florida and west to the Texas Gulf Coast, the Coastal Plain includes such prominent features as the Chesapeake Bay, long chains of Atlantic and Gulf barrier islands, and the lower Mississippi River, with its fragile delta. Much of the southeastern Coastal Plain was once covered by a vast longleaf pine forest, long since transformed by logging and agriculture.

Caribbean
Water defines the low-lying lands of South Florida and the Keys, which share a subtropical flora and fauna with the Caribbean islands. The population boom here has increasingly altered natural flows, consumed developable land, and boosted demand for water, raising the threat to the region's keystone natural system—the Everglades. Rainfall alone supplies the water for the vast wetland, creating the unique “sheet flow” of water over broad, shallow marshes that led Marjory Stoneman Douglas to dub it “a river of grass.”

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LandScope America is a new online resource for the land-protection community and the public. Bringing together maps, data, photography, and stories, it helps people explore natural lands and waters and conserve the places they love.

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LandScope America

Natural States of America

The American landscape is incomparably rich and varied. From the Gulf Coast to the Great Plains, Atlantic to Pacific, Arctic tundra to Hawaiian islands, our natural heritage is captured in song and story and in the national imagination. This map focuses on these great places and how we the people are protecting them.

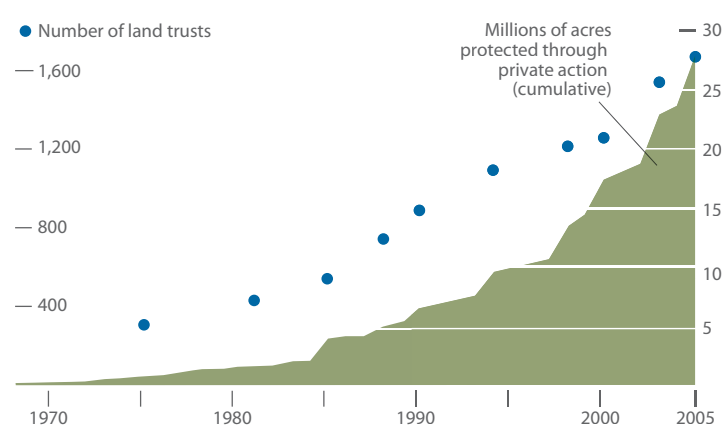
Over the past two decades, America's approach to conservation has changed. Once mainly the responsibility of the federal government, land protection is increasingly about partnerships among communities, land trusts, private landowners, sportsmen, corporations, and public agencies.

The land trust movement has grown into a mighty force. Through 1,700 land trusts large and small, citizens have united to conserve the places they love. Fueled by volunteer energy, land trusts are the ground troops of conservation, conserving wildlands, urban parks and green spaces, rivers and trails, and the open spaces of our farms, forests, and ranches.

While people are acting locally, they are thinking and planning at ever larger scales. Through sound science and landscape scale planning, they are addressing the most complex issues, including the challenges posed by climate change.

Funding sources and conservation methods have also changed. Conservation easements—voluntary protection agreements—have grown dramatically. Tax credits and incentive programs encourage private landowner action. And voters across the country have sent a clear message: conservation is a good investment.

Why? Because healthy natural ecosystems sustain human health and economic well-being, providing clean air and pure water. Parks and natural areas give us room to roam and places to hunt, fish, hike and play. They enrich our lives and nourish our spirit. They are the common wealth of our nation.



The first century of U.S. land conservation was marked by federal designations of national parks, forests, and refuges, but over the past few decades action has shifted to the state and local level. Between 1998 and 2005, states invested \$13 billion in land conservation, while the federal government spent just \$1.5 billion. The number of private land trusts has grown steadily, land protected through acquisition and easement exceeds 30 million acres as of 2008. Sources: Land Trust Alliance, The Conservation Fund, The Nature Conservancy, and The Trust for Public Land.

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This Land is Our Land

America the beautiful: here it is as diverse as our people. From the pinacle of Denali to the Mississippi Delta, this land spans tundra and tallgrass, forest and plain, mountain and shore. We are rich with freshwater and salt, great lakes and silent ponds, moody marshes and swamps loud with birdsong. This land contains our past, and with care, will replenish our future.

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Geography of Hope
12 Conservation Success Stories



- For centuries, **Wao Kiele O Puna** has been a sacred place for Native Hawaiians, where people use it for traditional hunting and gathering. This largest remaining expanse of lowland tropical rain forest on the island of Hawaii is a key aquifer recharge area for the island's main drinking water source. In 2006 The Trust for Public Land acquired the 2,000-acre rain forest with funding from the U.S. Forest Service's Forest Legacy Program, an important federal source for protecting privately owned forest lands. The land has been conveyed to a state agency, preserving its natural, cultural, and spiritual values for all Hawaiians.
- Saving and restoring forests is key to fighting global warming. The 24,000-acre **Garcia River Forest** in northern California is among the first independently inspected and verified sources of carbon credits. This previously logged property was acquired by The Conservation Fund in 2004, with The Nature Conservancy holding a conservation easement. As the forest regrows, the redwoods, and Douglas firs will absorb carbon dioxide, helping mitigate climate change. For about \$5 per month on their utility bill, Californians can voluntarily offset their energy use with Garcia River Forest carbon credits. The income will support restoration and sustainable forest management.
- Building community support and a vibrant coalition of partners has been the key to saving the **South Puget Sound Prairies**, an ecosystem that almost vanished. Over the last decade private landowners, government agencies, and conservation groups have restored thousands of acres of these oak savannas and golden grasslands. Land managers control invasive nonnative species through prescribed burning and weed removal, while volunteers have planted a million native seedlings. It's a highly successful model of hope and vision leading to community engagement and conservation action.
- With 31 million acres already under lease across five Rocky Mountain states, energy development will dramatically impact the western landscape in coming decades. Along Montana's 100-mile **Rocky Mountain Front**, one can still see the West as Lewis and Clark encountered it. Spurred by sportsmen's groups united to conserve "America's Serengeti" for hunting, fishing, and outdoor recreation, Congress recently prohibited any new oil and gas leases on federal land here. While extraction from state and private lands still poses a risk, conservation easements and lease buybacks may keep this extraordinary landscape healthy and whole.
- Hunching has been a way of life for a century in the **Malpai Borderlands**, where New Mexico, Arizona, and Mexico meet. Here a partnership among the region's ranching families maintains that legacy while conserving a wildlife-rich landscape of high desert grasslands and isolated mountain ranges, or "sky islands." The Malpai Borderlands Group has protected 75,000 acres through conservation easements and has improved the health of grazing lands by returning fire to the ecosystem. The group also conceived the practice of "grassbanking," where neighboring ranches share grazing lands so that fragile areas can be rested during drought.
- The scenic beauty and magnificent wildlife of the **Laramie Foothills** testify to a legacy of stewardship by generations of Colorado ranching families. Paleo-Indians camped on these rugged grasslands 13,000 years ago. Now the Laramie Foothills Mountains to Plains project, a partnership among Larimer County, the city of Fort Collins, and local landowners, is shielding an 85-square-mile open space corridor from rampant residential development spreading along the Front Range. Funding comes from Great Outdoors Colorado, a state trust fund, and millions approved in local ballot initiatives. By voting for conservation, Coloradans have put their wallet where the wildlife is.
- Behind the story of the near extinction of tallgrass prairie, the continental sea of grass that gave way to the plow, making America's breadbasket to the world in the past two decades, Laramie Foothills Mountains to Plains project's efforts at recovery. The Nature Conservancy's **Tallgrass Prairie Preserve** in Oklahoma is the largest protected remnant, with other large reserves across the Midwest. Greater scientific attention and increasing public acceptance of prescribed fires have been keys to restoring this great American landscape.
- The **Chicago Wilderness** is more than a place—it is a people-powered call to action. Over the past decade a coalition of 200 groups has helped conserve and restore a 225,000-acre network of parks and wild places in Illinois, Indiana, and Wisconsin. Citizen scientists have made biodiversity their passion, monitoring populations of frogs, birds, and butterflies. Thousands of volunteers restore prairies, woodlands, and wetlands, many of which are in or near urban areas. And young students are learning that nature is nearby, ensuring that "no child is left inside."
- The **Apalachicola River Basin** forms the built-up edge within one of America's biodiversity hotspots—the Florida Panhandle. More species of reptiles and amphibians are found here than anywhere else in the United States. A rich estuary for fish, crab, and oysters, the river and bay support a valuable seafood economy. Lands for conservation, recreation, and wildlife watching including national forest, state forest, state parks, and nature preserves, span several hundred thousand acres. With an impending tide of residential development, and impudent water consumption upstream, will that be enough to preserve the nature of this place?
- Metro Atlanta's sprawling growth is gobbling up open space and threatening the region with water shortages. Hope lies in conserving green space throughout the watershed, essential to securing sufficient clean water for five million people. Over the past decade the **Chattahoochee River Greenway Project** has protected 70 miles of riverfront, doubling previously existing parkland. The goal is to complete a 180-mile green necklace from the mountains through Atlanta and beyond. The project connects people to nature through recreation, access to parks and riverfront, reduces pollution, and strengthens the economy and quality of life for Georgians.
- Amidst ancient Appalachian ridges in southwest Virginia lies the **Clinch Valley**, the nation's leading hotspot of aquatic diversity. Dozens of rare species of freshwater fish, mussels, and cave-dwelling animals depend on clean water in the Clinch and Powell rivers and their interconnected cave systems. People need clean water too. While natural resources—coal, timber, and arable land—are the basis for the region's economy, unwise practices can threaten water quality. Through innovative strategies such as conservation easements, forest management, local farmers are protecting the streams and surrounding forests, demonstrating the connection between a healthy rural economy and a healthy environment.
- The wild bluffs and cobble beaches of the **Bald Coast** form an iconic stretch of Maine's coastline, a place for hiking, hunting, and wildlife watching. Here along the nation's easternmost shore, the efforts of conservation-minded landowners, land trusts, and state agencies have conserved more than 15,000 acres, with funding from individuals, foundations, and the Land for Maine's Future bond program. Statewide, nearly a half million acres and 1,019 miles of shoreline have been conserved through this state bond program, ensuring public access for traditional uses of the land. It's a wise investment by the people of Maine in the long-term health of the state's economy.

www.landscope.org

LandScope America is a new online resource for the land-protection community and the public. Bringing together maps, data, photography, and stories, it helps people explore natural lands and waters and conserve the places they love.



Open Space at Risk

From panoramic western landscapes to urban pocket parks, America's open spaces are a cherished part of our national and local identities. While their ecological importance and ability to sustain our spirits have long been appreciated, only recently has the economic value of these lands and waters been more fully understood. Forest, wetlands, and other natural lands provide people with essential services, including pure water, abundant wildlife, and a moderating influence on our changing climate.

Yet America's open spaces—rural, urban, and suburban—are dwindling rapidly. Each year about two million acres of open space are converted to other uses, amounting to almost 6,000 acres a day. **Development pressure**—the spread of housing and other structures into agricultural lands and natural habitats—is a major force in supplanting and fragmenting open space. Given that U.S. population is projected to increase by 135 million people over the next 40 years, how we choose to develop will be key to the sustainability of our farmlands, working forests, and natural habitats.

Among other concerns: Widespread **oil and gas exploration** is transforming many formerly serene rural western landscapes. Nearly 80,000 major dams have **altered water flows** in rivers and streams across the nation, leading to declines in native fish and other aquatic life. The spread of nonnative **invasive species** is rendering rangelands unusable, clogging water intake pipes, and reducing native biodiversity. And looming above the existing panoply of threats is the specter of **climate change**. An unpredictable mix of rising temperatures and shifting rainfall patterns will not only disrupt natural ecosystems, but also exacerbate the impact of more familiar threats (see maps at far right).

Fortunately, awareness and action to protect open space has never been greater. Using a variety of innovative conservation approaches, citizens, land trusts, and public agencies have rallied to protect many of America's finest lands and waters (see their stories above). The need now is for increased investment, continued commitment, and renewed hope for our future.

LandScope America is supported by a generous grant from the West Hill Foundation for Nature. The following organizations have partnered with NatureServe and the National Geographic Society to develop LandScope America: Colorado Natural Heritage Program, Florida Natural Areas Inventory, Maine Natural Areas Program, Maine Department of Inland Fisheries and Wildlife, Virginia Department of Conservation and Recreation—Natural Heritage Program, and Washington Natural Heritage Program. We thank the many groups who provided data and assistance for this map, especially Colorado State University Conservation Biology Institute, HSI Inc., the Land Trust Alliance, The Trust for Public Land, The Nature Conservancy, U.S. Forest Service, and U.S. Geological Survey. Thanks to 128 for its support in printing this map.

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A Gallery of Threats

Across America a variety of land use activities and other threats are taking a toll on our remaining open spaces and natural habitats. Alteration of the landscape from development and traditional resource-extraction industries—such as mining, logging, and oil and gas drilling—is now being further exacerbated by growing markets in biomass-based fuels and wind energy. Other, often less visible, threats include disruptions to natural fire regimes and forest pest outbreaks promoted by warming climates.

High resolution (30M) satellite imagery courtesy of Google Earth. www.google.com. Copyright 2008. All rights reserved.

Logging can eliminate old-growth forests, fragment remaining forest, and degrade sensitive wildlife habitats and riparian ecosystems. Logging roads may open access to previously remote areas and sap nearby streams.

Mining of coal and other minerals not only transforms the mine site itself but water pollution and stream siltation. Mountain-top removal, a technique increasing in use, results in landscape destruction and habitat loss.

Oil and gas drilling to save our fossil fuel addiction has led to the degradation of natural landscapes and riparian ecosystems.

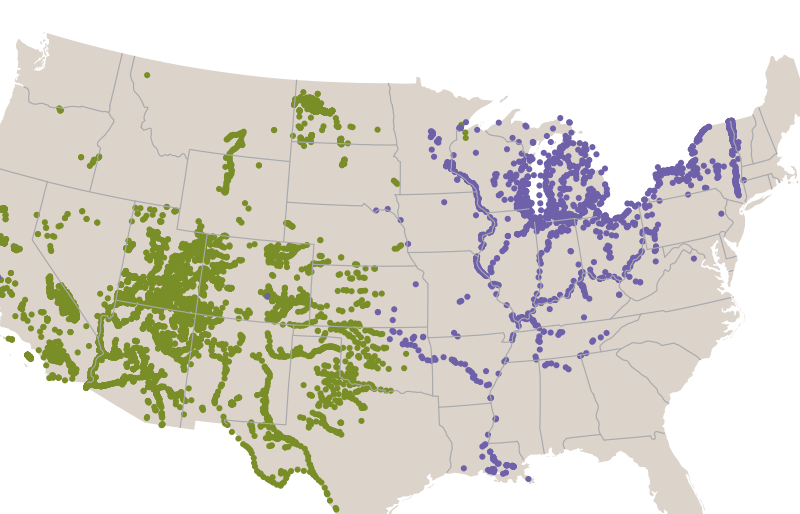
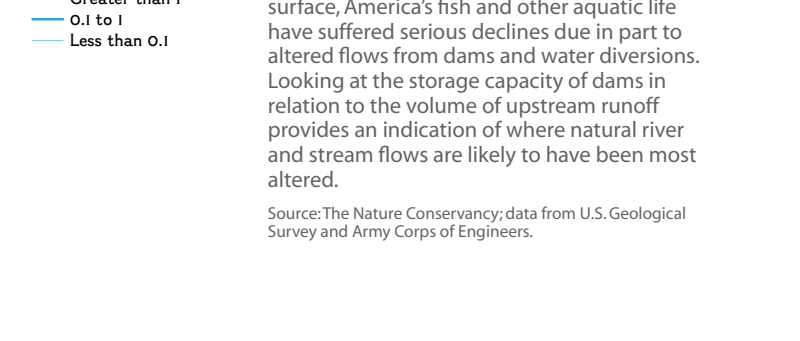
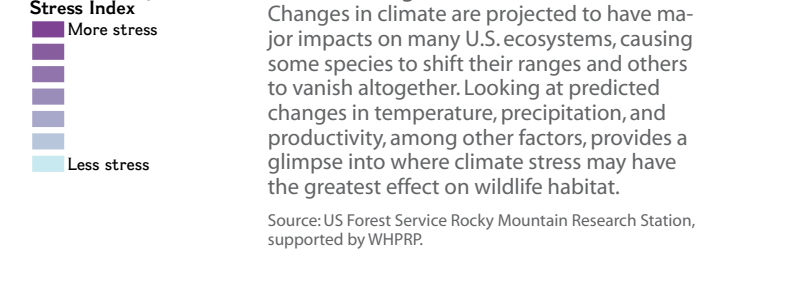
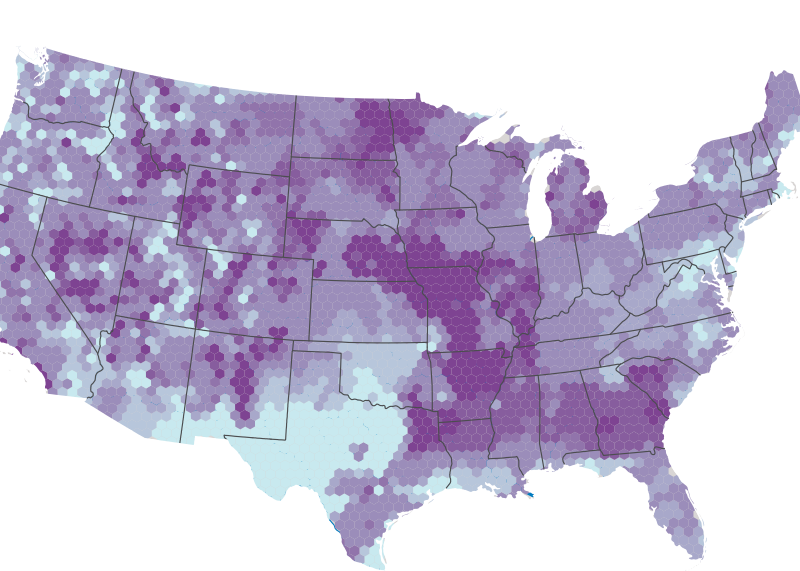
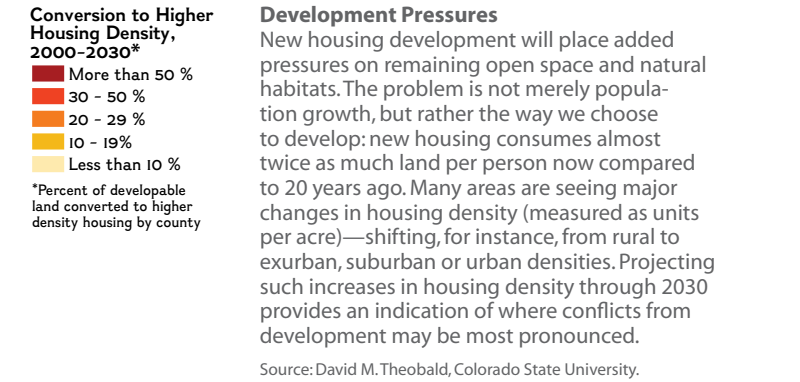
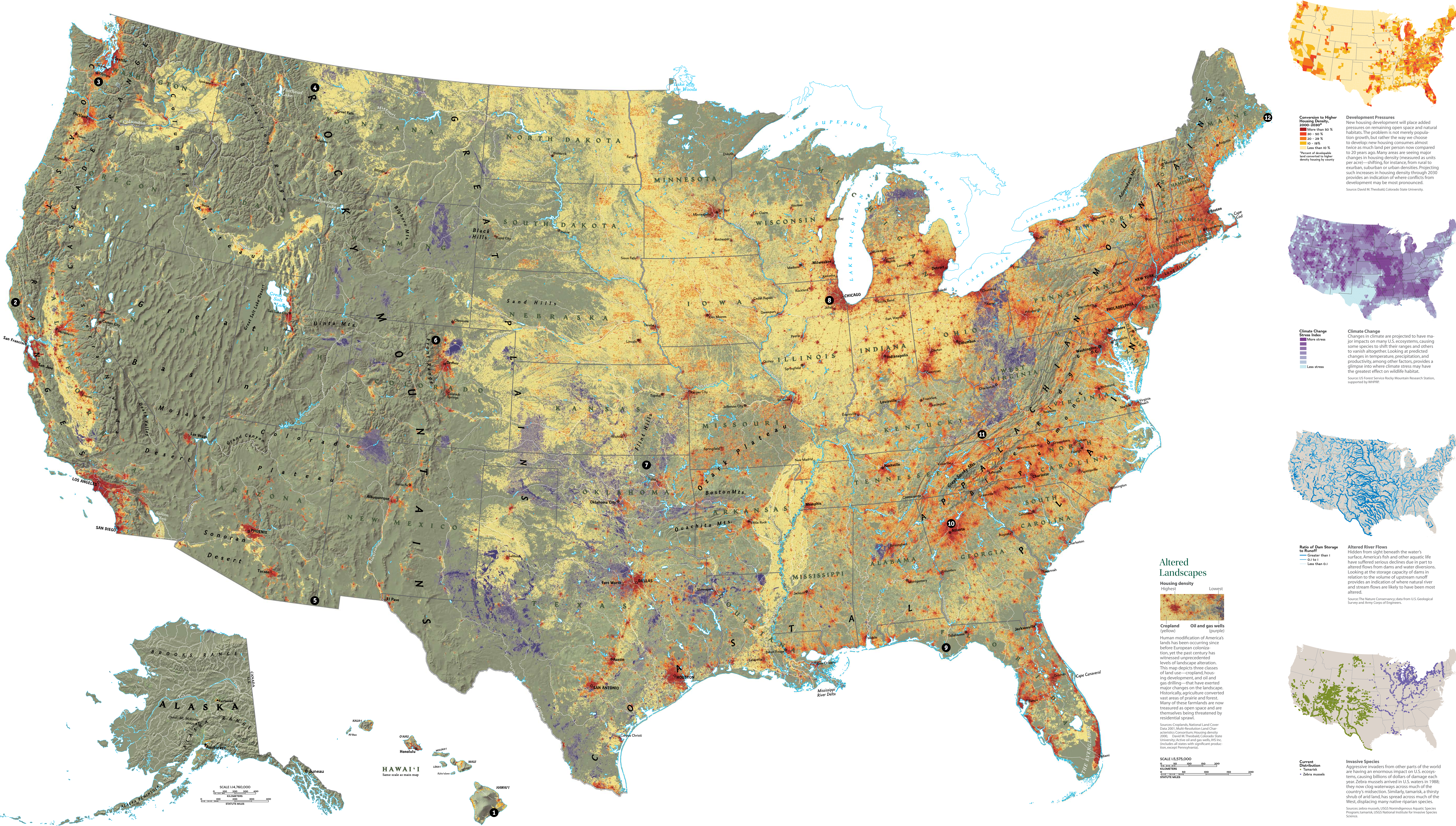
Irrigation is applied to more than 15 million acres of farmland, often at the expense of native grasslands. Canal irrigation has made replanting of natural waterways and restoration of riparian ecosystems.

Suburban sprawl is consuming prime farmland, a trend that shows no sign of slowing.

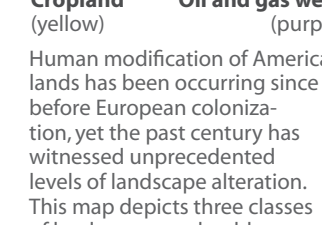
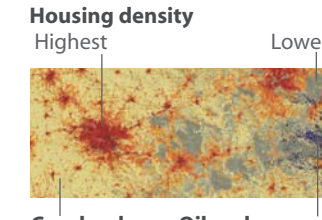
Forest fires are changing the very nature of our forests. Some, such as the Yellowstone fire, have been set by humans. Others are the result of lightning strikes. In the Rockies, fires have become more frequent and more intense.

Coastal areas, home to about half of the entire U.S. population, are having an enormous impact on U.S. ecosystems, causing billions of dollars of damage each year. Zebra mussels arrived in U.S. waters in 1988; they now clog waterways across much of the country's midsection. Similarly, tamarisk, a thirsty shrub of arid land, has spread across much of the West, displacing many native riparian species.

Source: NOAA, U.S. Geological Survey, U.S. Forest Service, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. National Institute for Environmental Studies.



Altered Landscapes



Human modification of America's lands has been occurring since before European colonization, yet the past century has witnessed unprecedented levels of landscape alteration. This map depicts three classes of land use—cropland, housing development, and oil and gas drilling—that have exerted major changes on the landscape. Historically, agriculture converted vast areas of prairie and forest. Many of these farmlands are now treasured as open space and are themselves being threatened by residential sprawl.

Sources: Croplands, National Land Cover Data 2001; Urban Expansion and Characteristics, National Land Cover Data 2001; Oil and Gas Wells, U.S. Geological Survey, National Energy Information Administration. Active oil and gas wells, HSI Inc. Includes all states with significant production, except Pennsylvania.

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