Migratory Songbirds: A Call to Action and Collaboration

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Jacksonville FL

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Talk Dedicated to

Michael Hutchins

Michael Hutchins, Ph.D.

- Director, American Bird Conservancy's Bird-Smart Wind Energy Campaign
- Founding Partner/Dir. of Conservation & Science, World Safaris/Safari Professionals
- Executive Director/CEO, The Wildlife Society (2005-2012)
- Director/William Conway Endowed Chair, Dept of Conservation and Science, Association of Zoos and Aquariums (1990-2005)
- Conservation Biologist and Coordinator of Research, Wildlife Conservation Society's Bronx Zoo (1985-1990)

Birds as Indicators of Environmental Health

Premier "canaries in the coal mine"

- Abundant and widespread
- Integral part of ecosystems
- Sensitive to environmental change and degradation
- Respond quickly to conservation actions
- Healthy bird habitat equals economic well being
- Long history of monitoring

American Dipper

The concept **of wild bird indicators** has been applied widely throughout the world **in other State of the Birds** reports and has been accepted as an **important measure of environmental health**.

Birds are perhaps some of the best indicators of environmental health. When bird species decline, become threatened or worse go extinct – we become threatened and our health as a species and certainly our integrity as a species becomes threatened.

Birds **are excellent indicators** because they are:

- Abundant and widespread
- Integral part of our ecosystems
- Sensitive to environmental change and degradation
- Respond quickly to conservation (success stories such as BAEA)
- Healthy bird habitats equates to economic well being
- Indicators of human quality of life

State of the Birds reports have been used worldwide to assess the health of bird populations and their habitats.

In U.K. for example**, "farmland birds indicator"** has been used by government as a measure of environmental health and has influenced national agricultural policy (Mark Avery story)

It is in the spirit and need - that the State of the Birds reports were created. To provide an assessment, a report card if you will of how the Birds in the United States are doing……so no more passenger pigeon or Bachman warbler events will happen under our watch.

Last known bird-1918

Last known bird-1963

Last known bird-1962

Last known bird-2004

While we remember that the passenger pigeon symbolizes the threat of extinction from 100 years ago… we also need to remember that there have several more recent extinctions including "modern day extinctions" of other extremely charismatic birds.

The last known Carolina Parakeet died in 1918….it's demise was likely caused by deforestation combined with hunting. They were considered an agricultural pest. The last bird was also in the Cincinnati Zoo.

Eskimo Curlew once flew through the rocky Mts feeding exclusively on insects and the rocky mt grasshopper. Another really abundant in the 1870s, it's demise was likely due to overhunting and the decline of the Rocky Mountain Grasshopper (wiped out with pesticides and the spread of agriculture)

Bachman's Warbler…..habitat loss

Then there's Hawaii – the extinction capital of the world….The Po'ouli or black-faced honeycreeper was only first discovered in 1972. It almost went extinct before it was identified….

And unfortunately there are more – but let's not dwell on these let's use them as examples, not forget them and learn from them.

Not only that – we have won many of these battles as well. There are many success stories…What I'm most positive about is how resilient nature actually is!!

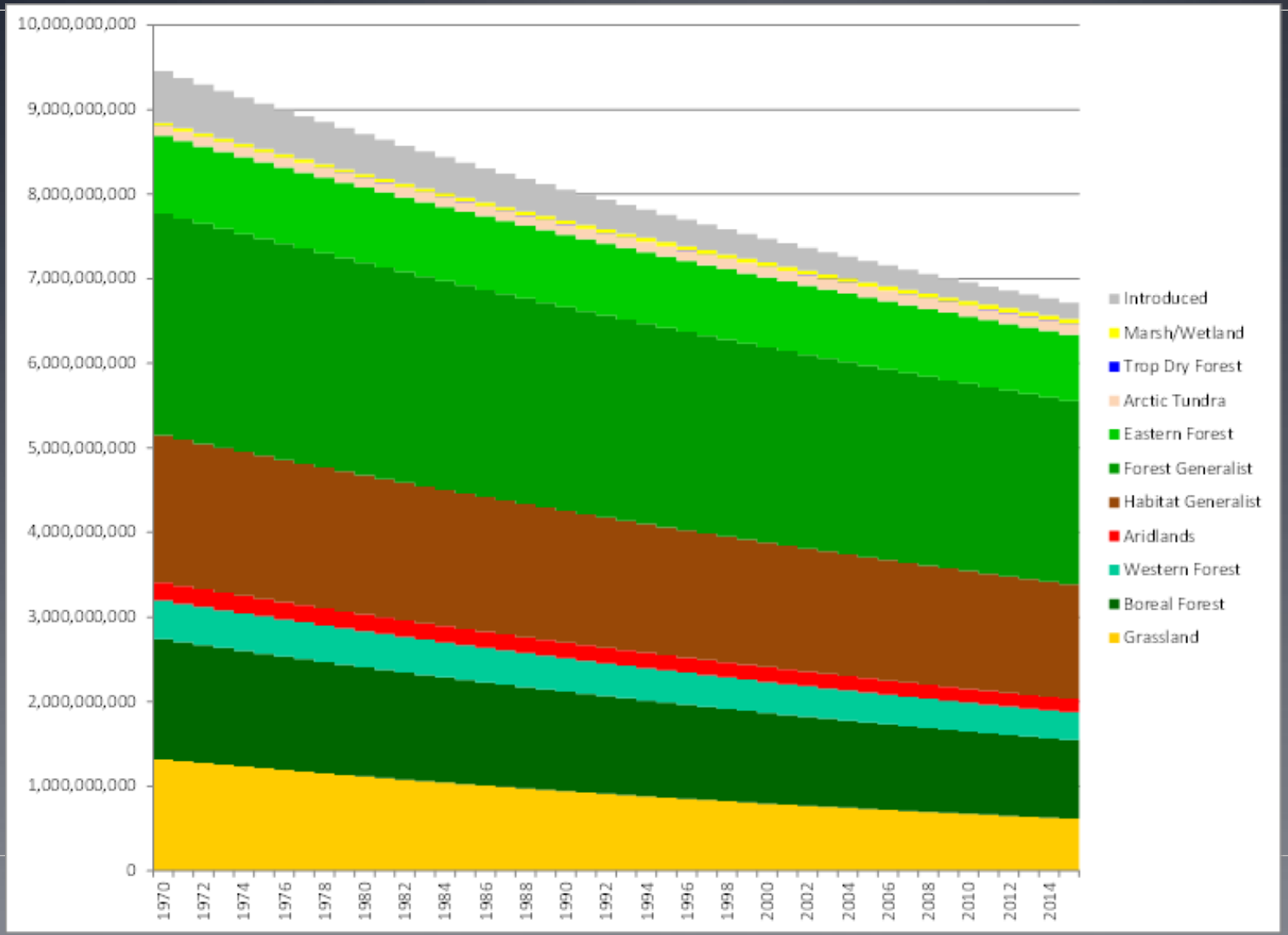
Conservation Works!

Conservation works….There are many examples of species…other passenger pigeons…. with their own remarkable biological histories that we have managed to turn into wonderful success stories. That's an important lesson.

Conservation when applied appropriately not only works…..it can be extremely effective.

Does it matter if we lose a species? Of course it does.

The State of North America's Birds 2018: It's Not Good News

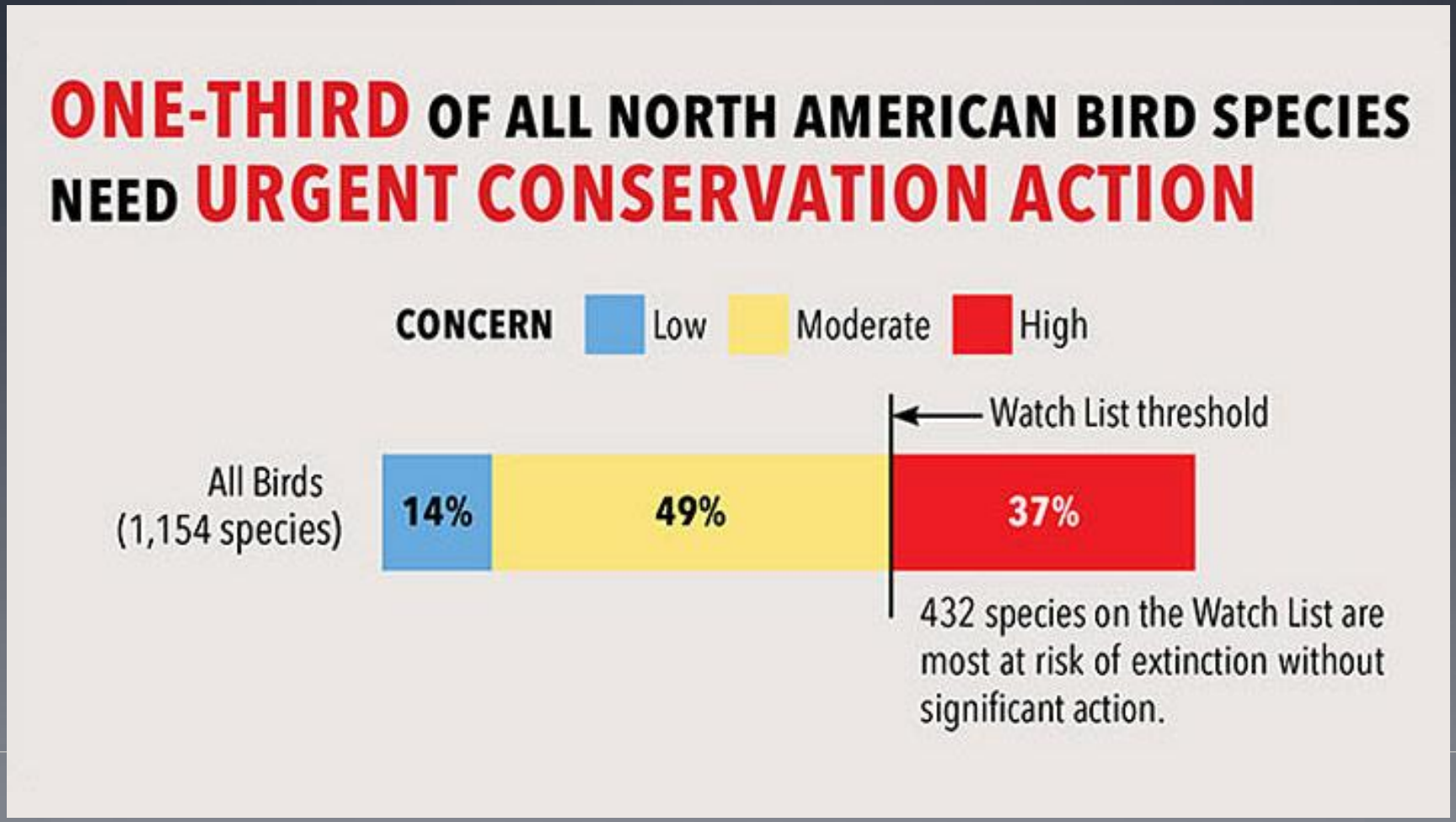


The State of North America's Birds 2018: It's Not Good News

- New Science Highlights Urgency and Magnitude of Challenge
- **Net Population Loss of 2.3 billion native landbirds since 1970**
- Net Loss in ALL habitats; largest in Grasslands and Boreal Forest
- 50% of Loss—10 most abundant and widespread species
- Efforts to Reverse Declines — Insufficient
- LOTS of Successful Conservation Examples to build on

The State of North America's Birds 2016: Report Card

First ever assessment of all bird species in Mexico, U.S., and Canada



The State of North America's Birds 2016: Report Card

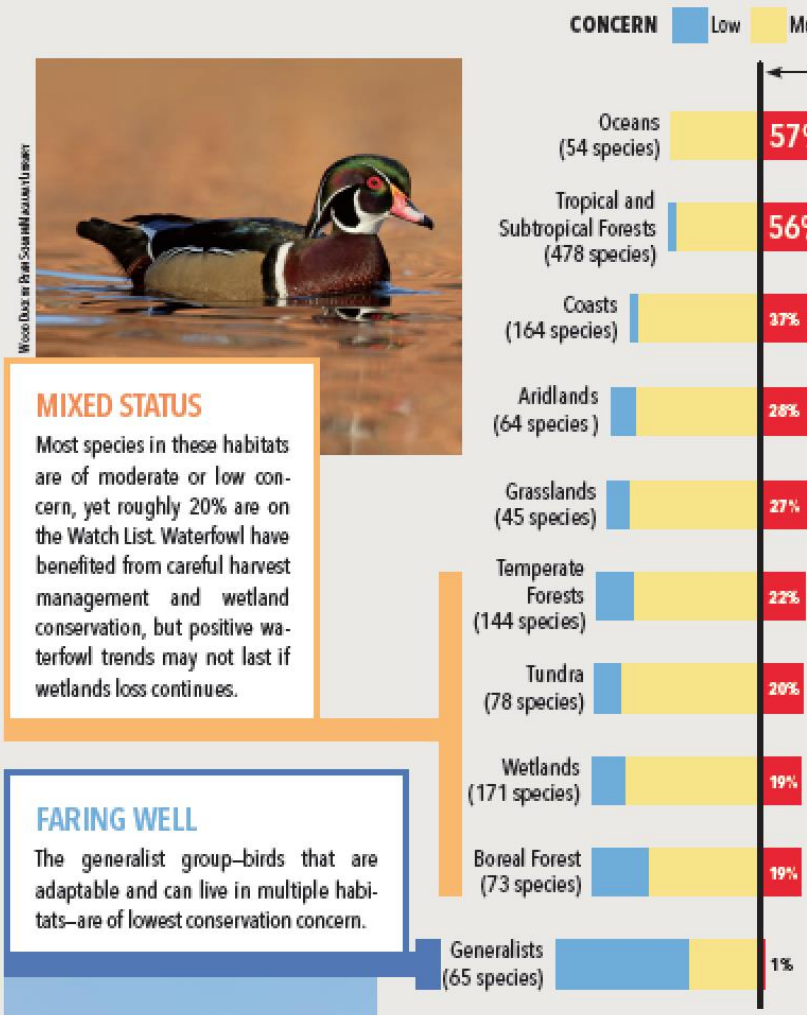
CONSERVATION CONCERN ACROSS HABITATS

MIXED STATUS

Most species in these habitats are of moderate or low concern, yet roughly 20% are on the Watch List. Waterfowl have benefited from careful harvest management and wetland conservation, but positive waterfowl trends may not last if wetlands loss continues.

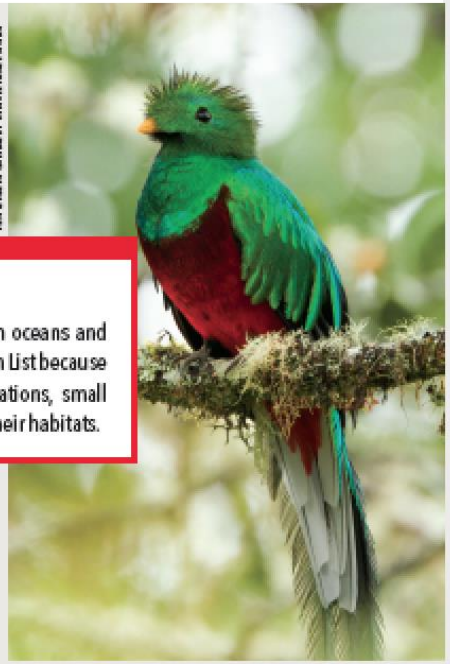
FARING WELL

The generalist group–birds that are adaptable and can live in multiple habitats–are of lowest conservation concern.



IN CRISIS

More than half of species from oceans and tropical forests are on the Watch List because of small and declining populations, small ranges, and severe threats to their habitats.

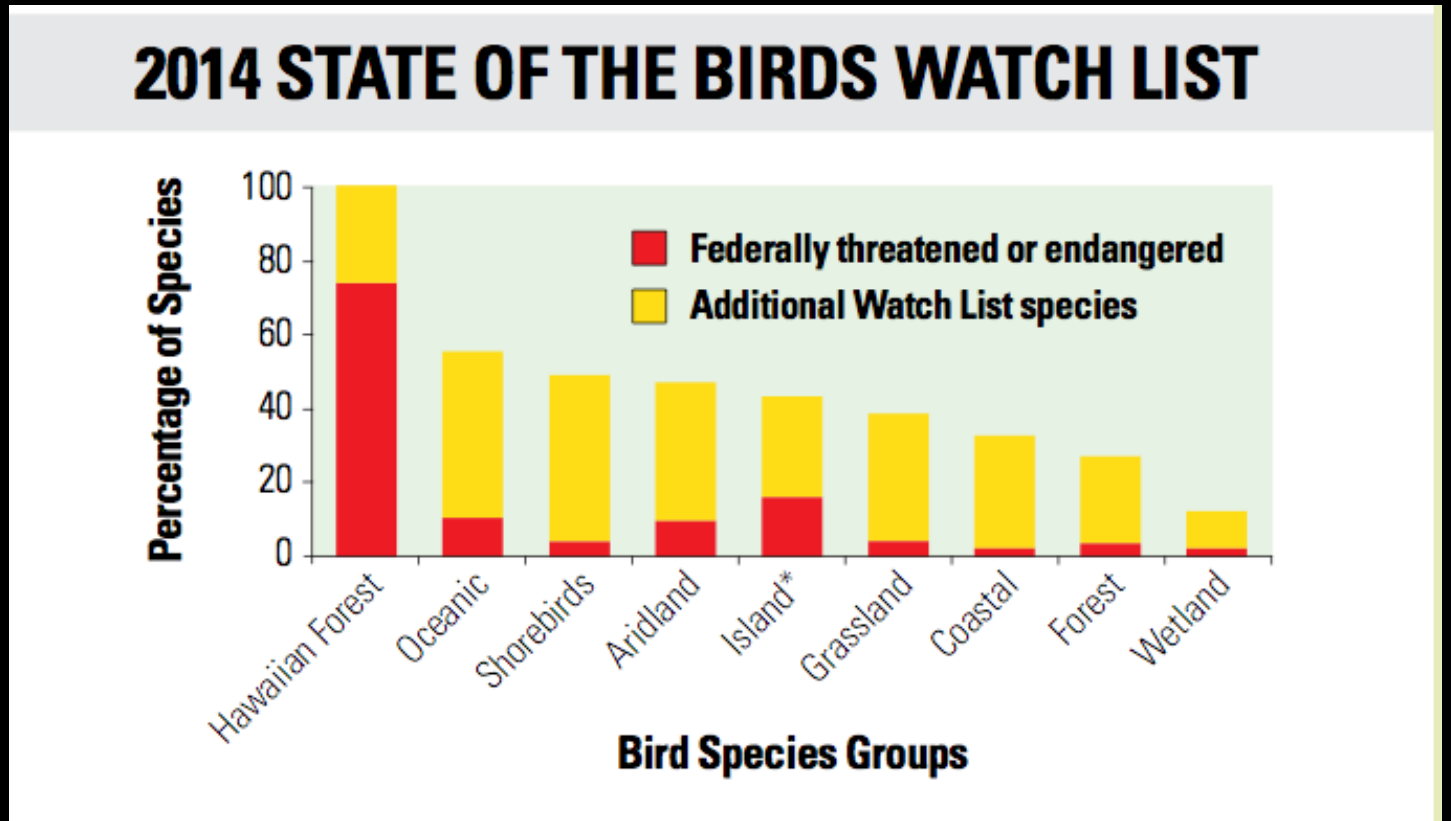


STEEP DECLINES

Many species in coastal, grassland, and aridland habitats are declining steeply. In particular, long-distance migratory shorebirds and species that migrate from the Great Plains to Mexico's Chihuahuan grasslands have lost, on average, almost 70% of their continental populations since 1970.

Preventing Extinction: 2014 Watch List

- 233 Species on 2014 State of the Birds Watch List
- 95 Species listed as Threatened or Endangered
- Goal: Keep remaining species from becoming T&E



Preserving Abundance

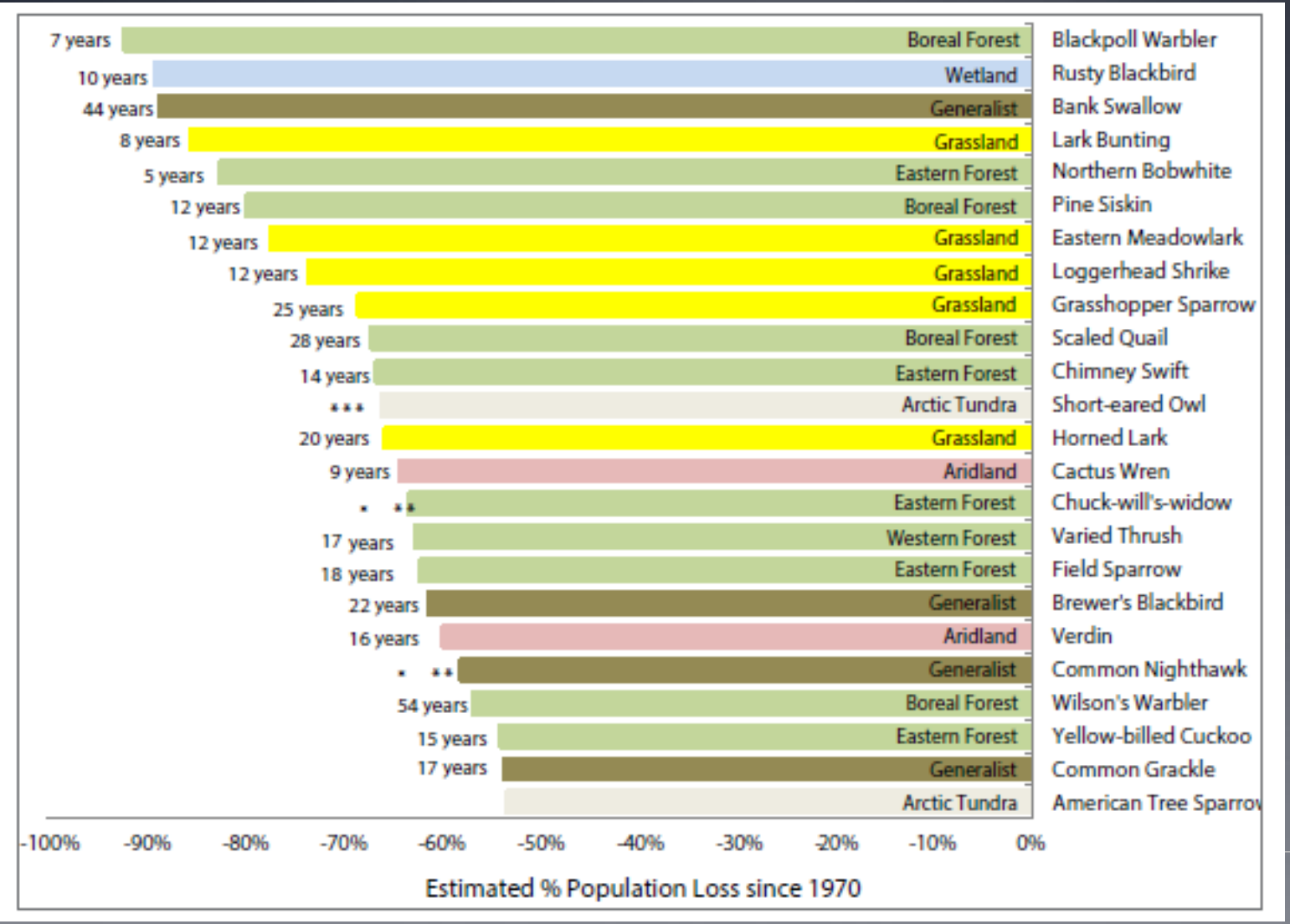
- Keeping Common Birds Common, while we can, is as important as preventing extinctions of rare species
- 33 still-common species have lost more than 50% of their population in the past 45 years – hundreds of millions of birds

Aerial Insectivores, such as swifts, swallows, and nighthawks are steeply declining

Northern Bobwhite are among the birds disappearing from rural American landscapes

Some unique and very important lands need greater protection, however, and through a suite of voluntary government assistance programs and organizations such as TNC and more than 1,700 land trusts that buy land and provide permanent easements, the 24-million acre network of private protected lands is as large as the entire NPS system in lower 48 states.

Common Birds in Steep Decline

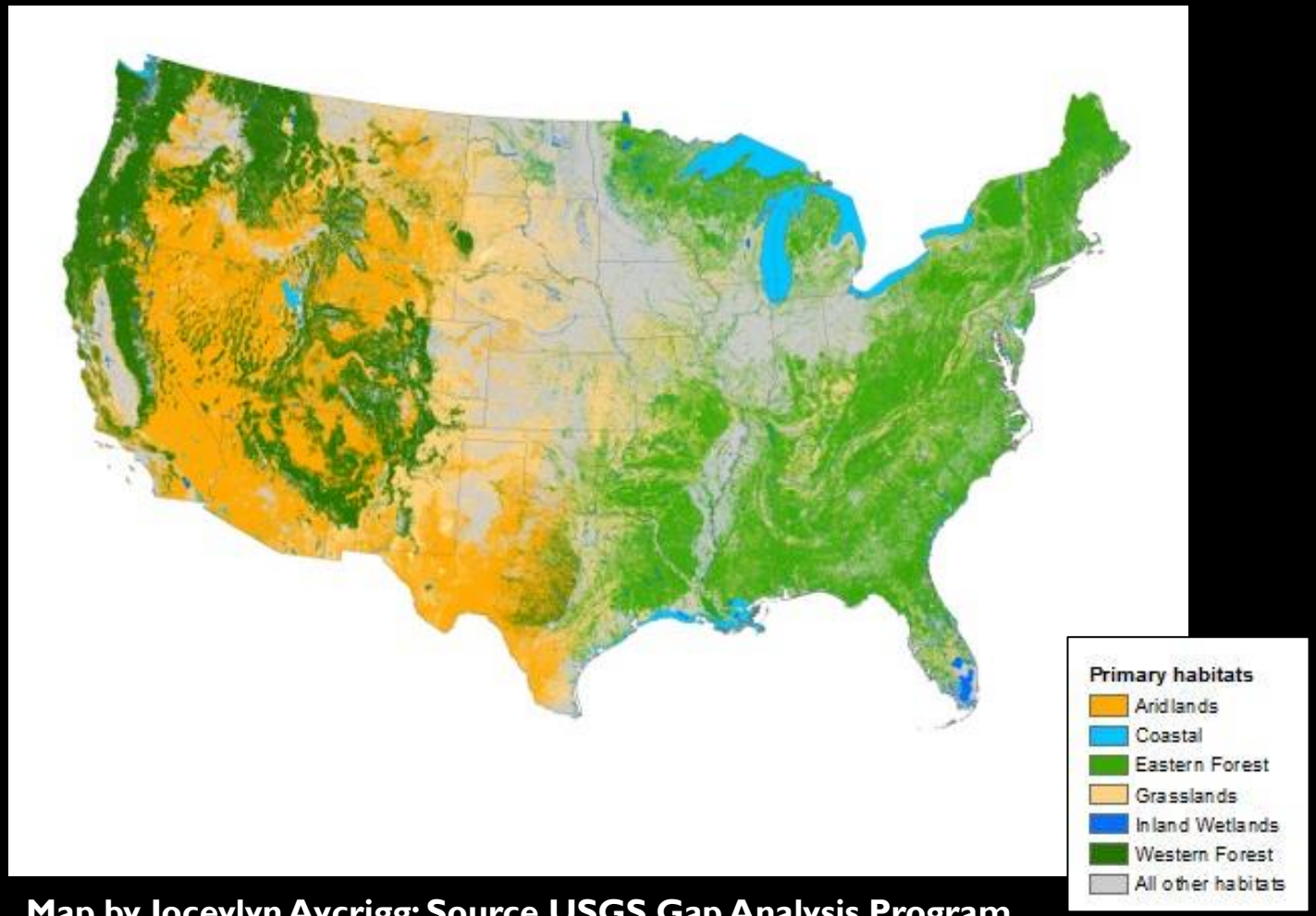


Common Birds in Steep Decline: These species have declined by > 50% over 40 years - but lack the full suite of elevated threats, small population size, and restricted distribution that, combined with steep declines, would warrant Watch List status. NOTE: The years indicates years to an additional 50% loss from current population size.

As portrayed in State of the Birds Reports in North America and around the world, birds are excellent indicators of overall environmental health—and their loss signals danger. Even relatively small percentage reductions in the abundance of widespread common species represent the loss of large numbers of individuals and substantial biomass. Such losses can disrupt ecosystem structure, function, and services. Thus successful conservation programs must not only address species at risk of extinction but also threats to the healthy functioning of the greater ecological community.

As part of our Species Assessment process, PIF identified 24 Common Birds in Steep Decline—species that are still too numerous or widely distributed to warrant Watch List status, but that are experiencing troubling long-term declines (Figure 2). All of these species have lost from 50%-90% of their populations since 1970, and most are projected to lose another 50% within the next 20-25 years. More than half are dependent on rural and agricultural landscapes, where loss of pastures and weedy margins, intensified crop production, and increased pesticide use are creating hostile environments for birds and other wildlife. Almost one-third migrate to Central or South America for the non-breeding period, where habitat loss poses a significant challenge for these species.

Birds as Breeding Habitat Indicators

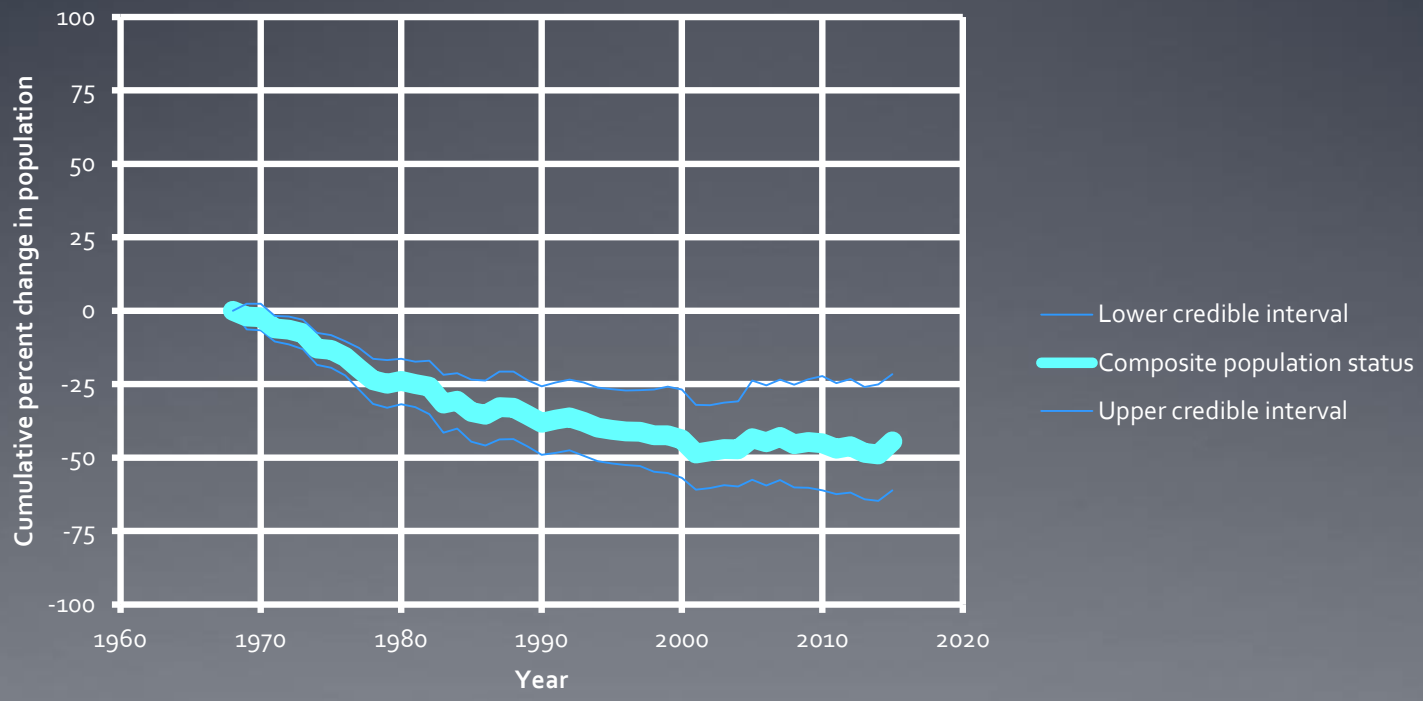


Map by Joceylyn Aycrigg: Source USGS Gap Analysis Program

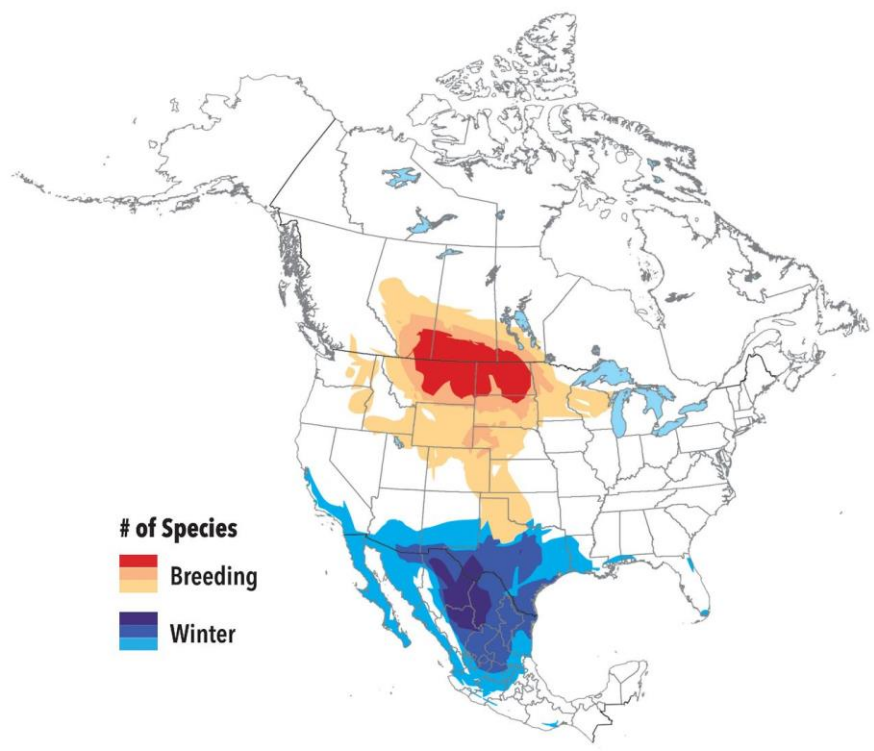
Species per habitat are:
Grasslands (24); Aridlands (17); Eastern Forests (26); Western Forests (39); Inland Wetlands (87).

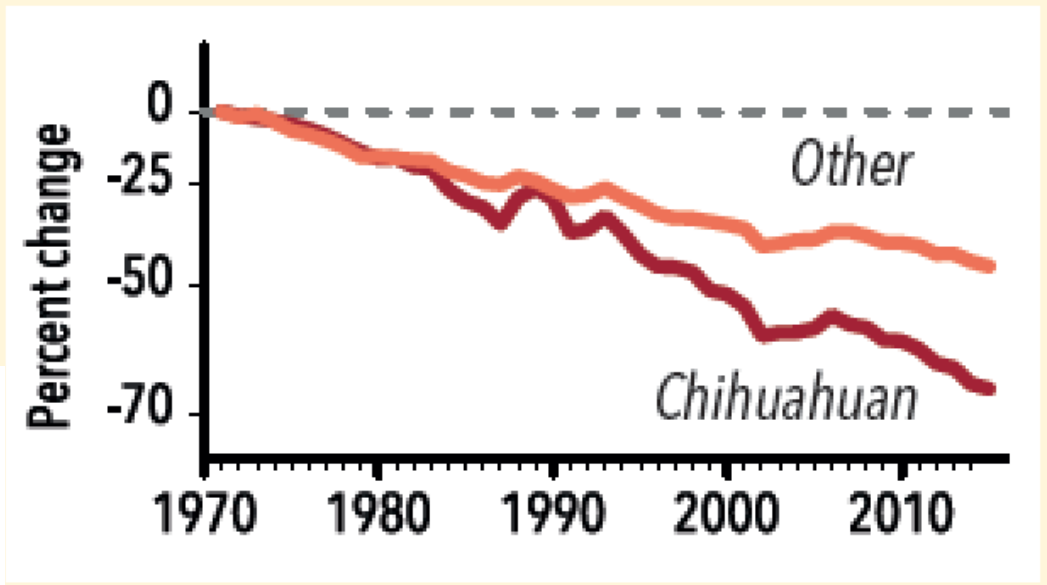
Grassland Species

Grassland species continue to decline: -44.5% over 45 years



Grassland birds in steep decline





Birds as Habitat Indicators

Many Grassland birds remain in a steep decline

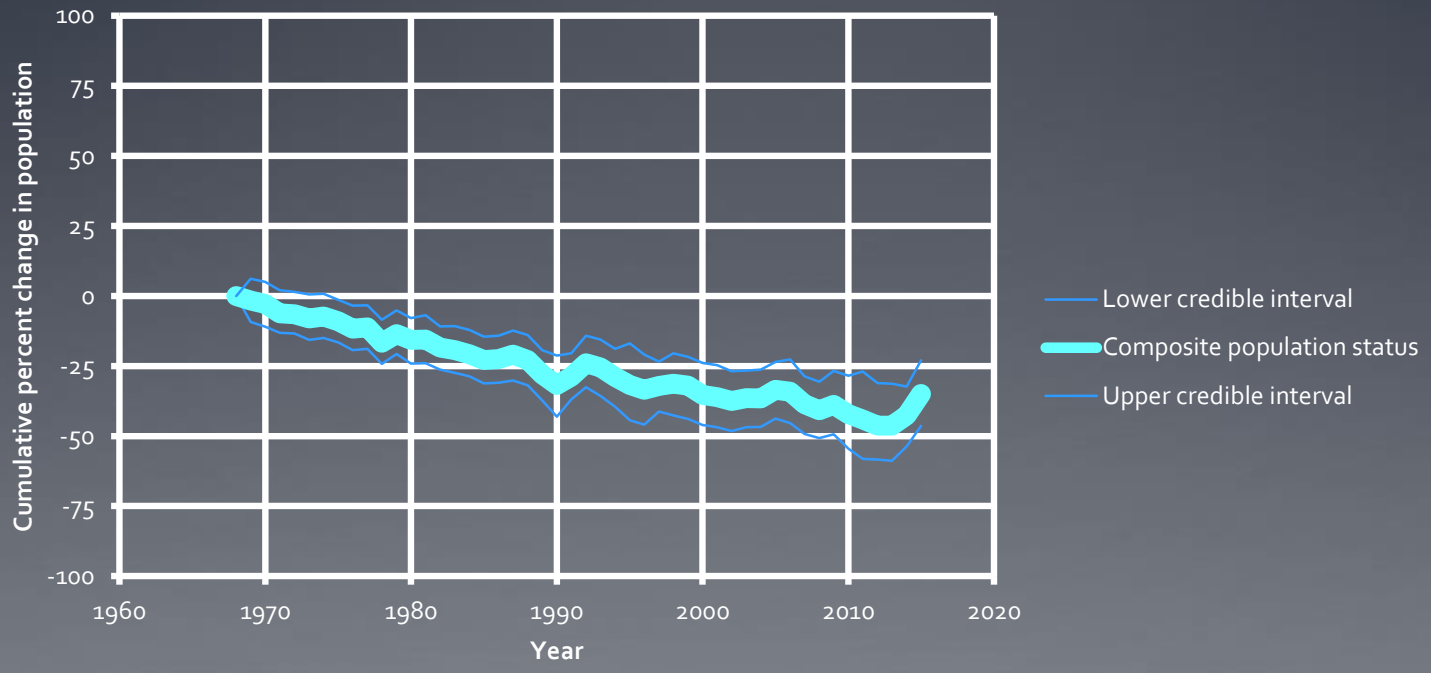
All these species have declined by more than 75%

Some unique and very important lands need greater protection, however, and through a suite of voluntary government assistance programs and organizations such as TNC and more than 1,700 land trusts that buy land and provide permanent easements, the 24-million acre network of private protected lands is as large as the entire NPS system in lower 48 states.

First 4 all go to Chihahua, Mexico.

Aridland Species

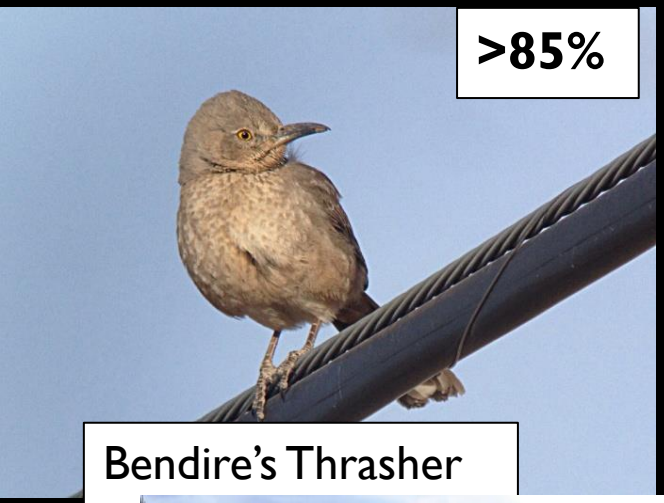
Aridland species continue to decline: -35% over 45 years



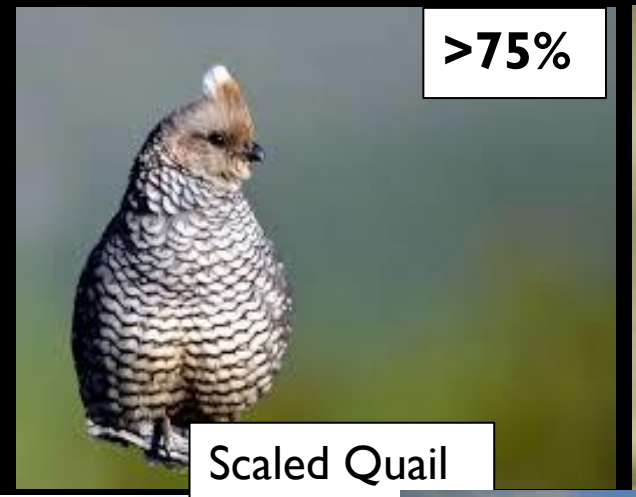
Birds as Habitat Indicators

Bird populations in Aridlands are in steep decline; Overall indicator declined by 35%

Species from prairies that winter in Chihuahuan grasslands of Mexico — as a group the most steeply declining species in the U.S. today (from Sauer's new analyses).

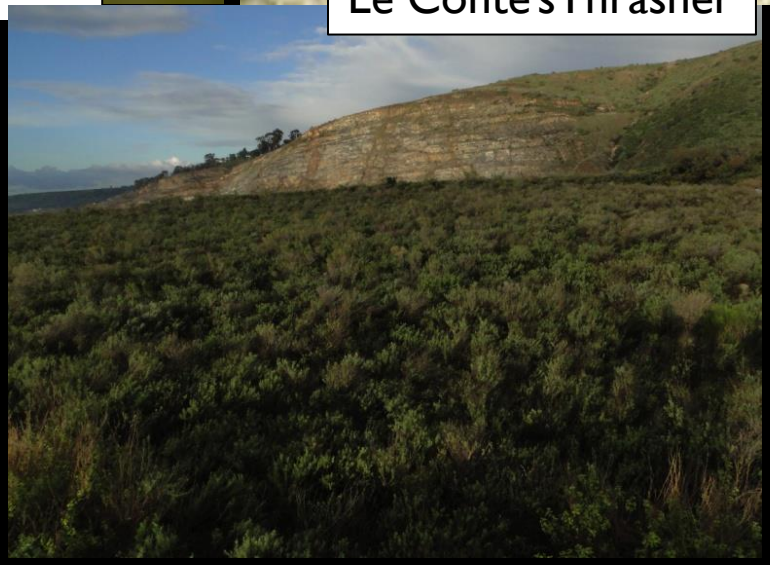


Bendire's Thrasher



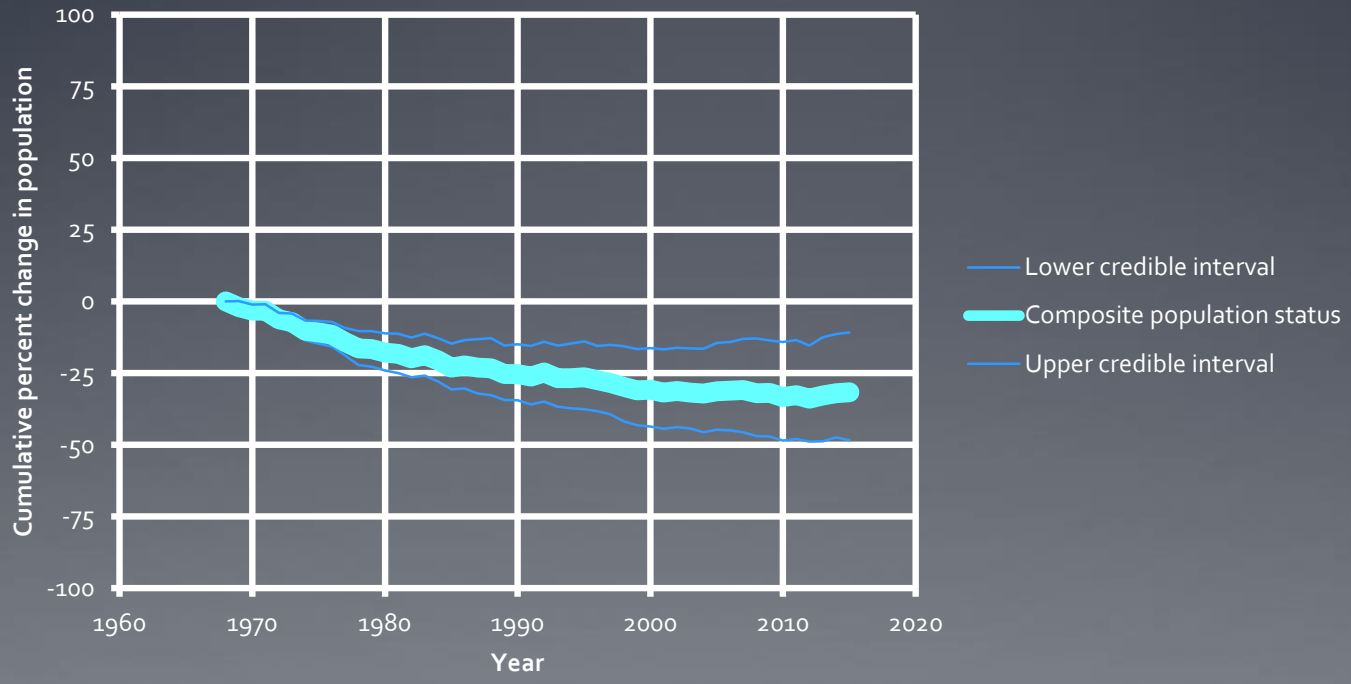
Scaled Quail

Le Conte'sThrasher



Eastern Forest Species

- Eastern forest species continue to decline: -32% in 45 years

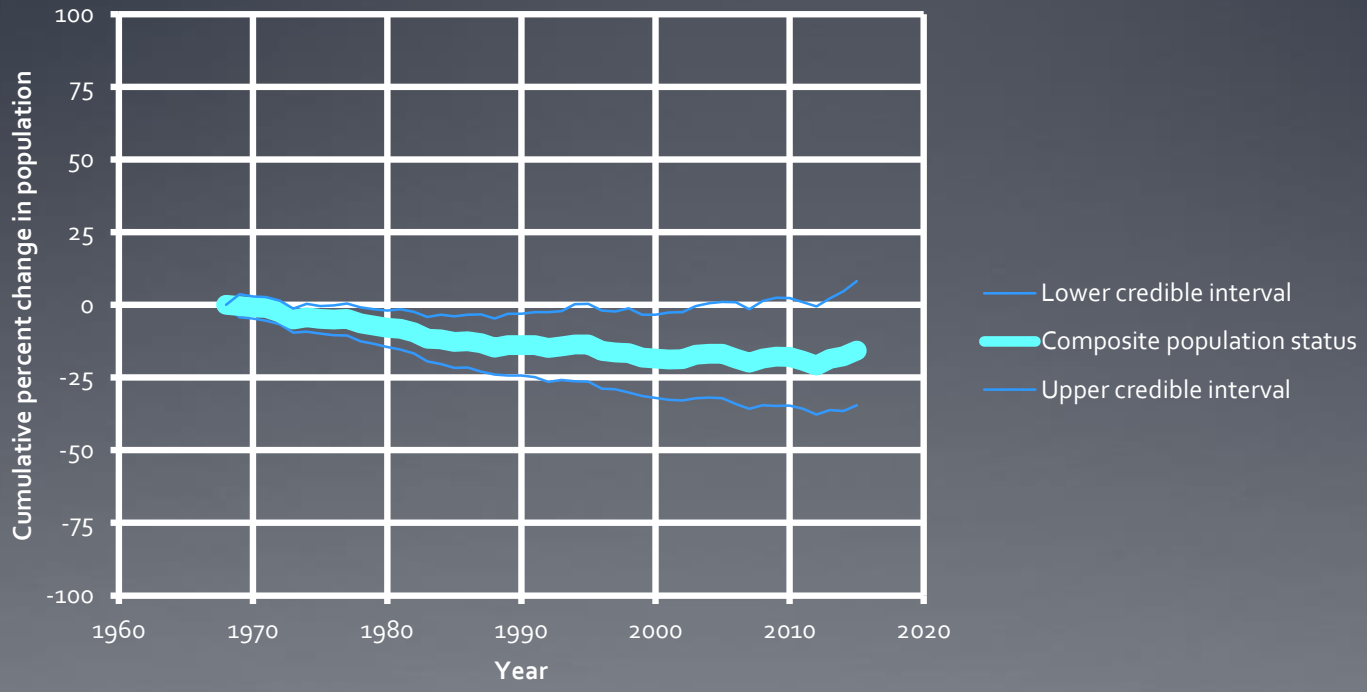


Birds as Habitat Indicators

- Bird populations in Eastern Forests have declined 31.7% since 1968

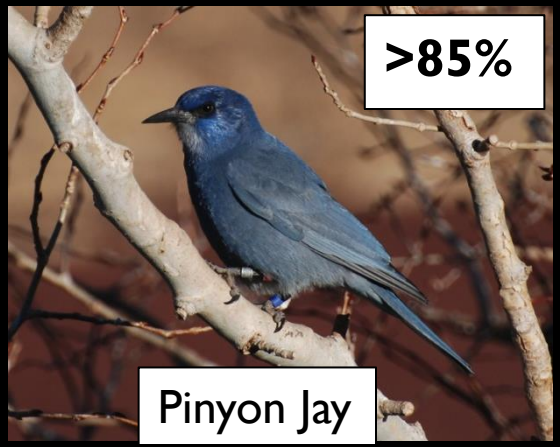
Western Forest Species

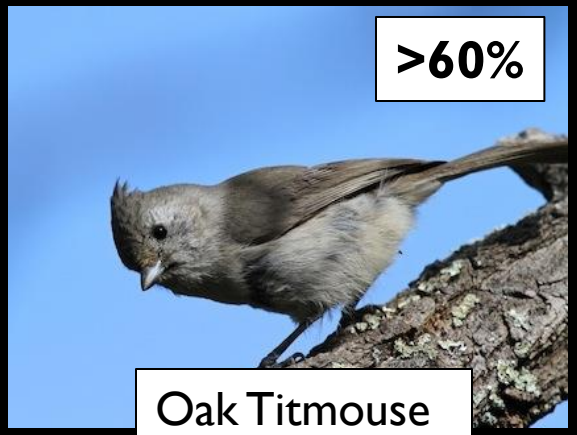
Western forest species show declines: -16% over 45 years

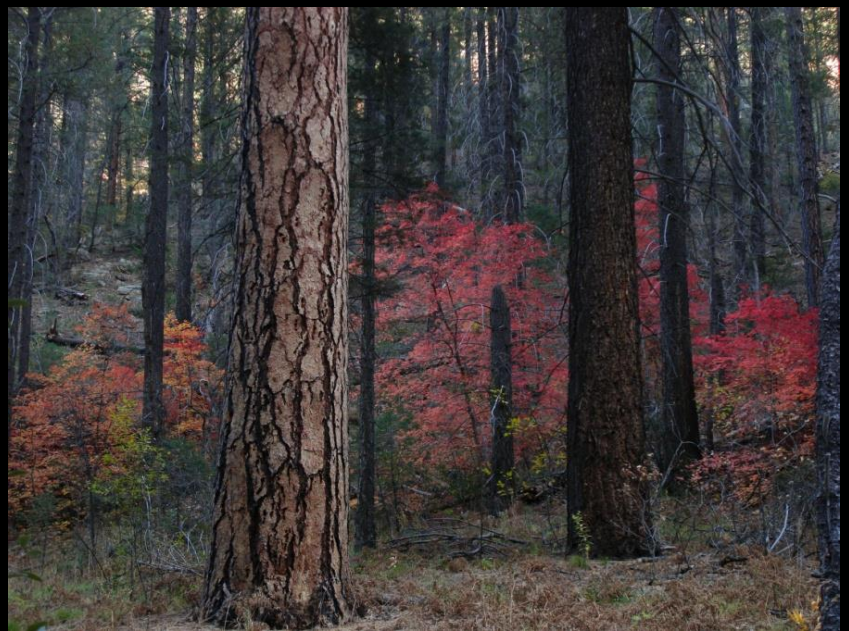


Birds as Habitat Indicators

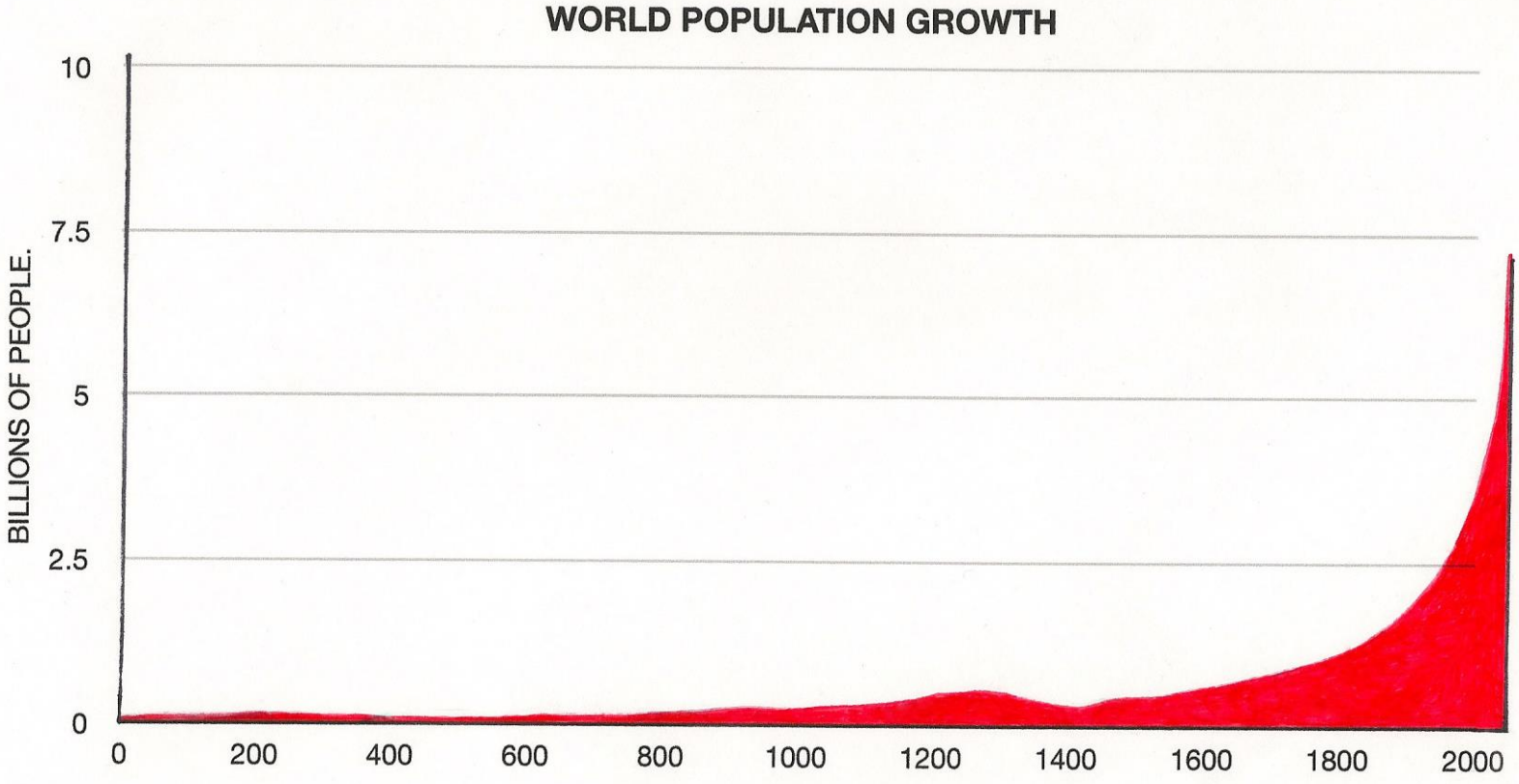
- Bird populations in Western Forests have declined by 15.7% since 1968







Human Population Growth

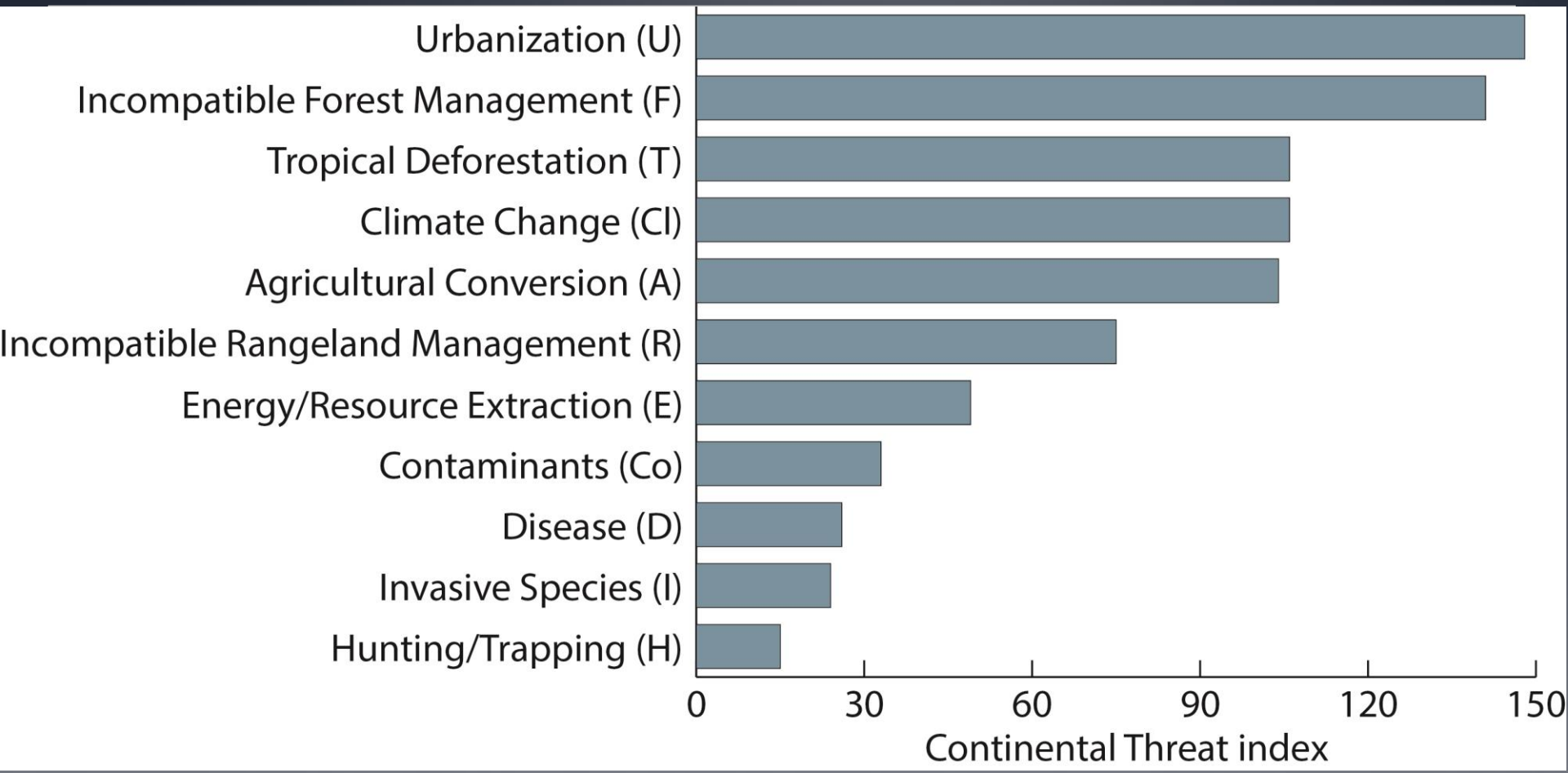


People and Birds Both Need:

- A place to live (habitat)
- Food
- Water
- Energy

As people take more, there is less for birds and other wildlife

2016 Plan Revision: Continental Threats Analysis



* threat index = threat scores summed across WL & CBSD species

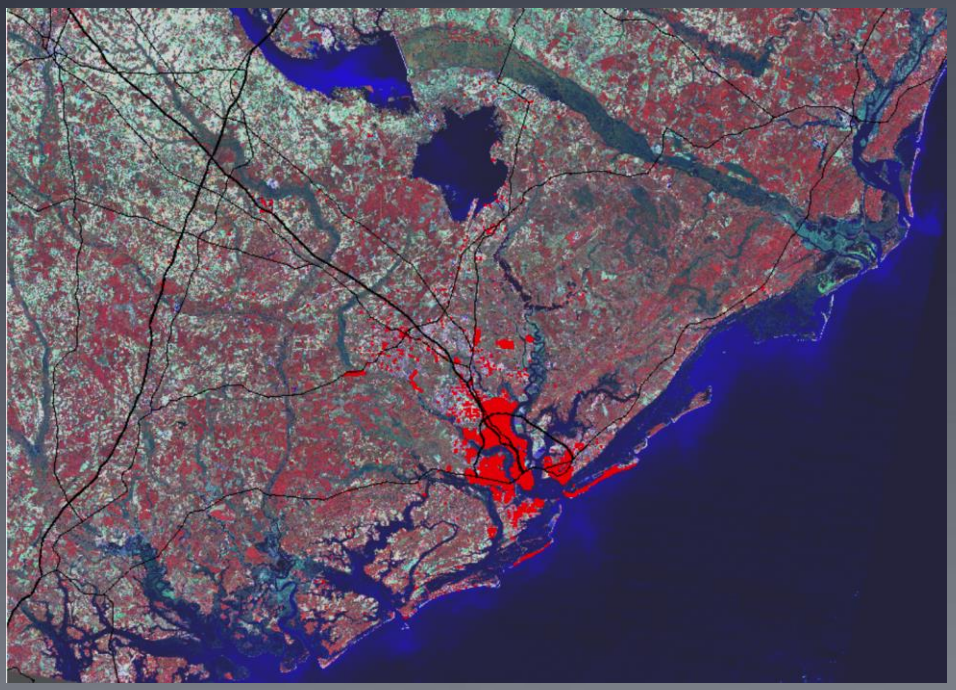
Comparison of the Continental Threats Index reflecting both the number of species affected and severity of the threat. Threats impacting each Watch List species are listed in Table 1 (see pages 6 & 7), using the codes presented here (in parentheses).

Several major large-scale forces threaten birds in every region and habitat in North America. In this section, we take a close look at how these factors result in elevated threat scores in the PIF vulnerability assessment for landbirds of continental importance with breeding populations in the U.S. and Canada. By summing the threats scores assigned for Watch List and Common Birds in Steep Decline species, we developed a Continental Threats Index for landbirds—this index summarizes both the number of species affected by a specific factor and the severity of those threats at the continental scale for each species (see page X). Our analysis indicates that the two most pervasive threats to landbirds in the U.S. and Canada are habitat loss due to urbanization and habitat degradation due to changing forest conditions (Figure 3)—each affecting almost half (44-45 species) of the 98 Watch List and Common Birds in Steep Decline species evaluated for this report. Habitat loss due to conversion to agriculture and tropical deforestation, along with climate change, also rank very high in terms of overall impact (affecting 30-31 species), followed by habitat degradation due to rangeland management (20 species). Other major threat factors may have severe effects but on a smaller number of species.

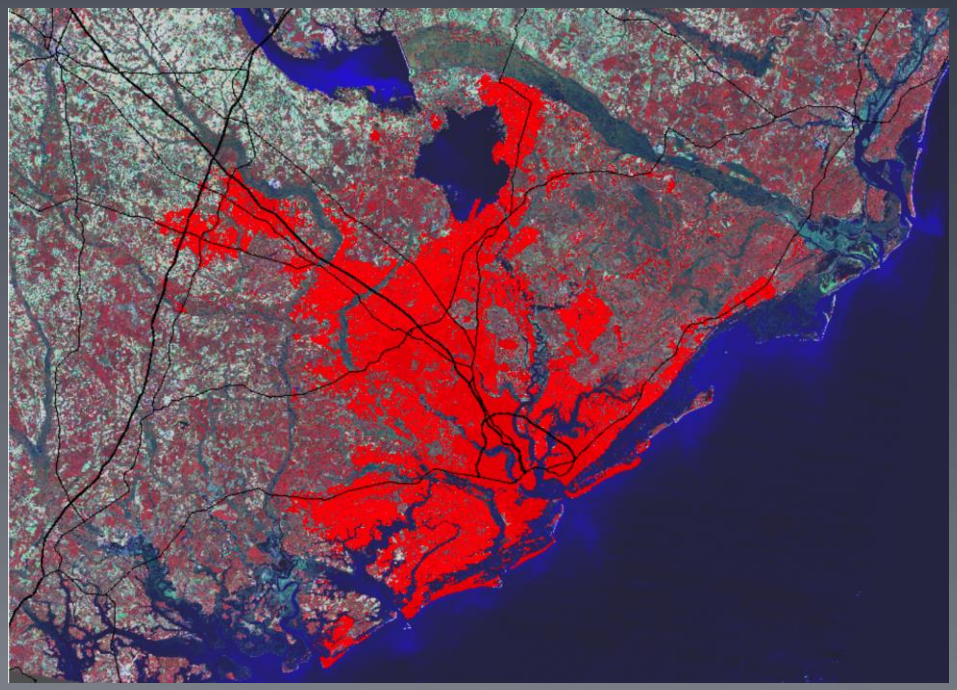
Some factors like energy extraction and development are likely to increase in scope or severity over the next 10 years. These major threat factors are operating at national, continental, or global scales, and cannot be adequately addressed at local or regional levels. Moreover, successful efforts to protect and restore habitats on a given landscape may not result in a net gain if issues such as urbanization and agricultural conversion are not remedied through coordinated policy at broader scales. Joining forces with people outside the bird conservation community to influence national and international policies and practices is essential to reduce and remove these threats to birds.

2016 Plan Revision: Continental Threats Analysis

Habitat Loss due to Urbanization is the most pervasive threat



CHARLESTON, SC METROPOLITAN AREA 1973



CHARLESTON, SC METROPOLITAN AREA 2030

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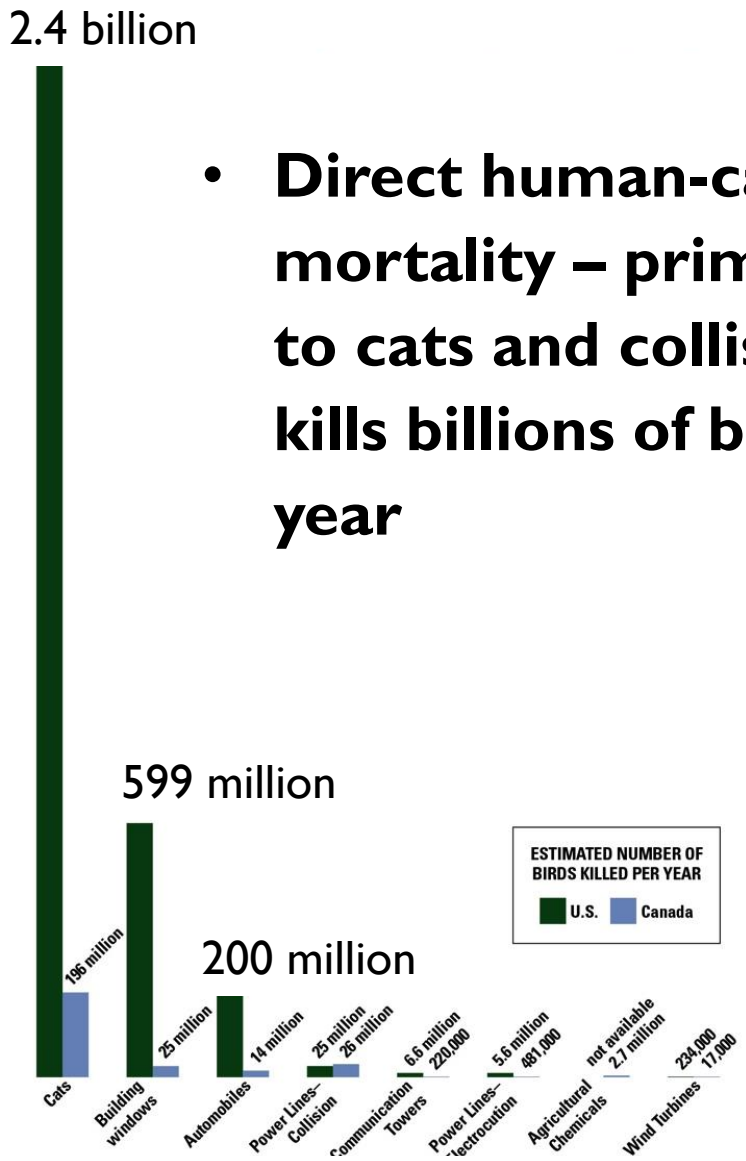
Addressing the Causes of Declines

- Historically, habitat loss from agriculture has been the largest cause of bird declines – by far

When discussing habitat loss – emphasize that there are programs that address these.

Addressing the Threats



- **Direct human-caused mortality – primarily due to cats and collisions – kills billions of birds each year**

Conservation Implementation

Need to address the scope and scale of the challenge with increased conservation capacity and greater societal awareness and engagement.

52 million birdwatchers in US and Canada spend $14 billion annually

What can zoos do?

- Conservation is a global issue, and zoos have done a great job promoting awareness of globally threatened species.
- However, zoos can also publicize national and local conservation issues by focusing on songbirds in the United States and especially on songbirds found near the zoo, even in cities.

What can zoos do?

- Display U.S. migrant birds
- Participate in World Migratory Bird Day
- Promote citizen science
- Educate about
  - conservation status
  - habitat loss
  - migratory connectivity
  - urban birds
- Join bird conservation partnerships
- Demonstrate ways to combat bird mortality
  - cats
  - collisions

Year of the Bird

Design and Illustrations:
Paula Andrea Romero
www.arteyconservacion.com

WORLD MIGRATORY BIRD DAY 2018

Yellow-fronted Parrot ~ Dickcissel ~ Swainson's Hawk ~ Northern Pintail ~ Red Knot ~ Goshawk ~ American Redstart ~ Golden-winged Warbler ~ Little Blue Heron ~ Black Tern ~ Rufous Hummingbird ~ Sage Thrasher

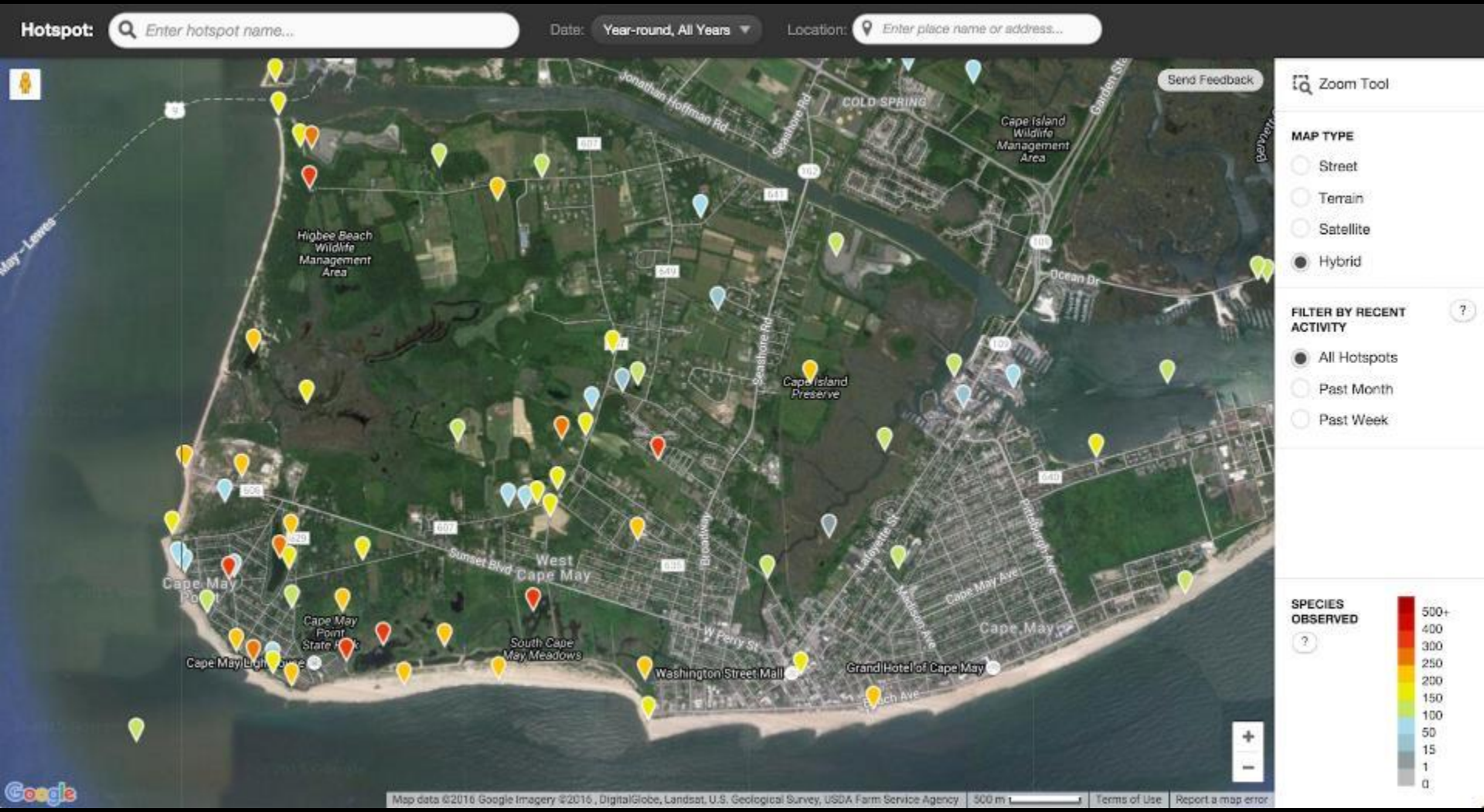
Environment for the Americas · AEWA · CMS · Pepco Holdings

eBird

- 2.4 million visitors to eBird in 2016
- 361,000 people have entered data
- 400 million observations
- 29 million checklists
- 4.33 million locations
- Every country in the world
- 10,315 species (98% of all bird species)
- 29 million hours in the field

And the passion that people feel for birds really is evident when you look at some eBird statistics. More than 300 million bird observations have been uploaded, by more than 300,000 eBirders—from every country in the world. More than 22 million hours have been spent collecting eBird data (and this doesn't even count the time to submit the data!), which is more than 3x the time that it took to build the Empire State Building. More than 2500 years. 98% of the world's birds have been reported to eBird.

Make Your Zoo a Birding Hotspot



Now that you know how to enter sightings, how do you see what other people have submitted? All of these data exploration tools that are covered can be accessed from the Explore Data tab in eBird that is always visible at the top of any eBird page.

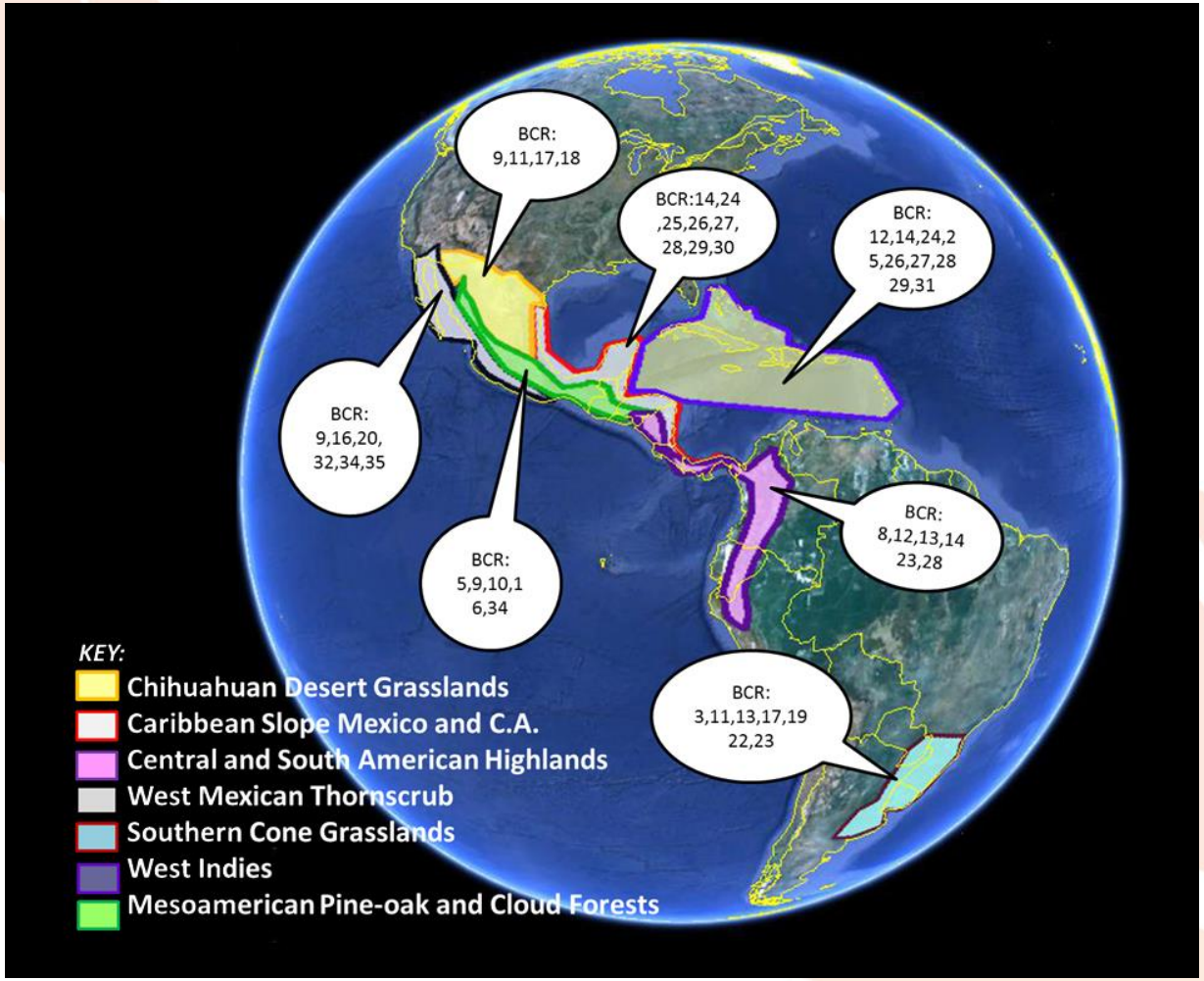
The Hotspot Explorer lets you view birding 'hotspots' worldwide—tens of thousands of locations where people have submitted enough sightings to merit an official birding location in eBird.

There are also millions of locations that are 'personal locations', which cannot be seen on this map, but show up in other data outputs. If you're trying to figure out a good spot to go birding nearby, or planning locations on a trip, this is the way to go!

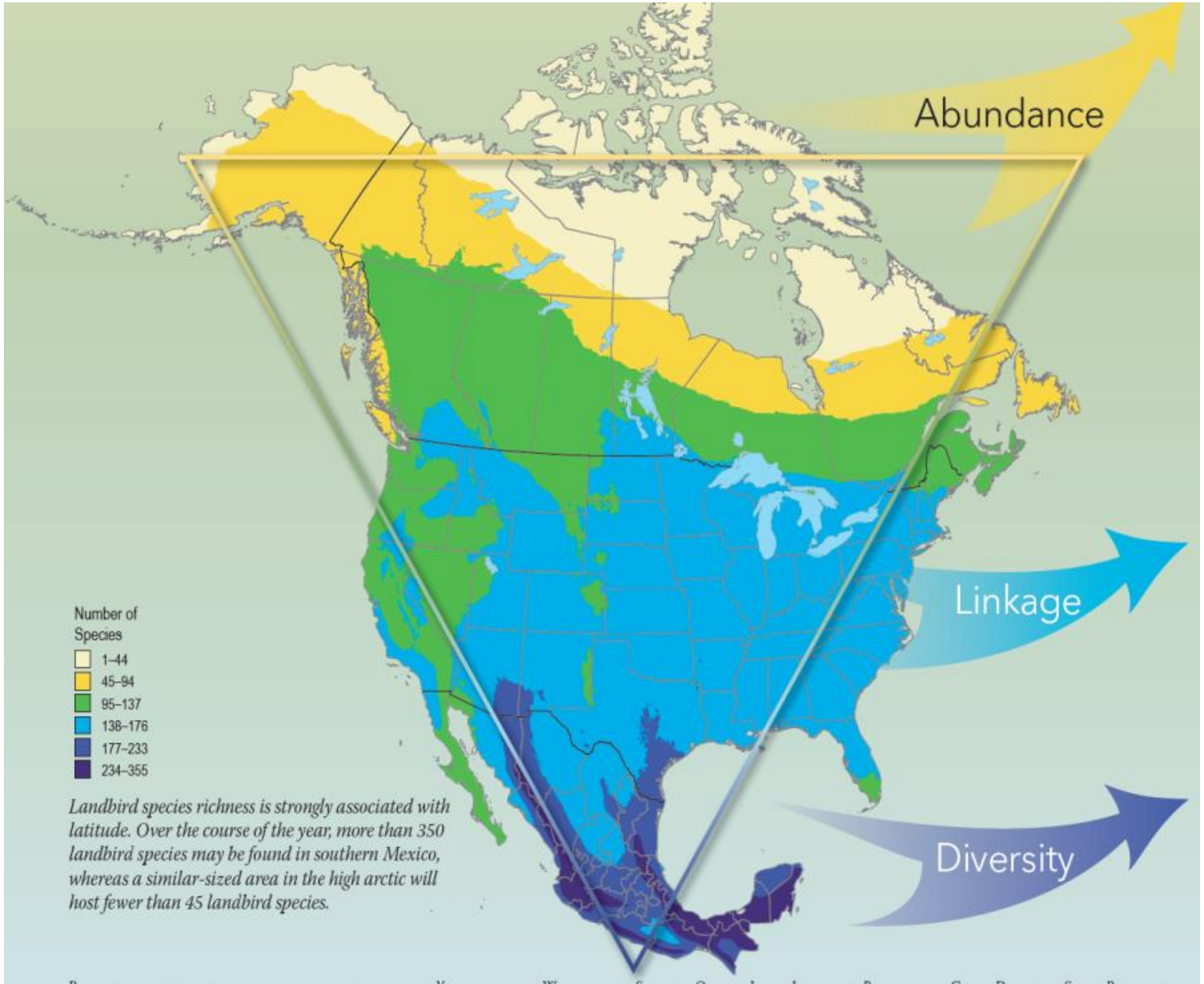
What can zoos do?

- Educate about migratory connectivity

Geographies are based on wintering areas.
Focal breeding grounds are related to wintering grounds via BCR.

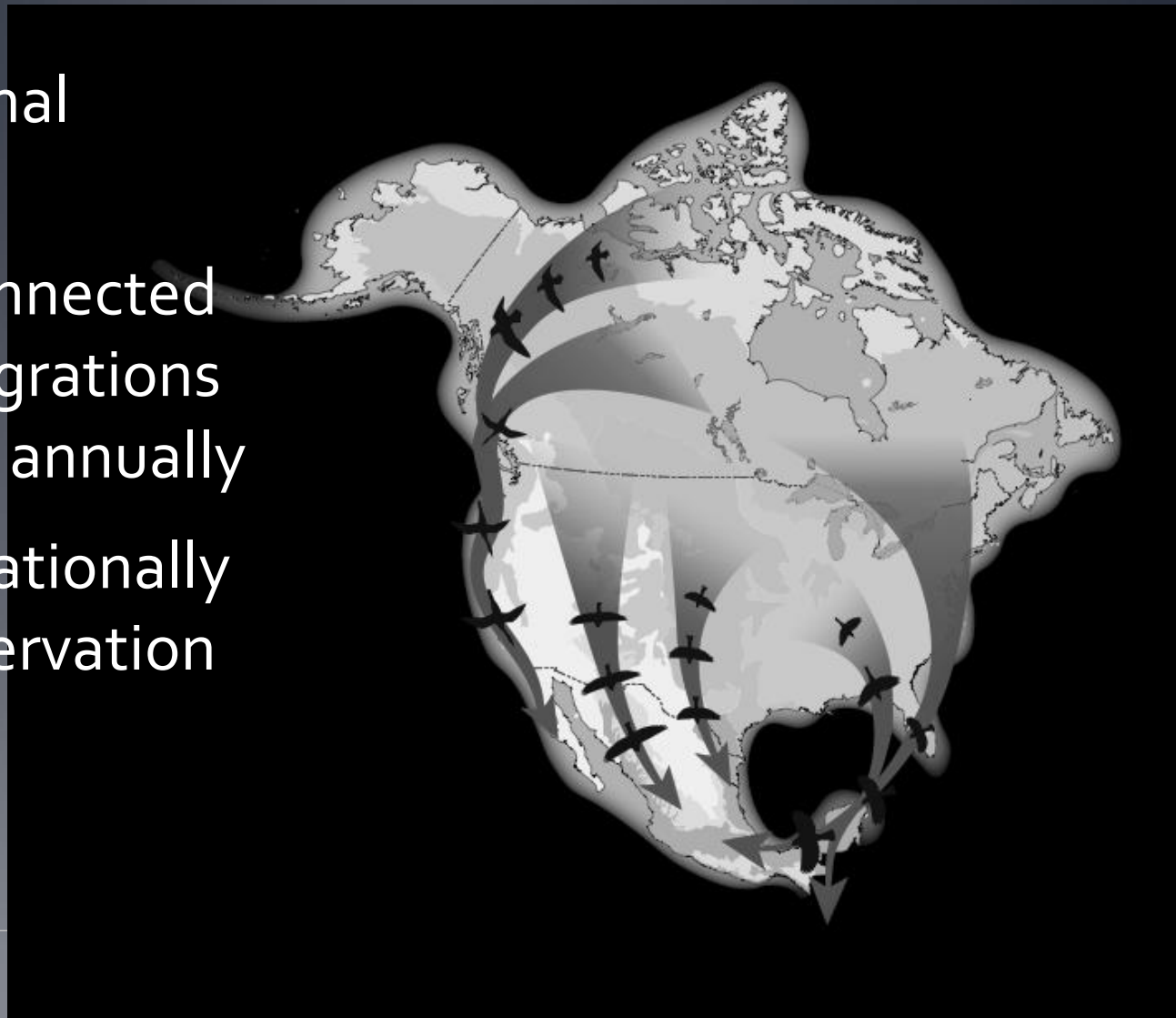


Continent of Birds



Birds Connect the Continent!

- 350 truly tri-national species
- Major habitats connected by spectacular migrations of billions of birds annually
- Depend on internationally coordinated conservation for survival



Few Endemic Bird Species

Of 883 bird species in the 48 contiguous states, only 15 are endemic to the USA

Full Life Cycle Stewardship

- Join bird conservation partnerships

What can zoos do?

- Educate about urban birds

What can zoos do?

- Join bird conservation partnerships
  - NABCI
  - PIF
  - Waterfowl
  - Waterbirds
  - Shorebirds
  - AFWA
  - Trilateral

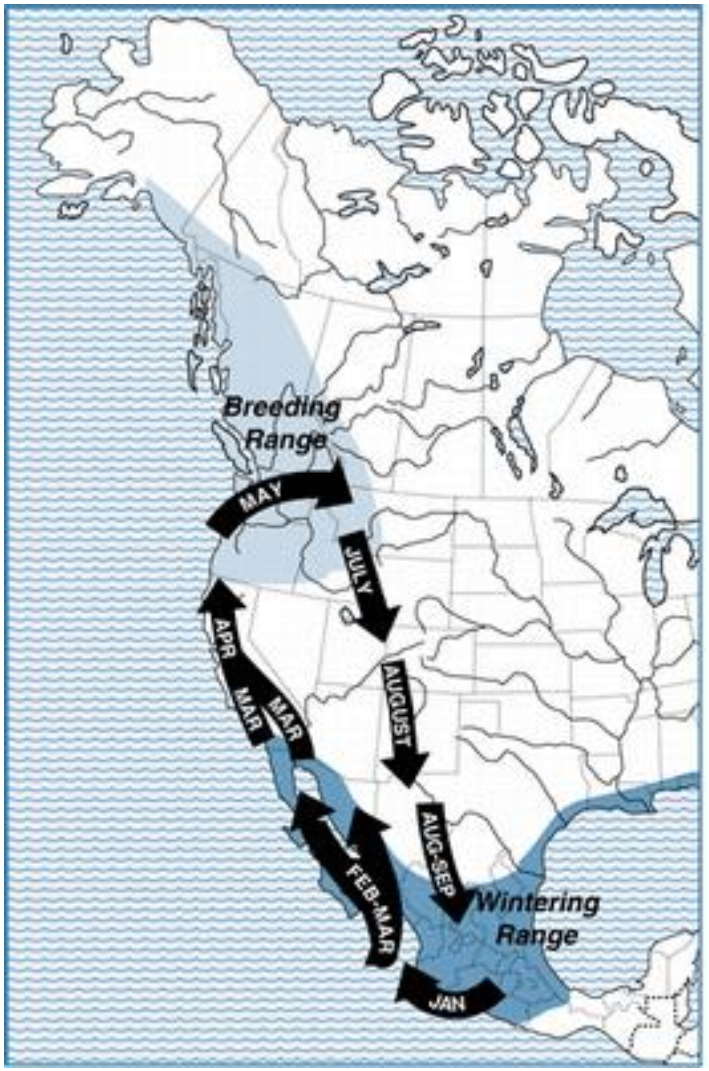
Western Hummingbird Partnership

Environment for the Americas

FOREST SERVICE
US
DEPARTMENT OF AGRICULTURE

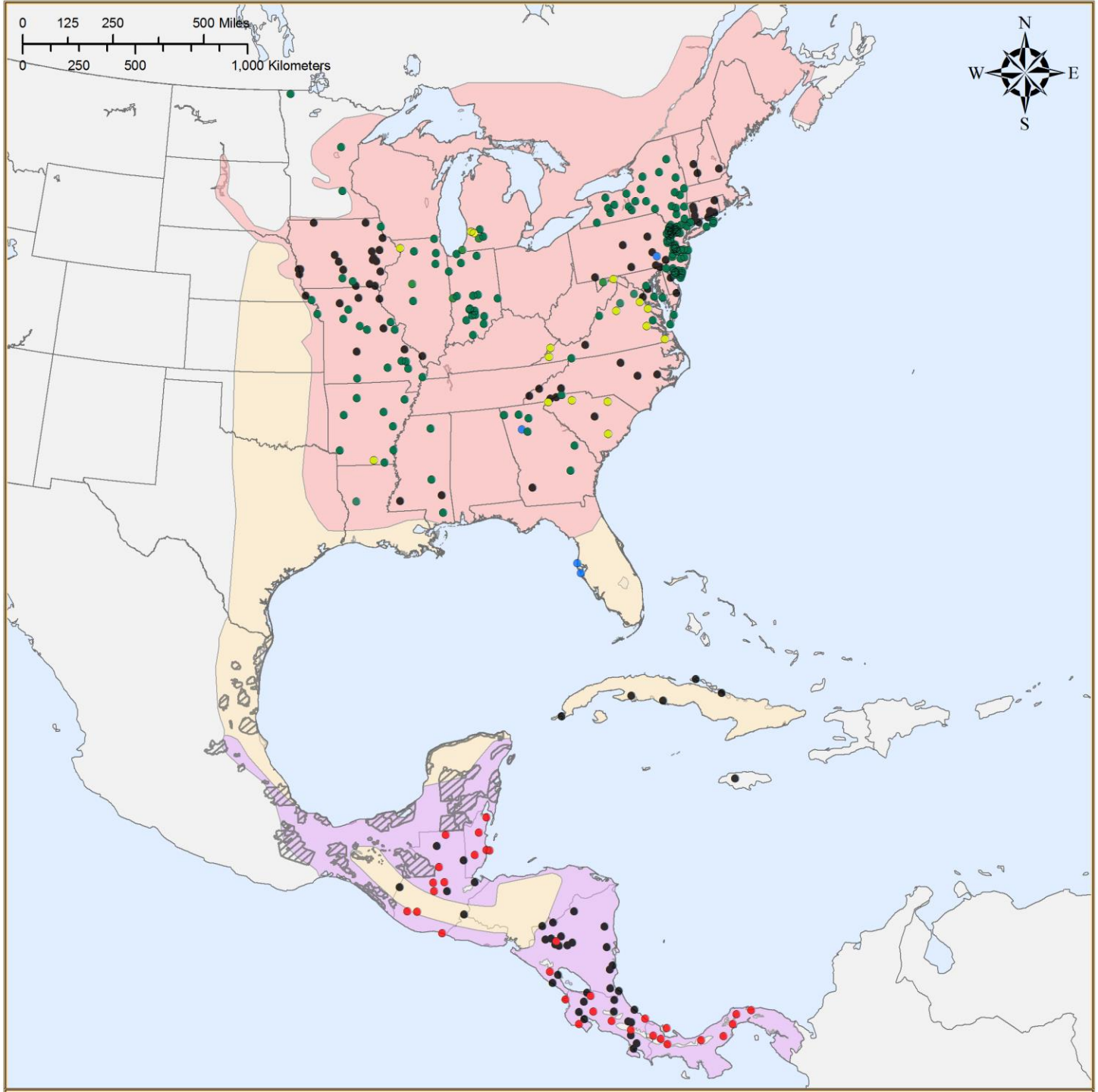

Rufous Hummingbird
4/25/06, Lost Creek Lake, Ore.
Photo by James Livaudais

Rufous Hummingbird migration



- Lowland Pacific Coast in spring
- Breeds in Alaska!
- Alpine meadows in summer/fall
- Winters in Mexico, spreading to Gulf Coast of SE USA

Alianza Internacional para la Conservacion de Hylocichla mustelina


0 125 250 500 Miles
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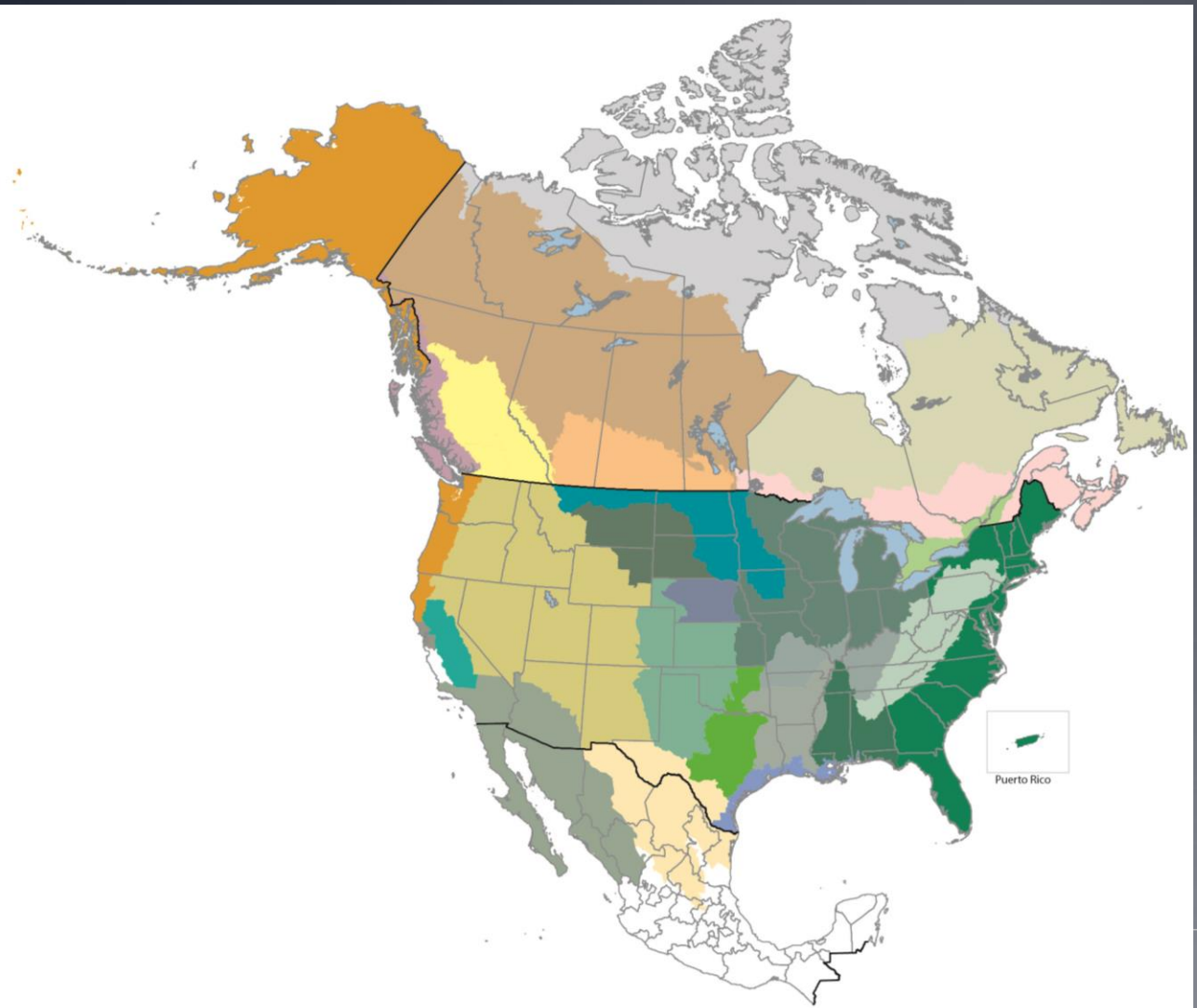
Bird Habitat Joint Ventures



Bird Habitat Joint Ventures with Implementation Plans across all the U.S. and southern Canada

Bird Conservation Region strategies for all of Canada

20% of US & Canada birds on path towards endangerment and extinction in absence of urgent conservation action.

We know, however, that when we use the best science to develop conservation plans and implement them, we can make a difference. Our diverse partners have achieved major milestones for bird conservation, including creation of "wall-to-wall" Joint Ventures with implementation plans all across the US and southern Canada, Wildlife Action Plans in all 50 US States, Bird Conservation Region strategies for all of Canada and the Neotropical Migratory Bird Conservation Act – a valuable tool for funding landbird conservation.

18 Habitat Joint Venture partnerships consist of government agencies, non-profit organizations, corporations, tribes, and individuals. They enhance bird conservation efforts through actions from planning and prioritization; project development and implementation; monitoring, evaluation and research, communications, education and outreach, grant development and funding support.

Joint Ventures are a proven mechanism to bridge the gap between science planning and implementation and have been widely accepted as the model for collaborative conservation in the 21st century. They work successfully across geographic, political and organizational boundaries to integrate bird conservation needs shared by multiple levels of government and non-governmental partners.

2016 Plan Revision: U.S. Joint Venture Profiles

BIRD CONSERVATION LANDSCAPE

The Central Hardwoods Joint Venture (CHJV) is a landscape interspersed with grasslands, woodlands, and forests. Historically, prairie grasses and forbs carpeted the understory of both oak and pine woodlands and contributed greatly to the region's overall biodiversity. Fire was the major disturbance that shaped the structure of these ecosystems. After European settlement, forests and woodlands were almost completely cut down, and many converted to cropland and pastures. Fires were suppressed decades later to recover timber, especially in areas with limited agricultural use. As a result, the forests and woodlands of today are overstocked, and the grassy understory is largely buried under thick leaf litter. Nearly all the native prairies and savannas have been converted to cropland or fescue, a non-native grass that is less beneficial to grassland birds and other wildlife. Thus, grassland and shrub species such as **Prairie Warbler**, **Field Sparrow**, **Bachman's Sparrow**, and **Northern Bobwhite** have suffered notable declines. Joint Venture partners are restoring native woodland communities for shrub-dependent species through thinning and prescribed fire, and replanting native warm-season grasses.


Northern Bobwhite. USFWS


Prairie Warbler. William Majoros

The CHJV focuses on species with the greatest conservation need, like the Prairie Warbler, as they typically have relatively small ranges, small population sizes, declining trends, and/or reliance on threatened or already degraded habitats.

CONSERVATION IN ACTION

Modeling Population Responses To Habitat Fragmentation

CHJV partners developed a set of GIS-based habitat suitability models to estimate the amount of habitat needed to reach PIF population goals for more than 20 priority bird species that breed in forest and shrublands across the region. Population viability models were then used to assess how habitat restoration and/or reforestation in landscapes with different levels of habitat fragmentation could affect the breeding success and future population trends for two Watchlist species: **Wood Thrush**, which nests in the forest interior, and **Prairie Warbler**, which nests in large shrubland areas within forested landscapes (Bonnot et. al. 2013). Importantly, the models evaluated the effects of survival rates during the non-breeding season on these species as well as breeding season factors.

Results indicated that habitat conservation efforts within less fragmented landscapes resulted in markedly better population responses. This supports CHJV work already underway to restore hundreds of thousands of acres of woodlands on or near public lands, with most in some of the least fragmented landscapes in the region. Model results also indicated that increasing **Wood Thrush** and **Prairie Warbler** survivorship during the non-breeding season would substantially increase population viability, which supports the full life cycle approach to bird conservation that PIF is championing.

SPECIES OF CONTINENTAL IMPORTANCE

Species	BCR 24	Area Importance	Urgency/Half-life (years)	Long-term Change	Short-term Trend
TEMPERATE EASTERN FOREST					
Bachman's Sparrow (R)	X	0%	***	***	***
Eastern Whip-poor-will (B)	X	31%	>50	-71%	-2.5%
Kentucky Warbler (B)	X	23%	>50	-4%	-0.6%
Prairie Warbler (B)	X	12%	34	-61%	-1.6%
Cerulean Warbler (B)	X	8%	39	-66%	-1.3%
Wood Thrush (B)	X	7%	>50	-30%	-1.4%
Red-headed Woodpecker (R)	X	5%	33*	-64%	-0.2%
Prothonotary Warbler (B)	X	3%	>50	28%	0.6%
Field Sparrow (B)	X	20%	34*	-59%	-2.3%
Yellow-billed Cuckoo (B)	X	10%	16*	-69%	-2.6%
Chuck-will's-widow (B)	X	10%	***	-53%	-1.2%
GRASSLANDS					
Henslow's Sparrow (B)	X	29%	>50	526%	4.3%
Eastern Meadowlark (B)	X	7%	28	-69%	-2.6%
Northern Bobwhite (R)	X	7%	12	-86%	-5.1%
Horned Lark (W)	X	AI = 4	38*	-55%	-1.3%
HABITAT GENERALISTS					
Chimney Swift (B)	X	7%	20	-81%	-3.4%
Common Grackle (B)	X	5%	20	-75%	-3.6%

Watch List ●●**, *Common Birds In Steep Decline*** ●
See Page XX For Table Explanation

LOOKING AHEAD

- Identify habitat and landscape factors best suited to support grassland birds such as **Henslow's Sparrow**, **Field Sparrow**, **Eastern Meadowlark**, and **Northern Bobwhite**.
- Develop spatially explicit strategies for increasing grassland bird populations that incorporate climate change and socioeconomic factors (e.g., drought, population growth, commodity prices).


Photo courtesy of CHJV

CHJV partners are restoring native woodland communities for shrub-dependent species through thinning and prescribed fire.

Each of the U.S. and Canadian profiles provides five elements: a regional map that is overlaid with Bird Conservation Regions and jurisdictional boundaries, a PIF Continental Species of Importance Table, a description of the area's bird conservation landscape, a success story, and next steps.

In combination, the elements in each of these profiles illustrate the important roles these partnerships play in implementing Partners in Flight plans and contributing to continental objectives for landbirds.

What can zoos do?

- Demonstrate ways to combat bird mortality:
  - Outdoor cats are a huge source of bird mortality
  - A zoo would never include cats in a bird exhibit
  - Zoos can educate the public about outdoor cats and bird mortality
  - How? With a catio!

What can zoos do?

- Demonstrate ways to combat bird mortality
  - collisions

The State of North America's Birds 2018

- Need to renew our continental commitment for all birds
- Build on the success of wetland and waterfowl conservation

52 million birdwatchers in US, Canada and Mexico spend $14 billion annually

Conservation Works!

NABCI

- 50+ organizations, agencies, and industry represented on NABCI Committees in all 3 countries