

Sprawling Into Wildlife Habitat

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Dave Theobald, Conservation Science Partners



**Sustaining the New West: conservation Challenges –
Conservation Opportunities
November 29 2017**



Introduction

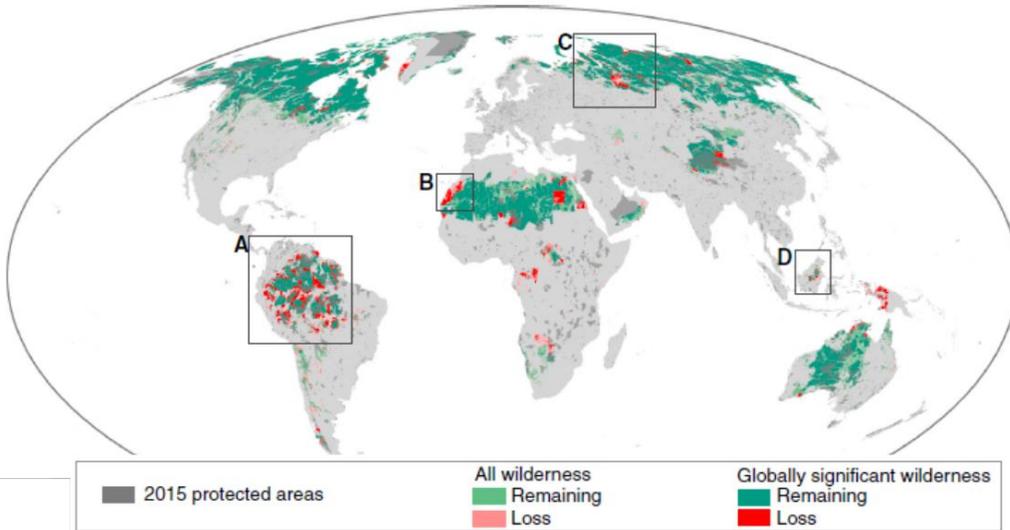
Conservation in Mountain Landscapes

Mountain landscapes:

- High importance for conservation
- Land use constrained by topography, soil, climate
- Technology now allows pursuit of natural amenities
- Now face rapid population growth
- Challenges and opportunities for conservation



Wildland Loss



1993-2009
Wildlands Protected: 2.5 million km²
Wildlands lost: 3.3 million km²
10.6% loss of large wildlands

Watson et al. 2016

“The Disappearing West”
Between 2001 and 2011, a football field’s worth of natural area in the West disappeared every 2.5 minutes

<https://www.disappearingwest.org/>



National Wildlife Federation



Introduction

Topics

- Population growth
- Drivers of sprawl
- Influence on wildlife
- Opportunities for conservation

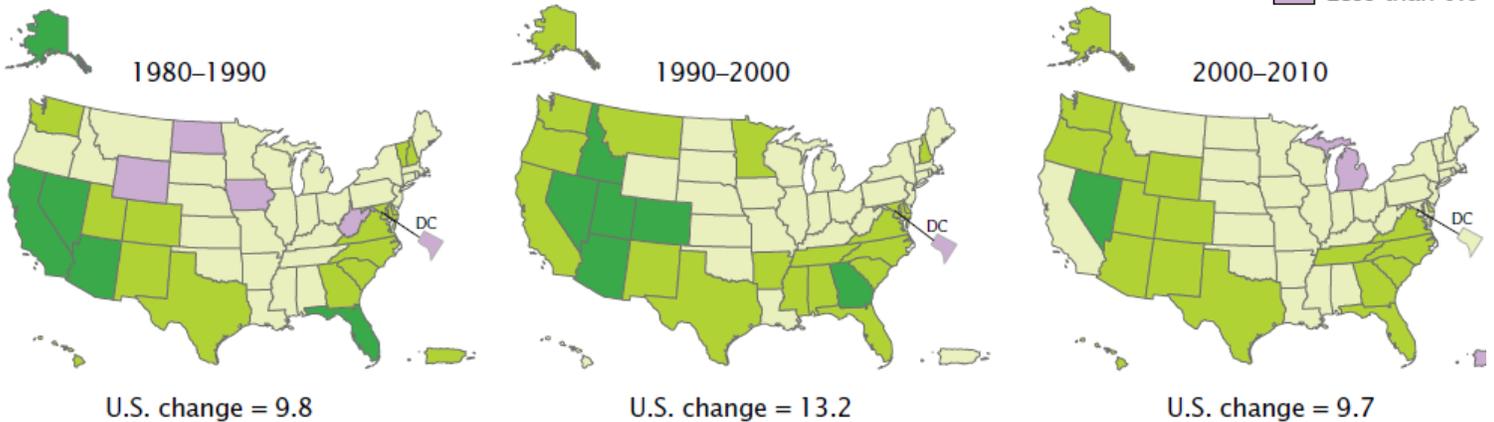
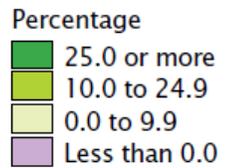


Population Growth

Challenges

Percentage Change in Population by State and Decade: 1980–1990 to 2000–2010

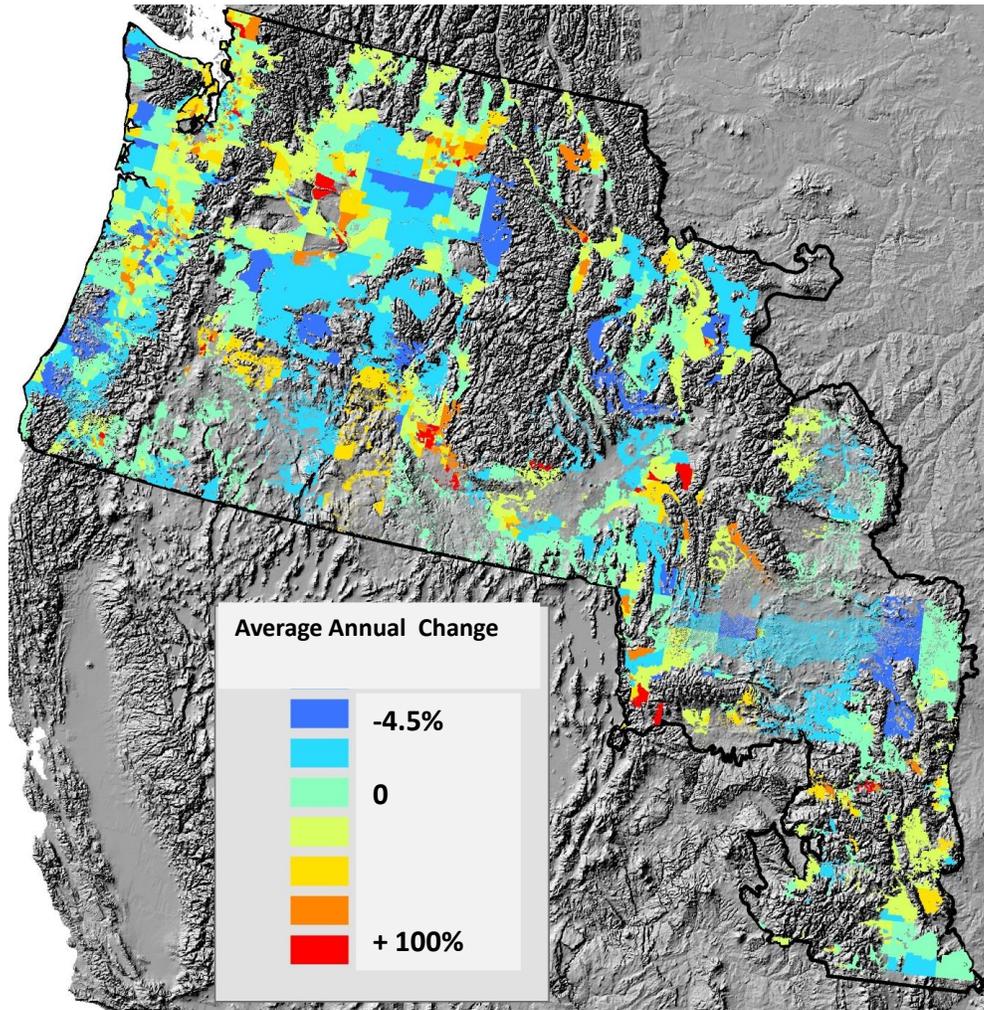
(For information on confidentiality protection, nonsampling error, and definitions, see www.census.gov/prod/cen2010/doc/p194-171.pdf)



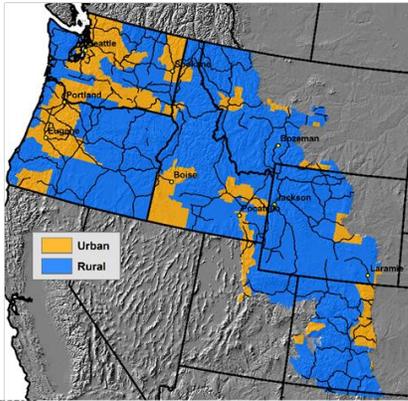
Source: U.S. Census Bureau, 2010 Census, Census 2000, 1990 Census, and 1980 Census.

Population Growth

Population Change 1900-2010

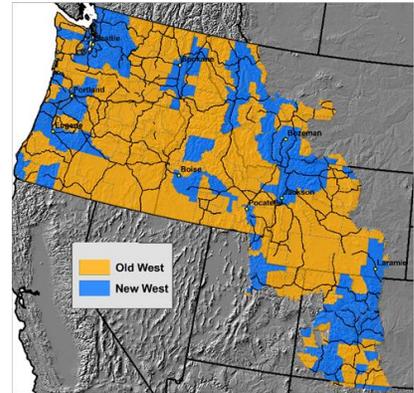


Urban \ Rural



Population Growth Correlates

Traditional / New West index

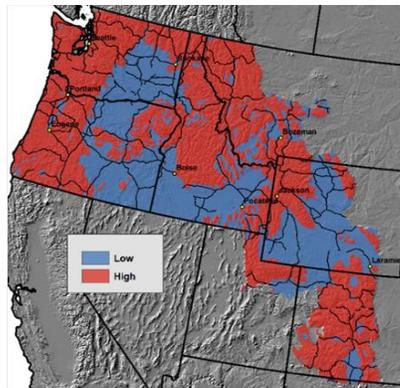


1	Metro - Counties in metro areas of 1 million population or more
2	Metro - Counties in metro areas of 250,000 to 1 million population
3	Metro - Counties in metro areas of fewer than 250,000 population
4	Nonmetro - Urban population of 20,000 or more, adjacent to a metro area
5	Nonmetro - Urban population of 20,000 or more, not adjacent to a metro area
6	Nonmetro - Urban population of 2,500 to 19,999, adjacent to a metro area
7	Nonmetro - Urban population of 2,500 to 19,999, not adjacent to a metro area
8	Nonmetro - Completely rural or less than 2,500 urban population, adjacent to a metro area
9	Nonmetro - Completely rural or less than 2,500 urban population, not adjacent to a metro area

Variable	Factor Score
Bachelor's degree or higher	0.85
Housing over \$200K	0.88
Employment in extractive industry	-0.59
Employment in FIRE (e.g. finance) industry	0.81
Employment in tourism industry	0.66
Moved from a different state	0.64
Living in a metro area	0.29
Housing units in seasonal use	0.33

Winkler et al. 2007

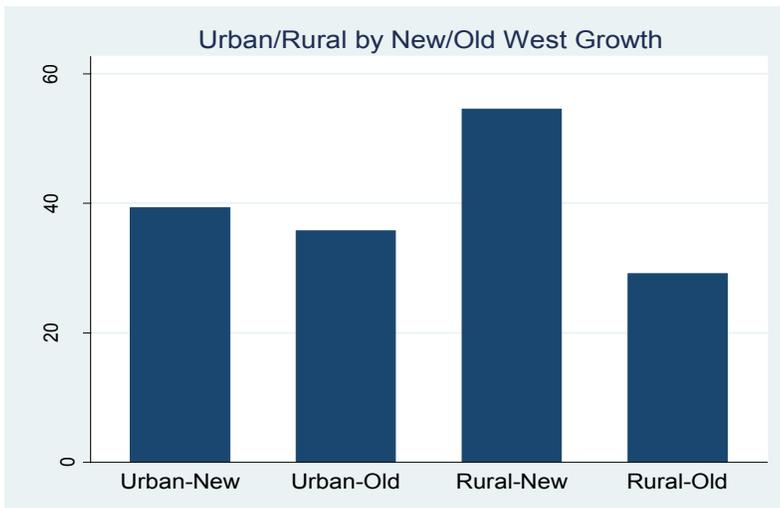
Natural Amenities Index



Variable
Topographic Complexity
Forest/Nonforest Complexity
Public Land Proximity
Coast Proximity
Surface Water Proximity

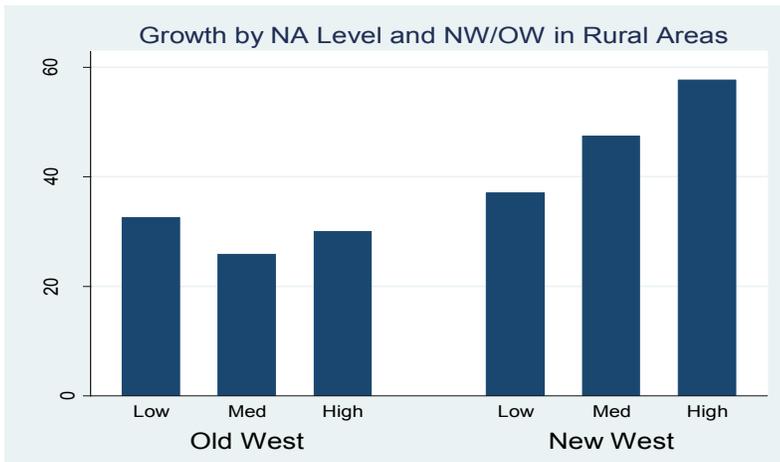
Housing Density

Census Tract: Change in Housing Density 1990-2010



Overall drivers of population growth:

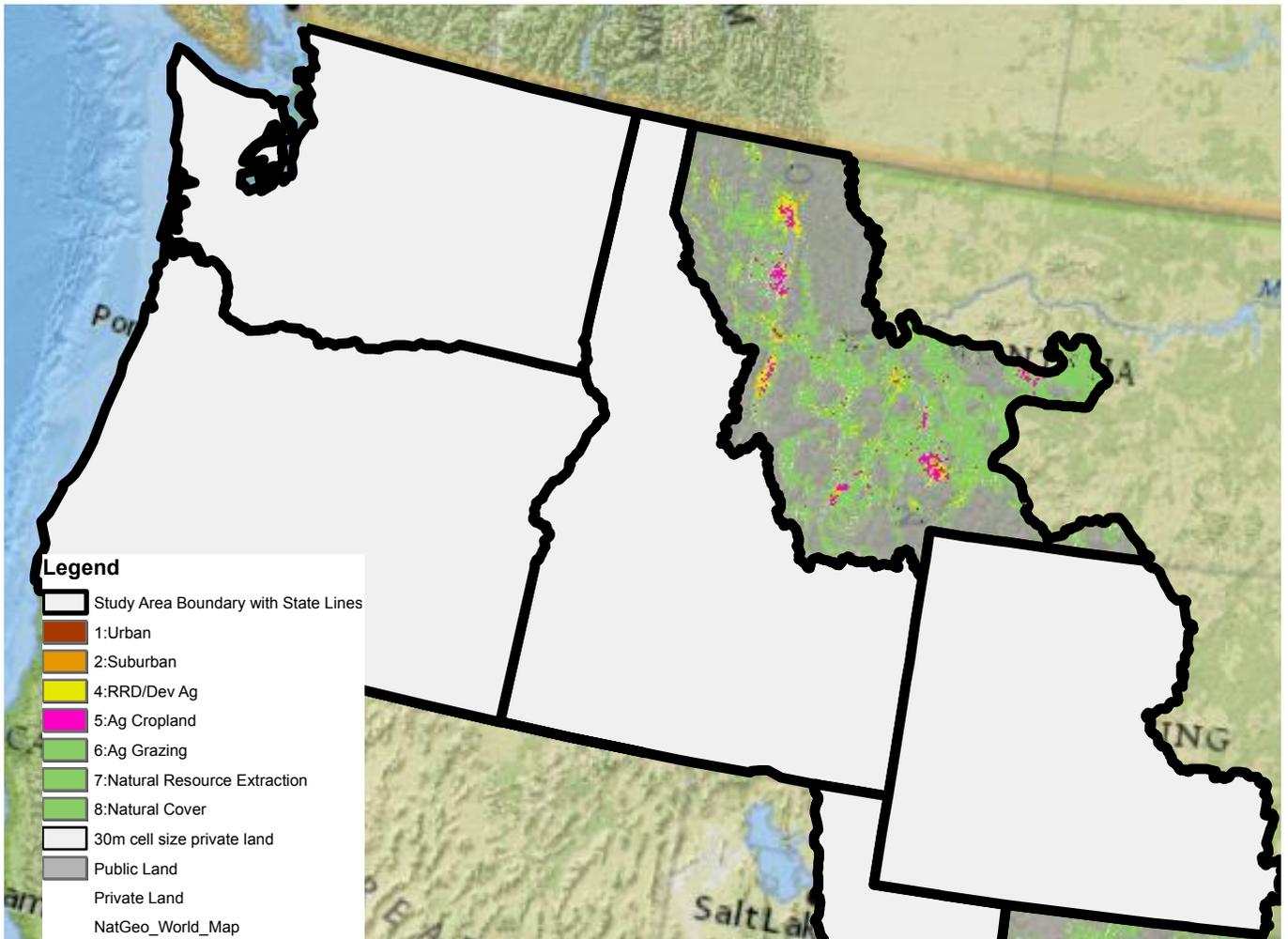
- Access to transport and urban areas increases population growth
- New West growing faster than Old West
- Natural amenities increases growth in New West
- Places with dry-extreme climate growing faster



Land Use

National Land Use Data Set

2010

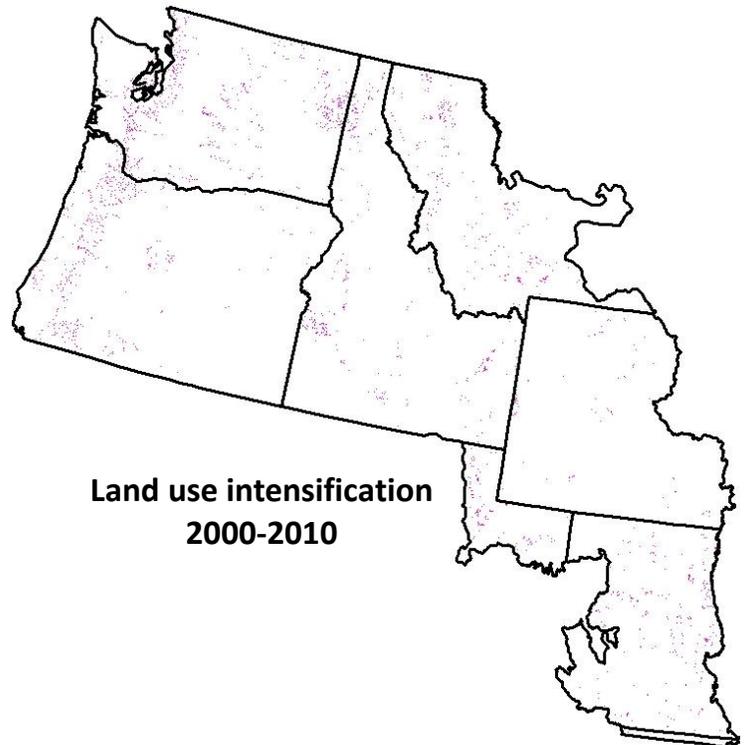
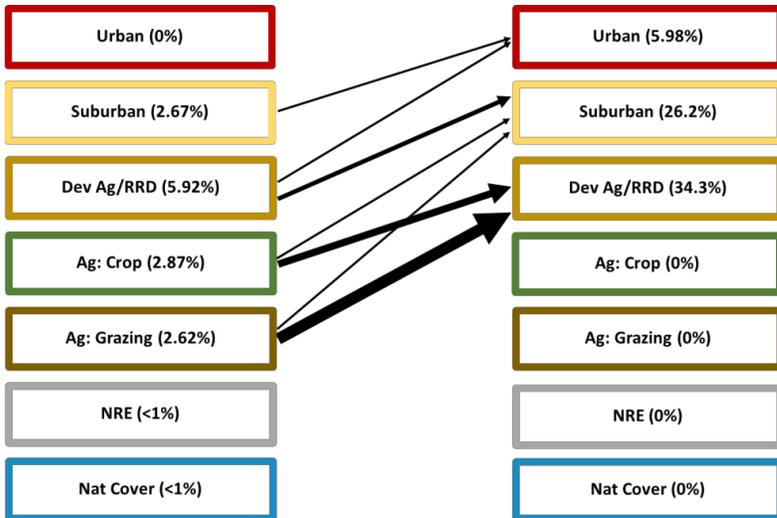


Land Use Change

National Land Use Data Set

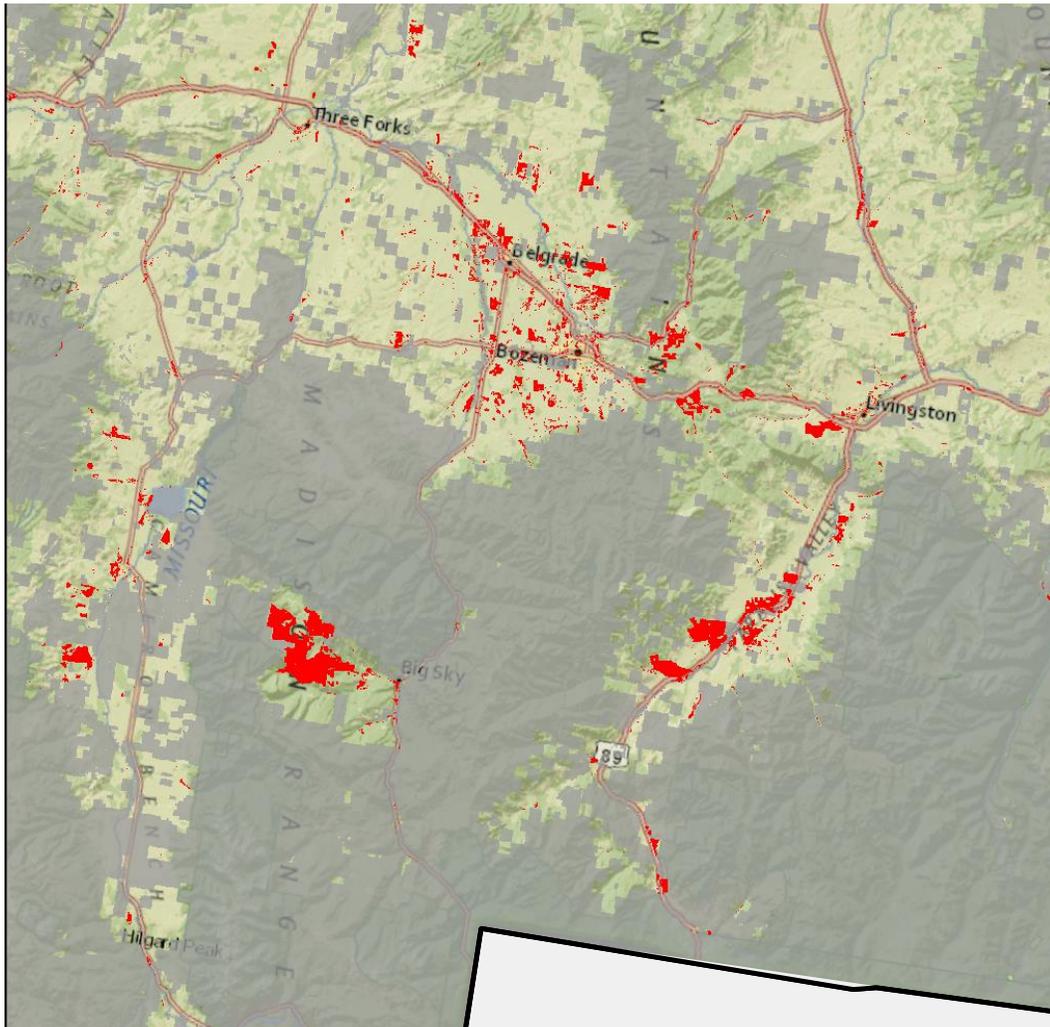
Trajectories of change 2000-2010

(private lands)



Land Use Change

National Land Use Data Set

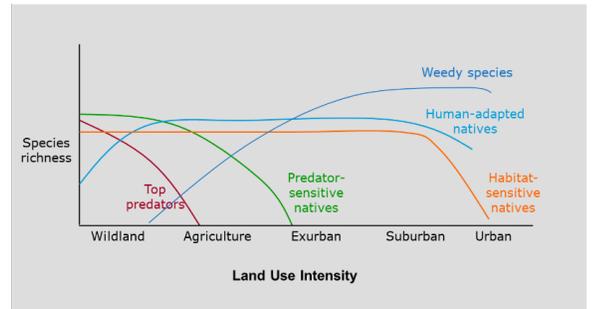
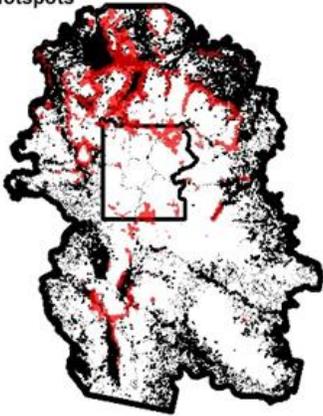


Land use
intensification
2000-2010

Influence of Sprawl on Wildlife

General Mechanisms

Bird hotspots

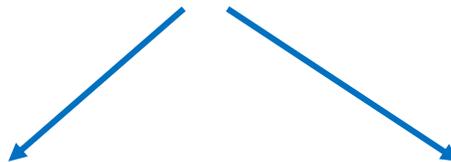


Biotic interactions

Habitat destruction



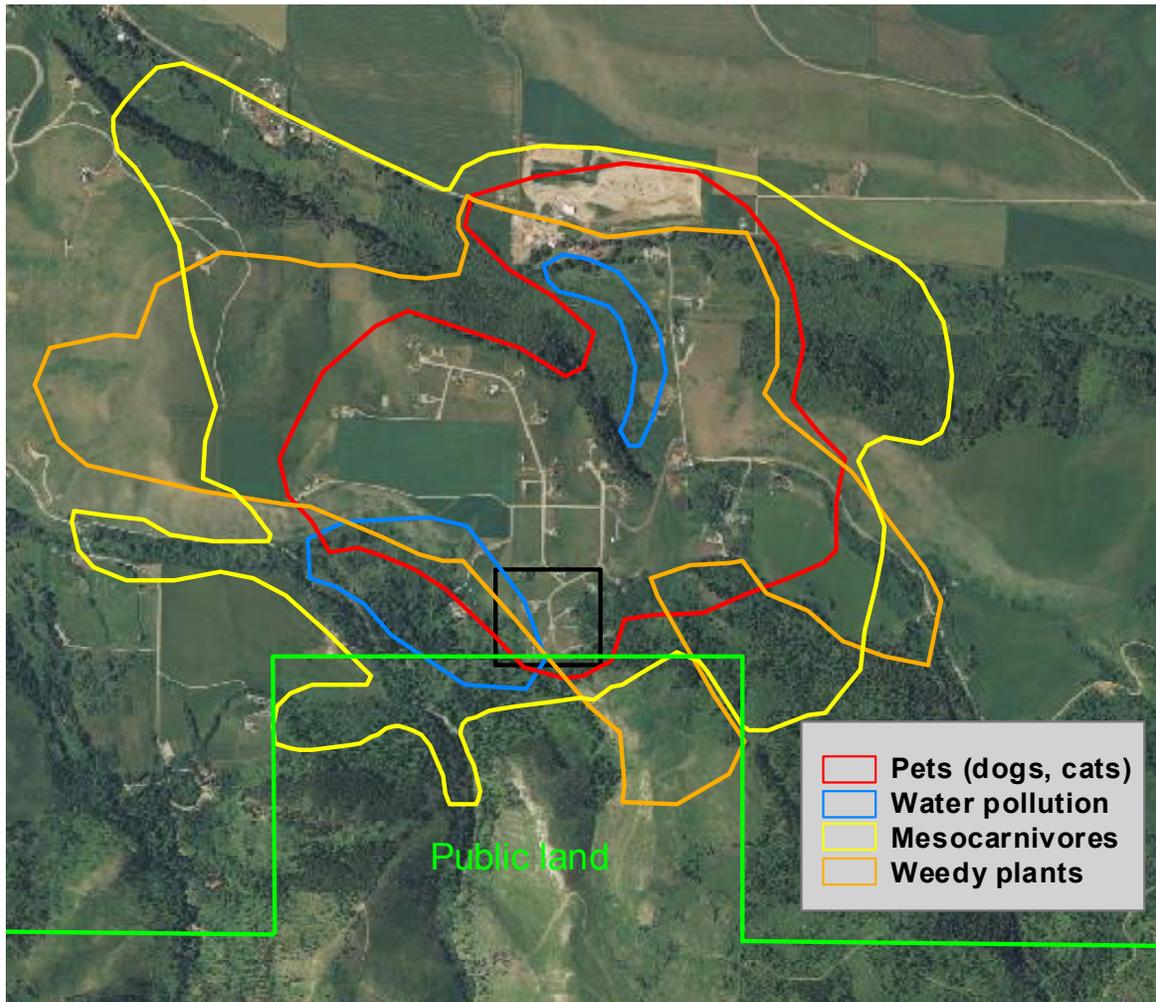
Constraints on natural disturbance



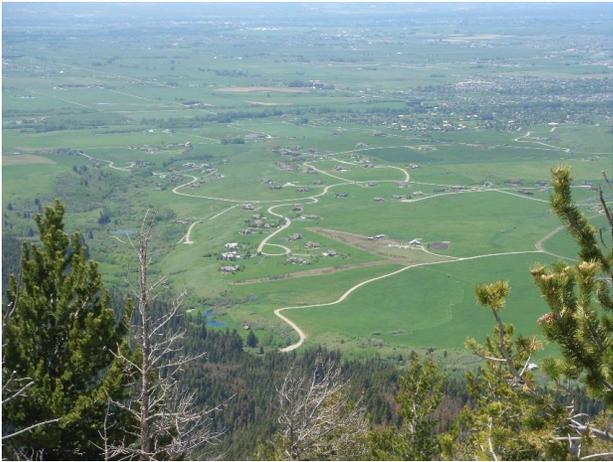
Human Disturbance

Influence in Wildlife

RRD Footprint

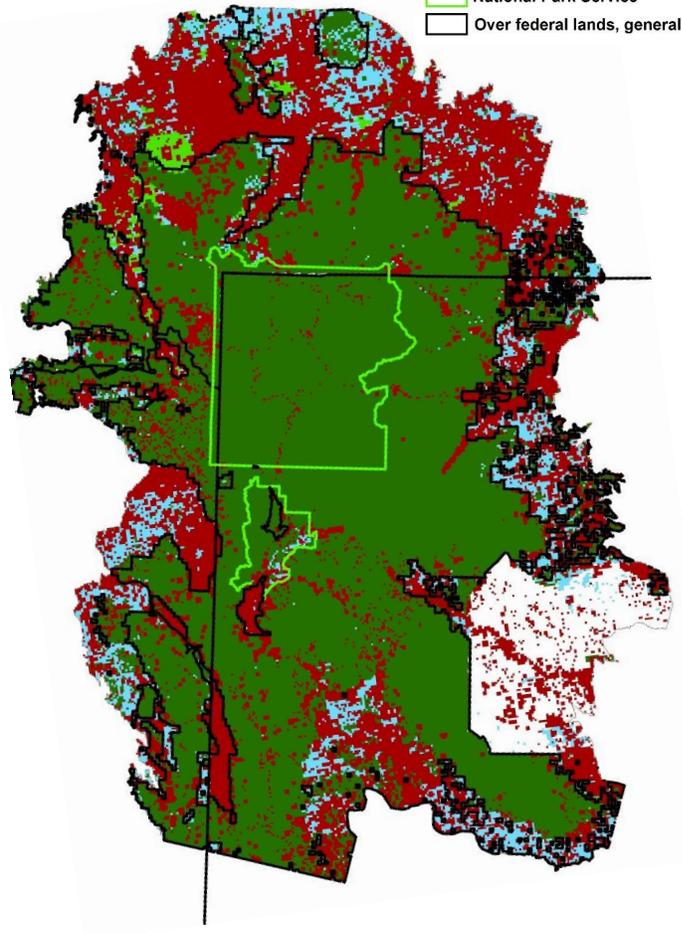


GYE Developed area



Gallatin Valley 2010

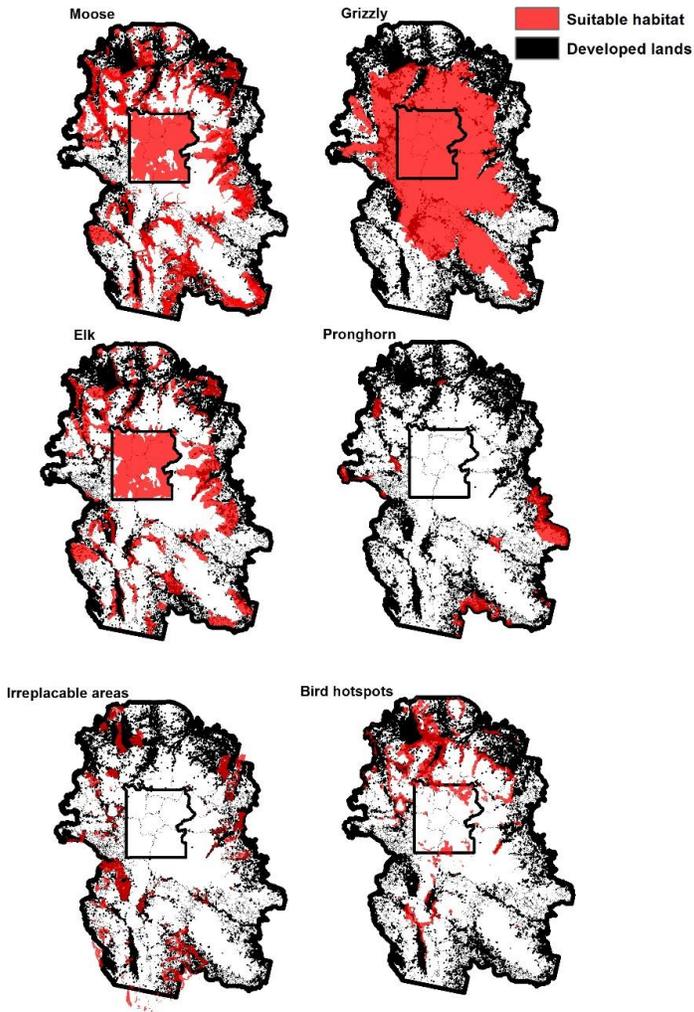
- Developed
- Private undeveloped
- Private protected undeveloped
- Public undeveloped
- Tribal undeveloped
- National Park Service
- Over federal lands, generalized



Hansen and Phillips 2016

Ecological Consequences

Habitat Fragmentation



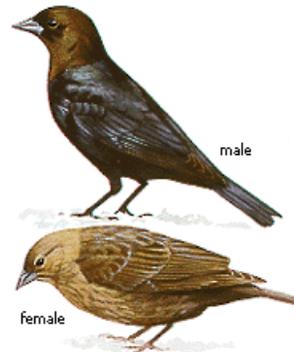
Habitat Type	Proportion Overlaying Land Use Development	
	Private Lands	All Lands
Aspen	56	27
Riparian habitat	89	57
Sage/grassland	68	39
Upland woody deciduous	63	32
Douglas fir forest	50	25
Subalpine coniferous forest	50	10
Bird hot spots	65	41
Irreplaceable areas		
Pronghorn	66	51
Moose	64	44
Grizzly bear	61	13
Elk winter	56	30

Hansen and Phillips 2016

Biotic Interactions: Home Effects on Bird Reproduction



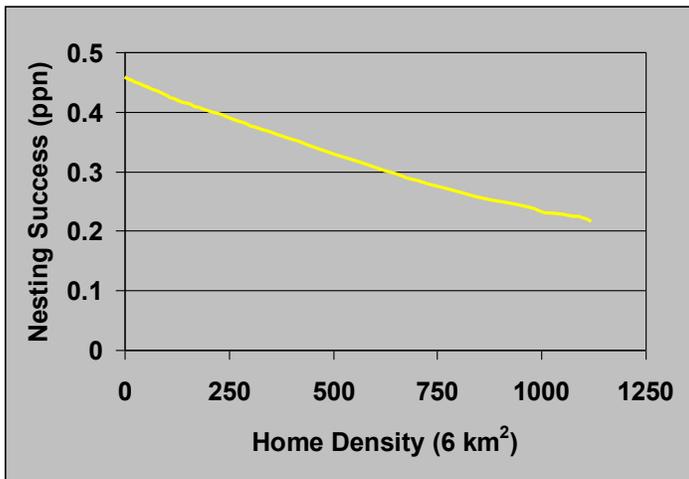
Homes near hotspot habitats



Brown-headed Cowbirds



Yellow warbler

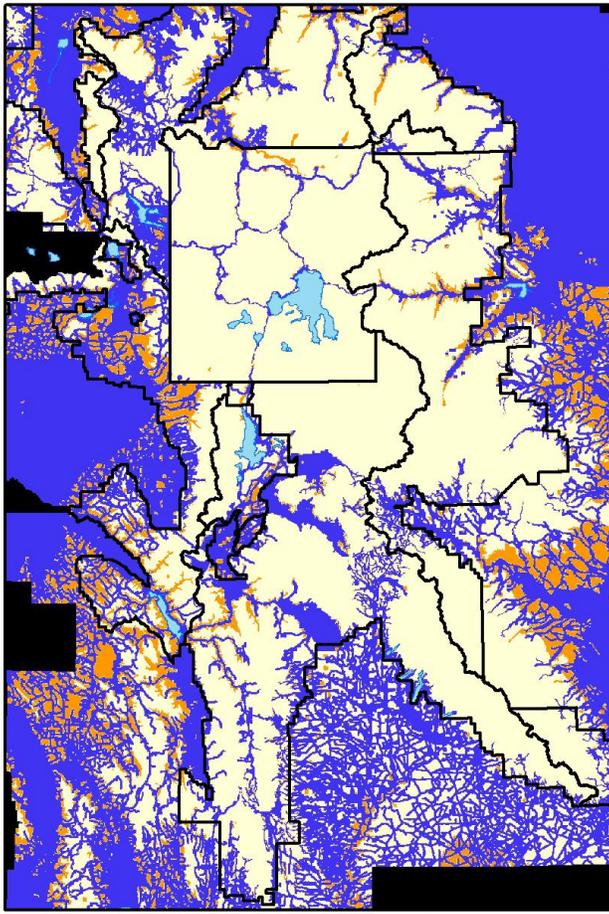


**Yellow Warbler in Hot spots:
Cowbird Parasitism rate – 44%
Nest Success – 22%**

Similar nest success for other cup-nesting species susceptible to cowbird parasitism.

Ecological Consequences

Grizzly Population Growth



■ Censored ≥ 0.91 , Assumed Dead < 0.91
■ both < 0.91
■ both ≥ 0.91
■ No Data

Modeled sources (white) and sinks (blue, orange) based on a female survival cutoff of 0.9.

Survival

85% of mortality was human caused

Survival rates were lower outside of YNP

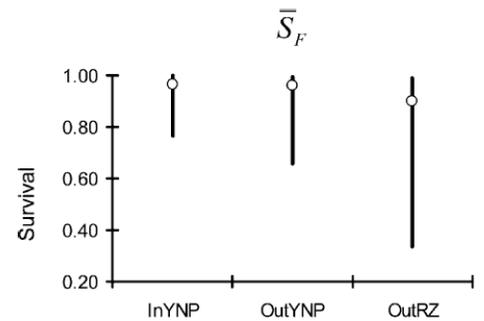
Correlates were:

Winter severity

Security (outside of road zone)

Distance from home

Development density

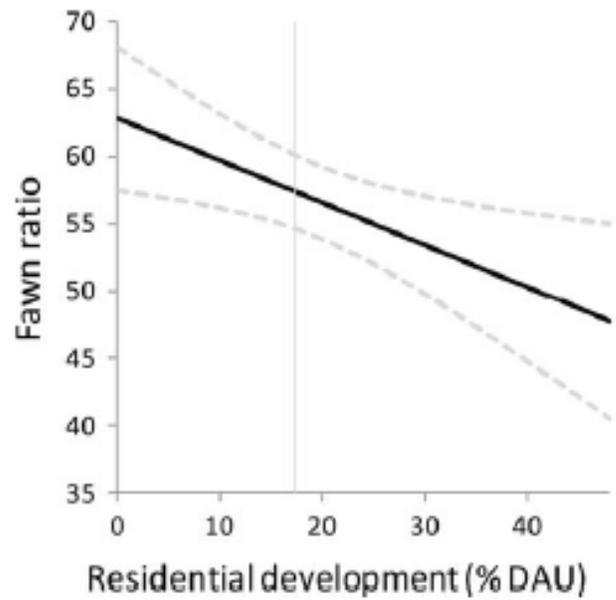
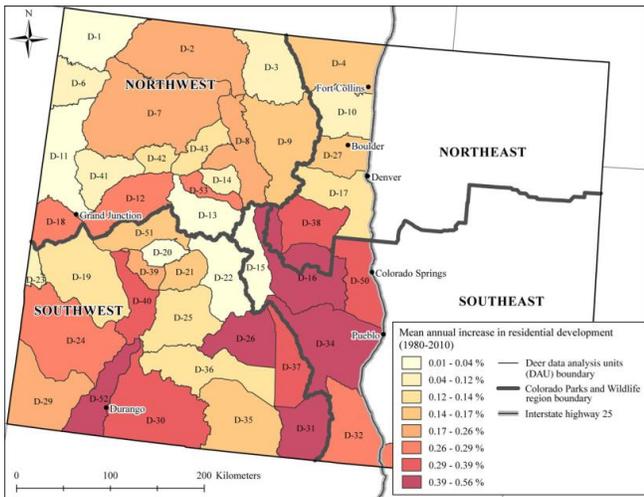


Schwartz et al. 2010.

Housing Density

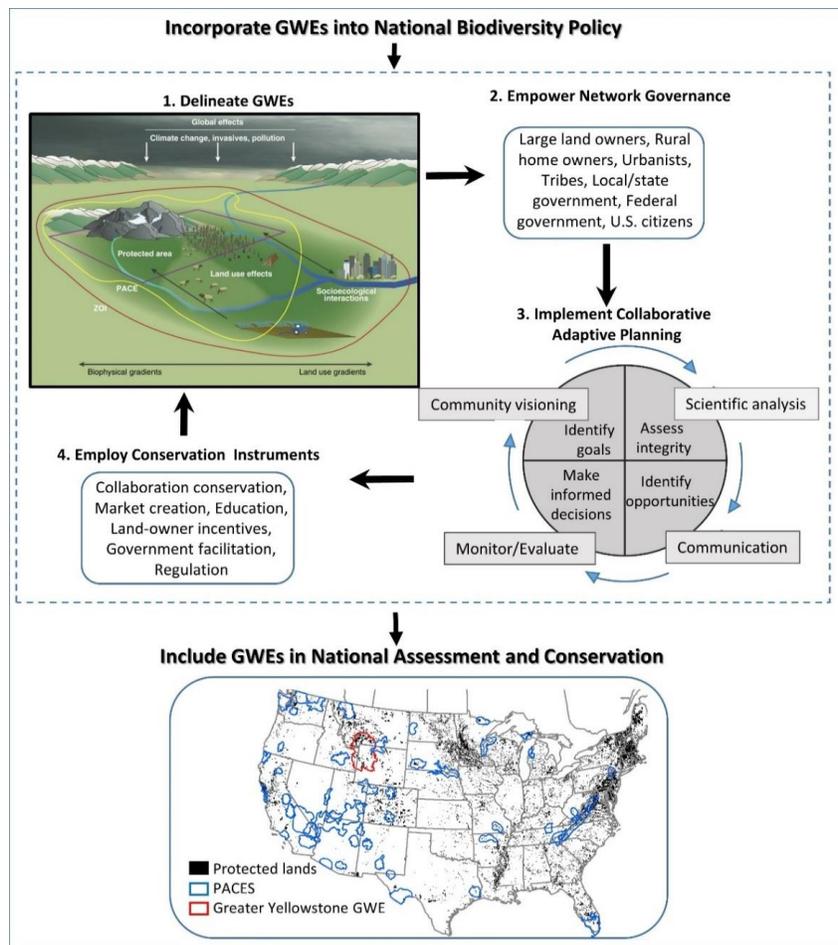
Sprawl Effects on Mule Deer 1980-2010

Johnson et al. 2017



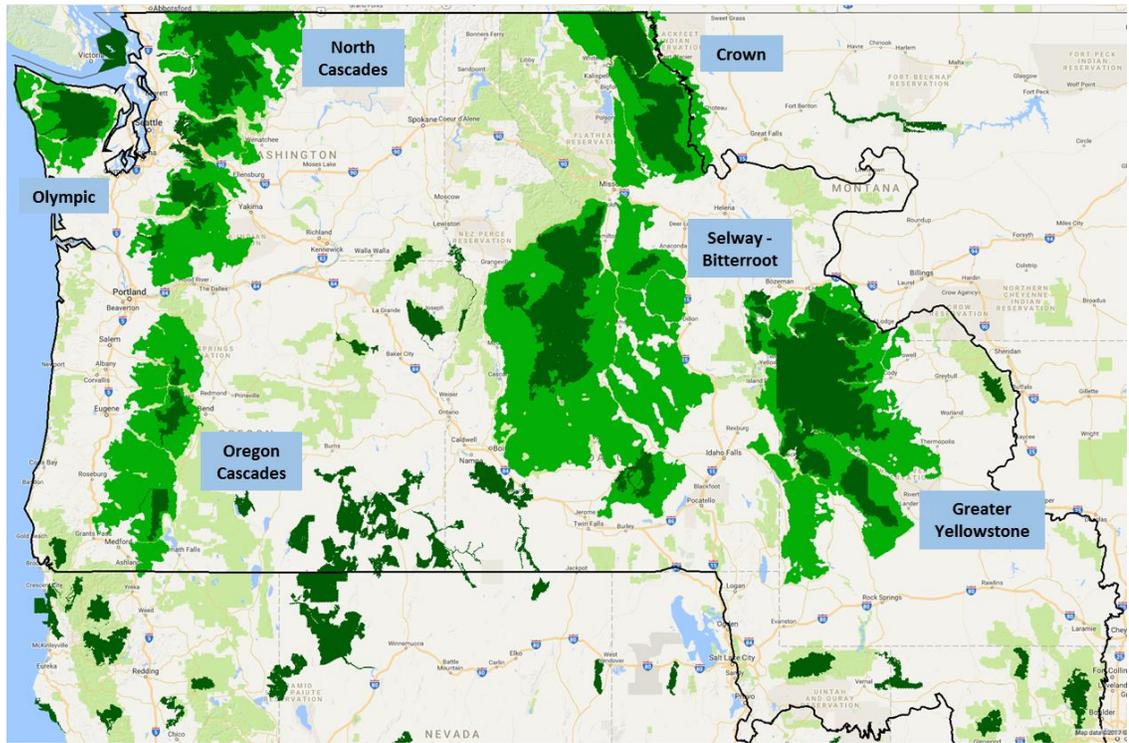
A Framework for Sustaining Wildlands

GWEs can better be sustained by application of a framework that focuses on public and private collaborative conservation within GWEs, and considers GWEs as components within a national network.



A Framework for Sustaining Wildlands

1. Pilot Greater Wildland Ecosystems



A Framework for Sustaining Wildlands

2) Empower Network Governance

Large landscape = Multiple stakeholders

'network governance' - emerges when people realize that they cannot solve a particular problem by acting independently and that their interests may be better served through collaboration.

Challenges:

no central authority for decision making or even facilitation

"wicked" problems which are difficult to articulate

lack of shared vision

lack of resources and capacity



Network Governance

High Divide Collaborative



Working together to:

- conserve and restore lands of importance for local communities and to protect ecological integrity
- bring \$36.5 million in Land & Water Conservation funding to the landscape

Shared Priorities

Working family **RANGLANDS**
Continental-scale **CONNECTIVITY**
Wild **RECREATION** lands and waterways
HEADWATERS for world-class fisheries
NATIONAL HISTORIC TRAILS
SAGE GROUSE habitat
PUBLIC ACCESS
Habitat in **WILDLAND URBAN INTERFACE**

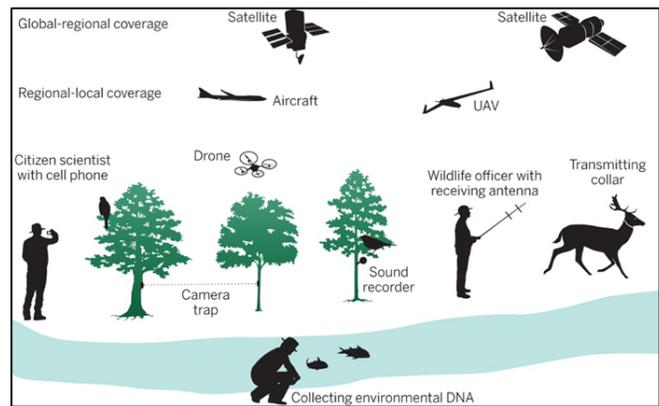
A Framework for Sustaining Wildlands

3. Evaluating Trends in Condition

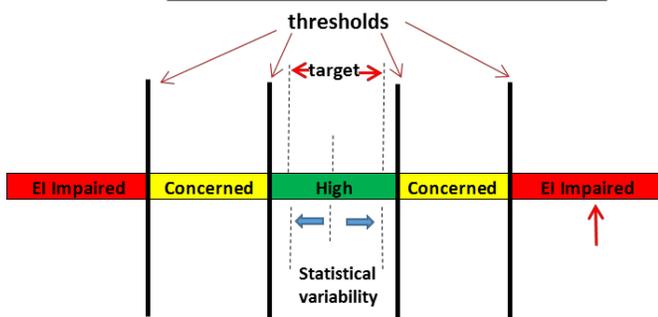
Identify Vital signs

Level 1 Vital Sign	Level 2 Vital Sign
Stressors / Threats	Urbanization Intensive land use
Water	Water quantity Flow regime
Weather and Climate	Seasonality Climate
Habitat	Ecosystem extent Intactness / pattern Stream intactness Community naturalness
Species	Trophic structure Threatened species
Ecosystem Processes	Disturbance Plant growth (productivity) Forest structure

Monitor



Evaluate Trends in condition and vulnerability

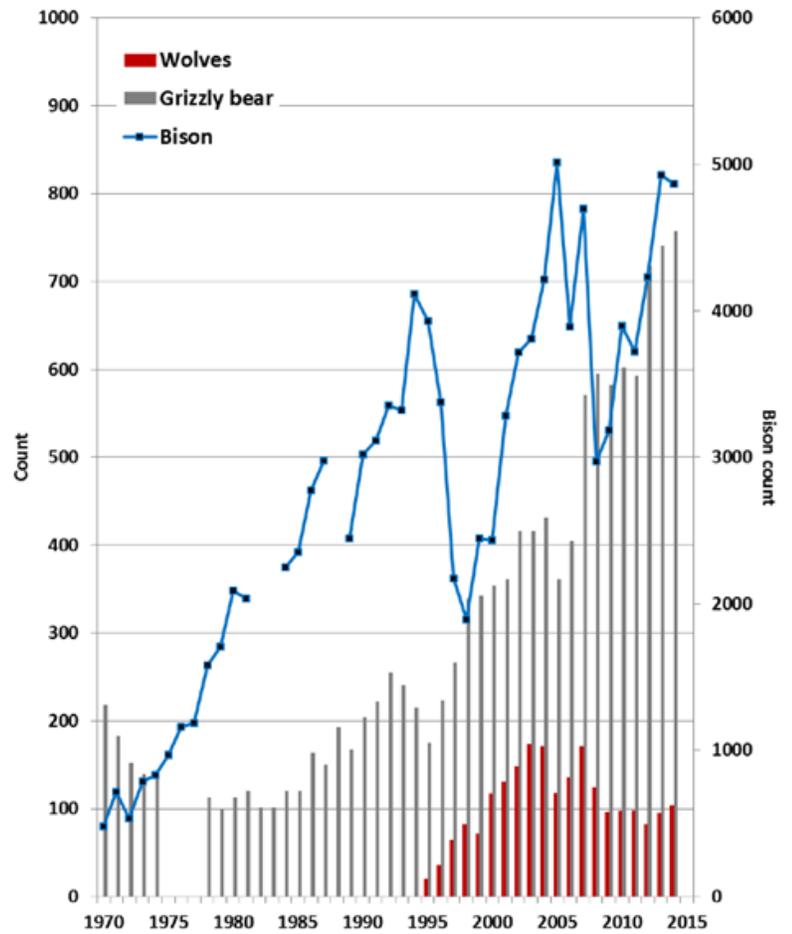


Communicate

Indicator Ecosystem	Condition and Trend of Ecosystems	% of Park Area	Rational for Rating
Forests	Poor ↓	44	Extreme moose density is affecting regeneration
Barrens	Fair ↓	35	Declining Woodland caribou
Wetlands	Fair ↓	11	Decline of Woodland Caribou
Freshwater	Good ↔	8.8	Healthy invertebrate populations
Seacoast	Fair ↑	0.2	Only a few pairs of terns continue to nest in the park
Marine	Fair ↓	1	Over-exploitation of many species

A Framework for Sustaining Wildlands

3. Evaluating Trends in Condition



A Framework for Sustaining Wildlands

4) Employ Conservation Instruments

Regulatory prohibitions and requirements

Government forces implementation.

Examples: Northwest Forest Plan; Yellowstone Grizzly bear recovery plan.

Government-lead cooperation

The government facilitates diverse entities to cooperate in achieving solutions as an alternative to government imposing solutions.

Examples: Sage Grouse Initiative; Alliance for the Chesapeake Bay

Direct incentives for private conservation action

Public or private entity purchases land, conservation easements, tax incentives.

Examples: American Prairie Reserve; Trust for Public Land

Education and marketing

Information is provided on benefits of conservation and ways to sustain ecosystem health.

Examples: NRCS riparian management training kits; NPS and Subaru National Parks campaign

Market creation and improvement

Businesses that benefit from healthy ecosystems are enabled through market tools.

Examples: Sustainable forestry certification

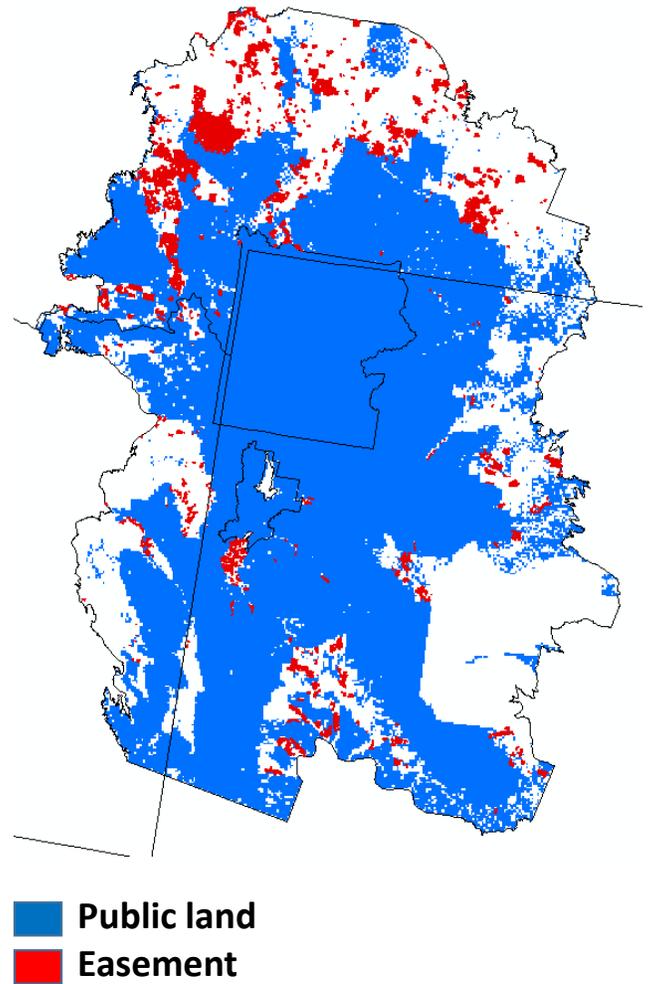
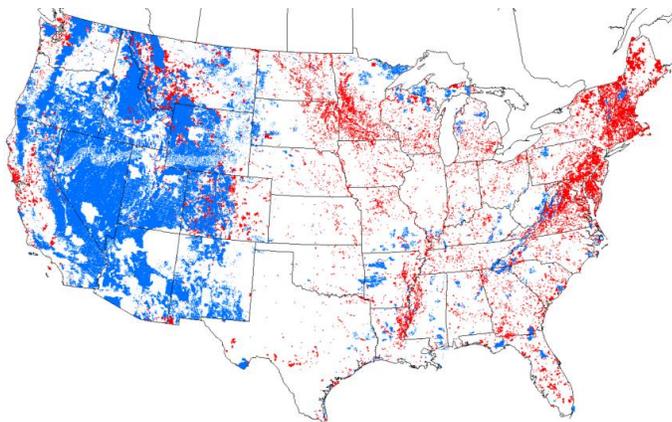
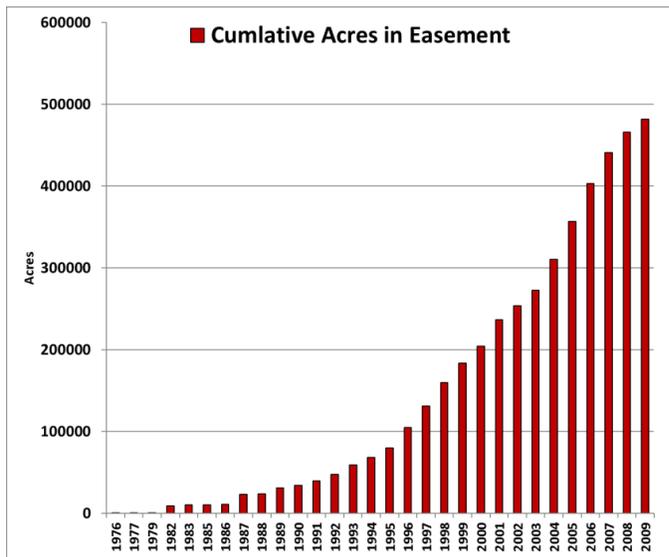
Collaborative Conservation

Diverse stakeholders collaborate to develop and implement the programs.

Examples: Crown Management Partnership; High Divide Collaborative

A Framework for Sustaining Wildlands

4) Employ Conservation Instruments: Conservation Easements



A Framework for Sustaining Wildlands

4) Employ Conservation Instruments: Education for Individuals

**Effective communication materials for how to have a
“lighter touch” on the ecosystem:**

Ranch managers

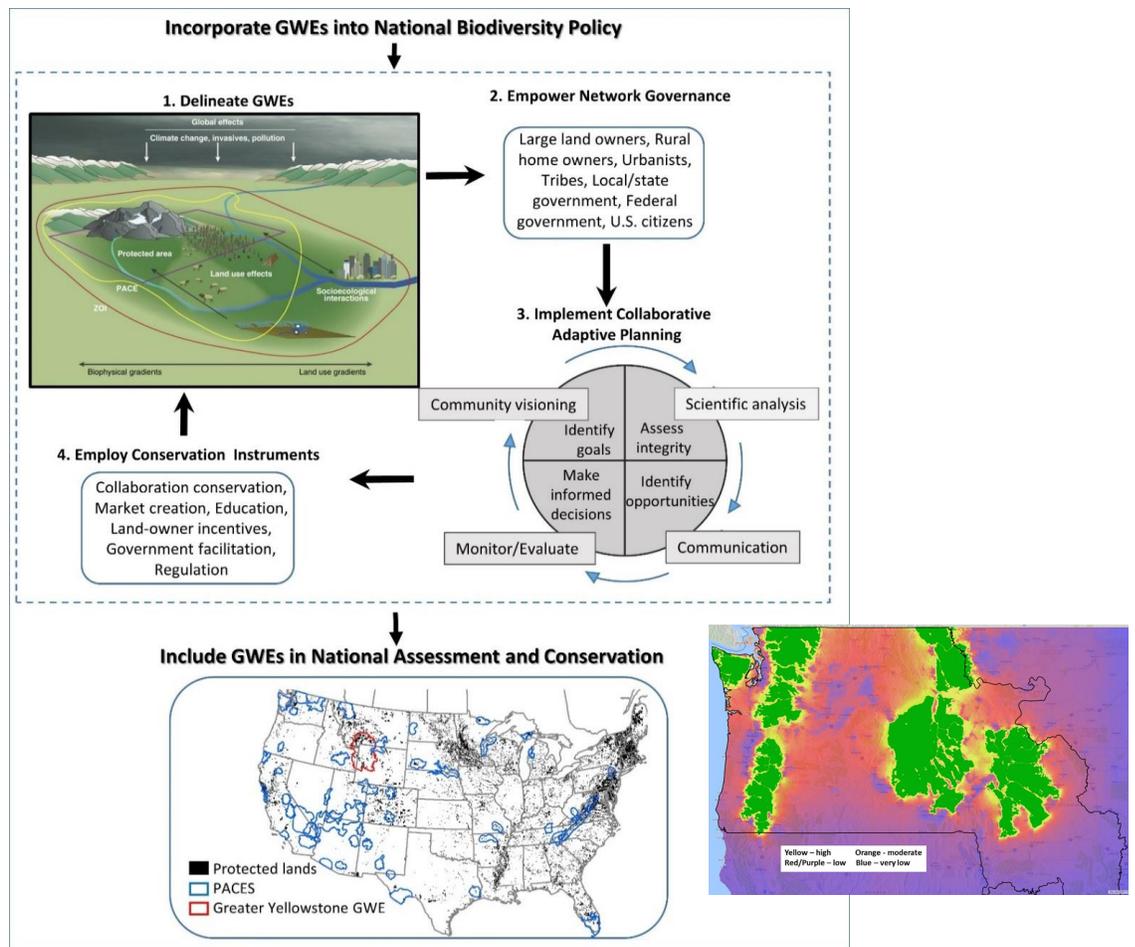
Exurban residents

Backcountry Recreationalists

City managers

A Framework for Sustaining Wildlands

GWEs can better be sustained by application of a framework that focuses on public and private collaborative conservation within GWEs, and considers GWEs as components within a national network.





Conclusions

Population growth and land use intensification is expanding rapidly across the region and will likely continue into the future.

The resulting sprawl has the potential for strong negative impacts on wildlife

Critically needed is national policy on applying large landscape conservation planning across there remaining large wildland ecosystems.

Acknowledgements

NASA Applied Sciences Program

NSF EPSCoR Track-I

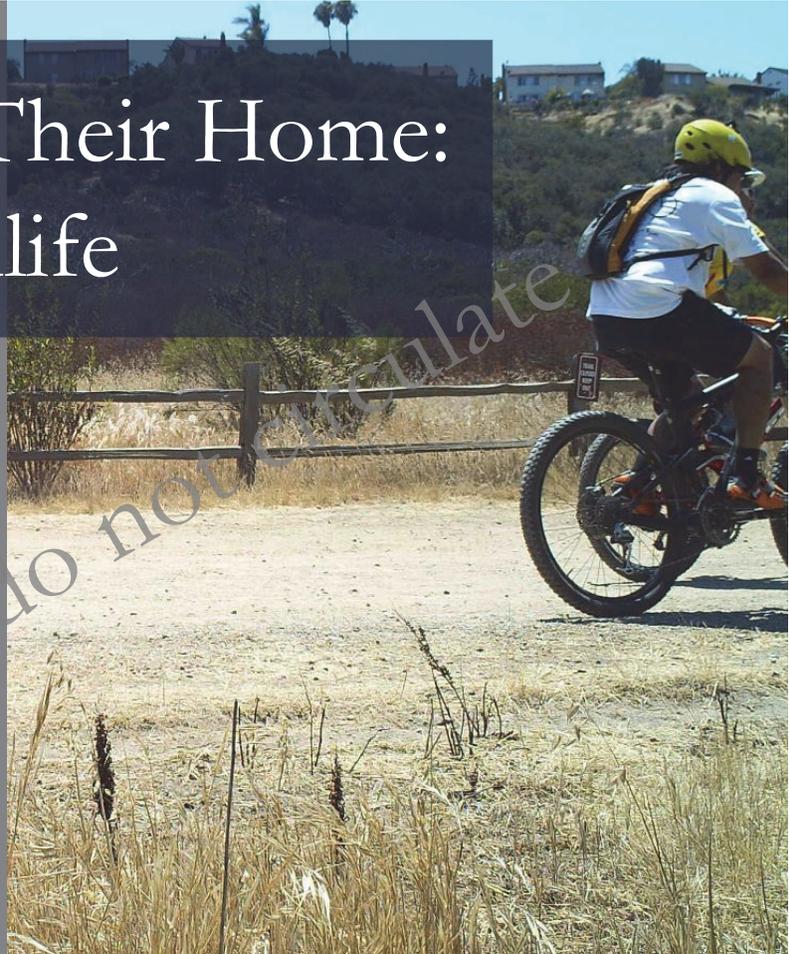
NASA Land Cover Land Use Change Program

North Central Climate Sciences Center

Discussions with Mike Clark, Dennis Glick, Kevin Krasnow, Arthur Middleton, Charles Preston, David Quammen.



Our Playground Is Their Home: Recreation and Wildlife



Colorado
State
University

Sarah E. Reed *Wildlife Conservation Society*
Courtney L. Larson *Colorado State University*

95%

protected lands are open to public access

40%

increase in recreation activity

\$887

billion in annual consumer spending

Draft - please do not circulate



“To conserve... the **wild life**
therein and to provide for the
enjoyment of the same...”

Outline

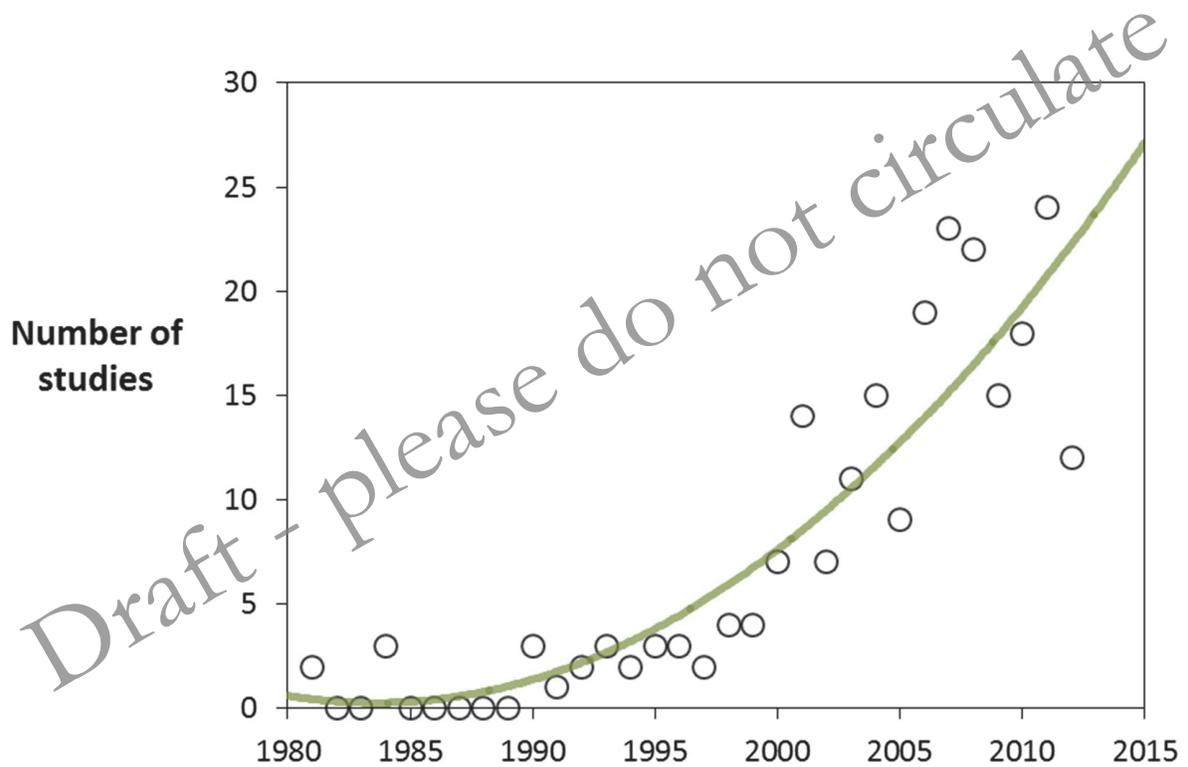
1. What do we know?
2. How much does it matter?
3. What do we need to know?

Draft - please do not circulate



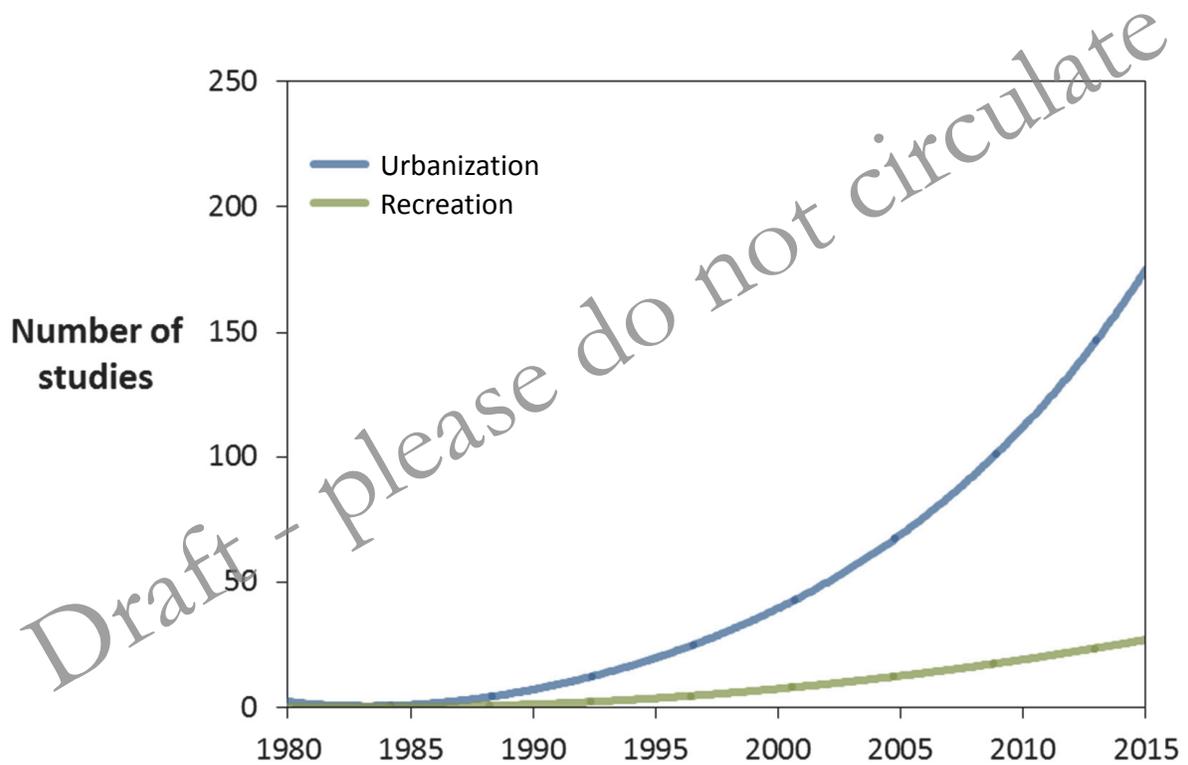
1. What do we know?

Studies of recreation and wildlife



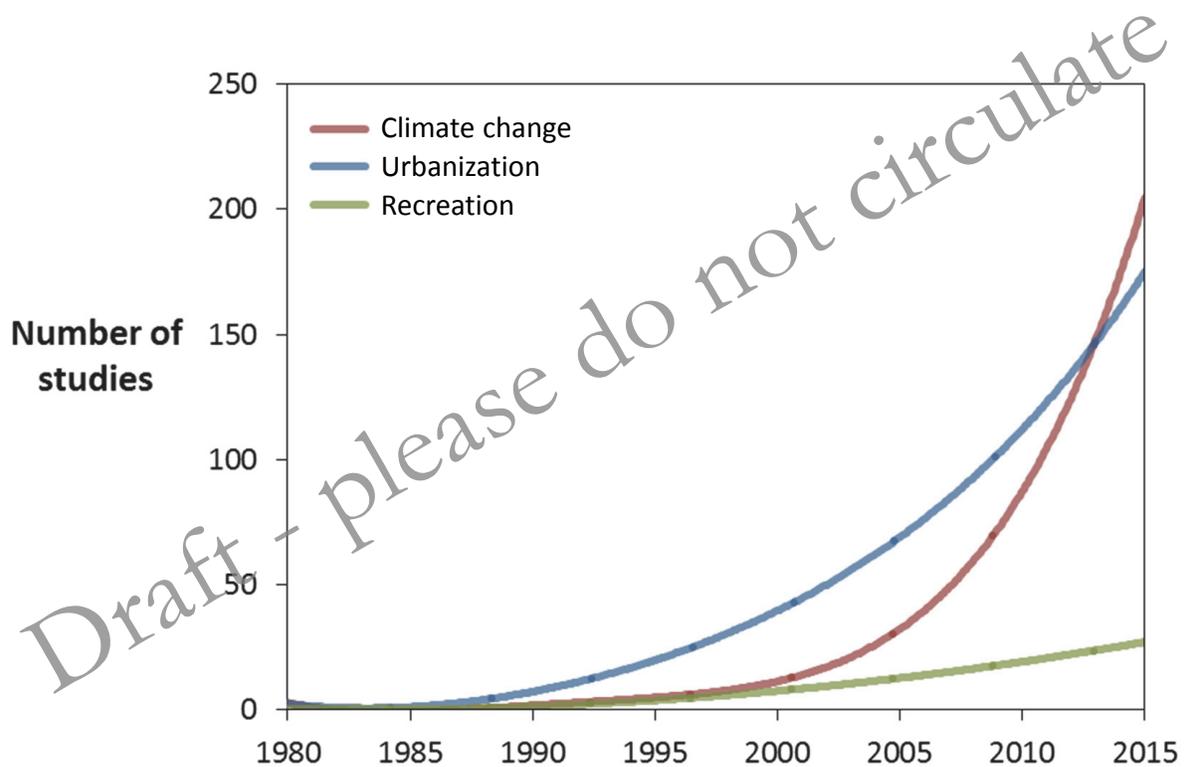
Larson et al. (2016)

Studies of recreation and wildlife



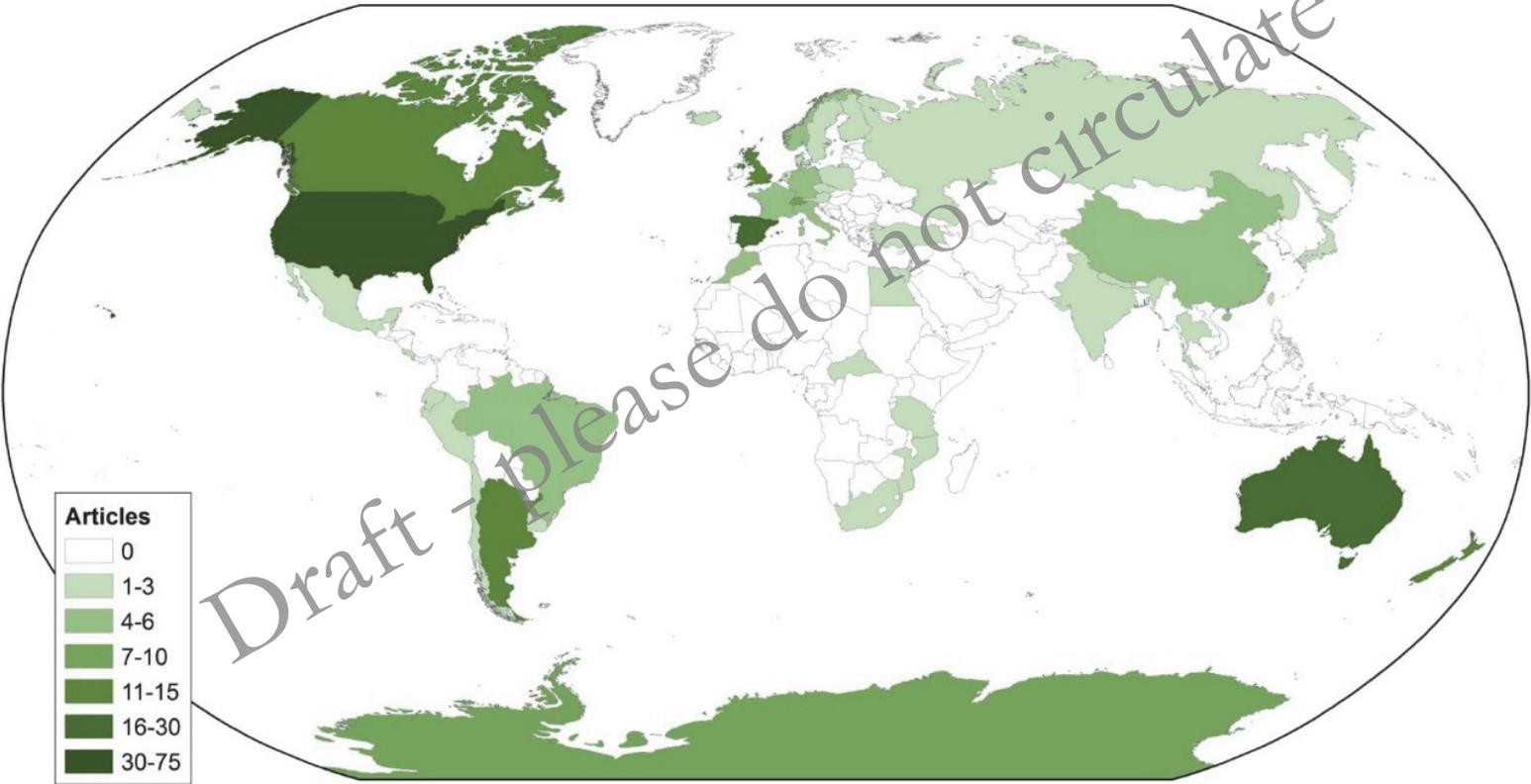
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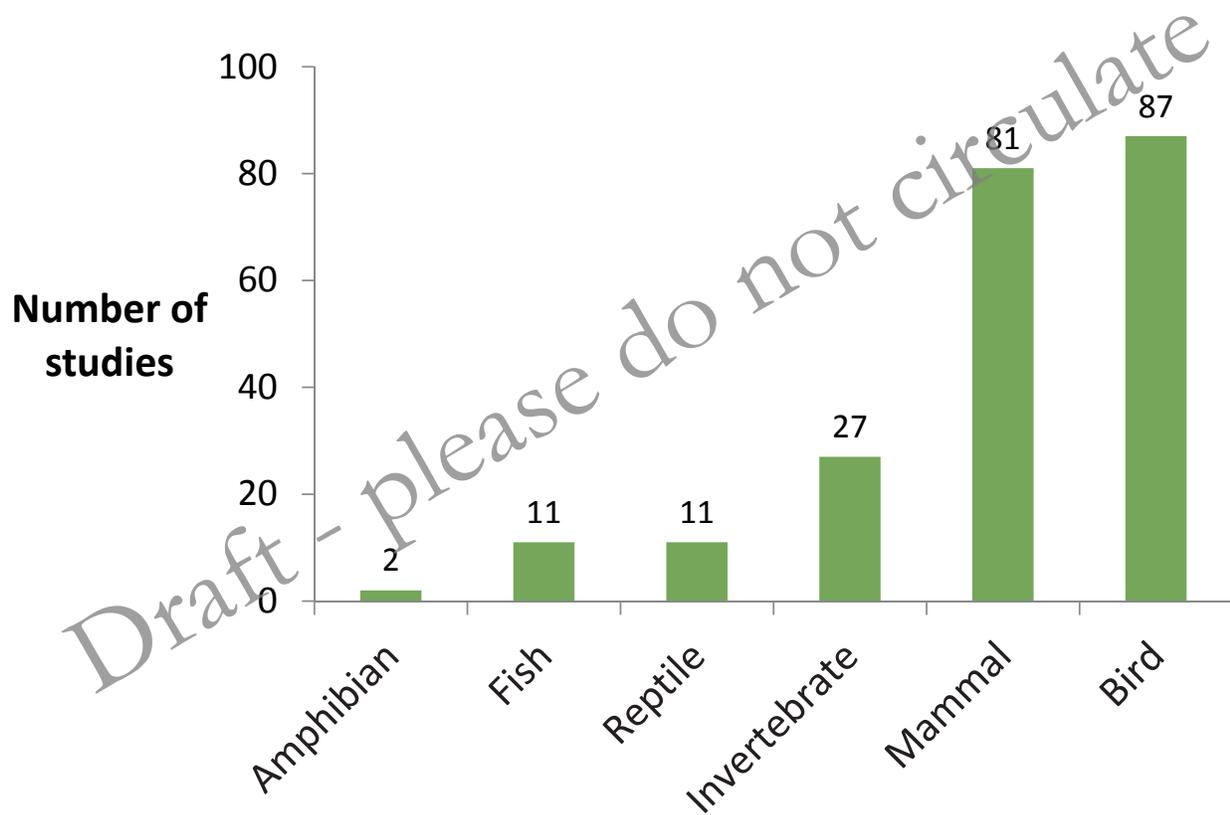
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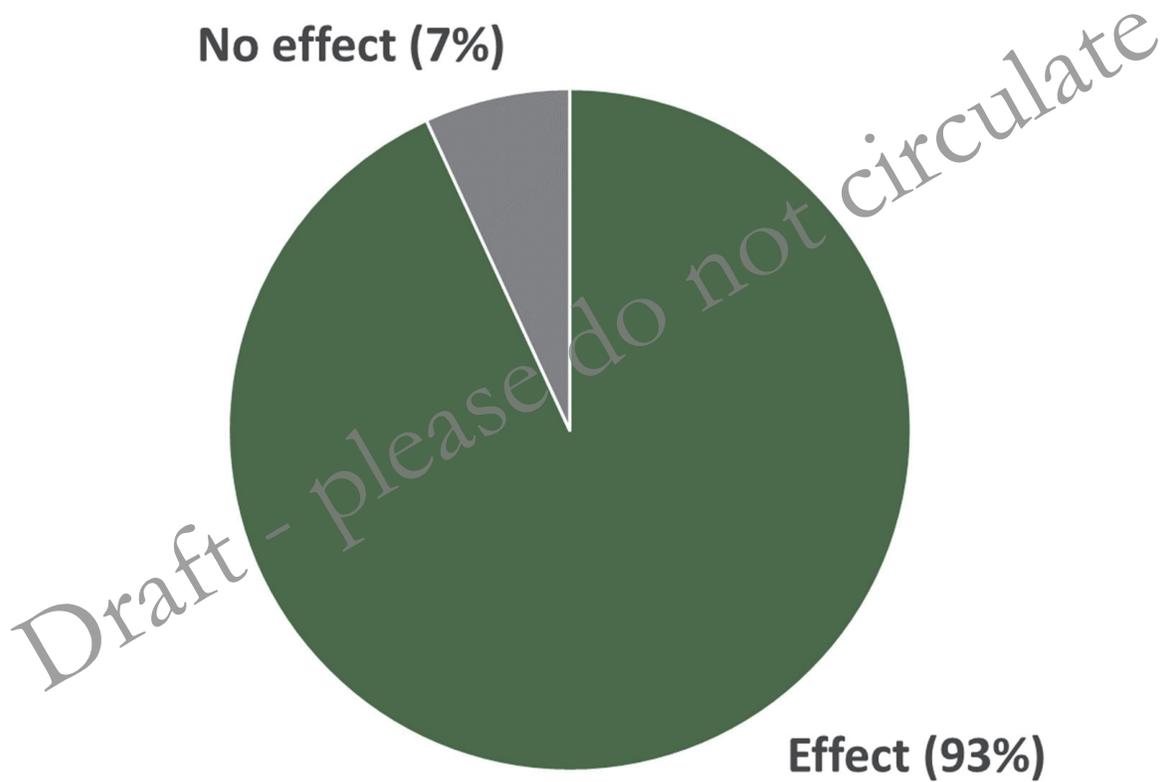
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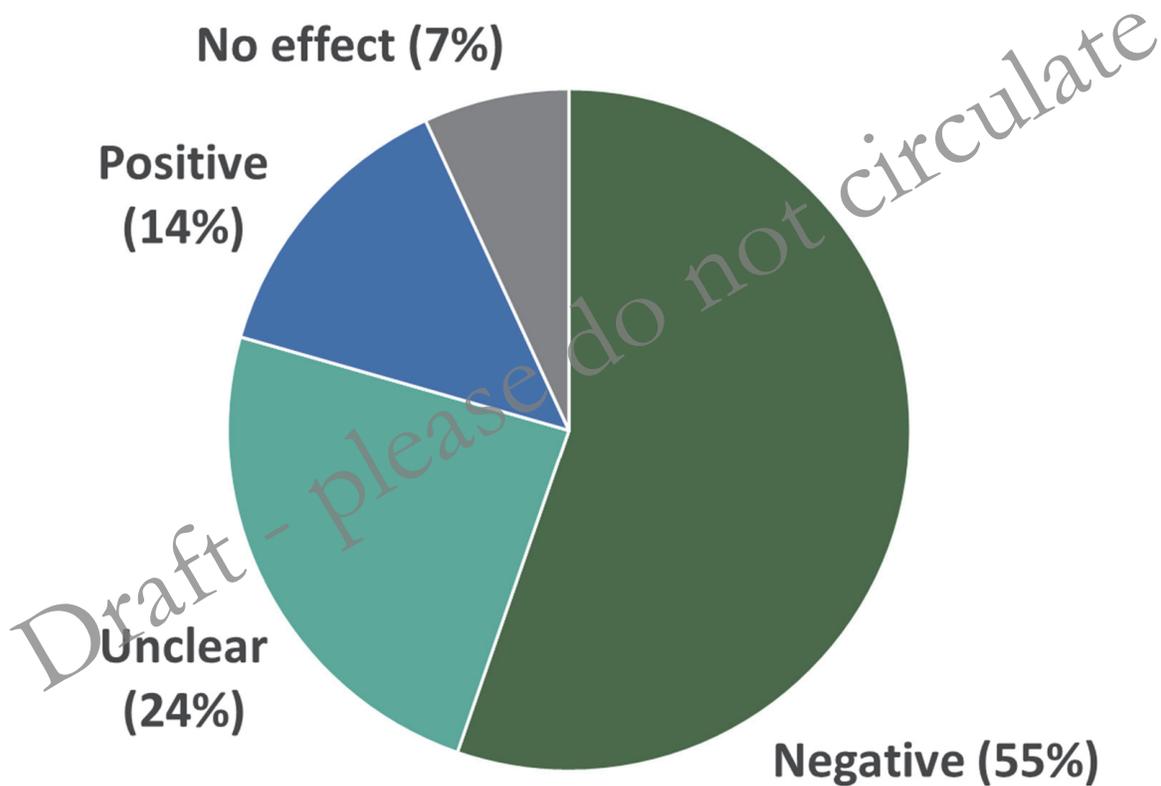
Larson et al. (2016)

Effects of recreation on wildlife



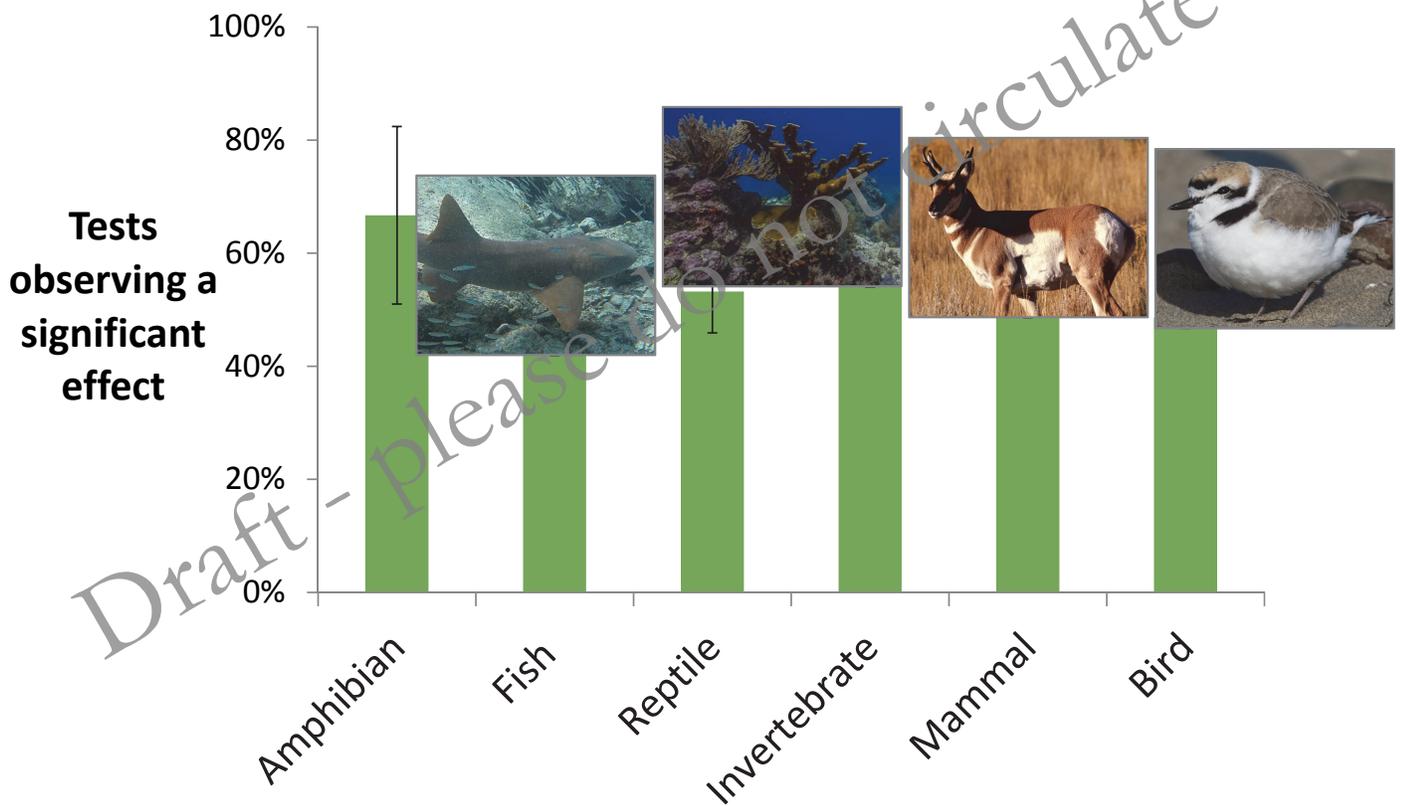
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Effects of recreation on wildlife



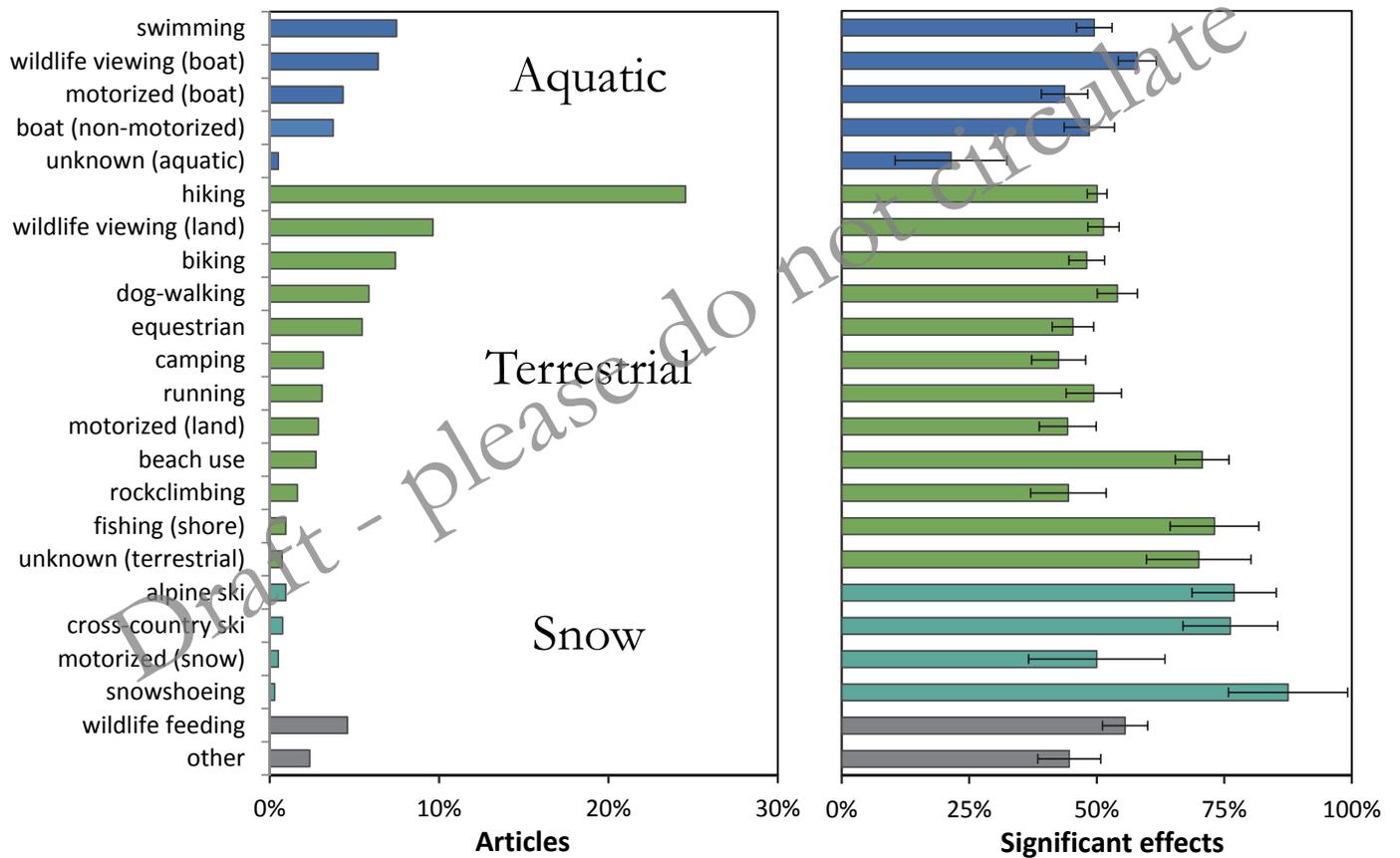
Larson et al. (2016)

Effects of recreation on wildlife



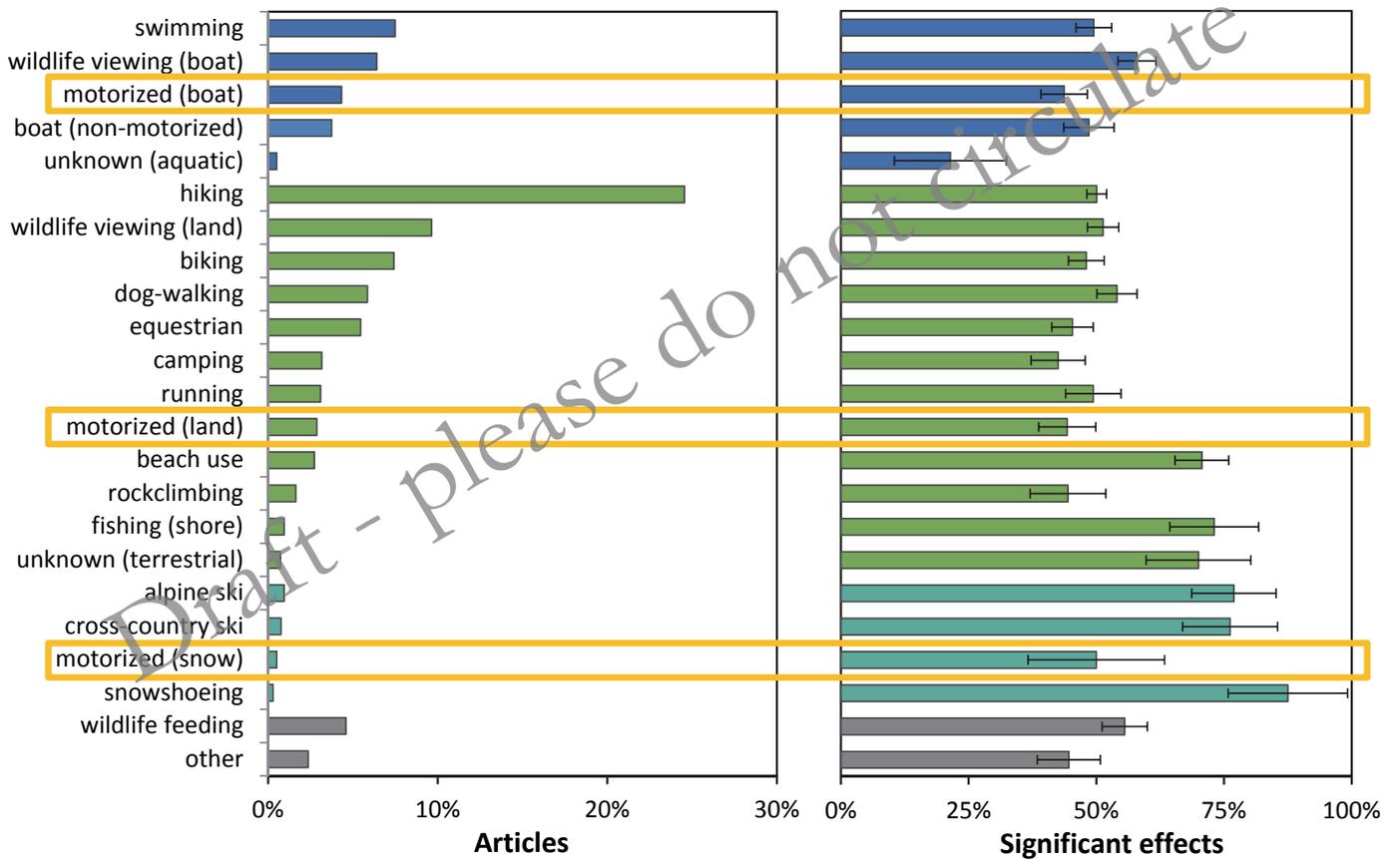
Larson et al. (2016)

Effects of recreation on wildlife



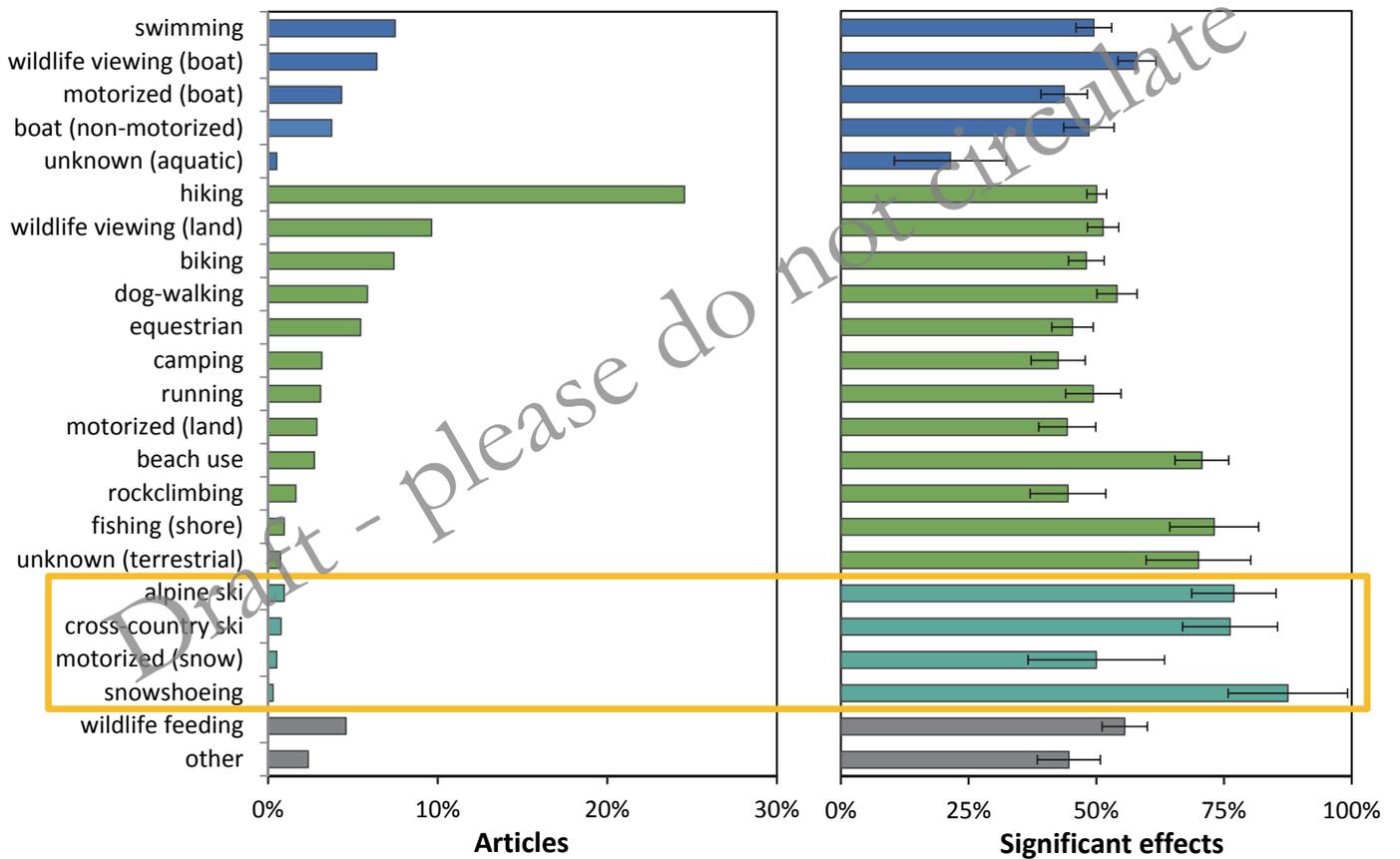
Larson et al. (2016)

Effects of recreation on wildlife



Larson et al. (2016)

Effects of recreation on wildlife



Larson et al. (2016)

Effects of recreation on wildlife



RESEARCH ARTICLE

Effects of Recreation on Animals Revealed as Widespread through a Global Systematic Review

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Abstract

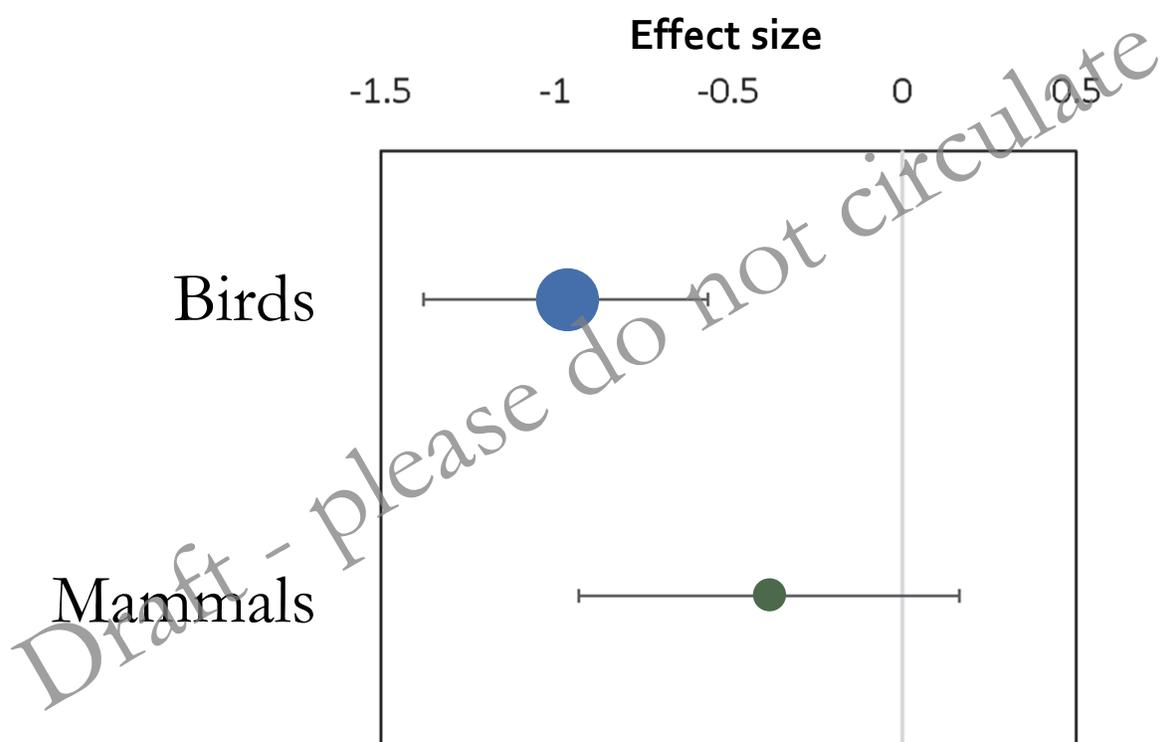
Outdoor recreation is typically assumed to be compatible with biodiversity conservation and is permitted in most protected areas worldwide. However, increasing numbers of studies are discovering negative effects of recreation on animals. We conducted a systematic review of the scientific literature and analyzed 274 articles on the effects of non-consumptive recreation on animals, across all geographic areas, taxonomic groups, and recreation activities. We quantified trends in publication rates and outlets, identified knowledge gaps, and assessed evidence for effects of recreation. Although publication rates are low and knowledge gaps remain, the evidence was clear with over 93% of reviewed articles documenting at least one effect of recreation on animals, the majority of which (59%) were classified as negative effects. Most articles focused on mammals (42% of articles) or birds (37%), locations in North America (37.7%) or Europe (26.6%), and individual-level responses (49%).

A photograph of a woman walking a dog on a paved path. The woman is in the foreground, seen from behind, wearing a dark top, shorts, and a purple cardigan. She is walking a small, fluffy brown dog on a leash. In the background, a man is jogging on the same path. The path is surrounded by green grass and leads towards a hillside with houses in the distance. A dark bird is flying in the sky on the right side. A semi-transparent dark band across the middle of the image contains the text "2. How much does it matter?".

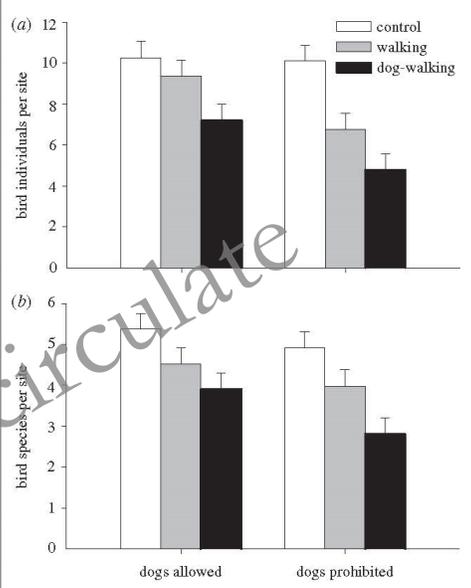
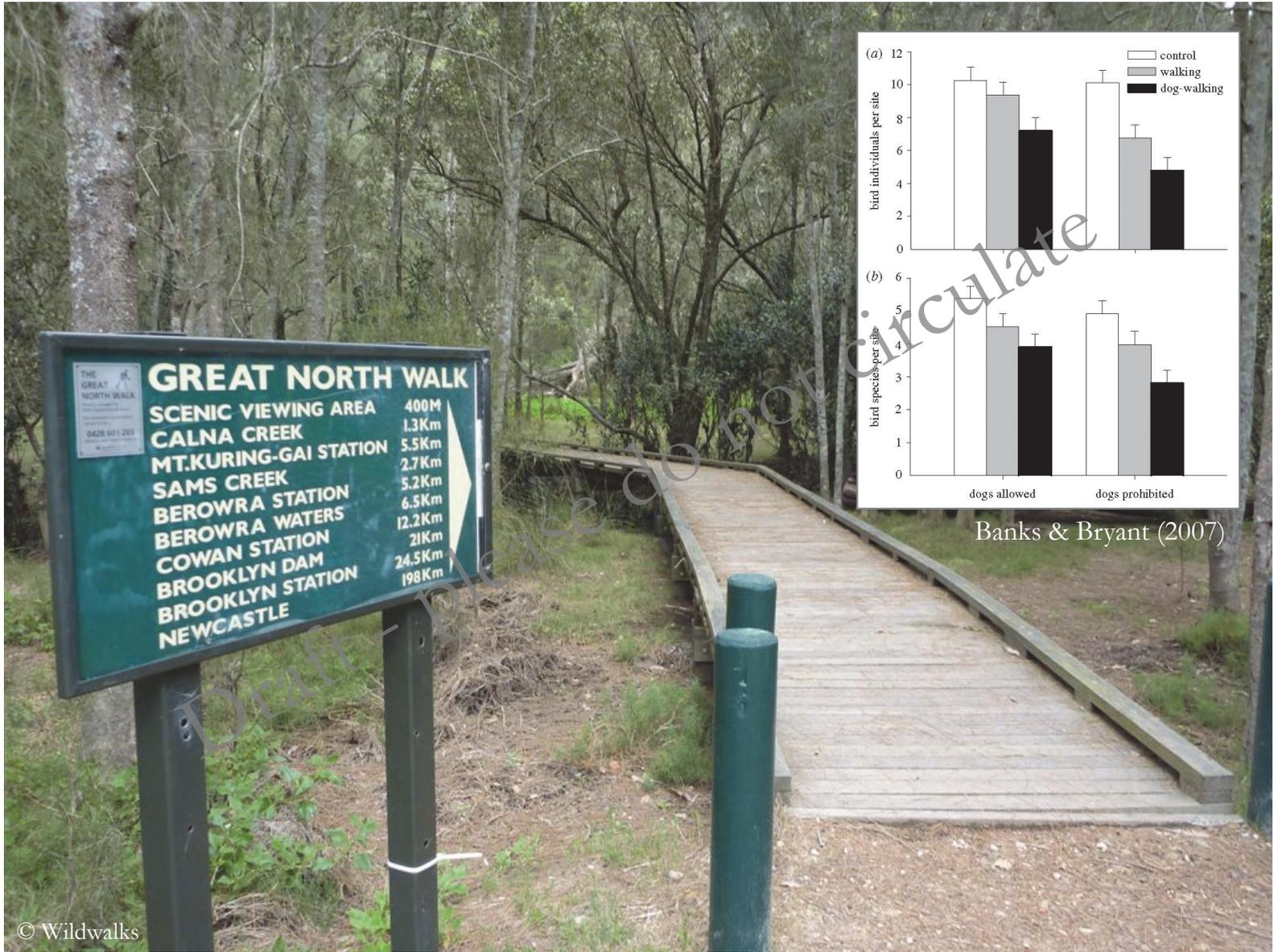
2. How much does it matter?

Draft + please do not circulate

Effect on species richness

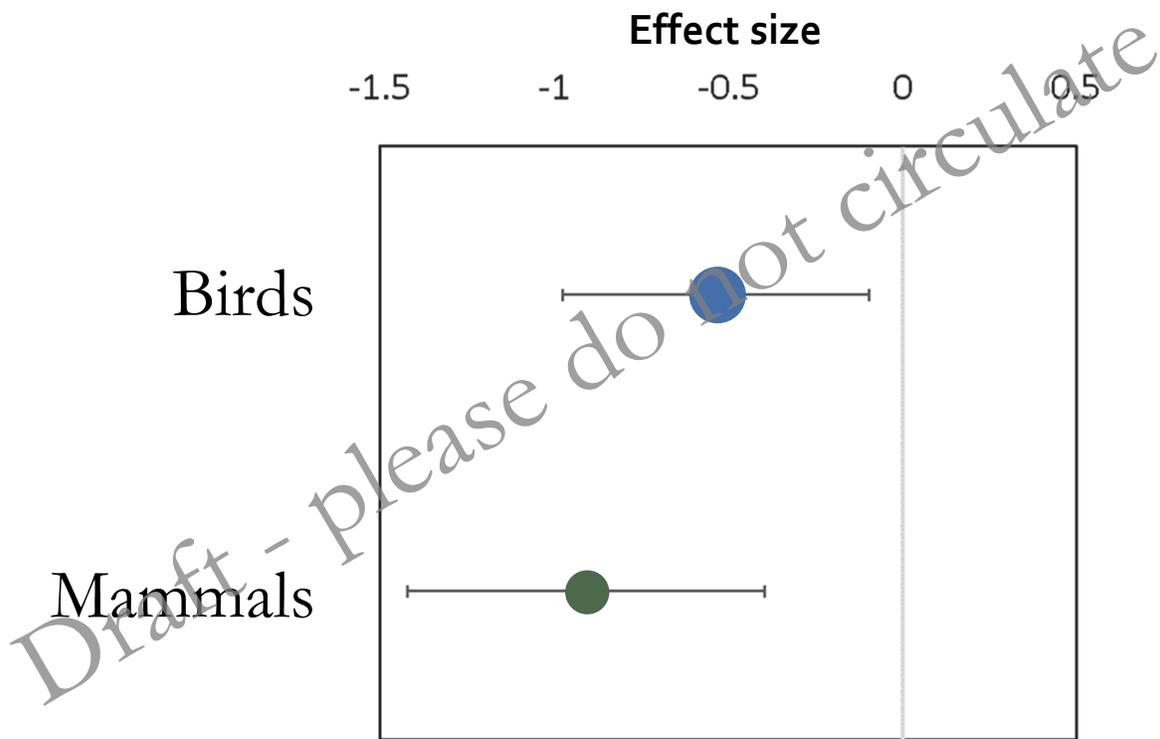


Larson et al. (*in preparation*)

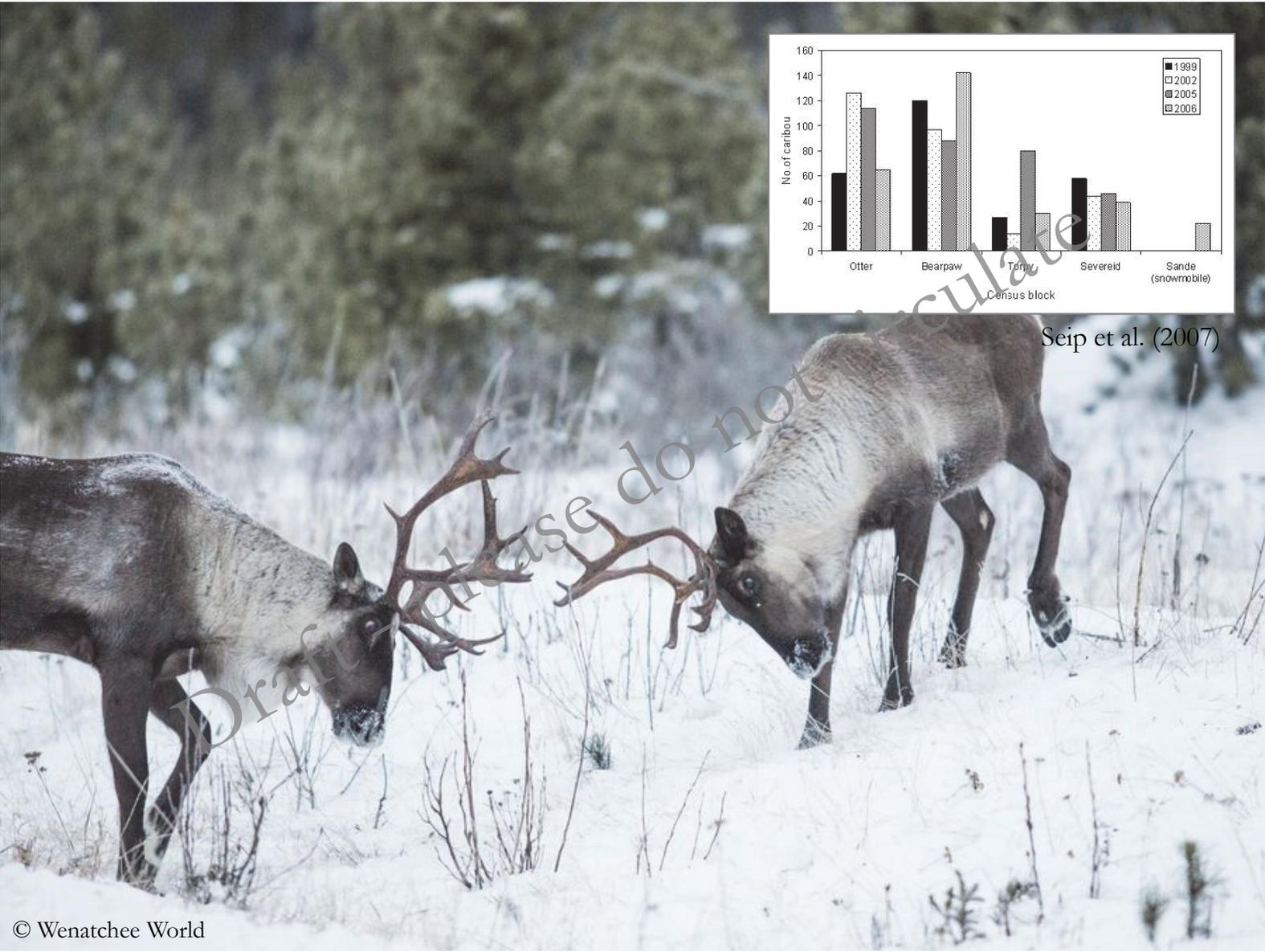


Banks & Bryant (2007)

Effect on wildlife abundance

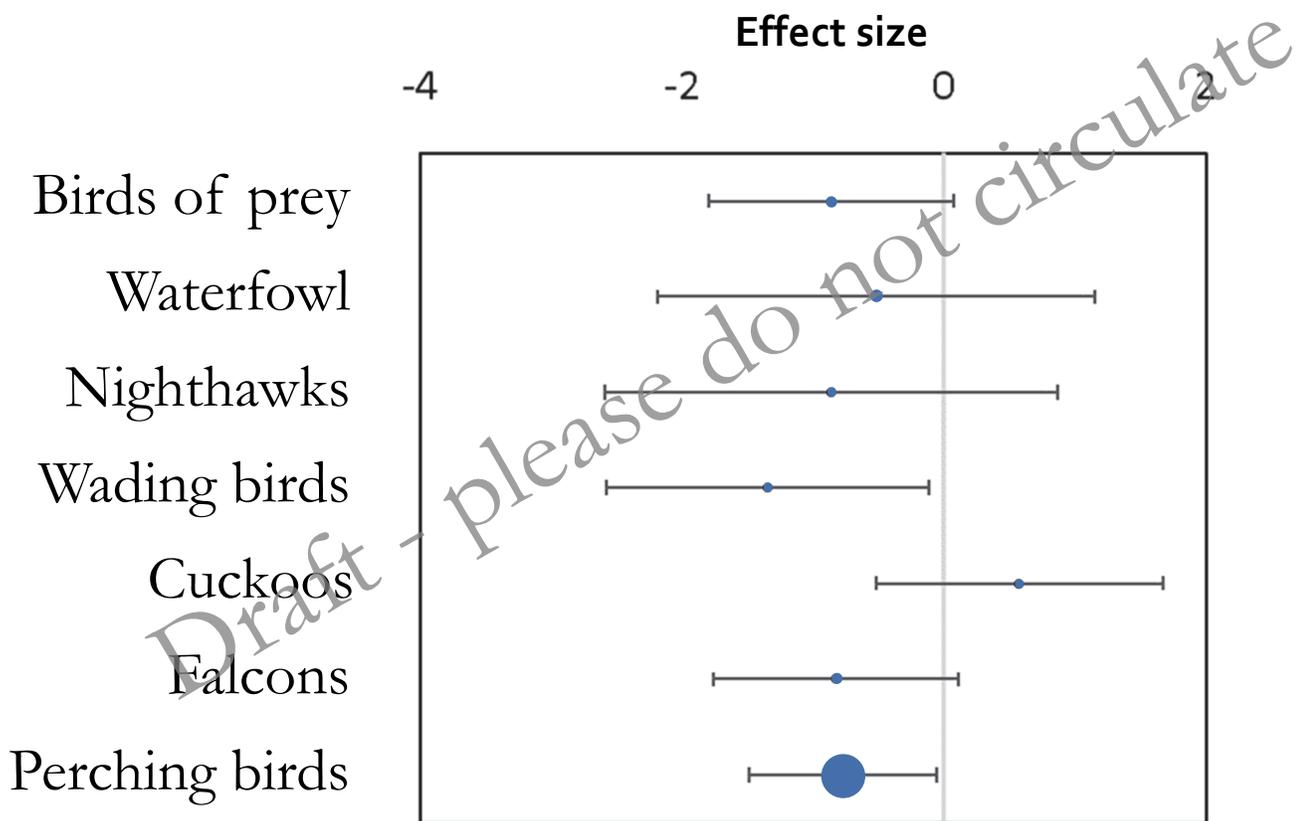


Larson et al. (*in preparation*)



Seip et al. (2007)

Effect on bird abundance



Larson et al. (*in preparation*)



3. What do we need to know?



What we know

Most studies focus on birds (39%) or mammals (37%)

What we need to know

Which species are most sensitive to disturbance by recreation?

Draft - please do not circulate

What we know

Most studies focus on birds (39%) or mammals (37%)

A majority (52%) of studies focus on individual-level effects of recreation

What we need to know

Which species are most sensitive to disturbance by recreation?

What are the consequences of recreation for populations and communities?

Draft - please do not circulate

What we know

Most studies focus on birds (39%) or mammals (37%)

A majority (52%) of studies focus on individual-level effects of recreation

The greatest proportion of studies (25%) focus on hiking

What we need to know

Which species are most sensitive to disturbance by recreation?

What are the consequences of recreation for populations and communities?

How do different recreation activities impact species differently?

Draft - please do not circulate

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How do different recreation activities impact species differently?

Most studies (80%) measure recreation as a categorical variable

What are the thresholds of recreation disturbance—number of visitors, spatial distribution, or timing?

Draft please do not circulate

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Most studies (80%) measure recreation as a categorical variable

What are the thresholds of recreation disturbance—number of visitors, spatial distribution, or timing?

Few studies (35%) are experimental or test management alternatives

What are options for managing the effects of recreation, and are they effective?

PROPERTY

OF THE *CITIZENS*

~~STATE~~ OF CALIFORNIA

~~DEPARTMENT OF FISH AND GAME~~

NO TRESPASSING

OF

NON TAX-PAYER



STATE OF CALIFORNIA
The Resource Agency
DEPARTMENT OF FISH AND GAME

STATE OF CALIFORNIA
The Resource Agency
DEPARTMENT OF FISH AND GAME



© 1988 BIRD, INC. MANUFACTURED BY 15104 1 3/8" X 27" 304 STAINLESS STEEL

“OK! I get it... I’m a filthy human who leaves a wake of delayed death and environmental havoc just by existing on the planet!”

“Having hiked more than a few times, I have noticed that I tend to disturb birds... Somehow, I still find a way to sleep at night.”

“A shame, isn’t it, that humans who want to commune with nature have to feel guilty because there’s too little of it remaining?”

“Discouraging people from communing with nature in low-impact ways can only lead to wholesale destruction of the environment through disconnection & apathy.”

“If the animals can’t survive my going on a hike past them, then they’re really not going to survive...”



Leaving Only Footsteps? Think Again

BY CHRISTOPHER SEDGWICK
 A searching editor at DuPont magazine who writes frequently about the outdoors and environment.

ONE of the most popular places for backpacking in North America is the 1,000-mile-long, high-altitude adventure playground of Jackson Hole. In recent years, as hikers and snowboarders rolled great a day of snow and powder-banking, the researcher Dr. Moninger has been noticing a troubling trend: a 10 percent decline in the number of grizzly bears and moose sightings in the region. She says that's because of recreation as well as climate change. She says that's because of recreation as well as climate change. She says that's because of recreation as well as climate change.

Continued on Page 1



**Wildlife
Conservation
Society**

Draft - please do not circulate

RUNNING THROUGH THE SCIENCE OF CLIMATE CHANGE for MONTANA

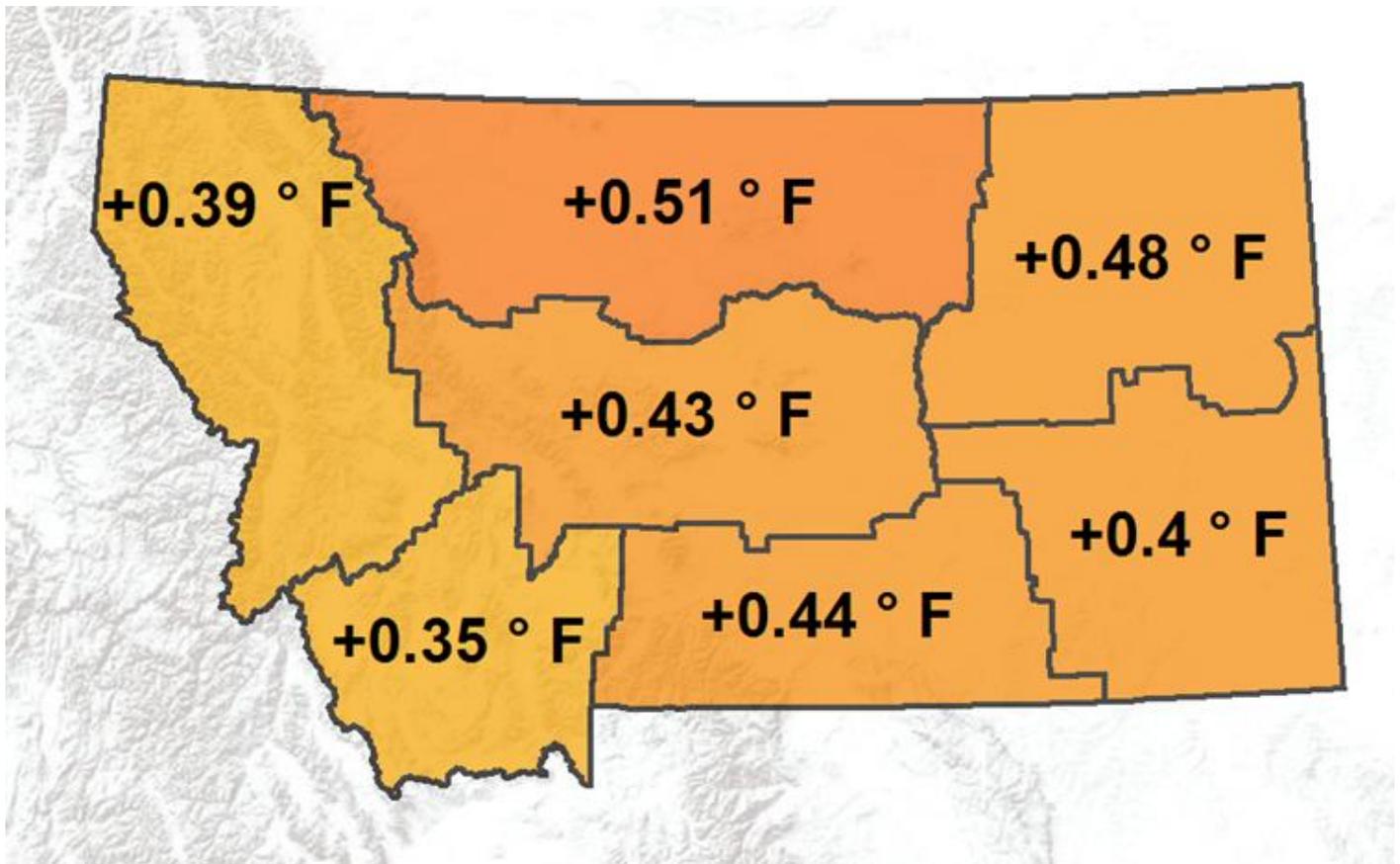
***FutureWest Symposium
Bozeman, MT***



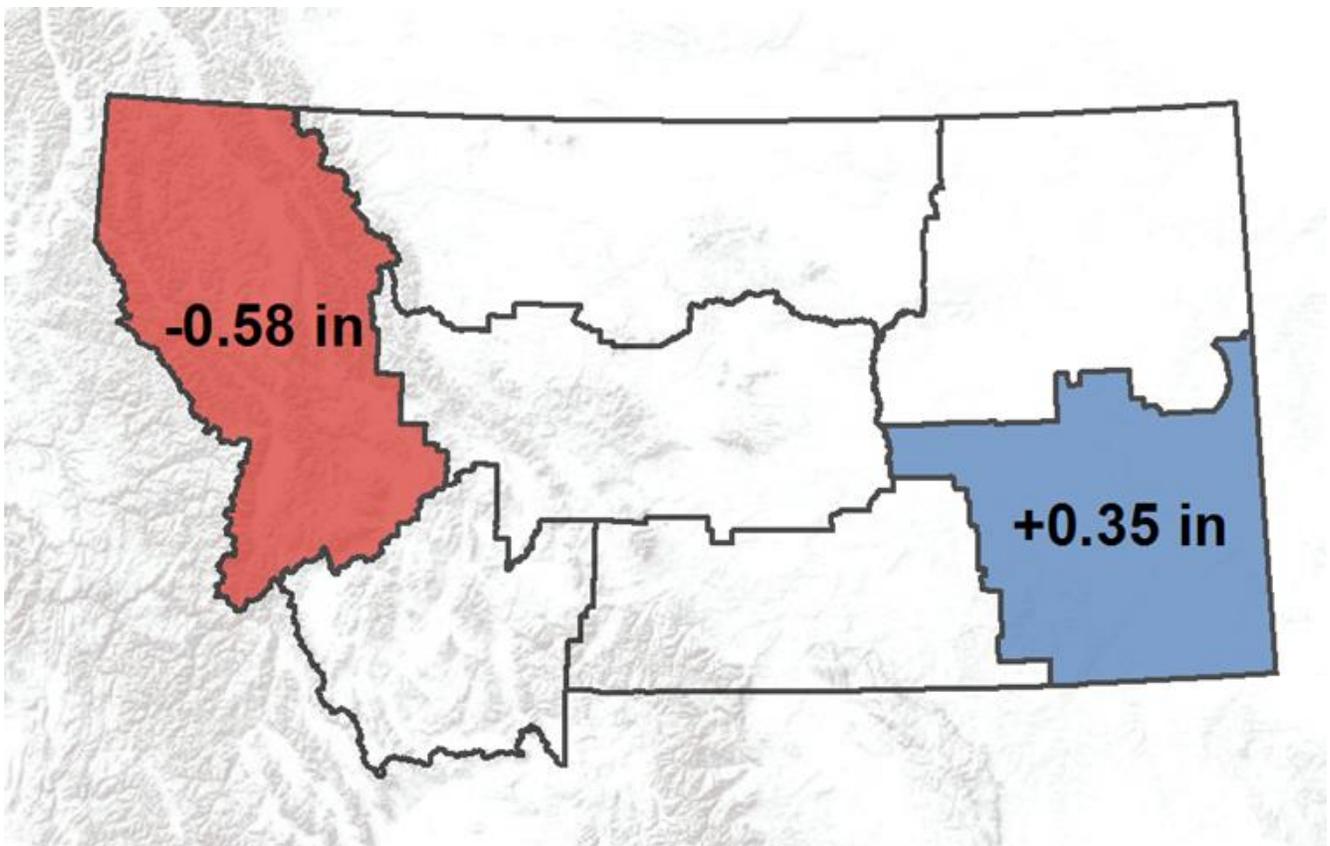
***Steven W. Running
Numerical Terradynamic Simulation Group
College of Forestry and Conservation
University of Montana***

November 29, 2017

Trend in Annual Ave Temperature Deg/10yr, 1950 - 2015



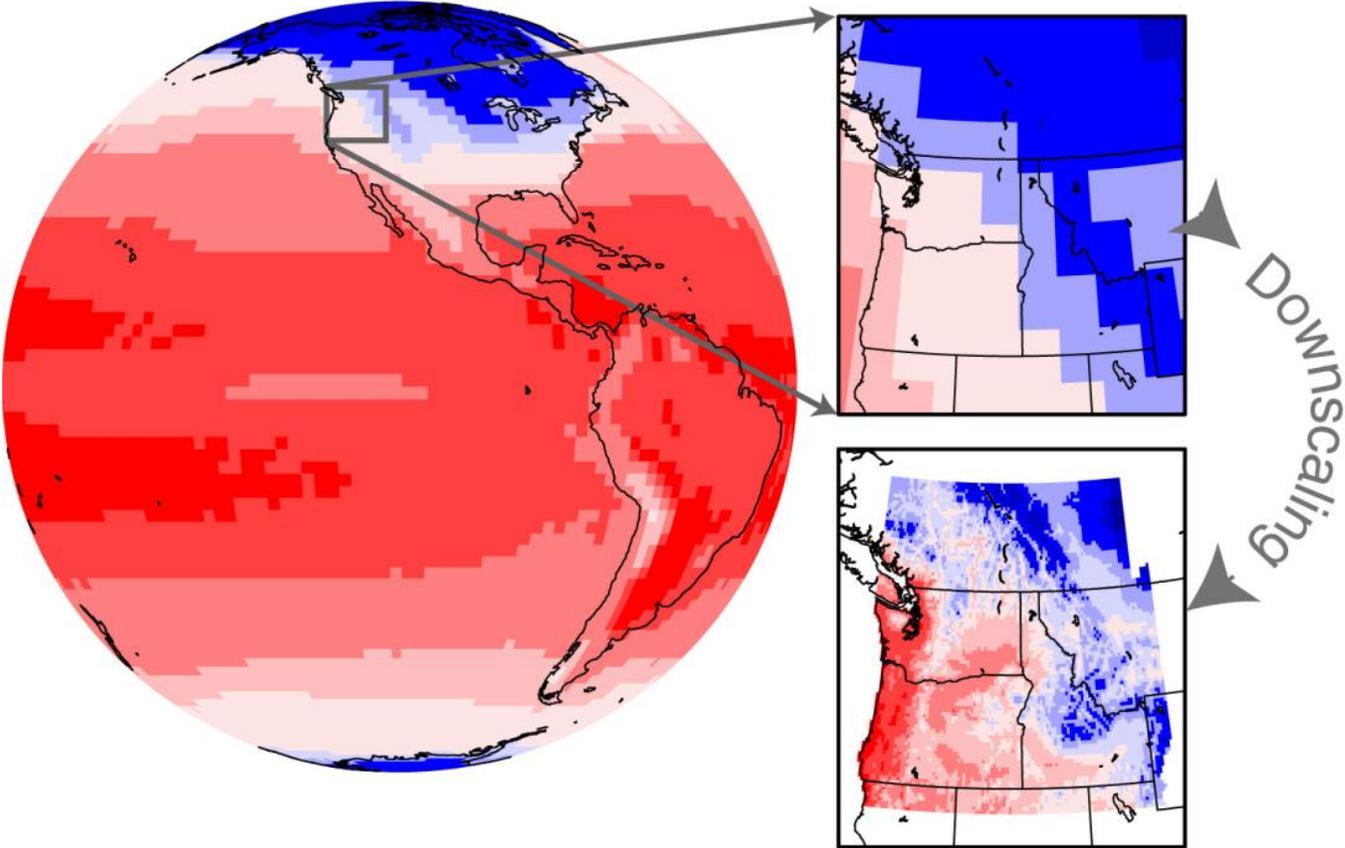
Trend in Annual Ave Precipitation Deg/10yr, 1950 - 2015



Montana Climate Assessment 2017

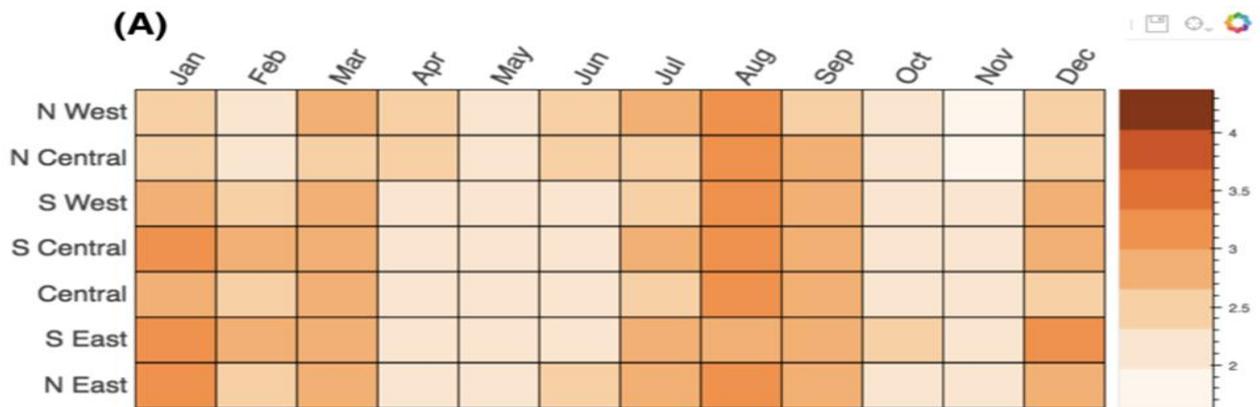
Downscaling global models for regional studies

Global Climate Model Air Temperature

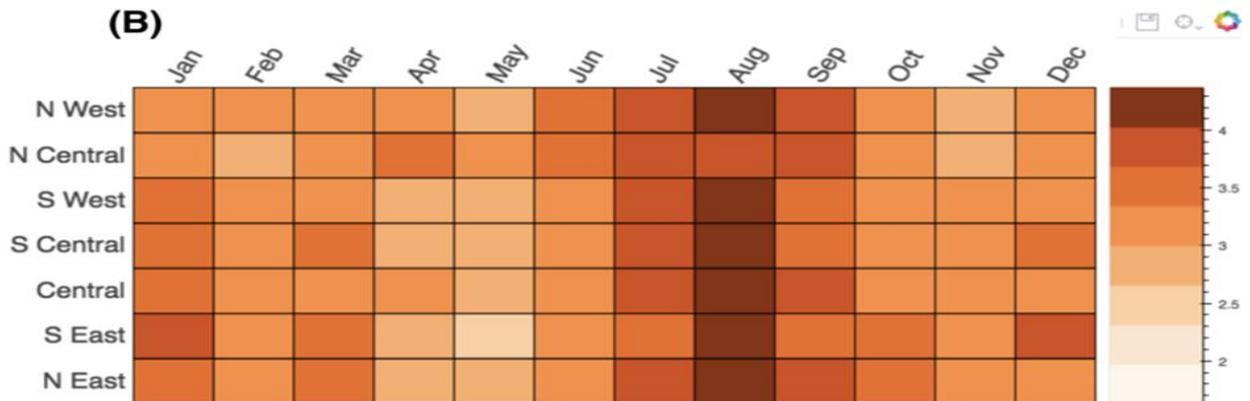


Projected monthly change in average temperature (°F) for each climate division in Montana between 2040 and 2069 for RCP4.5 and 8.5

Monthly Change in Average Temperature RCP 4.5 (2040-2069)

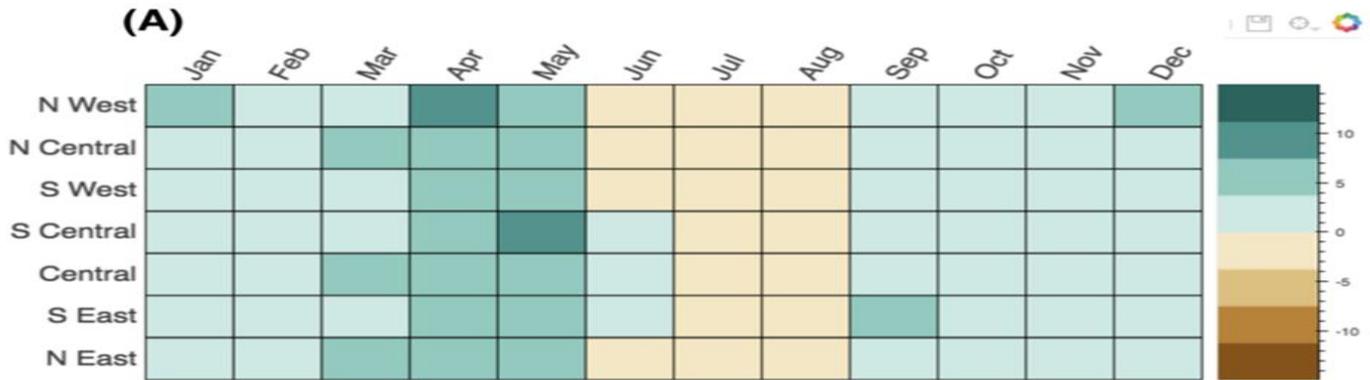


Monthly Change in Average Temperature RCP 8.5 (2040-2069)

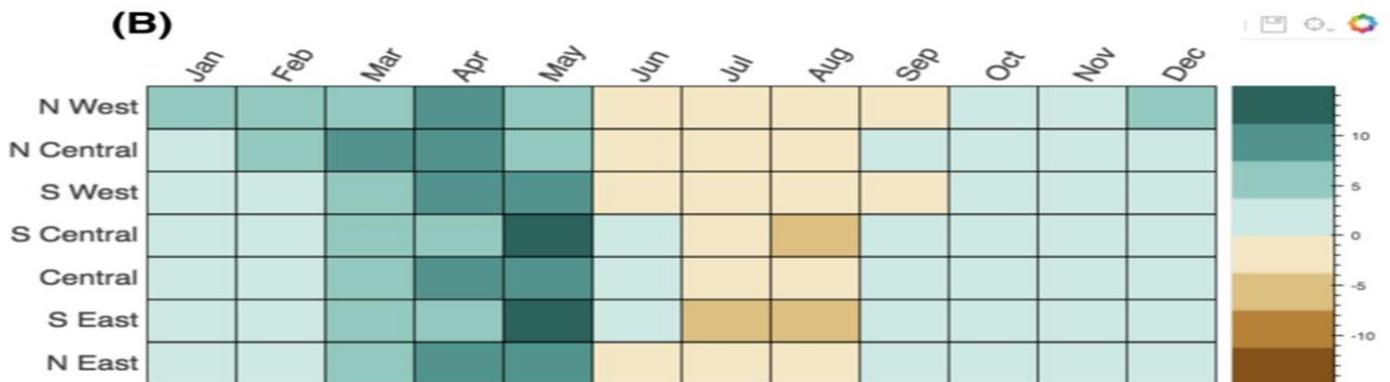


Precip Projections and Seasonality

Change in Monthly Precipitation (in.) RCP 4.5 (2040-2069)

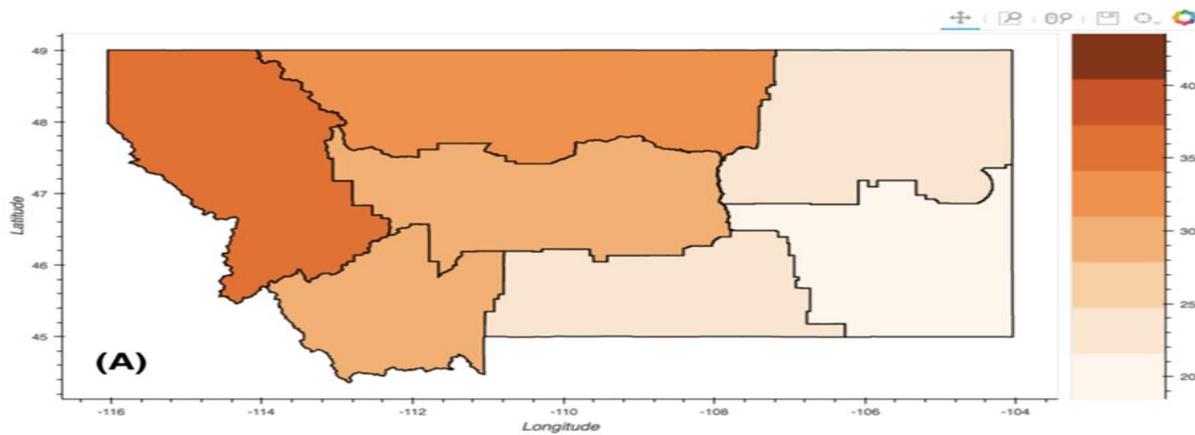


Change in Monthly Precipitation (in.) RCP 8.5 (2040-2069)

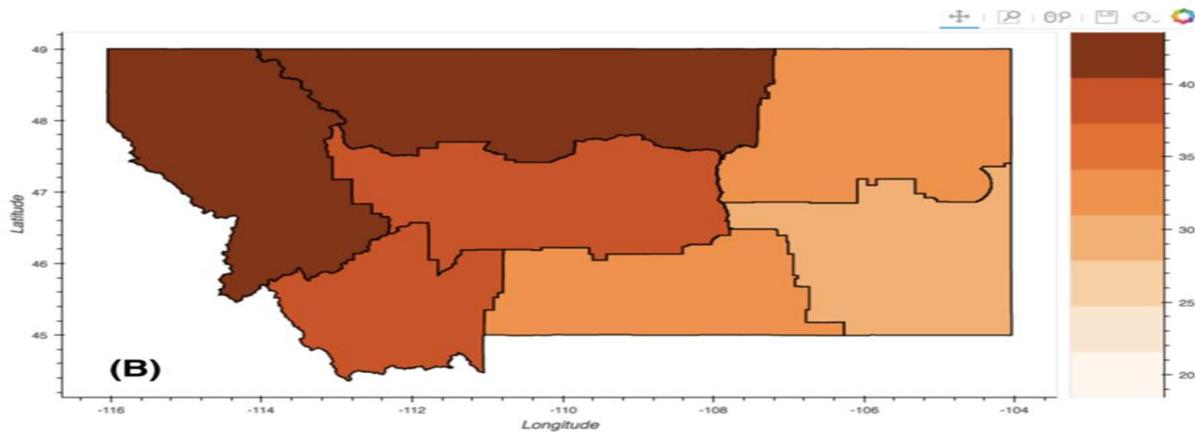


Projected monthly change in # frost free days (°F) for each climate division in Montana between 2040 and 2069 for RCP4.5 and 8.5

Change in Number of Freeze Free Days RCP 4.5 (2040-2069)



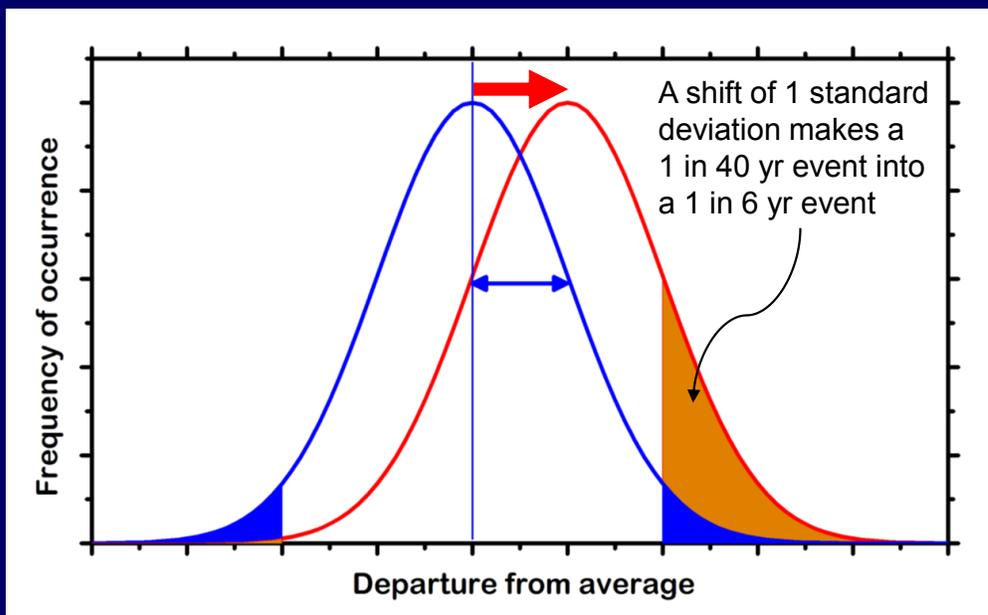
Change in Number of Freeze Free Days RCP 8.5 (2040-2069)



Calculus of extremes

The distribution of weather events around the climatic average often follows a 'bell-shaped' curve.

Climate change can involve change in the average, or the spread around the average (standard deviation), or both.



A shift in the distribution of temperatures has a much larger relative effect at the extremes than near the mean.

Wildfire future trends

Larger Fraction of the Landscape Vulnerable
for a *Longer period* of Time,
more high intensity fires



Need new strategies to combine wildfire fuel reduction with bioenergy production



Portable biomass electricity generator

BIOENERGY SYSTEM DESIGN

Our Inputs



Sunlight

Green Power House



WASTE BIOMASS

- Waste Wood (mill, logging, green waste, etc.)
- Sugar Cane Bgasse
- Palm Leaves
- Nut Shells
- Rice Hulls
- Wheat Chaff/Corn Stalks
- Other Crop Reminders

For Non-Agriculture Uses:

- Waste Water Treatment Sludge

Our Outputs



ELECTRICITY



BIO-OIL



ORGANIC PLANT FOODS & SOIL REGENERATING AMENDMENTS



GREENHOUSE

By 2050 Global Climate Models project Montana to be 5deg F. warmer in summer, but receive 10% less rainfall

***Water Management
Recreation vs Agriculture vs Energy***



The MonDak Region has an enormous amount of potential for irrigation development.



MT Will need +1inch/decade precip increase

IF SOCIETY IS NOT WILLING TO STOP BURNING COAL, THERE IS **NO CHANCE THAT GLOBAL TEMP CHANGE CAN STAY <2.0 DEG**



Forklift Never Out of Gas

With MLD's proven LPG level sensor Improve LP forklift safety.

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[Home](#) | [Energy](#) | [Coal](#) | The Decline Of The Coal Industry Is "Long-Term" And "Irreversible"

The Decline Of The Coal Industry Is "Long-Term" And "Irreversible"

Lets focus on coal mine reclamation



SMALL SCALE WATERSHED STORAGE

BEAVER PONDS



SNOW FENCES



STOCK PONDS



GLOBAL CROP PRODUCTION WILL NOT KEEP UP WITH POPULATION GROWTH to 2050

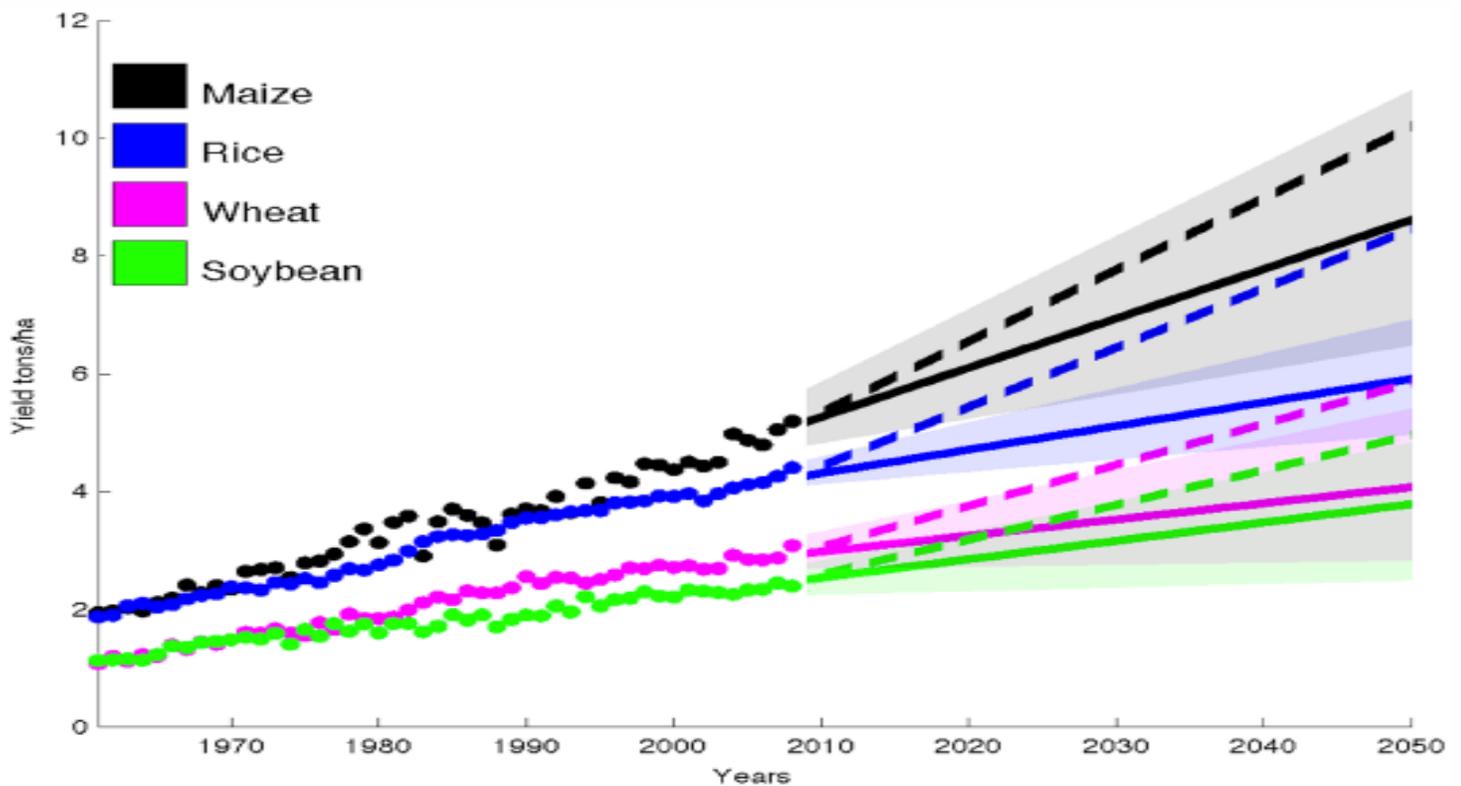


Figure 1. Global projections. Observed area-weighted global yield 1961–2008 shown using closed circles for maize, rice, wheat, and soybean. Shading shows the 90% confidence region derived from 99 bootstrapped trend of the $\sim 2.4\%$ yield improvement required each year to double production in these crops by 2050, assuming cultivation starting in the base year of 2008.

MONTANA AGRICULTURE *COULD* BENEFIT



- Longer growing seasons, easier winters and higher CO₂ give the potential for **increased** agricultural production.
- BUT will require new strategies, see Agriculture chapter of 2017 Montana Climate Assessment



**OPPORTUNITIES FOR MONTANA
NATURE-BASED TOURISM IN A
CLIMATE CHANGE WORLD**

2007 6 8

TOURIST CLIMATE MIGRATION??



**Will tourists
quit going here**

**And come
here!!**



CHANGING SEASONAL BALANCE

Less of This

More of This



WARMER TEMPS, LONGER SEASON

[Find a Park](#) [Discover History](#) [Explore Nature](#) [Get Involved](#) [Working with Communities](#) [Teachers](#) [Kids](#) [About Us](#)



Explore This Park

[Park Home](#)

Plan Your Visit

[Directions](#)

[Operating Hours & Seasons](#)

[Fees & Reservations](#)

Things To Do

[Schedule Of Events](#)

[Park Education](#)

[Visitor Centers](#)

[Winter Activities and Information](#)

[Stores in Yellowstone](#)

[Nearby Museums](#)

[Winter Services in](#)

Spring Bicycling

May 6: The road from the South Entrance to West Thumb Junction is now open to bicycles.

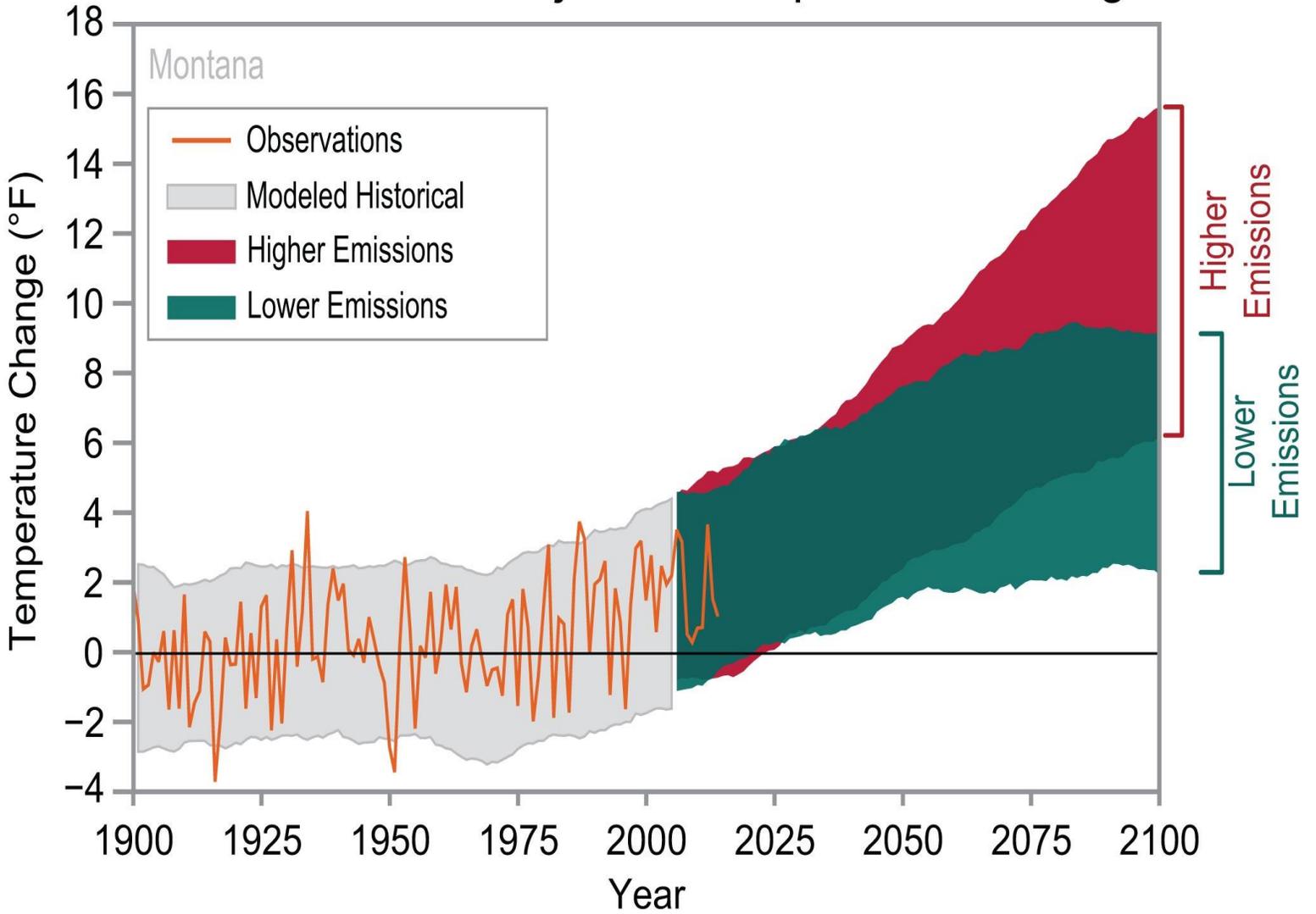


From late March or early April bicycling, walking, jogging, roller blades, roller skis and similar means of non-motorized public travel may be permitted between the West Entrance and Mammoth Hot Springs prior to these roads opening to motorized public travel.

Snow removal efforts may also allow for a brief period of bicycle access into the park from the East Entrance to the east end of Sylvan Pass (6 miles from the entrance) and the South Entrance (to West Thumb Jct) depending on road conditions for these early spring activities.

The first day of "spring bicycling" is never predetermined and is

Observed and Projected Temperature Change



CLIMATE CHANGE STUDIES

A NEW MINOR OFFERED BY THE UNIVERSITY OF MONTANA

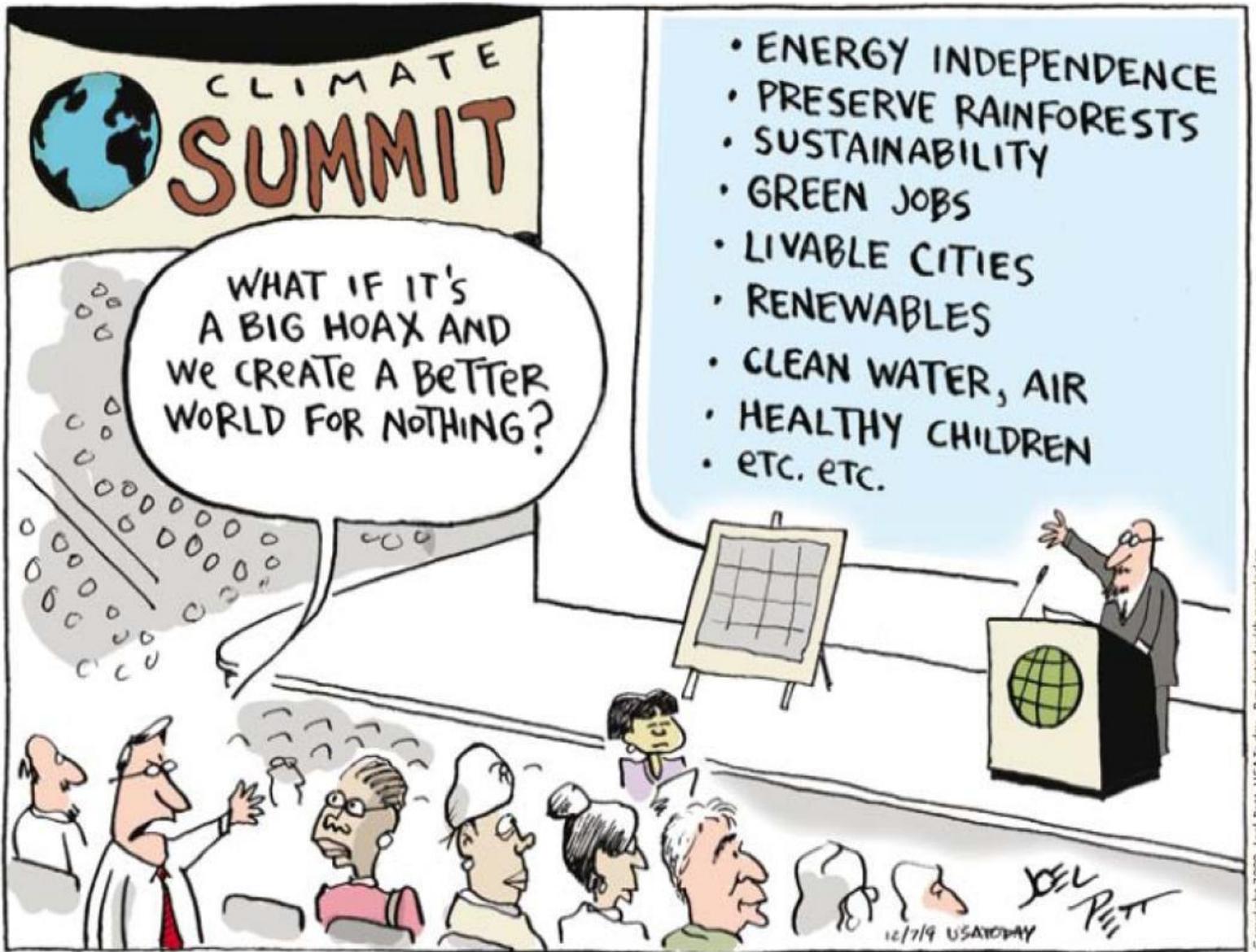
- Offers students a unique, multidisciplinary understanding of climate change
- Involves students in developing solutions
- Open to students from all majors
- Joint program of the College of Forestry and Conservation, College of Arts and Sciences, School of Law, and College of Technology

ccs@umontana.edu

www.cfc.umt.edu/CCS

Dr. Steven Running, Director
Climate Change Studies Program





CLIMATE
SUMMIT

WHAT IF IT'S
A BIG HOAX AND
WE CREATE A BETTER
WORLD FOR NOTHING?

- ENERGY INDEPENDENCE
- PRESERVE RAINFORESTS
- SUSTAINABILITY
- GREEN JOBS
- LIVABLE CITIES
- RENEWABLES
- CLEAN WATER, AIR
- HEALTHY CHILDREN
- ETC. ETC.



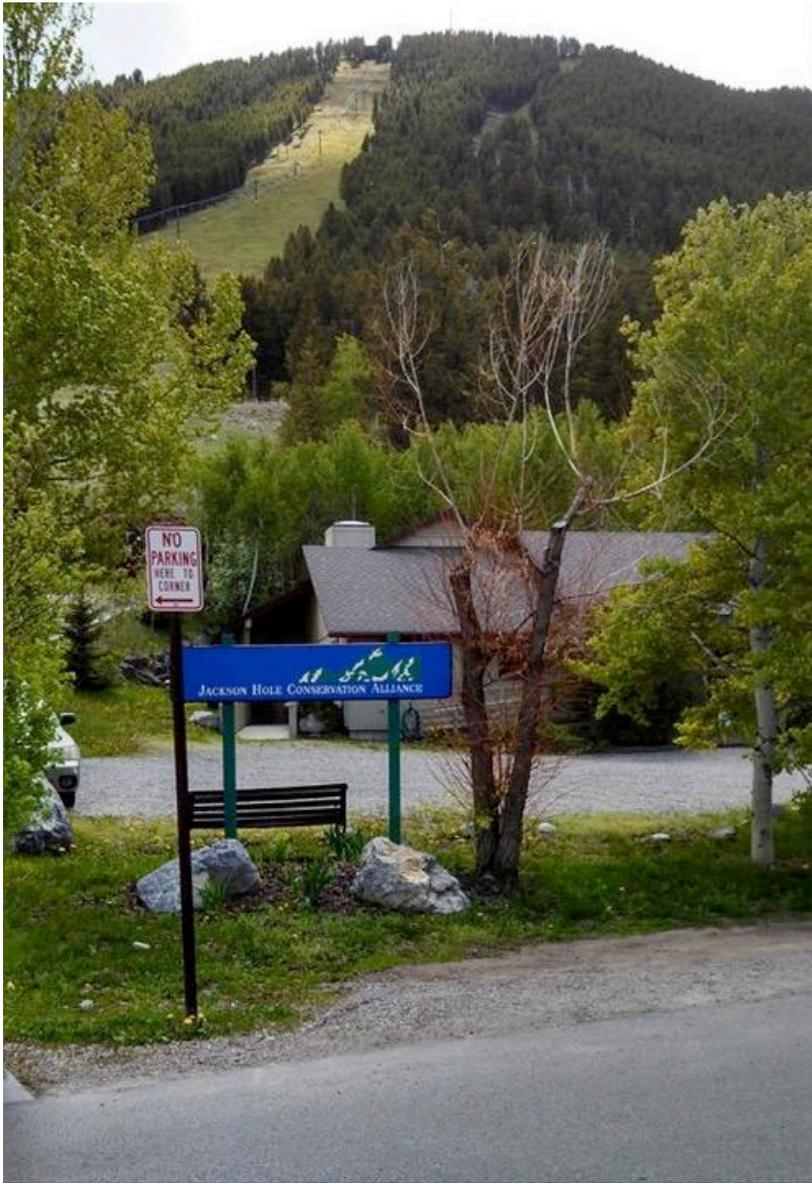
Building Community Conservation Champions

Skye Schell
Executive Director

Jackson Hole
Conservation Alliance





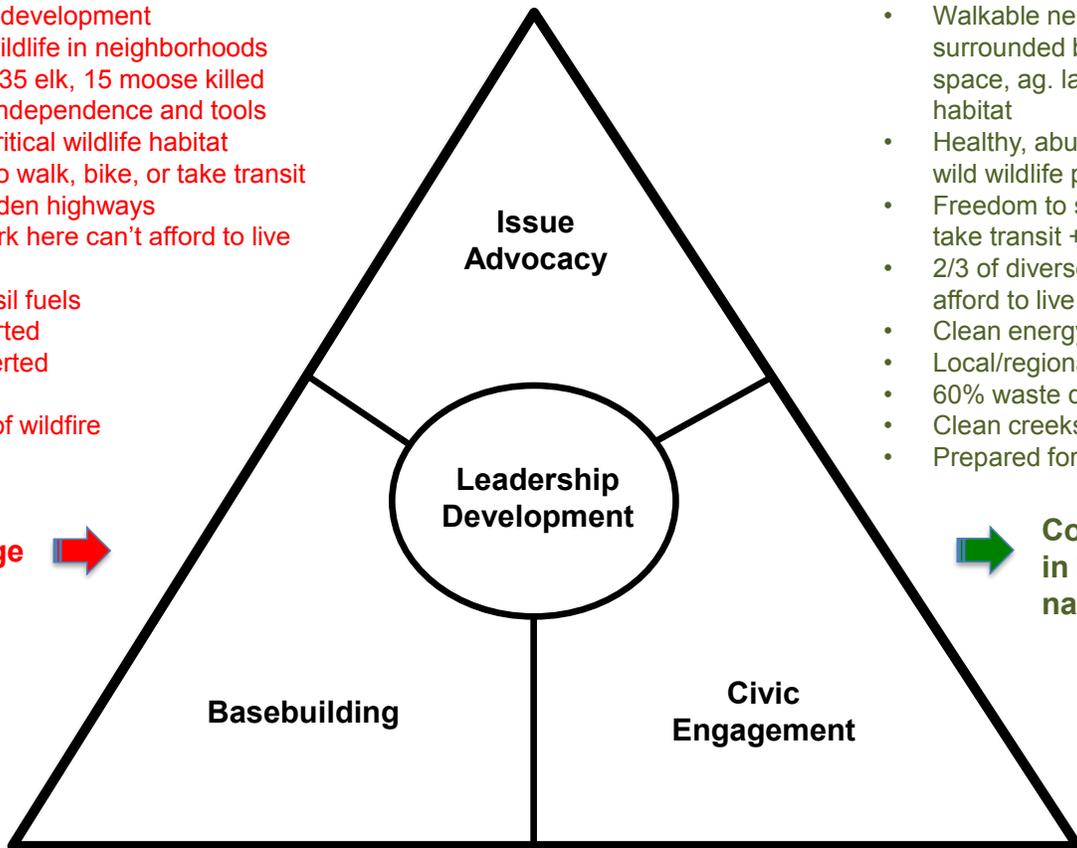


Our Challenges

- Too much rural development
- Conflicts with wildlife in neighborhoods
- 114 mule deer, 35 elk, 15 moose killed
- Agencies lack independence and tools
- Recreation in critical wildlife habitat
- Not safe/easy to walk, bike, or take transit
+ plans to widen highways
- People who work here can't afford to live here
- Addicted to fossil fuels
- 96% food imported
- 34% waste diverted
- Polluted creeks
- Increased risk of wildfire

Climate change →

Agenda (22)



Our Vision

- Walkable neighborhoods surrounded by protected open space, ag. lands, connected habitat
- Healthy, abundant, sustainable, wild wildlife populations
- Freedom to safely walk, bike, or take transit + no fat highways
- 2/3 of diverse workforce can afford to live here
- Clean energy economy of future
- Local/regional food system
- 60% waste diversion
- Clean creeks
- Prepared for wildfire

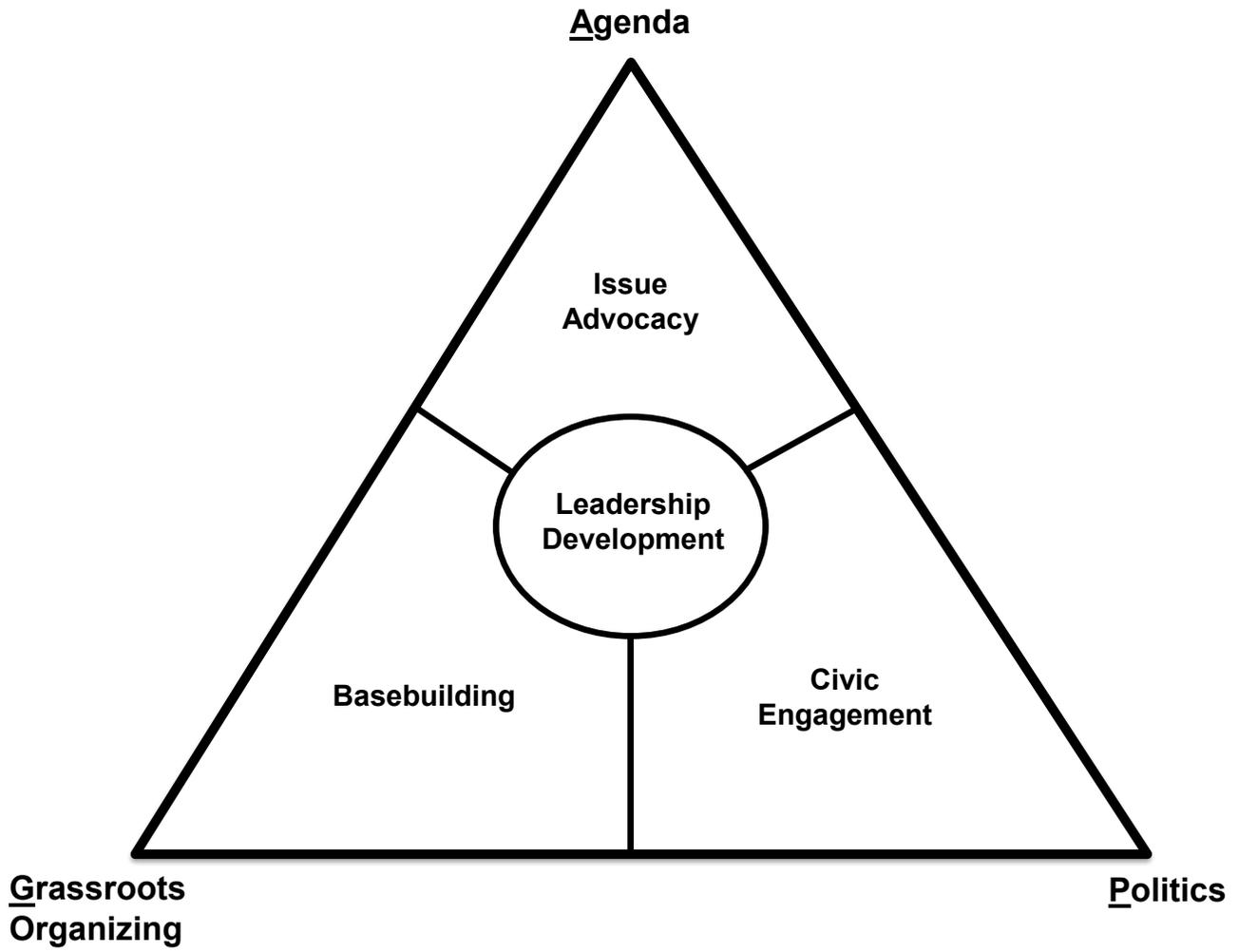
→ Community living in balance with nature

Grassroots
Organizing

Politics

POWER





POWER



CONSERVATION LEADERSHIP INSTITUTE
Developing and empowering
future leaders.

TOMORROW'S SOLUTIONS
OUR VISION

WATER Protecting our streams
and rivers for fish, birds,
wildlife, and people.

TRANSPORTATION

Providing convenient options like
walking, biking, and public transit.

ENERGY

Increasing conservation
and use of renewables.

COMMUNITY PLANNING

Creating walkable neighborhoods
with protected open space.

NO
FAT
HIGHWAYS

CIVIC ENGAGEMENT

Fostering an effective
local government.

WILDLIFE CROSSINGS

Reducing wildlife-vehicle collisions
by constructing wildlife crossings.

TETON COUNTY

HOUSING

Creating affordable
housing solutions.

WILD NEIGHBORHOODS

Encouraging homeowners to make
their properties wildlife-friendly and
prepared for wildfire.

WILDLIFE MANAGEMENT

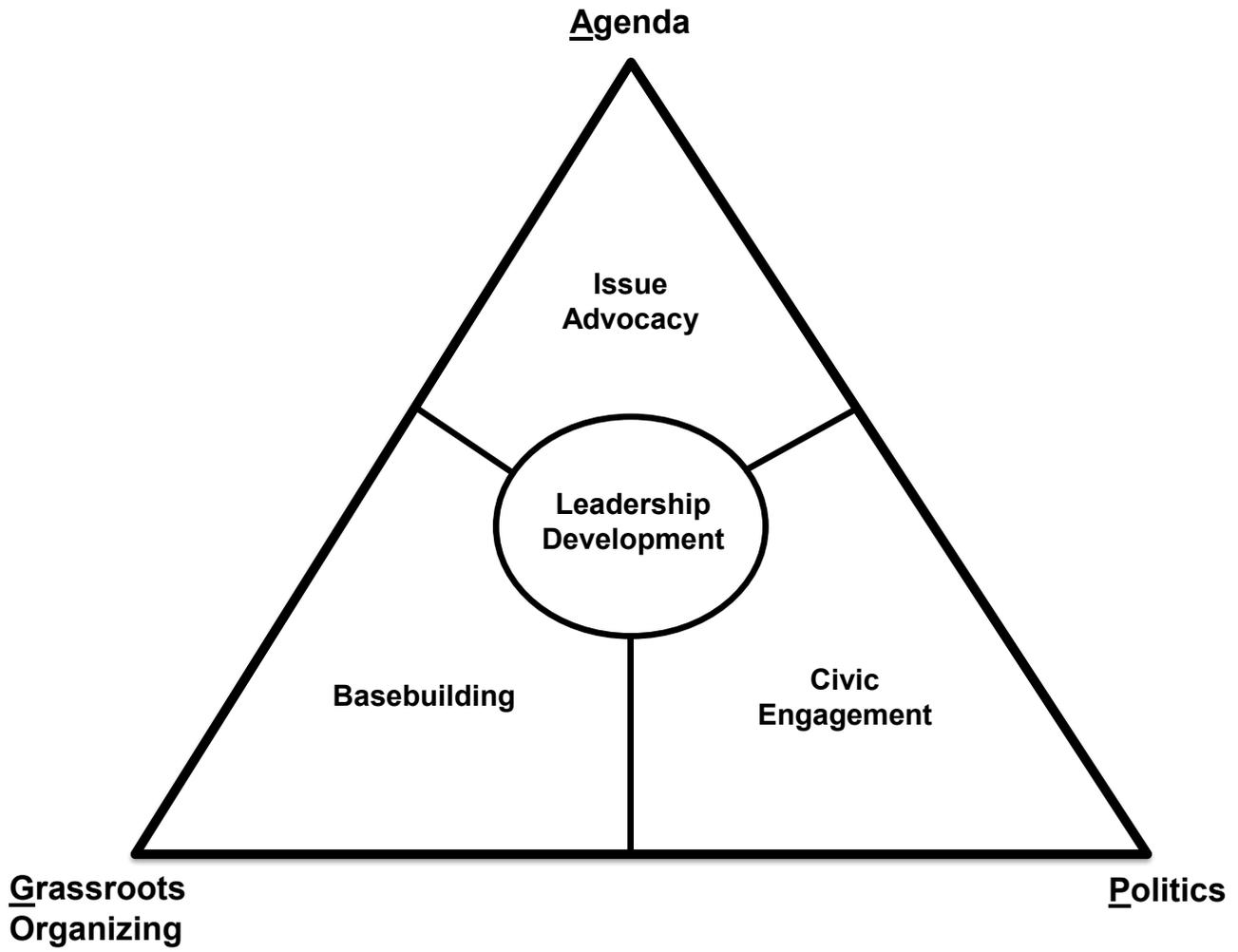
Supporting healthy, wild, and
abundant wildlife populations.

AGENDA
22

jhalliance.org

Protecting the wildlife, wild places, and community character of Jackson Hole.

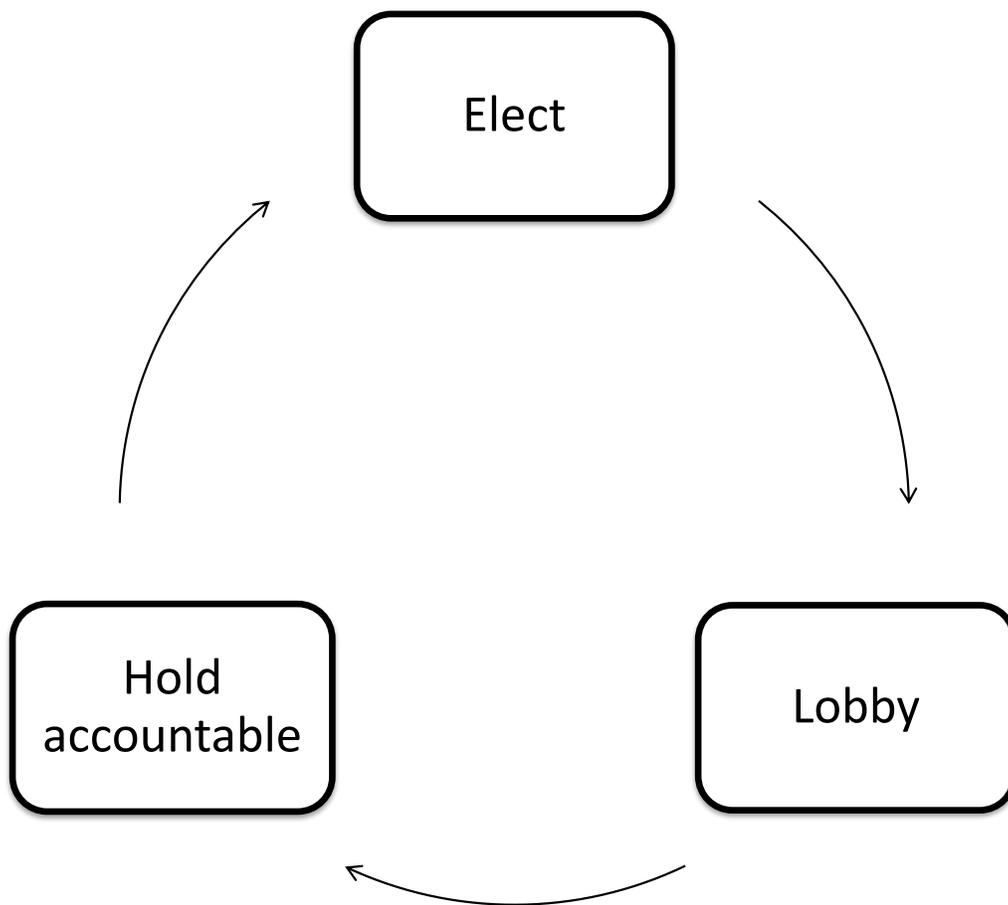
JACKSON HOLE CONSERVATION ALLIANCE



POWER



Civic Engagement



Lobby



Lobby



Hold accountable



KEEP IT PUBLIC,
Wyoming!



PUBLIC LANDS
in public hands

Engage voters in elections

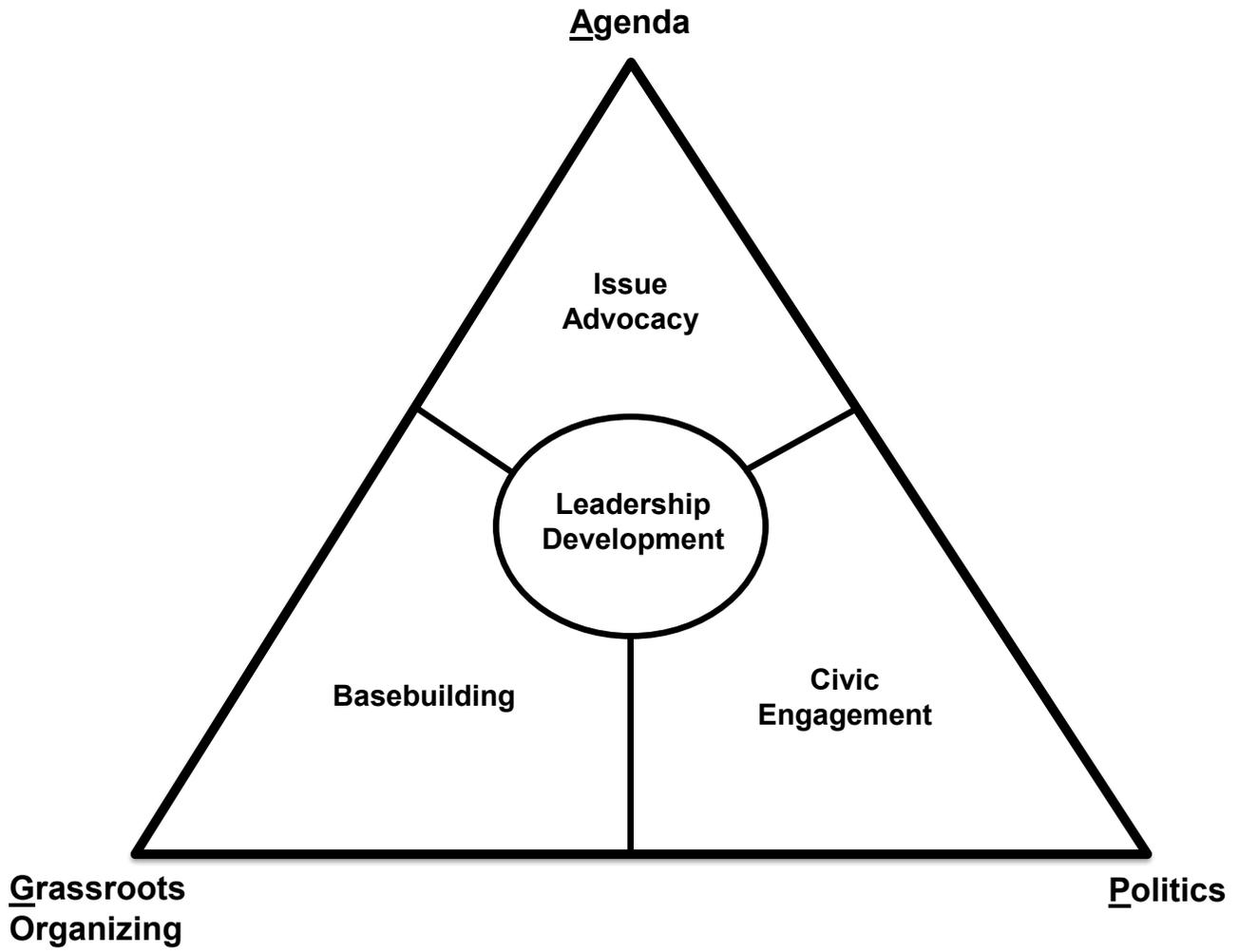


#PhoneBankHouseParty



New Voter Project





POWER



Conservation Leadership Institute



Conservation Champions



Jackson Hole
Conservation Leadership Institute
An initiative of the Jackson Hole Conservation Alliance

A vision for the future

