



BLM Renewable Energy Summit 2009

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Western Division

The Nature Conservancy



Our Mission

The mission of The Nature Conservancy is **to preserve** the plants, animals and natural communities that represent **the diversity of life on Earth** by protecting the lands and waters they need to survive.



Population of
9 billion by 2050



Global output to
double by 2030



PROJECT IONS

Food crop demand
up 70-85% by 2050



\$22 trillion in
energy investment
to 2030

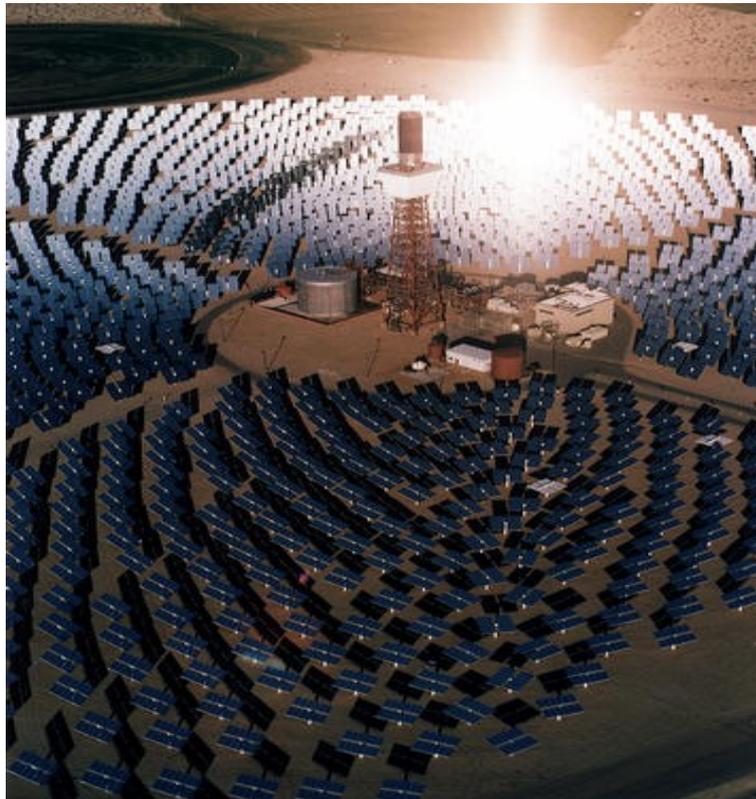


Water demand up
30-85% by 2050

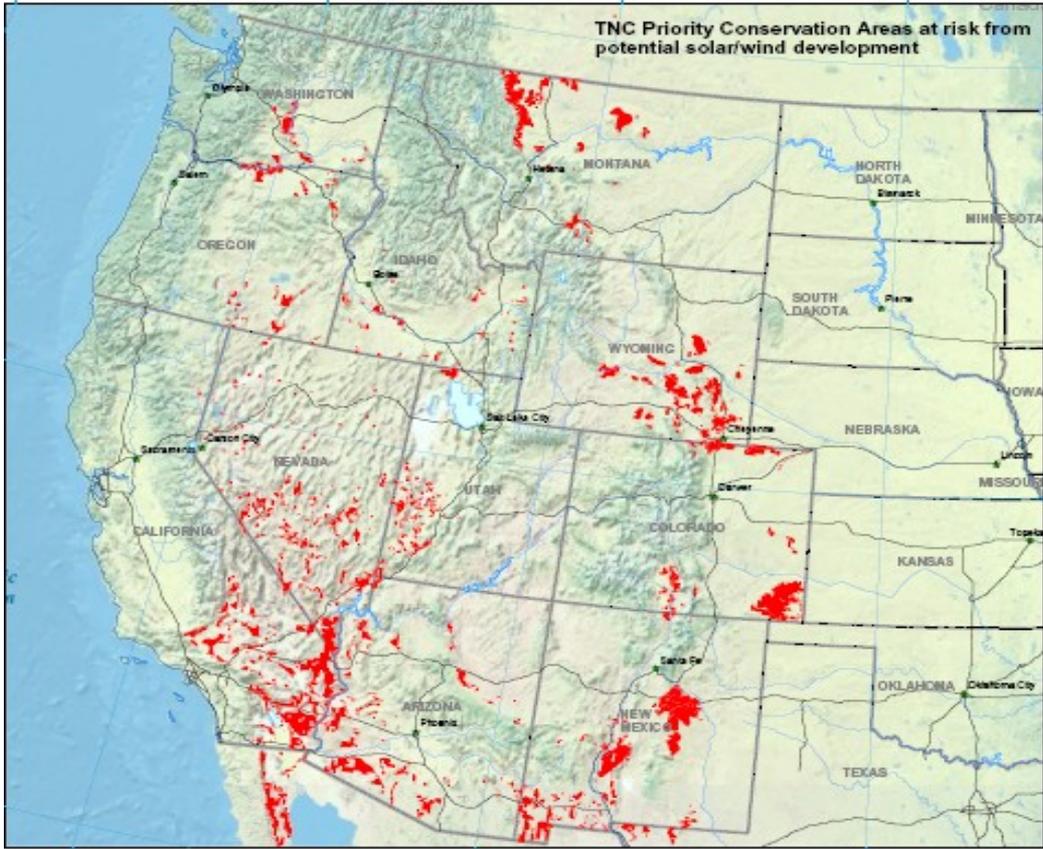


U. S. National Renewable Energy Goals

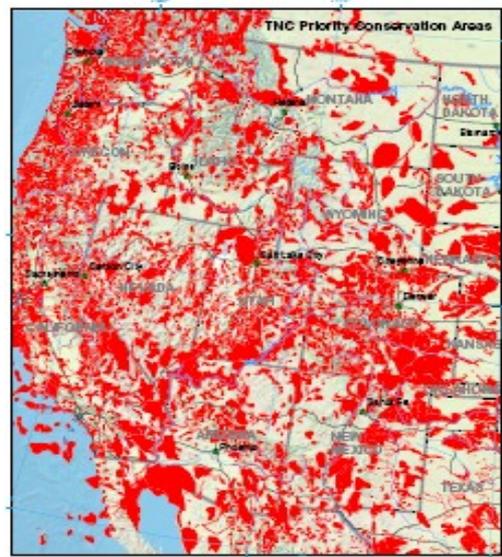
- Wind: 20% of total provided energy by 2030
- Solar: 10% of total provided energy by 2030



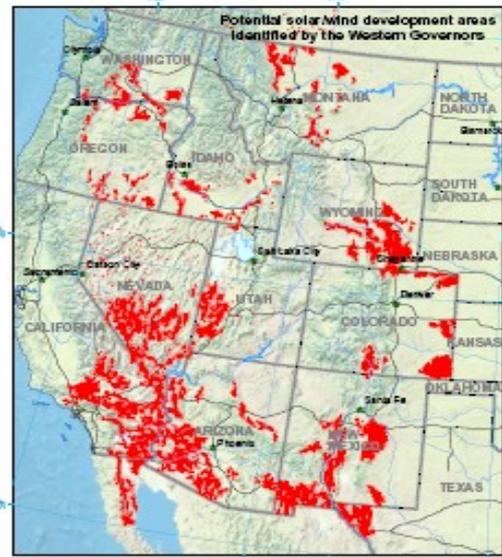
TNC Priority Conservation Areas at risk from potential solar/wind development



TNC Priority Conservation Areas



Potential solar/wind development areas identified by the Western Governors





The Nature Conservancy & Energy Development

A distinguishing characteristic of TNC's appearance in the development dialogue is that we are not trying to stop development, ***BUT TO CONSERVE BIODIVERSITY IN THE FACE OF ENERGY DEVELOPMENT.***

- Science-Based Approach
- Partnerships
- Projects & Policy





Science-based Approach

TNC brings tested, scientifically peer reviewed ecological analysis and planning tools to assist in energy siting & mitigation – with over 1000 scientists working with a vast array of partners utilizing these tools in hundreds of places.

Conservation by Design:

Eco-regional Assessments

Conservation Area Planning (CAP) &

Planning for Priority Species & Vegetation

Energy by Design





Eco-regional Assessments

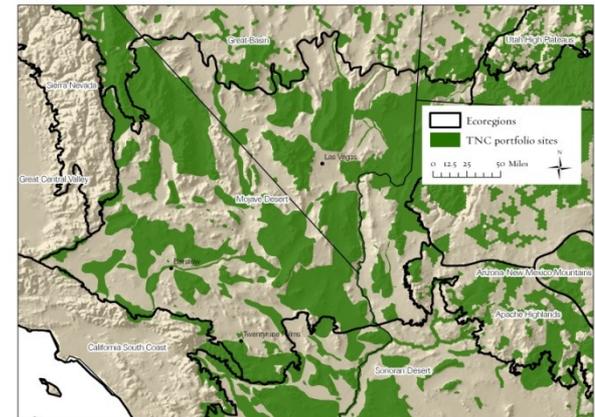
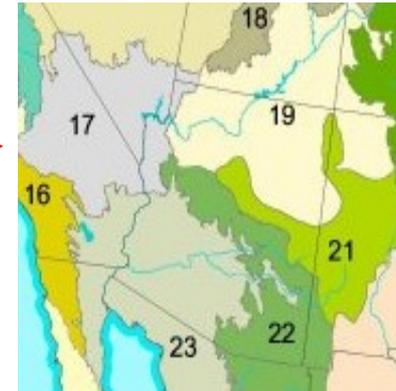
Over the last 12 years TNC has completed eco-regional assessments for all terrestrial, aquatic and marine eco-regions in the US.

Over the last 5 years, TNC has worked to “mesh” these assessments into one seamless data set (completed for the Western US).

Now embarking on rapid assessments to update assessments, e.g. Mojave, to include energy development & climate change.



Ecoregional Assessments





Conservation Area Planning (CAP) & Priority Planning for Species & Vegetation (PPSV)

PPSV is a joint project between BLM, NTC & TNC to analyze biological information and form alternatives for key species, vegetation, and habitats during land use planning, e.g. Grand Junction RMP pilot.

Enhanced CAP, using LANDFIRE and satellite topography imaging, to set concise conservation goals and inform where mitigation makes the most sense and provides the greatest return on investment, e.g. BLM Bodie Hills area plan.



Energy By Design

A science based process to identify, incorporate and implement the mitigation hierarchy across a region (e.g. basin) or site (e.g. permitted area) based on potential impacts and goals for species and habitats.



Objective: net gains for nature

Follow “mitigation hierarchy”

Better “early warning” and planning

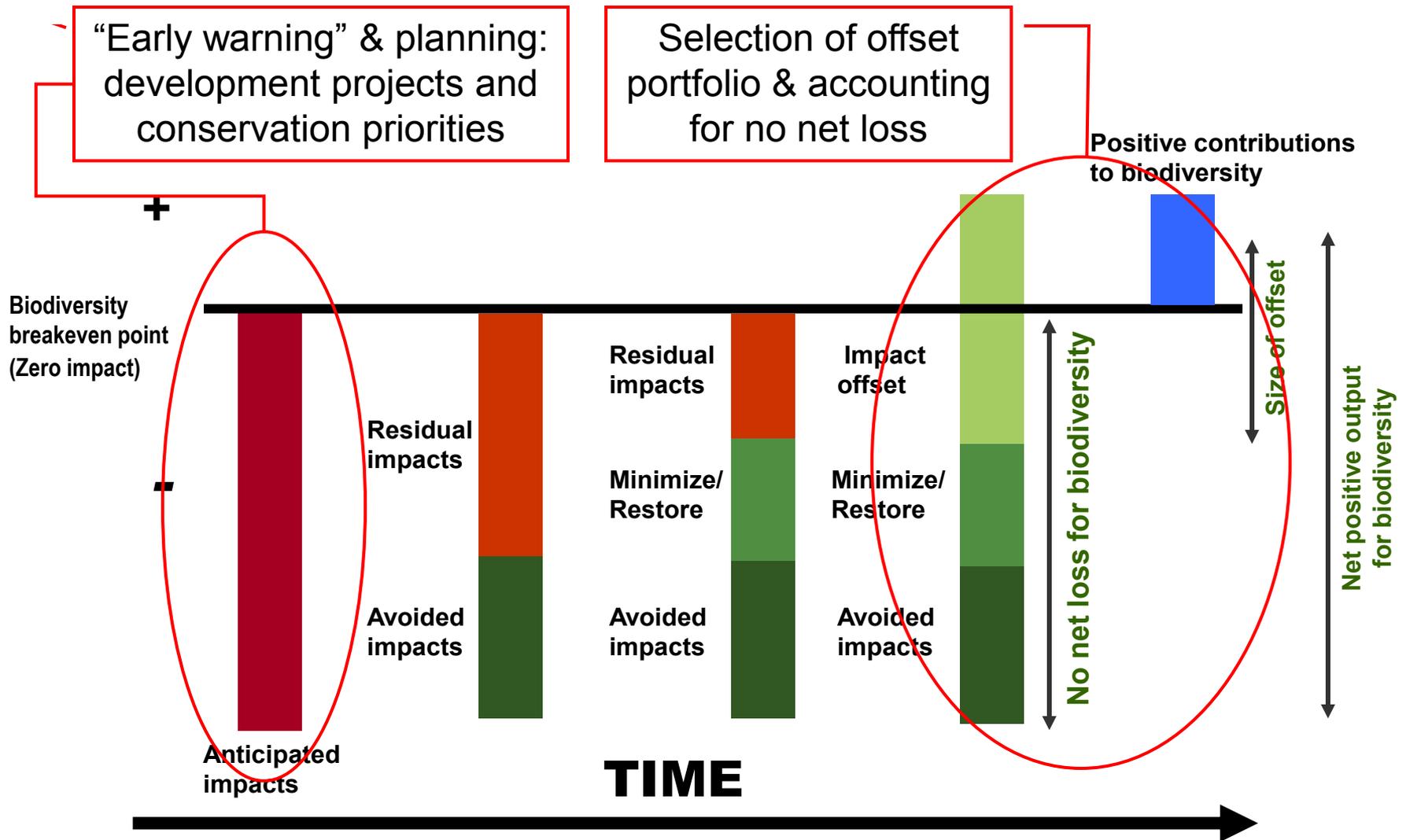
Reduce development-conservation conflicts

More effective use of biodiversity offsets

Conservation actions that compensate for residual, unavoidable harm to biodiversity



Avoid → **Minimize/Restore** → **Offset**



From Kiesecker et al. 2009

Kiesecker, J.M., H. Copeland, A. Pocewicz, N. Nibbelink, B. McKenney J. Dahlke, M. Holloran and D. Stroud 2009 A Framework for Implementing Biodiversity Offsets: Selecting Sites and Determining Scale. *BioScience* 59:77-84.

Kiesecker, J.M., H. Copeland, A. Pocewicz, B. McKenney 2009. Development by Design: Blending Landscape Level Planning with the Mitigation Hierarchy. *Frontiers In Ecology and the Environment* In Press

Common Problems with Mitigation Process



Problems

- Arbitrary, opaque and ad hoc approach
- Reactive piecemeal planning
- Improper ecological scale
- Lack of defined outcome
- Assessments often time/cost-prohibitive

Solutions

- Systematic, transparent and well-defined approach
- Pro-active comprehensive planning
- Use landscape/regional context
- Pursue no net loss or better outcome
- Use inexpensive, timely, and defensible approach



Assemble a Team of Experts



ID Target Species & Systems



ID Spatial Extent of Project



Gather Spatial Data for Targets



Examine Development Scenario



Determine Impacts & Goals



ID “On-site” Sensitive Features



ID Offset Portfolio



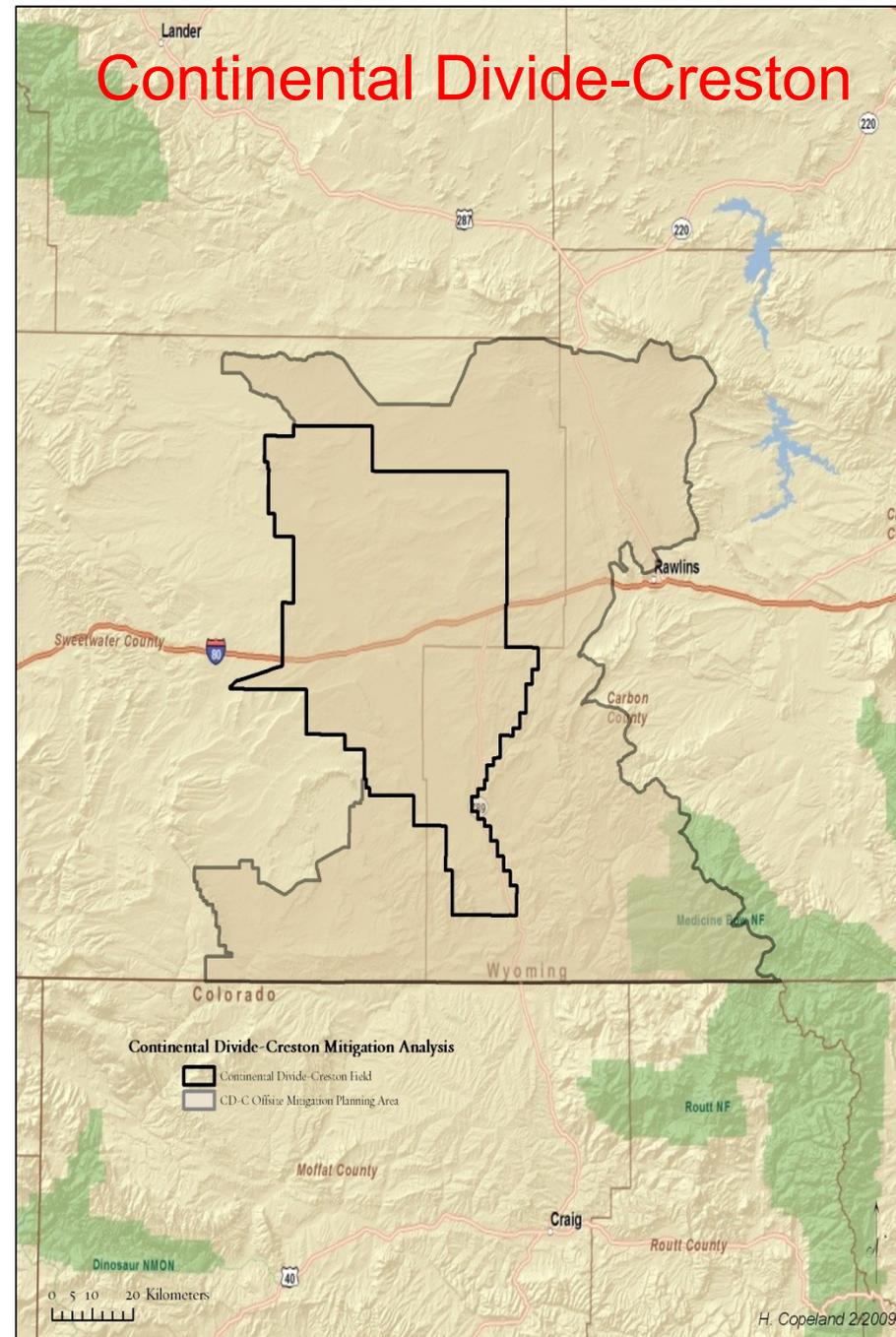
Determine Offset Valuation



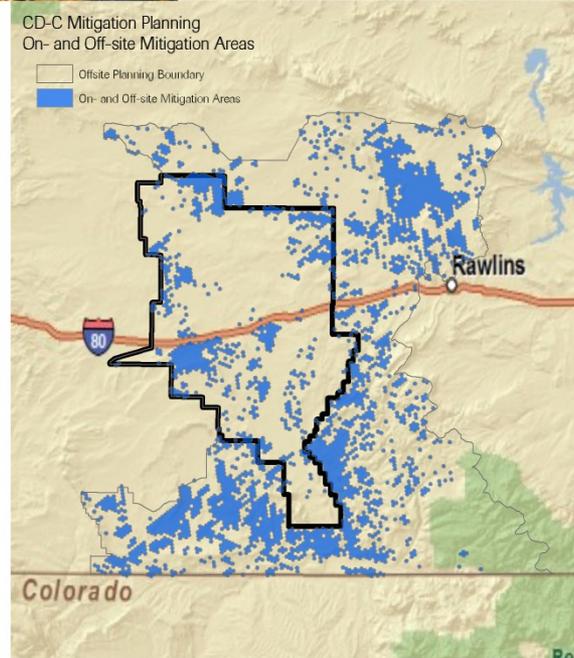
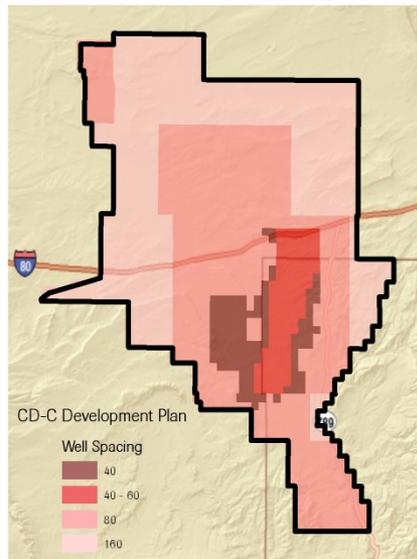
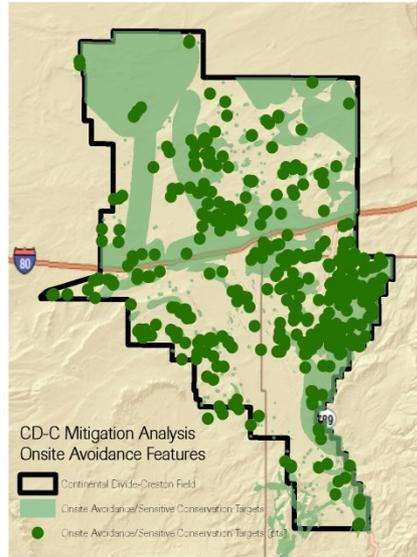
Approach



Validate Model Results



Continental Divide-Creston Mitigation Planning*



The mitigation planning analysis was completed by The Nature Conservancy in cooperation with the BLM, WYGF, WYNDD, University of Wyoming and local stakeholders.



*Kiesecker J, Copeland H, Etzelmiller R, Pocewicz A (In Prep) Energy by Design: Cooperative Mitigation Planning for the Continental Divide-Creston Gas Field





Partnerships & Projects in Energy Siting and Mitigation

- Partnerships
 - Questar
 - BP
 - Shell
 - American Wind and Wildlife Institute
 - Colombian Ministry of the Environment
 - Mongolian Ministry of the Environment
 - Council on Sustainable BioFuels Production





Projects & Policy in Energy Siting and Mitigation

- Projects & Policy
 - Colorado: BMP development
 - E. Oregon/Steens Mountain
 - E. Washington & E. Montana: Windpower Blueprint
 - USFWS Wind Federal Advisory Committee
 - Wyoming: Wind & sage grouse
 - The Mojave
 - Transmission siting
 - Federal climate & energy legislation





Project Goals (Tasks)

Task 1: review existing mapping processes for lessons learned; identify, compile, and share wildlife data; develop process for Tasks 2-4.

Task 2: Synthesize data on wildlife habitat location and quality, and bird and bat flyway into scenarios of wildlife sensitivity to present spatial representations and a snapshot of sensitivity snapshots for all targeted species.

Task 3: Conduct optimization analyses to identify large areas that are suitable for wind development that minimize wildlife impacts.

Task 4: Identify areas suitable for offsite mitigation based on the data synthesizing high quality/high value wildlife habitats compiled in Task 2, and scenarios and resulting impacts examined in Task 3.





Species Selection Criteria

Significant observed mortality at existing wind energy development sites

-or-

Significant avoidance at existing wind energy development sites

-or-

Imperiled or vulnerable & habitat overlaps with likely wind development

-or-

Of particular management concern & habitat overlaps with likely wind development



Energy By Design: A Summary



- Biodiversity conservation and development are not mutually exclusive.
- By working together, stakeholders can use a science-based approach to develop energy resources and achieve no net loss of habitat and species.





Recommendations:

- Energy development will be most successful and have the least adverse environmental impacts with sufficient mitigation if assessment and planning are done at landscape scales versus project by project
- Mitigation, and especially off-site mitigation, needs to be an integral part of assessment and planning, and should be included in project scoping so that it informs development of alternatives.
- By working together, stakeholders can use a science-based approach to develop energy resources and achieve no net loss of habitat and species.



