



# The Western Section of The Wildlife Society and Wildlife Research Institute

## Western Raptor Symposium February 8-9, 2011 Riverside, California



Symposium  
Sponsors



### February 8 – 11:20-11:40 am Session: Overviews – Diurnal Raptors

#### Status, Trends, and Conservation Challenges for the Ferruginous Hawk in the Western U.S.

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The ferruginous hawk (*Buteo regalis*) is a “litmus test” for the notion that raptors living in inaccessible arid lands can persist into the future in spite of human activity. Conflicting assessments of ferruginous hawk status from BBS (increasing) and state and provincial status reviews (most declining) may result from ephemeral nesting activity. Telemetry data do not support nomadism as an explanation for breeding irruptions. The species is a broad-fronted migrant so trends cannot be assessed at migration sites. These tendencies point to the need for coordinated range-wide breeding surveys. Prey is the back-breaker for persistence of this species in changing landscapes. On breeding ranges long-term declines in prey increase territory attrition, increase inter-specific competition for nest sites, and reduce productivity. Prey reductions result from small mammal eradication, cheatgrass (*Bromus tectorum*) invasion, and energy development that remove or change distribution of prey—all of which are long-term conservation challenges occurring at accelerated rates in formerly “secure” habitats. Significance of the non-breeding season is often overlooked; it lasts up to seven mo/yr, exposes hawks to a variety of mortality factors (windpower and electrocution), and is the time when there is hidden potential for reduced survival or breeding condition due to fragmentation of winter ranges from housing development and land conversion.

The authors and institutions that have provided the following presentations are happy to share their information, data, and opinions. However, these are not, necessarily, peer-reviewed presentations and the potential to take something out of context also exists. In order to avoid that, you are requested to contact the respective lead author(s) before using specific information contained in any of the following papers. Once you have done that, the proper citation is: “[Author(s). Date. Title.] Presented at the Western Raptor Symposium. Jeffrey L. Lincer and David Bittner (Co-Chairs). Hosted by Wildlife Research Institute and The Wildlife Society, Western Section. Riverside Convention center, Riverside, California, USA. February 8-9, 2011

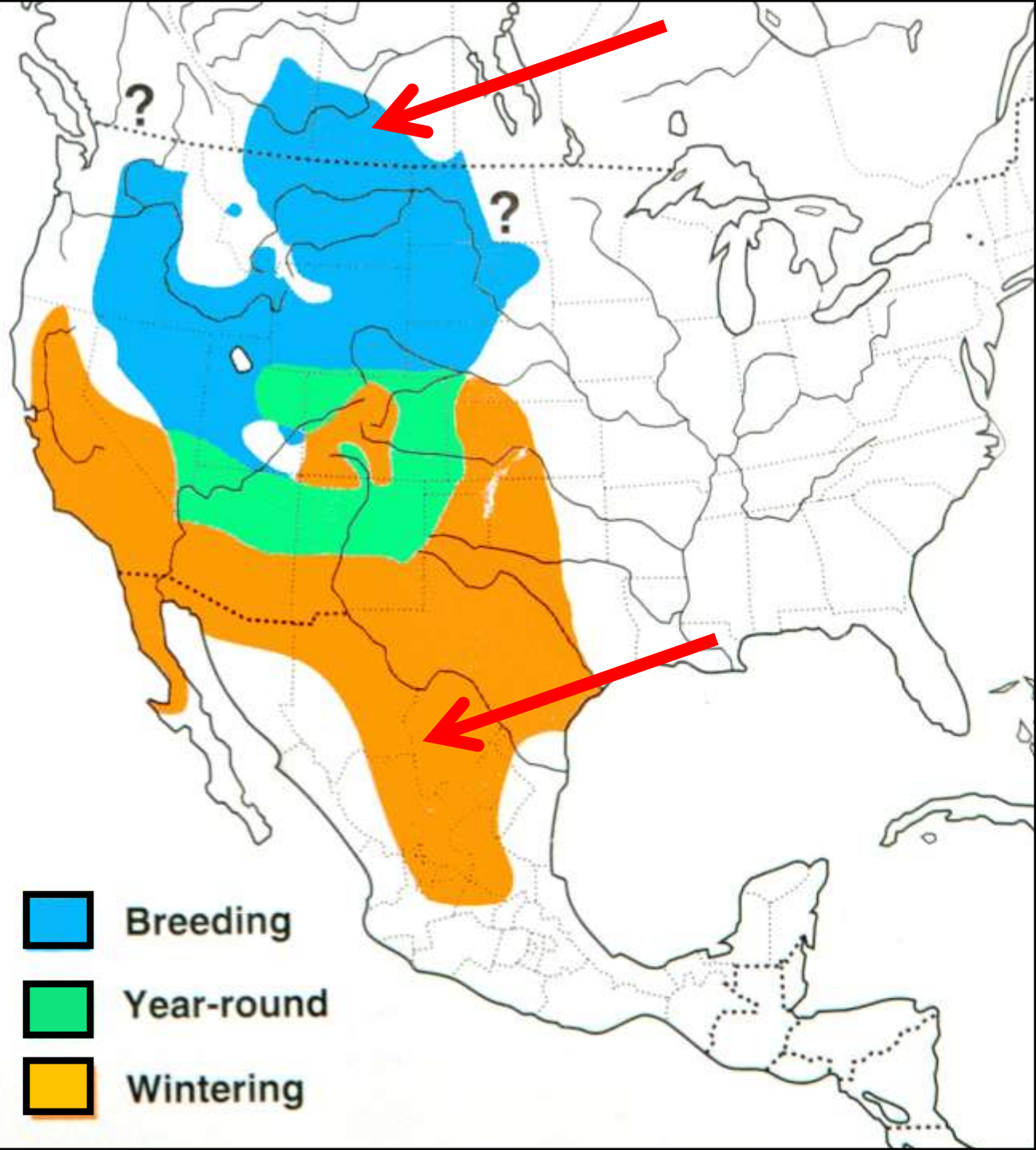
*Species Overview and Status*

**Ferruginous Hawk**





# Distribution



# Status/Trends

**Global: Apparently Secure (Natural Heritage Rank)**  
**Increasing (IUCN Red List 2004):**  
**Based on BBS data est. 20,000 adults**

**Decreasing (Olendorff 1992):**  
**Based on #breed. Pairs est. 10-12,000 adults**

## Status/Trends

**Canada: Threatened (COSEWIC Rank April 2008)**

**Vulnerable (Natural Heritage Rank)**

**Alberta: Endangered and decreasing**

**(Provincial Recovery Plan 2009)**

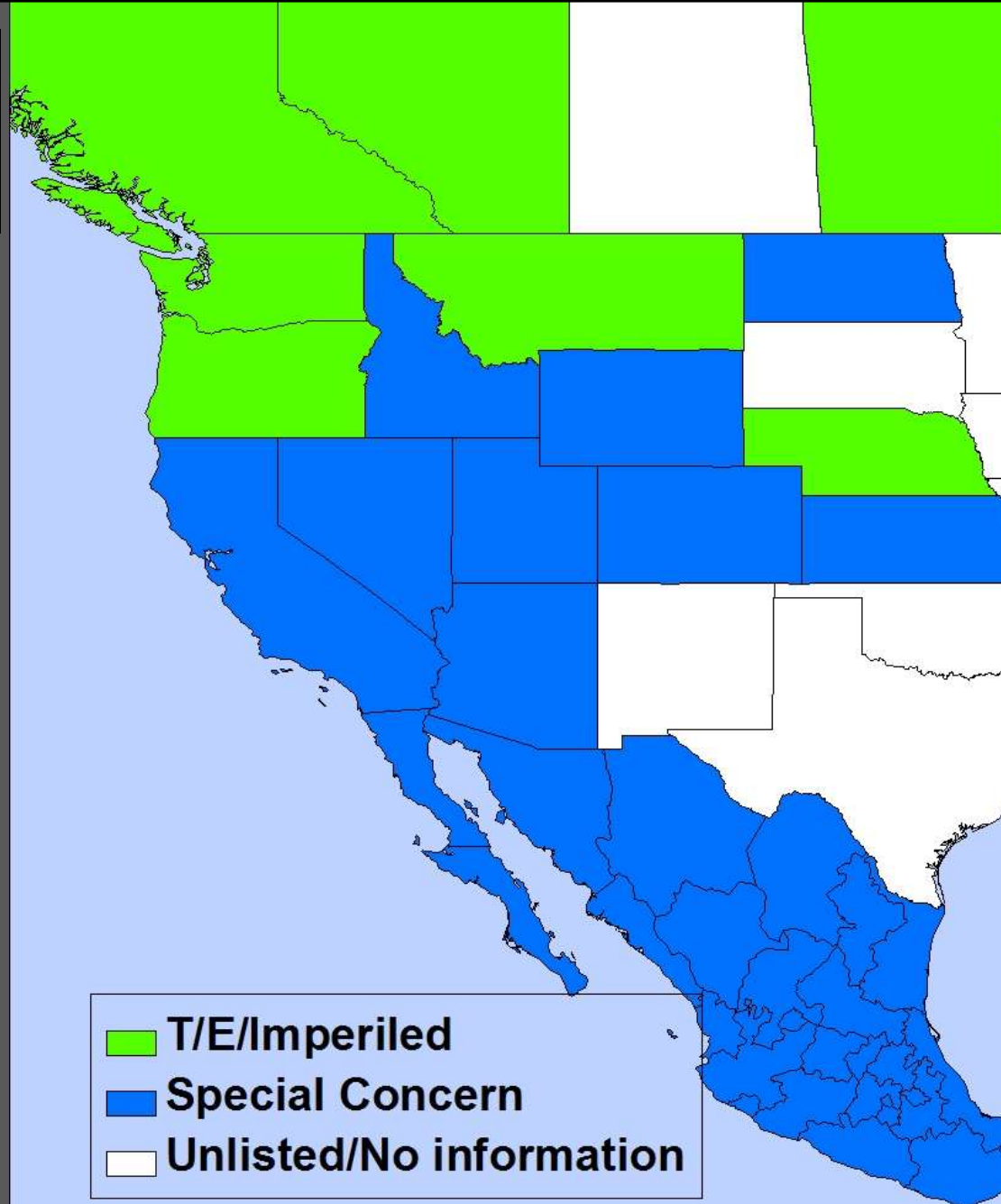
**1,702 pairs (1992); 731 (2000); 618 (2005)**

**US: Conservation Concern (USFWS)**

**Sensitive (BLM USFS)**

**Mexico: Species of Concern**

# Status by State/Province



# Tri-National Study 1999-2011



**61 adults, 51 juveniles**





## Breeding ranges

- No nomadism; adults 100% territory fidelity (106 returns to breeding ranges)

## Post-breeding and winter ranges

- Adults avg. 233 da/yr (64%) in migration and on non-breeding ranges

# Conservation Concerns

## *Range-wide*

- Cheat grass invasion (intense fires & overgrazing)
- Habitat conversion to agriculture
- Climate change
- Energy development

## *Regional*

- Rodenticides (prairie dogs - Nat. Grass., ground squirrels - N. Prairie)
- Electrocutation (Mexico)
- Residential development on winter range (CA, CO)
- Poaching (e.g., Dakotas, Oregon)
- Inter-specific competition for nest sites (Pacific NW)

# Canada



*Cypress Hills SK*



*Cardston AB*

# United States



*Arlington OR*



*Thunder Basin WY*

# Mexico



*Janos CH*



*La Soledad NL*

# Conservation Concerns

Cheat grass invasion (Intense fires/overgrazing)



Climate change

Altered  
Native  
Habitat



PREY



Conversion to agriculture



**Altered  
Native  
Habitat**

**Prey**



**Breeding Season  
Occ/Prod**



**Nonbreeding Season  
Condition**





1 ground squirrel

60 crickets



— Canada

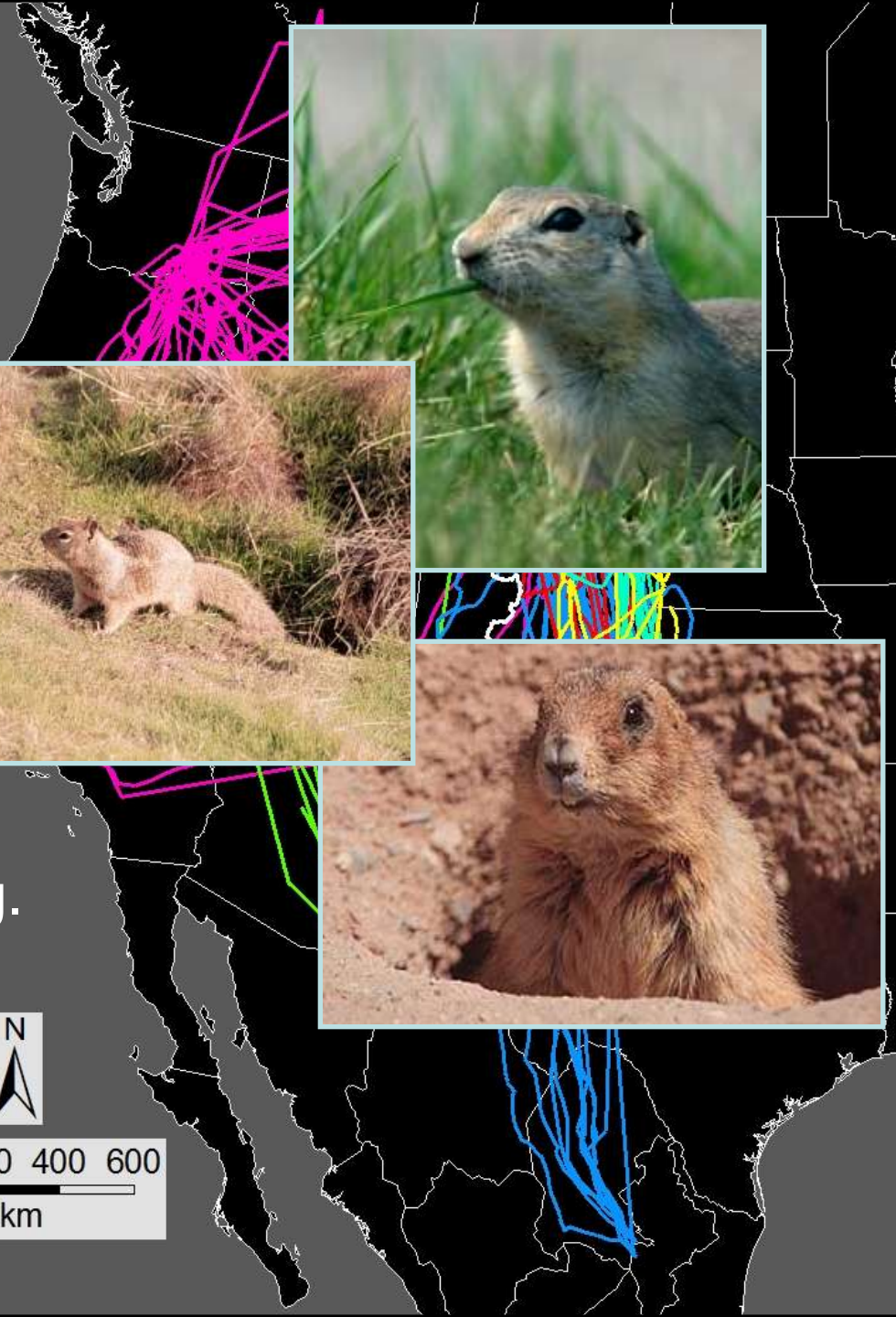
— Dakota

— Wyoming

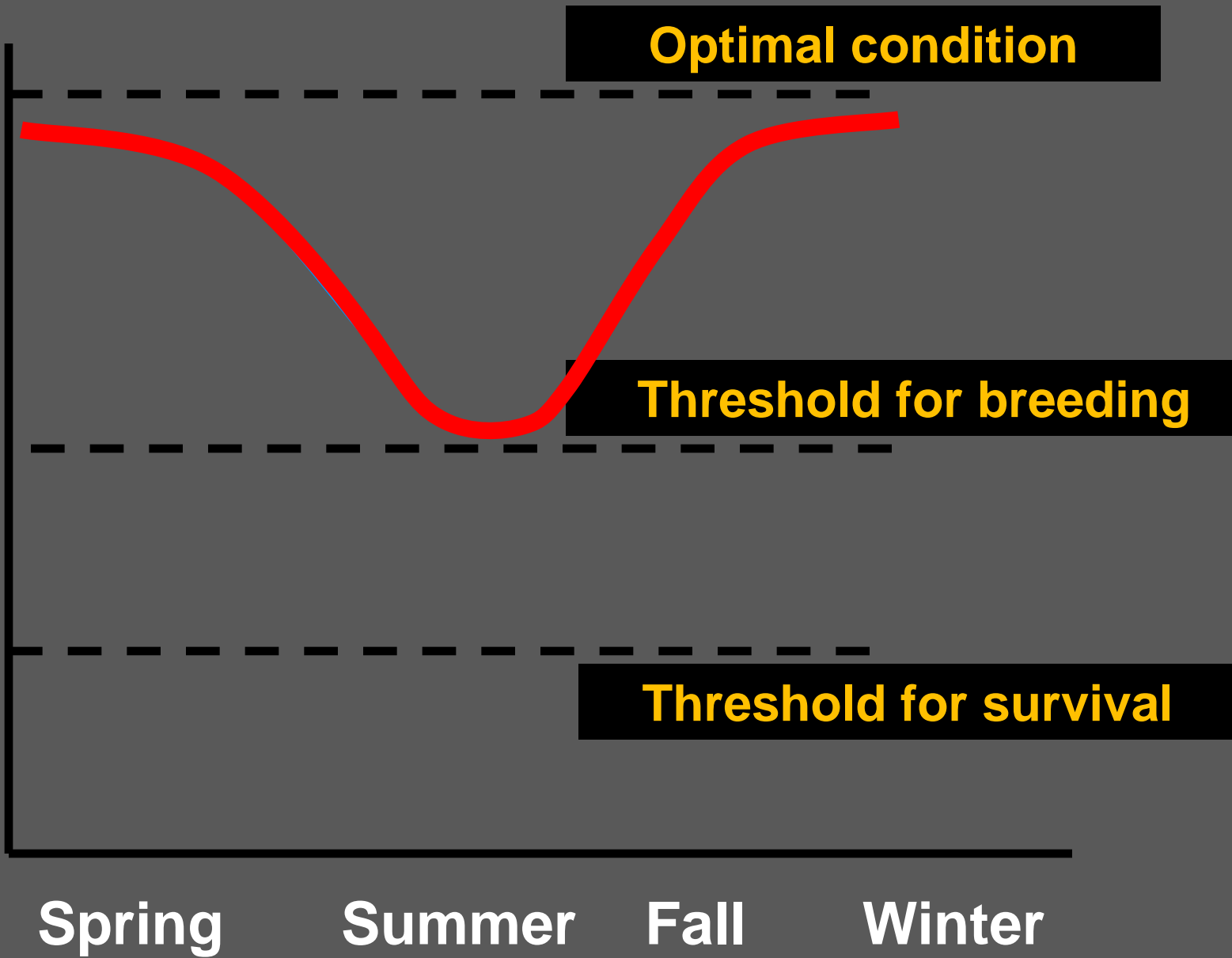
— Colo.

— Ariz. Nev.

— Wash. Oreg.



Condition (mass)



Optimal condition

Threshold for breeding

Threshold for survival

Spring

Summer

Fall

Winter



# Conservation Concerns

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## *Regional*

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- Interspecific-competition for nest sites (Pacific NW)

**Large-scale  
Landscape  
Alteration**



**Displacement  
Disturbance  
Direct Mortality**



*Coal-Methane  
Thunder Basin WY*



*Oil-gas  
Uintah Basin UT*



*Windpower  
Arlington OR*

# Wind Resource Rating (DOE 1987)



# Summary

- State and Provincial data, supported by high adult nest site fidelity, give validity that FEHA populations are declining in northern portion of FEHA range.
- Because FEHAs spend nearly 2/3 of the year away from breeding ranges, conservation planning must address issues related to migration and nonbreeding habitats.
- Range-wide conservation concerns for FEHA include factors that alter native habitats and reduce key prey, and large-scale landscape alteration from energy development that potentially results in displacement, disturbance, and direct mortality of hawks.

# Acknowledgements



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