

# Selected Faculty in Wildland Resources

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*Mike Kuhns, Department Head  
and Forestry Extension Specialist*

# Wildland Resources Department

- Research in ecology and management of wildlife, forestry, and range; conservation and restoration
- 32 faculty, 113 journal articles (2013), \$4.8M in grants (2014), 75 grad students, 425 undergrads
- RS/GIS Lab
- Tree Ring Lab
- <https://qcnr.usu.edu/wild/people/faculty>

# Extension Faculty – Wildlife

- Terry Messmer – Professor & Wildlife Specialist
  - Sage-grouse conservation; community-based conservation; wildlife-human interactions
  - Dave Dahlgren, Lorien Belton



# Extension Faculty – Wildlife

- Nicki Frey – Extension Assistant Professor in SW Utah, Resolution of human-wildlife conflict
  - Control of pocket gophers and Paiute ground squirrels in alfalfa.
  - Studying interactions between wildlife and visitors at Bryce Canyon NP; 65% of interactions were negative.
  - Investigating effects of power transmission line to sage-grouse winter range; increased avian predators.
  - Studying sage-grouse use of areas treated with grass seeding after wildfire; in summer males and non-nesting hens selected areas reseeded within the last 10 years compared to other habitat.
  - Also studies prairie dogs, etc.



# Extension Faculty – Range

- Eric Thacker – Assistant Professor, Range Extension Specialist
  - Range ecology; effects of grazing on land and wildlife
- Beth Burritt – Extension Associate Professor in Northern Utah
  - Effects of grazing on plants and of plants on grazers; animal feeding behavior



# Extension Faculty – Forestry

- Mike Kuhns – Professor in Forestry; urban forestry, rural forestry, WUI, woody biomass
  - Darren McAvoy
  - Megan Dettenmaier



# Research Faculty – Range

- Andrew Kulmatiski – Assistant Professor, Plant Soil Interactions
  - Studying how different precipitation patterns will affect dryland agriculture and rangeland species' composition and productivity.
  - The hope is that these experiments will help predict changes in productivity and identify crops best suited to future climate conditions.
  - Quite possible that bigger precipitation events will increase productivity, but will need deep-rooted crop varieties to benefit from bigger storms.







# Research Faculty – Range

- Kris Hulvey – Assistant Professor, Range Ecology
  - Biodiversity and ecosystem function
  - Restoration ecology
  - Invasion biology



# Grazing as a tool to control medusahead and velvet lupine

*Juan J. Villalba*

Use of medusahead can be enhanced if we understand how livestock (weed managers) “perceive” the plant as a result of their previous experiences with it.



Restoration efforts with forage kochia are being carried out in order to reduce utilization of velvet lupine by livestock.

# Tannin-Containing Legumes in Pasturelands and their Ecological Services

*Juan J. Villalba*

Tannin-containing legumes like birdsfoot trefoil and sainfoin enhance the efficiency of energy and protein use in ruminants relative to grasses and other legumes. The long-term goal of the proposed project is to assess the ecosystem service improvements of a tannin-containing legume-based beef production system.



We will create a **multidisciplinary, multi-state regional research and extension team along with an advisory panel**, and collect data on production, environmental impact and perceived value of a legume-based beef production system.

# Aspen and elk: Identifying at-risk stands and developing management plans to reduce herbivory

*Juan J. Villalba*

Elk supplementation is a low-cost approach with potential to have a much greater impact on the landscape than more expensive techniques such as fencing. Elk supplementation also considers the nutrition and welfare of the animal without the need of reducing animal numbers to protect aspen stands.



Elk preferences for supplements and locations can be transmitted from mother to offspring, creating a culture within the herd which facilitates the implementation of the technique once elk are trained to consume the supplement.

# Phytochemicals in Animal Health and Self-Medication in Livestock

*Juan J. Villalba*

Plants are nutrition centers and pharmacies with vast arrays of primary (nutrients) and secondary (pharmaceuticals) compounds (PSC) which can provide multiple services vital for agroecosystems.



We are determining whether livestock learn to self-medicate and mix secondary compound-containing plants and supplements such that the benefit (medicinal: antiparasitic) of the combination exceeds the benefit of consuming a single food resource.







# Vertebrate Responses to Environmental Change:

- Implications for Conservation and Management



- Lise M. Aubry, Assistant Professor
- Department of Wildland Resources & Ecology Ctr.
- [lise.aubry@usu.edu](mailto:lise.aubry@usu.edu)

# Wildlife-driven habitat damage

*e.g. impact of lesser snow geese on the Arctic tundra in Northern Manitoba*





# Human-Wildlife Conflicts

## *Human-black bear conflicts in NJ*





# Harvest Management

*Cougar sport harvest in Utah*

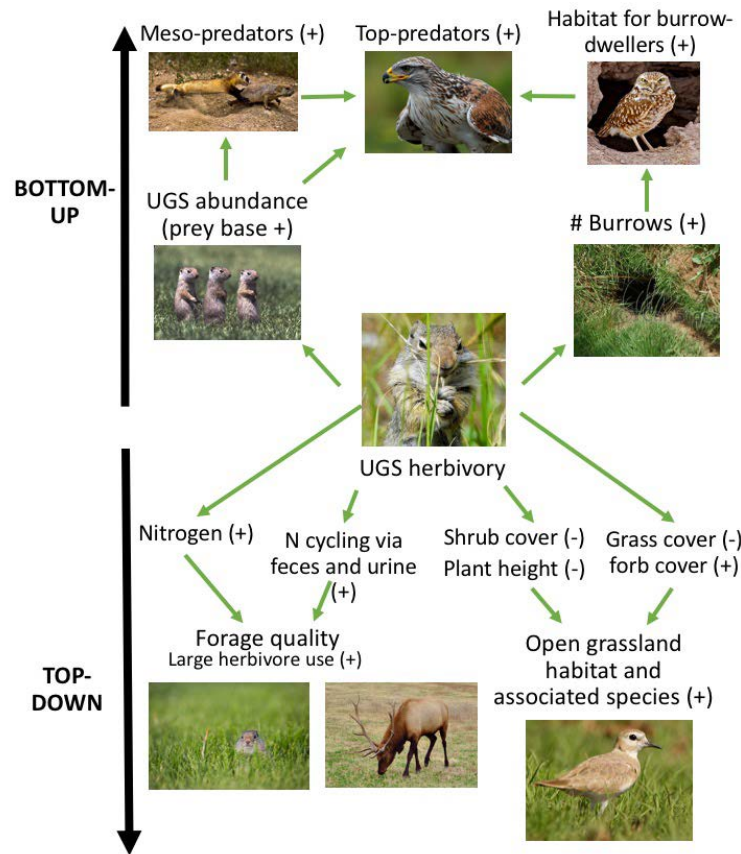


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# Wildlife and Climate Change

## *Uinta Ground Squirrels, ecosystem engineers of the Intermountain West*



# Wildlife and Climate Change

*Uinta Ground Squirrels, ecosystem engineers of the Intermountain West*

- Extension Collaboration Needed!
- Contact me at: [lise.aubry@usu.edu](mailto:lise.aubry@usu.edu)
- Web: <http://liseaubry.webs.com/>



# Research Faculty – Wildlife

- David Koons – Associate Professor, Animal Population Ecology
  - Demography, population dynamics
  - Life history evolution
  - Stochastic environments
  - Population structure
  - Wildlife harvest
  - Senescence
  - Avian ecology
  - Human-wildlife interactions
  - Natural resource management & conservation



# Research Faculty – Wildlife

- Johan duToit – Professor, Ecology and Conservation of Large Mammals
  - Spread of brucellosis between bison, elk, and cattle





# Research Faculty – Forestry

- Jim Lutz, Assistant Professor, Forest Ecology
  - Counts trees, lots of trees, and sometimes burns them.
  - Research in forest demography; causes and consequences of tree mortality.
  - Has three Smithsonian-affiliated forest dynamics plots in Cedar Breaks National Monument (28,308 mapped and tagged stems), Yosemite National Park (38,703 stems), and the Gifford Pinchot National Forest (34,225 stems).
  - Every year these forest plots are censused for mortality and recruitment by professors, students, and citizens.
  - Also involved in effects of fire on forest communities using field and remote sensing techniques (principally Landsat and LiDAR).

