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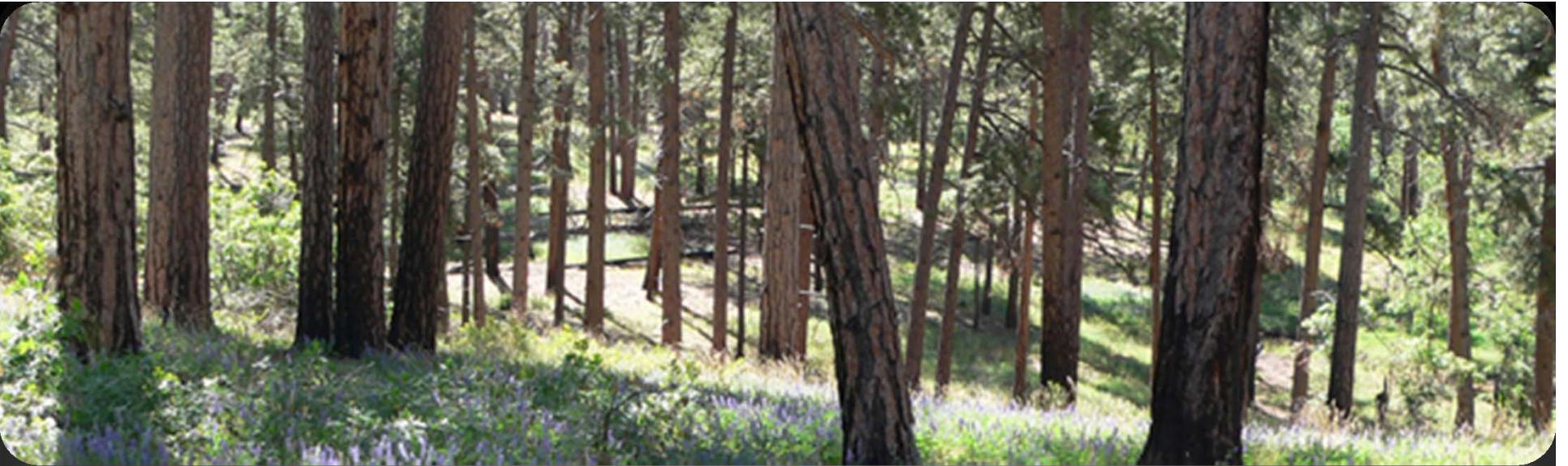
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What Forest Restoration Means for Agriculture and Communities:

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Presented by: Bruce Greco
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ECOLOGICAL RESTORATION INSTITUTE
Northern Arizona University

NORTHERN
ARIZONA
UNIVERSITY



President Barrack Obama,
State of the Union Speech,
February 12, 2013

- "...the fact is, the 12 hottest years on record have all come in the last 15. Heat waves, droughts, wildfires, floods, all are now more frequent and more intense.
- We can choose to believe that Superstorm Sandy, and the most severe drought in decades, and the worst wildfires some states have ever seen were all just a freak coincidence.
- Or we can choose to believe in the overwhelming judgment of science and act before it's too late.
- Now the good news is, we can make meaningful progress on this issue while driving strong economic growth...."

The Challenge....

(The bottom line)

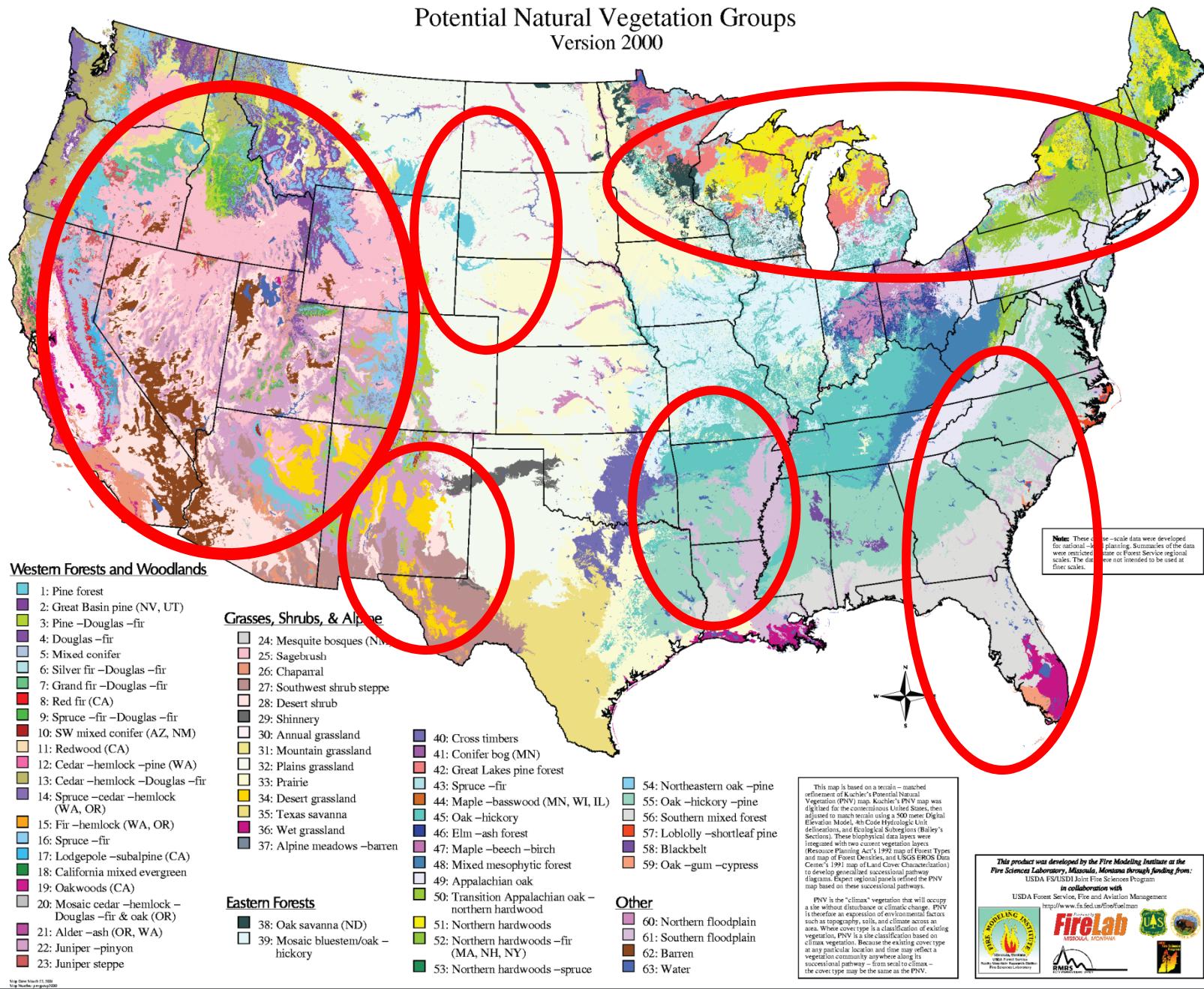
- America's forests are "out of whack"
- Frequent fire forests, in particular, have unnaturally high tree densities and fuel loads
- Under these conditions, fire intensity and size have been steadily increasing
- Research shows that **restoration** can help solve forest health problems and provide economic benefits
- We must increase the scale and pace of treatments

What is a “Frequent Fire” Forest?

- Forests which over evolutionary time have become adapted to frequent, low intensity surface fire
- Examples include longleaf pine, red pine, ponderosa pine, Jeffrey pine, and a wide range of dry oak-hickory forests
- Under natural conditions, these frequent fires kept tree populations in check, recycled nutrients, and prevented fuel accumulation

Potential Natural Vegetation Groups

Version 2000



Unnaturally High Tree Densities and Climate Change are a Recipe for Disaster







Crownfires are the latest in a long series of symptoms of declining ecosystem health. Impacts include:

- Loss of herbaceous cover
- Increased erosion
- Tree population explosions
- Watershed degradation
- Loss of plant and animal diversity
- Loss of esthetic values
- Unnatural insect and disease epidemics
- Shift to catastrophic crownfires
- Destruction of human and wildlife habitats

What Options Are Available?

- Restoration based approaches are proven at a small scale (5000+ ac)
- Implementation actions must be tested and refined as we apply them at large scales (1,000,000+ ac), in an adaptive management approach
- Multi-scaled collaborative approaches must be supported with best available science
- Insist on comprehensive landscape scale restoration solutions
- Act at a pace and scale consistent with the current forest landscape health crisis

TD1 Combine elements of this slide into the next one.

Taylor Dubay, 2/15/2013

What is ecological restoration?

- The aim of restoration is
 - to re-establish and enhance the resilience,
 - adaptive capacity,
 - and sustainability of forests
 - through treatments that incrementally return the ecosystem to a state that is within a historic range of variability of conditions

Slide 11

TD5

Combine this slide with slide 12

Taylor Dubay, 2/15/2013

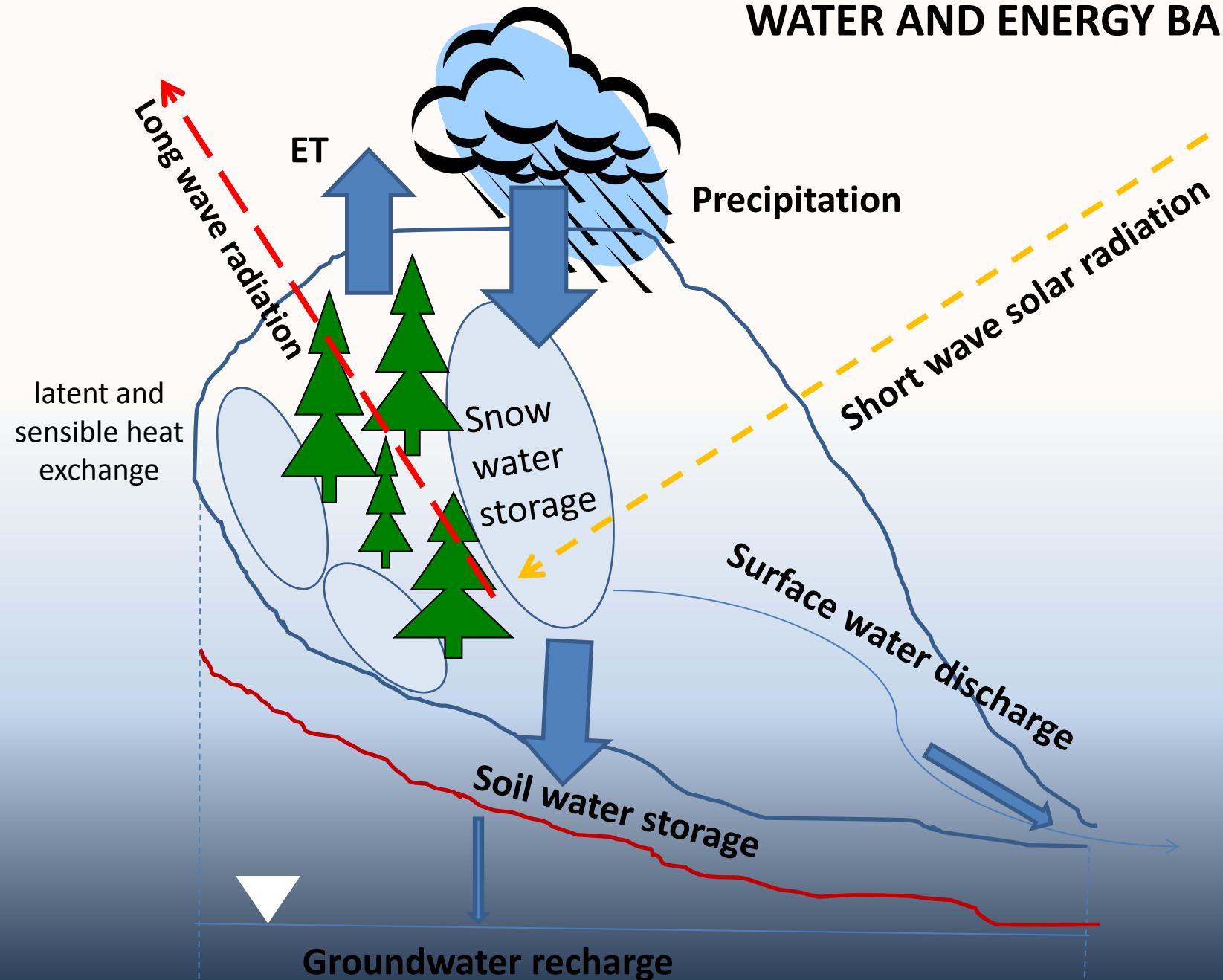


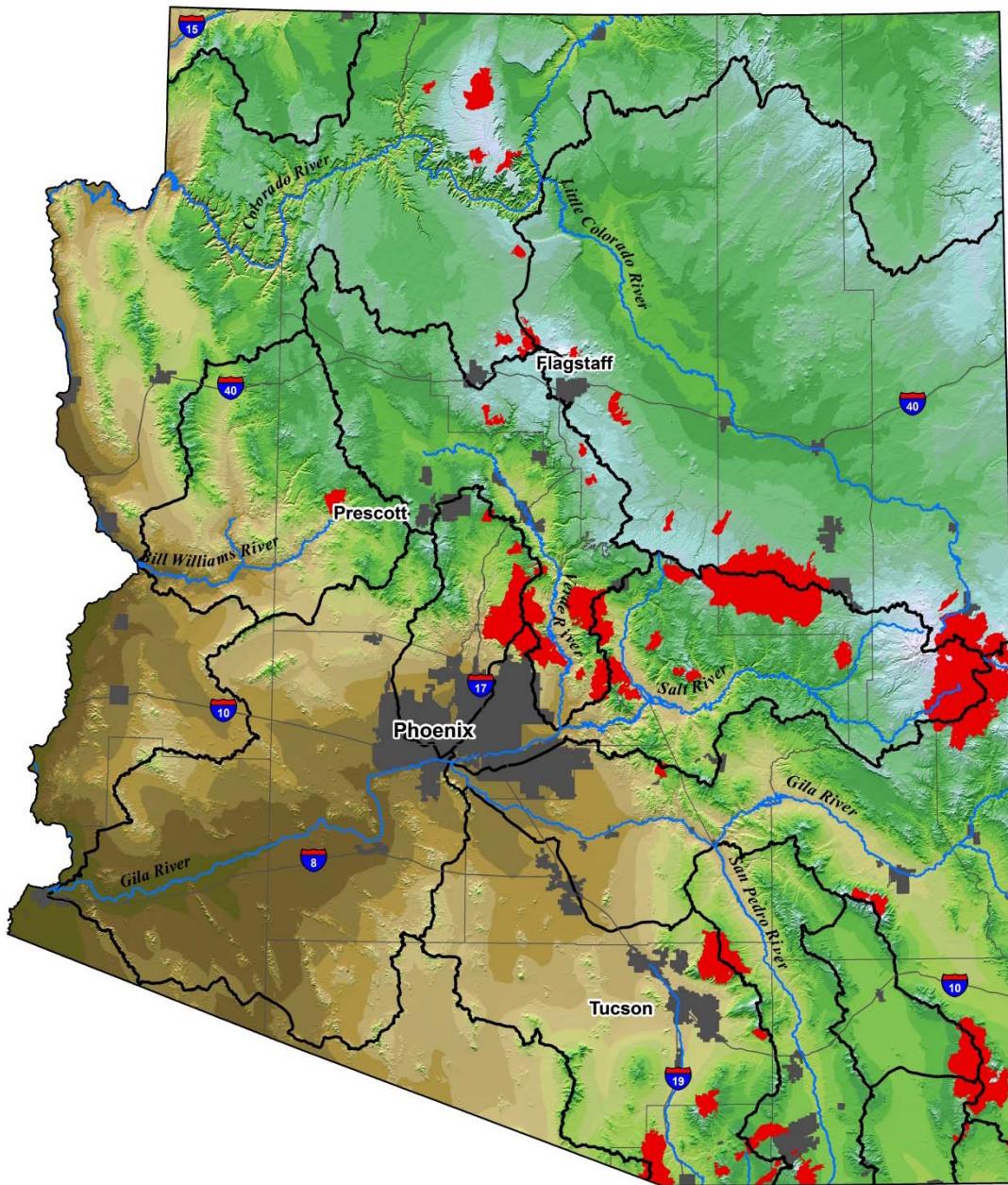


Shultz Fire – 2010
Flagstaff, Arizona



WATER AND ENERGY BALANCE





- Major Rivers
- Interstate Highways
- Watersheds
- Wildfires > 5000 acres
- Counties
- Urban Areas

Map data were acquired from the Arizona State Land Department, The United States Geological Survey, and the United States Forest Service, Region 3. Map preparation by the Ecological Restoration Institute.



0 50 100
Miles



