



NSS Convention, July 20, 2011

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White Nose Syndrome

Eastern Lessons



White Nose Syndrome

Eastern Lessons for Western Consideration





Eastern/Western Comparisons

Bat Species/Colony Size

Bat Hibernacula

Cave Locations

Land Ownership

**Colony Size Varies:
View Est. 4000 *Myotis sodalis*
Hellhole, West Virginia**



Colony Size Varies:

Oregon and Washington

2900 caves

39 used by *Myotis* spp.

Most colonies < 10 bats

Largest colony: 38 bats

(Source: Pat Ormsbee, USFS, 2011 WNS Symposium)

Washington State Townsends's bats:

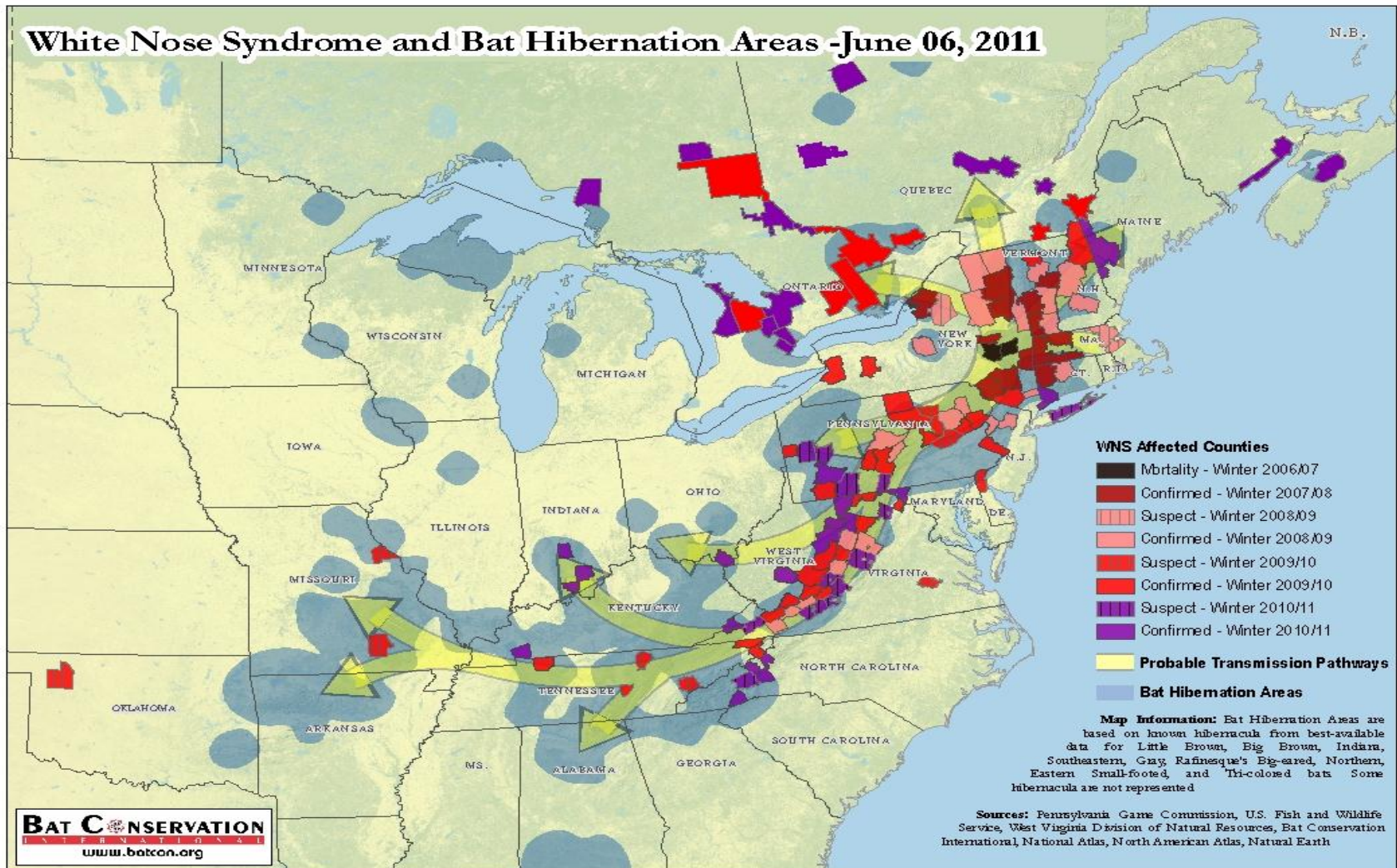
est. 600 total (Perkins, 1990)

est. 20 nursing colonies/ 20-200 bats

(Source: Greg Falxa, Fort Lewis 2009

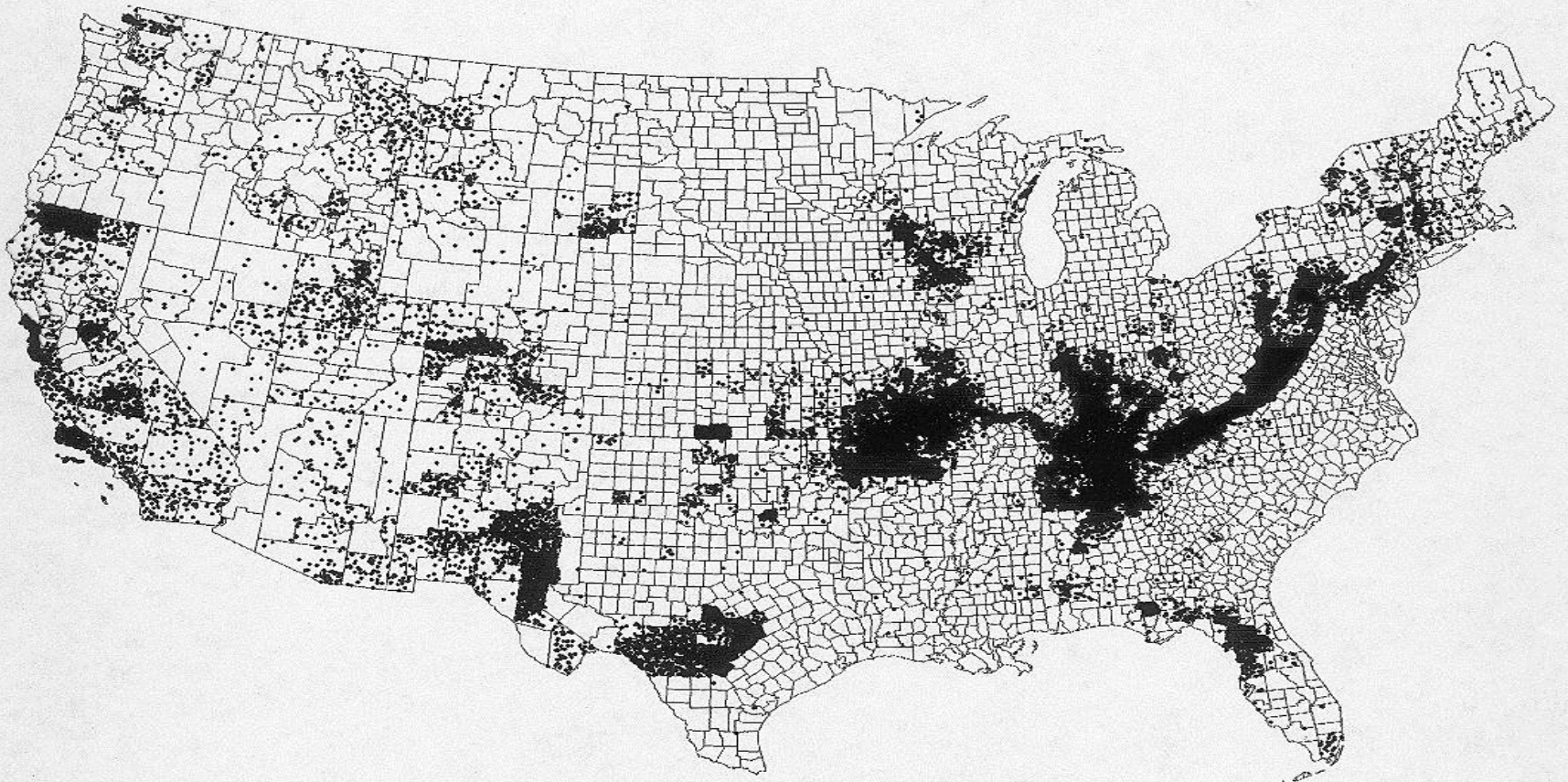
Townsend's big-eared bat Study)

Eastern Hibernacula Well-known



Distribution Map of Caves in the U.S.

(Culver, et al, NSS Journal of Cave and Karst Studies, Dec. 1999)

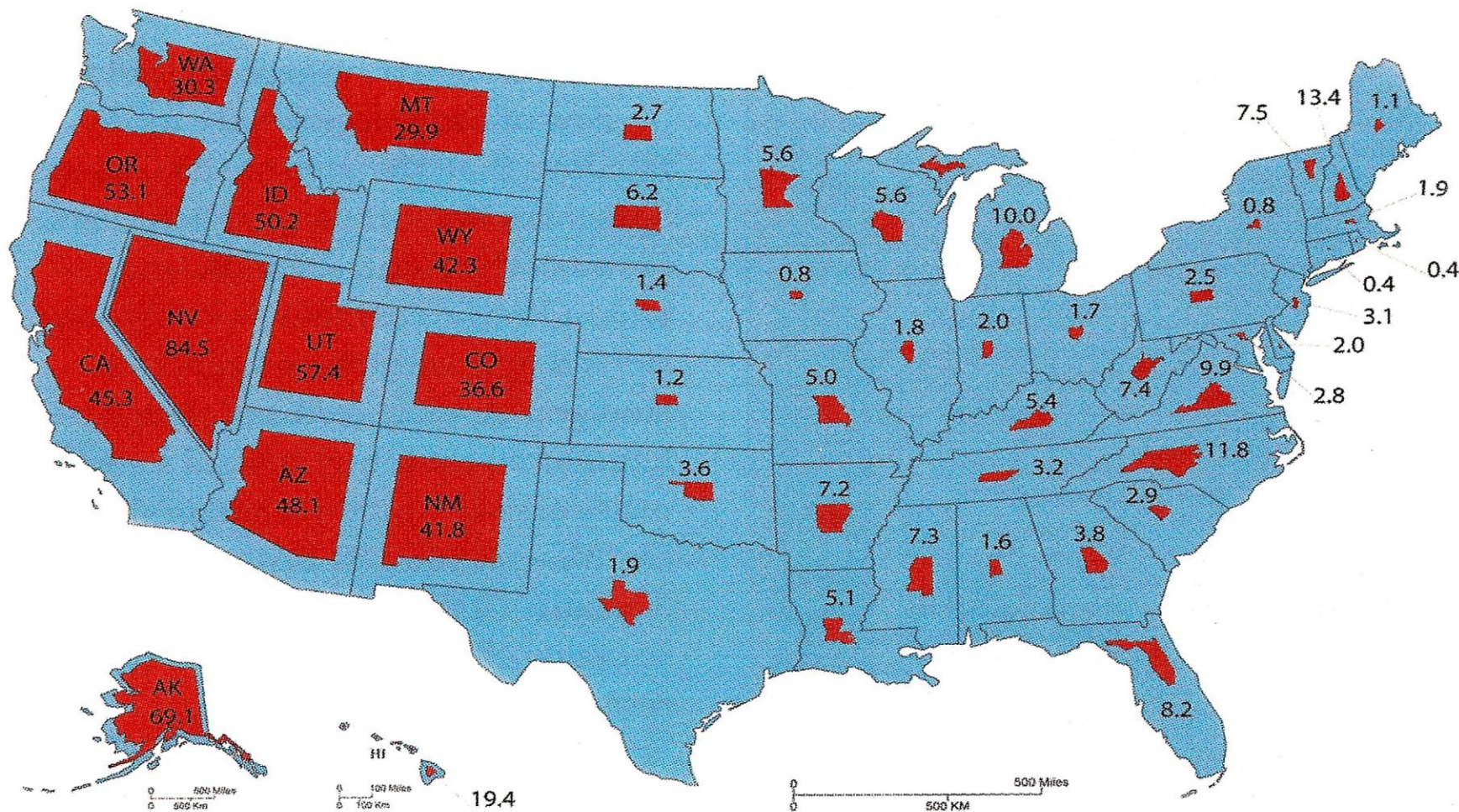


Cave Concentration Varies

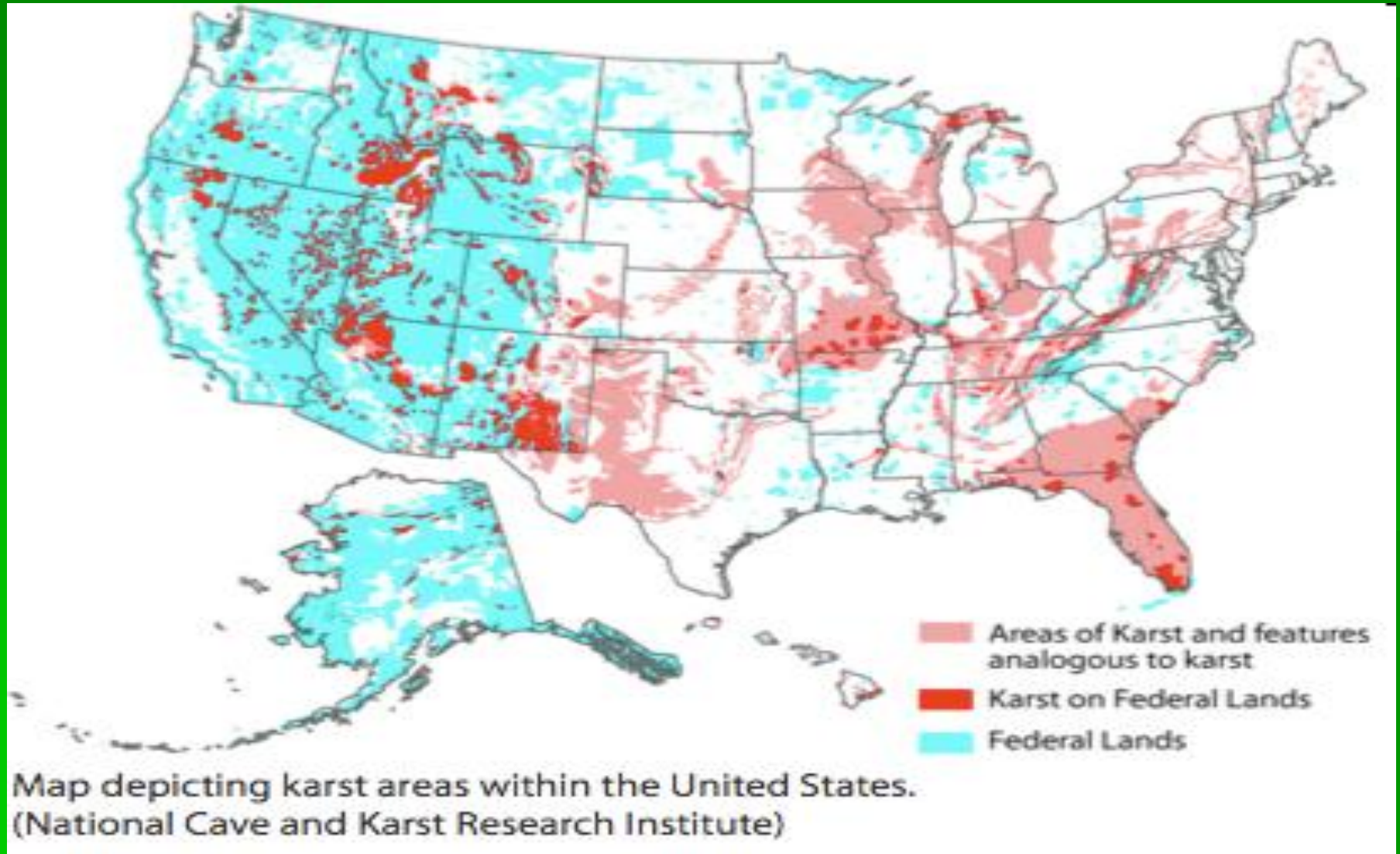
- Total # of caves in U.S. is 55, 792 as of May 2011 (Source: Richard Blenz, NSS Cave Files Committee)
- In the Western states of AZ, CA, CO, MT, NM, NV, OK, OR, UT, WA, AND WY, there are 8,250 caves.
- Tennessee alone has 9637 - more than a thousand more caves than the above 11 states combined.
- As an aside, bat data is available for less than 100 of Tennessee's caves (Source: Eric Britzke, USDOD).

WHO OWNS THE WEST?

Federal Land as a Percentage of Total State Land Area



Private vs. Public Karst Ownership



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WNS Affects Bat Species Differently

Declines of Six Hibernating Bat Species from White-Nose Syndrome in the Northeastern United States

- Myotis lucifugus: 93%
Myotis septentrionalis: 93%
Perimyotis subflavus: 86%
Myotis leibii: 78%
Myotis sodalis: 57%
Eptesicus fuscus: 48%
- (Source: Kate Langwig, et al, NASBR, Portland, Oregon, October, 2009)

Eastern Lessons

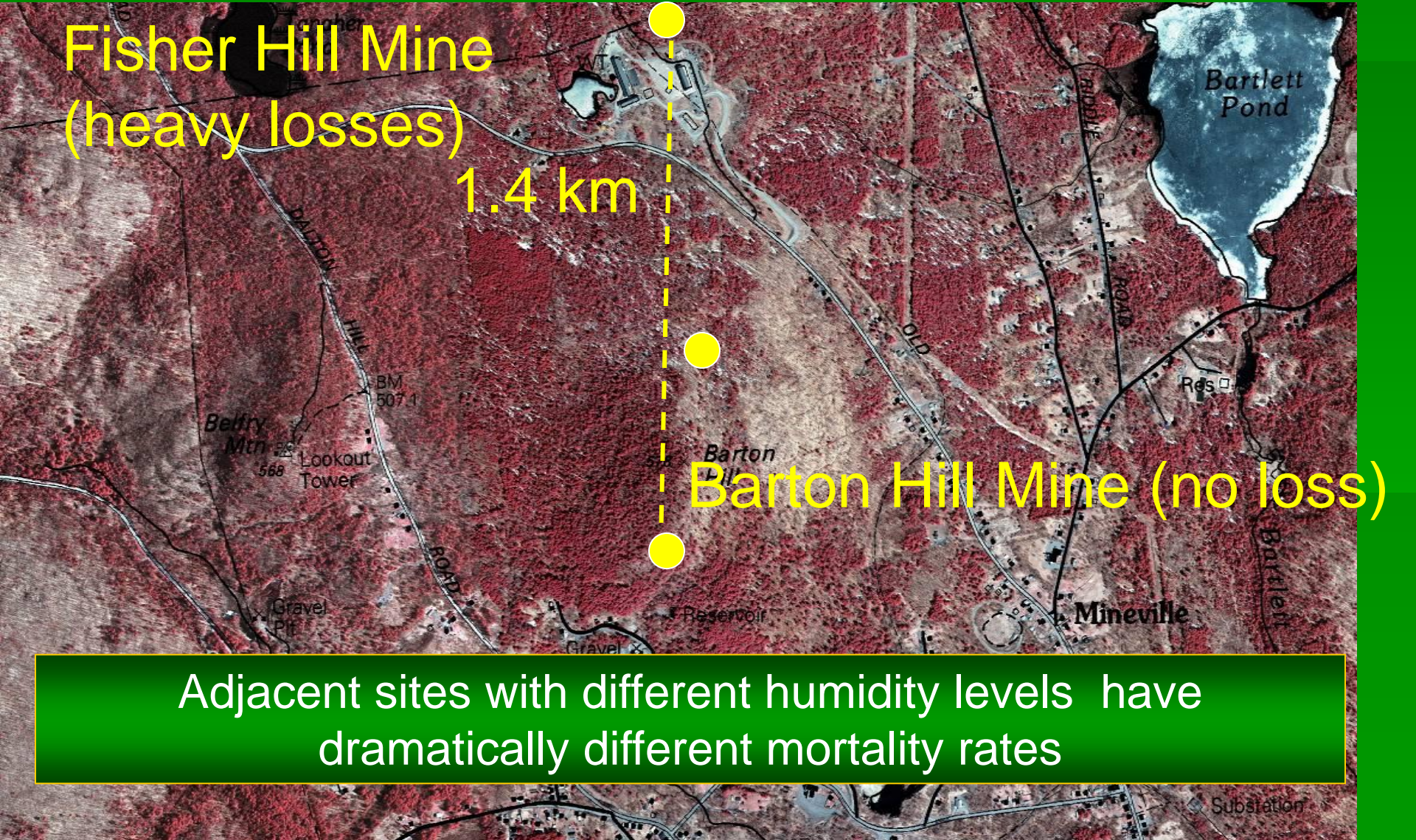
Microclimates Matter

Fisher Hill Mine
(heavy losses)

1.4 km

Barton Hill Mine (no loss)

Adjacent sites with different humidity levels have dramatically different mortality rates



Eastern Lessons

Blanket Cave Closures Don't Work and Have Unintended Consequences







Eastern Lessons

Cave Conservation

More than Just Bats



Cave Conservation More than Just Bats

- Cave Sciences – Paleontology, Archaeology, Hydrology, Microbiology, Geology, Biology, etc.
- Cave Studies – University and College Programs
- Exploration and Discovery – Project Caves - Mapping
- Technology Development
- Cave Rescue Training and Operations
- Cave Conservation
- Recreational Caving – Building the Conservation Ethic

Eastern Lessons

Baseline Data Was Inadequate

- Field surveillance and monitoring historically focused on endangered or threatened species
- Created biases and delays in reporting
- Funding didn't track WNS needs
- Funding for research woefully inadequate
- Nature of a disease of hibernating bats means only half a year for field studies

Eastern Lessons

NSS/Agency Partnerships Matter

**West Virginia Department of Natural Resources, U.S. Fish and Wildlife Service,
National Speleological Society Photographic Expedition and Bat Survey,
Hellhole Cave, West Virginia, Feb. 20, 2010**



What Can We Do?

- Collaborate: public/private partnerships, Cave stewardship, hibernacula identification and prioritization
- Field Work – bat surveys, acoustic monitoring, entrance monitoring
- Provide expertise – caving techniques, scientific research
- Dedicate, Clean and Disinfect our gear
- Help with public awareness and reporting
- Advocate for Conservation Balance
- Fund Research



Photo Credits:

Emily Smith, Jonathan Reichard, Gordon Brace, NY Department of Environmental Conservation, U.S. Fish and Wildlife Service, National Park Service, Peter Youngbaer

Al Hicks, NYDEC, Mine Microclimate Slide, 2008

Kamakura Bhudda, Wikimedia

Cowboy Thinker, Greg Polutanovich, in Bronze