

Indiana Bats and Surface Coal Mining in Pennsylvania

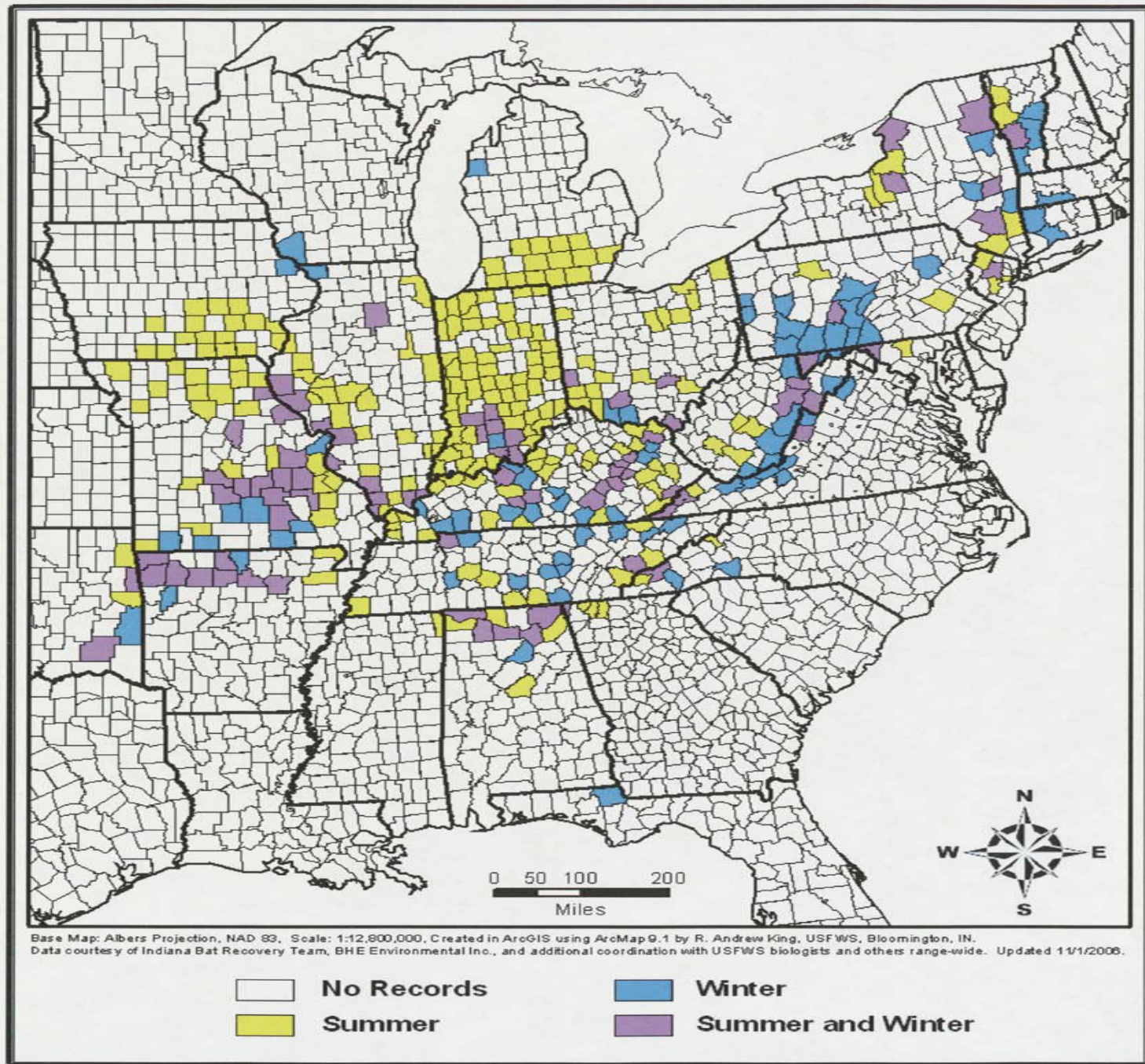
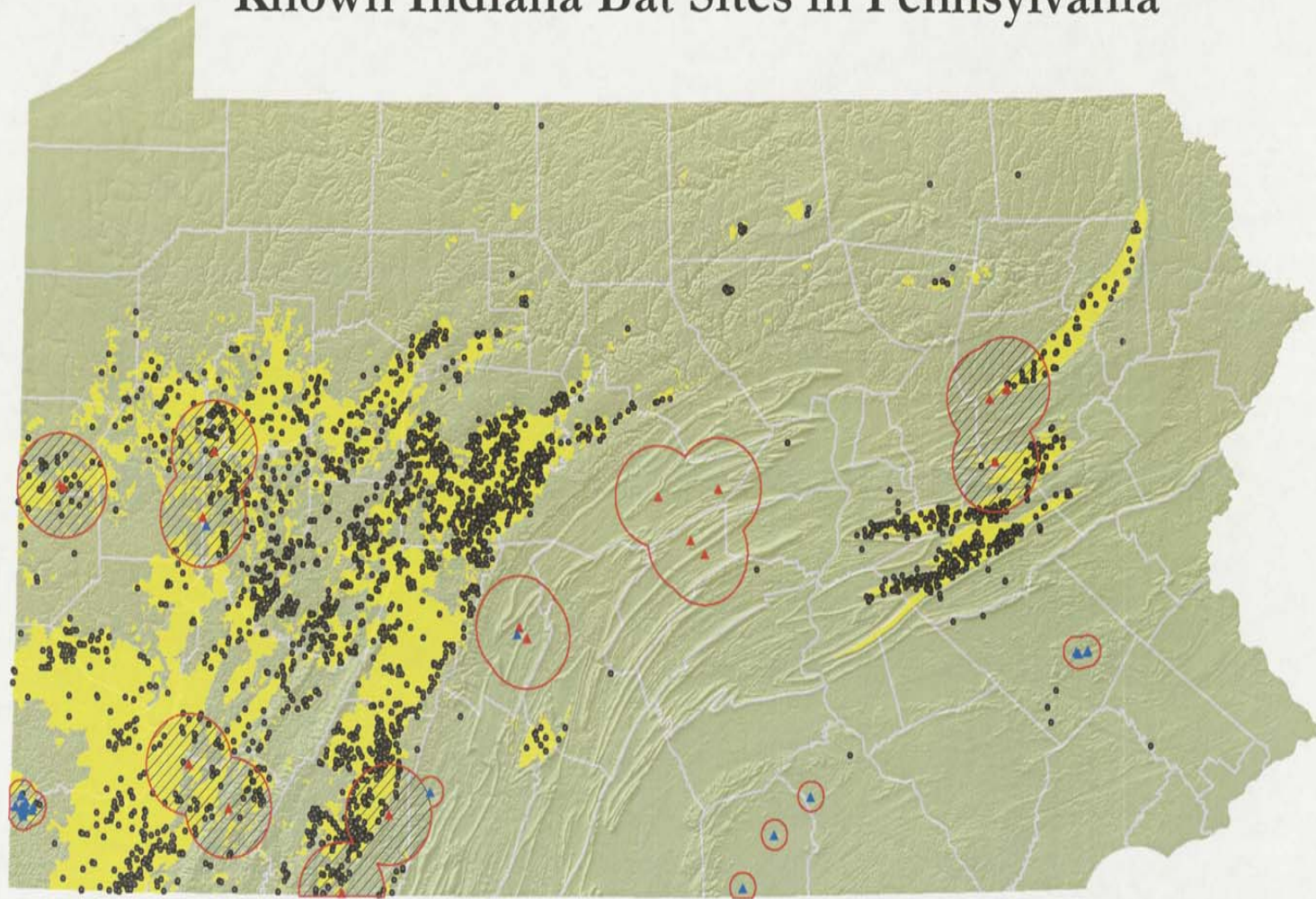


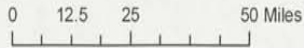
Figure 3. Distribution of counties with known summer and winter records of the Indiana bat.

Known Indiana Bat Sites in Pennsylvania



Area Statistics

Total Pennsylvania Area:	42,000 Sq. Miles
Buffered Indiana Bat Area:	3,952 Sq. Miles
Buffered Indiana Bat Area near Coal Operations:	2,625 Sq. Miles



Data Sources
 Indiana Bat Sites: PA Natural Heritage Program, 2009
 Coal Beds: Coal Mined Areas, Environmental Resources Research Institute, 1999
 Coal Mining Operations: PA Department of Environmental Protection, 2009
 Digital Elevation Model: U.S. Geological Survey, 1996

Indiana Bat Sites

- ▲ Hibernaculum
- ▲ Maternity colony
- Indiana Bat Buffer
- ▨ Buffers Near Coal Ops.

- Coal Operations
- Coal Beds

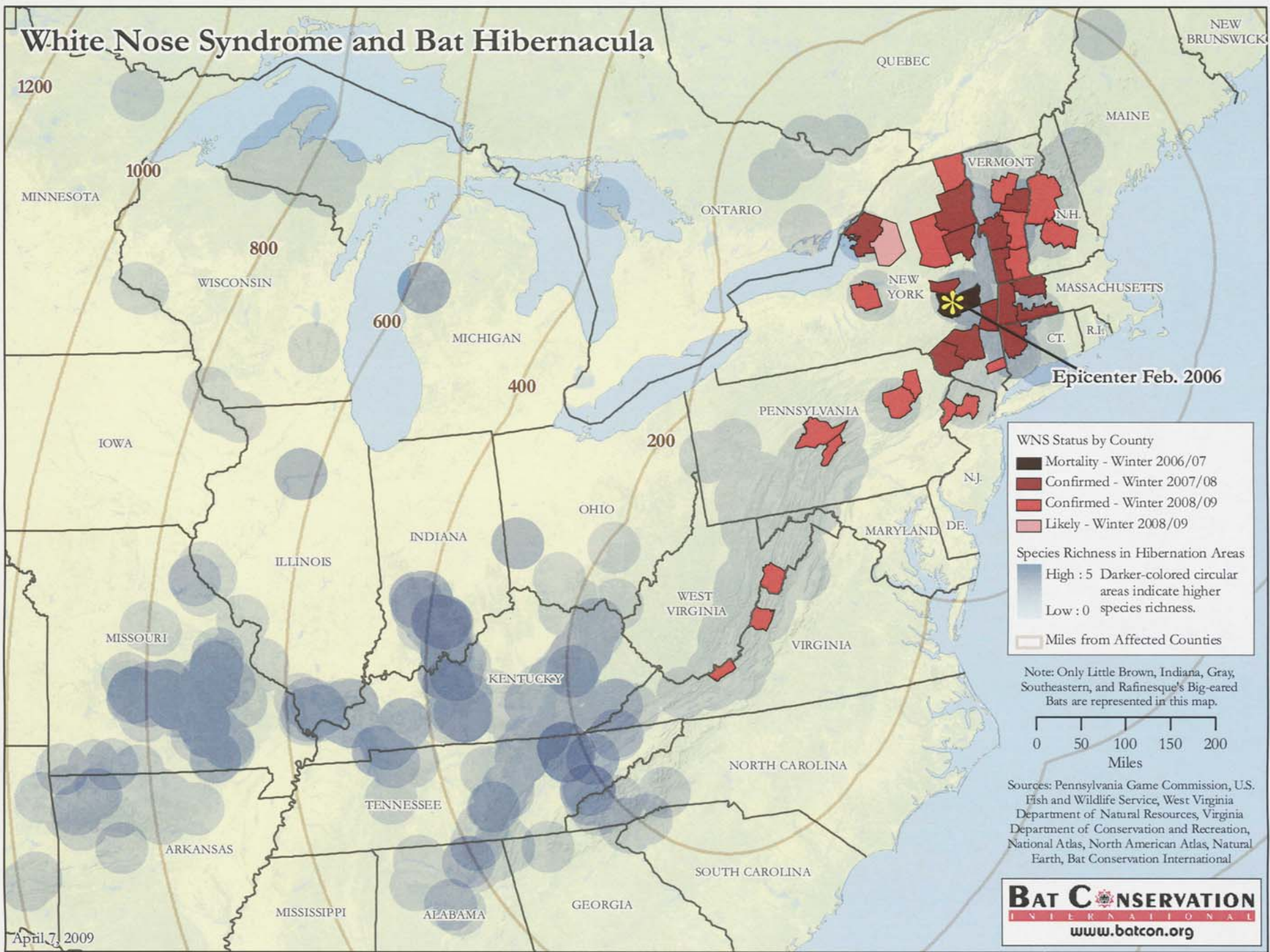


Pennsylvania Natural Heritage Program



White Nose Syndrome

White Nose Syndrome and Bat Hibernacula



April 7, 2009



White Nose Syndrome or simply “White Nose” is a name we have given to an as yet unidentified agent or agents that is causing mass mortalities at a growing number of bat hibernacula in and around Pennsylvania.

06/05/09

Bat White Nose Syndrome (WNS)
Occurrence by County*

○ Feb. 2006: 1st detected in
Schoharie Co., NY

■ Mortality- Winter 2006/07

■ Confirmed in 2007/08

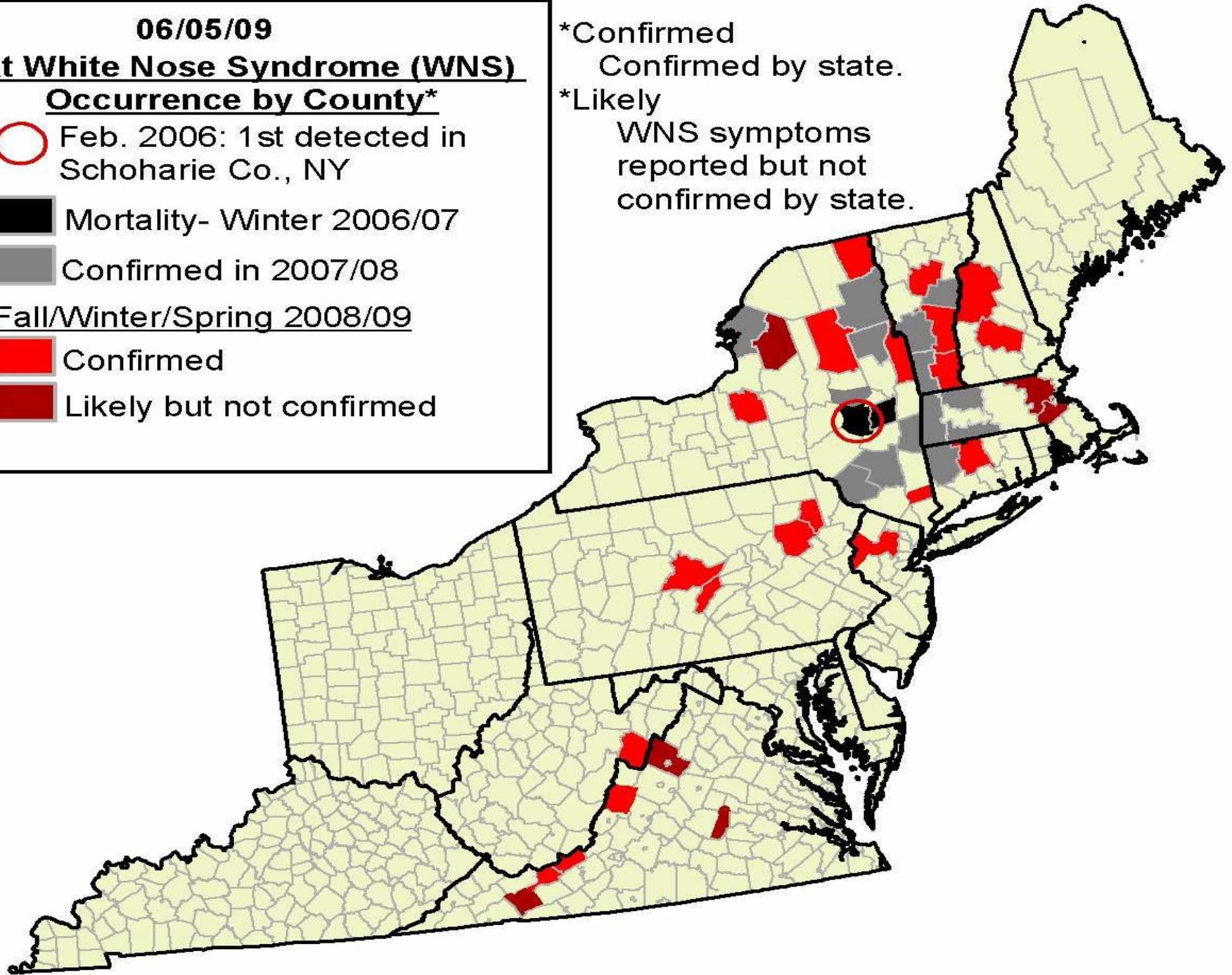
Fall/Winter/Spring 2008/09

■ Confirmed

■ Likely but not confirmed

*Confirmed
Confirmed by state.

*Likely
WNS symptoms
reported but not
confirmed by state.



Not all bats have White Nose Syndrome, but it is spreading rapidly with mortality rates of 90% over two years.



Indiana Bat

Protection Planning



Endangered Species Act (ESA)

- Passed and Signed in to Law by Richard Nixon in 1973.
- As of December 31, 2001 there are 1,812 species listed.
- The law is administered by the US Fish and Wildlife Service.
- All Federal Agencies are to Protect Species and Preserve their Habitats.

1996 Biological Opinion

- In 1996, USFWS issued their Biological Opinion on the SMCRA program clarifying that consultation in the coal mine permitting process is not the same as ESA Section 7 consultation. Nevertheless, regulatory consultation should not only meet the legal requirements of the regulations, but should be conducted in an effective manner if the designed endangered species protections are to be realized.

Range-wide Indiana Bat Protection and Enhancement Plan Guidelines

July 2009



Known Habitat

- 1. Caves, underground mine workings, rock shelters, bridges, tunnels, dams, and other underground openings where Indiana bats have been recorded.
- 2. Forests containing trees ≥ 5 inches in diameter with exfoliating bark that lie within a 10 mile radius of a known Priority 1 (P1)^a or Priority 2 (P2)^b Indiana bat hibernaculum (P1 > 10,000 and P2 > 1,000 bats).
- 3. Forests containing trees ≥ 5 inches in diameter with exfoliating bark that lie within a 5 mile radius of a known Priority 3 (P3)^c or Priority 4 (P4)^d Indiana bat hibernaculum (P3 > 50 and P4 < 50 bats).

Known Habitat

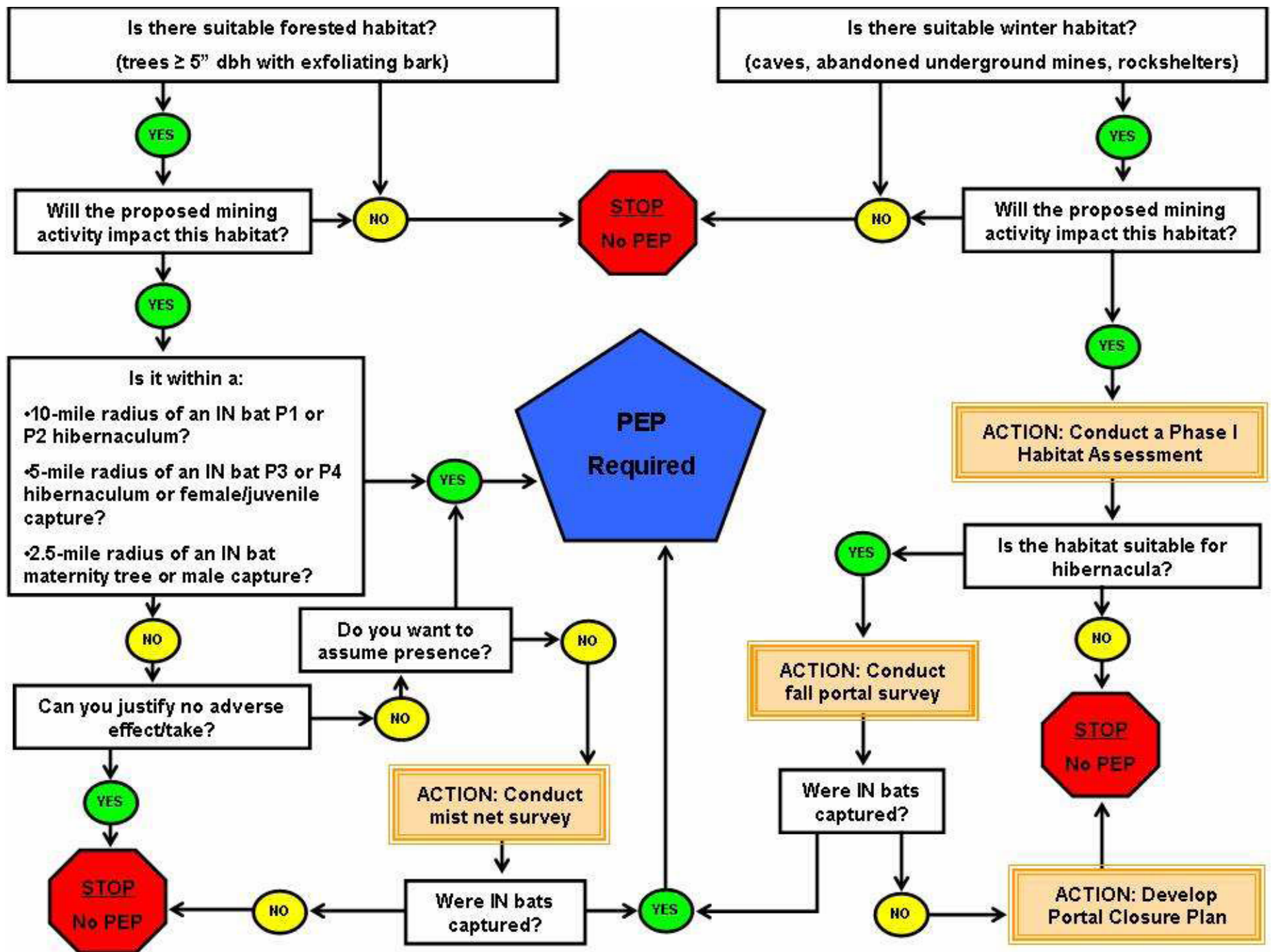
- 4. Forests containing trees ≥ 5 inches in diameter with exfoliating bark that lie within a 5 mile radius of an Indiana bat female or juvenile capture record without a maternity roost tree.
- 5. Forests containing trees ≥ 5 inches in diameter with exfoliating bark that lie within a 2.5 mile radius of an Indiana bat maternity tree record.
- 6. Forests containing trees ≥ 5 inches in diameter with exfoliating bark that lie within a 2.5 mile radius of an Indiana bat male record.

Suitable/Potential Habitat

- 1. Caves, underground mine workings, rock shelters, bridges, tunnels, dams, and other underground openings where no Indiana bats have been recorded and where no previous surveys and habitat analysis of such habitat have been conducted.
- 2. Forests containing trees ≥ 5 inches in diameter with exfoliating bark that lie within a 10 mile radius of any potential hibernaculum where no previous surveys and no habitat analysis of the potential hibernaculum have been conducted.
- 3. Forests containing trees ≥ 5 inches in diameter with exfoliating bark.

Potential Exemptions

- DEP will work with their local FWS office to determine if permit application acreage or other exemptions to this guidance such as, the amount of habitat altered/removed and the type of permitting action taken.
- States with abundant suitable habitat may choose to incorporate an exemption, as long as that exemption does not exceed 40 acres, for timber clearing.



APPLICANT ALTERNATIVES

- 1. Demonstrating a Lack of Adverse Effects
- 2. Conducting Bat Surveys
- 3. Assuming Presence of Indiana bats

Demonstrating a Lack of Adverse Effects

- Mining applicants and DEP can justify, in certain situations, that development of a Protection Plan is not necessary when a proposed mining activity will have no adverse effects on Indiana bats.
- Typically, this type of situation occurs when potential habitat is present within the permit area, but that habitat will not be impacted by the mining activity.

Conducting Bat Surveys

- A biologist with all required federal and/or state collection permits must conduct the necessary surveys and must provide the data collected during surveys according to the conditions of his/her collection permit(s) and any DEP requirements.

Positive Mist Net Survey

- If Indiana bats are captured during the survey, then Indiana bat presence within the survey area is confirmed and a PEP will be required.

Negative Mist Net Survey

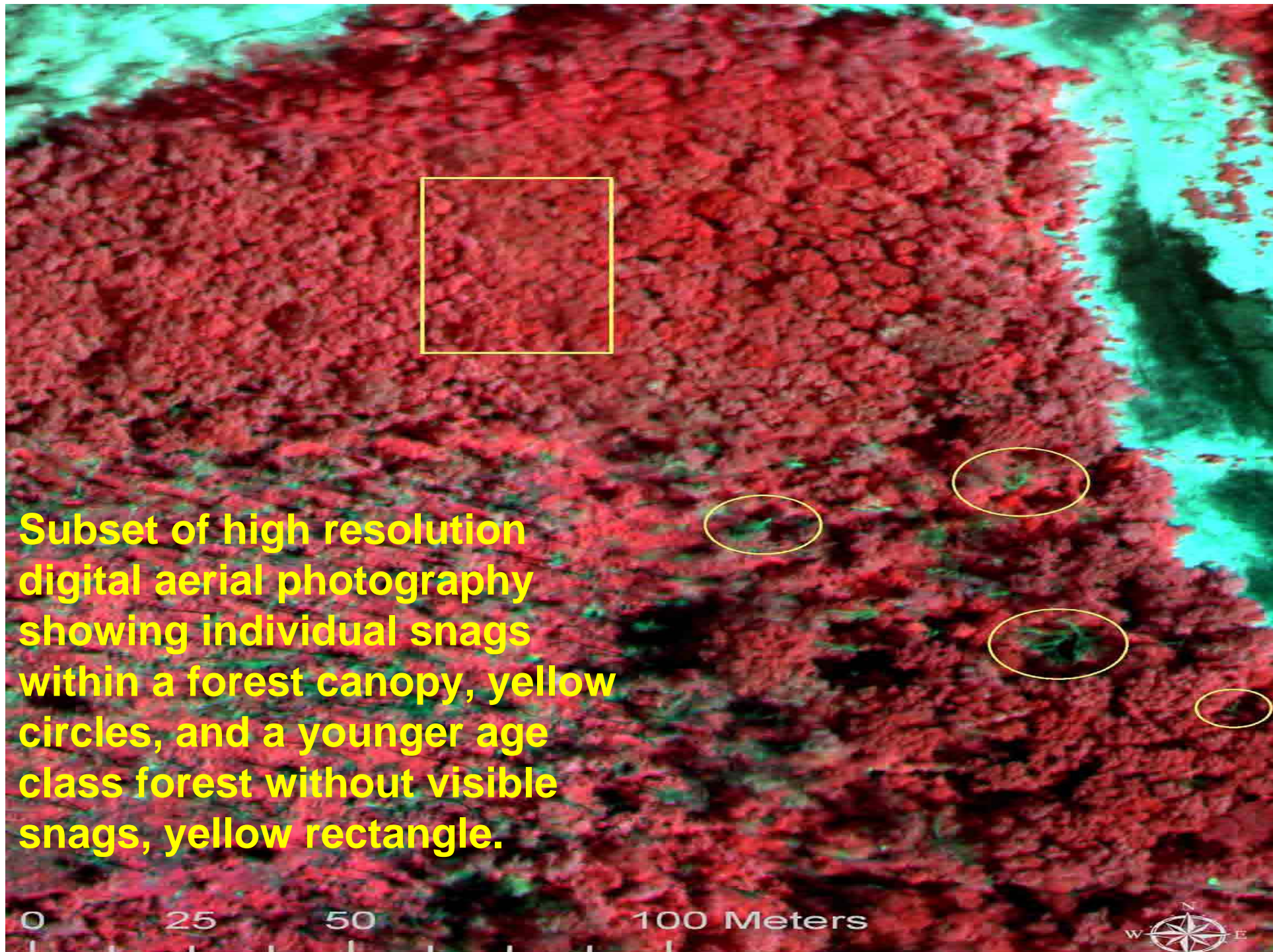
- A mist net survey that produces negative results (i.e., no Indiana bats captured) allows the applicant to initiate timber removal and coal extraction within the surveyed area subsequent to permit issuance without further coordination during the 5-year period, at which time the PEP development process ends, and no PEP is required.

Assuming Presence of Indiana Bats

- Applicants also have the option to assume the presence of Indiana bats if potential habitat occurs within the project area.
- When Indiana bat presence is assumed, a PEP will be required and a Post Mining Land Use (PMLU) must be chosen that results in reforestation of at least 70 percent of the disturbed Indiana bat habitat, unless off-site mitigation measures are incorporated.

Off-site Habitat Mitigation Measures

- Acquiring or otherwise providing protection to known or potential Indiana bat habitat in fee simple or through permanent conservation easements,
- Buying credits from an approved Indiana bat conservation bank,
- Ensuring the protection of other off-permit Indiana bat habitat through land donation, acquisition, easement, or perpetual trust agreement.



Subset of high resolution digital aerial photography showing individual snags within a forest canopy, yellow circles, and a younger age class forest without visible snags, yellow rectangle.



Questions?