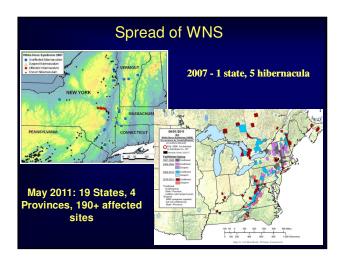


# What is White-Nose Syndrome?

- Disease of hibernating bats that continued to spread in 2011
  - Reached the Midwest OH & IN
    - No new confirmations in MO
  - · Within the already affected area
- Continues to pose considerable biological and social challenges
- National Plan has been developed to build on accomplishments to date, enhance coordination, and facilitate research



# How much mortality? Credit Andrew King. USFWS As previously mentioned, an estimated > 1,000,000 bats have succumbed to WNS Peer reviewed research predicts local extinction (extirpation) of little brown bats in the NORTHEAST, if current trend continues Federally endangered Virginia big-eared and threatened Gray bats remain unaffected by WNS

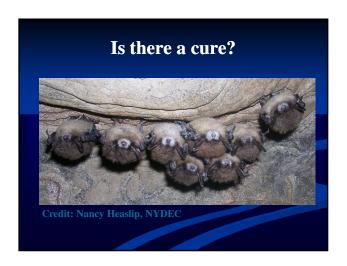


### What We Know About WNS

- Extremely high mortality at many affected hibernacula
- · Susceptibility seems to differ by bat species or microclimate
- Specific fungal infection is common to affected hibernacula sites and defines the disease
- No evidence of bacterial, viral, or parasitic cause
- · The fungus can persist in caves in the absence of bats
- Bats can become infected from an affected environment
- 6 cave bat species affected, w/ fungus detected on 3 additional (none of which tested positive in the 2<sup>nd</sup> year)



Bat Populations in MA, NH, NY, PA, VT from 42 sites w/ 2+ yrs of mortality			
Species	Sum Pre WNS	Sum Post WNS	Total decline
Little brown myotis	384,277	30,260	91%
Northern myotis	1,706	31	98%
Tri-colored bat	3,107	783	75%
Indiana myotis	55,028	15,650	72%
E. small-footed myotis	1,303	1,142	12%
Big brown bat	2,919	1,713	41%
All bats	412,340	49,579	88%
From Turner, Reeder, and Coleman	n - 2011		









# Cave Advisory – March, 2009

Due to threat of human transmission, USFWS recommends that people stay out of caves and abandoned mines and not transport caving gear.

- OBJECTIVES:
  - Protect all cave bat populations from



# Supportive Assumptions for FWS Cave **Advisory**

- 1. G.d. can persist in caves and mines for some unknown time period in the absence of bats
- Conidia of G.d. may remain viable for months or years under the appropriate conditions
- 3. Conidia of G.d. persist for some unknown time period outside a cave environment
- 4. Current decontamination procedures are effective if done correctly, but should not be expected to be 100% reliable
- 5. People can transport G.d. conidia (spores) on contaminated gear and equipment
- 6. Bats can transport G.d. conidia (spores) to other bats

#### **WNS National Plan**

To guide the response of Federal, State, and Tribal agencies, and partners to WNS

Multi-agency input: USFWS, USGS, NPS, USFS, DoD, APHIS, BLM, AFWA & States, St. Regis Mohawk Tribe

Establishes an organizational structure with oversight up to the Washington level

Formally establishes 7 working groups:

- 1. Communications
- 2. Data and Technical Information Management

- Diagnostics
   Disease Management
   Etiological and Epidemiological Research
- 6. Disease Surveillance7. Conservation and Recovery



## **WNS National Plan**

#### Two stages:

- 1. National Plan
  - The framework not prescriptive
  - A static document
- 2. Implementation Plan
  - Identifies players & costs
  - Provide guidance
  - Adaptive plan, web based (coming soon: www.whitenosesyndrome.TBD)



### **WNS National Plan**

#### Implementation by Partnering Agencies:

- Other Federal agencies (ex: NPS, USFS, BLM, DoD) provide guidance/policy in relation to planning and managing Federal lands under their respective jurisdictions
- State agencies largely responsible for surveillance, population monitoring, and disease management
- Response Plans- tailored to meet needs of individual State, Tribal, and Federal agencies
- · Funding/Support for research and response



# What is happening in Ohio?



- OH cave-hibernating species are known to be susceptible to WNS
- Found in March 2011 in Lawrence Co. while conducting Indiana bat census
- WNS confirmed on little brown bat; Gd detected on Indiana bat
- No other species were sampled
- Full census of all bats in 2012 at Indiana bat hibernaculum
- Multi-species bat conservation plan

# Some Working Group Products to Date

- 1. National Communications Plan
- 2. National Surveillance Plan
- 3. Diagnostics protocols & case definitions
- 4. Specimen-tracking database
- 5. Captive Management SDM project
- 6. New Decontamination Protocol pending
- 7. Commercial/Show Cave guidance pending
- 8. Research....





#### **WNS National Effort**

#### How can you contribute?

- · Keep updated: check in on national website
- · Support compliance with national guidance
  - Reduce the possible spread of WNS by humans
    - Consider the ramification of your actions
- Recognize the importance of your bat resource; talk with adjacent states/partners
  - · Avoid disturbing bats
- · Report observations
  - · See Jennifer Norris
- · Direct questions to regional WNS coordinator



............"What a thousand acres of Silphiums looked like when they tickled the bellies of the buffalo is a question never again to be answere and perhaps not even asked."

Sand County Almanac – Aldo Leopold

Visit our FWS Webpage – Updates for WNS http://www.fws.gov/whitenosesyndrome.html

Thank you

# **Currently Funded Research (partial)**

- Immune response of hibernating bats & post-exposure
- · Behavior and physiology of hibernation
- · Population-level impacts (local and range-wide)
- Contaminants pesticides and environmental
- · Genetics predisposition, post-exposure, & fungal
- Disinfection/Decontamination & Gd in the environment
- · Prospects for captive management
- · Dynamics of transmission
- Epidemiological modeling
- · Improving detection of Gd on bats & in environment
- · Susceptibility & potential for resistance

