Standards of Practice Facilitate Research and Management of White-nose Syndrome in Bats

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NATIONAL ASSISTANT COORDINATOR FOR WHITE-NOSE SYNDROME

Overview of White-nose Syndrome (WNS)


J. Reichard, FWS


Al Hicks, NYSDEC

Caused by *Pseudogymnoascus destructans* (*Pd*)

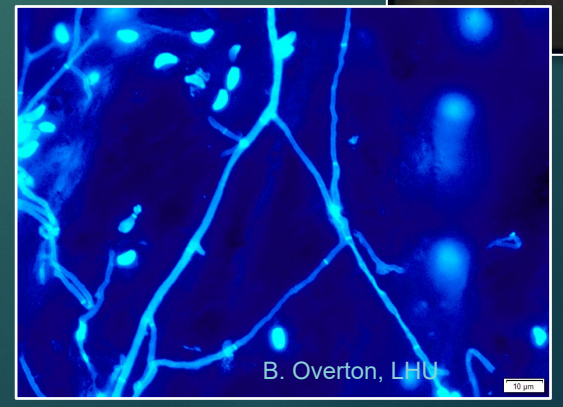
- Cold loving fungus
- Invasive species – present throughout Europe and Asia

Infects multiple species of hibernating bats

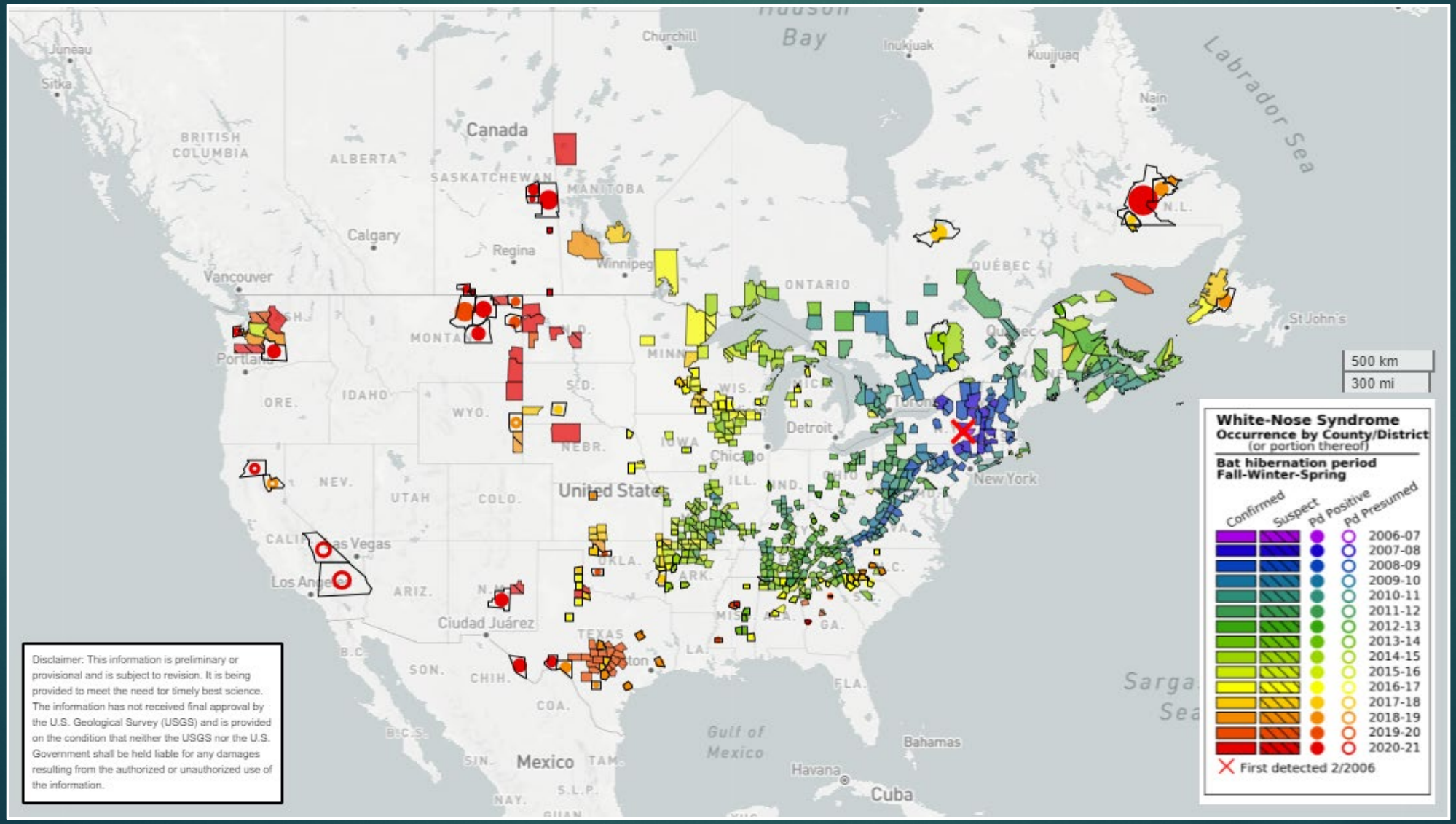
- Epidermal infection, primarily in winter
- At least 12 North American species susceptible

Management

- Actions focused on containment and conservation
- Efficiency, innovation and collaboration are critical


B. Overton, LHU

Spread of WNS in North America



Partnership in Research and Management

- Regional Bat Working Groups
- Science Strategy Meetings
- Annual meetings
- Collaboration
  - Transmission control
  - Surveillance
  - Captive management
  - Disease control

2019 White-nose Syndrome National Meeting
Tacoma, WA

Early Precautions

Cave Advisory
March 26, 2009

U.S. Fish and Wildlife Service recommends suspending activities in caves to protect bats from white-nose syndrome

Advisory:

White-nose syndrome (WNS) is a malady of unknown origin that has killed hundreds of thousands of bats across the northeast United States during the past three years and continues unchecked. It threatens to spread to the Midwest and Southeast, home to many federally endangered bat species as well as some of the largest bat populations in the country.

- Biological Safety Levels
- IACUC

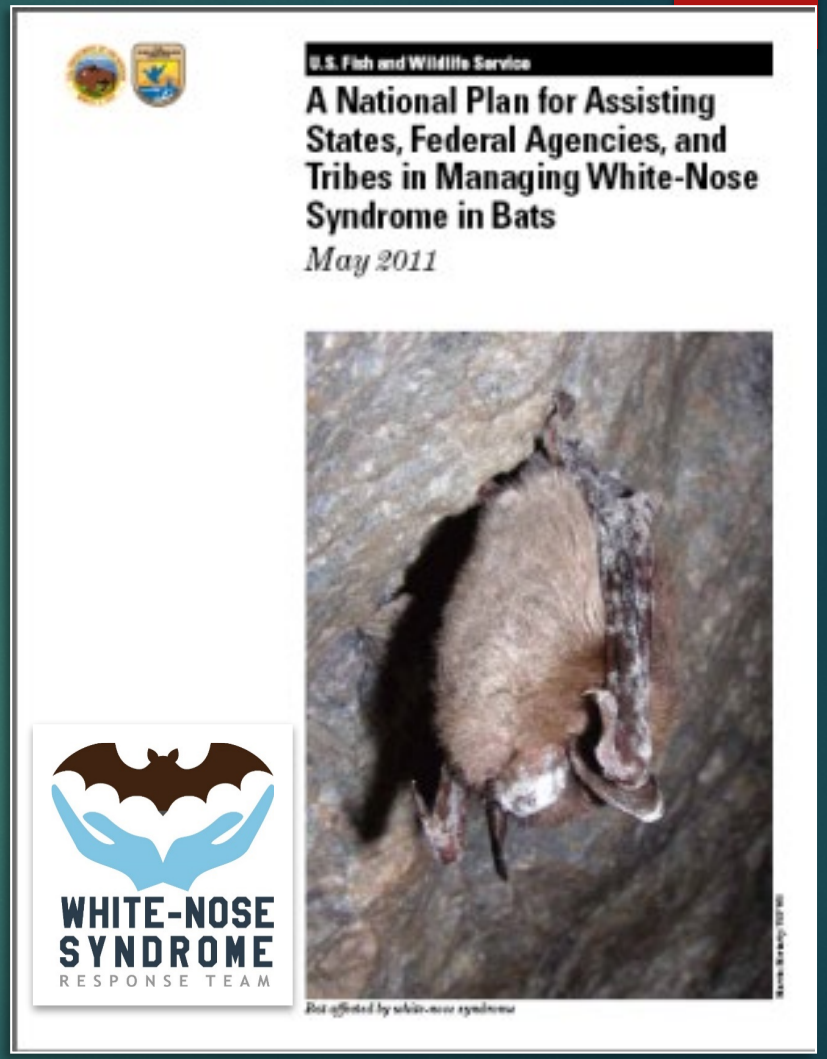
- Disinfection Protocol
- FWS Cave Advisory

Managing WNS: National Plan

US National Plan

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

- A multi-species recovery team under ESA
- Integrates **state** and **regional** plans
- Over 150 partners
- Aligns with Canadian response plan



USGS science for a changing world
CANADIAN WILDLIFE HEALTH COOPERATIVE
USDA

WHITE-NOSE SYNDROME RESPONSE TEAM
U.S. FISH & WILDLIFE SERVICE

Regulation and Oversight


J. Coleman, USFWS

- Endangered Species Act
- National Environmental Policy Act
- National Historic Preservation Act
- State wildlife permits
- ACUC
- Management authority
- Animal Welfare Act

Key Developments in WNS Research

- Demonstrating the pathogen-disease link (USGS)
- Disease progression (Cornell, UGA, Bucknell, USGS)
- Surveillance (USGS, UCSC, NAU, States)
- Assessing susceptibility
  - Population monitoring (State Agencies)
  - Epidemiology and impacts (UCSC, VT)
  - Transmission and exposure trials (USGS)
- Secondary influences (Bucknell, BU)

Evolving Cave Access Recommendations

Vermont DFW


National Park Service

- Cave Advisory
  - Recommendations for managing access
  - Show Cave Guidance

Improved Decontamination Protocol

- Decontamination protocol
  - Laboratory product testing
  - Regular revisions

Adapting Tools for Other Users

- Wildlife Rehabilitation
- Wildlife Control Operations
- Captive Management Recommendations
- Transportation maintenance

WHITE-NOSE SYNDROME
RESPONSE TEAM

Acceptable Management Practices

for Bat Species Inhabiting

Transportation Infrastructure

Available on
www.WhiteNoseSyndrome.org

April 2018

WHITE-NOSE SYNDROME
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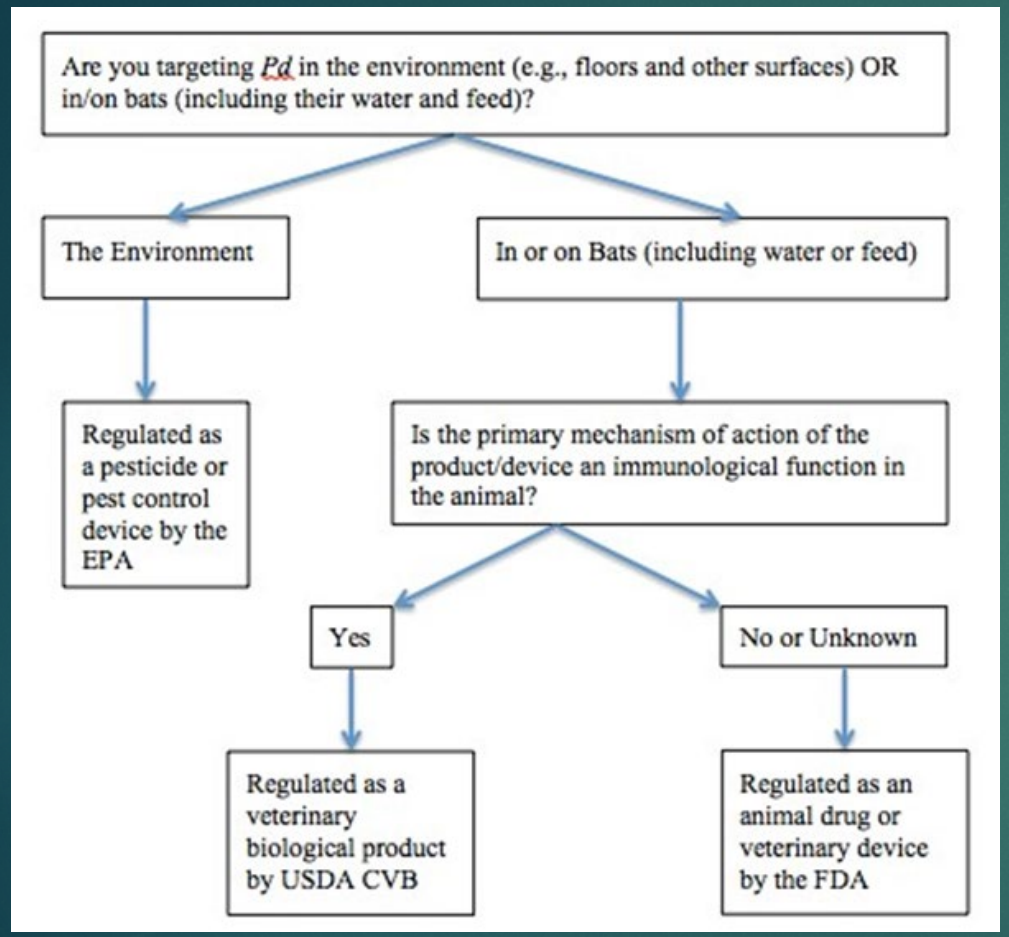
U.S. FISH & WILDLIFE SERVICE

Developing Tools for Disease Management



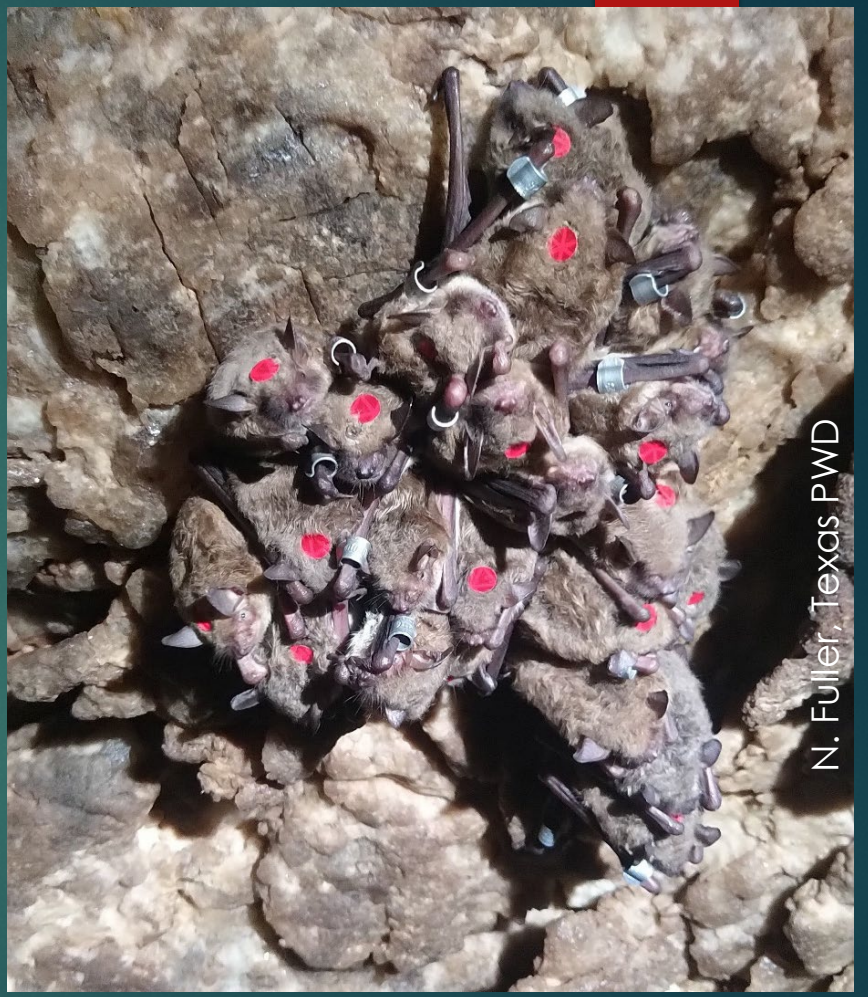
WNS treatment regulatory decision tree

2015 WNS Disease Management Workshop proceedings available at www.whitenosesyndrome.org

- Key assumption: Finding a solution will be challenging, but it is possible and worthwhile
- R&D framework
  - Progression of testing treatments (Kilpatrick)
- Shared focus on non-target effects

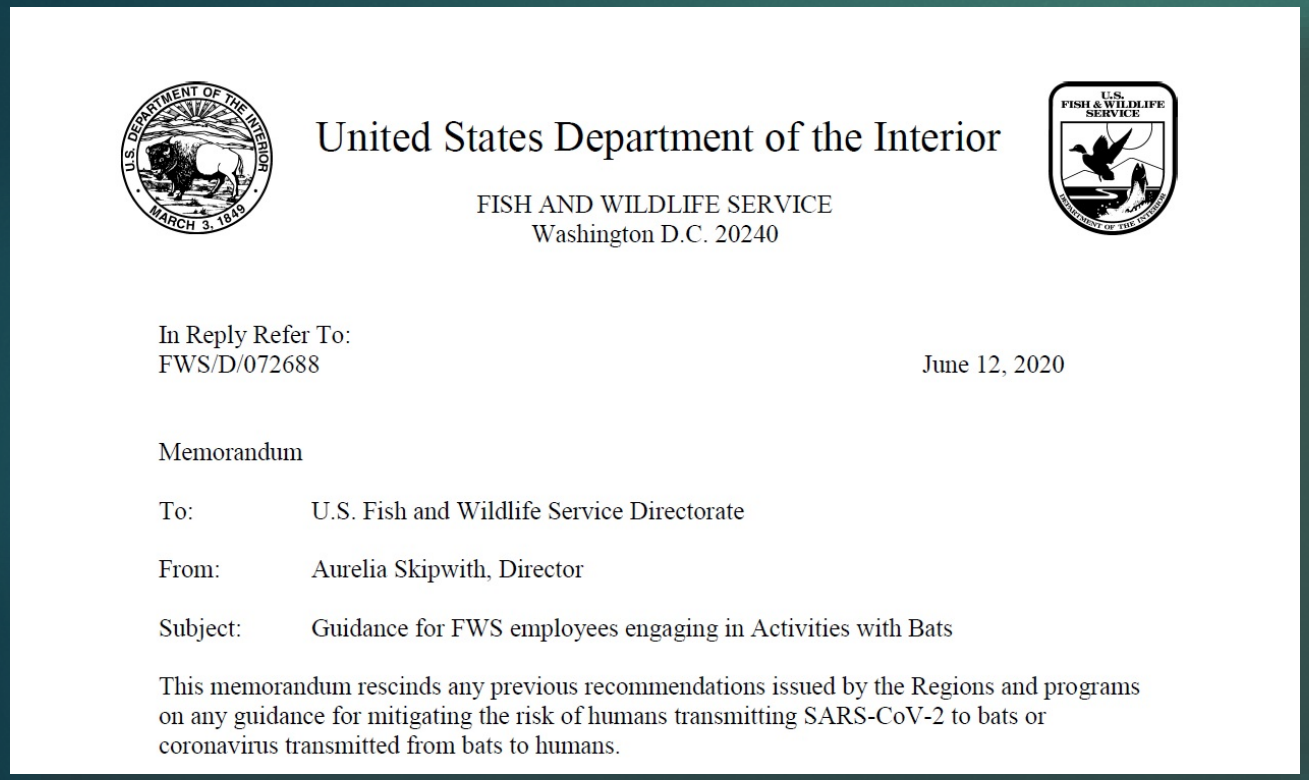
Bringing WNS Management to the Field

- **Combat the fungus:** VOCs, PEG 8000, UV light, chitosan
- **Improve environmental conditions:** Temperature manipulation, Prey patches
- - **Strengthen hosts' defenses:** vaccine, probiotics, heated roosts



Unexpected Developments: SARS-CoV-2

Rapid Risk Assessment (Runge et al. 2020)
USFWS Director's Memo June 2020



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington D.C. 20240

In Reply Refer To:
FWS/D/072688

June 12, 2020

Memorandum

To: U.S. Fish and Wildlife Service Directorate

From: Aurelia Skipwith, Director

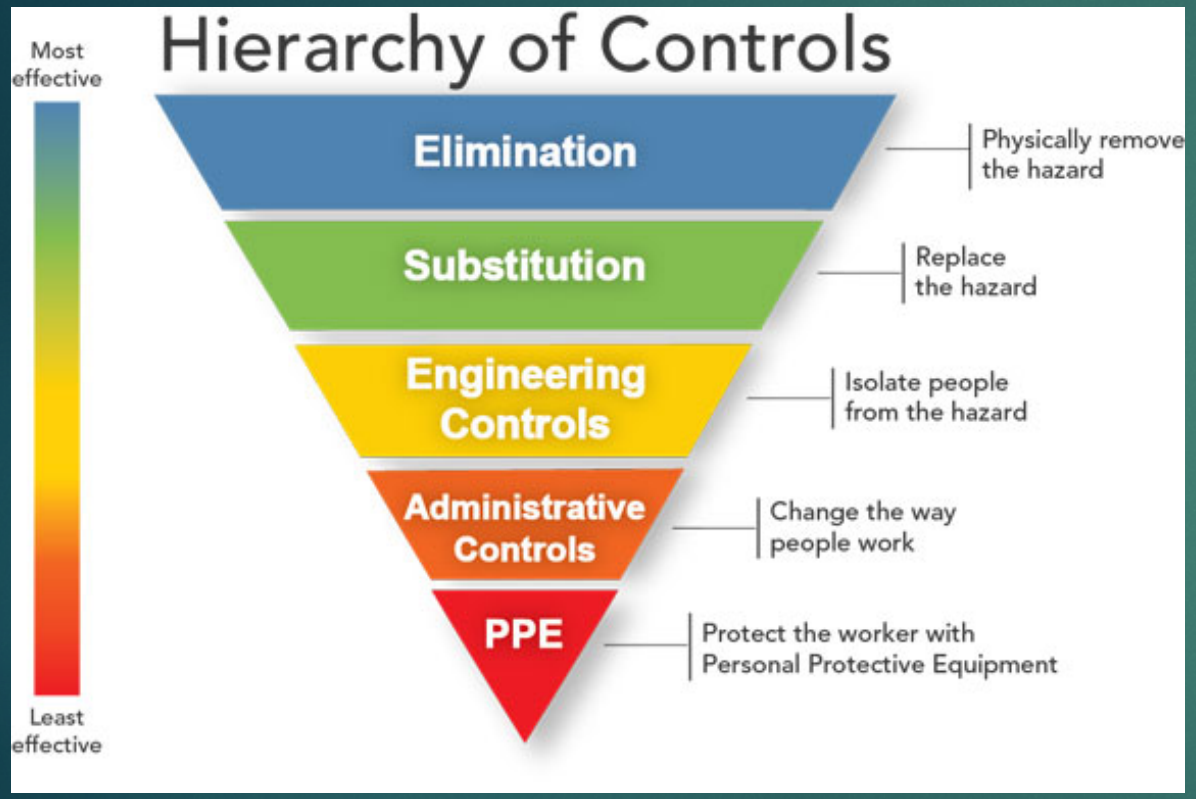
Subject: Guidance for FWS employees engaging in Activities with Bats

This memorandum rescinds any previous recommendations issued by the Regions and programs on any guidance for mitigating the risk of humans transmitting SARS-CoV-2 to bats or coronavirus transmitted from bats to humans.

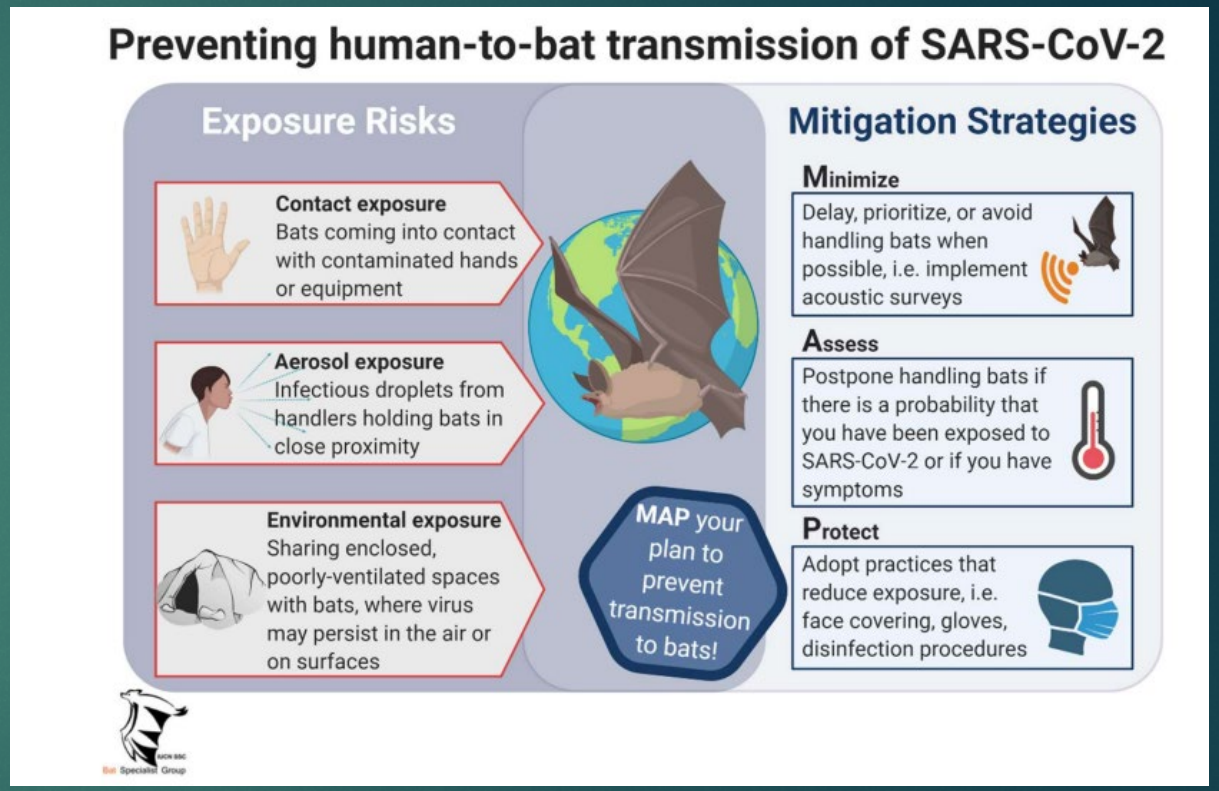
- Risk of transmission of SARS-CoV-2 to North American bats is non-negligible
- Consider alternatives to direct handling of bats
- Refer to state and local guidelines and restrictions
- Wear appropriate personal protective equipment (PPE)

- Rapid Risk Assessment (Runge et al. 2020) https://doi.org/10.3133/ofr20201060

CDC Guidance for Wildlife (Feb. 2021) Hierarchy of Controls similar to IUCN



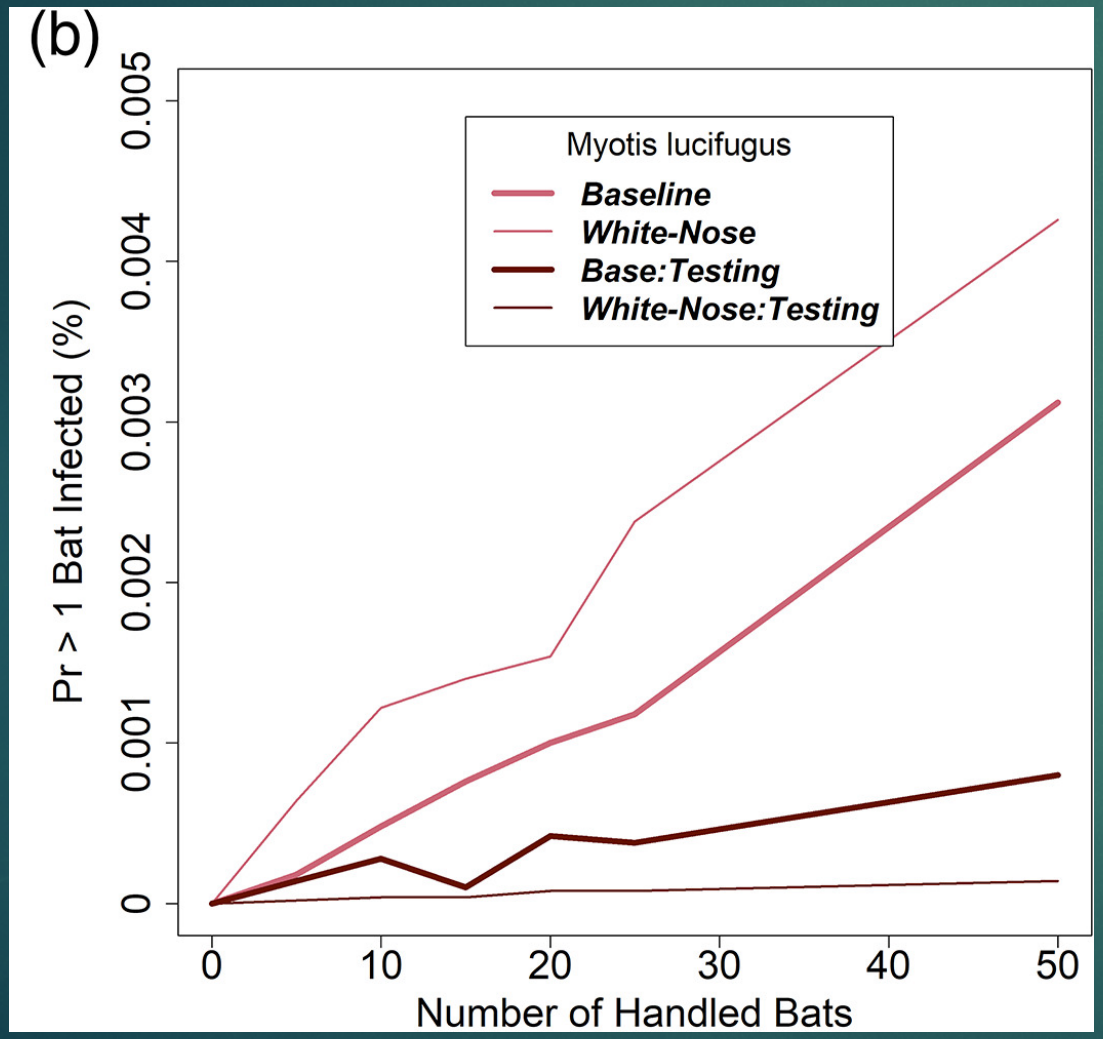
Centers for Disease Control



International Union for Conservation of Nature

- https://www.cdc.gov/coronavirus/2019-ncov/your-health/wildlife.html
- https://www.iucnbsg.org/bsg-publications.html

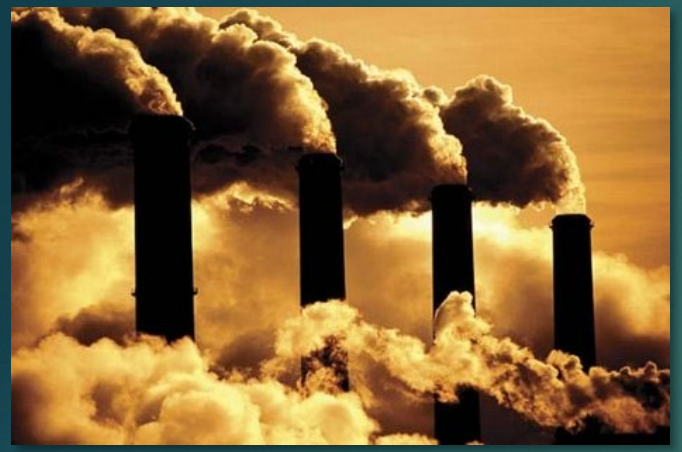
"Risks posed by SARS-CoV-2 to North American bats during winter fieldwork"



- WNS increases risk of infection by SARS-CoV-2
- Testing personnel reduces risk of transmission from people to bats.

Cook et al. 2021. Conservation Science and Practice. https://doi.org/10.1111/csp2.410

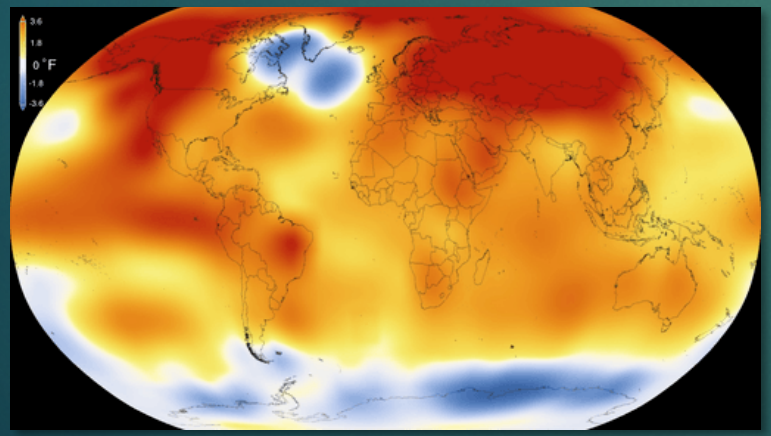
Other Threats to Bats



Contaminants

Habitat loss

Persecution/Vandalism



Climate Change

Energy Development

Thank You

J. Coleman, FWS

Jonathan_Reichard@FWS.gov

www.WhiteNoseSyndrome.org