

Wildlife Conservation Society Canada BC Bat Program



www.wcsbats.ca

Cori Lausen, Director of Bat Conservation

British Columbia Team Members:

Contracted Project Leads: Aimee Mitchell, Chris Currie, Elodie Kuhnert

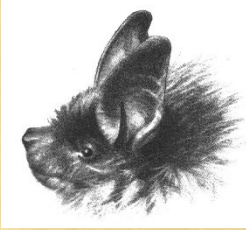
Staff: Heather Gates, Jason Rae, Dana Blouin, Brian Paterson

Students: Emily de Freitas (UNBC), Susan Dulc (TRU), Sara Lawrence (TRU), Chadabhorn Insuk (McMaster)





WCS Canada British Columbia Bat Program

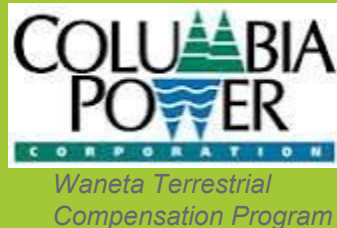
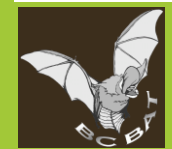
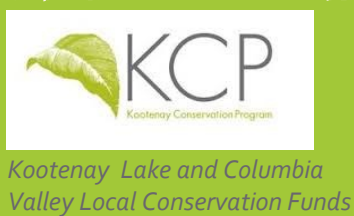


Funders

and

Collaborators

And many more!





Current *BC* Projects *FWCP funded

www.wcsbats.ca

Outreach/Education/Citizen-science

Bat Box Evaluation (BMP) Project

Tree Roost Enhancement * Emily de Freitas

BC's Implementation of NABat Program *

Roost Selection, Winter Ecology, Hibernation *

BatCaver * Brian Paterson

WNS Probiotic * This presentation





Protecting BC Bats from White Nose Syndrome (WNS)

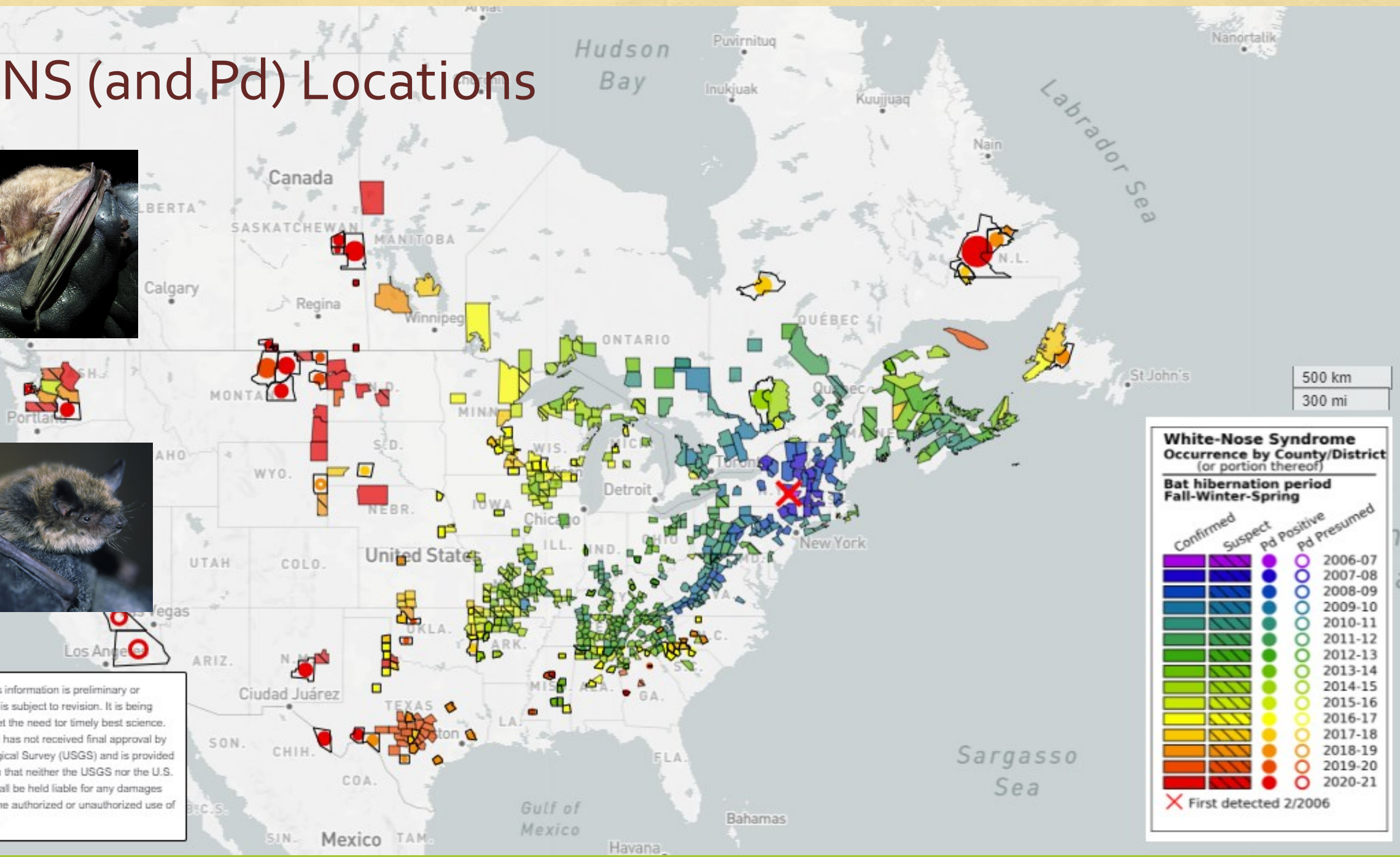
*Developing and Evaluating Mitigation Strategies
"Prophylaxis Probiotic Project"*



WNS (and Pd) Locations



Disclaimer: This information is preliminary or provisional and is subject to revision. It is being provided to meet the need for timely best science. The information has not received final approval by the U.S. Geological Survey (USGS) and is provided on the condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the information.



What Can We Do?

- Our “MADE IN THE WEST” approach



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- We are here to help!



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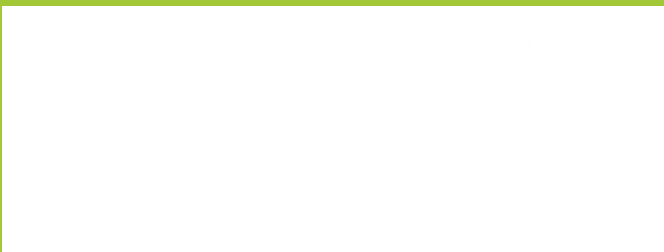


Probiotic

Field trials 2018 2019

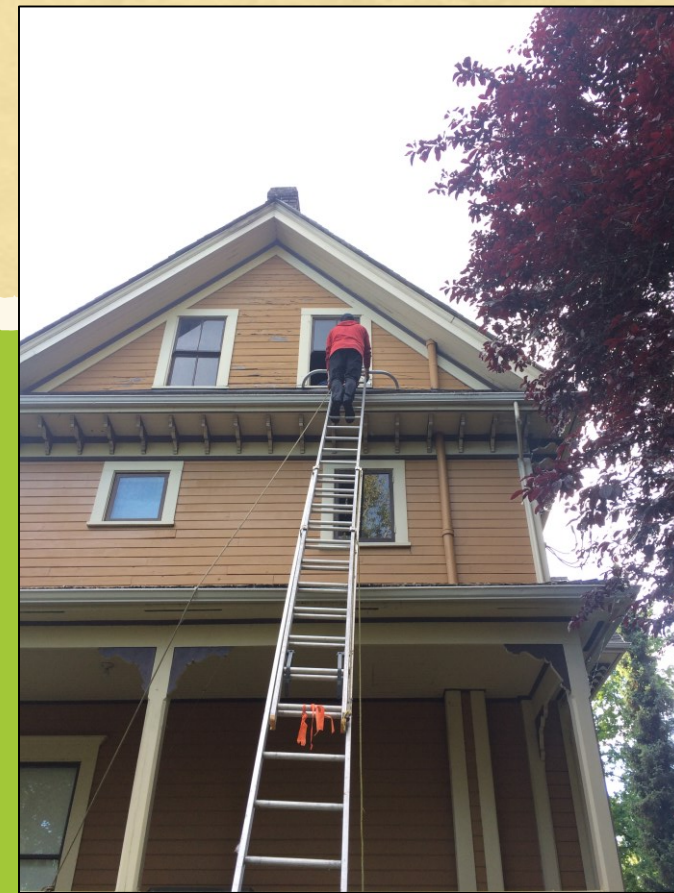


- Synergistic “cocktail”:
 - 4 ‘anti-Pd’ strains *Pseudomonas fluorescens*
 - proven to inhibit Pd
 - *Note: P. f.* has treated WNS, Hoyt et al. 2019, Nature
- Prophylactic – preventing not *treating* disease
- Target the wood substrates of building/bat-box roosts



Study Sites

- British Columbia (since 2019)
3 Treatment, 1 Control



Methods

Capture:

- Mistnets/harp-traps

Mark-Recapture:

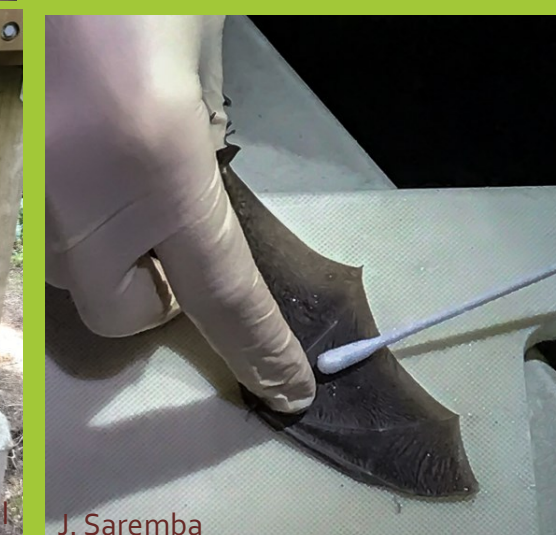
- PIT tags

Probiotic Application:

- Clay powder

Evaluating Probiotic - Inoculation/Persistence:

- Swabbing
- qPCR/metagenomics



Methods



Advisory Committee

Dr. Glenna McGregor, Veterinary Pathologist, Animal Health Centre, British Columbia, Ministry of Agriculture;

Dr. Caeley Thacker, Provincial Veterinarian, B.C. Ministry of FLNRORD;

Dr. Leigh Anne Isaac, Small Mammal and Herpetofauna Specialist, BC MOECCS;

Mandy Kellner, Bat Conservation Coordinator, BC MOECCS;

Dr. Purnima Govindarajulu, Unit Head, Conservation Science Section, BC MOECCS;

Dr. David Sedgman, Veterinarian Thompson Rivers University Animal Care Committee;

Dr. Craig K.R. Willis, Professor, University of Winnipeg, Department of Biology and C-FIR;

Dr. Yvonne Dzal, Postdoctoral Researcher, University of Winnipeg, Department of Biology and C-FIR;

Dr. Naowarat (Ann) Cheeptham, Professor, Thompson Rivers University, microbiologist

Dr. Jianping Xu, Professor, McMaster University, fungal specialist

Dr. Mathieu Pruvot, Wildlife Epidemiologist, University of Calgary and Wildlife Conservation Society (WCS) Health Program;

Jordi Segers, Bat Health Coordinator, Canadian Wildlife Health Cooperative (CWHC)

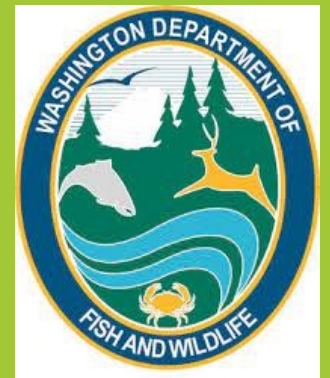


Probiotic Project Milestones

- Captive trials results (summer & winter)
 - Safe
 - Effective against Pd (lab)
 - Increases in concentration on bat wings in hibernation – should protect against WNS
- Genetics results
 - transfers well from roost to wings
 - incorporates well into microbiome

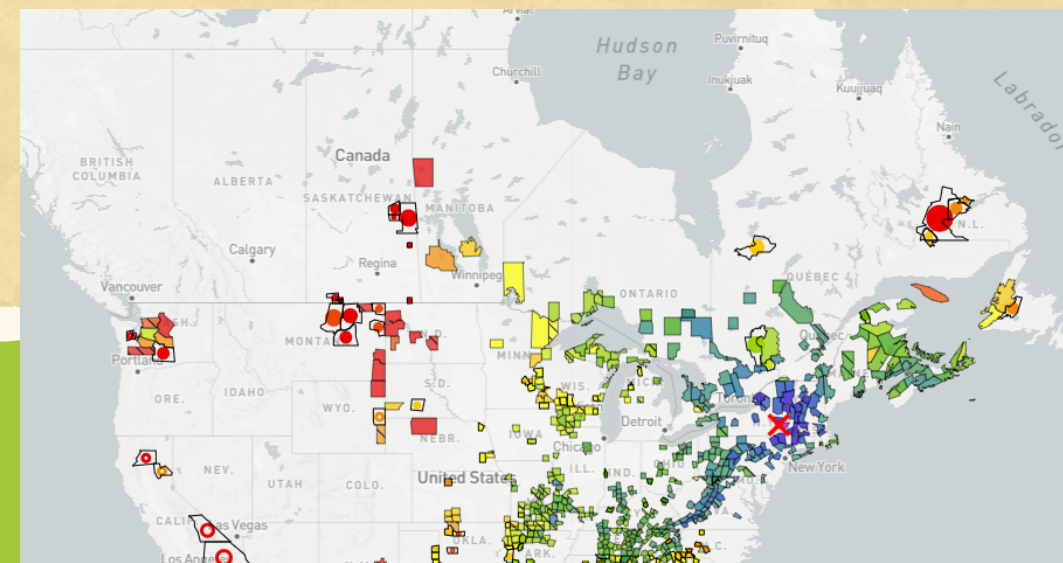


- Continued Investigations
 - Withstand cold and hot extremes?
 - Year to year persistence in roosts?
- Quantifying efficacy:
 - Wing skin experiments 2020-21 - inconclusive
 - WNS is not in our study sites yet!
 - Expansion to Washington (2022....)



2022

WNS – spread rate is in our favour



TRU: Optimizing large scale production of freeze-dried probiotic



Beyond 2022

Upscaling?

Opportunity for citizen participation?

Beyond Pacific Northwest?



FIELD TEAM

Aimee Mitchell

Chris Currie

Leah Rensel

+ an army of amazing
volunteers/assistants



LAB TEAM

Dr. Ann Cheeptham

Dr. JP Xu

Nicholas Fontaine

Adrian Forsythe

Sara Lawrence

Chadabhorn Insuk

+ many enthusiastic
TRU undergraduates

