



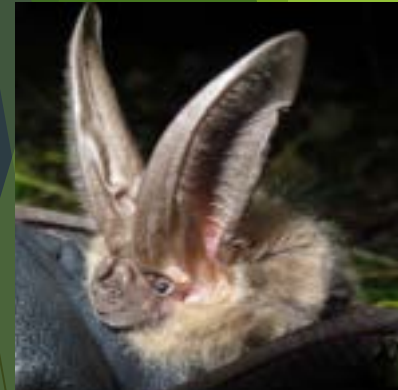
Bats in Columbia Valley



WCS
CANADA

Presented by Juliet Craig for:
Cori Lausen,

Wildlife Conservation Society Canada



Project Timeline: 2020 to ~2025

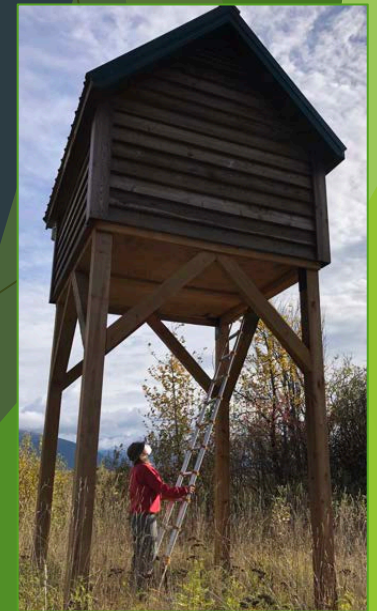
Bat Inventory,



Monitoring,



Roost Enhancement



What bats we expect in Columbia Valley...

- ▶ Relationship between insect diversity, habitat diversity and bat diversity
 - ▶ Different sizes, morphological traits, acoustic frequencies = different foraging opportunities for a variety of insects
- ▶ HYPOTHESIS: we expect a lot of bat species in Columbia Valley and in particular expect to see those that are tightly tied to foraging aquatic insects.



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Species known prior to 2020 = 7

Big Brown Bat	Western Long-eared Myotis
Hoary*	Long-legged Myotis
Silver-haired*	Californian Myotis
	Little Brown Myotis*

*SARA-listed Endangered due to white-nose syndrome

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Species hypothesized to be in Valley = 12

- + Eastern red bat?*
- + Fringed Myotis?
- + Western small-footed Myotis?
- + Yuma Myotis?
- + Northern Myotis?*



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Objectives

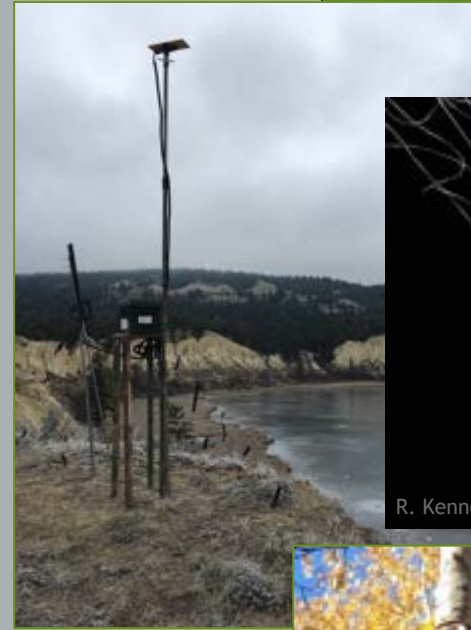
1. Determine species of bats in Columbia Valley.
2. Identify areas for maternity roost habitat enhancement ('tree replacements' or 'building replacements').
3. Monitor roosts for use - evaluate mitigation tools.
4. Track/monitor trends in species diversity and relative abundance over time.

METHODS and TIMELINE

Capture and acoustic inventory was to be conducted prior to roost any roost enhancement work

Revised timeline due to COVID:

- ❖ Acoustics monitoring/inventory (2020)
- ❖ Most of the roost enhancement structures built in 2021, and part 1 of capture inventory
- ❖ 2022 will complete inventory
- ❖ 2022+ monitoring - species trends and efficacy of enhancement structures



R. Kennedy



TOOLS

Acoustics (Bat Detectors):

-North American Bat Monitoring Program (NABat) -7+ nights in June annually

- Long term goals to track species diversity and relative abundance trends

-Additional acoustic recording in spring and summer monitoring at some sites

-Late summer and fall recording to identify ‘migration corridors’ and species migration events

-Winter recording at potential rock crevice hibernation habitat.



NABatMonitoring.org



TOOLS

Capture (Mist Nets/Harp-traps)



TOOLS

Stop-gap measure = instant roosts for ~ 30 years while natural tree habitats (old growth/snags) recover

“Old Growth Tree Mimic”

BrandenBark (Copperhead Consulting)



Installing on poles

TOOLS

“Modify Trees with Chainsaws”

Bat-specific crevices (with Todd Manning)

- slabs
- slits
- cavities (plunge cuts)



expediting snags for use by bats

TOOLS

Guano Sampling

- evidence of occupancy
- genetics to determine species

Guano Traps - mesh under roosts

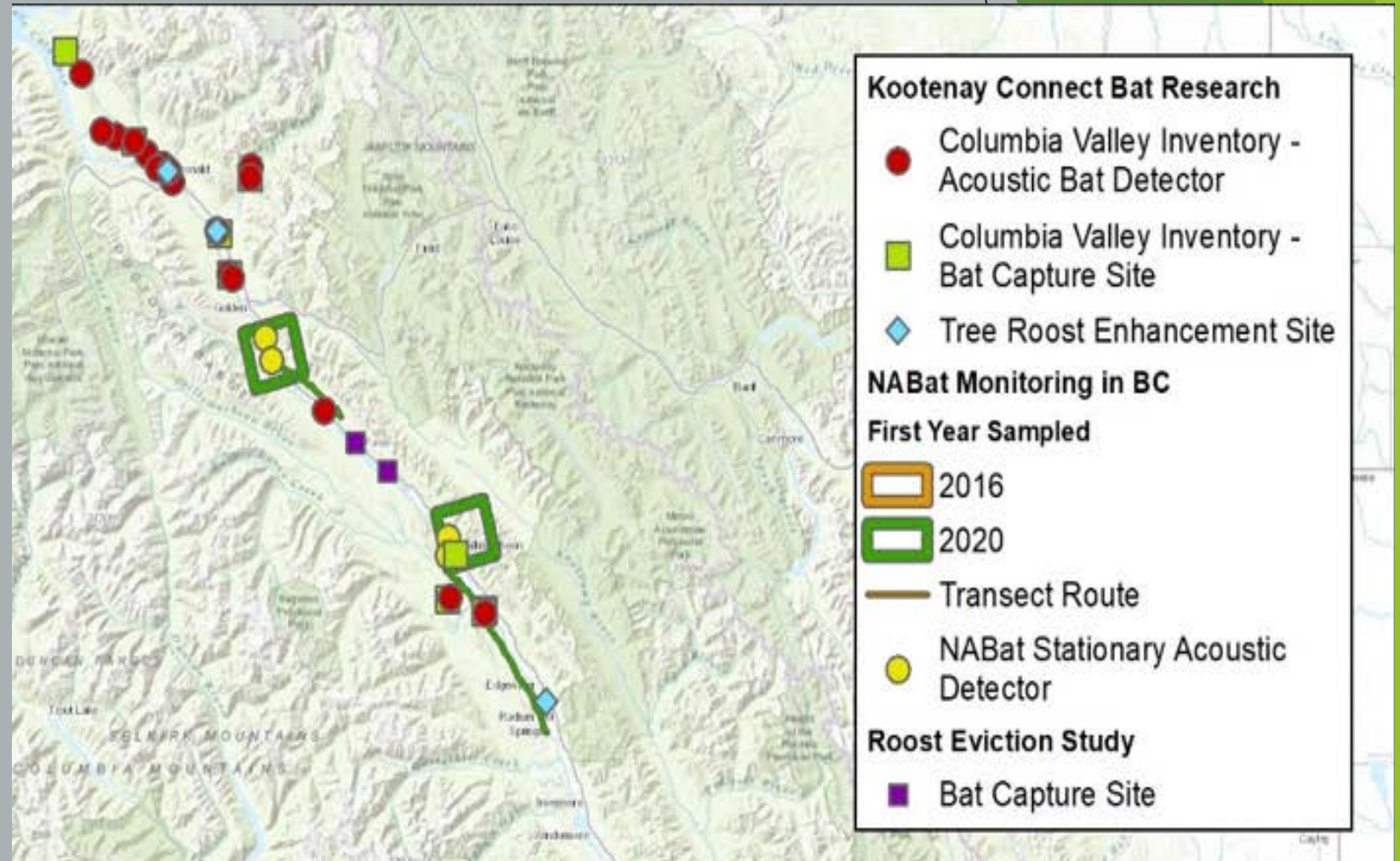
Guano at roosts - we sampled night roosts under bridges from Donald through to Canal Flats



FOCAL AREAS

Burges James Gasdsen Provincial Park
Spike Elk Farm (near Donald)
Marl Creek Provincial Park
Parson
Nicholson
Spillimacheen
Brisco
Edgewater BC Nature Trust
conservation land

*And several other capture inventory
locations near Kinbasket, Blaeberry
and Golden*



RESULTS - SPECIES DETECTED IN COLUMBIA VALLEY

9 species to date

Big Brown Bat

Silver-haired Bat

Western Long-eared Myotis

Long-legged Myotis

Californian Myotis

Little Brown Myotis

Hoary (acoustics only -- confirmed species)

Eastern Red Bat (acoustics only -- confirmed species)

Yuma Myotis (acoustics only -- need capture/genetics for confident verification)

Northern Myotis? (capture uncertain -- pending genetic confirmation)

RESULTS - ROOST CREATIONS

Pilot BrandenBark pole roost was installed in October 2020 (Donald area)

- ▶ **success story!** New roost used immediately in 2021 by Little Brown Myotis as a maternity roost - fledging of young confirmed in capture inventory August 2021

New in October 2021

Donald-Golden area

4 BrandenBark installations on trees
6 'chainsaw modified' trees

Edgewater NTBC

2 BrandenBark installations on trees
4 'chainsaw modified' trees

May 2022

2 more BrandenBark on pole at Spike Elk Farm

Guano traps on *all* roost structures created to date so we monitor use and evaluate tools

RESULTS - ROOST CREATIONS

Parson bat condo - proposed location for building this structure ~tentative

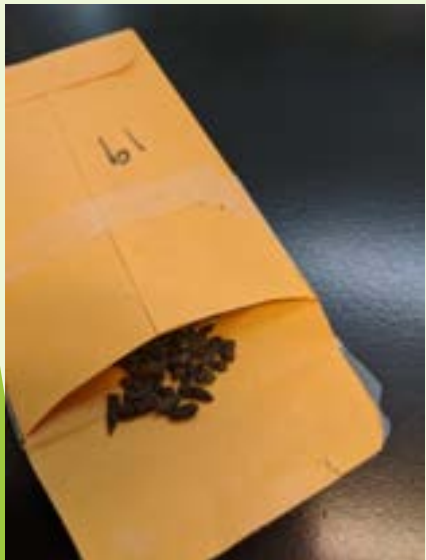
Goal is a *hybrid* structure:
-bats and swallows!



Parson condo will resemble something like these Bat Condos near Creston

RESULTS - BRIDGE SAMPLING

11 bridges sampled - guano found at all, genetics results pending



UP NEXT

MORE OF EVERYTHING!

And we are doing all of this across various other locations in the Columbia Basin:

- ▶ NABat acoustic recording,
- ▶ bat capture,
- ▶ bridge sampling,
- ▶ roost creations --BrandenBark, chainsaw modified trees, Bat Condos,
- ▶ acoustic monitoring migration routes
- ▶ analyzing long term trends in bat populations/communities
- ▶ evaluating use and efficacy of 'artificial roost structures' ("beyond the bat box")



WCS CANADA

wcsbats.ca



► FUNDERS AND PARTNERS PERTAINING TO EAST KOOTENAY COLUMBIA VALLEY BAT WORK



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