

# A Frog Was In My Boot This Morning

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# Wisconsin Frogs

American Toad, Blanchard's Cricket Frog



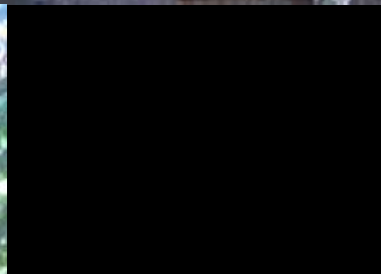
# Wisconsin Frogs

Spring Peeper, Boreal Chorus Frog



# Wisconsin Frogs

- Gray Treefrog
- Cope's Gray Treefrog



# Wisconsin Frogs

American Bullfrog, Green Frog



# Wisconsin Frogs

Northern Leopard Frog, Pickerel Frog



# Wisconsin Frogs

Mink Frog, Wood Frog



# Frogs – What Good Are They?

...what good are you?

- Eat things (Cricket Frog is said to eat 4,800 insects a year)





# Frogs – What Good Are They?

- Are eaten by everything



# Frogs – What Good Are They?

- finger lickin' good!

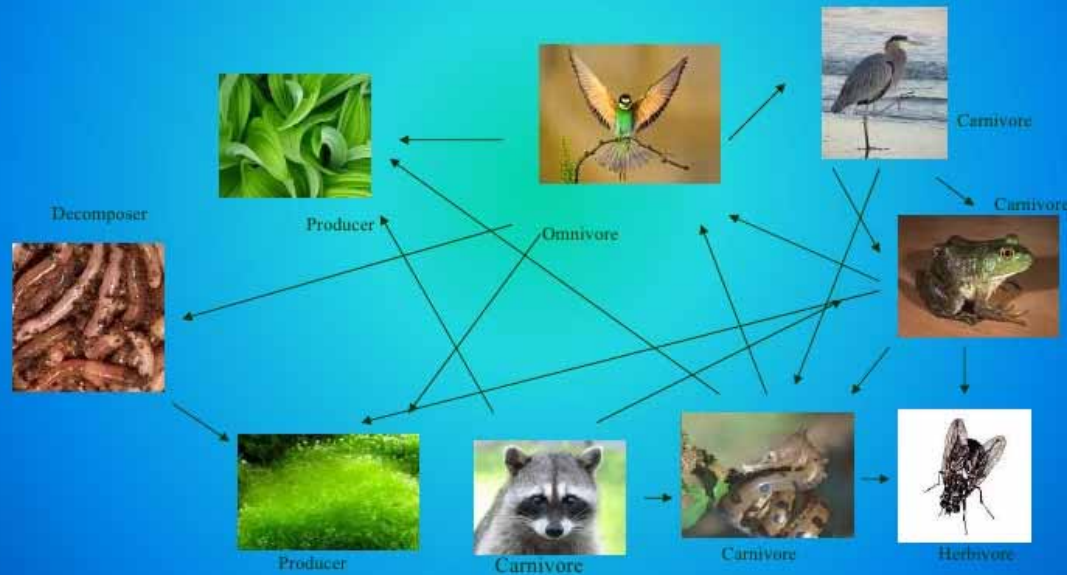


# Frogs – What Good Are They?

- Nutrient and energy flows

## *Food Web of A Bullfrog*

A Food Web shows how all of the given species are related in an ecosystem, depending on consumers, producers, and decomposers.



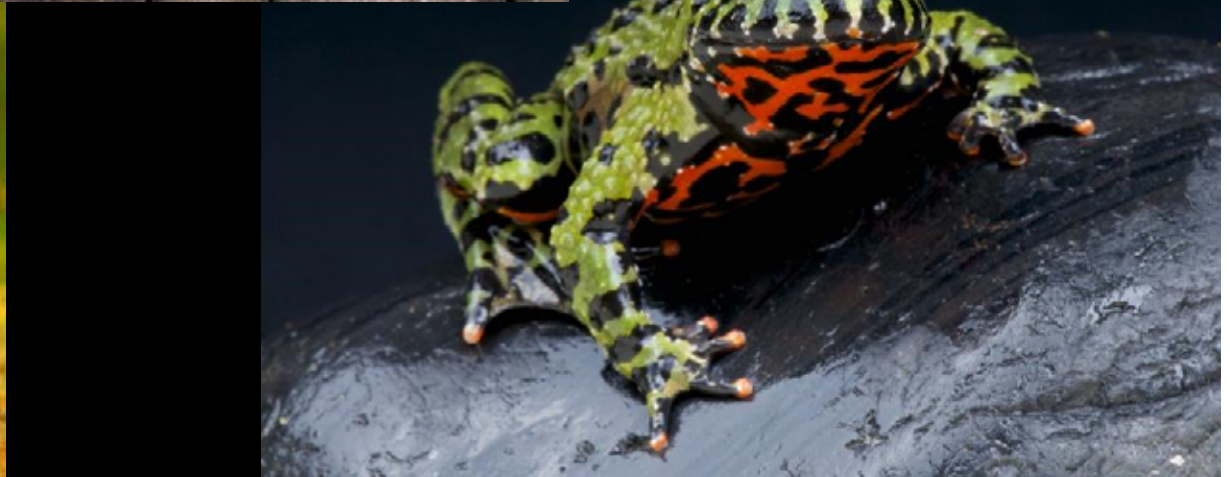
- Frogs fertilize, moving nutrients from ponds and lakes to forests and fields



# Frogs – What Good Are They?

## Drugs!

Pain killers, cancer treatment, antibiotics, psychoactive drugs, poisons



# Frog Surveys

## WDNR Wisconsin Frog and Toad Survey (1984 - ):

- large number of sites but low sampling effort (3 times per year)

## WDNR Phenology surveys (2014 - ):

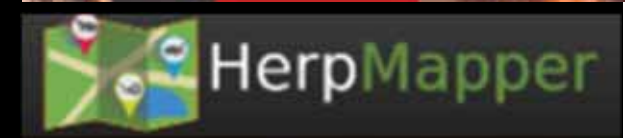
- few sites but growing, approx. weekly samples

## National Park Service program (2014 - ):

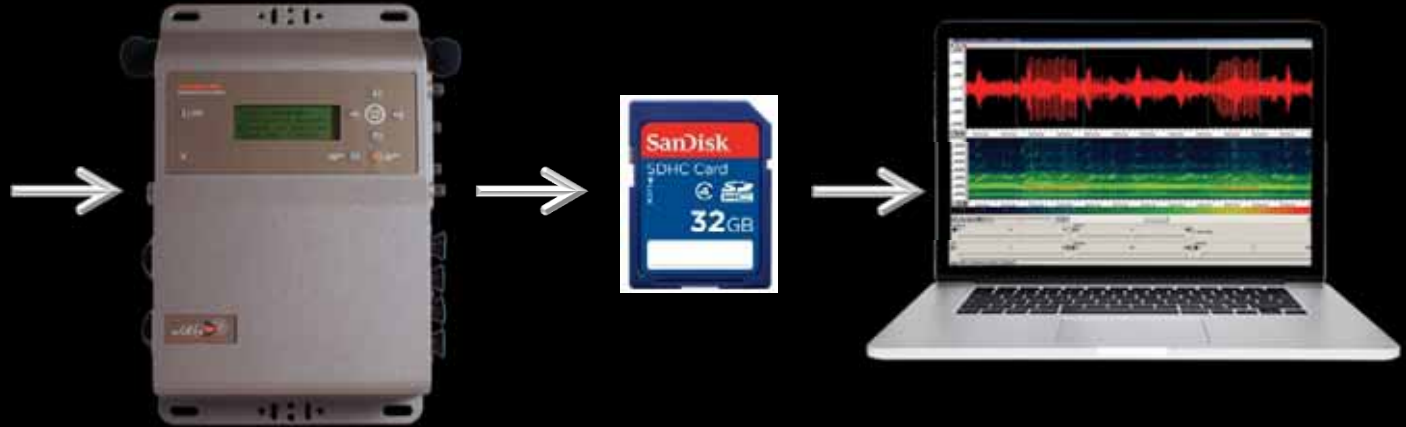
- large sample sizes using automated acoustics

## Distribution programs:

- Wisconsin Herp Atlas / HerpMapper.org, misc. surveys



# Acoustic surveys

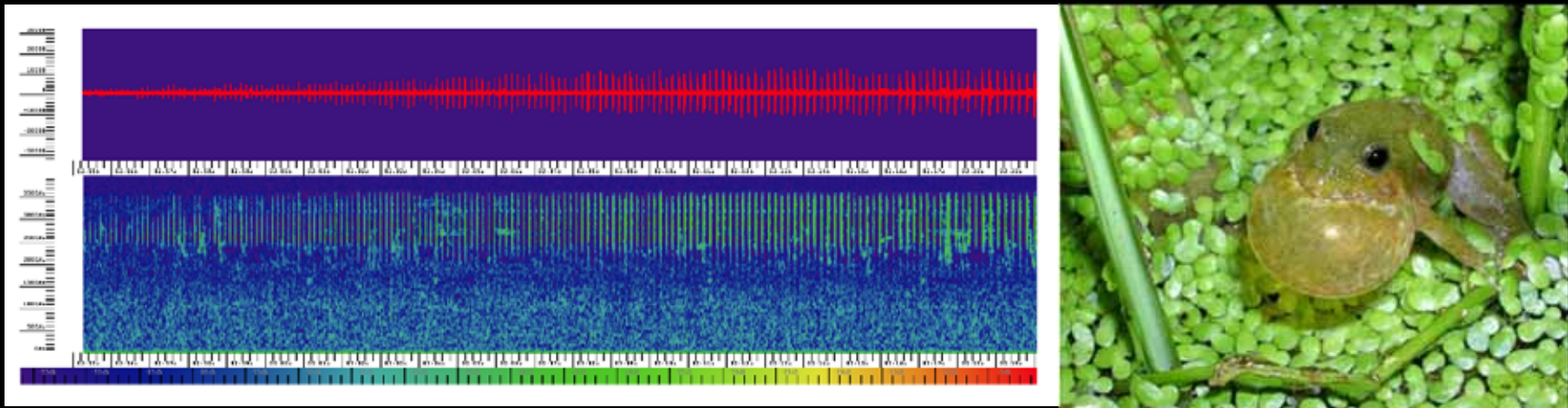


File Name	Time Offset	Duration	Level	Quality	Score	Recognizer	Comment	Correct Detection?	Sample Number
INDU04_20140430_200000.wav	00:04:40.348	6.844	39	26.7	50.78	ANAM3b	Yes - very faint	Y	1
INDU04_20140501_000000.wav	00:01:41.408	6.868	40	29.6	52.6	ANAM3b	No - train	N	2
INDU04_20140503_210000.wav	00:03:35.944	5.184	43	21.6	50.78	ANAM3b	No - train	N	3
INDU04_20140503_230000.wav	00:02:20.116	6.868	38	25.4	51.74	ANAM3b	No - train	N	4
INDU04_20140506_210000.wav	00:00:01.520	5.752	46	29.5	51.35	ANAM3b	Y - very faint	Y	5



# Acoustic surveys

- Ca. 600 samples auto-analyzed per site per year
- Auto-detections typically in the hundreds
- 30 samples per year manually analyzed
- Near perfect detection
- Accurate trend analyses for occupancy and call intensity



Spectrogram of a Cricket Frog call

# Cautionary Croaks

- Call Index Values are highly variable night to night
- Low sample sizes compromise trend analyses
- Trained observers often falsely report American Bullfrog, Chorus Frog, Pickerel Frog, and Cope's Gray Treefrog
- Statewide trends remain uncertain
- Recent new records for Bullfrogs and Cricket Frogs may just reflect better survey effort





# Frog Status

Rarer species:

- Blanchard's Cricket Frog
- Pickerel Frog
- Mink Frog



# Frog Status

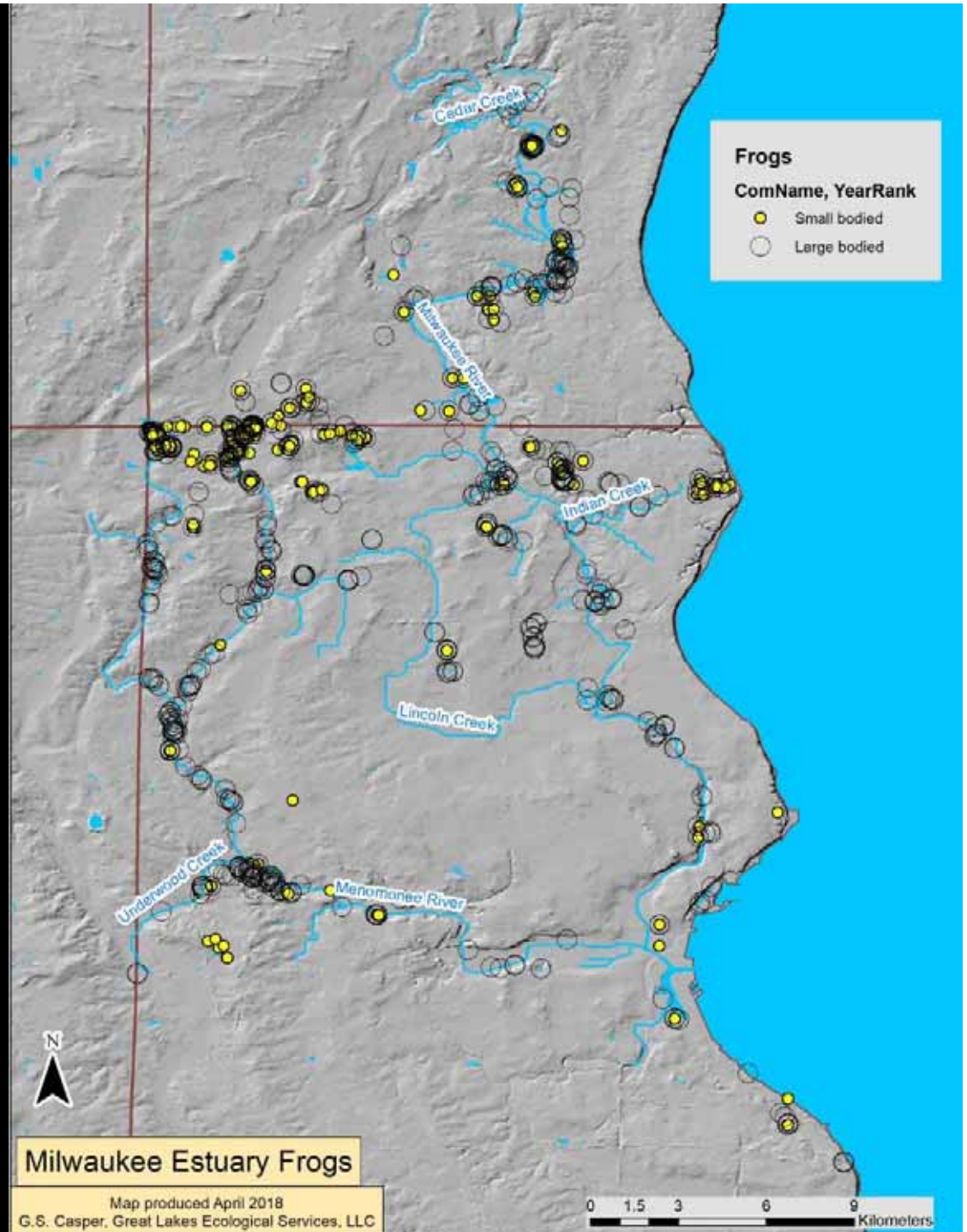
Sensitive species (habitat, disease):

- Chorus Frog
- Spring Peeper
- Treefrogs
- Wood Frog



# Urban surveys in Milwaukee

- Small bodied frogs needing terrestrial habitat are disappearing
- Habitat loss
- Disease



# Threats to Frogs

- Habitat loss and degradation
- Shoreline development
- Pollution
- Disease (chytrid fungus)



# Frog Conservation = Habitat Conservation

- For lake and stream shorelines, aim for 150 ft buffer.
- For vernal ponds, aim for 1,000 foot buffer of shoreline as core terrestrial habitat



# Frog Conservation = Habitat Conservation

- Restore shorelines
- Protect ephemeral wetlands and the habitat around them
- Reduce use of fertilizers and biocides.



# Help a Frog

- Be green. Be clean.
- Habitat restoration and preservation.
- Keep common species common through better land use planning.

