



SNIFFING FOR SCIENCE

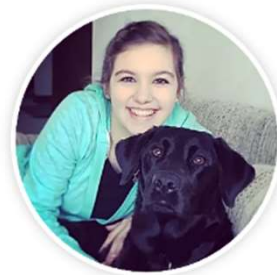
How Conservation Dogs
Support AIS Early Detection
and Monitoring Efforts



*Presentation by:
Laura Holder, Executive Director
Midwest Conservation Dogs, Inc.*



GREETINGS FROM MCDI!





WHAT IS A CONSERVATION DOG?

- Professional working dog
- Scent detection dog
- Dog trained to detect odors that help save the planet



WHAT CAN THEY DETECT?



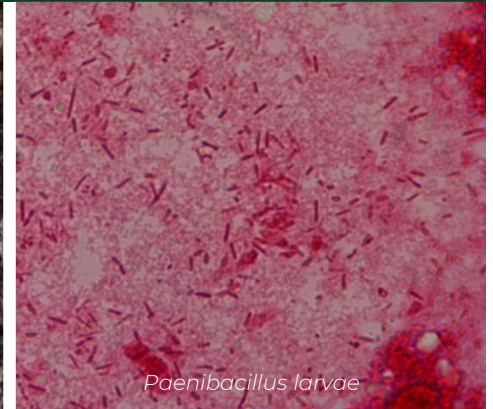
PLANTS



ANIMALS



INSECTS



FUNGI & BACTERIUM

On land AND in water!



WHAT MAKES THEM GOOD AT THIS JOB?



Their desire to work... with us!

- Dogs and humans have co-evolved over the past 32,000 years
- About 10,000 years ago, dogs were firmly ensconced in human society

Source: <https://www.livescience.com/31997-dogs-and-humans-evolved-together.html>



WHAT MAKES THEM GOOD AT THIS JOB?

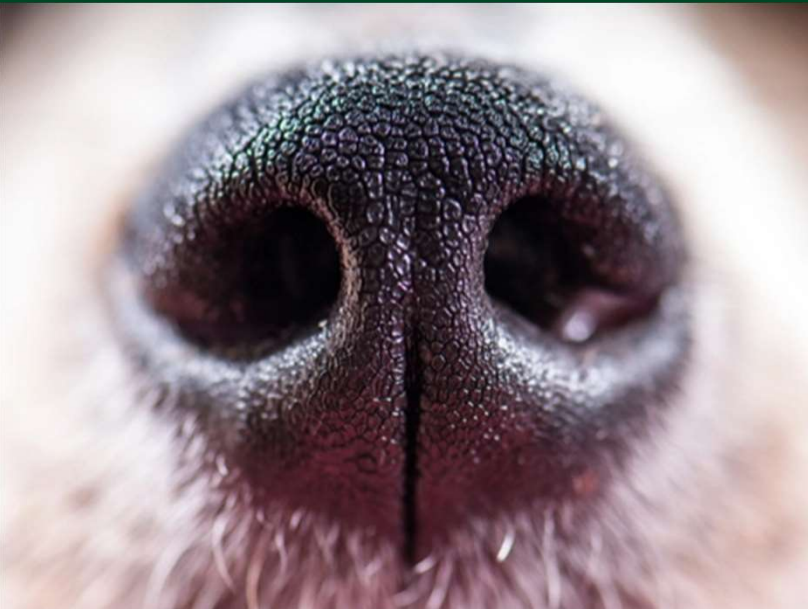


Their efficiency

- Search for multiple targets simultaneously
- Traverse terrain in a fraction of the time a human can
- Give instant, accurate results
- Detect things invisible to the human eye



WHAT MAKES THEM GOOD AT THIS JOB?



Their INCREDIBLE sense of smell

- It's wet and wriggly
- It's highly-capable
- It's portable

SUPERIOR SNIFFERS

A look inside the canine olfactory system

OLFACTORY BULB (OB)

Approximately 40 times larger in dogs than in humans, relative to total brain size. The OB functions primarily as a relay station, and to filter sensory input.

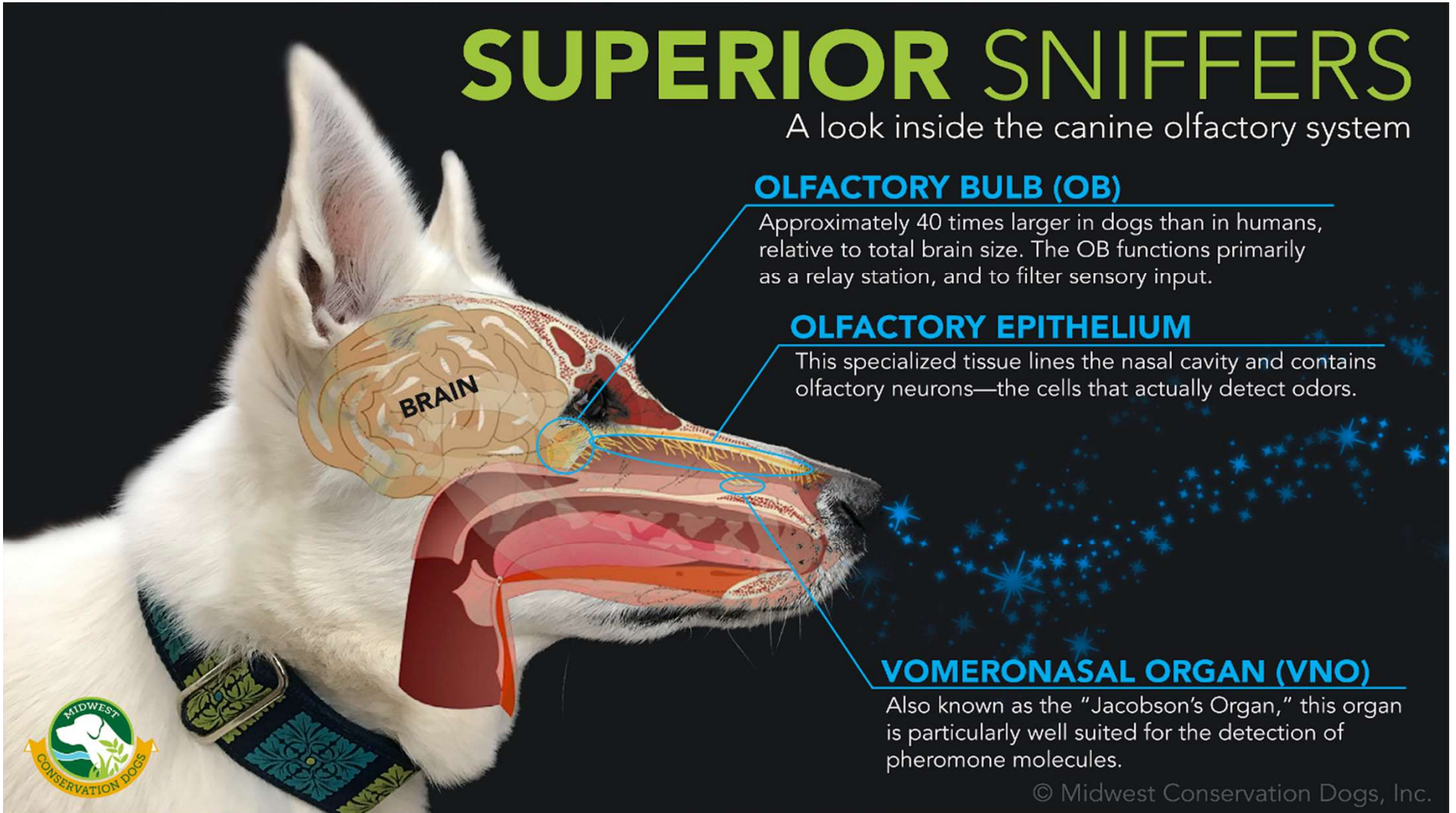
OLFACTORY EPITHELIUM

This specialized tissue lines the nasal cavity and contains olfactory neurons—the cells that actually detect odors.

VOMERONASAL ORGAN (VNO)

Also known as the "Jacobson's Organ," this organ is particularly well suited for the detection of pheromone molecules.

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MCDI WORKS WITH:

- Researchers and Scientists
- Universities and Schools
- Ecology Companies
- Private Landowners



WHAT ARE CONSERVATION DOGS SNIFFING OUT?



Brook Trout (pilot project)



- Project confirmed dogs can detect and discriminate scents in water
- Detection of fish in moving streams can assist with ecological monitoring



WHAT ARE CONSERVATION DOGS SNIFFING OUT?



Wood Turtle



- Threatened species in Wisconsin
- K9 Ernie found an individual never documented in 2019



WHAT ARE CONSERVATION DOGS SNIFFING OUT?



Zebra & Quagga Mussels



- Invasive species, prevalent in U.S.
- MCDI initiative to use dogs starting in 2020
- Partnership with Mussel Dogs



MUSSEL DETECTION

- Dogs can identify contamination down to the parts per trillion
- They can detect adults and veligers
- Inspection time is less than a minute

Photo © Mussel Dogs. Used with permission.



MCDI & MUSSEL DETECTION

- Prevent spread in known populations
- Provide early response for infestation
- Keep clean waters clean

Photo © Mussel Dogs. Used with permission.



CONNECTING & EDUCATING

- Establish professional partnerships
- Collaborate with organizers of water-based events
- Conduct surveys to assist management efforts

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THANK YOU!



@midwestconservationdogs

www.midwestconservationdogs.com