

New lab method can reveal disease-causing germs in bear muscle and liver

Healthy wildlife is important to both ecosystems and communities.

Wildlife species, including polar bears, may contain germs that can affect them and affect people if the infected meat is consumed without proper preparation.

Warmer Arctic winters and changing climate may increase the abundance and spread of germs and the sicknesses they cause.

Having tools to monitor wildlife health is important.

We developed a new, highly sensitive method called 'magnetic capture digital droplet PCR' that allows us to detect five different parasites or germs: *Erysipelothrix rhusiopathiae*, *Francisella tularensis*, *Mycobacterium tuberculosis* complex, *Toxoplasma gondii*, and *Trichinella* species.

Using this new method, we found these germs and parasites in some harvest samples – muscle, liver, and feces – from across the ISR and NU (see map).

We emphasize that the germs may not be new to polar bears, as this is the first time we have looked for them using this very sensitive method.

The harvested bears are thought to be healthy animals and this information cannot tell us differently.

We know of no new risks to human consumption, but you should continue to cook bear meat well.

This information is the first of its kind and with continued work we can track changes over time.

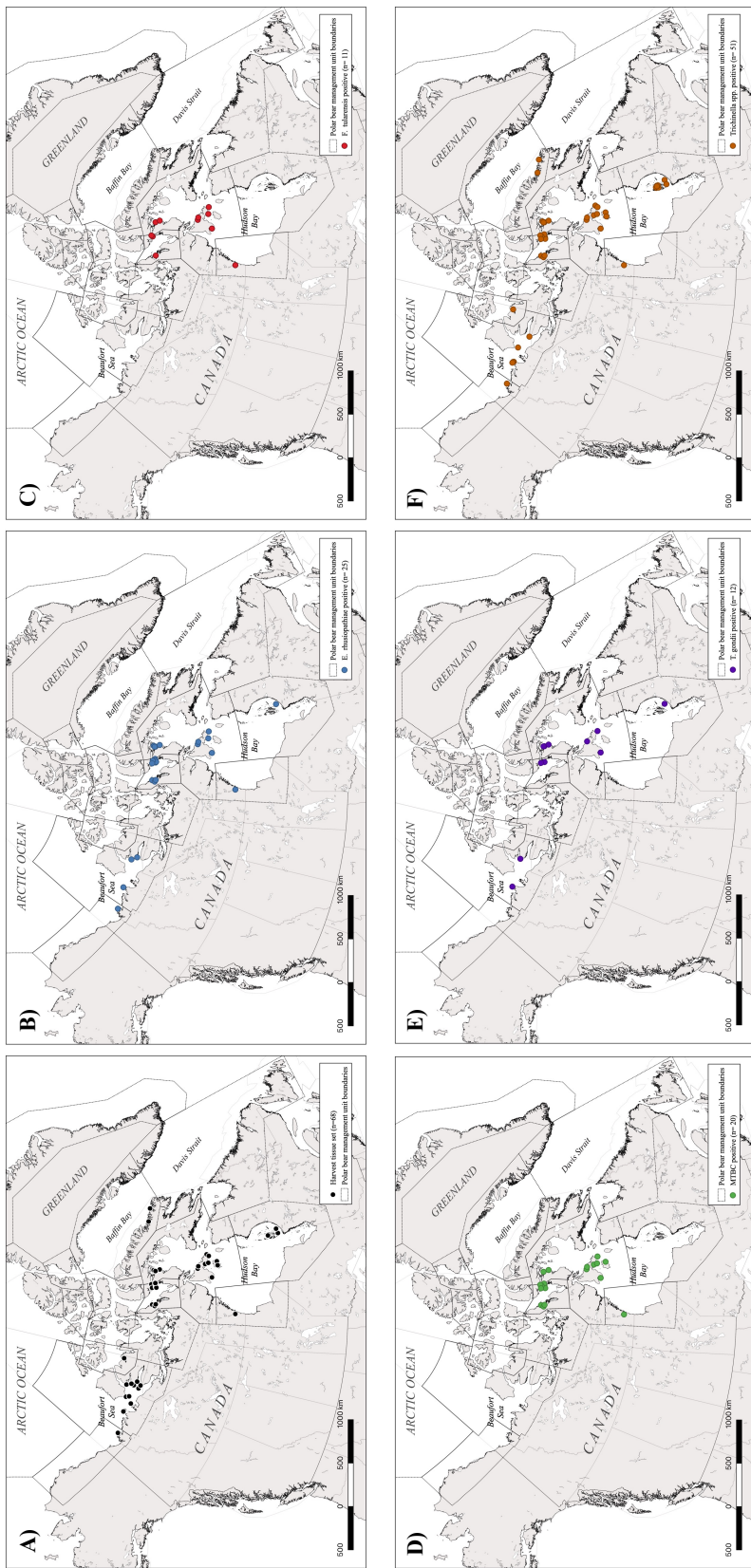


Figure 1. Maps showing locations of harvest samples used (A). Positive detections for B) *Erysipelothrix rhusiopathiae* (n= 25), C) *Francisella tularensis* (n= 11), D) *Mycobacterium tuberculosis* complex (n= 20), E) *Toxoplasma gondii* (n= 12), and F) *Trichinella* species. (n= 51), within the assessed (n=68) tissue sets. Boundaries of the polar management units that fall within Canada are overlain.