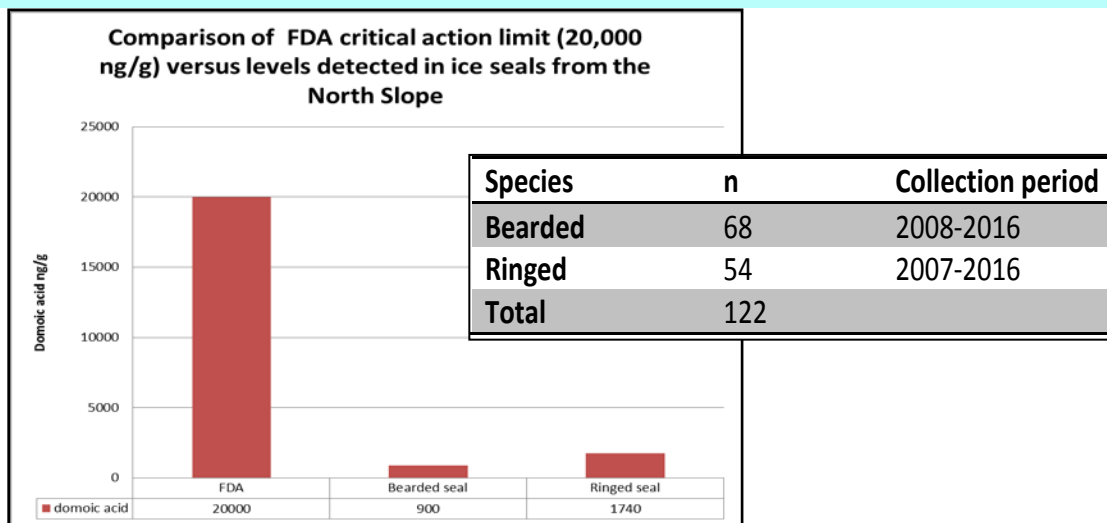




Detection of Marine Algae Toxin, Domoic Acid, in feces of subsistence-harvested Ice Seals: 2007-2016

With warming oceans we expect a northward migration of harmful algae and increases in harmful algae blooms. Marine algae toxins (domoic acid) enter the food chain (plankton > shellfish > fish > marine mammals) and are a possible threat to human and marine wildlife health. We tested harvested and found-dead ringed seals and bearded seals between 2007 and 2016 for domoic acid, a toxin produced by harmful algae.



Preliminary Key Findings:

- Bearded Seal domoic acid levels in feces range between 0-900 ng/g.
- Ringed Seal domoic acid levels in feces range between 0-1740 ng/g.
- Difference in fecal toxin levels between ice seal species probably reflects difference in diets, with ringed seals feeding more on fish.
- Variability between years of percentage of seals positive for domoic acid.
- Domoic acid (~ 6 ng/g) was detected in the intestinal contents of a mummified ice seal (from the 1940's).
- **SEAL HEALTH:** In humans, symptoms of Domoic Acid Poisoning include vomiting, confusion, motor weakness, seizures, and in extreme cases, death. We have had NO reports from hunters of Ice Seals acting strange or showing signs of Domoic Acid Poisoning, including arching back, seizures, repetitive movements, etc.
- **FOOD SAFETY:**
 - Current **FDA limit for domoic acid levels** in seafood is **20,000 ng/g (20 ppm)**.
 - Levels detected in feces of ice seals is well below the food safety critical limit!

