



Whaley awesome animals!

SPECIAL SPECIES: KING CRAB

If you were designing the most alien-looking creature you could imagine, you might end up with the king crab. These enormous, spiky, long-legged crustaceans look like they crawled out of a science fiction movie, and they are one of the most fascinating animals in the cold ocean waters of the North Pacific.

The red king crab is the largest and most well-known species, and it is genuinely impressive. A large male can span five feet from leg tip to leg tip and weigh over 20 pounds. Despite their name, king crabs are more closely related to hermit crabs, and if you look carefully you can see one of their five pairs of legs is small and tucked underneath their shell, a leftover remnant from their evolutionary past.

King crabs live in the cold, deep waters off the coasts of Alaska, Russia, Norway, and Japan. Young crabs spend their early lives in shallow water, forming enormous spiky balls called pods with hundreds of other juveniles, slowly rotating to protect each other from predators. As they grow, they move into deeper, colder water where they spend most of their adult lives walking along the seafloor scavenging for food.

One of the most remarkable things about king crabs is that they migrate. Every year they travel from deep water to shallow water and back again, following ancient routes along the ocean floor. Scientists track these migrations to manage fishing, because king crab populations have declined significantly in recent decades due to overfishing and warming ocean temperatures.

King crabs molt their shells as they grow, shedding their entire exoskeleton and emerging soft and vulnerable until the new shell hardens. During this brief window they are easy prey for nearly everything in the ocean. It is a risky business being a king crab.

Leg span: Up to 5 feet
Weight: 20 pounds
Food: Small fish, worms, etc
Lifespan: 20-30 years
Status: Near threatened (some)
Number left: Unknown





This Month IN SPAAAAACE!

October 4 - Saturn at its closest point to Earth

October 6 - Moon hides Jupiter

October 22 - Orionid meteor shower: debris from Halley's Comet, 20 meteor per hour

October 29 - Hunter's Moon

Nature

GARTER SNAKES - LAST SNAKES OF SUMMER

If you have been paying attention to your yard or along trails this fall, you may have noticed something. The garter snakes that spent the summer hunting frogs and earthworms along the edges of your lawn have disappeared. They have not gone far. They have gone down.

The eastern garter snake is Wisconsin's most common snake, and by October it is doing something amazing. As temperatures drop in autumn, garter snakes stop eating, burn through their fat reserves, and begin following ancient scent trails to their hibernation sites. These can be rock crevices, old animal burrows, or any cavity that extends below the frost line where temperatures stay just above freezing all winter.



What happens next is one of nature's more extraordinary spectacles. Garter snakes are communal hibernators, meaning dozens, hundreds, or even thousands of them pile into the same den together. Researchers have found sites in Wisconsin containing hundreds of snakes of multiple species, all tangled together, sharing body heat to survive the long Wisconsin winter. They will stay there, barely breathing, barely moving, from October until spring.

In spring, the males emerge first and wait near the den entrance. When females emerge, they release chemical signals that trigger a remarkable breeding frenzy, with dozens of males pursuing a single female in what biologists call a mating ball. It sounds chaotic, and it is.

Garter snakes are completely harmless and play an important role in controlling rodent, frog, and insect populations. If you find one in your yard next spring basking on a rock in the early sunshine, it has just completed one of the great survival feats in Wisconsin wildlife. Give it a moment of appreciation before moving on.



WANT TO HELP NASA?



CLICK THE GLOBE TO
VISIT NASA'S WEBSITE

Citizen Science

NASA GLOBE OBSERVER

Did you know you can do real science for NASA from your own backyard? The GLOBE Observer app is a free tool that lets anyone contribute scientific observations to NASA researchers, and October in Wisconsin is one of the best times of year to use it.



GLOBE Observer has several modules you can choose from depending on what you want to observe. The clouds module lets you look up at the sky, identify the types of clouds you see, and submit your observation along with a photo. NASA uses this data to check the accuracy of satellite cloud measurements from space, comparing what their instruments see from orbit with what real people on the ground are actually looking at. Your backyard observation genuinely helps calibrate space technology.

The trees module is especially wonderful in October. You photograph the trees around you and record whether they still have green leaves, are changing color, or have dropped their leaves entirely. This data helps scientists track the timing of fall color across the country and understand how climate patterns are shifting over time.

The app is completely free, works on any smartphone, and takes only a few minutes per observation. You do not need any scientific background, and there is an in-app tutorial for every module. Download GLOBE Observer from NASA's website or your app store, step outside, and look up. You are now a NASA citizen scientist.



Featured Fossil: The Boaz Mastodon

On a July afternoon in 1897, four farm boys in Richland County, Wisconsin, were checking a creek bank for flood damage after a heavy rain when they noticed something strange sticking out of the mud. What they had found would turn out to be one of the most important fossil discoveries in Wisconsin history.

The boys were the sons of farmer John Dosch, and what they pulled from the bank of Mill Creek near the tiny village of Boaz were the bones of an American mastodon, a massive prehistoric relative of the elephant that roamed Wisconsin for millions of years before going extinct about 11,000 years ago. Word spread quickly through the county newspapers, and the bones were eventually purchased by the State of Wisconsin for fifty dollars. Today the reconstructed skeleton stands nearly ten feet tall in the Geology Museum at the University of Wisconsin-Madison, where about 50,000 people visit it every year.

Mastodons looked similar to woolly mammoths but were stockier and had differently shaped teeth. While mammoths were grazers that ate grass, mastodons were browsers that ate leaves, twigs, and shrubs, moving through forests and wetlands rather than open plains. Mastodons were widespread across Wisconsin during the Ice Age, sharing the landscape with mammoths, giant ground sloths, dire wolves, short-faced bears, and the earliest human inhabitants of North America.

The Boaz discovery has an especially intriguing detail: a quartzite spear point was found near the bones, suggesting that the people who first arrived in Wisconsin may have actually hunted this animal. It is one of the few pieces of evidence we have that humans and mastodons coexisted in our state.

In 2015, researchers made a surprising discovery about the Boaz Mastodon. After a century on display, scientists determined that the skeleton was actually a composite of two different mastodons, one from Boaz and one from a nearby site called Anderson Mills. The two had been assembled together in 1915 without anyone realizing it. Rather than being a scandal, it is a great reminder that science is always willing to rewrite the story when new evidence comes to light.

If you want to see it yourself, the UW Geology Museum in Madison is free and open to the public.

THIS MONTH'S SCHEDULE:

- 10/2 - School Event
- 10/5 - School Event
- 10/8 - Forest Whales at Elementary Principal Convention
- 10/13 - School Event



BOOK AN EVENT

Want to inspire kids with a life-size whale? Contact Dave today with questions, size requirements, schedules, etc.



Clara's Corner

Nominate a
teacher!



Hello, friends! October is here, and I am so happy to be back in schools. Some of you have waited all summer to see me, and honestly, I have waited all summer to see you too.

I need your help with something important this month, and it involves a prize for a teacher that you admire. I have a laser-cut Smilodon skull. Smilodon was the saber-toothed cat, one of the most legendary Ice Age predators that ever lived, and this one can hang out on a wall. This skull is beautiful, and it needs a good home.

I want you to nominate a teacher who deserves something amazing. Maybe it is a teacher who makes science feel like an adventure. Maybe it is someone who stays after class to help you, or who makes you feel excited to come to school. Maybe it is just someone who showed up for you when you needed it.

Make a short video telling me why your teacher is awesome, and post it on Facebook or Instagram with the hashtag **#clarathewhale**. One lucky teacher will win this incredible piece of prehistoric art, and their student will get the joy of knowing they made it happen.

Nominations are due by October 31. Yes, Halloween. Which feels very appropriate for a saber-toothed cat.

**UNTIL NEXT TIME,
KEEP YOUR FINS MOVING!**

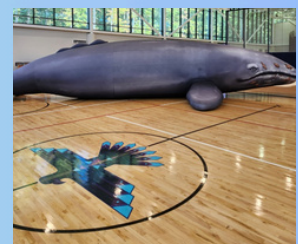
Clara

Your favorite 56-foot gray whale



FACT OF THE MONTH:

Dolphins have names. Every dolphin develops a unique whistle signature, and other dolphins in the pod use that whistle to call them by name.



Clara at the Potawatomi Community Center
Grandon, WI



Meet the Mammoth Hunter

Sean Sullivan is one of my best friends. Though some people could see us as competitors, I see him as one of the greatest *collaborators* a guy could ask for. Sean owns the company, [The Mammoth Hunter](#), and I wanted to spend some time introducing him to you because the things he brings to schools and libraries is nothing short of amazing. Check out this interview I did with Sean!

Okay, Sean, how would you sum up what you do for schools in one sentence?

I offer students an interactive experience with our shared prehistoric past in a way that leaves screens behind in exchange for real world interaction.

You've been doing this for awhile. What is one of your favorite moments over the years working with kids?

A young student once built a working version of a bull roarer, one of the musical instruments I show in my program, and brought it to class the next day to show me it worked. That one stuck with me.

If you could bring back one extinct animal, what would it be?

Only one?! I would choose *Allosaurus fragilis*. It was the first life-sized dinosaur skeleton I ever saw, at age five, at the Kalamazoo Public Museum. My dad took me for the afternoon because I was obsessed with dinosaurs. I still remember staring up at that massive skull in total awe.

I know how the kids react, but how do teachers and principals react when they see what you do?

The reaction I get is almost always surprise at how detailed and extensive the display is. It covers tools, fire starters, replica artifacts and fossils, art, music, jewelry, and much more.

What is something about mammoths that would genuinely surprise most adults?

The sheer size of the animals. Pretty much everyone is surprised when I have some student volunteers stretch out a rope that shows the length while I show the height of a mammoth with a spear.

What kinds of fossils and artifacts do you bring, and can kids actually touch them?

The actual artifacts are all stone tools. My replicas cover a complete cross-section of Stone Age life, from hunting and survival tools to art and jewelry. For fossils, we cover Ice Age animals from mammoths and ground sloths to the largest carnivores to walk North America since the dinosaurs. With a few exceptions, everything is hands-on.

What does a typical day look like when you bring your program to a school?

I arrive an hour early and set up in about 35 minutes. The program covers experiential archaeology, hunting tools, the woolly mammoth, megafauna carnivores, the importance of fire, and celebrating a successful hunt. After the discussion, students ask questions and interact with the display up close. Breakdown takes about 30 minutes, and then like our Stone Age ancestors, I hit the road.

If you and a real mammoth hunter from the Ice Age swapped jobs for a day, who would have a harder time?

Absolutely me. After 25 years of learning to replicate the tools and skills I present in programs, I am likely at the skill level of a seven or eight year old child in the Stone Age. A prehistoric hunter would find my life today very chill. There isn't even a single giant eagle or saber-tooth cat to worry about in my normal day!

Last question, Sean. Big kids, including adults, are mesmerized by you. How do you keep younger kids engaged?

Younger kids get dad jokes, we approach the mammoth hunt like a game of tag, and we discuss the taste of mammoth chicken nuggets. Different age groups get the same educational content, just explained in a way that works for them.



To book a program with The Mammoth Hunter, visit www.themammothhunter.com



Forest Whales is Booking schools for 2027!

AND NOW FOR A REALLY BAD JOKE...

WHAT DO YOU CALL A
CRAB THAT THROWS THINGS?

A "lob"ster.



FOREST WHALES WOULD LIKE TO APOLOGIZE
FOR THIS EXTREMELY TERRIBLE JOKE.
IT'S NOT OUR FAULT.
... REALLY.



Prehistoric Art for Your Walls

Hand-crafted. Life-sized. One of a kind.

Imagine a life-sized *Smilodon* skull on your wall. Or the massive jaws of an *Allosaurus fragilis*, the same dinosaur that sparked one paleontologist's lifelong obsession at age five (see page 6).

Forest Whales now offers laser-engraved prehistoric skull and bone cutouts, handcrafted in Wisconsin by Dave's own kids. Each piece is laser-cut from wood at true life size, assembled from individual bones, and ready to display in your home, classroom, or office. Some assembly required, but that's half the fun.

Available designs:

Smilodon (saber-toothed cat) skull — \$95

Short-faced bear skull — \$95

Allosaurus fragilis skull and neck bones — \$225

All prices include shipping anywhere in the United States.

These make extraordinary gifts for the fossil lover, the science teacher, or the kid who stared up at a dinosaur skeleton once and never quite got over it.

To order, contact dave@forestwhales.com (We're currently working on getting this to our website)

Want Whale Mail?

Did you receive this copy from someone else?

Whale Mail is free, and you can sign up at

www.forestwhales.com/education



We were interviewed at WJFW
in Rhinelander. Click [here](#) to
watch a segment.