Evolution in the Dog Family

The story of dogs began in North America, and Oregon hosts a rich fossil record of their evolution. Dogs that specialized for eating meat rose to the top of the food chain—but dogs with more flexible diets outlasted them.

Dogs evolved from an omnivorous to a carnivorous diet three times over the last 35 million years. The earliest dogs were foxlike omnivores—eating both plants and meat. Some descendants split into new groups specialized for meat eating. As predators, these carnivorous dogs were at risk of extinction if their prey disappeared. Whenever meat-eating dogs disappeared, other omnivorous dogs had a chance to evolve into carnivores. Today, as in the past, dogs with both diets live side by side.

Look at the illustrations of the three waves of dogs.

Do the dogs in each wave have similar body types?

What can body shape tell us about dog evolution?

Which living dogs maintain the diet of their common ancestor?

Which single group of dogs has lasted the longest?

eats meat and adapted

Bold name fossils from this *genus* on display.

This diagram illustrates most relatives in the dog family tree in Oregon over the last 35 million years. Paraenhydrocyon Caedocyon **Ectopocynus** Osbornodon Mesocyon First Wave Dogs Cynodesmus The first wave of dogs started out eating plants and meat, but some First Wave Dogs became specialized meat eaters. Enhydrocyon Phlaocyon **Cynarctoides** Desmocyon Rhizocyon Carpocyon **Second Wave Dogs** Tomarctus The dogs in the second group were members of the *Borophagines* or Tephrocyon "Voracious Eaters." They maintained **Microtomarctus** a varied diet until the first wave Euoplocyon carnivores were extinct. Then several second wave dogs became large **Cynarctus** Oxetocyon carnivores, with bone-crushing teeth. Paracynarctus Second Wave Dogs Archaeocyon Otarocyon **Leptocyon** Metalopex Urocyon Otocyon Third Wave Dogs As second wave dogs were going extinct, an ancient omnivorous group Nyctereutes branched into a third wave of dogs, Canines. In the last 5 million years, many third wave dogs have become Atelocynus meat eaters—just like the waves Eucyon before them. oldest known fossils most recently known Third Wave Dogs OMNIVORE ARTWORK, UNIVERSITY OF OREGON MUSEUM OF NATURAL AND CULTURAL eats plants and meat GRASSLAND CARNIVORE eats mostly meat 5 PRESENT 20 10 MILLION YEARS AGO

DOG FAMILY TREE

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DOGS: THEIR FOSSIL RELATIVES AND EVOLUTIONARY HISTORY