



Distinguishing mammoth from elephant ivory

My name is Bruce Schindler and I've carved and polished fossil ivories as my livelihood since 1993. I've lectured on the native and western uses of Alaskan ivories for the National Park Service, Elderhostle tours, and Princess and Holland America cruise lines. I am a recognized specialist by Yukon and Alaska paleontologists and local customs officials.

I've met with Senator Lisa Murkowski in my studio and given testimony at senate hearings on the crucial importance of fossil ivory to Alaska. I am proud to say that I played an important role in the passage of Alaska's SJR4 that urges exempting Alaska's ivories from any Federal ban.

Distinguishing mammoth from elephant ivory is a simple undertaking. Ancient mammoth tusks bear more resemblance to a broken piece of rotting wood than they do to an elephant tusk. Mammoth ivory is most often heavily stained and textured by the soil in which it was buried since the Pleistocene period (10,000 to 100,000 years). Mammoth ivory of the north, left for tens of thousands of years in the earth, will typically be colored and textured by the minerals of the ground it was buried in.

Colors are primarily a dirt brown on the exterior surface fading to a light tan as you reach the interior. Colors often include rich blue (vivianite), green, black, and a rich whisky brown. (This patina and texture is typically highly valued by carvers, collectors and curators because of its unique beauty, and as a testament of survival). The texture is most often rough, broken, and partly or fully rotten, as you can imagine after inhabiting a frozen muck for thousands of years.

The other major difference between elephant and mammoth ivory is found in the pattern of the grains. The distinctive grains found in all pachyderm ivory are called Schraeger lines. A cross section of mammoth and elephant tusks will clearly show a crosshatch pattern. The Schraeger lines in the crosshatch of a mammoth are at a sharp 90° angle similar to this:
^ . The crosshatch pattern in elephant ivory has a much flatter aspect, closer to a more obtuse 15° to 20° angle. Both grain patterns are generally visible to the naked eye and easily separated with a modicum of experience with ivory.

As a whole mammoth and elephant tusks are easy to identify. The challenge can come in the smaller cut pieces. The inner 1/3rd of the tusk, the core, doesn't always clearly show the crosshatching pattern. Also, an exceptionally well-preserved mammoth tusk can be fairly light colored toward the center. Small pieces of cut ivory from this part of the tusk might not be obvious face up. I'd say less than 10 percent of old mammoth ivory would fall into this

category. In such cases, DNA tests could be administered to determine the origin of the ivory.

Finally, let me say that mammoth ivory is a poor substitute for elephant ivory and will never replace it. It is not white, it is rarely solid, and it is unpredictable when being worked. Artisans can't impose their will onto it, it must be worked within its own limitations and parameters.

Mammoth ivory - it's beauty, it's history, it's story of survival, and it's physical resurrection from the frozen tundra as well as its eventual contribution as new art - is truly awe inspiring! But as a substitute for elephant ivory, it will always fall short.

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