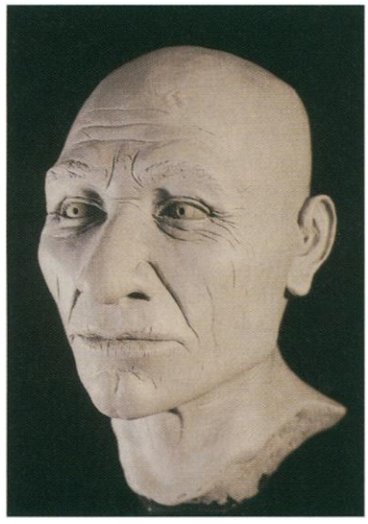
Kennewick Man's Trials Continue

As the discovery site of a 9300-year-old American is buried despite scientists' protests, researchers report tantalizing new results showing unexpected diversity in the earliest Americans

This week, a helicopter working under the direction of the Army Corps of Engineers is dumping 600 tons of boulders, gravel, and dirt along the shores of the Columbia River near the town of Kennewick in Washington state. This massive reworking of the shoreline is aimed at halting erosion at a point along the river where a 9300-year-old skeleton known as Kennewick Man—which reputedly has some "Caucasoid-like" features—was discovered about 2 years ago. Anthropologists say, however, that the work will bury the site—where more bones were found just 2 weeks ago—rather than protect it. They even persuaded Congress to pass a law forbidding the work. But because the bill wasn't finalized before the congressional recess began last week, it couldn't stop the earth movers.



JAMES C. CHATTERS

Facing the past. This reconstruction of Kennewick Man was made using a cast of the skull taken before the bones were locked away.

This sparring is the latest round in a bitter battle over a find that many archaeologists believe could provide important clues to the early peopling of the Americas. Eight prominent anthropologists have sued the Army Corps of Engineers, which has jurisdiction over the Kennewick site, for permission to study the bones of Kennewick Man. But the corps wants to turn the skeleton over to the Umatilla Tribe of northeastern Oregon for reburial, under the 1990 Native American Graves Protection and Repatriation Act (NAGPRA). This clash is part of a larger struggle over who controls American prehistory, pitting Native American religious beliefs against scientists' still-evolving theories about the first Americans.

The scientists in the case say that the small amounts of research that anthropologists have managed to do on Kennewick Man and a few other early Americans suggest a surprising diversity among these people and hint at a complex, largely unknown history. In their view, the question of who first peopled the Americas is far from settled (see sidebar). They would like to complete a full skeletal and DNA analysis of Kennewick Man, studies the corps abruptly halted when it seized the skeleton. Such research may yield "important clues about recent human evolution," says Joseph Powell, a physical anthropologist at the University of New Mexico in Albuquerque, noting that the colonization of the Americas was the last such event of its kind. "Humans will never again move into an uninhabited land," he says, and understanding when and how that happened is relevant to all people.

To get access to that knowledge, the scientists' suit also hopes to change the haphazard way federal agencies that handle NAGPRA-related issues have interpreted the law. Some agencies have allowed full study of skeletons before returning them to what was found to be the appropriate tribe, while in the case of Kennewick Man, the corps planned to simply hand over the skeleton to the tribe now living closest to hand, the Umatilla.

Linking paleo-Americans like Kennewick Man to any modern people is extremely difficult, the researchers say, and they hope to win public support for their contention that ancient skeletons not clearly affiliated with any known tribe should be studied. "Kennewick Man has become a public icon," says Robson Bonnichsen, director of the Center for the Study of the First Americans in Corvallis, Oregon, and one of the scientists in the suit. "He's pushed people's buttons; they are enormously interested in finding out who he is. He could well change our perception of who first settled America."

NAGPRA as the law of the land

When Kennewick Man's bones were first found, the coroner's office called in an independent forensic anthropologist, James Chatters, to study them. Based on the shape of the skull, Chatters initially thought the skeleton was that of a white settler from the last century. But when radiocarbon dates showed it to be 9300 years old, the corps seized the skeleton, halted all scientific tests, and prepared to return it to the Umatilla for reburial. The scientists' suit has kept the skeleton in limbo, locked in a vault at the Pacific Northwest National Laboratory in Richland, Washington.

Despite such security measures, Kennewick Man's most recent history includes Indians and pagans praying over his skeleton, and charges that it is both missing bones and has had extra bones added to it (*Science*, 2 January, p. 25). Alan Schneider, the attorney representing the scientists, has said that the case "is like a script for a Monty Python movie. All that's missing is someone clapping two coconuts together." The corps has suggested that some bones were removed before the skeleton was locked up—an allegation that Chatters strongly denies—and has mounted an investigation with the Justice Department. Frustrated by what they consider lax handling, the scientists last week asked that Kennewick Man be held by another agency—perhaps the Smithsonian Institution—while the case continues.

If Kennewick Man is reburied without further scientific study, it would be the latest in a long list of losses of scientifically important ancient skeletons due to NAGPRA and similar state laws, anthropologists say. For example, the Idaho State Archeologist's office gave a well-preserved 10,675-year-old skeleton from a gravel pit near the town of Buhl to the local Shoshone-Bannock tribe for reburial 6 years ago, after only minimal study (*Science*, 1 April 1994, p. 20). "It was a tremendous loss to science and the American people," says Douglas Owsley, a physical anthropologist at the Smithsonian Institution's National Museum of Natural History and a party in the suit. "And I don't think it's what Congress intended when it enacted NAGPRA."

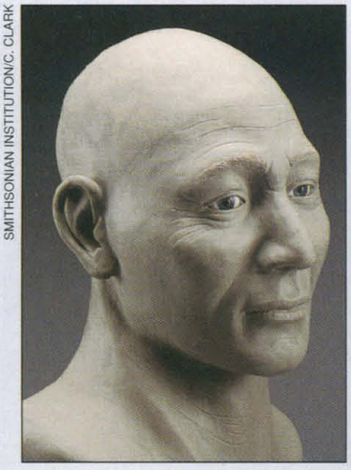
Rather, Owsley and other researchers think the law was designed to help right a grievous wrong and return to Native Americans the remains of known relatives and recent ancestors housed in museums and universities. Nearly every scientific institution in North America was affected by the law, and most have emptied or are emptying their storehouses of these skeletons. But problems remain with materials of greater antiquity—the so-called "unaffiliated" remains. The officials administering NAGPRA have yet to

Kennewick Man's Contemporaries

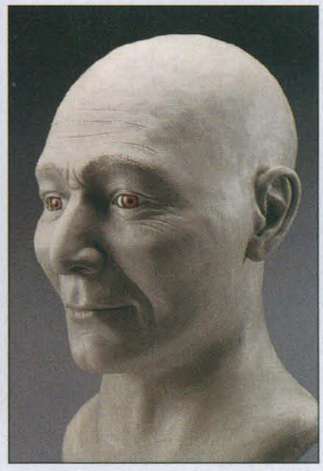
Despite the obstacles posed by state and federal laws, in a few cases researchers have managed to study ancient American skeletons. And what they are finding makes them even more eager to examine other skeletons such as Kennewick Man.

The state of Nevada decided that skeletons collected before the 1990 North American Graves Protection and Repatriation Act (NAGPRA) must be studied to establish their proper identification. So in the past few months, top researchers have trooped to the Nevada State Museum in Carson City to examine two well-preserved skeletons, known as Wizards Beach Man and Spirit Cave Mummy, which both date to more than 9000 years ago. And anthropologist Douglas Owsley of the Smithsonian Institution and colleague David Hunt worked with artist Sharon Long to reconstruct in clay the faces of these two individuals. The reconstructions, published here for the first time, offer a glimpse of what the earliest Americans looked like.

The biggest surprise, physical anthropologists say, is that they don't all look the same. For example, Wizards Beach Man "falls within the range of modern Indians," says Owsley. "He's what I imagine a proto-Indian looked liked." But Spirit Cave man "does not look quite like what you think of when you think about a modern Indian," he says. "His cranial vault is higher, his face is narrower, and his cheekbones smaller than what you see in Native Americans and Northeast Asians," a region that has been proposed as the ancestral homeland of some Native Americans. Among living peoples, he most resembles the Ainu of Japan, the group who first colonized that archipelago, says Owsley; others have suggested that Kennewick Man also resembles the Ainu.



SMITHSONIAN INSTITUTION/C. CLARK



SMITHSONIAN INSTITUTION/C. CLARK

Same time, different face? Some anthropologists think that Wizards Beach Man *(left)* and Spirit Cave Mummy *(right;* both reconstructed in clay) have different skull structures.

Not that these first Americans were actually related to the Ainu. Indeed, genetic studies show that the Ainu are not related to any living Native Americans, says Michael Hammer, a geneticist at the University of Arizona, Tucson. If ancestors of the Ainu did cross the Bering Strait, "they didn't leave any genetic heritage in the New World," he says.

Instead of indicating kinship, the resemblance to modern Ainu or Eurasians "is important for understanding their biology, the kind of climate they were adapted to, which could give clues to where they came from," explains Owsley's colleague, Richard Jantz, a physical anthropologist from the University of Tennessee, Knoxville. The point, says Owsley, is that the Nevadan skeletons, as well as two other paleo-American skulls he's studied, "are different enough in their morphology that we can't assume that they belong to any modern-day group. We may be seeing what some people in these regions looked like in the late Pleistocene," before acquiring modern features.

And the physical diversity suggests a complex history. "There's considerable heterogeneity in these earliest Americans," says Jantz, who described his analyses of the Nevada skeletons at the American Association of Physical Anthropologists meeting in Salt Lake City last week. "They appear to belong to different regional populations, which suggests that there were several waves of migrations rather than one or two." When other paleo-American skulls are added to the stew, Jantz and Owsley see between three and five distinctive populations in North America some 10,000 years ago.

Many of the ancient skeletons show signs of violence, another sign of different and competing peoples. In addition to a spear point in his pelvis, Kennewick Man suffered throughout his life from multiple fractured ribs, a heavy fall or blow to his neck, and another blow to his left frontal bone, says James Chatters, the anthropologist who recovered Kennewick Man. Spirit Cave man has a fracture below his left temple from a hard blow that may have killed him, says anthropologist Amy Dansie of the Nevada State Museum. And the fragmentary remains of another 9000-year-old boy from Nevada indicate that he died at age 18 from a knife in the ribs.

All this suggests that about 10,000 years ago, "new traditions and people were coming in," says Dennis Stanford, an archaeologist at the Smithsonian. "There was a lot of conflict; it wasn't a peaceful period as has often been portrayed. Someone was pushing on someone else, but we don't know who yet."

But not all scientists agree with this emerging picture. Early American expert Christy Turner of the University of Arizona, Tempe, for one, sees "only Indians" in the skulls that others regard as something different. And molecular anthropologists see no genetic evidence in living Native Americans for a diverse ancient population. Genetic surveys of living people suggest that "there were only a small number" of founding lineages, whose descendants spread throughout North and South America, says David Glenn Smith, a molecular anthropologist at the University of California, Davis. However, it's possible that there was once more genetic diversity, and that only a small number of lineages survived, say Owsley and other physical anthropologists.

Still, the few ancient skeletons whose DNA has been tested, including that of Wizards Beach Man, do indeed show markers seen in modern Native Americans. "No surprises," says Smith, who is studying the DNA of paleo-Americans. "They don't look all that different from modern Indians." But the DNA of skeletons with more divergent bone structure, including Spirit Cave, has not been tested, say Owsley and Jantz.

More data might clarify this sparse and conflicting evidence. But there's no guarantee that it can be done. When studies of the Nevada skeletons are done, the bones are to be returned to the appropriate tribes. Even so, the work has drawn sharp protest from the Paiute, who claim both skeletons as ancestors. "We're not trying to offend Native Americans, although they're hostile to us now," says Dansie. "It seems they think we're trying to steal their ancestors and their history. We're not; we just think you shouldn't deny these ancient people their identity." **–V.M.**

devise rules for how best to deal with these.

For most Indian tribes, including the Umatilla, the question is simply one of geography. Umatilla oral history says that their tribe has been "part of this land since the beginning of time," as their religious leader, Armand Minthorn, stated in 1996. "We do not believe that our people migrated here from another continent as the scientists do." So any bones recovered from traditional Umatilla lands are necessarily their ancestors. And they consider scientific study, which usually requires measuring bones and grinding up small quantities for dating and genetic analysis, to be taboo.

"It's a fundamental problem with science," says Mervin Wright Jr., tribal chair of the Pyramid Lake Paiute in Nevada, a tribe involved in another clash with scientists over ancient skeletal remains. "Scientists feel they have the right to do anything they want to investigate [their theories], without respecting our traditions. They need to accept what we know: that we've always been here. They don't need to look at any skeletons to determine this."

But anthropologists calculate that Kennewick Man is separated from any descendants by some 450 generations and argue that few people anywhere have remained settled in one region for 10,000 years. "The chances of finding someone living in the same vicinity today who is closely related to an individual who died that long ago are very remote," says D. Gentry Steele, a physical anthropologist at Texas A&M University in College Station, and a party in the law suit. "Populations move and disperse through time; for all we know, the closest relatives of Kennewick Man may be in South America today." So Steele and others argue that more study of the skeleton is needed. "We won't know who he is most closely related to until he is studied."

Tracing the first Americans

Last June, U.S. Magistrate Judge John Jelderks, who is hearing the lawsuit between the corps and the scientists, seemed to say much the same thing. He told the corps that it could not simply use the age of the skeleton or the projectile point in its hip as "conclusive proof that these remains are related to contemporary Native Americans," and queried the agency as well about its definitions of the terms "Native American" and "indigenous" people. He charged the corps to "critically examine all of the evidence in the record as a whole" to determine if Kennewick Man is a Native American.

Last week, the corps announced that it has asked the National Park Service (NPS) of the Department of the Interior (DOI), the agency that administers NAGPRA, to answer these questions. Francis McManamon, the chief archaeologist in charge of NAGPRA for the Park Service, says that they will consult the tribes, as required by NAGPRA, and that he expects that some examination and testing of the bones will be needed. But he notes that according to the DOI's reading of NAGPRA, Native Americans are "people who occupied the United States prior to the documented arrival of Europeans." That would include any bones older than about A.D. 1600 in the Northwest, so McManamon says he "expects" to find the skeleton is indeed a Native American, "and then we can move on to stage two, deciding its proper disposition."

But to the scientists in the case, such statements only lead to more questions. "Who is going to do these tests?" wonders Bonnichsen, noting that the top scientists in the field are part of the lawsuit and indeed often act as consultants for NPS on such matters. More importantly, anthropologists argue that Jelderks's questions require a more thorough investigation, and that the relationship between contemporary Native Americans and paleo-Americans like Kennewick Man may be quite complex.

BOB BRAWDY / *TRI-CITY HERALD*, WASHINGTON

Burying the past? The Army Corps of Engineers is covering the Kennewick Man site to protect it from erosion.

Until just a few years ago, most researchers regarded the settlement of the Americas as a straightforward story: The first Americans were the Clovis people, big-game hunters from Asia, who moved across the Bering Strait in three great migrations beginning about 11,500 years before the present. But now scientists largely agree that people were apparently living in America before the time of the Clovis culture. And new genetic and linguistic studies have thrown out the three-migration model (*Science*, 19 April 1996, pp. 346 and 373, and 4 October 1996, p. 31).

Ironically, NAGPRA has helped fuel this renaissance in the study of the first Americans. To help determine which tribe should be given skeletal material in collections, scientists have sometimes dated the remains—and occasionally turned up astonishingly old dates. For example, a Nevada skeleton known as Wizards Beach Man was thought to date to about 4000 years ago and turned out to be 9200 years old.

And bits of research allowed on a few of these ancient skeletons show a surprising amount of diversity in their bone structure, although so far not in their genes, anthropologists say. "There's so much variability in these early populations," says Bonnichsen. "And they don't all look like Native Americans today." That may mean, he and others say, that there was more than one population in the early Americas, populations that may or may not be related to modern American Indians.

Understanding America's prehistory will require filling out this fragmentary and conflicting evidence. "The only way to get the answers is by being free to do the research," says Bonnichsen. Some studies, however, such as a full archaeological and geological analysis of the Kennewick Man site, will likely never happen, as the corps is going ahead with its plan to halt erosion at the site.

Chatters, who found more bones when he took a last walk along the beach 2 weeks ago, contends that the corps' action will bury additional information about the site and also any additional bones. In a public relations coup, scientists won Congress over to their side on this point: Lawmakers in both the Senate and the House attached a provision to a disaster relief bill to block the corps' action without express permission from the court. But that bill wasn't finalized before congressional recess. "It's obvious that the corps couldn't care less about complying with clear-cut congressional intent," says Representative Doc Hastings (R–WA), who authored the House version of the bill to stop the corps' plans. (He also introduced a bill to amend NAGPRA so that scientists could study human remains and cultural items found on federal lands.) "It's outrageous that they are destroying a site of this importance."

Early this week, corps spokesperson Dutch Meier said that covering of the site was well under way. And all scientific research remains halted until the corps answers the court's questions. For now, says Bonnichsen, like the pagans and the Native Americans, the only thing scientists can do for Kennewick Man is to pray for him.

–Virginia Morell