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Managing North American Indigenous Peoples' Wildlife Resources

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INTRODUCTION

ARCHAEOLOGICAL AND GENETIC evidence suggests the first humans began colonizing North America from northeastern Asia during the last glacial maximum over 15,000 years ago. Some of these intrepid people entered over the **Bering Land Bridge** and made their way inland through nonglaciated corridors that stretched far to the south. Others took a maritime route, following the coast along the north Pacific Rim (Erlandson et al. 2015). Some may have been inspired by a desire to explore new horizons, but the most likely impetus for such perilous journeys was pursuit of large mammals. Pleistocene megafauna were concentrated in the ice-free inland corridors, and concentrations of sea mammals inhabited littoral habitats. While distinct, the creation stories of the indigenous peoples of North America parallel the migration theories of Western science to different degrees. For example, the creation story of the Laguna Pueblo people revolves around long ancestral migrations between 2 worlds (Box 42.1).

Despite variation between the creation stories of indigenous groups and migration theories of Western science, it is agreed these first human inhabitants became the **indigenous peoples** of North America. Each group formed its own relationships with plants and wildlife, creating similar yet unique methods of harvest and preparation, as well as sociological traditions based on what was available, what was productive, and what they learned from each other. Times of rich abundance alternated with times of scarcity and starvation. Survival depended on an intimate connection with the land and animals, as well as an understanding of both their physical world and the spiritual world. Each group respected the native plants and animals of their ancestral land base and practiced obligations of reciprocity woven deeply into their culture, spirituality, and customs. Cultural ideals and social norms dictated stewardship among indigenous peoples such that human law, natural law, and spiritual law were all considered one (Wilkinson 1997). Indigenous peoples depended on the wild game within their territories or traditional land bases, not only for food, but for clothing, dyes, jewelry, and more. American bison, for example, were used by indigenous groups of North America for meat, clothing and shelter (hide), dyes (gallbladder), tools (bone), food pouches and medicine bags (organs such as the bladder), traditional regalia (beard, teeth, etc.), and more (Smithsonian Institution 2014). Stewardship of natural resources was not just necessary for human survival, but also for the survival of culture, history, and personal and tribal identity. As a result of this relationship between natural resources, land, culture, and spirituality, indig-

enous management of natural resources in North America, both currently and historically, differs from other natural resource management systems.

In this chapter, we attempt to introduce the major legal, cultural, and geographic distinctions among North America's indigenous groups and how those distinctions influence their approaches to natural resource management. The scope of this chapter includes indigenous groups of the contiguous United States of America, Alaska, Hawaii, Canada, and México. We close with a description of Traditional Ecological Knowledge due to its importance to indigenous groups and its role in contemporary and future natural resource management.

INDIGENOUS GROUPS OF THE UNITED STATES OF AMERICA

Indigenous peoples within the 48 contiguous states of the United States are generally divided into 3 groups: those that belong to a state or federally recognized tribe, descendants of a state or federally recognized tribe without membership or recognition from that tribe, and descendants of a tribe that does not have legal recognition. **Federally recognized tribes** are defined as an American Indian or Alaska Native tribal entity that is recognized as having a government-to-government relationship with the United States, with the responsibilities, powers, limitations, and obligations attached to that designation, and is eligible for funding and services from the **Bureau of Indian Affairs** (**BIA**) (Bureau of Indian Affairs 2015). Regardless of an individual's or tribe's status, all indigenous peoples of the lower 48 states descended from the original inhabitants of this continent and, for the purposes of this chapter, will be referred to as **Native Americans** while some laws and policies refer to **Indians**. We refer to the indigenous people of Alaska and Hawaii as **Alaska Natives** and **Native Hawaiians**, respectively.

Tribes of the 48 Contiguous United States

Brief History of Indian Removal and Treaty Era

The Indian removal and treaty era (1778–1871) ushered the loss of thousands of years of trusteeship over natural resources by Native Americans. As colonial territories expanded under the Doctrine of Discovery, nontribal governments seized control of lands and natural resources within the traditional land base of Native American tribes (Lessee v. McIntosh, 21 US 8 Wheat, 543 543 [1823]). As the Indian removal and treaty era pressed forward, many tribal leaders opted to sign **treaties** with the United States as a way to provide peace and survival for their people. These treaties transferred rights of land ownership to the government, but

Box 42.1 Creation story of the Laguna Pueblo, a federally recognized tribe in New Mexico, USA

There is a place called **Shi-bop** that is understood to be below the surface of the earth, a place where the ancestors of the Laguna people lived and prospered. The Laguna ancestors were known as the Keresan tribe; their life was easy and people had great respect for one another. The Keresan had close connections to supernatural beings and talked directly with the Creator. Over a period of time, all the components of the land were created so the Keresan could inhabit the surface of the earth. Other groups had emerged and the Keresan wanted to help. Permission was granted by Earth Mother and a hole was opened between the 2 worlds. With the help of the fly, the antelope, and the badger, the people were able to emerge from Shi-bop. Earth Mother gave the Keresan clear directions and appointed leaders to help guide their migration to a place near the lake. When the Keresan traveled a long journey and became very tired, one of the leaders decided to settle in a place that was not where Earth Mother directed them. Harsh, terrible living conditions were inflicted upon the people for their disobedience. The Keresan pleaded Earth Mother for forgiveness, which she granted, and she appointed a new leader of the people; however, in the process, Earth Mother removed the people's connections to supernatural powers and divided the people into clans with specific responsibilities and functions. The people restarted their long journey and finally arrived at the place by the lake, near their contemporary homeland.

Today, the Laguna Pueblo people practice ceremonies and traditions that call upon their relatives who also emerged from Shi-bop, but continually obeyed Earth Mother and maintained their close connection to supernatural powers. This parallel group is an important component of Laguna traditional culture and practices.

This creation story as written was adapted from oral history about the origins and migration of Laguna Pueblo people, from Marmon and Corbett (2015), as told by Victor Sarracino, contemporary oral historian, and accomplished novelist Leslie Marmon Silko (1986).

retained the rights of the signing tribes to access and harvest wild game and plants and, further, the right to pursue native ways of life on those lands (Wood and Welcker 2008). In essence, all prior rights were retained other than those rights vacated in a treaty with great variability in the specifics of each treaty. Control over wildlife and other natural resources was transferred (sometimes in violation of signed treaties) with the ceded lands to federal agencies and, eventually as states formed, to the states. During this era, many tribes, particularly in the eastern United States, were forcibly removed from their ancestral lands and moved to unfamiliar lands where the continuation of their traditional lives could not be maintained. Tribes not forcibly removed saw their traditional land base greatly reduced. Tribal land holdings following removal often are referred to as **reservations**, defined by the BIA as an area of land reserved for a tribe or tribes under treaty or other agreement with the United States, executive order, or federal statute or administrative action as permanent tribal homelands, and where the federal government holds title to the land in trust on behalf of the tribe. Despite the existence of reservations and treaty provisions that promised continuance of native cultures, government-sponsored programs often aimed to assimilate Native Americans into Anglo-Saxon culture.

Indian Reorganization Act

The **Indian Reorganization Act (IRA)** of 1934, otherwise known as the Wheeler-Howard Act, was federal legislation that aimed to reverse the goal of assimilation of Native Americans and instead encourage sovereignty and strengthen tribal self-governance and management through tribal customs and traditions. This concept of self-governance and management also is often referred to as **self-determination**. As part of the IRA, jurisdiction over the management and development of lands, minerals, and natural resources (wildlife, water, plants, etc.) on tribal reservation lands was returned to the tribes to help reduce the losses of reservation lands and establish ways for Native American tribes to build economic self-sufficiency. With the passage of the IRA, tribes that agreed to approve the act were required to draft and adopt a **tribal constitution** to be approved by the US Secretary of Interior (Section 16, Indian Reorganization Act, Public Law 73-383) and became federally recognized by the US government. Tribes that voted not to approve IRA were not vested the rights and powers given to those tribes that approved the act and adopted tribal constitutions: (1) to employ legal counsel; (2) to prevent the sale, disposition, lease, or encumbrance of tribal lands, interests in lands, or other tribal assets without the consent of the tribes; and (3) to negotiate with federal, state, and local governments. In addition to the IRA and other avenues of federal recognition, tribes continue to lose or gain federal recognition. As of 2016, 567 Native American tribes are legally recognized by the BIA (81 FR 26826–26832), with 344 located in the lower 48 states.

Federal Trust Responsibilities to the Tribes

The retention of certain rights by tribes was promised by the federal government, and further, the obligation was set on the government to protect tribes and tribal peoples from threats known at that time such as settler encroachment upon tribal land, exploitation of natural resources, aggression from outside groups, and intrusion by the federal government on their traditional ways of life (Wood 2003, Wood and Welcker 2008). The United States guaranteed tribes that not only would they be secure on their newly reserved lands, but also the federal government would protect Native ways of life and autonomy (Wood and Welker 2008). These promises became known as the **Federal Indian Trust Responsibility**. As early as 1831, the Federal Indian Trust Responsibility (also known as the Federal Indian Trust Doctrine or Obligation) was being discussed and recognized by Chief Justice John Marshall in the case of the ***Cherokee Nation v. Georgia*** and was reiterated in ***Worcester v. Georgia* (1832)**, where it was recognized that tribes held inherent sovereignty preexisting that of the federal government or any state (Wood and Welker 2008). Currently, the BIA defines the Federal Indian Trust Responsibility as a legal obligation under which the United States has charged itself with moral obligations of the highest responsibility and trust toward Indian tribes and is a legally enforceable fiduciary responsibility to protect tribal treaty rights, lands, assets, and resources. This trust doctrine has been at the center of numerous Supreme Court cases over time, making it one of the most important principles in federal Indian law (Bureau of Indian Affairs 2015).

Due in part to this trust responsibility that is reaffirmed by various federal statutes, orders, regulations, and policies, the federal government is required to consult on a government-to-government basis with tribes during the course of actions, decisions, and procedures that may affect tribes and tribal resources. Such statutes and orders include the American Indian Religious Freedom Act, Archeological Resources Protection Act, National Historic Preservation Act, National Environmental Policy Act, Executive Order 13175, Secretarial Order 3206, and many others.

Modern Tribal Governmental Structure and Natural Resource Management

Tribal constitutions developed after the IRA laid the foundation for contemporary tribal governments. The modern tribal government structure typically consists of a principal governing seat, often called a tribal chair, tribal chief, executive officer, governor or other similar title, a deputy or vice chair (or other term), and a secretary and treasurer. Most tribes also elect a 4- to 8-member governing council, often termed an Executive Council, Tribal Council, Business Council/Committee, Tribal Legislature, or other related term. Tribes often refer to the entire citizenry or membership of the tribe as the General Council, who elect officials and vote on tribal laws, referendums, and tribal constitutional amendments.

As sovereign nations, tribal governments have jurisdiction over land and water within their boundaries, where they are able to set and enforce laws and ordinances, establish a court system, and use, develop, and manage natural resources. As government entities with inherent authorities that predate those of the United States, tribes generally have civil authority over members within their land base and, in some circumstances, nontribal members (Smith 2013). Similar to other government entities, tribal governments have the right and ability to form departments within their government. Today, most federally recognized tribes have environmental or natural resources departments operating under the tribal government (Wilkinson 1997). Of the federally recognized tribes in the contiguous 48 states, information found on tribal government websites (as of April 2016) indicated at least 279 had an established natural resources and/or environmental department. This is important as federally recognized Indian tribes within the lower 48 United States now have jurisdiction over a reservation land base of more than 21 million ha (Native American Fish and Wildlife Society 2007), 3 times more than the US National Wildlife Refuge System (Schmidt and Peterson 2009).

Tribal Natural Resources Departments.—Tribal environmental and natural resources departments are charged with similar functions as state and federal natural resources departments: monitoring environmental health (water, air, etc.) and wildlife populations, setting seasons and harvest limits where applicable, and improving wildlife habitat. Many tribes manage forests, rangelands, fisheries, and aquaculture facilities to generate revenue, produce food, conserve wildlife habitat, and conduct wildfire management. Similar to state resource management agencies, tribal natural resource agencies employ wildlife biologists with a variety of backgrounds. Wildlife biologists employed by tribes are not typically required to be of Native American descent, but an understanding of fundamental differences between tribal and nontribal wildlife management is generally required. Laws governing tribal trust lands are often different from state laws, and the applicability of many federal laws regarding tribal lands may be subject to varying treaties, executive and secretarial orders, and court cases (see Significant Case Law Regarding Tribal Management of Natural Resources). Furthermore, culture and spirituality are often interwoven into tribal wildlife management, and biologists must understand and be sensitive to such customs. For example, a tribal wildlife management program may put a special emphasis on the conservation and restoration of culturally important clan animals (Box 42.2), and harvest systems may center on subsistence and cultural customs rather than on recreational hunting pursuits (McCorquodale 1997). In this chapter, subsistence describes the taking of fish, wildlife, and other natural resources for the sustenance of individuals, their families, and their communities.

Tribal natural resource management programs focus primarily on the sovereign management of tribal lands and the wildlife resources within; however, in some cases, tribes have developed partnerships with state and federal agencies to comanage resources outside of trust lands (see **Tribal Off-Reservation Resource Management below**). United States **Secretarial Order 3206** (1997) defines **tribal trust resources** as those natural resources, either on or off Indian lands, retained by or reserved by or for Indian tribes through treaties, statutes, judicial decisions, and executive orders, which are protected by a fiduciary obligation on the part of the United States. Management of on-reservation resources is often fairly straightforward; wildlife surveys are conducted, harvest regimes and habitat management programs are initiated and

Box 42.2 Clans and clan animals and their significance to Native American tribes of the United States

Native American clans are social and/or familial units within a tribe that precede more modern forms of community organization and government and are still highly important in indigenous cultures today. Family lineage, including clan and tribe, often follow maternal bloodlines, although this is not always the case. Some tribes assign clan by personality trait, childhood interest, or role or occupation within the tribe. Clans in indigenous societies are often likely to be exogamous, meaning that members of the same clan cannot marry one another, but again, this varies by tribe.

Clans are often represented by animals of the tribe's region, sometimes called "totem animals," and can be birds, mammals, reptiles, or even fish. Clan animals are often present in creation stories, tribal legends, and stories designed to teach lessons. Teaching stories for children emphasized the virtues of the animals, and children were admonished to be wise, gentle, brave, or cheerful in the same manner as certain animals (Caduto and Bruchac 1997). Each species is generally associated with a set of anthropomorphic traits; for example, the coyote is often described by many native cultures as being a trickster, intelligent and stealthy, but occasionally full of mischief. Clan animals also are a way to teach traditional ecological knowledge and pass oral history. Oftentimes members of the clans are thought to share the spirit of their clan animal, and prominent clan animals are frequently part of the official governmental seal of the tribe.

adjusted where applicable, and species conservation and management plans are developed. On some tribal lands, particularly those with large land bases, native species reintroductions are a focus. For examples, in 1995, the Nez Perce Tribe successfully reintroduced gray wolves into northern Idaho, and in 2000, the Cheyenne River Sioux Tribe partnered with the US Fish and Wildlife Service (USFWS) to reintroduce black-footed ferrets to South Dakota (USFWS 2000). Fifty-eight tribes have partnered with the Inter-Tribal Bison Council (ITBC) to reintroduce 15,000 wild bison to tribal lands scattered across 19 states (Chadwick 2006, ITBC 2011). Defenders of Wildlife (2016) partnered with the Blackfeet Indian Nation to reintroduce 123 swift foxes to northern Montana from 1998 to 2002 and began reintroductions with the Assiniboine and Sioux tribes of the Fort Peck Indian Reservation in eastern Montana in 2006.

Tribal Off-Reservation Resource Management.—Tribes are sometimes involved in resource management and regulation beyond the boundaries of their reservations. In some instances, federal or state resource management agencies (e.g., USFWS, US Forest Service [USFS], or state departments of natural resources) will invite tribes in proximity to the land base being managed to participate or provide input to management plans or regulations (see following section on Memorandums of Understanding or agreements). In other instances, tribes may have **comanagement** responsibilities for wildlife off-reservation due to **rights retained in cession treaties**. In these treaties, the tribes agreed to cede or sell land to the United States, but explicitly retained the rights to hunt, fish, and gather to make their traditional lifeway. Courts have ruled (see *LCO v. Wisconsin* in following section) that **rights retained by tribes** continue to exist and tribal rules governing the harvest of species preempt state conservation laws as long as they meet a conservation standard and protect public health and safety. Tribes must maintain a system that provides for laws to protect natural resources, technical experts, conservation enforcement personnel, and courts to adjudicate any violations.

Some tribes with retained off-reservation harvesting rights have banded together to form intertribal resource management agencies designed to provide technical assistance to their member-tribes (see Intertribal Resource Management Agencies section below). Resource management in these off-reservation areas is complex, often with several entities (e.g., tribes, state and federal government) involved. But this complex resource management model is necessary if tribal and nontribal hunters are harvesting from the same population of animals. Coordination among all of these entities is required.

Comanagement and Other Partnerships with Tribes.—Partnerships among tribes, federal and state agencies, universities, and nongovernmental organizations (NGOs) are common. Federal agencies typically partner with tribes to fulfill fiduciary responsibilities toward tribes through grant-funding initiatives (e.g., USFWS's Tribal Wildlife Grant Program), capacity building (training) initiatives, and requests from tribes for consultation. States and tribes occasionally enter into comanagement agreements for cross-jurisdictional resources such as wildlife. Universities typically partner with tribes to conduct research or science-based management programs.

While decisions to enter into cooperative management programs often are made at the tribal executive level, initial communication regarding such programs often originates at the departmental or biologist level within the tribe. Tribes often reach out to federal-tribal liaisons employed by agencies such as the USFWS, BIA, or USFS to initiate partnerships or consultations. Nontribal agencies may directly reach out to tribal biologists or by contacting the tribal chairperson. Federal tribal liaisons also may provide outside agencies with contact information for tribal biologists if or when requested.

Partnerships between tribal governments and federal or state governments often include official Memorandums of Understanding (MOUs) or Memorandums of Agreement (MOAs) to specify conditions and terms of the cooperative management program. The USFS has entered into MOUs with tribes across the country. The purpose of these MOUs is specific to the tribes involved and the issues addressed. For example, in 1999, the USFS entered into an MOU with the Ojibwe tribes of the northern midwestern US within their territories ceded in the treaties of 1836, 1837, and 1842. This MOU was negotiated to avoid litigation around the harvest of wild plants, including trees, on the National Forests within these ceded territories. This MOU and its required annual meeting have become a model for USFS/tribal consultation and interaction. The MOU not only specifies the rules and regulations surrounding the harvest of wild plants and trees, but it also specifies how tribes and the USFS will consult with each other, how each entity will conduct cooperative projects, how the USFS will include tribes in the establishment of USFS resource management plans, and so on. This MOU has resulted in more than a decade of joint research on American martens (Dumyahn et al. 2007, McCann et al. 2010).

Significant Case Law Regarding Tribal Management of Natural Resources

Cooperation and comanagement between tribes and states are not always straightforward because, even though both are considered sovereign government entities by the federal government, they may have conflicting philosophies and management of natural resources. While comanagement of fish and wildlife resources between states and tribes does occur without conflict, some circumstances have required court intervention to determine state and tribal sovereign rights. Some prominent cases are discussed here.

Menominee Tribe v. United States 1968.—In 1854, the Menominee Indian Tribe entered into the Treaty of the Wolf River with the US government, retaining more than 93,000 ha of land as tribal reservation in present-day Menominee County, Wisconsin. On this land, the Menominee continued customary hunting and fishing, as they had done in this area for mil-

lennia. Under the management of the BIA, the tribe operated a successful timber operation, allowing the tribe to become one of the most self-sufficient tribes in the nation by the mid-1900s (Peroff 2006). A government survey in the late 1940s identified the Menominee as no longer needing BIA assistance, making them a top candidate for government termination (Peroff 2006). The goal of terminating the Menominee as a federally recognized tribe was reportedly to assimilate members into mainstream American culture as "emancipated" taxpaying citizens (Tigerman 2006). In 1954, the United States Congress terminated the federally recognized status of the tribe with the Menominee Indian Termination Act. With this act, the Menominee were given a period of time to develop a plan for termination and address issues of tribal resource allocation, spending its reserve funds in the process and leaving the once self-sufficient tribe $300,000 in debt (Lurie 2002). Termination for the tribe ultimately occurred in 1961. Upon termination, Menominee tribal lands were converted to a new county, Menominee County, subject to state laws and regulation. In 1962, the state of Wisconsin determined tribal hunting and fishing rights were abrogated by the tribe's termination, and tribal members would now be subject to state regulations, losing one of their last means for self-sufficiency (Wunder 1996). In 1968, the Menominee sued in the US Court of Claims to recover compensation for the loss of their hunting and fishing rights. The Court of Claims held the Termination Act ended federal supervision over the property and members of the tribe, but did not extinguish the tribe's hunting and fishing rights retained under the Treaty of Wolf River (Cramer 2005). Importantly, this case exemplified that because Indian treaties are federal law, the **Supremacy Clause of the US Constitution** prevents states from enacting wildlife laws that override **retained treaty rights** (Coggins and Modrcin 1979). This decision was used in subsequent rulings, including *Antoine v. Washington* (420 US 194, 1975), which reaffirmed treaties and laws must be construed in favor of Native Americans and clarified that state game laws cannot preclude treaty rights to hunt and fish (see Cohen 2005 §2.02[1] for detail). In 1973, Congress repealed the Menominee's termination and restored federal recognition (Jimenez and Song 1998).

United States v. Washington 1974 and 1979 (Boldt Decision).—Tribes of the Pacific Northwest and the Columbia River region historically depended on plentiful salmon populations and established complex and time-tested methods for harvest and seasonal replenishment (Wood 2004). Pacific Northwest tribal cultures centered on a plentiful native fishery with ceremonies closely following seasonal salmon migrations and traditions, such as the First Salmon Feast, which is still celebrated in current tribal cultural activities (Columbia River Inter-Tribal Fish Commission 2016*a*). During the 1850s, when tribes of this region were signing treaties, salmon in the Columbia River were estimated to number between 11 and 16 million fish (Lackey et al. 2006). After these tribes signed treaties and the states of Washington and Oregon took control of the salmon harvest, a huge commercial nontribal fishery grew, spurred by new technology, new transportation, and unprecedented demand (Wood 2004), which resulted in declines of salmon populations. Salmon population declines were exacerbated by unsustainable logging, hydroelectric dam construction, and sedimentation from land conversion along critical migration rivers (Burger 2000). Salmon runs began to collapse, and the states began to limit tribal and nontribal fishing (Wood 2004), closing treaty-guaranteed tribal fishing locations. Within approximately 100 years of state management, the salmon fishery was depleted to approximately 5% of its pretreaty levels (Allendorf and Waples 1996, Lackey et al. 2006) and the tribal harvest was 0.5% of its historic take (abridged from the Yakama story of Creation told by Jerry Meninick, Yakama Tribal Chair, 1992, as quoted by Wood 2004).

By 1968, 14 Yakama tribal members had filed suit against Oregon's regulation of off-reservation fishing that prohibited tribal members' access to traditional fishing sites (Columbia River Inter-Tribal Fish Commission 2016*b*). Their suit was later joined by the Yakama, Warm Springs, Umatilla, and Nez Perce tribes, as well as the US government (combined into a single case: *United States v. Oregon* [302 F. Supp. 899]). The judge in *United States v. Oregon* ruled that tribes were entitled to a "fair share" of fish runs and the state was limited in its power to regulate tribal treaty fishing rights. In *United States v. Washington* (384 F. Supp. 312 [aka the Boldt Decision]), Judge Boldt ruled a fair share was 50% of the harvestable fish destined to pass the tribes' usual and accustomed fishing places and reaffirmed tribal management powers of the salmon fishery. In following years, several additional dams were built along the Columbia and Snake rivers, bringing the total number of dams to 18 by 1975 and further causing declines in fish runs (Columbia River Inter-Tribal Fish Commission 2016*b*). The US Supreme Court upheld the Boldt Decision in 1979, and in 1980, Phase II of *United States v. Washington* (506 F. Supp. 187), Judge Orrick held that tribes have a right to 50% of the harvestable fish and to hold the state and the federal government accountable for maintaining a sustainable and ecologically sound fishery, stating "the most fundamental prerequisite to exercising the right to take fish is the existence of fish to be taken" (Morisset 2001). Judge Orrick also named the tribes as comanagers of the fishery. **The Boldt Decision** was a pivotal case in tribal natural resource management because it reaffirmed the tribes' treaty-affirmed rights to harvest and act as comanagers of natural resources within jurisdictions shared with state and federal agencies and affirmed the responsibility of state and federal governments to maintain sustainable resources and healthy habitats for their trustees.

Mescalero Apache Tribe v. New Mexico 1980.—Courts have recognized pretreaty native sovereign control over wildlife within their unceded territories (*Mescalero Apache Tribe v. New Mexico*, 630 F.2d 724, 728–29, 10 Cir. [1980]) and have observed tribal sovereignty assumes paramount importance in matters of wildlife, emphasizing tribes' "inherent authority" over

wildlife. In this case, the court dismissed the state's assertion that sovereign trusteeship was confined to the state government alone and held the tribe enjoyed the same sovereign status (Wood 2000). The court asserted the Supreme Court language that declared common-law duty to protect wildlife does not require only 1 sovereign, the state, to participate in wildlife management. Instead, the court described the trusteeship duty imposed on all sovereigns. The tribe and the state enjoy the same status as sovereign comanagers.

Lac Courte Oreilles (LCO) v. Wisconsin (700F.2d 341 [Voigt Decision]).—In 1983, the 7th Circuit Court of Appeals ruled hunting, fishing, and gathering rights the Ojibwe tribes reserved in the treaties of 1837 and 1842 continued to be valid, and the signatory tribes to these treaties could harvest natural resources independent of state conservation laws. This ruling on the existence of the harvest rights was followed by a series of decisions by the District Court on the nature and extent of these harvesting rights. This specified the tribes had a right of up to 50% of the harvestable surplus of all fish and wildlife species. The harvest regulations promulgated by the tribes were found to be sufficient to protect the conservation of species and to protect public safety and thus were preemptive of state law.

The court rulings and associated stipulations enacted a system whereby harvests of wildlife species could be divided between the Ojibwe tribes and Wisconsin. These rulings included the requirement that Ojibwe tribes be able to participate with the state agency on the management of harvested wildlife. The courts found the state has a fiduciary obligation to manage natural resources within the ceded territory for the benefit of current and future users. The tribes' regulation of their members does not relieve Wisconsin of its fiduciary obligation or prevent the state's execution of it, although it significantly narrows the state's management options and imposes additional burdens on them.

LCO v. Wisconsin was the first time tribes secured the legal right to 50% of wildlife harvests. It was the impetus for the Ojibwe tribes to form the Great Lakes Indian Fish and Wildlife Commission (see following section). This decision required Wisconsin consult with affected tribes on any action that may interfere with the exercise of these treaty-reserved harvest rights and constrained the state's management options by the rights of the Ojibwe.

Mille Lacs v. Minnesota (526 US 172 [1999]).—In 1994, the Mille Lacs band of Ojibwe sued Minnesota over rights reserved in the treaty of 1837 (same treaty as in *LCO v. Wisconsin*). The Ojibwe tribes of Wisconsin and the Fond du Lac Band of Minnesota joined this case heard by the US Supreme Court. The Supreme Court ruled in favor of the Ojibwe tribes and found the rights reserved in the 1837 treaty continued to exist. The state and the tribes agreed each sovereign could act as they deem appropriate and disagreements would be settled by a conflict resolution mechanism agreed to by both sides.

Intertribal Natural Resource Management Agencies

In many regions of the US, tribes retained the right to hunt, fish, and gather off reservation on lands often referred to as **ceded territories** because they were ceded to the United States in various treaties. In some situations, several individual tribes have come together to form intertribal agencies charged with carrying out the tribes' wildlife management prerogatives within ceded territories (Table 42.1). These in-

Table 42.1. Federally recognized US tribes that formed intertribal agencies charged with their representation for decisions made regarding their right to hunt and fish within lands ceded through treaties with the US government.

Intertribal agency	Tribes	Treaties	Focus areas	Geographic region
1854 Authority	Lake Superior Chippewa (Bois Forte band and Grand Portage band)	Treaty of 1854	Wildlife, fisheries, wild plants	Minnesota
Great Lakes Indian Fish and Wildlife Commission	11 Ojibwe (Chippewa) bands	Treaties of 1836, 1837, 1842, and 1854	Wildlife, fisheries, wild plants	Minnesota, Wisconsin, Michigan
Chippewa-Ottawa Resource Authority	5 Ojibwe, Ottawa, and Odawa tribes	1836 Treaty	Fisheries	Michigan
Columbia River Inter-Tribal Fish Commission	Yakama, Warm Springs, Umatilla, and Nez Perce tribes	1855 Treaties	Fisheries	Oregon, Idaho, Washington
Northwest Indian Fisheries Commission	20 tribes of western Washington	Treaties of Medicine Bay (1855), Neah Bay, Olympia, Point Elliott, Point No Point (1859)	Fisheries	Washington
Intergovernmental Policy Council of the Pacific Northwest	Hoh, Makah, and Quileute tribes, Quinault Indian Nation. Also includes the State of Washington and NOAA's Office of National Marine Sanctuaries	Treaties of Olympia and Neah Bay (1855)	Fisheries and marine resources	Areas of coastal Washington

tertribal agencies provide technical advice and services to member tribes, especially on topics of harvest management. The intertribal agency may help coordinate harvest among the tribes, report harvest results, and interact with state counterparts to evaluate combined state and tribal harvest effects on wildlife populations and set harvest limits for the coming year. Typically, intertribal agencies are not regulatory in nature, as this ability resides with the sovereign tribes. Intertribal agencies conduct research and provide natural resource management expertise, conservation enforcement, legal and policy analysis, and public information services in support of the exercise of member tribes' treaty rights.

Applicability of Federal Wildlife Law on Tribal Lands

The relationship between Indian treaty rights and federal wildlife laws has not been clearly defined (Coggins and Modrcin 1979). As a result, controversy exists regarding the extent to which federal wildlife laws apply to tribes. Federal wildlife laws that do not explicitly address Native American rights may not specifically apply to Native American tribes or bands, but individual tribal members can and have been charged for violating such laws (see the discussion of Endangered Species Act and Migratory Bird Act below).

Endangered Species Act and Secretarial Order 3206.—The Endangered Species Act of 1973 (ESA; 16 USC 1531–1544) was passed as broad-sweeping federal law that authorized the secretaries of the Departments of Interior and Commerce to develop and implement regulations to conserve threatened species and the ecosystems upon which they depend. The ESA has implications for management of wildlife and its habitat on federal, state, and privately owned lands, yet does not define its applicability to tribal lands (Sanders 2007). Nonetheless, the ESA has been identified by scholars and tribal entities as a significant bureaucratic and economic burden to tribes, limiting tribal sovereignty yet failing to protect wildlife resources both within and outside of tribal jurisdictions (Wilkinson 1997, Wood and Welcker 2008, Schmidt and Peterson 2009). ESA regulations have in some cases prevented tribal development from occurring and have been used to prosecute Native Americans for harvest of species at risk on tribal lands (see *United States v. Billie* 1987; Wood 1995, Zellmer 1998, Albert 2002, Holt 2010).

In 1996, an ad hoc group of tribal resource managers and tribal lawyers called for a meeting with federal officials to discuss applicability of the ESA on tribal lands and strategies to ease the disproportionate burden on tribes (Wilkinson 1997). These meetings evolved into a series of workshops between tribal and federal officials that resulted in issuance of **Secretarial Order 3206**, entitled American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act (SO 3206), signed by Secretary of Interior Bruce Babbitt and Secretary of Commerce William Daley in 1997. SO 3206 established a general policy that all agencies under the Departments of Interior and Commerce should carry out their responsibilities to ensure Indian tribes do not bear a disproportionate burden for the conservation of listed species and to avoid or minimize the potential for conflict and confrontation (Wilkinson 1997, Sanders 2007). The policies within SO 3206 dictate that before ESA restrictions can supersede tribal jurisdiction, a negotiation process must first take place that considers (1) the restriction is achievable by the tribe, (2) the conservation goal can only be achieved if the tribe participates, (3) the restriction is the least prohibitive of all possible actions that could be taken, (4) the restriction does not discriminate against Native Americans and their cultural activities, and (5) voluntary tribal measures are inadequate to achieve the conservation goal.

Federal departments under SO 3206 must defer to tribal species conservation plans when in place and must work with tribes to promote healthy ecosystems on tribal lands through funding, training, and other initiatives. It is notable that SO 3206 refers only to critical habitat components and incidental take of species, while direct take on tribal lands continues to be an enforceable action, even when performed for subsistence or ceremonial purposes. For this reason, while SO 3206 was considered a partial victory for tribes, the ESA and its applicability to tribal lands remain controversial.

Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and the Morton Policy.—The USFWS has statutory authority and responsibility for enforcing the Migratory Bird Treaty Act of 1918 (MBTA; 16 USC §§ 703–712). The MBTA makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter any migratory bird, or the parts, nests, or eggs of such a bird, except under the terms of a valid permit issued pursuant to federal regulations. The Bald and Golden Eagle Protection Act (BGEPA16 USC § 668–668c) of 1940 and 1962 extends the same basic prohibitions of the MBTA to bald eagles and golden eagles. These laws prohibit Native Americans from obtaining, possessing, or using the feathers of eagles and other migratory birds (Boradiansky 1990) for ceremonial purposes (Box 42.3, Fig. 42.1), despite the fact these species' declines were largely due to overharvesting by non-Natives and the effects of chemicals such as DDT (Grier 1982). Under the prosecution of these laws, Native American defendants have argued treaty rights guaranteed their ability to hunt and fish, whether for subsistence or ceremonial purposes. As such, courts have been forced to decide whether the right to hunt retained in treaties can be revoked by these statutes (Boradiansky 1990); the MBTA was found not to have abrogated tribal treaty rights (*United States v. Bresette*, 761 F. Supp. 658 [1991]) and BGEPA was found to apply to tribes (*United States v. Dion*, 476 US 734 [1986]). Much conflict has ensued in the courts, and tribal members were forced to either abandon highly important cultural practices or face threat of federal prosecution. In 1975, Department of Interior Secretary C. B. Morton issued an internal policy (widely known as the Morton Policy) declaring that his department would not enforce the laws that

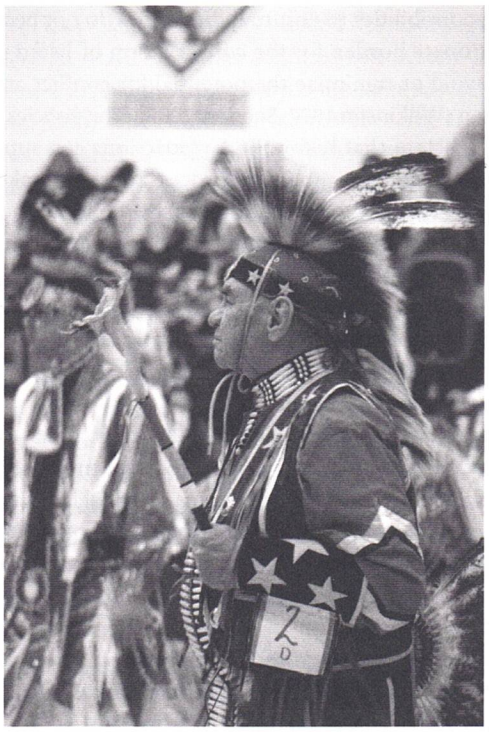

Fig. 42.1. White Earth Ojibwe elder George Earth in traditional pow-wow regalia using eagle parts and feathers. *Photo © Heather Stricker (2011).*

Box 42.3 The significance of eagles to Native American tribes of the United States

While specific beliefs and customs vary by tribe, bald and golden eagles are among the most significant animal species in North American indigenous spirituality, customs, and culture. By reason of its majestic, solitary, and mysterious nature, and its ability fly higher than most any other bird, the eagle is believed by many native cultures to be an element of the sky and a messenger from Father Sky, the Creator, or spirit world (White 1913). As they roam the sky, they are believed to have a special connection to God. Both bald and golden eagles and their feathers are considered sacred and are honored with great care and respect. They represent protection, wisdom, courage, strength, and spirituality (Lake-Thom 1997, Johnston 2003). Eagle feathers and parts are still widely used today in Native American arts, regalia, and ceremonies.

protect migratory birds against Native Americans who possessed them for religious and cultural purposes (United States Attorney General 2012). **The Morton Policy** permitted members of federally recognized tribes to engage in specified activities, including the possession and use of federally protected birds, as well as their parts or feathers, without fear of federal prosecution, harassment, or other interference.

Other departments, such as the US Justice Department, were not subject to the Morton Policy. In 1994, the Clinton administration recognized this ongoing infringement on Native American religious expression and abrogation of treaty rights and ordered all federal agencies to accommodate Native American religious and cultural practices (Friends Committee on National Legislation 2012). Finally, in 2012, the US Justice Department formalized and memorialized the longstanding policy, setting forth clarifications and defining the legal use and possession of parts and feathers of eagles and other migratory birds by Native Americans. According to the official memo released by the US Attorney General in 2012, a member of a federally recognized tribe engaged in the following types of conduct will not be subject to prosecution: (1) possessing, using, wearing, or carrying federally protected birds, bird feathers, or other bird parts; (2) traveling domestically with federally protected birds, bird feathers, or other bird parts or, if tribal members obtain and comply with necessary permits, traveling internationally with such items; (3) acquiring from the wild, without compensation of any kind, naturally molted or fallen feathers of federally protected birds, without molesting or disturbing such birds or their nests; (4) giving or loaning federally protected birds or the feathers or other parts of such birds to other members of federally recognized tribes, or exchanging federally protected birds or the feathers or other parts of such birds with other members of federally recognized tribes, without compensation of any kind; and (5) providing the feathers or other parts of federally protected birds to craftspersons who are members of federally recognized tribes to be fashioned into objects for eventual use in tribal religious or cultural activities. Although no compensation may be provided and no charge made for such feathers or other bird parts, tribal craftspersons may be compensated for their labor in crafting such objects. The Morton Policy applies only to salvaged or found feathers and continues to prohibit the killing of eagles for any purpose. Only in very rare cases are tribal members allowed (via permit) to engage in direct take of eagles (e.g., Northern Arapaho Tribe received a permit to kill 2 bald eagles in 2012).

As the Morton Policy applies only to possession of naturally molted feathers, and federal law continues to prohibit the removal of an eagle from the wild (live or dead, including roadside mortalities, etc.), tribal members rely largely on obtaining eagle feathers from the **National Eagle Repository**, a facility operated and managed by the USFWS Office of Law Enforcement located at the Rocky Mountain Arsenal National

Wildlife Refuge northeast of Denver, Colorado. Under federal regulation, all found salvaged eagles, eagle parts, and feathers must be shipped to the repository for evaluation and cataloging. After cataloging, the eagle and/or parts are processed for distribution to individual tribal members who have submitted permit applications. Those who submit eagle feathers or parts will not likely receive back the same feathers they sent. This remains a contentious policy, as many Native American cultures believe finding an eagle feather is a direct gift from the Creator, and it is dishonorable to send it away to a facility and receive a different feather in its place. Several tribes now maintain their own federally permitted eagle aviaries where they house sick or injured eagles that cannot be returned to the wild. In doing so, these tribes have direct access to naturally molted feathers to be distributed to tribal members for customary use per provisions of the Morton Policy.

Alaska Natives

In the late 1700s, Czarina Catherine the Great granted civil rights to indigenous Alaskans under Russian rule if they were baptized into the Orthodox faith. The 1867 Treaty of Cession transferred Alaska to the United States and extinguished those rights, noting that all inhabitants of Alaska with the exception of uncivilized native tribes shall be admitted to the enjoyment of all the rights, advantages, and immunities of citizens of the United States. The status of indigenous Alaskans was further clarified in the treaty with the statement that uncivilized tribes will be subject to such laws and regulations as the United States may, from time to time, adopt in regard to aboriginal tribes of that country. As mining interests expanded in the territory, the Mining Act of 1874 allowed American citizens and immigrants of good standing (interpreted at the time as whites only) to stake claims. Alaska Natives were excluded from this right.

The First Alaska Organic Act of 1884 created the District of Alaska primarily for structured development of the area's bountiful natural resources. The act was the first recognition of indigenous claims to these resources as it allowed indigenous people and others who currently used or occupied lands to continue their use undisturbed. It also provided that the terms under which they could acquire title to those lands was reserved for future legislation by Congress. It also created a commission consisting of government officials that would examine the condition of the indigenous people residing in the Territory and determine what lands, if any, should be reserved for their use, what provision shall be made for their education, what rights by occupation of settlers should be recognized, and all other facts that may be necessary to enable Congress to determine what limitations or conditions should be imposed when the land laws of the United States shall be extended to the area.

Unlike other Native American tribes in lands claimed by the United States, no treaties were ever made with Alaska Natives and few reservations were set aside for them. President Franklin Roosevelt extended the provisions of the Indian Reorganization Act of 1934 to protect the rights of Alaska Natives by granting them the privilege of self-governance on reservation lands. The Secretary of the Interior was convinced that reservations would define Alaskan tribes by identifying particular groups with the land they occupied. He also believed that this would define geographic limits of jurisdiction so that Alaska Native communities could exercise power of local government and that they would enable the United States to segregate Native land and resources, thereby preserving the economic rights of the Natives. The ensuing debates within Alaska and in Washington, D.C., as well as within Native communities, raised issues of indigenous land rights. In the end, only a small number of reservations were established and the aborted reservation policy failed to resolve the multifaceted cultural and legal disagreements over who owned Alaska's lands and natural resources.

Concurrent with struggles to recognize rights of Alaska Natives, wildlife management during the time that Alaska was governed by the United States (i.e., prestatehood) evolved from general neglect during the early years following its purchase from Russia to active participation by the mid-20th century. The first regulations for terrestrial animals were established in 1902, with seasons and bag limits for select species, but no provision for enforcement. In 1908, these provisions were expanded to include license fees and funding for a limited number of game wardens. In 1925, a more comprehensive law was passed by Congress establishing the Alaska Game Commission, instituting a more robust system of regulatory administration and enforcement, encouraging game management and translocations, and exempting Alaska Natives from license requirements if they did not live a "civilized" lifestyle.

State Rights, Native Rights, and Federal Oversight

Besides declaring Alaska to be a state of the United States, the Alaska Statehood Act (1958) also attempted to address chronic disagreements over land issues. In the act, however, the US Congress not only actively avoided resolution of the issue, promising to resolve it sometime in the future, but exacerbated the controversy by allowing the new state to select 418,849 km^2 of public lands. These selections inevitably included lands that Natives relied upon as traditional hunting and fishing grounds, as well as sacred areas.

In January 1959, Alaska gained statehood and assumed sole management authority for its resources, including wildlife. Gaining local control of resources, especially fisheries, from the federal government had been a primary territorial motivation for the pursuit of statehood. As a reflection of this, the Alaska Constitution is one of the few in the nation that specifically addresses how state resources will be managed. Article VIII, Section 2 directs that the legislature shall provide for the utilization, development, and conservation of all natural resources belonging to the state, including land and waters, for the maximum benefit of its people, and Section 3

specifies that natural resources must be managed by the state as a public trust for the benefit of the people as a whole, rather than for the benefit of the government, corporations, or private persons. These provisions, as well as others in the Constitution, proclaim that wildlife and fish are shared resources and they prohibit discrimination among user groups, including discrimination by race or cultural ties.

In January 1960, the newly established state legislature elevated the Game Commission's task to take the lead in research, management, and enforcement of regulations for the fish and wildlife resources in the state, thus exchanging roles with their federal colleagues. Concurrently, the role of the former Alaska Game Commission was assumed by the Alaska Board of Fish and Game, as they were tasked with promulgating regulations based on scientific biological and social data and on the desires of the people. This arrangement persists today, with the only modifications being a separation of the Board into the Board of Fish and the Board of Game (1975), and migration of primary responsibility for regulatory enforcement to the Alaska Department of Public Safety (Alaska State Troopers) in 1977.

Alaska Natives were influential in shaping the new state and were active participants in all facets of government and politics. Nevertheless, there was still an underlying frustration over unresolved land issues and aboriginal rights (Hensley 2009). In an effort to raise their political standing and counter what many considered threats to their way of life, Alaska Native leaders banded together to form the Alaska Federation of Natives in 1966.

Concurrent with these social upheavals, a vast quantity of high-quality oil was found in northern Alaska near Prudhoe Bay; however, profitability was only achievable via construction of an oil pipeline that bisected the entire state (1,300 km). Pressure to resolve Alaska Native land claims along the proposed pipeline corridor and throughout the state escalated in late 1969 when oil companies paid the state more than $900 million for the right to develop and market crude oil from these deposits.

The prospect of oil revenue proved to be a strong incentive for negotiation, and in 1971, the **Alaska Native Claims Settlement Act** (**ANCSA**) was passed by the United States Congress and signed into law. This act extinguished aboriginal hunting and fishing rights throughout Alaska in exchange for (1) creation of 13 regional for-profit Native corporations, (2) a cash settlement of $963 million, and (3) title to 180,000 km^2 of land distributed among ANCSA Alaska Native Regional and Village Corporations.

At face value, ANCSA would seem to have finally resolved long-standing disputes over rights to land, fish, and wildlife resources, but in actuality, it directed the state and federal governments to protect subsistence uses of wildlife and fish, thus setting the stage for continued conflict. Anticipating passage of additional federal legislation over subsistence use of fish and wildlife, the State of Alaska passed legislation in 1978 that identified subsistence as the priority use of fish and wildlife statewide; however, it did not define who was a subsistence user.

A companion piece of legislation, the **Alaska National Interest Lands Conservation Act** (**ANILCA**), outlined in Section 17(d)(2) of ANCSA, was completed in 1980 and signed into federal law. The primary purpose of ANILCA was to greatly expand the federal land conservation system by creation or enlargement of National Parks, Preserves, Monuments, and Wildlife Refuges in Alaska. In addition, **Title VIII of ANILCA specifically defined subsistence as** customary and traditional uses of fish and wildlife by rural Alaska residents. Congress considered adopting a Native requirement to define subsistence user, but abandoned that approach because it clearly conflicted with the state constitution (at that time, the state had still not defined subsistence user), and federal legislators recognized that many non-Native Alaskans lived subsistence lifestyles as well. The ANILCA contained several additional provisions regarding management of wildlife for subsistence purposes: (1) it defined subsistence users for individual populations of wildlife based on an individual's place of residence, (2) it identified subsistence as the priority use of fish and wildlife throughout Alaska, and (3) it mandated federal management of these resources on federal public lands if the state failed to protect subsistence as defined under federal law. These latter 2 components of ANILCA would have significant, lasting implications for wildlife management throughout Alaska.

Because the Alaska State Constitution is interpreted to provide equal access to wildlife resources for all residents, the state was deemed to be out of compliance with ANILCA, and since 1990, wildlife management in Alaska has been conducted under 2 independent and overlapping regulatory systems: 1 administered by the state and 1 administered by the federal government. Federal subsistence regulations are promulgated by the **Federal Subsistence Board** (**FSB**). This board is composed of 8 members: the regional director of each of the 5 Department of the Interior (DOI) agencies, plus 3 members of the public who are appointed by the Secretary of Interior and Secretary of Agriculture (2 of the public members represent rural Alaskan subsistence users, and 1 is the FSB chairman). Eleven federal Regional Advisory Councils, each composed of locally elected members of the public, advise the FSB on regulatory issues. The state **Board of Game** (**BOG**) promulgates wildlife regulations for all users and is composed of 7 members of the public appointed by the governor and subject to approval by the state legislature. Eighty-four state Fish and Game Advisory Committees, each composed of locally elected members of the public, advise the BOG on regulatory matters. The default is that Alaska Department of Fish and Game (ADF&G) manages all resident terrestrial wildlife for all users, including subsistence users, on all lands in Alaska, including federal public lands; however, when the harvestable surplus of a wildlife population is insufficient to meet the collective demand of all users and the fed-

eral government determines that state regulations do not provide adequate opportunity for federally recognized users to meet their subsistence needs, federal subsistence regulations supersede state regulations on federal public lands.

Federal regulations apply only to federally qualified subsistence users on federal public lands. Before federal hunting regulations can be imposed on subsistence users, however, all other consumptive uses of wildlife are either reduced or eliminated. Therefore, during times of wildlife shortage, federal subsistence regulations affect all residents of Alaska on federal public lands either through the restriction of hunting by residents of the state that are not federally recognized subsistence users or through the regulation of harvests by federally recognized subsistence users.

State and federal law regarding subsistence uses of wildlife is relevant to wildlife management on Native lands because the State of Alaska claims sovereign ownership of all resident wildlife. This includes animals that occupy federal public lands and private lands. Most of Alaska (~90%) is held under public trust, with about 25% managed by the State of Alaska and 65% by the federal government. The remaining 10% is privately owned, mostly by Native entities. The home range of most populations of large, mobile species found on tribal lands often includes state- and federally owned public lands. Additionally, many areas traditionally hunted by Native peoples for millennia are managed by the state or federal government. Dual state-federal management of wildlife in Alaska has significant ramifications that affect funding for management programs, the types of management activities that can be conducted on state vs. federal lands, regulatory complexity, and access to hunting and fishing opportunities for subsistence, sport, personal, commercial, and nonconsumptive users. Although the BOG and FSB have mutually provided a liaison to each other's meetings, and even though each board provides an extensive review process for proposed regulatory actions that is open to the public and all agencies, the 2 boards act independently to promulgate regulations for wildlife populations having home ranges that often span numerous jurisdictional boundaries.

Despite the complexities of management on public lands, terrestrial wildlife management on Native lands in Alaska is relatively straightforward. Wildlife populations that use or inhabit Native lands are managed by the state without exception, and state hunting regulations apply equally regardless of whether animals are on private or public lands. Native landowners' only management options include unequivocal control of access to their lands and the ability to impose hunting/trapping/fishing regulations on those lands that are more restrictive than state regulations. Alaska Native Regional Corporations and several Village Corporations and tribes have natural resource departments, and many employ wildlife biologists. These biologists are actively involved in habitat and access management on Alaska Native lands, and they also assist state and federal agencies and provide input for regulatory bodies such as the BOG and FSB.

Despite numerous attempts to resolve land and natural resource use conflicts, and even though Alaskan tribes have been federally recognized as sovereign entities for over a decade, Alaska Natives still have no legal authority to manage fish or wildlife on public lands where their ancestors traditionally subsisted for millennia, or on their own lands that are inhabited by publicly owned wildlife. Even so, through participation in state-supported fish and game Advisory Committees, federal Regional Advisory Councils, the FSB and the BOG, various comanagement groups, and administration of Native-administered wildlife management programs, Alaska Natives now greatly influence wildlife management on Native and public lands (see case study).

Case Study

A somewhat ironic twist to the saga of wildlife management on Native lands in Alaska has to do with the same species that attracted some of the first human inhabitants to these lands as well as the non-Native people who later brought tremendous change to indigenous cultures—marine mammals. Soon after the United States purchased Alaska from Russia, concerns about the fate of northern fur seals in the Bering Sea prompted the US Congress to pass An Act to Prevent the Extermination of Fur Bearing Animals in Alaska (1870). This led to the first international wildlife treaty in 1911, the North Pacific Fur Seal Convention, which effectively ended commercial pelagic seal hunting, except for aborigines using primitive weapons and using the seals for noncommercial uses such as food, shelter, and clothing.

The State of Alaska assumed management of walrus, seals, sea lions, and sea otters from the federal government along with other resident species in 1959; however, this authority was overturned in 1972 with passage of the Marine Mammals Protection Act by the US Congress. The most significant impact of the Marine Mammals Protection Act on indigenous Alaskans was Section 101(b), which allowed unlimited nonwasteful take of marine mammals by any Alaska Native who dwells on the coast of the North Pacific Ocean or the Arctic Ocean. For the purposes of the act, Alaska Native is defined as a US citizen who is one-fourth degree or more Alaska Indian, Eskimo, or Aleut blood, or a combination thereof.

The act was amended in 1994 to include Section 119 authorizing comanagement of marine-mammal populations by Alaska Natives and the US government. This promoted full and equal participation in subsistence management of marine mammal populations, directly incorporating traditional knowledge alongside scientific research in management decisions, and working with Native communities to self-regulate and monitor harvests. As a result, there are several comanagement agreements around the state that created groups such as the Alaska Beluga Whale Committee, Alaska Eskimo Walrus Commission, Ice Seal Committee, Alaska Eskimo Whaling Commission, and the Indigenous People's Council for Marine Mammals.

Following the successes of marine mammal comanagement models in Alaska and the establishment of comanagement groups for terrestrial wildlife in Canada (Osherenko 1988), a number of comanagement groups were formed to help guide management of terrestrial wildlife in Alaska, especially species in high demand, such as caribou, moose, and brown bears. Examples of terrestrial wildlife comanagement groups include the Forty-Mile Caribou Management Group, Western Arctic Caribou Herd Working Group, Seward Peninsula Muskoxen Cooperator's Group, Porcupine Caribou Herd International Management Group, Alaska Migratory Bird Co-Management Council, Koyukuk River Moose Hunters' Working Group, and Unit 23 User Conflict Working Group. Most terrestrial comanagement groups share the objectives of sharing information among users and agency staff, providing opportunities to resolve differences among user groups before arguing their individual positions to the Board of Game or Federal Subsistence Board, providing a comprehensive approach to wildlife management that extends beyond the boundaries of individual agencies and management units, and bridging differences between the state and federal regulatory systems.

In the regulatory arena, which is a primary focus of most or all terrestrial comanagement groups, these groups generally complement state-supported Fish and Game Advisory Committees and federal Regional Advisory Committees. The scope of some comanagement groups goes beyond hunting regulations, though, to include land-use policies that affect wildlife habitat through resource development, wildlife education, and reducing conflicts between wildlife and domestic animals (e.g., impacts of caribou on the Alaskan reindeer industry). Unlike the various marine mammal comanagement groups that are primarily composed of Native representatives who work with USFWS staff, terrestrial comanagement groups tend to include a broad spectrum of wildlife users, including Native and non-Native users, who work with ADF&G and multiple DOI agency staff. Although no terrestrial comanagement groups possess any legal authority to regulate wildlife or habitat, when a group can achieve consensus among its members, it tends to be influential in shaping hunting regulations and land-use policies by virtue of its focus and broad representation. For many Alaska Native tribes, comanagement has been a compromise position to maximize their influence in managing the animals and lands they have survived on for millennia (Committee on Energy and Natural Resources report, 113th Congress, 2013; Kofinas 2005; Spaeder 2005). Indeed, the desire to influence wildlife management explains why other user groups, such as recreational hunters, nonconsumptive users, resource extraction industries, and commercial operators (e.g., guides and transporters), also participate in comanagement processes. The rise of comanagement in Alaska has been partly driven by public desire for increased involvement in wildlife management processes that goes beyond the formulation of hunting regulations and partly by a growing recognition among agencies of the value of public participation in various management arenas.

A unique example of Native American participation in wildlife management occurs in the northernmost region of Alaska. In the 1970s, revenue from oil development on Alaska's North Slope enabled creation of a borough—the North Slope Borough (NSB)—which is an extension of state government. The NSB, in turn, created its own Department of Wildlife Management. Unlike the state's ADF&G, the NSB Department of Wildlife Management has no regulatory authority or any responsibility to monitor wildlife populations or support the Board of Game. The NSB Department of Wildlife Management facilitates sustainable harvests and monitors populations of fish and wildlife species through research, leadership, and advocacy from local to international levels. The NSB department diversifies funding opportunities through the submission of grant proposals focusing on subsistence species and issues of the highest interest to North Slope residents (www.north-slope.org/departments/wildlife-management).

Despite no vestige of legal regulatory authority, the NSB Department of Wildlife Management has unequivocally shaped wildlife management in northern Alaska. For example, by developing techniques to monitor population levels of bowhead whales and by collecting baseline abundance data, it was instrumental in establishing subsistence harvest quotas for this species. Bowheads are comanaged by the Alaska Eskimo Whaling Commission and the National Oceanic and Atmospheric Administration, and the NSB department provides technical information regarding the biology of bowheads to that comanagement group. The importance of marine mammals to the subsistence economy of northern Alaska, especially bowhead and beluga whales, has focused much of this department's attention toward the sea, but not to the exclusion of terrestrial wildlife (e.g., caribou and waterfowl), or to subsistence users and practices.

This department is unique in several regards. Although it is administered under a branch of state government, it is relatively autonomous compared to other state resource management agencies (e.g., the ADF&G or Department of Natural Resources) that have statewide responsibilities. It has staffed its biological and administrative positions with an integrated mix of non-Native, academically trained wildlife biologists as well as local Inupiaq residents who are professional peers regarding wildlife and subsistence. It has historically worked cooperatively with both state and federal agencies, as well as with oil industry staff, at the state, national, and even international levels. Perhaps the most unique aspect of this department is that since its inception, it has received funding that has been adequate to conduct substantive wildlife research and has been relatively exempt from political manipulation at local and state levels. Lack of funding is a serious barrier to Native involvement in wildlife management throughout the United States (Skates 2010).

The over 4 decades of NSB Department of Wildlife Management operation has clearly demonstrated that legal authority is not requisite for indigenous people to be influential and effective in actively managing wildlife. Regional Native Corporations and tribal organizations in other parts of Alaska are following the NSB model by becoming more involved in wildlife management. This includes identifying research needs and designing protocols to address them, funding research projects, and developing technical capabilities among local residents that use traditional ecological knowledge (TEK) and complement Western science. This approach enables Native Alaskans to assess harvest levels, identify conservation areas, inventory wildlife populations, capture and radio-collar wild animals to monitor movements and distribution, manage access to tribal lands by nontribal users, and conduct many other types of wildlife work.

Native Hawaiians

The first humans to inhabit the Hawaiian Islands are not descended from the same indigenous peoples of North America; rather, they descended from indigenous Polynesians. The unique history of human settlement of this oceanic archipelago and its entry into the United States resulted in an unclear and complicated relationship between the rights of indigenous Hawaiians and natural resource management. Native Hawaiians have several terms to identify themselves, including "Kanaka Maoli," "Kanaka 'Oiwi," "Kanaka Hawai'i," and "Hawai'i maoli," but for simplicity, we will use the term ***Native Hawaiian*** in reference to any descendants of indigenous Hawaiians. Legally, there is no single definition of who is Native Hawaiian, but during the 2010 census, approximately 290,000 people identified themselves as being of Native Hawaiian descent (Hawaii State Data Center 2010). The lack of clarity on who are considered Native Hawaiians and their rights to access and manage natural resources of Hawaii stems from Hawaii's complex sociopolitical history. Prior to colonization and Western influences, Hawaii was a monarchy based on Native Hawaiian social structure, which dictated rights to access and manage natural resources (MacKenzie 1991). The 8 main islands of Hawaii were divided into separate kingdoms with the **ali'i 'ai moku**, or chief, controlling a **moku**, an island or section of land. Lands were administered into communally held **ahupua'a**, a self-sustainable strip of land that ran from the mountain peaks spreading along the coastline so that all members of the ahupua'a had access to both terrestrial and marine wildlife and plant resources, both cultivated and wild caught. Each ahupua'a was administered by an **ali'i 'ai ahupua'a** or ahupua'a chief, or **Konohiki** (headman), who was appointed by the **Ali'i ai ahupua'a**, with social structure and land management and cultivation following habitat distributions according to altitude and geographic proximity to ocean resources. In addition to access to land and water for irrigation to cultivate resources such as taro, the **maka 'ainana**, or people of the land, had rights to use the ahupua'a resources, including rights to hunt, gather wild plants, and fish in offshore waters. **Kapu** were regulations put in place limiting the type, amount, timing, or use of resources within an ahupua'a. While a **mo'i**, or high chief, controlled a section of land, that power was thought to be divine in origin and that mo'i's responsibility was analogous to a trustee with a responsibility to administer the land in honor of the gods and maintain productivity of the land as to provide for the needs of the people. Regardless of where an individual was within the sociopolitical hierarchy, all residents of the ahupua'a shared a mutual dependence to maintain their subsistence way of life.

Western influence in the late 1800s (MacKenzie 1991) introduced land retention and hereditary succession, previously not known in the islands, which eroded Native Hawaiians' traditional land tenure and resource management. By the turn of the 20th century and with increased demand for land by foreign interests, the majority of land had passed from the traditional, communal land tenure system, ahupua'a, into non-Hawaiian ownership mostly for plantation agriculture. In addition, the Hawaiian monarchy had been abolished and annexation to the United States was under way.

After Hawaii entered statehood in 1959, clarification of the role of the state and the federal government as trustees for lands held for the benefit of Native Hawaiians and the blood quanta associated with the various place- and land-based rights of Native Hawaiians has not occurred. Although definition of who are the maka 'ainana is not clear, the rights of Native Hawaiians to gather traditional resources if practiced as Native Hawaiian tradition on undeveloped land within the ahupua'a where the gatherers live were reaffirmed in *Kalipi v. Hawaiian Trust Co.* (656 P.2d 745 [1982]). Further, the Hawaii State Constitution (H.I. Const. art XII, sect VII [Traditional and Customary Rights]) reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural, and religious purposes and possessed by ahupua'a tenants who are descendants of Native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the state to regulate such rights.

According to the Native Hawaiian Legal Corporation (MacKenzie 1991), recent federal legislation for Native Americans has included Hawaiians as beneficiaries, but such legislation falls far short of addressing and clarifying the relationship between Native Hawaiians and the federal government. In the next decade, increasing demands from the Hawaiian community for rights of self-governance and sovereignty must be resolved by both the federal and state governments.

INDIGENOUS GROUPS OF CANADA

There are 3 main indigenous groups of Canada recognized under Section 35 of the Constitution Act (The Constitution Act, 1982, Schedule B to the Canada Act 1982 [UK], 1982, c 11): First Nations, Inuit, and Métis. **First Nations** refers to the

Indian people recognized in the Canadian Constitution, regardless of their status as federally recognized. Governing units of First Nations people, or Indians as referred in the Constitution Act, are called bands, which is equivalent to the use of tribes in the United States. First Nations bands often hold **reserve lands** with title to these lands held in trust by the Crown. **Inuit** are another indigenous group of Arctic Canada including Nunavut, Northwest Territories, Northern Quebec, and Northern Labrador who did not sign treaties with the Canadian government, but have negotiated modern land claims. **Métis** are people of mixed First Nation and European ancestry who identify themselves as Métis, as distinct from First Nations people, Inuit, or nonindigenous people. The Métis have a unique culture that draws on their diverse ancestral origins, such as Ojibway, Cree, French, and Scottish.

The Canadian government recognizes 2 types of claims by First Nations, comprehensive and specific claims, with the former providing ongoing rights to land and natural resources not addressed by specific treaties. **Indian and Northern Affairs Canada (INAC)** is the federal government department responsible for administering the Indian Act first passed in 1876 that determines the requirements for who is considered a **Status or Registered Indian**. As of 2016, there are currently 618 recognized First Nation bands (Indigenous and Northern Affairs Canada 2019).

Numerous court cases since the 1970s have provided some clarification on the rights of the 3 indigenous groups of Canada. Perhaps of most significance to natural resource management in Canada is *R. v. Goodon* (2 CNLR 278 [2009]) that affirmed land title is separate and distinct from harvest rights and that lack of title to land does not extinguish indigenous rights to harvest. Despite the aforementioned affirmation, the management of natural resources and harvest rights is highly variable among each province and land claim and treaty area, as is the role of the First Nations, Inuit, and Métis in the management of those resources.

INDIGENOUS GROUPS OF MÉXICO

The Mexican National Institute of Indigenous Languages (Instituto Nacional de Lenguas Indígenas [INALI]) lists as many as 365 different languages (INALI 2008) associated with indigenous ethnic groups that are located in less than 11 Mexican states, but comprise 2.5% of the country's population (Instituto Nacional de Estadistica Geografia e Informatica [INEGI] 2000). As one of the world's top 10 megadiverse countries, México is ranked as the fourth highest country in overall mammal diversity (Martin et al. 2010, International Union for Conservation of Nature [IUCN] Red List 2016) and contains approximately 10% of the world's living organisms (Mittermeier 1988, Ceballos et al. 1998). More than 76% of the plant cover is still preserved in indigenous territories, and 42% of forests are under social ownership, although to date, indigenous communities comprise only 14.3% of Mexican territory (Boege 2008). Indigenous groups in México remain without clear legal recognition at a federal or state level, definition of their rights to hold title to or access traditional land bases (with exception to the Yaqui's), or the authority to control access to and manage natural resources; they are, however, permitted to use those resources under governmental regulation (Boege 2008, López Bárcenas 2010). After the Mexican Revolution of 1910, the struggle for rightful land recovery resulted in agrarian land reform and the redistribution of private lands to campesinos, or peasant farmers. Some indigenous groups benefited from the redistribution of lands through the newly implemented communal system, but only if they also were campesinos, and they still remained without clear title or ownership. However, nomadic groups such as the Rarámuri (Huichol), Wixárika, and Mayos were excluded. Furthermore, many other lands were not returned, but remained under private or government ownership throughout indigenous territories. In 1992, Article 27 of the Constitution of the United Mexican States was amended to allow for the sale of communal lands, or "ejidos," which also permitted peasants to use those lands for collateral on loans. However, this has instead contributed to the continued fragmentation and reduction of indigenous territories.

One of the greatest threats to the biodiversity of indigenous communities in México is the accelerated population growth of urban areas, along with aggressive industrialization imposed by national and state governments in an attempt to spur economic growth and development in rural areas (World Bank 2012). Conflicts between indigenous groups and large-scale projects such as hydroelectricity dams, transportation corridors, tourism growth, and energy exploration have increased dramatically, leaving indigenous groups with little voice in government policy development. However, the recent development of federal commissions to address indigenous issues, such as the National Indigenous Institute and the Commission on the Development of Indigenous Pueblos, is indicative that indigenous rights are gaining attention and being considered (Boege 2008). In addition, because México is a signatory to the Convention on Biological Diversity and the National Biodiversity Strategy, which promotes the involvement of indigenous communities in conservation practices, there are efforts to decentralize natural resource management and redirect efforts toward state and local levels (World Bank 2012). Currently, and unlike US or Canadian indigenous groups who have significant autonomy on their tribal lands, indigenous groups in México must comply with all state and federal laws for hunting or other consumptive uses of wildlife (Valdez et al. 2006). However, indigenous communities have been vocal about wanting to actively participate in the decision-making process as related to the lands where they live. Recent revision to the General Law on Ecological Balance and Environmental Protection now formally recognizes **Community Conservation Areas** that are voluntarily conserved by indigenous communities through traditional laws and customs, allowing for

the implementation of more consistent conservation efforts (World Bank 2012). While attempts have been made through national and state efforts to assist indigenous communities in biodiversity conservation, they have not been without challenges, highlighting the need to allow for more autonomy for local implementation based on each indigenous community's unique social and cultural structure (World Bank 2012). For example, a fairly successful and long-lived wildlife management effort in México is with the Seri indigenous group along the Sonoran coast. Bighorn sheep and mule deer management has been sustainably managed for decades, while maintaining the ecological integrity of Tiburon Island, a national protected area under the stewardship of the Seri people. However, the island's management has not been without challenges, and the Seri have had to curb the constant threat of poaching and resist pressure to develop the island (R. Medellin, Universidad Autónoma de México, personal communication, 2018). In any case, successful implementation for any conservation effort is dependent on the ability to gain an early and common understanding of the respective roles for all stakeholders and to provide these communities with adequate support for long-term implementation and sustainability.

In México, as with many other nations, there is an urgency to empower indigenous people and develop models that can help them navigate through a complicated land tenure structure and the impacts of climate change on land productivity, but yet maintain their presence on ancestral lands in a way that preserves culture and ensures economic and ecological sustainability. Academic and science professionals, nongovernmental organizations, citizen science programs, and governments must collaborate to provide capacity building in a way that bridges science and traditional knowledge, as well as helps indigenous people develop and apply management, research, and problem-solving scenarios that are culturally and community relevant. Finally, governments must adapt and streamline regulations and administrative requirements to incorporate traditional knowledge as a tool to increase indigenous participation in the management of their ancestral lands and harmonize their traditions and culture with that of México as a whole.

TRADITIONAL ECOLOGICAL KNOWLEDGE

The indigenous peoples of North America have intimate knowledge of their local environment accumulated over generations and handed down via traditions, stories, songs, and prayers. This knowledge has been recognized as important information that can be incorporated into scientific exploration through long-term observations, controlled experiments, diachronic and synchronic data observation, and the use of qualitative and quantitative measures (Berkes 2012). This knowledge by indigenous peoples has been described as **Traditional Ecological Knowledge** or **TEK** (Berkes 1993).

Berkes (2012) offers a working definition of TEK as a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment. TEK is a dynamic way of knowing, building on experience, and adapting to changes. It is an attribute of societies with historical continuity in resource use on a particular land base. The word *Traditional* does not imply the knowledge must take some preconceived form, be old, or devoid of change, as though knowledge that evolves over time is not traditional, thus narrowing the scope of knowledge considered TEK. But for others, the word *traditional* carries positive meanings, including time-tested with a heavy emphasis on wisdom (Berkes 2012). Some people have substituted the word *Indigenous* for *traditional* to avoid the debate over the word *traditional*. In TEK, the word *ecological* refers to understanding how living beings, including humans, relate to one another and to the environment both physically and spiritually. It is not narrowly defined as in ecological sciences to include only biophysical interactions among nonhuman species. The issues with the definition of TEK have induced some societies to create their own words or phrases for this knowledge to better reflect what they consider TEK. For example, the Inuit of the Canadian Arctic use the term *Inuit Quajimajatuqangit* (Arnakak 2002), which covers all aspects of Inuit values and way of life (Wenzel 2004).

In the broadest sense, TEK is place-based knowledge or knowledge of the land accumulated over generations by the personal experiences of the people who occupy the land. TEK tends to be qualitative in nature and creates a diachronic database (i.e., a record of observations from a single locale over time; Kimmerer 2000). This perspective makes TEK useful for the conservation of protected areas or the stewardship of biodiversity as these are site-specific endeavors, but does not preclude TEK from other types of studies that use synchronic or quantitative data collection.

The indigenous people themselves frequently perceive TEK as a way of life (Simpson 2001) where knowledge is not static, but evolves constantly. Thus, TEK can be seen in 2 ways; one is ways of knowing or knowing the process, and the other is to know about things (e.g., species names, life cycles, etc.; Berkes 2012). The latter aspect of TEK has been largely accepted in the scientific community while the former continues to lack acceptance in Western science. It is the process knowledge of TEK that uses ideas of spirituality or belief systems that sometimes fall outside of the realm of Western science. Yet this process knowledge is an essential component of TEK and the culture from which it originates (Kimmerer 2000). As TEK is increasingly sought as a potential source of ideas for emerging models of ecosystem management, especially restoration (Kimmerer 2000), the role of cultural or spiritual values is coming to the fore. For example, the Indigenous Peoples Restoration Network says in its mission statement that indigenous people's spiritual values must be central to the vision of ecological restoration.

Obtaining TEK from indigenous peoples requires patience, experience, respect, and time and, when available, following protocols when asking for TEK. Among some of the tribes in the midwestern United States, it is appropriate to give ceremonial tobacco when asking for TEK while different protocols might be used in other locales. Regardless of how TEK is requested, there are increasingly common ways TEK should be understood, synthesized, and reported. The Climate and Traditional Knowledges Workgroup (2014) has published guidelines for considering TEK in climate change initiatives. Although developed by a group interested in climate change, the recommendations contained in this report are applicable more widely and provide a foundation for the use of TEK in wildlife management projects. These recommendation focus on 2 areas: (1) do no harm (i.e., avoids risks that could lead to a loss of or misappropriation of TEK) and (2) provide free, prior, and informed consent (i.e., respect and safeguard the rights of those providing TEK).

Reporting TEK requires the same care used to collect it. Often, TEK is reported out of context or with error. To avoid improper reporting of TEK, those who collect and rely on TEK for management direction should have their interpretation of TEK verified by whom it was provided. This requires an iterative process whereby the TEK is presented by the provider (frequently orally) and then transcribed by the user. The transcription should be reviewed and approved by those who provided the information. The user also should acquire consent from the provider for sharing TEK, approve the format for transmission of TEK, and should be cited for the knowledge provided. The citation should include the provider's name, where he or she is from (village or community), and the date the TEK was provided. If permission is not granted, none of the TEK should be disseminated in any format.

SUMMARY

Since time immemorial, across millions of acres of land, indigenous peoples of North America have maintained a respectful relationship with the native plants and animals. The relationships between each indigenous group and the plants and animals they depend on are woven into their culture, spirituality, and customs. Indigenous peoples historically depended on the wild game within their territories, not only for food, but for clothing, dyes, jewelry, shelter, tools, food pouches and medicine bags, and traditional regalia. Present-day stewardship of natural capital, and thus the ensured existence of wildlife and other natural resources, is not just necessary for each group's continued survival, but also for the survival of their culture, history, and identity. Common among all indigenous groups of North America are the lasting and ongoing devastating effects of colonial influences on their sovereignty and natural resource management with cascading effects on their cultures and identities. Inherent to their right and ability to properly manage natural resources within their traditional land bases is the legal recognition and enforcement of the rights of indigenous groups followed by fulfillment of trust obligations, when applicable, to ensure indigenous groups' ongoing ability to access and manage culturally important natural resources. We have demonstrated how the relationship between natural resources, land, culture, and spirituality of indigenous groups of North America and their management of natural resources differs historically and currently from other present-day natural resource management systems, including the major legal, cultural, and geographic distinctions and how those distinctions influence each group's approach to natural resource management.