Public Rights on Rivers

Second edition ♦ November 2013

Researched, compiled, and edited by the staff of the National Organization for Rivers, past and present.

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Chapter One:
The development of river law

What rights do you have to canoe, kayak, raft, fish, and duck hunt on rivers?

Can you canoe on rivers through private land in some states, but not in others? If you get out to push your canoe over a shallow spot, or carry it around a log jam, are you trespassing?

Can ranchers erect barbed-wire fences across rivers? Can a private fishing or hunting club keep you off their section of river?

If your property deed says that you own to the middle of a river, can you limit river users to the other half of the river?

Which rivers are legally navigable, and who decides which rivers qualify?

Can farmers divert almost all the water out of a river into irrigation ditches? Can they bulldoze along the shore of a river?

Can cities dump partly-treated sewage into rivers? Can industrial sites allow toxins lying on the ground to wash into the nearest river whenever it rains?

Can government agencies charge a fee for the right to run a river? Can they make you pay a government concessionaire in order to run a river, unless you obtain one of the few noncommercial permits that are available in a lottery?

The answers to these questions are matters of law, but they are not as simple as citing an act of Congress. There are U.S. Supreme Court decisions and state laws to consider.[1]

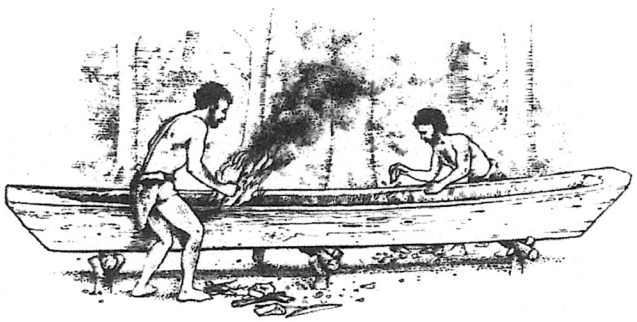
River law, like other areas of law, was not created in a vacuum. Instead, it developed in response to evolving human uses of rivers, and the legal disputes that arose in the course of those uses. Public rights on rivers today are based largely on historical uses of rivers. For example, the U.S. Supreme Court has held that even small, shallow rivers continue to be public rivers in today's world, if they were usable by fur traders in canoes centuries ago.[2] The Court has also confirmed that public rights on a river are largely a matter of the actual *facts* about the river.[3] Consequently, one must understand the *facts* about historical uses of rivers before coming to conclusions about the current state of the *law*. Mistaken views about the history of river use will lead to mistaken views about public rights on rivers today.

In other words, if you try to answer questions such as those posed above by citing statutes and court decisions from different eras of history, without an understanding of how rivers were actually used during those eras, you soon get into a mishmash of confusing, almost conflicting views. However, if you consider the history of human uses of rivers, and how the law developed in response to those uses, many of the seeming conflicts fall away, and the answers to such questions become clear.

Consequently, this chapter outlines the facts about historical uses of rivers, as well as the concurrent development of river law.

Ancient uses of rivers

People were boating on rivers long before recorded history. Archeological evidence suggests that primitive men were paddling small watercraft of some sort over 800,000 years ago, even before the ability to use language had fully developed.[4] Ancient peoples hollowed out logs to make **dugout canoes,** a technique still used in some places today. The oldest known dugout canoes still in existence, dating from about 8000 to 6300 B.C., were found in the Netherlands. Another canoe, from about 4000 B.C., was unearthed in the tomb of a Sumerian king near the Euphrates River.[5]



People have been making dugout canoes for thousands of years, using tools and fire to hollow out logs.

Dugout canoes can be heavy and hard to maneuver. Some ancient peoples found that by building a frame of wood, then covering it with animal skins or the bark of certain trees, they could make a much lighter canoe, more manueuverable on the water and easier to carry overland.

[1] **U.S. Supreme Court decisions,** and federal appeals court decisions, are available on the Internet at web sites such as **supremecourt.gov, openjurist.org** and **findlaw.com.** Most other decisions cited in this book can be viewed on the Internet by doing a search using the name and numbers of the case. The **footnotes** in this book are written to be clear to non-technical readers, rather than following traditional law journal formats. The **page numbers** for passages quoted from decisions are usually omitted, because they can be readily located with "Find" commands in today's digital world. The prefix **www** is usually omitted.

[2] **Rivers usable by fur traders in canoes:** *Economy Light & Power Co. v. United States,* 256 U.S. 113 (1921) (Regarding a shallow river, with "boulders and obstructions," used in "early fur-trading days," from about 1675 to 1825.)

[3] **Actual facts about a river:** *United States v. Utah,* 283 U.S. 64 (1931) ("Each determination as to navigability must stand on its own set of facts.")

[4] **Small watercraft over 800,000 years ago:** Based on findings in 2004 on the Indonesian island of Flores, by archeologists led by Michael Morwood. See humanorigins.si.edu/research/asian-research/hobbits and its bibliography.

[5] **Oldest known dugout canoes:** *The History of the Ship* by Richard Woodman, Lyons Press 2002, page 11.

Since ancient times, canoes have been propelled with paddles, or by long poles pushing off the bottom in shallow water, or by rigging a small sail.

In northern regions, ancient peoples made **kayaks,** which are covered canoes in which the user is seated and uses a double-ended paddle. Archeologists have concluded that kayaks have been used for thousands of years in Asia, as well as across North America, from Alaska to the east coast of Canada, as well as in Greenland.[6] Evidence indicates that ancient peoples used kayaks and similar craft for fishing and fowling, and to migrate long distances. For example, the recent DNA sequencing of ancient human hair found in the permafrost in Greenland revealed that the hair came from a man of the Saqqaq culture, living around 4,000 years ago, and that the man's closest relatives were the Chukchis of eastern Siberia.[7]

Kayaks have been used in Asia and North America for many centuries, for fishing, fowling, and transportation.

In temperate and tropical regions, ancient peoples made **reed boats,** a form of canoe consisting of reeds lashed together. (Also called *reed rafts,* since they consist of floating material lashed together, rather than an actual hull that keeps out water.) The oldest known remnants of a reed boat were found in 2002 in Kuwait. The boat was covered with *bitumen* (a kind of tar) from the oil-rich ground, to help waterproof it, and was about 7000 years old.[8] In ancient Egypt, reed boats were made of papyrus reeds, as depicted in paintings from about 4000 B.C.[9] They are still used today on Lake Tana in Ethiopia. The Bible says that when Moses was an infant, his mother set him afloat among the reeds along the edge of the Nile River in a miniature papyrus reed boat, coated with bitumen, to save him from a royal order that required the killing of Hebrew baby boys.[10] In pre-Columbian North America, reed boats were used on rivers in California that flow into San Francisco Bay, by several tribes collectively known as the Ohlone. Archeologists estimate that in Pre-Columbian times, more people lived in the San Francisco Bay area than in any other area of what is now the United States and Canada. Their primary source of food was fishing and fowling, using reed boats.[11] By 1900, reed boats were no longer used in the United States, but were still used for fishing in northern Mexico, as shown in black and white photographs from the time. Today, they are still used on Lake Titicaca in Bolivia, and along the coast of Peru.

Native Americans used reed boats on rivers in northern California.

In other places, ancient peoples lashed logs together to make **log rafts.** A log raft is quite heavy, and some groups found that by making a lighter wooden frame, then attaching several inflated animal skins to it, they could make a lighter and more maneuverable raft, more like the modern inflated river rafts used today. Various types of rafts were used in the ancient world. Some were propelled by oars, like a rowboat, while others were propelled by paddles, like a canoe.[12]

By the time the ancient civilizations arose, river boats were already well developed. Babylon flourished near the Tigris and Euphrates rivers, which were used for crop irrigation, transportation, and fishing. The pharaohs of ancient Egypt cruised the Nile on long, ornate vessels, rowed by teams of oarsmen, and the goods of the land were transported in a variety of boats along the river, using paddles, oars, and sails.[13]

Ancient raft designs are still in use in some places today, made from logs lashed together (the original **catamaran** in the ancient Tamil language) or inflated animal hides attached to a wood frame, somewhat like a modern inflated rubber raft with an oar frame.

[6] **Kayaks in use for thousands of years:** *Bones, Boats, and Bison: Archeology and the First Colonization of Western North America* by E. James Dixon, University of New Mexico Press 2000.

[7] **Kayaks used to migrate long distances:** "Ancient DNA set to rewrite human history" by Rex Dalton, *Nature* 465 (2010) page 148 (at nature.com.)

[8] **Reed boat in Kuwait:** "Report of Oldest Boat Hints at Early Trade Routes" by Andrew Lawler, *Science* Magazine, June 7, 2002, Vol. 296 no. 5574, page 1791.

[9] **Reed boats in Egypt about 4000 B.C.:** *Boats of the World: From the Stone Age to Medieval Times* by Sean McGrail, Oxford University Press 2004.

[10] **Moses in reed boat:** Exodus 2:3 (papyrus reeds often called *bulrushes.*)

[11] **Reed boats and large population in San Francisco Bay area:** *The Ohlone Way, Indian Life in the San Francisco-Monterey Bay Area* by Malcolm Margolin, illustrated by Michael Harney, Heyday Books, Berkeley 1978.

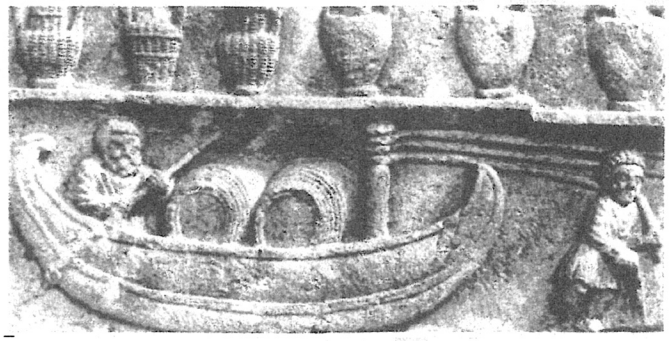
[12] **Ancient rafts using inflated animal skins:** *The History of the Ship* by Richard Woodman, Lyons Press 2002, page 12.

[13] **Ancient boats on rivers:** *Egyptian Boats and Ships* by Steve Vinson, Shire Publications 1994. Reconstructed ancient Egyptian boats are still on display at the Maritime Museum *(Museu de Marinha)* in Lisbon, among other places.

In ancient civilizations around the Mediterranean, loads of grain and barrels of wine were sent by river from farms and vineyards in higher country to cities downstream and along the coasts. Loads of ore, as well as stone and lumber for use as building materials, were also taken down rivers.

Boatmen used several methods to get their empty boats back upstream, against the current. In some stretches they rowed the boats, with six or more pairs of oars. In other stretches they propelled the boats upstream by pushing off the riverbed with long poles. At times they hoisted a small sail. (It may seem impractical to sail up a river, until one considers that on a number of rivers there is often an afternoon wind blowing upstream, coming inland from the ocean.)

Where the current was too swift for rowing, poling, or sailing, boats were pulled upstream using ropes from the bank, pulled by men, mules, or oxen. This process is known as **cordelling,** from the French word for a tow rope, *cordelle*. From today's perspective this may sound like too much work, until one considers the alternatives. In ancient times, roads were typically rough and rutted. In hilly areas they were steep and rocky. Carts and wagons, even if pulled by a team of oxen, could not carry large, heavy loads for long distances. Rivers, on the other hand, could be used to transport large, heavy loads for long distances downstream with relatively little effort. Having men, mules, or oxen pull the empty boats back upstream, after the cargo was delivered, was a small price to pay for this great transportation advantage.



An ancient Roman carving shows the process of towing a boat upstream, from the bank, known as **cordelling.**

Fishing in ancient times. Archaeologists have found widespread evidence that the people of ancient civilizations frequently fished in rivers. Fish typically release millions of eggs, so fish populations can usually recover quite readily from moderate fishing pressure. Therefore fish provided ancient people with a sustainable food supply.

Since ancient times, people have preserved fish by salting and drying them. Fish dried in this fashion are still sold in local markets in much of the world today. Of course, dried fish cannot match the flavor and tenderness of fresh fish. Before the advent of modern refrigeration, people living near the coasts could eat fresh fish from the ocean, while those living further inland could obtain fresh fish only from rivers. Consequently, rivers have been an important source of food since ancient times.

Fowling in ancient times. Rivers are typically frequented by ducks, geese, and other waterfowl. People have been fowling along rivers, to obtain food, since prehistoric times, using spears, arrows, snares, and other devices.

Rivers as boundaries. The practice of using rivers as boundaries is as old as mankind. Rivers have long served as boundaries between tribal groups, between individual farms, and even between nations.

As the water level rises and falls in a river flowing through fairly flat country, the edges of the river move outward and inward. Consequently, people discovered long ago that describing the boundary of a property as the *edge* of a river was problematic, because the location of the edge tends to be vague and transitory. They found that it was more useful to describe the boundary as being the line running down the *deepest part* of the river. Even at very low water levels, the remaining trickle of water still flows down the deepest part of the river channel, providing a fairly definite boundary line between the adjacent properties, and giving access to the water to the landowners on both sides of the river.

In Latin this line was called the *filum aquae,* literally "the line of the water." Early nordic languages called it the *thalweg* of the river, literally the "dale-way" (in the sense of the path taken by water down a dale or valley.) In English it is often called the *thread* of the river. It is still used as a property boundary in many places.

A *riparian* landowner is one who owns land along a river (from the Latin word *ripa*, meaning the bank of a river.) This refers to people who own land along one or both sides of a river. Ancient law reconciled private ownership of land along rivers with public rights to use the beds and banks of rivers, as discussed below.

River law in ancient times

The laws of ancient civilizations reflected the importance of boating, fishing and fowling on rivers in those centuries, as follows:

The Institutes of Justinian and the Laws of Nature. A foundational document in the law of western civilization is the *Corpus Juris Civilis,* ("The Body of Civil Law,") published under the direction of the Roman emperor Justinian in 534 A.D. Two of the parts of this lengthy document are the *Institutes* and the *Digest*.

Today, the massive doors at the entrance to the U.S. Supreme Court are sculpted with the image of Justinian proclaiming the *Institutes*. One literally "walks through the Institutes of Justinian" to enter the highest court in the land.

The legal scholars who compiled the *Institutes* explained that they had, in turn, "collected the whole ancient law" in their treatise, from civilizations that flourished many centuries earlier, including the civilizations of ancient Greece, Egypt, and previous civilizations.

Ancient law, as reflected in the *Institutes*, held that "running water" is "common to mankind," and that "all rivers and ports are public, hence the right of fishing in a port, or in rivers, is common to all men." (Sections 2.1.1 and 2.1.2.) It recognized public rights to boat and fish in rivers, using the banks as well as the water itself. (Section 2.1.4.)[14]

It held that these public rights on rivers are part of the *Laws of Nature* (also known as the *Law of Nature*, or *natural law*.) Ancient law viewed the Laws of Nature as being "established by divine providence," so that they "remain forever fixed and immutable." (Section 1.2.11.) In other words, ancient law viewed public boating and fishing rights on rivers as being granted to mankind by God (or the gods,) and therefore as not being revocable by human governments.

Ancient law also held that these rights are part of the *Law of Nations*, in the sense of being fundamental law common to all nations (not in the sense of being part of international law.)

Ancient law reconciled private ownership of the banks of rivers with public rights to use the banks. It said, "The public use of the banks of a river is part of the Law of Nations, just as is that of the river itself. All persons therefore are as much at liberty to bring their vessels to the bank, to fasten ropes to the trees growing there, and to place any part of their cargo there, as to navigate the river itself. But the banks of a river are the property of those whose land they adjoin; and consequently the trees growing on them are also the property of the same persons." (Section 2.1.4.) In other words, it affirmed a public *easement* to use the banks of rivers, even where the *ownership* of the banks was private.

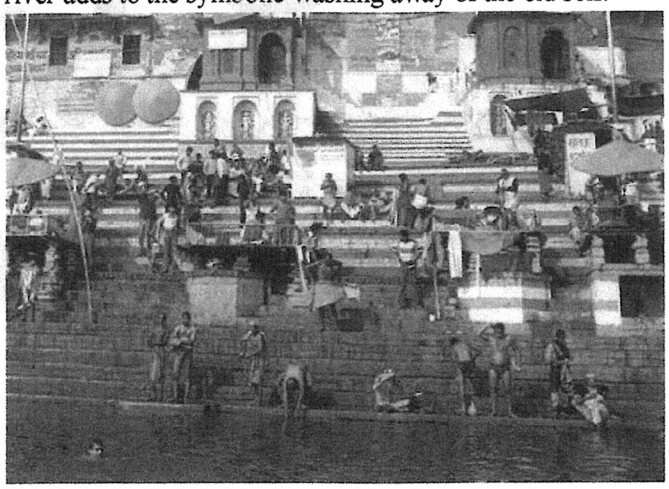
As reflected in the *Digest*, under ancient law it was "forbidden to do anything to a river or to its banks, or place anything thereon, that would impede navigation or use of the banks." (Section 43.12.1.) Construction along a river was permitted "only if no damage were done to navigation." (Section 43.12.1.15.)

Regarding the right to divert water from rivers, ancient law said, "Water may be led from a river, unless it makes the river less navigable." (Section 43.12.1.15.) Water was "not allowed to be withdrawn if it would cause injury" (in the legal sense) to other river users. (Sections 8.3.17 and 43.20.3.1.)

The right to travel. Since rivers served as important routes of travel in ancient times, the public right to travel is relevant to river law. The earliest known charter of human rights was issued by Cyrus the Great, ruler of Persia during the 500s B.C. His charter affirmed, among other things, that people have the right to "live in all regions" or "live where they want to."[15] Legal scholars consider this to be the earliest known confirmation of the right to travel.

Ancient law regarding the spiritual significance of rivers. The concept of separation of church and state is relatively recent in human history. In ancient times, the government and the predominant religion in society were often one and the same, so that principles of law rested on principles of religion. Therefore, to better understand the origins of river law, we must be aware of ancient views about the religious and spiritual significance of rivers.

Since prehistoric times, people have known that running water is generally cleaner than stagnant water, and that rivers bring life-giving water to plants, animals, and people. They have also noticed that rivers make a variety of natural, almost musical sounds. The oldest of the world's major religions, Hinduism, is said to have started when wise men stood on the banks of rivers in India, about 4,000 years ago, and sang songs that they considered to be "inspired by the breath of God." The Hindus and other ancient religions used rivers for baptism, and archaeologists and anthropologists agree that the practice of baptism is very old. It is likely that baptisms were conducted in rivers (rather than more convenient locations such as lakes,) because river water tends to be cleaner, and because the moving current of a river adds to the symbolic washing away of the old self.[16]



Hindus bathe daily in the Ganges River in northern India, as they have for thousands of years.

Later religions continued these views regarding water, as further discussed in Chapter Two. At this point, we can simply note that since ancient times people around the world have attached spiritual significance to water, flowing water, and rivers, and that this belief in the spiritual significance of rivers contributed to the view that public rights on rivers were granted to mankind by God (or the gods,) and therefore are not revocable by human governments, as discussed earlier. This in turn contributed to the legal view that running water is owned by the whole community, and that water rights are a temporary right to use a community resource, but are not actual ownership of the water. This

[14] **Institutes of Justinian:** Translated by John Baron Moyle, available as an e-book from Amazon Digital Services.

[15] **Cyrus the Great confirming the right to travel:** *Human Rights* by Prakash Talwar, Isha Books 2006. See also www.farsinet.com/cyrus.

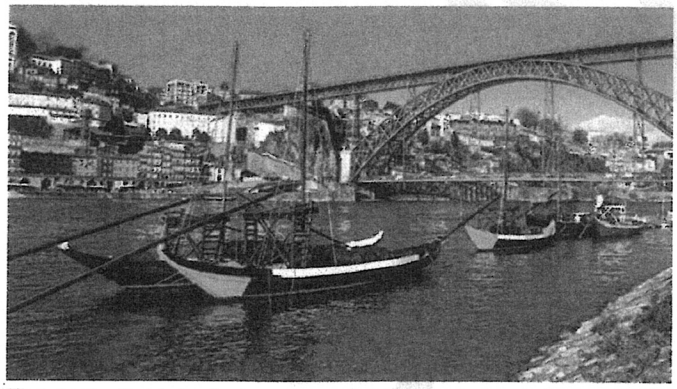
[16] **Hindu origins of baptism:** *The World's Religions: Our Great Wisdom Traditions* by Huston Smith, HarperOne 1991.

view continues today, as will be discussed in the following pages.

River uses during the development of Europe

In the centuries following the decline of the Roman empire, river use continued to be an important part of life in Europe. Large rivers such as the Rhine, the Danube, and the Thames, as well as countless smaller rivers, carried the products of the land to buyers elsewhere. As in earlier times, loads of grain and barrels of wine, as well as ore, stone, and lumber, were typically sent by river from sources upstream to cities and seaports downstream. As in earlier times, boatmen got their boats back upstream by rowing, poling, *cordelling*, or using a small sail when practical.

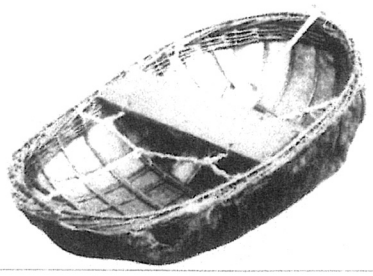
The practice of cordelling (described earlier) continued in parts of Europe into modern times. For example, for centuries numerous vineyards on the hillsides surrounding the Douro River in Portugal have grown the grapes used to make port wine. The new wine was traditionally carried down the river, though sizeable rapids, in barrels lashed to the decks of wooden rowboats called **rabelos,** to the city of Porto, which is near the mouth of the river at the Atlantic Ocean. There the wine, after further aging, was loaded onto ships and taken to buyers abroad, especially in England. The river boatmen, after delivering the barrels to Porto, *cordelled* the empty boats back up the river to await the next harvest. It was not until the 1930s that the industry switched to transporting the barrels from the vineyards to the coast by truck.[17]



The port wine industry used small boats called **rabelos** until the 1930s, to transport barrels of wine down the Douro River.

After the decline of the Roman empire, fishing on rivers also continued throughout Europe, as it had since ancient times. People fished from the banks of rivers as well as from small boats. The sport of fly fishing was already popular in Europe by the 1400s, and books were published about it in the 1400s and 1500s.[18]

In Wales, for centuries river fishermen have used small one-man boats called *coracles*, which consist of a wicker frame covered with leather, propelled by a paddle. A coracle is light enough for a fisherman to carry on his back.[19]



Welsh fishermen have used **coracles** for many centuries.

River law during the development of Europe

Ancient law regarding public rights on rivers continued into the laws of the emerging European nations.

In 1265, the government of **Spain** published *Las Siete Partidas*, a document that is considered to be a foundation of law in Spain and Latin America. Reflecting the *Institutes of Justinian* and other ancient law, it confirmed public boating and fishing rights on rivers. It said that rivers belong to all persons in common. Regarding the banks of rivers, it said, "Although the banks of rivers are, so far as their ownership is concerned, the property of those whose lands include them, nevertheless, every man has a right to use them."[20] This reaffirmed the principle of a public *easement* to use the banks of rivers, even where the *ownerhip* of the banks is private, as stated centuries earlier in the *Institutes of Justinian*, discussed above.

In **France,** a classic treatise on French Civil Law by Jean Domat, published in 1694, also reflected ancient law, saying that rivers, as well as "the banks of rivers," are "public things," which "do not appertain to any particular persons." Instead, "it is the sovereign who regulates the use of them."[21] By the 1800s, French law held that rivers were "inalienable" public property, meaning public property that could never be granted to private owners. The legal view was, "The sole purpose of the inalienability is to assure that the property will remain in public use or service. It follows that any voluntary alienation or dismemberment of the property is void, unless the property has ceased to be part of the public domain before it was alienated."[22]

In **England,** the public used rivers freely in ancient times. After the invasion of William the Conqueror in 1066, some rivers and their banks were fenced off by the Norman kings, for private use by the kings and noblemen. However, public boating and fishing rights were restored by the *Magna Carta* in 1215. This famous document limited the power of the kings, and required the kings to recognize

[17] **Wine transport by river in Portugal until the 1930s:** See www.ivp.pt.

[18] **Fly fishing books, 1400s and 1500s:** *The Treatyse of Fysshynge wyth an Angle* by Juliana Berners 1496 (England.) *The Little Treatise on Fishing* by Fernando Basurto 1539 (Spain.) *The Art of Angling* by William Samuel 1577 (England.) In *American Fly Fishing, A History* by Paul Schullery, Lyons&Burford 1987.

[19] **Coracles:** *Trout and Salmon Fishing in Wales* by George Agar Hansard 1923, re-published by Nabu Press 2010, page 145.

[20] **Every man has a right to use the privately-owned banks:** *Las Siete Partidas*, section 3.28.6 (S. Scott, translator and editor, 1931.)

[21] **French law in 1694:** *The Civil Law in its Natural Order* by Jean Domat 1694, page 150 (L. Cushing ed. 1850.)

[22] **French law in the 1800s:** *Droit Civil Francois* by Aubry and Rau 1838, Sec. 42.

public rights in a number of matters. Regarding rivers, it required the king to remove *kydells*, or *weirs*, (small dams intended to hold fish in one stretch of river,) from the rivers thoughout all England, so as to clear the streams for the free passage of fish as well as people.[23]

A well-known treatise on English common law was prepared about the year 1250, by the legal scholar Henry de Bracton. It affirmed public rights on rivers, citing the *Law of Nature* ("natural law") as the source of these public rights. It said, "By natural law these are common to all: running water, air, the sea, and the shores of the sea."[24] This echoed the *Institutes of Justinian* (as discussed earlier.)

In later centuries, English law continued to affirm both a "freedom of passage" and a "liberty of fishing" in rivers.[25]

By the 1600s, the legal view in England was that the beds and banks of rivers could be privately owned by the adjacent landowner, yet still be subject to two *servitudes*, one belonging to the king, and the other belonging to the people in general, thereby allowing public boating and fishing.[26] The law did not see these public rights on private land as being contradictory.[27] Note that this was different from the French legal view that the banks of rivers were necessarily public land, but it was essentially the same as the earlier Spanish view, reflected in *Las Siete Partidas*, (as well as the ancient view, reflected in the *Institutes of Justinian*,) that the banks must be open to public use, even where they are privately owned.

By the 1800s, the legal view in England was that the government held boating and fishing rights on rivers *in trust* for the use of the people.[28] This was essentially the same as the view that developed in the United States, as we will see later in this chapter.

River uses in ancient North America

Archeologists estimate that people have been living in the Americas for over ten thousand years. Archeological evidence indicates that humans lived and hunted wild game at Monte Verde (near present-day Puerto Montt, Chile,) about 14,000 years ago, and near present-day Clovis, New Mexico about 13,000 years ago.[29] Archeologists have long theorized that people migrated from Asia to North America by walking across the Bering Strait, when the level of the ocean was lower than it is today. However, there is increasing evidence that a number of people migrated from Asia to North America in kayaks or similar watercraft. The Inuit (Eskimo) people have long been capable of crossing the Bering Strait, and in fact the Yupik people still live on both sides of the strait. Explorers in the early 1900s found that among various tribes in Alaska, across Canada to Labrador, and in South America, in places where the ancient kayaking and fishing cultures appeared to have changed the least over time, details of the kayaks and paddles themselves were quite similar to those found in Asia, suggesting that prehistoric kayaking fishermen migrated from Asia to North America.[30]

The word *kayak*, usually viewed as an Eskimo word, appears to be derived from an earlier Turkish word, *kayik* or *qayiq*. (Turkish people first appeared in locations far to the east of modern-day Turkey, and a Turkish people, the Yakuts, still live in eastern Siberia.)[31] The Turkish word *kayik* also appears to be related to (or be the source of) the ancient Greek word for a small boat, *kaiki*, a word still used for small recreational boats among the Greek islands in the Mediterranean.[32]

People have been using kayaks for fishing, fowling, and transportation for thousands of years, in northern Asia, North America, and Greenland.

Today, among Spanish and Mayan speakers throughout Central America, the common word for a kayak or dugout canoe is *cayuco*, sounding much like *kayak*, *kayik*, and *kaiki*. Consequently, the term *kayak*, in its various forms, may be an ancient term, of nearly worldwide use, still used today.

[23] **Magna Carta:** The first *Magna Carta, The Great Charter of King John*, signed at Runnymede in 1215, chapter 33.

[24] **English law in 1250:** *On the Laws and Customs of England (De Legibus et Consuetudinibus Angliae)* by Henry de Bracton, Bk. I, ch. XII section 6, at 57 (Twiss ed. 1878).

[25] **English law in later centuries:** *Mare Clausum*, by Selden, Bk. II, ch. XXI, at 355 (Gent. Ed. 1663) ("As a freedom of passage, so also wee finde that a libertie of Fishing hath been obtained by Petition from the King of England.")

[26] **Public use of privately owned beds and banks:** *De Jure Maris* by Sir Matthew Hale, written in 1667 and published in 1786. ("The *jus privatum* that is acquired by the subject [the riparian landowner], either by patent or prescription, must not prejudice the *jus publicum* wherewith public rivers and the arms of the sea are affected to public use.")

[27] **Public rights on private land along rivers:** *Lord Fitzwalter's Case*, [K.B. 1611] 1 Mod. 105, Eng. Rep. 766. (Not contradictory for the soil to be privately owned "and yet the river being common to all fishers.")

[28] **Rivers held in trust by the government for public use:** *A Treatise on the Law of Waters* by H. Woolrych, page 437 (2d ed. 1851).

[29] **People in the Americas 14,000 years ago:** For example, see *World Prehistory: A Brief Introduction* by Brian M. Fagan, Prentice Hall 2007.

[30] **Kayaks and paddles in Asia and North America:** *The Bark Canoes and Skin Boats of North America* by Edwin T. Adney and Howard I. Chapelle, Smithsonian Inst. 1964, page 195 (comparing kayaks and paddles in Asia and North America.)

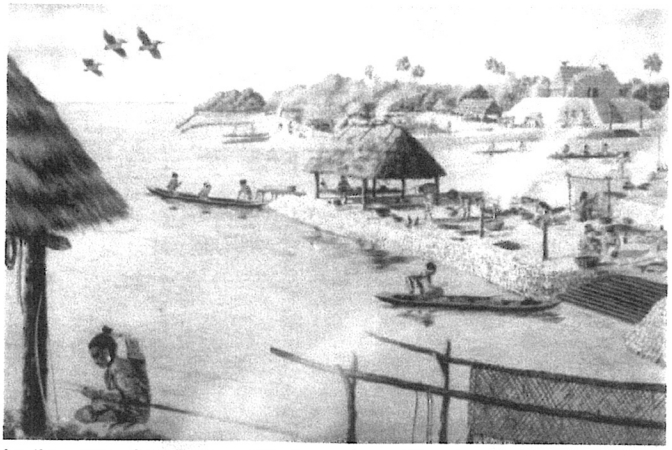
[31] **Turkish for kayak:** "Starting from Greenland" at idiocentrism.com/kayak.htm.

[32] **Greek for kayak:** "The history of traditional Greek boats" by Maggie Makris, www.helium.com/items/1447035-greek-kaiki-boats-traditional-greek-boats.

A skeleton found along the Columbia River in 1996 (named "Kennewick man" after the nearby city of Kennewick, Washington) appears to be that of an *Ainu* man who lived about 9,000 years ago.[33] The *Ainu* or *Jomon* were an ancient people who lived in Japan before the Japanese. They used kayaks and similar craft to fish and hunt for seals and walruses. Isotope measurements of the skeleton, completed in 2012, indicate that the man most likely lived off a diet of marine mammals.[34] In view of his diet and background, and the long stretches of harsh terrain between Japan and Washington, it appears to be very unlikely that this Ainu man (or his ancestors) got to the Columbia River area by walking overland. It appears to be much more likely that he (or they) traveled along the coast of the Pacific by kayak or similar craft.[35]

Various pyramid-building civilizations flourished in North and Central America starting about 3,000 years ago, in the region stretching from what is now Illinois to what is now Panama. The pyramids they built were strikingly similar to those of ancient India and neighboring countries, suggesting migrations across the Pacific. The remains of these pyramids can still be seen at places such as Cahokia Mounds State Historic Site in Illinois, Chichen Itza in Mexico, Tikal in Guatemala, and several other locations. These ancient civilizations also built cities of stone, somewhat similar to those of ancient Greece and Rome.[36]

As in ancient Babylon and ancient Egypt, transportation by river played a key role in the development of these American civilizations. Numerous ancient records, illustrations, and archeological digs confirm that these civilizations used canoes and similar craft on rivers for trade and for fishing, and that fish were a principal source of food.[37] As archeologists have excavated ancient American ruins in any one location, they have often found various small items (such as jewelry and tools) that could only have come from other, distant civilizations. These findings show that there was trading over great distances between American civilizations.[38]



In the area that is now St. Augustine, Florida, Native Americans once fished, canoed, and built temples on small pyramids.

These civilizations built cities and towns at strategic points along rivers. Today, the Cahokia Mounds are large earthen mounds, located a few miles east of St. Louis, Missouri. However, from about 700 to 1400 A.D., they were stone-faced pyramids, in a city of perhaps 10,000 to 20,000 people, located on a bend in the Mississippi River, just downstream from its confluence with the Missouri. This was an ideal location for a capital of commerce, carried by canoes, covering a large region in what is now the midwestern United States.[39]

River law in ancient North America

Based on ample acheological evidence, it is clear that transportation and trade using canoes on rivers, and fishing on rivers, were common practices among the ancient North American civilizations, in what is now the United States, Mexico, and Central America. It is clear that these civilizations had already been using canoes and similar craft on rivers, for transportation, trade and fishing, for thousands of years before the arrival of Europeans.

In other words, at the time that the *Institutes of Justinian* were being published in the Roman empire (regarding ancient law that confirmed public rights to use rivers in the civilizations around the Mediterranean,) the same sorts of public rights on rivers had also long been confirmed by law and custom among the civilizations of North America.[40]

Today, there are still a few "windows" into the canoeing and fishing lifestyle of ancient North America. For example, the *Kuna* people still maintain their traditional homeland, *Kuna Yala*, and their own nearly-autonomous government, within the nation of Panama. Their homeland includes the San Blas Islands in the Caribbean, and the adjacent section of the mainland coast, up to the Continental Divide (which is not far from the ocean in that area.) They still use the same type of dugout canoes, for fishing and transportation, as were used in ancient America (and were used throughout

[33] **Kennewick Man:** *The First Americans: The Pleistocene Colonization of the New World,* Nina G. Jablonski, Editor, Univ. of California Press 2002, page 105.

[34] **Isotope measurements:** By Douglas Owsley, mnh.si.edu/kennewickman.

[35] **Kennewick man came by kayak:** *In the Wake of the Jomon, Stone Age Mariners and a Voyage across the Pacific* by Jon Turk, International Marine McGraw-Hill, 2005 (likely that Ainu people kayaked along the coast rather than walking overland, Japan to Alaska, based on research and modern-day trips.)

[36] **Pyramids and cities of stone:** *Ancient Maya: The Rise and Fall of a Rainforest Civilization* by Arthur Demarest, Cambridge University Press 2005.

[37] **Trade and fishing on rivers in ancient America:** *Archeology of Ancient Mexico and Central America: An Encyclopedia,* edited by Susan T. Evans and David L. Webster, Routledge 2000, page 115 (Ancient Mayan city of *Cerros*, next to present-day Corozal in Belize, controlled trade routes on the Rio Hondo and New River, from Yucatán to Petén. The ancient city, now in ruins, is surrounded by a stone-lined canal, where traders in canoes loaded and unloaded cargo.)

[38] **Trading over great distances:** Note striking similarities between the jewelry and pottery designs of North American tribes such as the Navajo and South American tribes such as the Mapuche in Chile. The items traded between North and South America in ancient times may not have been carried the whole way by the same traders, but could well have been taken in several stages by different traders. In any event, there was definitely trading between civilizations.

[39] **Cahokia Mounds:** See the well-illustrated web site at cahokiamounds.org.

[40] **Public rights on rivers in ancient America:** "Aztec and Maya Law: An Online Exhibit and Bibliography," Tarlton Law Library, University of Texas. (tarlton.law.utexas.edu/ exhibits/Aztec/index.html.)

much of the ancient world on other continents.) They paddle up and down the rivers of their region, as well as from island to island along the coast. They use the same sorts of pointed paddles as those that were used by ancient kayakers in Asia, but are not typically seen elsewhere. Today, they are astute traders, setting an annual tribal-wide price for their coconuts, which they trade to factories in nearby Colombia for use in foods and cosmetics. It is evident that this trading tradition among American tribes originated in ancient times.[41]

Dugout canoes are still used today by the Kuna people in Panama.

Ironically, the *Kuna* territory lies scarcely fifty miles from the Panama Canal, the modern "crossroads of the world," where large ships carry trade between the Atlantic and the Pacific, and where North America and South America meet. This modern "crossroads of the world" is very near the place where America's ancient culture, which involved trading by canoe, still thrives today, essentially unchanged.

The European discovery of America

It is likely that the first Europeans to see the coasts of North America were Norse explorers. Shortly after the year 1000 A.D. they made several voyages from Norway to the east coast of what is now Canada. As they anchored their sailing ships in sheltered bays along the coast, they were met by native tribal people paddling kayaks. At first the explorers traded peacefully with the natives, but soon there were misunderstandings and fighting. The explorers returned to Europe and reported their findings, but in those days most Europeans apparently regarded the reports as exagerration or fiction, or as not relevant to daily life.[42]

These and subsequent explorers reported that the native people made their kayaks by building frames of sticks or animal bone, then covering them with the skins of seals or other animals. They used these kayaks when fishing, and also to hunt, using spears or traps, for seals and other animals. They used the fur of these animals for clothing, and the meat for food.

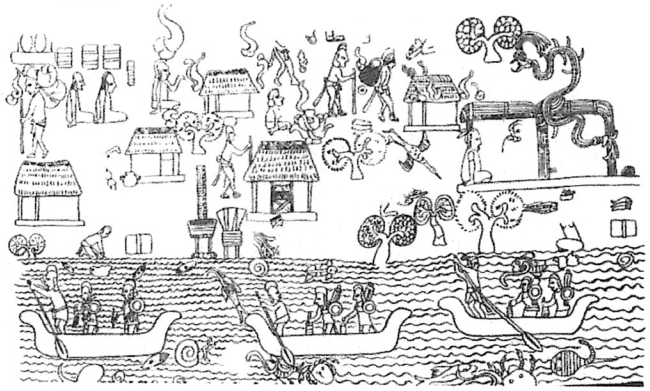
They also used kayaks for transportation. They put food, furs, other freight, and even their children inside these kayaks, then paddled them across cold, windy waters in relative safety.[43]

As mentioned earlier, it appears that native peoples in North America had already been living in this manner, using kayaks and other types of canoes, for thousands of years before the Norse explorers arrived.

Of course, the more publicized European discovery of America was nearly 500 years later, when Christopher Columbus and his crew sailed in 1492 from Spain to what is now the Bahamas. On these islands they found native *Taino* people paddling small boats, calling them by a term that the Spanish explorers transliterated as *canoa*, from which English and other European languages got the word *canoe*.[44]

Miscommunication was common between natives and European explorers, so the Spanish explorers may have been hearing a local variation of the word *cayuco*, which in turn appears to be a variation of *kayak*, *kayik*, and *kaiki*, as noted earlier. Consequently, the two modern words *canoe* and *kayak* may have come from the same ancient root word, which was similar in numerous places around the world.

In 1502, on a later voyage continuing further south, Columbus encountered a large Mayan trading canoe along the coast of what is now Honduras. The canoe was carrying goods such as jade, salt, cotton, and cacao beans. (*Cacao* is a Mayan word, adopted in Europe as *cocoa*.) This was the first known contact between the European and Mayan civilizations (and the first known European experience with chocolate.)[45]



The ancient Maya used canoes for transport, fishing, and trading.

In 1520, a Spanish military expedition led by Hernán Cortés conquered the capital of the Aztec civilization, in what is now Mexico. The capital was located on an island, surrounded by a shallow lake routinely used by canoes, in the area that is now Mexico City. Remnants of the ancient lake are still visited by tourists, in small, flower-decorated

[41] **Kuna life and trading:** *The Art of Being Kuna: Layers of Meaning Among the Kuna of Panama* by Mari Lyn Salvador, University of Washington Press 1997.

[42] **Norse explorers around 1000:** *The European Discovery of America, The Northern Voyages* by Samuel Eliot Morison, Oxford University Press 1971, pg. 53.

[43] **Ancient kayak uses:** *Nanook of the North* by Robert Flaherty, Windmill Books 1971, based on a film from the 1920s showing Eskimo families who were still living in the ancient manner at that time.

[44] **Natives found by Columbus:** *The Tainos: Rise and Decline of the People Who Greeted Columbus* by Irving Rouse, Yale University Press 1993.

[45] **Mayan trading canoes:** "The Mayan Navigators," mayadiscovery.com/ing/history/navigators.htm. "The Maya and Cacao," authenticmaya.com/cacao.htm.

boats, at the present-day Xochimilco gardens on the outskirts of Mexico City.[46]

During these same years, Spanish explorers in the tropical regions of Central and South America found the natives making log rafts for use on rivers from the lightweight wood of a certain tropical tree. In Spanish, a raft is a *balsa*, so they called this wood *balsa* wood. (Today, it is typically used to make model airplanes.)[47]

The first major European exploration of what is now the United States was in 1538, when the Spanish explorer Hernando DeSoto landed in Florida, with 620 men and 223 horses, and made a military-style overland expedition through what is now Florida, Georgia, Alabama, Mississippi, Arkansas, and Louisiana. When the expedition reached the banks of the Mississippi River, thousands of natives (who had heard of the coming invasion) were massed along the opposite shore. Natives in full war regalia repeatedly paddled past the expedition's camp in brightly-painted war canoes, shooting volleys of arrows. The expedition later crossed the river, and continued further west, but many men died, and the survivors returned home in tatters. DeSoto himself died, and his crew "buried" his body by putting it in a hollow log and sending it down the Mississippi.[48]

In 1576, an expedition from England, led by Martin Forbisher, sailed to the east coast of what is now Canada, visiting some of the same areas that the previously-mentioned Norse explorers had seen nearly six centuries earlier. Again, the explorers were met by natives in kayaks, as the earlier Norse explorers had been. Again, at first the explorers traded peacefully with the natives, but later there were disputes and fighting. This time, however, the explorers captured a native and his kayak, and took him back to England. There, this displaced man demonstrated his kayaking, fishing, and fowling skills in various public performances. His performances were then portrayed by English artists in pictures, which were published in books distributed in England and other European countries at that time.[49]

Fishing along the banks of rivers was customary in colonial and early American times.

River uses in colonial America

Colonial fishing. The first colonists in what is now Virginia and neighboring states, during the 1600s, survived largely on fish and game until they could grow and harvest crops. Fish were plentiful in rivers and the ocean. Native tribesmen showed them how to fish successfully, which allowed the colonists to survive.[50]

Later, printed advertisements in Europe, designed to attract additional colonists to America, portrayed fish as being quite plentiful in America, and canoes as being a common and convenient way to catch them. In those times there were devastating famines in parts of Britain, Ireland, and elsewhere in Europe. People feared starving to death. The promise of plentiful fish was a powerful draw for people to emigrate from Europe to America.[51]

In later generations, when colonists were less concerned about mere survival, fishing for sport became common. In Philadelphia, there were at least five different fishing clubs by 1750, and books had been published about fly fishing techniques.[52]

Colonial canoeing on rivers. As colonists moved inland, they found that much of the land was thickly forested and nearly impassable.[53] In many areas, rivers were the only practical routes of transportation. Again, the natives showed them how to use canoes, which could be paddled both upstream and downstream, and could be carried around obstructions in rivers. Canoeing on rivers became a key element in the westward movement of settlers.[54]

Colonial logging on rivers. Colonists often used rivers to transport lumber. They felled trees in the mountains, then cut them on the spot into shorter logs, then floated the logs down rivers to crews waiting at large eddies downstream, who pulled them out of the river and used them to build new settlements.

They even used small creeks to transport logs. They would stockpile the logs along a creek during the low-water months, then send them downstream when the time of high water arrived. Note that rapids and waterfalls were not much of an obstacle for colonial loggers. They simply ran the logs down the rapids and over the waterfalls, then retrieved them from eddies further downstream.[55]

Colonial fur trading. When European colonists arrived in America, native tribes had already been trading in furs for several thousand years, typically transporting them in canoes on rivers. The colonists simply linked this existing commerce to European markets. French entrepreneurs

[46] **Cortés and the Aztecs:** *The Spanish Invasion of Mexico, 1519-1521* by Charles M. Robinson, Osprey Publishing 2004.
[47] **Balsa wood:** *Spanish Word Histories and Mysteries* by the Editors of the American Heritage Dictionaries, Houghton Mifflin Harcourt 2007, page 23.
[48] **DeSoto on the Mississippi:** *Tales of the Mississippi* by Ray Samuel, Leonard Huber, and Warren Ogden, Pelican Publishing, Gretna, 1955 and 2000, pg 2 to 9.
[49] **Native kayaker taken to England:** *The European Discovery of America, The Northern Voyages* by Samuel Eliot Morison, Oxford Univ. Press 1971, page 142.
[50] **Fishing by first colonists:** *Ocean Planet* by Peter Benchley and Judith Gradwohl, Harry N. Abrams Publishers/Smithsonian Institution 1995, page 163.
[51] **Plentiful fish as a draw for emigration:** *Ocean Planet* (just cited) page 164.
[52] **Colonial fly fishing books:** *The Compleat Angler* by Izaak Walton 1676. *The Art of Angling* by Richard Brookes 1740.
[53] **Thickly-forested land:** *The Loggers* by Richard L. Williams, Time-Life Books 1976, page 28.
[54] **Colonial canoeing on rivers:** *The Rivermen* by Paul O'Neil, Time-Life Books 1975, page 19.
[55] **Logging on rivers with rapids and falls:** *The Loggers* (just cited) page 104.