

**GREENLEE COUNTY**

**BEFORE THE  
ARIZONA NAVIGABLE STREAM ADJUDICATION COMMISSION**

**IN THE MATTER OF THE  
NAVIGABILITY OF SMALL AND  
MINOR WATERCOURSES IN  
GREENLEE COUNTY, ARIZONA,  
EXCLUDING THE GILA RIVER, BLUE  
RIVER, AND SAN FRANCISCO RIVER**

No.: 03-008-NAV

**REPORT, FINDINGS AND DETERMINATION  
REGARDING THE NAVIGABILITY OF SMALL AND  
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Pursuant to Title 37, Chapter 7, Arizona Revised Statutes, the Arizona Navigable Stream Adjudication Commission ("Commission") has undertaken to receive, compile, review and consider relevant historical and scientific data and information, documents and other evidence regarding the issue of whether any small and minor watercourse in Greenlee County, Arizona, excluding the Gila River, Blue River and San Francisco River, was navigable or nonnavigable for title purposes as of February 14, 1912. Proper and legal public notice was given in accordance with law and a hearing was held at which all parties were afforded the opportunity to present evidence, as well as their views, on this issue. The Commission, having considered all of the historical and scientific data and information, documents and other evidence, including the oral and written presentations made by persons appearing at the public hearing and being fully advised in the premises, hereby submits its report, findings and determination.

There are 1,298 documented small and minor watercourses in Greenlee County, of which 1,181 are unnamed. All of these watercourses, both named and unnamed, are the subject of and included in this report. Excluded from this report are the Gila River, Blue River and San Francisco River which are deemed to be major watercourses and are the subject of separate reports. Included in this report are separate stream navigability studies for Beaver Creek, Fish Creek and Eagle Creek, which were not rejected at level three of the small and minor watercourses study and for which it was felt more analysis and study was required. Attached hereto as Exhibit "A" is a list of all of the small and minor watercourses in Greenlee County, Arizona, both named and unnamed, covered by this report.

#### **I. Procedure**

On August 20, 2003, the Commission gave proper prior notice of its intent to study the issue of whether small and minor watercourses in Greenlee County, Arizona, were navigable or nonnavigable for title purposes as of February 14, 1912, in accordance with A.R.S. § 37-1123B. A copy of the Notice of Intent to Study and Receive, Review and Consider Evidence on the issue of navigability of small and minor watercourses in Greenlee County is attached hereto as Exhibit "B."

After collecting and documenting all reasonably available evidence received pursuant to the Notice of Intent to Study and to Receive, Review and Consider Evidence, the Commission scheduled a public hearing to receive additional evidence

and testimony regarding the navigability or nonnavigability of small and minor watercourses located in Greenlee County, Arizona. Public notice of this hearing was given by legal advertising on September 5, 2003, as required by law pursuant to A.R.S. § 37-1126 and, in addition, by mail to all those requesting individual notice and by means of the ANSAC website (azstreambeds.com). This hearing was held on October 15, 2003, in the City of Clifton, the county seat of Greenlee County, since the law requires that such hearing be held in the county in which the watercourses being studied are located. Attached hereto as Exhibit "C" is a copy of the notice of the public hearing.

All parties were advised that anyone who desired to appear and give testimony at the public hearing could do so and, in making its findings and determination as to navigability and nonnavigability, the Commission would consider all matters presented to it at the hearing, as well as other historical and scientific data, information, documents and evidence that had been submitted to the Commission at any time prior to the date of the hearing, including all data, information, documents, and evidence previously submitted to the Commission.

Following the public hearing held on October 15, 2003, all parties were advised that they could file post-hearing memoranda pursuant to Rule R12-17-108.01. Post-hearing memoranda were filed by Salt River Project Agriculture and Improvement District and Salt River Valley Water Users Association and Phelps Dodge Corporation.

On January 27, 2004, at a public hearing in Phoenix, Arizona, after considering all of the evidence and testimony submitted, and the post-hearing memorandum filed with the Commission, and the comments and oral argument presented by the parties, and being fully advised in the premises, the Commission, with a unanimous vote, found and determined in accordance with A.R.S. § 37-1128 that all small and minor watercourses in Greenlee County, Arizona, were nonnavigable as of February 14, 1912.

## **II. Greenlee County, Arizona**

Greenlee County, Arizona, is located in the eastern section of the state and is approximately 1,836 square miles in land area with a population of 9,325 as of July 1, 2000. It borders Apache County to the north, Graham County to the west, Cochise County to the South and the State of New Mexico to the east. Greenlee County lies within the following latitude and longitude ranges: 32° 25' 30" North to 33° 47' 00" North and 109° 03' 01" West to 109° 29' 30" West.

The upper half of Greenlee County lies in the central mountain area of eastern Arizona. The southern half lies in the desert and desert mountain area of southeastern Arizona. The northern half of the County is in the Apache Sitgreaves National Forest with an elevation of 6,000 to 9,000 feet and contains pine trees and other mountain foliage. The southern part of the County consists of plains and valleys of semi-arid desert and rolling hills of grassland, with cactus and other desert foliage, and some desert mountains. The highest point in the county is Rose Peak at 8,786 feet above sea

level. The lowest point in the county is where the Gila River crosses the Greenlee-Graham County line below the confluence of the San Francisco River with the Gila River, at approximately 3300 feet above sea level.

The major population centers of Greenlee County are the cities of Duncan, Morenci and Clifton, which is also the county seat. Smaller towns or settlements located in Greenlee County are Franklin, Stargo, Hannagan Meadow, Blue and Beaverhead. The major commercial industries of Greenlee County are mining and tourism. There is also substantial ranching in the county and some farming along the Gila River and Blue River. U.S. Highway 191 (formerly Highway 666, the Coronado Trail) is the main north-south corridor of transportation, running north from Safford, through Clifton, to Springerville in Apache County. State Highway 75 also runs in a northeasterly direction from Duncan to Clifton. State Highway 78 (Mule Creek Trail) runs northeasterly from Three Way south of Clifton into New Mexico where it joins with U.S. Highway 180. There is also a railroad line from Clifton-Morenci to Lordsburg, New Mexico, that provides a connection for the mines in Clifton-Morenci to the Southern Pacific/Union Pacific Railroad main line. The major areas of interest in Greenlee County are the open pit copper mine at Morenci and the recreation areas in the Apache Sitgreaves National Forest in the northern half of the County.

### III. Background and Historical Perspectives

#### A. Public Trust Doctrine and Equal Footing Doctrine

The reason for the legislative mandated study of navigability of watercourses within the state is to determine who holds title to the beds and banks of such rivers and watercourses. Under the public trust doctrine, as developed by common law over many years, the tidal lands and beds of navigable rivers and watercourses, as well as the banks up to the high water mark, are held by the sovereign in a special title for the benefit of all the people. In quoting the U.S. Supreme Court, the Arizona Court of Appeals described the public trust doctrine in its decision in *The Center for Law v. Hassell*, 172 Ariz. 356, 837 P.2d 158 (App.1991), review denied October 6, 1992.

An ancient doctrine of common law restricts the sovereign's ability to dispose of resources held in public trust. This doctrine, integral to watercourse sovereignty, was explained by the Supreme Court in *Illinois Cent. R.R. v. Illinois*, 146 U.S. 387, 13 S.Ct. 110, 36 L.Ed. 1018 (1892). A state's title to lands under navigable waters

is a title different in character from that which the State holds in lands intended for sale. . . . It is a title held in trust for the people of the State that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein freed from the obstruction or interference of private parties.

*Id.* at 452, 13 S.Ct. at 118; *see also Martin v. Waddell*, 41 U.S. (16 Pet.) at 413 (describing watercourse sovereignty as "a public trust for the benefit of the whole community, to be freely used by all for navigation and fishery, as well for shellfish as floating fish").

*Id.*, 172 Ariz. at 364, 837 P.2d at 166.

This doctrine is quite ancient and was first formally codified in the Code of the Roman Emperor Justinian between 529 and 534 A.D.<sup>1</sup> The provisions of this Code, however, were based, often verbatim, upon much earlier institutes and journals of Roman and Greek law. Some historians believe that the doctrine has even earlier progenitors in the rules of travel on rivers and waterways in ancient Egypt and Mesopotamia. This rule evolved through common law in England which established that the king as sovereign owned the beds of commercially navigable waterways in order to protect their accessibility for commerce, fishing and navigation for his subjects. In England the beds of nonnavigable waterways where transportation for commerce was not an issue were owned by the adjacent landowners.

This principle was well established by English common law long before the American Revolution and was a part of the law of the American colonies at the time of the Revolution. Following the American Revolution, the rights, duties and responsibilities of the crown passed to the thirteen new independent states, thus making them the owners of the beds of commercially navigable streams, lakes and other waterways within their boundaries by virtue of their newly established sovereignty. The ownership of trust lands by the thirteen original states was never ceded to the federal government. However, in exchange for the national government's agreeing to pay the debts of the thirteen original states incurred in financing the

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<sup>1</sup> *Putting the Public Trust Doctrine to Work*, David C. Slade, Esq. (Nov. 1990), pp. xvii and 4.



Revolutionary War, the states ceded to the national government their undeveloped western lands. In the Northwest Ordinance of 1787, adopted just prior to the ratification of the U. S. Constitution and subsequently re-enacted by Congress on August 7, 1789, it was provided that new states could be carved out of this western territory and allowed to join the Union and that they "shall be admitted . . . on an equal footing with the original states, in all respects whatsoever." (Ordinance of 1787: The Northwest Territorial Government, § 14, Art. V, 1 stat. 50. See also U. S. Constitution, Art. IV, Section 3). This has been interpreted by the courts to mean that on admission to the Union, the sovereign power of ownership of the beds of navigable streams passes from the federal government to the new state. *Pollard's Lessee v. Hagan, et al.*, 44 U.S. (3 How.) 212 (1845), and *Utah Division of State Lands v. United States*, 482 U.S. 193 (1987).

In discussing the equal footing doctrine as it applies to the State's claim to title of beds and banks of navigable streams, the Court of Appeals stated in *Hassell*:

The state's claims originated in a common-law doctrine, dating back at least as far as Magna Charta, vesting title in the sovereign to lands affected by the ebb and flow of tides. See *Martin v. Waddell*, 41 U.S. (16 Pet.) 367, 412-13, 10 L.Ed. 997 (1842). The sovereign did not hold these lands for private usage, but as a "high prerogative trust . . . , a public trust for the benefit of the whole community." *Id.* at 413. In the American Revolution, "when the people . . . took into their own hands the powers of sovereignty, the prerogatives and regalities which before belong either to the crown or the Parliament, became immediately and rightfully vested in the state." *Id.* at 416.

Although watercourse sovereignty ran with the tidewaters in England, an island country, in America the doctrine was extended to navigate inland watercourses as well. See *Barney v. Keokuk*, 94 U.S. 324, 24 L.Ed. 224

(1877); *Illinois Cent. R.R. v. Illinois*, 146 U.S. 387, 434, 13 S.Ct. 110, 111, 36 L.Ed. 1018 (1892). Moreover, by the "equal footing" doctrine, announced in *Pollard's Lessee v. Hagan*, 44 U.S. (3 How.) 212, 11 L.Ed. 565 (1845), the Supreme Court attributed watercourse sovereignty to future, as well as then-existent, states. The Court reasoned that the United States government held lands under territorial navigable waters in trust for future states, which would accede to sovereignty on an "equal footing" with established states upon admission to the Union. *Id.* at 222-23, 229; accord *Montana v. United States*, 450 U.S. 544, 101 S.Ct. 1245, 67 L.Ed.2d 493 (1981); *Land Department v. O'Toole*, 154 Ariz. 43, 44, 739 P.2d 1360, 1361 (App. 1987).

The Supreme Court has grounded the states' watercourse sovereignty in the Constitution, observing that "[t]he shores of navigable waters, and the soils under them, were not granted by the Constitution to the United States, but were reserved to the states respectively." *Pollard's Lessee*, 44 U.S. (3 How.) at 230; see also *Oregon ex rel. State Land Board v. Corvallis Sand & Gravel Co.*, 429 U.S. 363, 374, 97 S.Ct. 582, 589, 50 L.Ed.2d 550 (1977) (states' "title to lands underlying navigable waters within [their] boundaries is conferred . . . by the [United States] constitution itself").

*Id.*, 172 Ariz. 359-60, 837 P.2d at 161-162.

In the case of Arizona, the "equal footing" doctrine means that if any stream or watercourse within the State of Arizona was navigable on February 14, 1912, the date Arizona was admitted to the Union, the title to its bed is held by the State of Arizona in a special title under the public trust doctrine. If the stream was not navigable on that date, ownership of the streambed remained in such ownership as it was prior to statehood--the United States if federal land, or some private party if it had previously been patented or disposed of by the federal government--and could later be sold or disposed of in the manner of other land since it had not been in a special or trust title under the public trust doctrine. Thus, in order to determine title to the beds of rivers,

streams, and other watercourses within the State of Arizona, it must be determined whether or not they were navigable or nonnavigable as of the date of statehood.

### **B. Legal Precedent to Current State Statutes**

Until 1985, most Arizona residents assumed that all rivers and watercourses in Arizona, except for the Colorado River, were nonnavigable and accordingly there was no problem with the title to the beds and banks of any rivers, streams or other watercourses. However, in 1985 Arizona officials upset this long-standing assumption and took action to claim title to the bed of the Verde River. *Land Department v. O'Toole*, 154 Ariz. 43, 739 P.2d 1360 (App. 1987). Subsequently, various State officials alleged that the State might hold title to certain lands in or near other watercourses as well. *Id.*, 154 Ariz. at 44, 739 P.2d at 1361. In order to resolve the title questions to the beds of Arizona rivers and streams, the Legislature enacted a law in 1987 substantially relinquishing the state's interest in any such lands.<sup>2</sup> With regard to the Gila, Verde and Salt Rivers, this statute provided that any record title holder of lands in or near the beds of those rivers could obtain a quitclaim deed from the State Land Commissioner for all of the interest the state might have in such lands by the payment of a quitclaim fee of \$25.00 per acre. The Arizona Center for Law in the Public Interest filed suit against Milo J. Hassell in his capacity as State Land Commissioner, claiming that the statute was unconstitutional under the public trust doctrine and gift clause of the Arizona

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<sup>2</sup> Prior to the enactment of the 1987 statute, the Legislature made an attempt to pass such a law, but the same was vetoed by the Governor. The 1987 enactment was signed by the Governor and became law. 1987 Arizona Sessions Law, Chapter 127.

Constitution as no determination had been made of what interest the state had in such lands and what was the reasonable value thereof so that it could be determined that the state was getting full value for the interests it was conveying. The Superior Court entered judgment in favor of the defendants and an appeal was taken. In its decision in *Hassell*, the Court of Appeals held that this statute violated the public trust doctrine and the Arizona Constitution and further set forth guidelines under which the state could set up a procedure for determining the navigability of rivers and watercourses in Arizona. In response to this decision, the Legislature established the Arizona Navigable Stream Adjudication Commission and enacted the statutes pertaining to its operation. 1992 Arizona Session Laws, Chapter 297 (1992 Act). The charge given to the Commission by the 1992 Act was to conduct full evidentiary public hearings across the state and to adjudicate the State's claims to ownership of lands in the beds of watercourses. See generally former A.R.S. §§ 37-1122 to 37-1128.

The 1992 Act provided that the Commission would make findings of navigability or nonnavigability for each watercourse. See former A.R.S. § 37-1128(A). Those findings were based upon the "federal test" of navigability in former A.R.S. § 37-1101(6). The Commission would examine the "public trust values" associated with a particular watercourse only if and when it determined that the watercourse was navigable. See former A.R.S. §§ 37-1123(A)(3), 37-1128(A).

The Commission began to take evidence on certain watercourses during the fall of 1993 and spring of 1994. In light of perceived difficulties with the 1992 Act, the Legislature revisited this issue during the 1994 session and amended the underlying legislation. See 1994 Arizona Session Laws, ch. 178 ("1994 Act"). Among other things, the 1994 Act provided that the Commission would make a recommendation to the Legislature, which would then hold additional hearings and make a final determination of navigability by passing a statute with respect to each watercourse. The 1994 Act also established certain presumptions of nonnavigability and exclusions of some types of evidence.

Based upon the 1994 Act, the Commission went forth with its job of compiling evidence and making a determination of whether each watercourse in the state was navigable as of February 14, 1912. The Arizona State Land Department issued technical reports on each watercourse, and numerous private parties and public agencies submitted additional evidence in favor of or opposed to navigability for particular watercourses. See, *Defenders of Wildlife v. Hull*, 199 Ariz. 411, 416, 18 P.3d 722, 727 (App. 2001). The Commission reviewed the evidence and issued reports on each watercourse which were transmitted to the Legislature. The Legislature then enacted legislation relating to the navigability of each specific watercourse. The Court of Appeals struck down that legislation in its *Hull* decision, finding that the Legislature had not applied the proper standards of navigability. *Id.* 199 Ariz. at 427-28, 18 P.2d at 738-39.

In 2001, the Legislature again amended the underlying statute in another attempt to comply with the Court's pronouncements in *Hassell* and *Hull*. See, 2001 Arizona Session Laws, ch. 166, § 1. The 2001 legislation now governs the Commission in making its findings with respect to the small and minor watercourses in Greenlee County.

#### **IV. Issues Presented**

The applicable Arizona statutes state that the Commission has jurisdiction to determine which, if any, Arizona watercourses were "navigable" on February 14, 1912 and for any watercourses determined to be navigable, to identify the public trust values. A.R.S. § 37-1123. A.R.S. § 37-1123A provides as follows:

A. The commission shall receive, review and consider all relevant historical and other evidence presented to the commission by the state land department and by other persons regarding the navigability or nonnavigability of watercourses in this state as of February 14, 1912, together with associated public trust values, except for evidence with respect to the Colorado River and, after public hearings conducted pursuant to section 37-1126:

1. Based only on evidence of navigability or nonnavigability, determine what watercourses were not navigable as of February 14, 1912.

2. Based only on evidence of navigability or nonnavigability, determine whether watercourses were navigable as of February 14, 1912.

3. In a separate, subsequent proceeding pursuant to section 37-1128, subsection B, consider evidence of public trust values and then identify and make a public report of any public trust values that are now associated with the navigable watercourses.

A.R.S. §§ 37-1128A and B provide as follows:

A. After the commission completes the public hearing with respect to a watercourse, the commission shall again review all available

evidence and render its determination as to whether the particular watercourse was navigable as of February 14, 1912. If the preponderance of the evidence establishes that the watercourse was navigable, the commission shall issue its determination confirming the watercourse was navigable. If the preponderance of the evidence fails to establish that the watercourse was navigable, the commission shall issue its determination confirming that the watercourse was nonnavigable.

B. With respect to those watercourses that the commission determines were navigable, the commission shall, in a separate, subsequent proceeding, identify and make a public report of any public trust values associated with the navigable watercourse.

Thus, in compliance with the statutes, the Commission is required to collect evidence, hold hearings, and determine which watercourses in existence on February 14, 1912, were navigable or nonnavigable. This report pertains to all of the small and minor watercourses in Greenlee County, Arizona, and excludes the San Pedro River. In the hearings to which this report pertains, the Commission considered all of the available historical and scientific data and information, documents and other evidence relating to the issue of navigability of the small and minor watercourses in Greenlee County, Arizona, as of February 14, 1912.

Public trust values were not considered in these hearings but will be considered in separate, subsequent proceedings, if required. A.R.S. §§ 37-1123A3 and 37-1128B. In discussing the use of an administrative body such as the Commission on issues of navigability and public trust values, the Arizona Court of Appeals in its decision in *Hassell* found that the State must undertake a “particularized assessment” of its “public

trust” claims but expressly recognized that such assessment need not take place in a “full blown judicial” proceeding.

We do not suggest that a full-blown judicial determination of historical navigability and present value must precede the relinquishment of any state claims to a particular parcel of riverbed land. An administrative process might reasonably permit the systematic investigation and evaluation of each of the state’s claims. Under the present act, however, we cannot find that the gift clause requirement of equitable and reasonable consideration has been met.

*Id.*, 172 Ariz. at 370, 837 P.2d at 172.

The 2001 *Hull* court, although finding certain defects in specific aspects of the statute then applicable, expressly recognized that a determination of “navigability” was essential to the State having any “public trust” ownership claims to lands in the bed of a particular watercourse:

The concept of navigability is “essentially intertwined” with public trust discussions and “[t]he navigability question often resolves whether any public trust interest exists in the resource at all.” Tracy Dickman Zobenica, *The Public Trust Doctrine in Arizona’s Streambeds*, 38 Ariz.L.Rev. 1053, 1058 (1996). In practical terms, this means that **before a state has a recognized public trust interest in its watercourse bedlands, it first must be determined whether the land was acquired through the equal footing doctrine. However, for bedlands to pass to a state on equal footing grounds, the watercourse overlying the land must have been “navigable” on the day that the state entered the union.**

199 Ariz. at 418, 18 P.3d at 729 (also citing *O’Toole*, 154 Ariz. at 45, 739 P.2d at 1362 (emphasis added)).

The Legislature and the Court of Appeals in *Hull* have recognized that, unless the watercourse was “navigable” at statehood, the State has no “public trust”



ownership claim to lands along that watercourse. Using the language of *Hassell*, if the watercourse was not “navigable,” the “validity of the equal footing claims that [the State] relinquishes” is zero. *Hassell*, 172 Ariz. at 371, 837 P.2d at 173. Thus, if there is no claim to relinquish, there is no reason to waste public resources determining (1) the value of any lands the State **might** own if it had a claim to ownership, (2) “equitable and reasonable considerations” relating to claims it might relinquish without compromising the “public trust,” or (3) any conditions the State might want to impose on transfers of its ownership interest. See *id.*

## V. Burden of Proof

The Commission in making its findings and determinations utilized the standard of the preponderance of the evidence as the burden of proof as to whether or not a stream was navigable or nonnavigable. A.R.S. § 37-1128A provides as follows:

After the commission completes the public hearing with respect to a watercourse, the commission shall again review all available evidence and render its determination as to whether the particular watercourse was navigable as of February 14, 1912. If the preponderance of the evidence establishes that the watercourse was navigable, the commission shall issue its determination confirming that the watercourse was navigable. If the preponderance of the evidence fails to establish that the watercourse was navigable, the commission shall issue its determination confirming that the watercourse was nonnavigable.

This statute is consistent with the decision of the Arizona courts that have considered the matter. *Hull*, 199 Ariz. at 420, 18 P.3d at 731 (“... a ‘preponderance’ of the evidence appears to be the standard used by the courts. See, e.g., *North Dakota v. United States*,

972 F.2d 235-38 (8th Cir. 1992)"); *Hassell*, 172 Ariz. at 363, n. 10, 837 P.2d at 165, n. 10 (The question of whether a watercourse is navigable is one of fact. The burden of proof rests on the party asserting navigability . . . ."); *O'Toole*, 154 Ariz. at 46, n. 2, 739 P.2d at 1363, n. 2.

The most commonly used legal dictionary contains the following definition of "preponderance of the evidence":

Evidence which is of greater weight or more convincing than the evidence which is offered in opposition to it; that is, evidence which as a whole shows that the fact sought to be proven is more probable than not. *Braud v. Kinchen*, La.App., 310 So.2d 657, 659. With respect to burden of proof in civil actions, means greater weight of evidence, or evidence which is more credible and convincing to the mind. That which best accords with reason and probability. The word "preponderance" means something more than "weight"; it denotes a superiority of weight, or outweighing. The words are not synonymous, but substantially different. There is generally a "weight" of evidence on each side in case of contested facts. But juries cannot properly act upon the weight of evidence, in favor of the one having the onus, unless it overbears, in some degree, the weight upon the other side.

*Black's Law Dictionary*, 1064 (5th ed. 1979).

The "preponderance of the evidence" standard is sometimes referred to as requiring "fifty percent plus one" in favor of the party with the burden of proof. One could imagine a set of scales. If the evidence on each side weighs exactly evenly, the party without the burden of proof must prevail. In order for the party with the burden to prevail, sufficient evidence must exist in order to tip the scales (even slightly) in its favor. See, generally, *United States v. Fatico*, 458 U.S. 388, 403-06 (E.D. N.Y. 1978), *aff'd*

603 F.2d 1053 (2nd Cir. 1979), *cert. denied* 444 U.S. 1073 (1980); *United States v. Schipani*, 289 F.Supp. 43, 56 (E.D. N.Y. 1968), *aff'd*, 414 F.2d 1262 (2nd Cir. 1969).

## VI. Standard for Determining Navigability

The statute defines a navigable watercourse as follows:

“Navigable” or “navigable watercourse” means a watercourse that was in existence on February 14, 1912, and at that time was used or was susceptible to being used, in its ordinary and natural condition, as a highway for commerce, over which trade and travel were or could have been conducted in the customary modes of trade and travel on water.

A.R.S. § 37-1101(5).

The foregoing statutory definition is taken almost verbatim from the U. S. Supreme Court decision in *The Daniel Ball*, 77 U.S. (10 Wall) 557, 19 L.Ed. 999 (1870), which is considered by most authorities as the best statement of navigability for title purposes. In its decision, the Supreme Court stated:

Those rivers must be regarded as public navigable rivers in law which are navigable in fact. And they are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water.

77 U.S. at 563.

In a later opinion in *U. S. v. Holt Bank*, 270 U.S. 46 (1926), the Supreme Court stated:

[Waters] which are navigable in fact must be regarded as navigable in law; that they are navigable in fact when they are used, or are susceptible of being used, in their natural and ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the

customary modes of trade and ravel on water; and further that navigability does not depend on the particular mode in which such use is or may be had—whether by steamboats, sailing vessels or flatboats—nor on an absence of occasional difficulties in navigation, but on the fact, if it be a fact, that the [water] in its natural and ordinary condition affords a channel for useful commerce.

270 U.S. at 55-56.

The Commission also considered the following definitions contained in A.R.S. § 37-1101 to assist it in determining whether small and minor watercourses in Greenlee County were navigable at statehood.

11. “Watercourse” means the main body or a portion or reach of any lake, river, creek, stream, wash, arroyo, channel or other body of water. Watercourse does not include a man-made water conveyance system described in paragraph 4 of this section, except to the extent that the system encompasses lands that were part of a natural watercourse as of February 14, 1912.

3. “Highway for commerce” means a corridor or conduit within which the exchange of goods, commodities or property or the transportation of persons may be conducted.

2. “Bed” means the land lying between the ordinary high watermarks of a watercourse.

6. “Ordinary high watermark” means the line on the banks of a watercourse established by fluctuations of water and indicated by physical characteristics, such as a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation or the presence of litter and debris, or by other appropriate means that consider the characteristics of the surrounding areas. Ordinary high watermark does not mean the line reached by unusual floods.

8. “Public trust land” means the portion of the bed of a watercourse that is located in this state and that is determined to have

been a navigable watercourse as of February 14, 1912. Public trust land does not include land held by this state pursuant to any other trust.

Thus, the State of Arizona in its current statutes follows the federal test for determining navigability.

## **VII. Evidence Received and Considered by the Commission**

Pursuant to A.R.S. § 37-1123, and other provisions of Title 37, Chapter 7, Arizona Revised Statutes, the Commission received, compiled, and reviewed evidence and records regarding the navigability and nonnavigability of small and minor watercourses located in Greenlee County, Arizona. Evidence consisting of studies, written documents, newspapers and other historical accounts, pictures and testimony were submitted. A comprehensive study entitled "Final Report - Small & Minor Watercourses Analysis for Greenlee County, Arizona" prepared by Stantec Consulting Inc., in association with JE Fuller/Hydrology & Geomorphology, Inc., under supervision of the Arizona State Land Department, dated April 2001, was submitted. An earlier draft of the final report dated January 2001 was also considered by the Commission, as well as the Small and Minor Watercourse Criteria Final Report dated September 1998 and the 3-County Pilot Study dated September 1999. Documents were also submitted by the Arizona Center for Law in the Public Interest and Phelps Dodge Corporation which submitted additional evidence concerning the importation of water into Eagle Creek. The list of evidence and records, together with a summarization is attached as Exhibit "D." The Commission also heard testimony and received and considered

evidence at the public hearing on small and minor watercourses located in Greenlee County, Arizona, held in Clifton, Arizona, on October 15, 2003. The minutes of the hearing are attached hereto as Exhibit "E".

**A. Small & Minor Watercourses Analysis for Greenlee County, Arizona**

**1. Analysis Methods.**

Due to the large number of small and minor watercourses located in Greenlee County, Arizona (1,298 watercourses, of which 1,181 are unnamed), it is impractical and unnecessary to consider each watercourse with the same detail that the Commission considered major watercourses. The study of small and minor watercourses developed by Stantec Consulting Inc. and its associate J. E. Fuller Hydrology & Geomorphology, Inc. provided for an evaluation using a three-level process which contained criteria that would be necessarily present for a stream to be considered navigable.<sup>3</sup> A master database listing all small and minor watercourses was developed from the Arizona Land Resource Information System (ALRIS) with input from the U.S. Geological Survey, the U.S. Environmental Protection Agency and other agencies and sources. The final version of the master database called "Streams" includes a hydrological unit code (HUC), segment number, mileage, watercourse type and watercourse name, if available. Thus there is a hydrological unit code for each of the segments of the 1,298 small and minor watercourses in Greenlee County, Arizona. In addition, the database

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<sup>3</sup> The three-level process begins with a presumption and hypothesis that each stream is navigable. Analysis at each level attempts to reject that hypothesis. Fuller Final Report for Mohave County, November 22, 2002.

locates each segment by section, township, and range. Some of the satellite databases discussed below also locate certain significant reference points by latitude and longitude.

Using the master database, the contractor also set up six satellite databases, each relating to a specific stream characteristic or criterion, that would normally be found in a watercourse considered to be navigable or susceptible of navigability. These stream criteria are as follows:

1. Perennial stream flow;
2. Dam located on stream;
3. Fish found in stream;
4. Historical record of boating;
5. Record of modern boating; and
6. Special status (other water related characteristics, including in-stream flow application and/or permit, unique waters, wild and scenic, riparian, and preserve).

All watercourses were evaluated at level one which is a binary (yes or no) sorting process as to whether or not these characteristics are present. For a stream or watercourse not to be rejected at level one, it must be shown that at least one of these characteristics is present. If none of these characteristics are present, the stream or watercourse is determined to require no further study and is rejected at level one as having no characteristics of navigability.

All streams and watercourses surviving the level one sorting (i.e., determined to have one or more of the above characteristics) are evaluated at level two. The level two analysis is more qualitative than level one and its assessment requires a more in-depth analysis to verify and interpret the reasons that caused a particular stream to advance from level one. Each of the above characteristics on which there was an affirmative answer at level one is analyzed individually at level two to determine whether the stream is potentially susceptible to navigation or not susceptible to navigation; for example, a watercourse that at first appears to be perennial in flow but upon further analysis is determined to have only a small flow from a spring for a short distance and therefore cannot be considered perennial for any substantial portion of the watercourse.

In addition, the level two analysis utilized a refinement with value engineering techniques analyzing watercourses with more than one affirmative response at level one and assigned values to each of the six categories mentioned above. Clearly, perennial flow, historical boating, and modern boating are more important to the issue of navigability than the categories of dam impacted, special status, or fish. Thus, for the purpose of the value engineering study, the following rough values were assigned to each of the six categories: historical boating-10, modern boating-8, perennial stream-7, dam impacted-4, fish-4, and special status-2. These values were arrived at after much calculation, analysis and evaluation of each stream having affirmative responses at level one. This system is a recognized tool used in value engineering studies, and seven



qualified engineers from the state Land Department and consulting staff of the contractor participated in determining the values used for each category. This system establishes that a value in excess of 13 is required for a stream to survive the level two evaluation and pass to level three for consideration.<sup>4</sup> Thus, a stream having both perennial flow and historical boating (sum value of 17), or a combination of the values set for other criteria equaling more than 13, would require that the stream pass to evaluation at level three. If a stream does not have a sum value greater than 13, it is determined to require no further study and is rejected at level two as having insufficient characteristics of navigability.

If a stream survives the evaluation at level two, it goes on to level three which uses quantitative hydrologic and hydraulic analysis procedures including any stream gauge data available, as well as engineering estimates of depth, width and velocity of any water flow in the subject watercourse and comparing the same to minimum standards required for different types of vessels. Also considered is the configuration of the channel and whether it contains rapids, boulders or other obstacles. If a stream or watercourse is not rejected or eliminated at level three, it is removed from this process and subjected to a separate detailed study similar to that performed on a major watercourse, and a separate report will be issued on that stream or watercourse. Since

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<sup>4</sup> When this procedure was first developed, a cutoff value of 11 was established for a stream to survive level two and pass to level three for evaluation. As the procedure was refined, the cutoff value of 13 was substitute for 11 as it was felt to be more accurate. In this case it makes no difference which value is used since no stream has a value between 11 and 13.

three streams survived the level three analysis, a separate detailed stream navigability study was performed on each of them and separate reports are included herein.

## **2. Application of Analysis Methods to Small and Minor Watercourses in Greenlee County.**

The application of the level one analysis to the 1,298 small and minor watercourses located in Greenlee County resulted in 1,212 watercourses or 93.4% being determined as not having any of the six characteristics listed above, and these 1,212 were therefore rejected or eliminated and did not proceed to a further evaluation at level two. Attached as Exhibit "F" is a list of the watercourses in Greenlee County which were determined to have no characteristics of navigability or characteristics indicating susceptibility of navigability at level one.

Only 86 watercourses, approximately 6.6%, received an affirmative response to one or more of the above characteristics or criteria and were evaluated at level two. Fifty-eight of these watercourses had only one affirmative response at level one and, after further analysis of that affirmative response, were rejected and determined not to have the characteristics of navigability requiring further study. Twenty-four of the watercourses received an affirmative response to more than one of the characteristics listed but, after analysis, were determined to have a total value of 13 or less and were rejected and determined to have insufficient characteristics of navigability or susceptibility of navigability to warrant further study. In the value engineering analysis, it was determined that only four streams had a sum value of more than 13

when analyzed pursuant to the value engineering techniques and therefore should be advanced for further study at level three. It was thus determined that 82 of the streams analyzed at level two could not be considered as susceptible of navigability and were therefore rejected at level two. Attached as Exhibit "G" is a list of the 82 watercourses that received a positive response to one or more of the characteristics listed above and were evaluated at level two. The four streams that survived the value engineering analysis at level two and were considered at level three are the Black River, Beaver Creek, Eagle Creek and Fish Creek.

### **3. Level Three Analysis of Black River**

The Black River crosses Apache, Greenlee, Navajo, Graham and Gila Counties in the mountainous area of central Arizona. It received four affirmative responses in the level one analysis--modern boating, fish, special status, and perennial stream. It runs in a generally south by west direction from its headwaters in Williams Valley and Big Lake to its confluence with the Salt River, approximately 13 miles southwest of White River, Arizona. It is 113.4 miles long and drains a total area of about 1,252 square miles. Elevations along the watercourse range from a maximum of 7,840 feet at the headwaters to about 4,230 at its confluence with the Salt River. For geomorphology purposes, the Black River can be divided into three reaches. In the upper reach and middle reach it flows through deep canyons which have only limited access to the river itself. In the

middle reach, the slope flattens out and in the lower reach the slope and banks are much more accessible to persons desiring to go to the river.

There are three U.S. Geological Survey gauging stations along the Black River which have the following mean annual flows. The upper gauging station near Maverick, Arizona, has a mean annual flow of 141 cubic feet per second ("cfs"). The gauging station near Point of Pines and below the pumping plant has a mean annual flow of 221 cfs. The gauging station near Ft. Apache, Arizona, close to where it flows into the Salt River, has a mean annual flow of 438 cfs. Near Freezeout Creek, eight miles northwest of Point of Pines, the Phelps Dodge Corporation has constructed a pumping plant to transfer water from the Black River to Eagle Creek for use in its processing plants in the mines near Morenci, which reduces the average flow down the Black River and increases the flow in Eagle Creek.

The overall depth of the river averages between 1-1/2 to 3-1/2 feet and is between 15 and 25 feet in width. The river has numerous rapids and even some low waterfalls which inhibit the use of boats on the river. Notwithstanding this, due to the amount of water, canoes, kayaks and rubber rafts can be used for recreational purposes some of the time on portions of the river. Due to obstructions in the river such as rapids and waterfalls, overgrowth and rock outcrops, shallow-flow depths, and steep slopes in the canyon areas, continuous access to the river is nearly impossible except on a localized recreational use basis and the river itself is not conducive to regular commercial

transportation. In view of the overall conditions of the river, it was determined that the Black River should be rejected as a navigable river at level three, and a detailed study was not conducted. Both Beaver Creek (see 4 below) and Fish Creek (see 5 below) are tributaries of the Black River and the three should have been considered as a single watercourse. Clearly, Beaver Creek and Fish Creek should not have been recommended for separate detailed studies above level 3, notwithstanding reports of modern boating, when the Black River was rejected at level 3. However, since the evidence presented them in this fashion, this report will also relate the separate studies.

#### **4. Level Three Analysis of Beaver Creek**

Beaver Creek lies in the northernmost area of Greenlee County and wends its way from its headwaters west of the San Francisco mountains of the Apache National Forest to its confluence with the Black River approximately two miles west of Sprucedale, Arizona. It had four affirmative responses at Level One—fish, modern boating, special status and perennial stream. It is 13.1 miles long and has a drainage area of approximately 64 square miles. Elevations along the watercourse range from a maximum of 9,102 feet at its headwaters to about 7,298 feet at its confluence with the Black River. It is not a fully perennial stream but is an interrupted stream which is relatively dry for the first 3-1/2 miles of its headwaters. It then becomes perennial for the remaining 9.62 miles.

The U.S. Geological Survey. gauging station located on Hannigan Creek near Hannigan Meadow, which flows into Beaver Creek, is the only gauging station on this watershed. Thus, the flow data had to be computed and evaluated using regression equations developed by the Geological Survey. The Survey estimates that the mean annual flow of Beaver Creek is 22.3 cfs and, due to the small drainage area, its two-year flood peak is only 400 cfs. Its average depth is estimated between .3 and .6 of a foot, and its width is 10 to 25 feet. Comparing this data to the criteria necessary for recreational boating, it is clear that Beaver Creek near its mouth can barely support recreational watercraft and then only about ten percent of the time.

The stream is predominantly narrow, making it difficult to support even small watercraft, and the shallow flows are not sufficient to carry or support small watercraft. There are also a number of significant stream obstructions including thick vegetation, low overhanging tree branches, and rocks. Although the hydraulic conditions in the stream are insufficient to meet minimum boating criteria and the observed stream characteristics make Beaver Creek incapable of exhibiting characteristics conducive to navigation, a detailed navigability study was recommended and conducted for Beaver Creek since there were records of modern boating on this stream.

## **5. Level Three Analysis of Fish Creek**

Fish Creek is located in eastern Arizona in the northern area of Greenlee County, along the southern margin of the Colorado Plateau physiographic province of Arizona.

It received four affirmative responses in the Level One analysis, including perennial stream, modern boating, fish and special status. Its headwaters are located along U.S. Highway 191 at the northern divide between the Conklin Creek watershed and Bitter Creek watershed. The creek is 14 miles long from its headwaters to its confluence with the Black River. Elevations within the drainage basin are from 9,300 feet at its headwaters to 6,900 at the confluence with the Black River.

The main channel has a maximum width of about 25 feet and a depth of about three feet at most locations. The channel is confined within a canyon bottom that varies in width from 25 to 50 feet. The stream exhibits a classic pool and riffle pattern along most reaches. No evidence was submitted to suggest that the location or alignment of the stream corridor had varied significantly since the time of statehood. There are no U.S. Geological Survey gauges on Fish Creek, and information on the condition of the creek is based strictly on anecdotal information and field data and the U.S. Geological Survey regression equations to estimate flood peaks.

During the field investigation, the creek was flowing roughly six to ten feet wide, at a depth of less than 6 inches. The field investigation was conducted on a warm day in December, and it is felt that much of the flow was likely the result of melting of the moderately thick snowpack observed in the watershed. Numerous cobbles and boulders protruded from the streambed, making the stream relatively easy to cross on foot without getting wet. Using the information available and making comparisons

with the nearby Beaver Creek watershed, it was estimated that the average annual flow or discharge was 34 cfs and that the average channel depth would be .6 of a foot with a width of approximately 14 feet.

The historical and field evidence suggests that Fish Creek is an intermittent and interrupted stream and that the typical flow condition is shallow depths with large protruding rocks and boulders. Comparing the flow characteristics for Fish Creek with federal boating criteria indicates that acceptable recreational boating conditions exist less than ten percent of the time. Numerous rocks and boulders create low flow obstacles to all types of boating and flow depths are not sufficient to support boating by the types of commercial vessels typically used at the time of statehood. Based on the information developed, it is felt that Fish Creek should be rejected at Level Three. However, due to a record of modern boating, a detailed study was conducted for Fish Creek.

## **6. Level Three Analysis of Eagle Creek**

The Eagle Creek watershed is located in eastern Arizona in what is widely regarded as the transition zone between the basin and range and Colorado Plateau physiographic provinces of Arizona. Eagle Creek was named for the eagles that were once found along its river valley. The watershed extends from its headwaters above the Mogollon Rim near Alpine, from where it runs in a southerly direction almost along the Greenlee-Graham County line to a point nine miles southwest of the Clifton-Morenci



area where it flows into the Gila River. It had four affirmative responses at level one—perennial stream, modern boating, fish, and special status. It is 52.5 miles in length and has a drainage area of 622 square miles.

Eagle Creek is a perennial stream but flows more heavily during winter storms, snow melt and summer monsoon storms. There are two U.S. Geological Survey gauging stations located on Eagle Creek. The upper one located near the Double Circle Ranch has a mean annual flow of 26 cfs and the lower one above the pumping plant near Morenci, Arizona, has an annual mean flow of 71 cfs. The average channel depth is .4 to .8 of a foot, and the average channel flow width is 20 to 26 feet. The flow characteristics for Eagle Creek limit acceptable recreational boating conditions to less than 10% of the time. Boating during higher water such as floods, when greater depth is present, would be extremely difficult and hazardous due to the high velocities of the stream, overhanging vegetation, rapids and waterfalls. Since the Arizona State Parks Department lists Eagle Creek as a modern recreational boating stream and due to there being a record of some modern boating and the presence of a perennial flow, a detailed study was recommended for Eagle Creek.

## **7. Summary of Results of Small and Minor Watercourses Analysis for Greenlee County, Arizona**

All of the 1,298 small and minor watercourses in Greenlee County were analyzed in the three-level process developed by the State Land Department and its contractors Stantec and J.E. Fuller Hydrology. At level one, 1,212 watercourses or 93.4% were

determined as not having an affirmative response to any of the six characteristics utilized at level one and were therefore rejected and eliminated at level one. Eighty-six watercourses, approximately 6.6%, received an affirmative response to one or more of the characteristics or criteria and were evaluated at level two. Fifty-eight (58) of these watercourses received only one affirmative response at level one, and further analysis disclosed that they should be rejected as not having the characteristics of navigability requiring further study. Twenty-eight (28) of the watercourses received more than one affirmative response at level one and were analyzed under the value engineering system described above. In this analysis, twenty-four (24) of the watercourses had a sum value of less than 13 and were determined as not having the characteristics of navigability requiring further study. Only four streams had a sum value of more than 13 and were determined to require further study at level three. These four streams, Black River, Beaver Creek, Eagle Creek and Fish Creek, were evaluated at level three. Due to the configuration of the Black River, including obstructions such as rapids and waterfalls, overgrowth, rock outcrops, shallow flow depth, and high canyon walls, it was determined that the Black River was not conducive to commercial travel and it was therefore rejected as a navigable river at level three. Beaver Creek, Fish Creek, and Eagle Creek, which combined have a lower average mean flow than the Black River, were not rejected at level three because there were reports of boating on them. Accordingly, separate detailed studies of these creeks were conducted.

## **B. Prehistoric and Historic Considerations Affecting Small and Minor Watercourses in Greenlee County, Arizona**

In addition to the Small and Minor Watercourses Analysis and other evidence described above, the Commission also considered evidence of the prehistoric conditions and the historic development of Greenlee County as disclosed in part in the studies submitted in connection with hearings on navigability of the San Francisco River, Blue River and Gila River.

### **1. Prehistory or Pre-Columbian Conditions**

Only a limited amount of archaeological study has been performed on Greenlee County. No paleoindian or archaic sites have been recorded in Greenlee County, although such sites are fairly abundant in the general vicinity of central and southeastern Arizona and western New Mexico.<sup>5</sup> A number of formative period sites (A.D. 1 to 1540) have been found near the San Francisco River, but most are small and considered primitive. Most archaeologists classify these sites as being of the Mogollon culture, and the earliest recorded were approximately 50 B.C. One archaeologist recorded seven minor sites above Clifton. A ruin consisting of twenty rooms in two structures, with a plaza between them, was excavated at the point where the Blue River flows into the San Francisco River. Archaeologists are of the opinion that the reason there are few sites in the lower reaches of the San Francisco River and the mountainous areas of the upper two-thirds of Greenlee County, Arizona is due to the geography and

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<sup>5</sup> The paleoindian period is generally recognized to be between 9000 to 6000 B.C., and the archaic period from 6000 B.C. to A.D. 1.

deep canyons. The largest sites in the San Francisco basin are located in New Mexico where the ground is more level and susceptible to farming. A large site of 100 pithouses has been excavated near Luna, New Mexico.

The Mogollon culture has been defined as a population, probably migrating or influenced by migration from northern Mexico, which inhabited the mountains and mountain lowland transition zones in east central Arizona and western New Mexico. This culture originated at about 300 B.C. and is generally defined on the basis of pithouse architecture, brownware pottery, and flexed burials. It was predominant in the mountainous areas of Greenlee County, although possibly influenced by the Hohokam from the upper Gila River valley until about A.D. 1200 when the Salado culture developed and became more predominant for a couple of centuries. Also, recent discoveries indicate that between 1275 and 1325, a group of Anasazi Indians from the Kayenta region of northern Arizona migrated south into the Mogollon highlands and the upper Gila and San Francisco River and Blue River basins.

There is no archaeological evidence of any prehistoric irrigation agriculture along the rivers and streams of Greenlee County, in Arizona, and it is felt that the inhabitants of the small sites were probably hunters and gatherers living off berries and other food items they could collect from the wild. There is no archaeological evidence of use of the rivers and streams by any of these prehistoric Indians for commercial trade or travel nor of any flotation of logs. Some time between 1300 to 1400 and prior to 1540,

the earlier Mogollon-Salado-Anasazi peoples were replaced by the Yavapai culture and the area remained very sparsely populated. The Yavapais were a Yuman speaking people who apparently migrated from the Colorado River across central Arizona, reaching the San Francisco River basin. In the late 1600's and early 1700's the Athabascan-speaking western Apaches migrated into the area and displaced the Yavapai. Both the Yavapai and Apache were relatively nomadic, living by hunting and gathering, and occupied shelters of overhanging rocks and brush wickiups.

## **2. Historical Settlement in Greenlee County**

The first Europeans came into the area with the Coronado Expedition of 1540. Historians dispute Coronado's route from northern Mexico to the Zuni pueblos and on to the pueblos along the Rio Grande River. While the main highway north from Clifton is called the "Coronado Trail," it is unlikely that the Coronado Expedition came that far east and actually passed through the San Francisco River basin, except possibly portions of the northern and western Blue River area. Coronado did encounter native peoples living in the vicinity of Chichitcale, a ruin at the northern edge of the Sonoran Desert in the Gila River valley, the exact location of which is still disputed. These people were probably Yavapai, as they were described by Coronado's chroniclers as the most barbarous and primitive people yet seen.

After the Coronado Expedition of 1540, Europeans did not explore the mountainous areas of Greenlee County until approximately 1800 when mining began at

Santa Rita del Cobre near present day Silver City, New Mexico. According to the historians, Apache Indians showed copper ore deposits to Colonel Jose Carrasco about 1800 and soon thereafter Don Francisco Elguea applied for and received a land grant for the area and developed mines. Mexico won its independence from Spain in 1821 and, although it tried to keep citizens of the expanding United States out of its territory, some began to settle in Taos and Santa Fe in the 1830's and 1840's.

In the 1820's, American fur trappers began trapping beaver along the rivers of the southwest. Their general route was from Santa Fe to the Santa Rita copper mines, near what is now Silver City, New Mexico, and then westward to the Gila River. The first documented trapping expedition up the San Francisco River occurred in 1826 when a portion of a trapping party traveling down the Gila branched off to try the San Francisco, as well as Bonita Creek. Throughout the late 1820's, 1830's, and as late as 1842, other trapping parties traveled down the Gila and some may have traveled up the San Francisco and Blue Rivers but did not leave specific and definite records. These mountain men while trapping the rivers of the southwest, traveled by foot and horseback. There is no record of their having used canoes, rafts, or other types of boats, except when they reached the Colorado River.

In 1846 war broke out between the United States and Mexico, and a number of military expeditions passed through southern Arizona, but none traveled through Greenlee County north of the Gila River. In 1846 General Stephen Watts Kearny, who

was guided by Kit Carson, and the Army of the West traveled down the Gila River through southern Arizona on their way to California. They may have passed by the mouth of the San Francisco River, but did not go up the river to any extent. Lt. William Emery who was a topographical engineer mapped the route for the Army of the West and recorded information regarding the area. He reported on the stream he called the Prieto River, which is believed to be today's San Francisco River, and stated that it flowed through the mountains, that its sands were reputed to contain gold, and that the river though small was good for hunting beaver. Lt. Philip St. George Cook and the Mormon Battalion also passed through the area at this time, but its route was further south, and he did not cross or come in contact with the area north of the Gila River.

After the Treaty of Guadalupe Hidalgo which ended the war with Mexico in 1848 and the subsequent purchase in 1853 of the area south of the Gila River by the treaty that accomplished the Gadsden Purchase, the present boundaries of the United States were set and the Army undertook extensive topographical and geographical review of the area. The Apache Indians were a great problem and, beginning the 1860's, the United States military established a system of military posts throughout southern Arizona to control these Indians. The nearest of these posts were Ft. Apache near the confluence of the White and Black Rivers in the mountains to the west and Camp San Carlos and Ft. Thomas on the Gila River in Graham County. During the Apache wars, troops discovered copper deposits on the San Francisco River which began to be

developed in 1872, resulting in the creation of the Clifton-Morenci Mining District. The first prospectors came from Silver City, New Mexico, and explored the area and established the copper mine locations. The mines near Clifton and Morenci have continued to produce copper, and the great open pit mine at Morenci is one of the largest producers of copper in the world today. Clifton was the major town in the area and reached its peak population in 1910 when it had about 5,000 residents (in 1993, its population was 3,000).

Farming and ranching developed at about the same time as mining in the San Francisco River basin, including along the Blue River, during the 1870's. Most farming was concentrated to the south on the Gila River, but a very limited amount of irrigation agriculture was practiced on small farms on the San Francisco River and its major tributary, the Blue River. One of the earliest cattle trails through southern Arizona passed through the upper Gila River following the route of the Army of the West. Other than mining in the Clifton-Morenci area, most of the commercial activity in Greenlee County related to ranching and farming. There are some 45 homesteads and other government grants located in the San Francisco and Blue River basin. Except for Clifton and Morenci, the small settlements mostly supported the ranching industry. Two of these small settlements located in the San Francisco River basin were Benton, which was located on the Blue River, and Oroville, which was located on the San Francisco River a few miles above Clifton. Transportation in the area was by horseback,



ox and mule teams, and stagecoach. Railroads were built between the mines and smelters as early as 1878, and in 1883 to 1884, the Arizona and New Mexico Railroad constructed a line that connected Clifton to the main line of the Southern Pacific Railroad at Lordsburg, New Mexico. Several toll roads were constructed in the 1880's and 1890's, and by the early 1900's, highways suitable for automobile and truck traffic were in place.

Several accounts describe boating on the San Francisco and Blue Rivers, as well as Beaver Creek, Fish Creek and Eagle Creek, but they consisted of recreational floating only, using small rafts and canoes when the water was high enough to allow it. There is no historical evidence of any commercial boating on the San Francisco River, Blue River, or any of the small and minor watercourses in Greenlee County, nor is there any historical evidence of floating of logs on the small and minor watercourses of Greenlee County. The evidence and witnesses all agreed that the weather and climatic conditions existing at the present time are the same as or very similar to those existing in 1912 when Arizona became a state.

Based on all of the evidence considered, it appears at the time of statehood some of the small and minor watercourses in Greenlee County were susceptible to limited forms of recreational floating downstream but, at most, this was less than 10% of the time. There is no historical evidence of any commercial enterprise conducted on any of the small and minor watercourses for trade and travel as of the time of statehood. None

of the streams and watercourses in Greenlee County are listed under the Rivers and Harbors Act of 1899. The customary mode of transportation in the region was not by boat. Prior to and at the time of statehood, travel was by foot, horseback, mule train, wagon and stagecoach and, after 1883, by train. At the time of statehood and immediately thereafter, trucks and automobiles were also used as the road system was expanded and improved.

### **VIII. Separate Detailed Stream Navigability Study for Beaver Creek**

Since Beaver Creek survived the level three analysis of small and minor watercourses in Greenlee County, a separate and detailed study of its navigability and susceptibility for navigation was conducted. The separate report on Beaver Creek is incorporated in this Report, Findings and Determination.

Beaver Creek lies within the eastern portion of the Mogollon Rim/White Mountain geographical area of Greenlee County, Arizona. Its headwaters are near U.S. Highway 191 (formerly Highway 666) in the southeast portion of Section 22, Township 4 North, Range 30 East, Gila and Salt River Base and Meridian, latitude 33° 42.1' North, longitude 109° 12.1' West. The stream flows north for a couple of miles and then turns in a west by northwest direction until its confluence with the Black River in the center of Section 24, Township 4 North, Range 28 East, Gila and Salt River Base and Meridian, latitude 33° 40.8' North, longitude 109° 21.2' West. The length of the stream is 12.4 miles and it drains an area of 63.7 square miles. The drainage area is bounded by the

Bear Creek watershed divide to the south, U. S. Highway 191 to the East, and Middle Mountain to the North. The watershed is located entirely within the Apache Sitgreaves National Forest. Elevations within the watershed range from 8500 feet along Middle Mountain to 7300 feet at its confluence with the Black River.

#### **A. History of the Beaver Creek Watershed**

Beaver Creek was inhabited by the Mogollon culture of pre-Columbian Indians from about 300 B.C. until the 13<sup>th</sup> century. Spanish exploration of the area began in 1539-1540 with the Coronado Expedition which marked the first incursion of Europeans into the area. During the 17<sup>th</sup> century Apache Indians entered the area from the east in their migration south from Alaska and the northwest. Hunters and trappers began working the area as early as the mid-1800's. A little later Mormon expansion worked its way south from Utah, up the Little Colorado River valley through the area surrounding Beaver Creek and into the Gila River valley farther south. Homesteaders settled in the area throughout the late 1800's and early 1900's, but many did not stay to make a permanent residence. During this time conflicts between the settlers and the Apaches were quite common.

In 1926, the Coronado Trail (then U.S. Highway 666 and now U.S. Highway 191) was constructed to provide access from the Clifton-Morenci area to the Springerville-Alpine area. Anglo settlers have lived in the Beaver Creek area since the early 1800's, although most settlement in the area appears to have been centered around the

community of Alpine located 14 miles to the northeast. There is no evidence of use by the pre-Columbian Indians of Beaver Creek for transportation. All transportation up to the time of statehood was by foot, horseback or horse-drawn wagon until modern times when the automobile and trucks made their appearance. No railroad segments were ever constructed along Beaver Creek.

There is no record in any of the literature of Beaver Creek being used for irrigation purposes, although it is likely that the stream flow was diverted by early settlers and used for irrigation of small gardens and farm plots maintained by settlers in the valley.

#### **B. Wildlife, Habitat and Hydrology**

Beaver Creek is located within the area that consists primarily of montane conifer forests with extensive stands of ponderosa pine. These trees were heavily logged during the latter part of the 1800's and early 1900's. Early settlers report to an abundant grouping of wildlife consisting of deer, elk, mountain lion, bear, wolf, coyote, turkey, Mexican pigeons and wild geese. The area is currently the site of reintroduction of the Mexican gray wolf which was eliminated by ranchers and hunters in the early part of the 1900's.

Beaver Creek itself is primarily a cobble-bedded channel with low vegetated banks. The bank vegetation consists of woody riparian vegetation and grasses. The main channel is straight to slightly sinuous and consists primarily of a single channel

with occasional braided reaches. The U.S. Geological Survey operated a stream gauge for approximately one year on Beaver Creek, and it indicated an average mean flow of 25 cfs. The mean annual precipitation in the area taken from a geological survey water gauge at Hannigan Creek, a tributary to Beaver Creek, indicates a mean annual precipitation of 30 inches for the area. Although in wet seasons the flow will be greater, the average channel flow depth is only three-quarters of a foot, with an average channel flow width of ten feet. The geological survey for the year 1916 which was an especially wet year, indicates running water in Beaver Creek with a depth of six to twelve inches and stream widths of ten to thirteen feet. In other drier years, the stream has been dry, but the historical and field evidence suggests Beaver Creek is a perennial stream. Although one source listed Beaver Creek as a modern boating stream for recreational purposes, three other sources did not list it as a recreational boating stream.

### **C. Summary**

From the evidence presented, the Commission concludes that most reaches of Beaver Creek are perennial, flowing all or most of the time in response to discharge from springs, tributary inflows, geologic controls and snow melt, as well as in response to precipitation. No evidence was found to indicate that sustained trade or travel occurred in boats on Beaver Creek, and no evidence was found to indicate that commercial enterprise of any kind was conducted in boats on this stream at the time of statehood. Any boating or fishing on Beaver Creek was strictly for recreational and not

commercial purposes. No record of the use by Beaver Creek for flotation of logs or other material was found in the historical documents and, due to its low flow, it is doubtful that any significant flotation of logs could have occurred during ordinary and normal conditions. No evidence was found of any specific diversion structures. However, it is likely that fords and other crossings existed on Beaver Creek in earlier days, and some of these structures may have been impediments to navigation. Transportation in proximity to Beaver Creek was accomplished by foot, horse or wagon at the time of statehood and later by automobile and truck as the road system improved. No evidence was found of any entries under the Desert Land Act of 1877 for diversion of the flow from Beaver Creek, and no evidence was found to indicate Beaver Creek was regulated under the Rivers and Harbors Act of 1899.

#### **IX. Separate Detailed Stream Navigability Study for Fish Creek**

Since Fish Creek survived the level three analysis of small and minor watercourses in Greenlee County, a separate and detailed study of its navigability was conducted. A separate report on Fish Creek, all of which is located in Greenlee County, is incorporated in this Report, Findings and Determination.

Fish Creek, a tributary to the Black River, lies within the eastern portion of the Mogollon Rim/White Mountain geographical area in northern Greenlee County, in eastern Arizona. Its headwaters are near U.S. Highway 191 (formerly Highway 666) in the south central portion of Section 16, Township 3 North, Range 29 East, Gila and Salt

River Base and Meridian, latitude 33° 35.6' North, longitude 109° 20.9' West. The stream flows north for three miles, then turns due west for a couple of miles, then north again for 3-1/2 miles, then west for approximately 3 miles and, finally, north for 2-1/2 miles, all of it flowing through deep canyons with high walls until it flows into the Black River in the middle of Section 30, Township 4 North, Range 28 East, Gila and Salt River Base and Meridian, latitude 33° 42.7' North, longitude 109° 26.6' West. Fish Creek is 14 miles in length and it drains an area of 25.8 square miles. The drainage basin is bounded by the Conklin Creek watershed divide to the south, U.S. Highway 191 to the East, and the Bear Creek watershed divide to the North. Elevations within the drainage basin range from 9300 feet near the northern divide at Highway 191 to 6900 feet at its confluence with the Black River. The watershed lies entirely within the Apache Sitgreaves National Forest.

#### **A. History of the Fish Creek Watershed**

The Mogollon Rim region around Fish Creek has a history of human occupation dating back to 300 B.C. where the first evidence appears of the Mogollon culture and extends to the present. Spanish exploration of the area began in 1539-1540 with the Coronado Expedition which marked the first incursion of Europeans into the area. During the late 1800's and early 1900's settlers came into the area but generally bypassed Fish Creek en route to other destinations. Most settlement in the region appears to have been centered around the present-day community of Alpine which is

located approximately 20 miles to the northeast of Fish Creek. Hunters and trappers began working in the general region in the mid to late 1800's, and during this time conflicts between the Anglos and the Apaches who came into the area in the 17<sup>th</sup> Century A.D. were quite common. Also, Mormon expansion worked its way south from Utah, up the Little Colorado River valley and through the area surrounding Fish Creek and into the Gila River valley farther south.

In 1926 the Coronado Trail (then U.S. Highway 666 and now U.S. Highway 191) was constructed to provide access between the Clifton-Morenci area and the Springerville-Alpine area. The Coronado Trail marks the eastern and upstream end of the Fish Creek valley. Although there were homesteaders in the general area during the late 1800's and early 1900's, there is no specific record of any Anglo settlers living along the creek in the early 1900's and since that time. There is no record in the historical literature of Fish Creek being used for irrigation purposes nor was it used as a highway for commerce. There are no railroad segments or any roads for motor vehicles along Fish Creek.

## **B. Wildlife, Habitat and Hydrology**

Fish Creek is located within the area that consists primarily of montane conifer forests with extensive stands of ponderosa pine which were heavily logged during the latter part of the 1800's and early 1900's. Early settlers, as well as recent recreational hikers, report an abundant amount of wildlife in the Fish Creek basin,



consisting of deer, elk, mountain lion, bear, wolf, coyote, turkey, Mexican pigeons and wild geese. The area is currently the site of reintroduction of the Mexican gray wolf which was eliminated by ranchers and hunters in the early part of the 1900's. Fish Creek is also home to the Apache trout. The Arizona Game and Fish Department has installed a fish barrier across the creek at its confluence with the Black River to keep rainbow trout introduced by the Game and Fish Department from swimming upstream and creating hybrid species by breeding with the native Apache or Arizona trout.

Fish Creek is a cobble-bedded boulder-strewn channel with low banks lined with riparian vegetation. The main channel is generally straight and consists of a single channel within a well-defined canyon drainage system. It is described as a classic pool and riffle or step-pool pattern for most of its length. Its average annual discharge is estimated at 25 cfs and it is between six and ten feet wide, with a depth of less than six inches in its normal ordinary condition. It is considered an intermittent and interrupted stream that flows primarily in response to springs, snow melt, and precipitation. The mean annual precipitation for the area is 30 inches per year. Numerous cobbles and boulders protruding from the streambed, which make the stream not susceptible of navigability, make the stream easy to cross on foot without getting one's feet wet. Access to Fish Creek is very limited due to the steep canyon walls of the deep canyons through which Fish Creek flows. Although one source listed Fish Creek as a modern boating stream for recreational purposes, three other sources did not list it as a

recreational boating stream, and there is no history of any boating having been conducted on the stream. There is no record of any commercial, recreational or other type of boating on Fish Creek, and there are no roads over which vehicles can travel into the Fish Creek basin. There is a Forest Service trail that runs along the creek and has been used for many years for moving firefighters through the back country.

### **C. Summary**

From the evidence presented, the Commission concludes that Fish Creek is an intermittent stream with some interrupted perennial segments. The stream flows most of the time in response to discharge from springs, geologic controls and snow melt, as well as in response to precipitation. No evidence was found to indicate that sustained trade or travel occurred in boats on Fish Creek, and that no commercial enterprise of any kind was conducted by using the watercourse for trade or travel. No evidence was found of boating or commercial fishing on Fish Creek as of the time of statehood, although some recreational fishing does occur on Fish Creek by hikers who are willing to hike into the wilderness. There is no evidence of any use of Fish Creek for floatation of logs. No evidence was found of any specific diversion structures, bridges, fords, dikes or manmade features ever being constructed on Fish Creek. Transportation on Fish Creek at the time of statehood and at the present is accomplished by foot, horse or wagon and, in some limited areas, possibly 4-wheel drive vehicles. No evidence was found that entries under the Desert Land Act of 1877 were made for diversion of flow

from Fish Creek, and no evidence was found in the literature to indicate that Fish Creek was regulated under the Rivers and Harbors Act of 1899.

#### **X Separate Detailed Stream Navigability Study for Eagle Creek**

Since Eagle Creek survived the level three analysis of small and minor watercourses in Greenlee County, a separate and detailed study of its navigability was conducted. A separate report on Eagle Creek, all of which is located in Greenlee County, is incorporated in this Report, Findings and Determination.

Eagle Creek is located in Greenlee and Graham Counties in eastern Arizona in what is generally regarded as the transition zone between the basin and range and Colorado Plateau physiographic provinces of Arizona. It is 52.5 miles in length and drains an area of 622 square miles. The mean annual precipitation for the area is 19.2 inches. The headwaters of Eagle Creek are located along U.S. Highway 191 (formerly Highway 666) in the northeastern portion of Section 33, Township 3 North, Range 29 East, Gila and Salt River Base and Meridian, latitude 33° 34.6' North, longitude 109° 20.3' West. From the headwaters it proceeds in a southerly direction for approximately five miles, then turns due west for approximately eight miles, and then turns south where it parallels the Apache Sitgreaves Forest and San Carlos Indian Reservation, which is also the Graham-Greenlee line, crossing into Graham County at times and then back into Greenlee County until it flows into Township 4 South where it veers in an east by southeast direction. From there it flows generally in a southerly direction until its

confluence with the Gila River near the Graham-Greenlee County line at the top of Section 31, Township 5 South, Range 29 East, Gila and Salt River Base and Meridian, latitude 32° 57.6' North, longitude 109° 24.4' West. The confluence with the Gila River is located about nine miles southwest of the Clifton-Morenci area. The Eagle Creek watershed is bounded by the Mogollon Rim on the north, U. S. Highway 191 to the East, and the Nantanes Mountains on the San Carlos Apache Reservation to the West. The watershed is located entirely within the San Carlos Apache Indian Reservation and the Apache Sitgreaves National Forest and, as pointed out above, generally parallels the Reservation and Forest boundary.

**A. History of the Eagle Creek Watershed**

Eagle Creek was inhabited by the Mogollon culture of pre-Columbian Indians from about 300 B.C. until the 13<sup>th</sup> century. In 1540 the expedition led by Francisco Vazquez de Coronado passed through this region on its way to conquer what was believed to be rich cities to the north. This was the first incursion of Europeans into the region. During the 17<sup>th</sup> century A.D., Apache Indians entered the region from the east following their migration from Alaska and western Canada. In 1880 Eagle Creek was the site of an Apache encampment that consisted of approximately 40 to 50 families, including both White Mountain and Chiracahua Apaches who planted corn along the creek. The California gold rush of 1849 brought the first influx of American travelers and settlers into the area. Gold in minor amounts was discovered on Eagle

Creek in 1861, and a minor gold rush occurred with Eagle Creek being a destination for many prospectors. It soon became clear that this was not a major find and the prospectors moved on. Hunters and trappers also began working in this region in the mid-1800's, and conflicts between them, the Apaches, and the prospectors were quite common. Also at about this time Mormon expansion from the north worked its way up the Little Colorado River valley through the area surrounding Eagle Creek and into the Gila River valley to the south. Homesteaders established small ranches along Eagle Creek in the late 1800's and early 1900's, and some of these ranches are still established as working ranches.

In 1898 the Morenci Water Company constructed a log dam on Eagle Creek and began pumping water from the creek through a four-inch pipeline to the Town of Morenci five miles away for municipal and mining use. This use of water from Eagle Creek was expanded in 1945 when the Phelps Dodge Company constructed a pumping station on the Black River to pump water from it into the Eagle Creek watershed to augment the supply of water being diverted to the mines in Morenci. Also in the late 1950's, a well field was developed on Eagle Creek some distance upstream from the Morenci take-out point to provide an additional supply of water to Eagle Creek for diversion to Morenci. The diversions from the Black River and the pumping of water from Eagle Creek to Morenci continues to this day. Pumping from Eagle Creek to

Morenci has averaged 10,800 acre feet of water or 15 cfs during the fifty-year period from 1945 to 1999.

In 1926, the Coronado Trail (then U.S. Highway 666 and now U.S. Highway 191) was constructed to provide access between the Clifton-Morenci area and the Springerville-Alpine area. Roads and trails from this highway grant access from the east to Eagle Creek. Forest roads also give access to Eagle Creek from Highway 191, one of the main ones being access to the ranches on the southern end, such as the Double O Ranch to the Honeymoon Campground. Other forest roads and trails from Highway 191 and from the San Carlos Indian Reservation grant access to Eagle Creek from the west. All of the literature indicates that transportation along Eagle Creek as of the time of statehood was by foot, horseback or horse-drawn wagon, and later by automobile and truck as a network of roads, although primitive, was established. No railroad segments were ever constructed along Eagle Creek.

There is no record of any commercial boating of any type on Eagle Creek, Eagle Creek was no doubt used occasionally for irrigation purposes by ranchers for their gardens, but there does not appear to have been any major diversions for agricultural purposes.

#### **B. Wildlife, Habitat and Hydrology**

The upper area of the Eagle Creek basin consists primarily of montane conifer forests on or near the Mogollon Rim, with juniper, piñon, woodland, and oak-

pine woodland in the lower watershed area. The conifer forest consists of extensive stands of ponderosa pine which were heavily logged during the latter part of the 1800's and early 1900's. The region is host to a wide variety of wildlife including deer, elk, mountain lion, bear, wolf, coyote, turkey, Mexican pigeons and wild geese. The area is currently the site of reintroduction of the Mexican gray wolf which was eliminated by ranchers and hunters in the early part of the 1900's.

There are two U.S. Geological Survey gauge stations located in the Eagle Creek watershed basin. The upper one, located near the Double Circle Ranch, reports an average annual mean flow of 26 cfs and an annual mean runoff of 18,824 acre feet. The lower gauge station, which is just above the Phelps Dodge pump station five miles outside Morenci and below the well fields which add water to Eagle Creek, reports an average mean flow of 71 cfs and an annual mean runoff of 51,402 acre feet. There is a fair record of floods on Eagle Creek, and the 100-year floods for the two gauge stations report at 24,600 cfs and 47,000 cfs, respectively, although no floods this large have ever been reported. Research indicates that the climate and weather conditions at statehood were not drastically different from currently existing conditions.

Eagle Creek is a perennial stream and is primarily a cobble-bedded channel with low well-vegetated banks. The bank vegetation includes both woody riparian species and grasses. The main channel is straight to slightly sinuous and consists primarily of a single channel with occasional braided reaches. The stream exhibits classical pool and

riffle patterns throughout most of its reach. The flow depths range from 3 to 24 inches, and the width of the stream varies from 13 to 80 feet. Comparison of the estimated flow characteristics for Eagle Creek with federal boating criteria indicates that acceptable recreational boating conditions exist less than 10% of the time. Boating during floods would be difficult and hazardous due to high velocities, overhanging vegetation, rapids and waterfalls. Eagle Creek is listed as a modern recreational boating stream in one of the sources that lists such facts. All of the other sources do not list it as a recreational boating stream. Considering all of the factors, it is concluded that Eagle Creek could be used for recreational boating during seasonal high flow conditions and that canoes, kayaks and tubes could be used, but only approximately 10% of the time. There is no reference to any commercial boating on Eagle Creek, and no commercial recreational outfitters advertise any operations or excursions on Eagle Creek.

### **C. Summary**

From the evidence presented, the Commission concludes that Eagle Creek is a perennial stream, flowing all or most of the time in response to discharge from springs, tributary inflows, geologic controls and snow melt, as well as in response to precipitation. There is no evidence to indicate any trade or travel may have occurred in boats on Eagle Creek. No evidence was found to indicate that a commercial enterprise of any kind was conducted by using the watercourse for trade or travel. Likewise, there is no history of boating or commercial fishing on Eagle Creek at the time of statehood,



although Eagle Creek is used for recreational fishing and boating. Recreational boating consists of seasonal kayaking, canoeing and water tubing. There is no record of any use of Eagle Creek for flotation of logs or other material, although flotation of logs may have been possible during seasonal high flows or floods. At least one diversion structure existed on Eagle Creek at the time of statehood, which is the dam located at the current location of the pump station diversion near Morenci. It is likely that there were numerous fords, low bridges, and other crossings existing along Eagle Creek and these structures may have been an impediment to navigation. The evidence collected indicates that transportation in the Eagle Creek basin was customarily accomplished by foot, horse or wagon at the time of statehood and later by automobile and truck as the road system was developed. No evidence was found that entries under the Desert Land Act of 1877 were made for diversion of flow from Eagle Creek, and no evidence was found to indicate that Eagle Creek was regulated under the Rivers and Harbors Act of 1899.

#### **XI. Findings and Determination**

The Commission conducted a particularized assessment of equal footing claims the State of Arizona might have to the beds and banks of the 1,298 small and minor watercourses in Greenlee County, Arizona, and based on all of the historical and scientific data and information, documents, and other evidence produced, finds that none of the said small and minor watercourses, including Beaver Creek, Eagle Creek

and Fish Creek on which separate detailed studies were conducted, were used or were susceptible to being used, in their ordinary and natural condition, as a highway for commerce, over which trade and travel were or could have been conducted in the customary modes of trade and travel on water as of February 14, 1912.

The Commission also finds that none of the small and minor watercourses in Greenlee County, Arizona, except Eagle Creek and the Black River, are or were truly perennial throughout their length and that as of February 14, 1912, and currently they flow/flowed only in direct response to precipitation and are or were dry at all other times.


The Commission also finds that there is no evidence of any historical or modern commercial boating having occurred on any of the small and minor watercourses in Greenlee County, Arizona.

The Commission also finds that there is no evidence of any fishing, except recreational fishing, having occurred on the small and minor watercourses in Greenlee County, Arizona.

The Commission further finds that all notices of these hearings and proceedings were properly and timely given.

In view of the foregoing, the Commission, pursuant to A.R.S. § 37-1128A, finds and determines that the small and minor watercourses in Greenlee County, Arizona, were not navigable as of February 14, 1912.

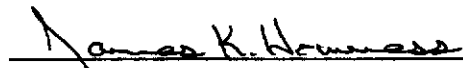
DATED this 28 day of ~~March~~<sup>June</sup> 2004.

  
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Earl Eisenhower, Chair

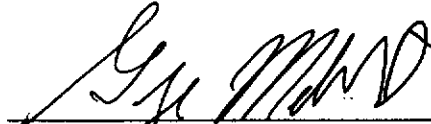
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Dolly Echeverria, Vice Chair

  
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Jay Brashear, Member

\_\_\_\_\_  
Cecil Miller, Member

  
\_\_\_\_\_  
James Henness, Member

Staff Members:

  
\_\_\_\_\_  
George Mehnert  
Executive Director

  
\_\_\_\_\_  
Curtis A. Jennings  
Legal Counsel to the Commission

**Table A-3  
List of Small and Minor Watercourses in Greenlee County**

Al Creek	Fish Creek - Greenlee
Alder Creek - Greenlee	Fishhook Creek
Apache Creek - Greenlee	Foot Creek
Ash Creek - Greenlee	Grant Creek - Greenlee
Bear Creek 1 - Greenlee	Greaser Wash
Bear Creek 2 - Greenlee	Hannagan Creek
Bear Wallow Creek	Hannah Springs Creek
Beaver Creek - Greenlee	Harden Cienega Creek
Beeler Creek	Harris Wash
Benton Creek - Greenlee	Heifer Branch Beaver Creek
Bitter Creek - Greenlee	Horton Creek - Greenlee
Black River	Indian Creek - Greenlee
Blue Creek	Jackson Creek
Buckalou Creek	Juan Miller Creek
Bull Creek - Greenlee	K P Creek
Burro Wash - Greenlee	Kaywood Wash
Bush Creek	Largo Creek
Campbell Blue Creek	Left Prong Dix Creek
Canyon Creek 2	Limestone Gulch
Castle Creek - Greenlee	Linden Creek
Cat Creek	Little Blue Cree
Cave Creek - Greenlee	Little Sand Wash
Centerfire Creek - Greenlee	Lop Ear Creek
Chase Creek	Malay Creek
Chitty Canyon Creek	McKittrick Creek
Cienega Creek	Middle Prong Creek
Cienega Creek 1 - Greenlee	Nolan Creek
Clear Creek - Greenlee	North Bull Creek
Coal Creek	North Corral Creek
Cold Creek	North Fork Bear
Coleman Creek	Oak Creek - Greenlee
Conklin Creek	Pace Creek
Corduroy Creek - Greenlee	Panther Creek
Cottonwood Creek - Greenlee	Pat Creek
Coyote Wash - Greenlee	Pigeon Creek - Greenlee
Crabtree Creek	Pipestem Creek
Deerhead Creek	Rainville Wash
Dix Creek	Raspberry Creek
Double Cienega Creek	Right Fork Foote
Dromedary Creek	Right Prong Dix
Dry Prong Creek	Rousensock Creek
Dutch Blue Creek	Salt House Creek
Eagle Creek	Sand Wash - Greenlee
East Eagle Creek	Sanders Wash
East Fork Black	Sandia Wash
Fall Creek - Greenlee	Sardine Creek

A-1

**Table A-3**  
**List of Small and Minor Watercourses in Greenlee County**

Sheep Wash - Greenlee  
Silver Basin Creek  
Silver Creek - Greenlee  
Skully Creek  
Snake Creek  
South Fork Bear  
Squaw Creek - Greenlee  
Steeple Creek  
Stove Wash  
Strayhorse Creek  
Thomas Creek 1 - Greenlee  
Thomas Creek 2 - Greenlee  
Tollgate Wash  
Tule Creek  
Turkey Creek 2  
Tutt Creek  
Wampoo Wash  
Waters Wash  
West Prong Creek  
White Mule Creek  
Whitefield Wash  
Whitewater Creek  
Willow Creek 1  
Willow Creek 1 - Greenlee  
Willow Creek 2 - Greenlee  
1181 Unnamed Washes

A-2

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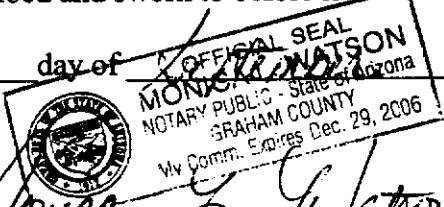
Susan G. Curtis being duly sworn deposes and says:  
That she is the legal clerk of The Copper Era, a newspaper  
published in the Town of Clifton, Greenlee County,  
Arizona; that the legal described as follows:

Arizona Navigable Stream  
Adjudication Commission  
Statement of Intent

a copy of which is hereunto attached, was first published in  
said newspaper in its issue  
dated Aug 20, 2003 and was  
published in each 3 issue(s) of said newspaper  
for 3 consecutive weeks, the last  
publication being in the issue  
dated Sept 3, 2003.

Signed: Susan G. Curtis

Subscribed and sworn to before me this  
3 day of September, 2003

  
Monica G. Watson  
Notary Public

My Commission expires: December 29, 2006

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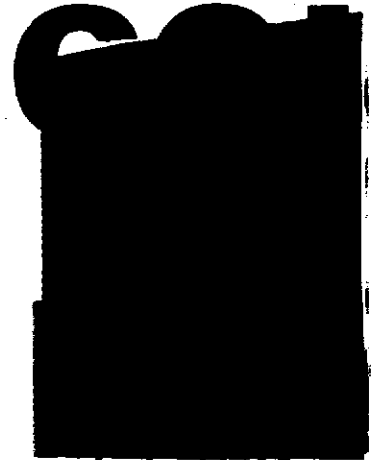
B

**STATEMENT OF INTENT**  
State of Arizona  
Navigable Stream Adjudication  
Commission

Pursuant to A.R.S. §37-1101, et. seq.,  
the Arizona Navigable Stream  
Adjudication Commission (ANSAC)  
is planning to hold a watercourse  
navigability hearing regarding the  
Gila River, Blue River, and the San  
Francisco River in Greenlee County,  
Arizona. Notice is hereby given, pur-  
suant to A.R.S. §37-1123 (B), that  
ANSAC intends to receive, review,  
and consider evidence regarding the  
navigability or non-navigability of  
the Gila River, Blue River, and the  
San Francisco River in Greenlee  
County. Interested parties are  
requested to file all documentary and  
other physical evidence they propose  
to submit to ANSAC by October 1,  
2003. All evidence submitted to  
ANSAC will be the property of  
ANSAC and the State of Arizona.  
Evidence submitted will be available  
for public inspection at the ANSAC  
offices during regular office hours.

Pursuant to A.R.S. §37-1101, et. seq.,  
the Arizona Navigable Stream  
Adjudication Commission (ANSAC)  
is planning to hold a watercourse  
navigability hearing regarding all of  
the small and minor watercourses in  
Greenlee County, Arizona. Notice is  
hereby given, pursuant to A.R.S. §37-  
1123 (B), that ANSAC intends to  
receive, review, and consider evi-  
dence regarding the navigability or  
non-navigability of all small and  
minor watercourses in Greenlee  
County.

Interested parties are requested to  
file all documentary evidence they  
propose to submit to ANSAC by  
October 1, 2003. All evidence sub-  
mitted to ANSAC will be the proper-  
ty of ANSAC and the State of  
Arizona. Evidence submitted will  
be available for public inspection at  
the ANSAC offices during regular



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# THE ARIZONA REPUBLIC

STATE OF ARIZONA }  
COUNTY OF MARICOPA } SS.

Melissa Daams, being first duly sworn, upon oath deposes and says: That she is a legal advertising representative of the Arizona Business Gazette, a newspaper of general circulation in the county of Maricopa, State of Arizona, published at Phoenix, Arizona, by Phoenix Newspapers Inc., which also publishes The Arizona Republic, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the dates as indicated.

The Arizona Republic

Septmeber 5, 2003

Melissa Daams

Sworn to before me this  
5<sup>TH</sup> day of  
September A.D. 2003

C-1



Marilyn Greenwood  
Notary Public

### NOTICE OF PUBLIC HEARING

State of Arizona  
Navigable Stream Adjudication Commission  
Pursuant to A.R.S. § 37-126 (A), notice is hereby given that the Navigable Stream Adjudication Commission will hold public hearings to receive physical evidence and testimony relating to the navigability or nonnavigability of all watercourses in Greenlee County. The hearings will be held in Greenlee County on October 15, 2003. The hearings will begin at 9:00 AM in an order established by the chair at the Train Depot 100 North Coronado Boulevard, Clifton, Arizona, 85533. These are presently the only hearings scheduled for the watercourses in Greenlee County. The list of watercourses in Greenlee include the Gila River, Blue River, and the San Francisco River and the following small and minor watercourses: Al Creek, Alder Creek - Greenlee, Apache Creek - Greenlee, Ash Creek - Greenlee, Bear Creek 1 - Greenlee, Bear Creek 2 - Greenlee, Beaver Creek - Greenlee, Beecher Creek - Greenlee, Benton Creek - Greenlee, Bitter Creek - Greenlee, Black River, Blue Creek, Buckalou Creek, Bull Creek - Greenlee, Burro Wash - Greenlee, Bush Creek, Campbell Blue Creek, Canyon Creek 2, Castle Creek - Greenlee, Cat Creek, Cave Creek - Greenlee, Comberline Creek - Greenlee, Chappin Creek, Chitty Canyon Creek, Cienege Creek, Cienege Creek 1 - Greenlee, Coal Creek - Greenlee, Coal Creek, Cold Creek, Coleman Creek, Conklin Creek, Corduroy Creek - Greenlee, Cottonwood Creek - Greenlee, Coyote Wash - Greenlee, Crabtree Creek, Drowned Creek, Dix Creek, Double Cienege Creek, Dromedary Creek, Dry Prong Creek, Dutch Blue Creek, Eagle Creek, East Eagle Creek, Fall Creek - Greenlee, Fishhook Creek - Greenlee, Foote Creek, Great Creek - Greenlee, Graegar Wash, Hannagan Creek, Hannal Springs Creek, Harden Cienege Creek, Harris Wash, Heiler Branch, Horton Creek - Greenlee, Indian Creek - Greenlee, Jackson Creek, Juan Miller Creek, K P Creek, Kaywood Wash, Largo Creek, Left Prong Dix Creek, Limestone Gulch, Linden Creek, Little Cree, Little Sand Wash, Lop Ear Creek, Malay Creek, McKittrick Creek, Middle Prong Creek, Nolan Creek, North Bull Creek, North Corral Creek, North Fork Bear Oak Creek - Greenlee, Pace Creek, Panther Creek, Pat Creek, Pigeon Creek - Greenlee, Pipestem Creek, Rainville Wash, Raspberry Creek, Right Fork, Right Prong Dix, Rousseau Creek, Salt House Creek, Sand Wash - Greenlee, Sanders Wash, Sandia Wash, Sardine Creek, Sheep Wash - Greenlee, Silver Basin Creek, Silver Creek - Greenlee, Skully Creek, Snake Creek, South Fork Bear, Squaw Creek - Greenlee, Steeple Creek, Stove Wash, Strayhorse Creek, Thomas Creek 1 - Greenlee, Thomas Creek 2 - Greenlee, Tollgate Wash, Tule Creek, Turkey Creek 2, Tutt Creek, Wampoo Wash, Waters Wash, West Prong Creek, White Mule Creek, Whitefield Wash, Whitewater Creek, Willow Creek 1, Willow Creek 1 - Greenlee, Willow Creek 2 - Greenlee, and any other named or unnamed watercourse within Greenlee County.

Interested parties may submit evidence to the commission office prior to the hearing. During the public hearing, the commission will receive additional evidence including testimony. The commission will conduct its hearings informally without adherence to judicial rules of procedure or evidence. Evidence submitted in advance of the hearing will be available for public inspection during regular commission office hours of 8:00 a.m. to 5:00 p.m., Monday thru Friday, except on holidays. The commission office is located at 1700 West Washington Street, Room 304, Phoenix, Arizona 85007. Please call first to review evidence at (602) 542-9214. Individuals with disabilities who need a reasonable accommodation to communicate evidence to the commission, or who require this information in an alternate format may contact the commission office at (602) 542-9214 to make their needs

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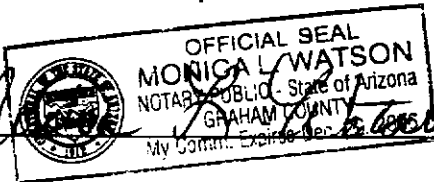
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Arizona Navigable Stream  
Adjudication Commission  
Public Hearing

a copy of which is hereunto attached, was first published in  
said newspaper in its issue  
dated Sept 10, 2003 and was  
published in each 1 issue(s) of said newspaper  
for 1 consecutive weeks, the last  
publication being in the issue  
dated Sept 10, 2003.

Signed: Susan G. Curtis

Subscribed and sworn to before me this  
10 day of September, 2003

  
[Signature] Notary Public

My Commission expires: December 29, 2006

RECEIVED  
OCT 06 2003  
BY: \_\_\_\_\_

**NOTICE OF PUBLIC HEARING**  
State of Arizona  
Navigable Stream Adjudication  
Commission

Pursuant to A.R.S. § 37-1126 (A),  
notice is hereby given that the  
Navigable Stream Adjudication  
Commission will hold public hear-  
ings to receive physical evidence and  
testimony relating to the navigability  
or nonnavigability of all watercours-  
es in Greenlee County. The hearings  
will be held in Greenlee County on  
October 15, 2003. The hearings will  
begin at 9:00 AM in an order estab-  
lished by the chair at the Train Depot  
100 North Coronado Boulevard,  
Clifton, Arizona 85533. These are  
presently the only hearings sched-  
uled for the watercourses in Greenlee  
County.

The list of watercourses in Greenlee  
include the Gila River, Blue River,  
and the San Francisco River and the  
following small and minor water-  
courses: Al Creek, Alder Creek -  
Greenlee, Apache Creek - Greenlee,  
Ash Creek - Greenlee, Bear Creek 1 -  
Greenlee, Bear Creek 2 - Greenlee,  
Bear Wallow Creek, Beaver Creek -  
Greenlee, Beeler Creek, Benton Creek  
- Greenlee, Bitter Creek - Greenlee,  
Black River, Blue Creek, Buckalou  
Creek, Bull Creek - Greenlee, Burro  
Wash - Greenlee, Bush Creek,  
Campbell Blue Creek, Canyon Creek  
2, Castle Creek - Greenlee, Cat Creek,  
Cave Creek - Greenlee, Centerfire  
Creek - Greenlee, Chase Creek,  
Chitty Canyon Creek, Cienega Creek,  
Cienega Creek 1 - Greenlee, Clear  
Creek - Greenlee, Coal Creek, Cold  
Creek, Coleman Creek, Conklin

its hearings informally without  
adherence to judicial rules of proce-  
dure or evidence.

Evidence submitted in advance of  
the hearing will be available for pub-  
lic inspection during regular commis-  
sion office hours of 8:00 a.m. to 5:00  
p.m., Monday thru Friday, except on  
holidays. The commission office is  
located at 1700 West Washington  
Street, Room 304, Phoenix, Arizona  
85007.

Please call first to review evidence  
at (602) 542-9214.

Individuals with disabilities who  
need a reasonable accommodation to  
communicate evidence to the com-  
mission, or who require this informa-  
tion in an alternate format may con-  
tact the commission office at (602)  
542-9214 to make their needs known.

Req.: Arizona Navigable Stream  
Adjudication Commission  
Published September 10, 003 in the  
Copper Era, Clifton, Arizona 85533.

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# Evidence Log

Hearing No. 03-008

Page No.

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## Arizona Navigable Stream Adjudication Commission

Greenlee County Small and Minor Watercourses  
October 15, 2003

Item Number	Received Date	Source to ANSAC	Description	Entry By
1	01/?/01 approx	Evidence on hand at AN-SAC.	Draft Final Report, Small & Minor Watercourses Analysis for Graham County, Arizona.	George Mehnert
2	04/?/01 approx	Evidence on hand at AN-SAC.	Final Report, Small & Minor Watercourses Analysis for Graham County, Arizona.	George Mehnert
4	9/?/98	Evidence on hand at AN-SAC	Small and Minor Watercourse Criteria Final Report.	George Mehnert
5	9/?/99	Evidence on hand at AN-SAC	Final Report, 3 County Pilot Study.	George Mehnert
6	2/18/97	David Baron ACLPI	Letter from David Baron dated February 18, 1997.	George Mehnert
7	10/24/03	Michael Kafka, Phelps Dodge Corporation	Submission of Additional Evidence concerning the Importation of Water Into Eagle Creek.	George Mehnert

D



STATE OF ARIZONA  
NAVIGABLE STREAM ADJUDICATION COMMISSION

1700 West Washington, Room 304, Phoenix, Arizona 85007

Phone (602) 542-9214 FAX (602) 542-9220

E-mail: [streams@mindspring.com](mailto:streams@mindspring.com) Web Page: <http://www.azstreambeds.com>

GEORGE MEHNERT  
Executive Director

**Meeting Minutes**  
**Clifton, Greenlee County**  
**October 15, 2003**

**COMMISSION MEMBERS PRESENT**

Jay Brashear, Earl Eisenhower, James Henness, Cecil Miller.

**COMMISSION MEMBERS ABSENT**

Dolly Echeverria.

**STAFF PRESENT**

George Mehnert, Dir; Curtis Jennings, Legal Counsel.

**1. CALL TO ORDER.**

Chair Eisenhower called the meeting to order at approximately 9:10 a.m.

**2. ROLL CALL.**

See above.

**3. APPROVAL OF MINUTES**

A. Minutes of September 23, 2003.

**Motion:** To approve minutes of September 23, 2003.

**Motion by:** Cecil Miller. **Second by:** Jim Henness **Vote:** All aye.

- 4. HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE GILA RIVER IN GREENLEE COUNTY.** The following people appeared and gave testimony, other information, or asked questions on October 15, 2003: Cheryl Doyle, Philip Rommerub, Dixie Zumwalt, Steve Wene.

- 5. HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE BLUE RIVER IN GREENLEE COUNTY.** The following people appeared and gave testimony, other information, or asked questions on October 15, 2003: Cheryl Doyle, John Wallace, Philip Rommerub.

6. **HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE SAN FRANCISCO RIVER IN GREENLEE COUNTY.** The following people appeared and gave testimony, other information, or asked questions on October 15, 2003: Cheryl Doyle, John Wallace, Philip Rommerub, Bill Staudenmaier regarding evidence submitted previously by Cheryl Hodges-insure that this information is still part of the record.

The Chair requested of Cheryl Doyle of the State Land Department that she check with the State Parks Board and find out how the Parks Board determines the designations for recreational boating, and that she send a letter to the Commission regarding this information.

7. **HEARING REGARDING THE NAVIGABILITY OR NON-NAVIGABILITY OF THE SMALL AND MINOR WATERCOURSES IN GREENLEE COUNTY.** The following people appeared and gave testimony, other information, or asked questions on October 15, 2003: Cheryl Doyle, John Wallace, Bill Staudenmaier.

Request by Bill Staudenmaier to postpone the closing of the record and extend by 10 days the due date for the close of receipt of evidence. The Chair clarified that the extension by 10 days of keeping the record open for taking evidence will also extend by 10 days the 30 days for submitting post hearing memorandums.

**Motion: To extend the time for taking evidence by 10 days.**

Motion by: Jim Henness. Second by: Jay Brashear Vote: All aye.

8. **CALL FOR PUBLIC COMMENT** (comment sheets).

*(Pursuant to Attorney General Opinion No. 199-006 [R99-002]. Public Comment: Consideration and discussion of comments and complaints from the public. Those wishing to address the Commission need not request permission in advance. Action taken as a result of public comment will be limited to directing staff to study the matter or rescheduling the matter for further consideration and decision at a later date.)*

9. **FUTURE AGENDA ITEMS AND ESTABLISHMENT OF FUTURE HEARINGS AND OTHER MEETINGS.**

Discussion. Business meeting in December and future dates for hearings. January hearing meeting for Pima County, including the San Pedro and San Francisco River. Cecil Miller cannot meet January 26, 15, or 14. Chair suggested January 22 or 23, 2003 for Pima County hearings.

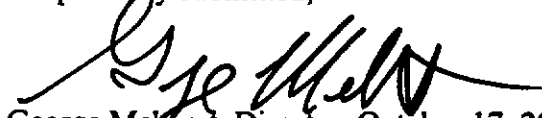
**10. ADJOURNMENT.**

**Motion: To adjourn.**

Motion by: Cecil Miller. Second by: Jim Hennessey Vote: All aye.

Adjourned at approximately 10:40 a.m.

Respectfully submitted,



George Melkert, Director, October 17, 2003.

Table A-1A  
Watercourses in Greenlee County Rejected at Level 1

No.	W_ID	W_NAME	SECCOUNT	W_COUNTIES	W_MILES	W_ADDRESS	W_PER	W_MBOAT	W_MBOAT	W_FISH	W_STATUS	W_DWPF	HITS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	20	Al Creek	1	Greenlee	1.987	T2.0N,R30.0E,S36	No	No	No	No	No	No	0
2	28	Alder Creek - Greenlee	5	Greenlee	6.119	T1.0S,R31.0E,S30	No	No	No	No	No	No	0
3	142	Beaver Creek 1 - Greenlee	4	Greenlee	6.860	T2.0S,R30.0E,S11	No	No	No	No	No	No	0
4	169	Benton Creek - Greenlee	3	Greenlee	3.321	T1.0N,R30.0E,S24	No	No	No	No	No	No	0
5	207	Butler Creek - Greenlee	10	Greenlee	10.511	T7.0S,R31.0E,S08	No	No	No	No	No	No	0
6	249	Blue Creek	6	Greenlee	2.339	T2.0N,R32.0E,S19	No	No	No	No	No	No	0
7	321	Bull Creek - Greenlee	3	Greenlee	4.237	T1.0N,R30.0E,S24	No	No	No	No	No	No	0
8	339	Burno Wash - Greenlee	4	Greenlee	10.410	T9.0S,R32.0E,S05	No	No	No	No	No	No	0
9	342	Bush Creek	4	Greenlee	8.627	T3.0N,R31.0E,S14	No	No	No	No	No	No	0
10	377	Canyon Creek 2	2	Apache/Greenlee	4.274	T4.5N,R31.0E,S29	No	No	No	No	No	No	0
11	383	Cattle Creek - Greenlee	5	Greenlee	6.212	T4.5N,R31.0E,S33	No	No	No	No	No	No	0
12	397	Cal Creek	3	Greenlee	2.610	T4.5N,R31.0E,S35	No	No	No	No	No	No	0
13	426	Centerfire Creek - Greenlee	3	Greenlee	5.734	T4.0N,R31.0E,S36	No	No	No	No	No	No	0
14	466	Chenega Creek	1	Apache/Greenlee	3.547	T4.5N,R30.0E,S22	No	No	No	No	No	No	0
15	472	Chenega Creek 1 - Greenlee	5	Greenlee	8.247	T2.0S,R31.0E,S07	No	No	No	No	No	No	0
16	483	Clear Creek - Greenlee	10	Greenlee	11.096	T2.0S,R31.0E,S07	No	No	No	No	No	No	0
17	493	Coal Creek	36	Greenlee	16.347	T3.0S,R31.0E,S03	No	No	No	No	No	No	0
18	498	Cold Creek	6	Greenlee	13.050	T6.0S,R30.0E,S02	No	No	No	No	No	No	0
19	543	Collinwood Creek - Greenlee	6	Greenlee	9.132	T6.0S,R32.0E,S33	No	No	No	No	No	No	0
20	582	Coyote Wash - Greenlee	7	Greenlee	11.697	T8.0S,R32.0E,S27	No	No	No	No	No	No	0
21	590	Cradle Creek	2	Greenlee	4.884	T2.0N,R29.0E,S19	No	No	No	No	No	No	0
22	648	Deerhead Creek	4	Greenlee	7.919	T3.0S,R28.0E,S05	No	No	No	No	No	No	0
23	684	Dromedary Creek	1	Greenlee	3.142	T6.0S,R31.0E,S27	No	No	No	No	No	No	0
24	755	Fall Creek - Greenlee	1	Greenlee	2.141	T4.5N,R32.0E,S31	No	No	No	No	No	No	0
25	769	Fishhook Creek	5	Greenlee	6.181	T3.0N,R31.0E,S19	No	No	No	No	No	No	0
26	865	Grassier Wash	4	Greenlee	8.442	T6.0S,R31.0E,S18	No	No	No	No	No	No	0
27	37630	Harris Wash	1	Greenlee	3.768	T7.0S,R31.0E,S28	No	No	No	No	No	No	0
28	37716	Indian Creek - Greenlee	5	Greenlee	3.260	T2.0S,R31.0E,S26	No	No	No	No	No	No	0
29	37768	Juan Miller Creek	3	Greenlee	4.861	T2.0S,R29.0E,S12	No	No	No	No	No	No	0
30	37883	Kaywood Wash	1	Greenlee	8.463	T6.0S,R31.0E,S32	No	No	No	No	No	No	0
31	37813	Largo Creek	2	Greenlee	4.420	T3.0N,R31.0E,S21	No	No	No	No	No	No	0
32	37838	Limestone Gulch	4	Greenlee	6.174	T4.0S,R30.0E,S18	No	No	No	No	No	No	0
33	37839	Lunden Creek	6	Greenlee	10.023	T6.0S,R31.0E,S27	No	No	No	No	No	No	0
34	37867	Little Sand Wash	3	Greenlee	3.163	T6.0S,R31.0E,S03	No	No	No	No	No	No	0
35	37891	Lop Ear Creek	1	Greenlee	7.029	T6.0S,R31.0E,S11	No	No	No	No	No	No	0
36	37917	Malay Creek	5	Graham/Greenlee	3.649	T3.0N,R27.0E,S10	No	No	No	No	No	No	0
37	37943	McKilrick Creek	3	Greenlee	7.660	T2.0N,R30.0E,S14	No	No	No	No	No	No	0
38	37972	Middle Prong Creek	11	Graham/Greenlee	10.211	T1.0N,R28.0E,S07	No	No	No	No	No	No	0
39	38071	Nolan Creek	2	Greenlee	3.006	T4.0N,R31.0E,S26	No	No	No	No	No	No	0
40	38075	North Bull Creek	1	Greenlee	1.751	T1.0N,R30.0E,S10	No	No	No	No	No	No	0
41	38078	North Corral Creek	4	Greenlee	4.520	T1.0S,R29.0E,S31	No	No	No	No	No	No	0
42	38110	Oak Creek - Greenlee	4	Greenlee	6.997	T1.0N,R31.0E,S07	No	No	No	No	No	No	0
43	38164	Panther Creek	1	Greenlee	2.199	T3.0N,R30.0E,S26	No	No	No	No	No	No	0
44	38180	Pai Creek	2	Greenlee	4.721	T2.0S,R30.0E,S36	No	No	No	No	No	No	0
45	38238	Peperstem Creek	2	Greenlee	8.790	T1.0S,R30.0E,S32	No	No	No	No	No	No	0

NOTES: The column headings are defined as follows:  
W\_ID: Unique ID number given to the watercourse  
W\_NAME: Name of the watercourse.  
SECCOUNT: Number of segments merged together to comprise the watercourse  
W\_COUNTIES: County(ies) where the watercourse is located.  
W\_MILES: Length of the watercourse in miles.  
W\_ADDRESS: Township, Range and Section of the mouth of the watercourse.

W\_PER: Stream classification-perennial or not.  
W\_MBOAT: With modern boating or not.  
W\_FISH: With fish or not.  
W\_DWPF: Impacted by dam or not.  
HITS: Number of animals this based on the six attribute data

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Table A-1A  
Watercourses in Greenlee County Rejected at Level 1

No.	W_ID	W_NAME	SECCOUNT	W_COUNTIES	W_MILES	W_ADDRESS	W_PER	W_MBOAT	W_MBOAT	W_FISH	W_STATUS	W_DAMP	HITS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
46	38303	Rainville Wash	4	Greenlee	7.055	T8.05.R32.0E.S29	No	No	No	No	No	No	0
47	38344	Right Prong Dix	7	Greenlee	7.730	T3.05.R31.0E.S29	No	No	No	No	No	No	0
48	38375	Rouenssock Creek	10	Greenlee	10.246	T1.0N.R30.0E.S27	No	No	No	No	No	No	0
49	38405	Salt House Creek	8	Greenlee	5.912	T2.0N.R28.0E.S23	No	No	No	No	No	No	0
50	38428	Sand Wash - Greenlee	5	Greenlee	9.181	T8.05.R31.0E.S03	No	No	No	No	No	No	0
51	38430	Sanders Wash	3	Greenlee	7.056	T7.05.R31.0E.S16	No	No	No	No	No	No	0
52	38431	Sanders Wash	1	Greenlee	2.087	T7.05.R31.0E.S34	No	No	No	No	No	No	0
53	38460	Sharp Wash - Greenlee	21	Greenlee	16.900	T2.05.R28.0E.S03	No	No	No	No	No	No	0
54	38512	Shully Creek	7	Greenlee	10.738	T6.05.R31.0E.S09	No	No	No	No	No	No	0
55	38618	Sleeper Creek	4	Greenlee	7.595	T3.0N.R30.0E.S36	No	No	No	No	No	No	0
56	38629	Stone Wash	2	Greenlee	2.741	T7.05.R31.0E.S05	No	No	No	No	No	No	0
57	38719	Tolgate Wash	11	Greenlee/Grant	11.961	T7.05.R28.0E.S10	No	No	No	No	No	No	0
58	38762	Tule Creek	3	Greenlee/Grant	6.773	T3.05.R28.0E.S08	No	No	No	No	No	No	0
59	38788	Tull Creek	2	Greenlee	4.920	T4.0N.R31.0E.S33	No	No	No	No	No	No	0
60	38835	Wanpoo Wash	6	Greenlee	6.703	T6.05.R31.0E.S24	No	No	No	No	No	No	0
61	38843	Waters Wash	1	Greenlee	2.420	T6.05.R31.0E.S11	No	No	No	No	No	No	0
62	38872	West Prong Creek	11	Greenlee	7.488	T1.0N.R27.0E.S02	No	No	No	No	No	No	0
63	38889	Whita Mule Creek	2	Greenlee	4.821	T4.05.R32.0E.S08	No	No	No	No	No	No	0
64	38896	Whitfield Wash	2	Greenlee	2.652	T8.05.R32.0E.S19	No	No	No	No	No	No	0
65	38899	Whitwater Creek	5	Greenlee	8.623	T3.05.R28.0E.S20	No	No	No	No	No	No	0
66	38927	Willow Creek 2 - Greenlee	4	Greenlee	11.537	T8.05.R32.0E.S29	No	No	No	No	No	No	0
67	-	1146 Unnamed Washes	-	Greenlee	Varies	Varies	No	No	No	No	No	No	0

NOTES: The column headings are defined as follows:  
W\_ID: Unique ID number given to the watercourse  
W\_NAME: Name of the watercourse.  
SECCOUNT: Number of segments merged together to comprise the watercourse.  
W\_COUNTIES: County(ies) where the watercourse is located.  
W\_MILES: Length of the watercourse in miles.  
W\_ADDRESS: Township, Range and Section of the mouth of the watercourse.  
W\_PER: Stream classification-perennial or not.  
W\_MBOAT: With modern boating or not.  
W\_MBOAT: With historical boating or not.  
W\_FISH: With fish or not.  
W\_DAMP: Impacted by dam or not.  
W\_STATUS: With special status designations or not.  
HITS: Number of affirmative hits based on the six attribute data.

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Table A-2A  
Watercourses in Greenlee County Rejected at Level 2

NO	W_ID	W_NAME	SECCOUNT	W_COUNTIES	W_MILES	W_ADDRESS	L1_PER	L2_PER	L2_HBOAT	L2_HBOAT	L2_DIMP	L2_FISH	L2_STATUS	NEW_RAT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	364	Campbell Blue Creek	19	Apache/Greenlee	18.85	T4.0N,R32.0E,S04	Yes	Yes	No	No	Yes	Yes	No	11.00
2	437	Chase Creek	14	Greenlee	11.39	T4.0S,R30.0E,S30	Yes	Yes	No	No	Yes	No	No	11.00
3	459	Chilly Canyon Creek	3	Apache	4.88	T2.0N,R28.0E,S24	Yes	Yes	No	No	No	Yes	No	11.00
4	717	East Fork Black	3	Apache	5.12	T4.0N,R28.0E,S11	Yes	Yes	No	No	No	Yes	No	11.00
5	850	Grant Creek - Greenlee	12	Greenlee	10.70	T3.0N,R31.0E,S30	Yes	Yes	No	No	No	Yes	No	11.00
6	37622	Hammagan Creek	2	Greenlee	7.16	T4.0N,R30.0E,S08	Yes	Yes	No	No	No	Yes	No	11.00
7	38697	Thomas Creek 2 - Greenlee	3	Greenlee	4.15	T4.0N,R30.0E,S08	Yes	Yes	No	No	No	Yes	No	11.00
8	144	Bear Creek 2 - Greenlee	1	Greenlee	4.11	T4.0N,R28.0E,S23	Yes	Yes	No	No	No	Yes	No	10.00
9	512	Conklin Creek	3	Greenlee	7.40	T4.0N,R27.0E,S36	Yes	Yes	No	No	No	Yes	No	10.00
10	533	Corduroy Creek - Greenlee	1	Greenlee	3.85	T3.0N,R29.0E,S04	Yes	Yes	No	No	No	Yes	No	10.00
11	668	Dix Creek	3	Greenlee	1.56	T3.0S,R31.0E,S04	Yes	Yes	No	No	No	Yes	No	10.00
12	677	Double Clenega Creek	3	Greenlee	3.89	T4.0N,R29.0E,S32	Yes	Yes	No	No	No	Yes	No	10.00
13	716	East Eagle Creek	12	Greenlee	14.15	T2.0N,R28.0E,S12	Yes	Yes	No	No	No	Yes	No	10.00
14	37772	K P Creek	11	Greenlee	12.10	T2.0N,R30.0E,S12	Yes	Yes	No	No	No	Yes	No	10.00
15	38082	North Fork Bear	4	Greenlee	5.16	T3.0N,R28.0E,S16	Yes	Yes	No	No	No	Yes	No	10.00
16	38308	Raspberry Creek	7	Greenlee	8.26	T2.0N,R30.0E,S23	Yes	Yes	No	No	No	Yes	No	10.00
17	38530	Snake Creek	2	Greenlee	6.20	T3.0N,R28.0E,S28	Yes	Yes	No	No	No	Yes	No	10.00
18	38557	South Fork Bear	7	Greenlee	3.78	T3.0N,R28.0E,S16	Yes	Yes	No	No	No	Yes	No	10.00
19	38632	Strayhorse Creek	14	Greenlee	11.10	T2.0N,R30.0E,S26	Yes	Yes	No	No	No	Yes	No	10.00
20	38924	Willow Creek 1 - Greenlee	3	Greenlee	8.95	T4.5N,R29.0E,S38	Yes	Yes	No	No	No	Yes	No	10.00
21	502	Coleman Creek	7	Apache/Greenlee	7.26	T4.5N,R31.0E,S32	Yes	Yes	No	No	No	Yes	No	8.00
22	404	Cave Creek - Greenlee	5	Greenlee	2.63	T3.0S,R29.0E,S01	Yes	Yes	No	No	No	Yes	No	7.00
23	703	Dutch Blue Creek	8	Greenlee	7.07	T1.0N,R31.0E,S20	Yes	Yes	No	No	No	Yes	No	7.00
24	783	Footie Creek	8	Greenlee	10.95	T3.0N,R31.0E,S21	Yes	Yes	No	No	No	Yes	No	7.00
25	2939	H06.0115	1	Greenlee	0.14	T1.0N,R30.0E,S21	Yes	Yes	No	No	No	Yes	No	7.00
26	2840	H06.0118	1	Greenlee	0.12	T1.0N,R30.0E,S21	Yes	Yes	No	No	No	Yes	No	7.00
27	3019	H06.0386	1	Greenlee	0.89	T3.0S,R29.0E,S13	Yes	Yes	No	No	No	Yes	No	7.00
28	3020	H06.0389	2	Greenlee	0.81	T3.0S,R29.0E,S13	Yes	Yes	No	No	No	Yes	No	7.00
29	3061	H06.0432	3	Greenlee	2.06	T1.0S,R31.0E,S27	Yes	Yes	No	No	No	Yes	No	7.00
30	3072	H06.0443	5	Greenlee	4.63	T1.0S,R31.0E,S17	Yes	Yes	No	No	No	Yes	No	7.00
31	3113	H06.0468	2	Greenlee	0.81	T1.0N,R31.0E,S08	Yes	Yes	No	No	No	Yes	No	7.00
32	3164	H06.0590	1	Greenlee	2.89	T3.0N,R30.0E,S08	Yes	Yes	No	No	No	Yes	No	7.00
33	3202	H06.0601	2	Greenlee	2.21	T3.0N,R29.0E,S24	Yes	Yes	No	No	No	Yes	No	7.00
34	3203	H06.0602	2	Greenlee	2.28	T3.0N,R30.0E,S19	Yes	Yes	No	No	No	Yes	No	7.00
35	14898	H38.0292	2	Greenlee	2.74	T4.0N,R30.0E,S06	Yes	Yes	No	No	No	Yes	No	7.00
36	18409	H4.3.1378	1	Greenlee	2.23	T2.0N,R29.0E,S10	Yes	Yes	No	No	No	Yes	No	7.00
37	37823	Hammah Springs Creek	6	Greenlee	7.54	T1.0N,R31.0E,S28	Yes	Yes	No	No	No	Yes	No	7.00
38	37745	Jackson Creek	5	Apache/Greenlee	4.83	T5.0N,R31.0E,S28	Yes	Yes	No	No	No	Yes	No	7.00
39	38142	Pace Creek	3	Apache/Greenlee	3.83	T4.5N,R32.0E,S20	Yes	Yes	No	No	No	Yes	No	7.00
40	38208	Pigeon Creek - Greenlee	19	Greenlee	14.45	T2.0S,R30.0E,S12	Yes	Yes	No	No	No	Yes	No	7.00
41	38441	Sardine Creek	10	Greenlee	8.10	T3.0S,R30.0E,S21	Yes	Yes	No	No	No	Yes	No	7.00
42	38488	Silver Creek - Greenlee	8	Greenlee	4.52	T3.0S,R30.0E,S21	Yes	Yes	No	No	No	Yes	No	7.00
43	38601	Souaw Creek - Greenlee	9	Greenlee	11.37	T1.0N,R30.0E,S35	Yes	Yes	No	No	No	Yes	No	7.00
44	38686	Thomas Creek 1 - Greenlee	9	Greenlee	8.20	T1.0N,R30.0E,S36	Yes	Yes	No	No	No	Yes	No	7.00
45	38778	Turkey Creek 2	14	Apache/Greenlee	17.23	T4.5N,R30.0E,S13	Yes	Yes	No	No	No	Yes	No	7.00

NOTES: The column headings are identified as follows:  
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W\_NAME: Name of the watercourse.  
SECCOUNT: Number of segments merged together to comprise the watercourse.  
W\_COUNTIES: County(ies) where the watercourse is located.  
W\_MILES: Length of the watercourse in miles.  
W\_ADDRESS: Township, Range and Section of the mouth of the watercourse.  
L1\_PER: Level 1 stream classification - perennial or not. The classification is provided by ALRIS (1998) and Arizona State Parks (1995).  
L2\_PER: Level 2 stream classification. M designation means that the stream is classified as perennial and non-perennial by the two data sources.  
L2\_HBOAT: With or without modern boating account.  
L2\_DIMP: With or without historical boating account.  
L2\_FISH: Dam-impacted or not.  
L2\_STATUS: With fish or not.  
L2\_STATUS: With special status designations or not.  
NEW\_RAT: Computed total rating of the watercourse based on the evaluated weights.

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NEW\_RAT: Computed total rating of the watercourse based on the evaluated weights.

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Table A-2A  
Watercourses in Greenlee County Rejected at Level 2

NO	W_ID	W_NAME	SECCOUNT	W_COUNTIES	W_MILES	W_ADDRESS	L1_PER	L2_PER	L2_MBOAT	L2_HBOAT	L2_DIMP	L2_FISH	L2_SSTATUS	NEW_RAT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
46	38623	Willow Creek 1	72	Greenlee	29.56	T1.0S,R28.0E,S18	Yes	Yes	No	No	No	No	No	7.00
47	57	Apache Creek - Greenlee	41	Greenlee	18.86	T6.0S,R31.0E,S32	Yes	Yes	No	No	No	Yes	Yes	6.82
48	151	Bear Willow Creek	5	Graham/Greenlee	5.90	T3.0N,R27.0E,S03	Yes	Yes	No	No	No	Yes	No	6.50
49	37628	Herdan Cienega Creek	27	Greenlee	10.38	T3.0S,R31.0E,S03	No	Yes	No	No	No	Yes	No	6.50
50	37844	Little Blue Cree	12	Greenlee	13.65	T1.0N,R31.0E,S14	Yes	No	No	No	No	Yes	No	4.00
51	2979	H06_0347	1	Greenlee	2.85	T5.0S,R28.0E,S03	No	Yes	No	No	No	No	No	3.50
52	73	Ash Creek - Greenlee	3	Greenlee	3.88	T1.0N,R31.0E,S20	Yes	Yes	No	No	No	No	No	3.50
53	156	Becker Creek	3	Greenlee	3.80	T2.0N,R30.0E,S36	Yes	Yes	No	No	No	No	No	3.50
54	2834	H06_0110	1	Greenlee	1.75	T2.0N,R30.0E,S19	Yes	Yes	No	No	No	No	No	3.50
55	2946	H06_0123	1	Greenlee	0.14	T1.0S,R31.0E,S30	Yes	Yes	No	No	No	No	No	3.50
56	2948	H06_0125	1	Greenlee	0.78	T2.0S,R31.0E,S07	Yes	Yes	No	No	No	No	No	3.50
57	3009	H06_0378	2	Greenlee	1.44	T3.0S,R29.0E,S25	Yes	Yes	No	No	No	No	No	3.50
58	3036	H06_0408	1	Greenlee	1.09	T1.0S,R31.0E,S05	Yes	Yes	No	No	No	No	No	3.50
59	3083	H06_0454	2	Greenlee	2.34	T3.0N,R31.0E,S35	Yes	Yes	No	No	No	No	No	3.50
60	3125	H06_0501	3	Greenlee	2.15	T3.0N,R29.0E,S23	Yes	Yes	No	No	No	No	No	3.50
61	3200	H06_0558	1	Greenlee	0.17	T2.0N,R30.0E,S26	Yes	Yes	No	No	No	No	No	3.50
62	3214	H06_0613	1	Greenlee	0.38	T1.0N,R30.0E,S18	Yes	Yes	No	No	No	No	No	3.50
63	3247	H06_0648	1	Greenlee	0.28	T1.0S,R30.0E,S22	Yes	Yes	No	No	No	No	No	3.50
64	3252	H06_0653	1	Greenlee	0.12	T1.0S,R31.0E,S30	Yes	Yes	No	No	No	No	No	3.50
65	3278	H06_0880	2	Greenlee	1.79	T3.0S,R28.0E,S12	Yes	Yes	No	No	No	No	No	3.50
66	3310	H06_0716	1	Greenlee	0.16	T3.0S,R30.0E,S17	Yes	Yes	No	No	No	No	No	3.50
67	3456	H06_1284	1	Greenlee	1.08	T3.0N,R29.0E,S08	Yes	Yes	No	No	No	No	No	3.50
68	14882	H39_0272	1	Greenlee	1.49	T4.0N,R28.0E,S25	Yes	Yes	No	No	No	No	No	3.50
69	14881	H38_0283	1	Greenlee	1.40	T4.5N,R28.0E,S34	Yes	Yes	No	No	No	No	No	3.50
70	15002	H36_0285	3	Greenlee	3.87	T4.5N,R28.0E,S23	Yes	Yes	No	No	No	No	No	3.50
71	15003	H39_0286	3	Greenlee	0.33	T6.0S,R31.0E,S07	Yes	Yes	No	No	No	No	No	3.50
72	17343	H42_1145	1	Greenlee	0.36	T1.0S,R28.0E,S05	Yes	Yes	No	No	No	No	No	3.50
73	17456	H43_0127	1	Graham/Greenlee	0.10	T5.0S,R28.0E,S18	Yes	Yes	No	No	No	No	No	3.50
74	18245	H43_1211	2	Greenlee	0.36	T1.0N,R28.0E,S30	Yes	Yes	No	No	No	No	No	3.50
75	18438	H43_1411	2	Greenlee	0.36	T4.5N,R28.0E,S33	Yes	Yes	No	No	No	No	No	3.50
76	37843	Heller Branch Be	2	Apache/Greenlee	5.85	T4.5N,R28.0E,S33	Yes	Yes	No	No	No	No	No	3.50
77	37890	Horton Creek - Greenlee	1	Greenlee	4.63	T3.0S,R31.0E,S27	Yes	Yes	No	No	No	No	No	3.50
78	37827	Left Prong Dix Creek	5	Greenlee	6.27	T3.0N,R31.0E,S05	Yes	Yes	No	No	No	No	No	3.50
79	38342	Right Fork Foote	6	Greenlee	4.99	T4.0N,R31.0E,S05	No	No	No	No	No	No	No	3.00
80	311	Bucalfou Creek	1	Greenlee	1.97	T2.0N,R27.0E,S14	No	No	No	No	No	No	No	3.00
81	686	Dry Prong Creek	18	Greenlee	14.38	T2.0N,R27.0E,S14	No	No	No	No	No	Yes	No	3.00
82	38498	Silver Basin Creek	6	Greenlee	6.45	T5.0S,R28.0E,S14	No	No	No	No	No	Yes	No	0.00

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[S88 - No designated Township, Range, and Section]

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