

96-002-010

ORIGINAL

SALT RIVER

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Material Relevant to both Salt and Gila Rivers

Submitted by

Arizona Center for Law in the Public Interest

August 29, 1996

Maricopa County, Lower Salt River

03-005-NAV

4/7/03

Evidence Item No. 010

IN THE COURT OF APPEALS  
STATE OF ARIZONA  
DIVISION ONE

ORIGINAL

ARIZONA CENTER FOR LAW IN THE PUBLIC )  
INTEREST, a nonprofit corporation; )  
DEFENDERS OF WILDLIFE, a nonprofit corpora- )  
tion; MICHAEL GREGORY; THOMAS WRIGHT; )  
and JAMES VAALER, )

1 CA-CV 89-134

MARICOPA County  
Superior Court  
No. CV 87-20506

Plaintiffs-Appellants, )

v. )

MILO J. HASSELL, in his capacity as State )  
State Land Commissioner; ARIZONA STATE )  
LAND DEPARTMENT, an agency of the State )  
of Arizona; and STATE OF ARIZONA, )

Defendants-Appellees, )

and )

CALMAT CO. OF ARIZONA, an Arizona corpora- )  
tion; TANNER LAND COMPANY, INC., an )  
Arizona corporation; THOMAS M. AND FRANCES )  
K. VALENTE, husband and wife; FIRST AMERICAN )  
TITLE INSURANCE COMPANY OF ARIZONA, an )  
Arizona corporation; MARICOPA COUNTY, a )  
political subdivision of Arizona; SALT RIVER )  
PROJECT AGRICULTURAL IMPROVEMENT DISTRICT, )  
a political subdivision of Arizona, and )  
SALT RIVER VALLEY WATER USERS ASSOCIATION, )  
an Arizona corporation, )

Defendants Intervenors-Appellees. )

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APPELLANTS' OPENING BRIEF

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## B. Navigability Of Arizona Rivers

The navigability of many Arizona rivers is supported by both historical and modern evidence. More than 140 years ago, the navigability of the Gila River was recognized in Article VII of the Treaty of Guadalupe Hidalgo (1848):

The River Gila . . . divided in the middle between the two republics, the navigation of the Gila . . . below said boundary shall be free and common to the vessels and citizens of both countries; and neither shall, without the consent of the other, construct any work that may impede or interrupt, in whole or in part, the exercise of this right; not even for the purpose of favoring new methods of navigation.

Today, Arizona's rivers and lakes support a wide range of boating activities. The 1989 draft Statewide Comprehensive Outdoor Recreation Plan, published by the Arizona State Parks Board, identifies 42 Arizona stream segments that provide whitewater canoeing, kayaking, or rafting opportunities for persons of varying levels of boating skills.<sup>6</sup> The plan also identifies a number of other river segments that are suitable for quiet-water boating by persons with minimal skills, including the Upper Verde and the Lower Salt. A.84-86. Commercial river running companies now conduct substantial numbers of trips each year on the Salt, Verde, Gila and Virgin Rivers. A.81-84. On the Upper Salt River alone, the United States Forest Service allows more than 30,000 service days of commercial use each year. A.83.

Many of the smaller watercourses in the state are boatable. According to the U.S. Department of Interior, the following are

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<sup>6</sup> Arizona State Parks Board, 1989 Statewide Comprehensive Outdoor Recreation Plan, Arizona Rivers, Streams & Wetlands Study at 79-89 (draft), excerpted at A.65-86.

minimum criteria for river depth and width to support the types of boating indicated:

Recreation Craft	Required Depth (ft)	Required Width (ft)
Canoe/Kayak	0.5	4
Drift boat, rowboat-raft	1.0	6

PSJ.4 at 3. According to James Slingsluff, an experienced Arizona river runner (A.55), modern canoes generally need only 2-3 inches of water to boat on a river, and only 1-1 1/4 inches if the canoe is totally flat-bottomed. PSJ.5 at 71-72. A wooden or canvas boat generally needs 4-6 inches of water to boat on a river. Id. at 159-60.

In the trial court, plaintiffs offered hundreds of pages of exhibits and deposition testimony supporting the navigability of 18 different Arizona rivers. IA.189-192, 212, 213. This evidence included historical accounts of actual pre- and post-statehood river travel; information on the historic depths, widths and flows in various rivers; and firsthand accounts of actual current use of numerous rivers. A small sample of navigability evidence on several of these rivers is provided below. A more complete summary discussing all 18 rivers is provided in the Appendix to this brief at A.87.

1. Agua Fria River: According to a 1915 federal land survey, the Agua Fria routinely had 4 to 12 inches of water in an 80 foot wide channel beginning at a point 3 1/2 to 4 miles above the confluence with the Gila River. Below that point, to the confluence

with the Gila River, the river depth was approximately 2 feet deep. PSJ.52; PSJ.1 (Attachment 1 to State's Answers - memo of 7/25/86 from Bill Allen to Jay Skardon); PSJ.21 at 81-84. These surveys led the State Land Department's chief hydrologist to conclude in 1986 "that the lower 3 1/2 to 4 miles of the [Agua Fria] channel were navigable at statehood." PSJ.1 (Attachment 1 to State's Answers).

2. Gila River: There are numerous historical accounts of actual river travel on the Gila. The pioneer James O. Pattie canoed the river as part of a fur trapping expedition in the 1850's. PSJ.10 at 184. During the mid- to late 1800's, a number of pioneer groups boated westward on the Gila, in some cases navigating most of the river's length. PSJ.16 at 249-51, PSJ.53, 54, 55, 56. At one point, the Gila was also used by two steamers to transport freight and passengers from Yuma to Gila City, twenty miles upstream. PSJ.9 at 407. Ferryboats were commonly used on the Gila in the late 1800's and early 1900's, including several commercial operations. PSJ.17, 57, 58. A ferry from Sentinel to Agua Caliente Hotsprings carried passengers and freight on a daily basis during this period, according to a local resident who moved to the area in 1910. PSJ.17.

An 1852 account from a government expedition reported that in the Gila below the San Pedro confluence, the average stream of water measured about 40 yards in width with an average depth of 2 feet. PSJ.12 at 20. The 1846 military survey of Lt. Col. Emory states that "[t]he Gila, at certain stages, might be navigated up to the Pimos Village and possibly with small flat boats at all

stages of water." PSJ.8 at 95. Historical flow records maintained by the United States Geological Survey show that, in 1912, flows in the Gila River near Clifton equaled or exceeded 190 cubic feet per second on 116 separate days. PSJ.25 at 130. According to an outfitter who currently runs commercial river trips on the Gila, 200 cfs is adequate to support a commercial river trip on the San Francisco near the Gila confluence. PSJ.24 at 74.

3. Salt River: There are several historical accounts of actual navigation on the Salt in pre-statehood days. See, e.g., PSJ.20, 59. One group successfully boated the Salt in June 1885, from the area of today's Roosevelt Lake down to Tempe. The group had made the trip to determine whether logs could be brought downriver to Phoenix from the Sierra Anchas. The Arizona Gazette reported that "the undisputed conclusion is that such work can be successfully carried out." PSJ.20. The Salt River also had several established ferry businesses. PSJ.60, 61. One of the most well known ferry operations was that of Charles T. Hayden, which operated near today's Mill Avenue Bridge. PSJ.60. Historical photos of the Salt, including Hayden's Ferry, are reproduced in the Appendix at A.97-101. According to an 1850's account, the Salt 12 miles upstream from the Gila was 80 to 120 feet wide and from 2 to 3 feet deep. PSJ.19 at 240, 244. See also, PSJ.17 at 90.

A number of companies currently operate commercial river trips on the Salt. A.48, 52, 80-83. One of these companies conducts approximately 100 trips per year, encompassing all

seasons. A.48. Another company runs trips in the period from December through May. A.52. The Salt is also currently used for private recreational boating trips. A.55, 80-83; PSJ.5 at 73-87. According to two experienced river runners, the Salt River from the Highway 60 Bridge to the Highway 288 Bridge is suitable for river travel in all seasons. A.48, 55. The National Park Service describes the Salt River as "one of the best whitewater streams in the Southwest." A.62.

4. Tonto Creek: Tonto Creek is currently used for recreational boating. A.53. At least one outfitter has applied for a permit to conduct commercial trips on Tonto Creek. Id. According to this outfitter - an experienced river runner - Tonto Creek is "very suitable for river travel." A.52-53.

5. Verde River: The Army used boats to ferry people and cargo across the Verde at Fort Verde in the late 1800's. PSJ.21 at 34-35; PSJ.22 at 6(A). The State Land Department relied at least in part on this historical use in concluding that the Verde at Camp Verde was navigable at statehood and asserting state ownership of the bed in a 1984 action. PSJ.21 at 34. In 1931, two people boated the Verde from Clarkdale to a point 18 miles above Fort McDowell, stopping to engage in trapping along the way. PSJ.62, 63.

Photographs of recent boating on the Verde are reproduced in the Appendix at A109-114. At least two outfitters currently run commercial river trips on the Verde: One of these operates approximately 40 trips per year. A.48-52. The Verde is also currently used for private river trips, from Perkinsville all the

way to Bartlett Reservoir. A.55-56; PSJ.23, 65. One river runner has boated the Verde between Beasley Flats (just below West Clear Creek) and Childs approximately 100 times. PSJ.23.

6. Other examples: Photographs of recent boating on Wet Beaver Creek and Oak Creek appear in the Appendix at A.107, 108, 115. Commercial river trips are currently conducted on the San Francisco and Virgin Rivers. A.52. The Black River, Dry Beaver Creek, Little Colorado River, West Clear Creek and White River have all been boated in recent times and have all been described by experienced river runners as "very suitable for river travel" in various seasons. A.52-53, 55-56; PSJ.5 at 104-07, PSJ.24 at 52, 54.

C. Actual Value Of Riverbed Lands

Riverbed lands in Arizona are worth hundreds of millions, if not billions of dollars. Land Department v. O'Toole, 154 Ariz. 43, 45, 739 P.2d 1360 (App. 1987); A.40. Riverbed and flood plain land sought to be acquired by the Maricopa County Flood Control District alone is valued at \$35 million. PSJ.26 at 3. Lands in the Salt riverbed at Phoenix have been valued at more than \$21 million. A.47. In a 1985 report, the Rio Salado Development District conservatively estimated the average cost of land in the floodway of the Salt River at Phoenix at \$20,000 per acre. A.95. One sand and gravel company paid more than \$61,000 per acre for Salt riverbed land in 1985. PSJ.27, 28. Examples of recent appraisals and/or sales prices for other riverbed lands include \$1,500 per acre in the Gila, \$8,000 per acre in the Agua



## ARGUMENT

I. H.B. 2017 VIOLATES THE GIFT CLAUSE OF THE ARIZONA CONSTITUTION BY TOTALLY RELINQUISHING STATE CLAIMS TO MILLIONS OF DOLLARS WORTH OF RIVERBED LAND

A. The State Of Arizona Owns The Beds Of Numerous Arizona Watercourses.

1. Under the Equal Footing Doctrine, the state owns the beds of all watercourses that were at statehood capable of transporting people or goods for part of the year.

The test of navigability under the Equal Footing Doctrine is a liberal one: Whether the waterway was at statehood susceptible for use as a highway for transporting people or goods. Utah v. United States, 403 U.S. 9, 11 (1971). A river may be deemed navigable for title purposes despite occasional impediments such as sand or gravel bars, and despite the fact that it is only navigable a few months out of the year. State of Oregon v. Riverfront Protective Association, 672 F.2d 792, 795 (9th Cir. 1982). Actual use for boating, whether commercial or sporting, can demonstrate susceptibility as a highway for public passage. Utah v. United States, 403 U.S. at 11. Although state ownership turns on navigability at the time of statehood, evidence of current recreational use by small craft such as canoes is probative of navigability at statehood. North Dakota v. Andrus, 671 F.2d 271, 277-78 (8th Cir. 1982).

The remoteness of a river and lack of actual use at statehood does not defeat a finding of navigability: The question is whether the river was susceptible of transporting people or goods. United States v. Utah, 283 U.S. 64, 83 (1931). Likewise, a river is deemed navigable if it was susceptible of transporting

people or goods by any conveyance - not merely those in use at the time of statehood. State of Alaska v. United States, 662 F. Supp. 455, 465 (D. Alaska 1986). In fact, the floating of logs down a river is a form of navigation for purposes of the doctrine. State of Oregon v. Riverfront Protective Association, 672 F.2d at 795. The fact that dams or diversions render a waterway non-navigable today does not make it non-navigable for equal footing purposes as long as it was passable in its original condition. See United States v. Utah, 283 U.S. at 75-79; State v. Bonelli Cattle Co., 107 Ariz. 465, 468, 489 P.2d 699 (1971).

The broad judicial construction of "navigability" is well illustrated in North Dakota v. Andrus, 671 F.2d 271 (8th Cir. 1982), reversed on other grounds, Block v. North Dakota, 461 U.S. 273 (1983). There, the court found the Little Missouri River to have been navigable at statehood based on: a) isolated cases of historic use by small craft such as canoes; b) an observation from the Lewis and Clark expedition on the river's width and depth; c) some brief and unsuccessful efforts to float logs downstream; and d) current use annually by hundreds of recreational canoeists. 671 F.2d at 277-78. In another case, a finding of navigability was upheld based on evidence that a river was used for log drives for as little as 2 1/2 months per year even though suffering frequent log jams, flooding and low flows. State of Oregon v. Riverfront Protective Association, 672 F.2d at 295-96. In Illinois v. Corps of Engineers, 17 E.R.C. 2214, 2216 (N.D. Ill. 1981), the court based a finding of navigability on sporadic, historic use by explorers, trappers and fur traders on

a shallow and swampy river, and noted that even a single trip by a supply boat could raise an inference of navigability.<sup>7</sup>

**2. Numerous Arizona rivers meet the Equal Footing Doctrine's navigability test.**

Under the standards set forth above, many Arizona rivers qualify as navigable for purposes of the Equal Footing Doctrine. As discussed in the Statement of Facts, supra, there are numerous prestatehood accounts of actual navigation on Arizona rivers as well as commercial ferry boat operations<sup>8</sup> into the early 1900's. Government surveys in the 1800's reported flow depths and widths in numerous Arizona rivers that would have been more than sufficient to support river travel. Hundreds of commercial river rafting trips are today conducted each year on rivers ranging from the Salt to the Virgin. In addition, dozens of Arizona rivers are currently used for recreational boating for all or part of the year, including the Black River, Dry Beaver Creek, the Little Colorado, Oak Creek, the San Francisco River, Tonto Creek, West Clear Creek, Wet Beaver Creek, and the White River. Courts have held rivers to be navigable for purposes of the Equal

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<sup>7</sup> The court was determining navigability for commerce clause purposes, but such cases can nevertheless be used as persuasive authority in appropriate Equal Footing Doctrine cases. See Alaska v. United States, 754 F.2d 851, 854 (9th Cir. 1985).

<sup>8</sup> Use of ferry boats to cross a river was specifically found to be probative of navigability in City of Centralia v. State, 851 F.2d 278, 282 (9th Cir. 1988).

Footing Doctrine based on comparable - or even less extensive evidence than provided in this case.<sup>9</sup>

3. The state's title to riverbeds vested automatically at statehood, and is not merely an inchoate claim.

In the proceedings below, defendants asserted that the state's riverbed interest is only an "inchoate claim" until there is a judicial determination of navigability. Both caselaw and statute make abundantly clear, however, that title to the beds of navigable waters vests automatically in the state upon its admission to the Union. As the United States Supreme Court has repeatedly held, the state "receives absolute title to the beds of navigable waterways within its boundaries upon admission to the Union." State Land Board v. Corvallis Sand and Gravel Co., 429 U.S. 363, 372 (1977) (emphasis added). The state assumes this ownership as an inherent incident of sovereignty. Martin v. Waddell, 41 U.S. (16 Pet.) 367, 409-411 (1842). The unequivocal nature of the state's ownership interest is further confirmed in

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<sup>9</sup> In the trial court, defendants did not seriously dispute the truth of the navigability evidence offered by plaintiffs, but instead relied primarily on conclusory assertions of nonnavigability by persons with no demonstrated expertise in river travel or the amount of water needed to support boating. See IA.210 at 17-18; IA.211 at 7-11. Even if these "experts" were qualified to assess boatability, the determination of navigability is a mixed question of law and fact - not one that can be "decided" by witnesses. See Young v. Environmental Air Prods., 136 Ariz. 206, 210, 665 P.2d 88 (App. 1982), modified on other grounds 136 Ariz. 158, 665 P.2d 40 (1983). Defendants also relied heavily on the lack of actual historic boating evidence as to several rivers but as noted above, lack of actual use does not defeat a finding of navigability if the river was susceptible for use in the transport of people or goods. United States v. Utah, 283 U.S. 64, 83 (1931).



IN THE COURT OF APPEALS  
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DIVISION ONE

SALT RIVER

002

ORIGINAL

ARIZONA CENTER FOR LAW IN THE PUBLIC )  
INTEREST, a nonprofit corporation; )  
DEFENDERS OF WILDLIFE, a nonprofit corpora- )  
tion; MICHAEL GREGORY; THOMAS WRIGHT; )  
and JAMES VAALER, )

I CA-CV 89-134

MARICOPA County  
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Plaintiffs-Appellants, )

v. )

MILO J. HASSELL, in his capacity as State )  
State Land Commissioner; ARIZONA STATE )  
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of Arizona; and STATE OF ARIZONA, )

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CALMAT CO. OF ARIZONA, an Arizona corpora- )  
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K. VALENTE, husband and wife; FIRST AMERICAN )  
TITLE INSURANCE COMPANY OF ARIZONA, an )  
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political subdivision of Arizona; SALT RIVER )  
PROJECT AGRICULTURAL IMPROVEMENT DISTRICT, )  
a political subdivision of Arizona, and )  
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an Arizona corporation, )

Defendants Intervenors-Appellees. )

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APPELLANTS' REPLY BRIEF

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allowed limited conveyances of specific riverbed or tideland parcels for purposes consistent with the trust, they have consistently and uniformly held that states may never transfer the whole of the public trust into private hands, any more than they can relinquish their police powers.

#### ARGUMENT\*

I. H.B. 2017 VIOLATES THE GIFT CLAUSE BY TOTALLY RELINQUISHING STATE CLAIMS TO MILLIONS OF DOLLARS WORTH OF RIVERBED LAND

A. The Evidence Is Compelling That Many Arizona Rivers Were Navigable At Statehood.

Although defendants' briefs abound with conclusory assertions that Arizona's riverbed claims are "weak," the simple fact is that they do not and cannot contest the extensive, actual evidence of navigability presented by the plaintiffs in this case. It is undisputed that there are numerous historical accounts of boat travel on Arizona rivers, that pre-statehood depths and widths of many rivers were more than sufficient to support navigation, and that many Arizona rivers are routinely used today for both commercial and recreational boating. Although the defendants dispute the legal inferences to be drawn from these facts (incorrectly, as further discussed below), they do not seriously claim that plaintiffs' historical evidence is wrong, that more water is needed for river travel than plaintiffs claim, or that

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\* NOTE: Abbreviations for citations to the record herein are the same as in Plaintiffs' Opening Brief. Pl. Open. Br. at 1 n.2 and 5 n.5.

the current river use documented by the plaintiffs does not really occur. Defendants cannot dispute these facts because they are all extensively documented in the record: By official government reports, by historical accounts cited and relied on by defendants' own witnesses, by affidavits and depositions of five Arizona river runners who collectively have participated in hundreds of river trips in Arizona, and by actual photographs of boating on Arizona watercourses.<sup>1</sup> See, e.g., Pl. Open. Br. at 6-11, Pl. Open. Br. Appendix (A) at 48-64, 87-123.

The only "evidence" offered by the defendants consists of negative inferences and conclusory assertions of a type that courts simply do not rely upon in determining navigability in fact. For example, intervenors rely primarily on: a) the supposed preference of fur trappers for overland routes in the early Southwest; b) the purported failure of one attempt to drive logs down the Salt River; c) occasional mishaps on early boating trips in Arizona; d) the nonuse of the Gila River to transport produce between Phoenix and Yuma; and e) the fact that one party traveling westward on a floatable wagon in 1849 did not attempt to

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<sup>1</sup> The state in passing notes that it raised some evidentiary objections below (State Br. at 16 n.3), but because the trial court never ruled on these objections and they have not been specifically presented on appeal, they must be deemed waived. See generally Killingsworth v. West Way Motors, Inc., 87 Ariz. 74, 80-81, 347 P.2d 1098 (1960); Tucson Federal Sav. & Loan v. Aetna Inv. Corp., 74 Ariz. 163, 173-74, 245 P.2d 423 (1952); 4 C.J.S. Appeal & Error §§320, 321.c (1957). In any event the objections were utterly meritless for reasons thoroughly addressed by plaintiffs below. IA. 211 at 3-7, 11-36.



float downstream. But the mere fact that on a particular trip or at a particular time individuals decided not to travel by river does not in any way show that rivers were not susceptible for use as highways. The choice of the mode of travel on a given trip could be influenced by many factors, such as the availability of railroads, the availability and orientation of overland routes, the purpose of the trip, and the season of the year. For this very reason, the United States Supreme Court has expressly held that the lack of actual, historic boating use on a given river does not defeat a finding of navigability. United States v. Utah, 283 U.S. 64, 81-82 (1931) (susceptibility of river to use as a highway may be proved without any evidence of actual use for boating). The isolated examples of boating accidents offered by defendants are grossly exaggerated (as further discussed below), and in any event are hardly determinative of non-navigability. Boating accidents have occurred on every navigable waterway since boats were invented, and courts have uniformly held that occasional impediments and problems in river travel do not defeat a finding of navigability. See, e.g., id. at 86.

Intervenors also fail to refute the evidence of navigability as to the five specific rivers discussed by plaintiffs in their opening brief, as follows:

Agua Fria River - The fact that the state decided to waive its navigability claims on the upper Agua Fria in no way contradicts plaintiffs' point that the lowest 3 1/2 to 4 miles of the river were navigable at statehood. The Land Department's chief hydrologist expressly so found, and the state has never adopted a

contrary position. Plaintiffs' Supplemental Appendix (SA), attached hereto, at 1.<sup>2</sup> Intervenors also rely on the conclusory assertion of Elaine Lacy that the Agua Fria River "is non-navigable over its entire length." Int. Br. at 3. Despite intervenors' description of Ms. Lacy as a "expert," the simple fact is that she is completely unqualified to render such a conclusion. She has never boated on a river anywhere, has no knowledge of canoeing, rafting or other forms of river travel, and has no specialized knowledge of navigation or on the amount of water needed to float a boat. PSJ 72 at 8-11, 26-28. Her speciality as a historian - Latin American History - hardly qualifies her to make judgments over the navigability of rivers. Id. at 11, 12, 18-19, 24. In any event, the determination of navigability for purposes of title is a mixed question of law and fact, rendering conclusory assertions such as Ms. Lacy's completely inadmissible. See Young v. Environmental Air Prods., 136 Ariz. 206, 210 (App. 1982), modified on other grounds 136 Ariz. 158; M. Udall & J. Livermore, Law of Evidence §26.

Gila River - Intervenors provide exaggerated, misleading accounts of several isolated mishaps on early Gila River trips. For example, although it is true that the Mormon Battalion encountered some difficulties at the beginning of its trip on the Gila, these were due in large measure to the fact that their

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<sup>2</sup> The stipulation referred to by intervenors (Int. Br. at 3) makes absolutely clear that the state conceded non-navigability only with respect to stretches of the Agua Fria above the lowest 3 1/2 to 4 miles. SA at 2. See also SA at 6.

boats were overloaded: After the load was lightened, the rafts made headway and eventually traveled 70 miles in 7 days. IA 204, App. 105 at 4-7. Likewise, intervenors cite an 1891 trip down the Gila in which a boat was purportedly "destroyed": But the actual account (copy attached hereto at SA 9) shows that the boat was upset and lost in a flood (a plausible occurrence on any river), that the two men built another boat and continued on, that they otherwise "met with no special incident," and that they ultimately navigated the entire length of the river in Arizona, hunting and trapping on the way.

Intervenors also cite a single trip in 1889 in which a ferry boat was wrecked on a sandbar on the Gila. This one accident is hardly significant when compared with the numerous successful ferry boat operations on the Gila in the late 1800's and early 1900's, including the almost daily ferry boat travel between Sentinel and Agua Caliente Hotsprings. PSJ 17, 57, 58. Intervenors further mislead in suggesting that plaintiffs' summary judgment exhibit 54 somehow supports an inference of non-navigability. Int. Br. at 5. The exhibit (copy attached hereto at SA 10), is an 1879 newspaper account of a successful Phoenix to Yuma river trip by which "the advocates of navigation of the Gila obtained a solid fact." The article also notes that a steamboat had previously transported loads of wood on the river. Id. These and the numerous other accounts cited by plaintiffs clearly refute intervenors' assertion that the Gila was traveled only by "daring" and "intrepid" individuals. See, also, SA at 11.

Finally, intervenors seek to minimize the Treaty of Guadalupe Hidalgo's reference to the Gila's navigability, but that reference shows at the very least that government officials in the mid-1800's perceived the river as having some value for navigation. Contrary to intervenors' assertion the Court in Oklahoma v. Texas, 258 U.S. 574 (1922) did not in any way hold that treaty references to navigability are "inadmissible." The Court in that case simply held that a treaty statement that the Red River was navigable was not conclusive evidence that the entire length of the river was navigable in fact, in the face of other evidence to the contrary. Id at 584-85.

Salt River - Intervenors completely ignore plaintiffs' extensive evidence of historic and current boating on the Salt, and focus almost entirely on one 1885 trip that they claim was unsuccessful. In reality, the newspaper account of the trip (attached hereto at SA 12-13), indicates that only one mishap occurred, and that it did not prevent completion of an "exciting and interesting trip." The trip was taken to determine whether logs could be rafted to the lower Salt, and the "undisputed conclusion" from the trip was "that such work can be successfully carried out." SA at 13.<sup>3</sup>

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<sup>3</sup> Intervenors' effort to draw support from a brief reference to the Salt as a non-navigable stream in a 1908 decree is completely unavailing: There is no evidence that the reference was in any way intended to be an adjudication of navigability for any purpose, or was even based on any actual evidence relevant to the issue. Int. Br. at 7. Defendants also incorrectly assert that the state has conceded the non-navigability of the Salt River, citing a statement to that effect in a totally unrelated court

Verde River - The evidence cited by plaintiffs - e.g., the accounts of historic use, the photographs and affidavits showing extensive current boating, and the state's successful assertion of sovereign ownership over the Verde Riverbed at Camp Verde - are all undisputed by the defendants. Intervenors complain that plaintiffs did not cite the deposition testimony of Herbert Young, but that testimony is hardly probative of non-navigability: At best, it shows that one person who was not involved in river related activities did not happen to see any boating on the river. Likewise, the statement of the state's counsel in defending the settlement of the Valley Concrete case that evidence of navigability at Cottonwood was "weak," was little more than a conclusory assertion made to defend a litigation position (the settlement was being challenged by the Audubon Society, which felt the settlement was inadequate). Earlier in the very same litigation, the State Land Department asserted in answers to interrogatories that flow rates on the Verde at Cottonwood were such as to make it navigable. PSJ 22.<sup>4</sup>

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<sup>3</sup> (Continued)

judgment. State Br. at 34; Int. Br. at 23-24. The issue was stipulated in a case having nothing to do with sovereign ownership, and there is no evidence that the state official making this "concession" had any authority whatsoever to do so. The Arizona State Land Department - which is given sole charge of the stewardship and management of state lands - was not a party and has unequivocally taken the position that the navigability of the Salt River has not been determined. SA at 6; A. 46.

<sup>4</sup> Contrary to intervenors' rhetoric, the state has never stipulated to the non-navigability of the Verde at Cottonwood: If anything, as plaintiffs have previously argued, the payment of a \$90,000 settlement by the Valley Concrete company suggests that

Tonto Creek - Intervenors rely exclusively on the conclusory assertion of a single hydrologist that the creek is not susceptible for use as a highway. As with Ms. Lacy, the hydrologist is completely unqualified to make such a conclusion: There is no evidence that he has any knowledge whatsoever of the river depths and flows necessary to support river travel or that he has any familiarity whatsoever with boating. Moreover, his assertions of non-navigability are flatly refuted by the affidavits and deposition testimony showing that numerous trips have in fact been taken down the Creek (20 by one river runner alone) and that one outfitter is seeking a permit to run commercial trips there. A. 52; PSJ 5 at 171-72; PSJ 25 at 50-51.

Defendants urge judicial deference to the legislature's "finding" that the state's navigability claims are weak. In reality, the legislative finding is at best equivocal: It simply states that "the Land Department has determined that the state's claim, if any, to certain watercourses is weak," and that "its claim to other watercourses may be more viable." H.B. 2017 §1.A (emphasis added).<sup>5</sup> In any event, the determination of naviga-

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<sup>4</sup> (Continued)

the state's claims had some merit. In this regard, the statement of Valley Concrete's lawyer that the settlement was not intended to recognize the state's navigability claims is utterly irrelevant: The formal, filed settlement dismisses the state's navigability claims along with all the others in exchange for \$90,000, and there is nothing in the document to suggest that the payment was in response to only the damage claims. PSJ 42.

<sup>5</sup> Moreover, the legislature elsewhere in the bill directed the Attorney General to study and pursue riverbed ownership claims against the United States based on navigability. H.B. 2017 §5. (Continued)

bility is a federal question. Declarations by a state legislature as to the non-navigability of a river are not controlling for purposes of the Equal Footing Doctrine. See, e.g., United States v. Utah, 283 U.S. at 75; Newcomb v. City of Newport Beach, 60 P.2d 825, 828 (1936).

B. The Test Of Navigability For Purposes Of The Equal Footing Doctrine Is A Liberal One.

Contrary to intervenors' assertion, the characterization of the federal test of navigability as a "liberal" one is not something merely invented by plaintiffs: It is a description used by courts and commentators alike based on a common sense reading of the caselaw. See, e.g., North Dakota v. Andrus, 671 F.2d 271, 278 (8th Cir. 1982); Frank, Forever Free: Navigability, Inland Waterways, and the Expanding Public Interest, 16 U.C. Davis L. Rev. 579, 603 (1983). Defendants are also completely off base in asserting that the cases relied upon by the plaintiffs deal only with the admissibility of evidence on navigability, as the discussion below further shows.

1. **Susceptibility for transport of people or goods is the essence of the federal test.**

Despite the overwhelming caselaw holding that a river is navigable if susceptible for transporting people or goods, intervenors continue to insist that the test is met only if the travel

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<sup>5</sup> (Continued)

Obviously, the legislature felt that the state did indeed have viable claims based on navigability: Its decision to waive those claims as against private parties was plainly motivated by special interest considerations, and not any serious belief that the claims were not worth pursuing.

is "economically productive" and only if there was actual commercial use at statehood. The federal courts have unequivocally rejected such a narrow test. In Utah v. United States, 403 U.S. 9, 11 (1971), the United States Supreme Court held that the Great Salt Lake was navigable at statehood, based primarily on evidence of noncommercial boating. The Court rejected objections that the use was not commercial in the customary sense, holding that "[t]he lake was used as a highway and that is the gist of the federal test." Other decisions are in complete accord that navigability is demonstrated by the capability of a waterway for use in transporting persons or goods, whatever the purpose or activity involved. See, e.g., United States v. Holt State Bank, 270 U.S. 49 (1926); City of Centralia v. FERC, 851 F.2d 278, 281 (9th Cir. 1988); Alaska v. United States, 754 F.2d 851, 854 (9th Cir. 1985).<sup>6</sup>

The source of defendants' confusion on this issue is their insistence on applying their own peculiar definition of commerce - one that is apparently limited to the shipping of cargo on some sort of a grand scale. The federal courts have never followed such a narrow definition. For example, in The Montello, 87 U.S. (20 Wall.) 430, 442 (1874), the Supreme Court did not - as intervenors imply - limit navigability to "commercially useful"

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<sup>6</sup> Intervenor's cite several state court decisions on this point (Int. Br. at 16), but these at most can be read as holding waters to be non-navigable where they are not useful for transportation. Int. Br. at 16. Any broader reading of these cases would have to be rejected as inconsistent with the above cited U.S. Supreme Court precedents.



ivers. Rather, the Court equated commerce with transportation of any kind:

The capability of use by the public for purposes of transportation and commerce affords the true criterion of the navigability of a river, rather than the extent and manner of that use.

Id. at 441-42 (emphasis added). Subsequently the Supreme Court made clear that "commerce has been held to include the transportation of persons and property no less than the purchase, sale and exchange of commodities." United States v. Hill, 248 U.S. 420, 423-24 (1919). In making navigability for title determinations, "the court need only inquire if the water body is susceptible to the most basic form of commercial use: the transportation of people or goods." State of Alaska v. United States, 662 F. Supp. at 465.

Of course, plaintiffs have shown substantial evidence of commercial use for fur trapping, westward travel, and ferry businesses in territorial and statehood days, and extensive present day use by commercial river outfitters. Interventors suggest that ferry travel across a river and river rafting for hire somehow do not constitute commerce. Yet they make no attempt to refute the authority cited by plaintiffs, City of Centralia v. FERC, 851 F.2d 278, 282 (9th Cir. 1988), where the court specifically relied on evidence of ferry travel "across" a river as significant evidence of navigability.<sup>7</sup> As for the river

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<sup>7</sup> Moreover, there is absolutely no support for intervenors' notion that only travel up and down a river constitutes navigation. The crux of the navigability test is the "utilization of

outfitters, the special master's report adopted by the United States Supreme Court in United States v. Utah, expressly recognized the "transportation of tourists for hire" as a form of commerce. United States v. Utah, Report of the Special Master at 117. Given that tourism is one of Arizona's leading industries, it is simply absurd for intervenors to suggest that these activities do not constitute commerce. See United States v. Underwood, 344 F. Supp. 486, 487-88, 496 (D. Fla. 1972).

2. Actual use for boating, including modern day boating, is probative of navigability at statehood.

Plaintiffs have maintained that actual use for boating, whether commercial or sporting, can demonstrate susceptibility as a highway for public passage, citing Utah v. United States, 403 U.S. at 11. The defendants cite several cases where evidence of actual use was not sufficient to establish navigability, but those cases found non-navigability based on a variety of other factors as well, and because of the extremely limited and restricted nature of the boating that occurred. For example, the river segment held non-navigable in Oklahoma v. Texas, 258 U.S. 574 (1922), was navigable only for sporadic periods of 7 days or less, required frequent, long portages, and was apparently navi-

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7 (Continued)

the waterway as a path between two points." Alaska v. United States, 754 F.2d 851, 854 (9th Cir. 1985). Ferry boats that crossed Arizona rivers, such as Hayden's Ferry and the ferry at Agua Caliente Hotsprings were plainly using waterways as paths between two points. Such use also strongly supports an inference that the river was susceptible for travel lengthwise as well.

gated only once by a government survey boat. Id. at 587-88.<sup>8</sup> Likewise, the lake found to be non-navigable in United States v. Oregon, 295 U.S. 1 (1935), was little more than a swamp, surrounded by 1,000 acres of mud, and containing growths of vegetation that prevented navigation. 295 U.S. at 16, 18, 22. Id. at 22. Similarly Pennsylvania Environmental Council v. Bartlett, 315 F. Supp. 238 (M.D. Pa. 1970), relied on by the state, held a river to be non-navigable because the only apparent evidence of navigability was a single kayak trip. As for George v. Beavark, 402 F.2d 977 (8th Cir. 1968), the Eighth Circuit has specifically rejected the case as authority for determining navigability for Equal Footing Doctrine purposes. North Dakota v. Andrus, 671 F.2d 271, 278 (8th Cir. 1982). The narrow fact situations in these cases and others cited by defendants are simply not analogous to the broad evidence of navigability presented by the plaintiffs in this case. As to virtually every river discussed, there is evidence of actual repeated travel over significant distances without major obstacles, and of boatability for substantial parts of the year. See, e.g., A. 48-64, 87-123; IA 211 at 17-41; PSJ 25.

Intervenors assert that plaintiffs' evidence of current boating on Arizona rivers is not probative of navigability because "modern" canoes and rafts were not in use at statehood.

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<sup>8</sup> Contrary to the state's assertion (State Br. at 10), the court did not in any way hold that evidence of actual use was "inadmissible": Indeed, the Court had previously held that such evidence could be "most persuasive." United States v. Utah, 283 U.S. 64, 82 (1931).

But there is absolutely no requirement that the inquiry be confined to modes of travel in use at statehood. State of Alaska v. United States, 662 F. Supp. 455, 463 (D. Alaska 1987). Rather the question is simply "the capacity of the rivers in their ordinary condition to meet the needs of commerce as these may arise." United States v. Utah, 283 U.S. 64, 83 (1931) (emphasis added). Intervenors cite language from The Montello, 87 U.S. (20 Wall.) 430, 442 (1874), to the effect that not every creek on which a boat can be made to float is deemed navigable. The Court made this reference, however, in the context of a much broader statement of the liberal definition of navigability for purposes of the Equal Footing Doctrine:

It would be a narrow rule to hold that in this country, unless a river was capable of being navigated by steam or sail vessel, it could not be treated as a public highway. . . . If it be capable in its natural state of being used for purposes of commerce, no matter in what mode the commerce may be conducted, it is navigable in fact, and becomes in law a public river or highway. Vessels of any kind that can float upon the water, whether propelled by animal power, by the wind, or by the agency of steam, are or may become the agency by which a vast commerce can be conducted . . .

Id. at 441-42 (emphasis added). Thus, navigability has never been defined solely by reference to any particular mode of transportation at statehood or otherwise.<sup>9</sup>

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<sup>9</sup> Intervenors also seek support from the Ninth Circuit decision in Alaska v. United States, 754 F.2d 851 (9th Cir. 1985), but the court there in no way held that navigability could only be demonstrated with reference to craft in use at statehood. The court simply held that use of a small, remote Alaskan lake for float plane takeoffs and landings was insufficient to demonstrate navigability because the lake was not useful as a highway between two points. 754 F.2d at 854.

Finally, plaintiffs' evidence of navigability is not limited to use by modern canoes and rafts. With respect to most rivers, plaintiffs have provided evidence of actual historic use, historic flows, or both. Plaintiffs have also provided expert testimony and official government reports on the depths, widths and flows needed to support boating of various kinds, including wooden and canvas craft such as those in use at statehood. The current and historic flow data submitted by plaintiffs shows that most river segments discussed have historically been capable of supporting traditional wooden craft as well as the more modern canoes and rafts.<sup>10</sup>

**3. Other courts have found navigability based on comparable evidence.**

Contrary to defendants' assertions, courts have found rivers to be navigable based on evidence similar to, or even less exten-

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<sup>10</sup> For example, the undisputed evidence shows that a rowboat can generally travel in a river approximately 1 foot deep and 6 feet wide, and a canoe with even less depth and width. PSJ 4; PSJ 5 at 71-72, 159-60. Prestatehood accounts by government explorers reported depths and widths substantially above these minimums. For example: a) Gila (1852) - 2 feet deep, 40 yards wide; b) Salt (1850's) - 2 to 3 feet deep, 80 to 120 feet wide; c) Bill Williams (1853-54) - 1 to 2 feet deep, 15 feet wide; d) Little Colorado (1853) - 2 1/2 feet deep, 10 to 20 yards wide. PSJ 12 at 20; PSJ 19 at 240, 244; PSJ 7 at 8, 102, 109. Other examples are cited at A. 87-96. In addition, experts have estimated the flow rates (in cubic feet per second - "cfs") required to travel on various Arizona rivers, and historical records show that such flow rates have typically been available for substantial parts of the year. For example, one experienced river runner has indicated that 250 cfs is adequate to support travel in a wooden canoe on the Salt between the Highway 60 bridge and Horseshoe Bend. The historic normal annual mean flow on this stretch, based on flow records from 1925 through 1975, is 601 cfs. PSJ 70 at 162; PSJ 18 at 314.

sive than that presented in this case. For example, the Supreme Court in Utah v. United States, 403 U.S. 9 (1971), found the Great Salt Lake navigable at statehood based on occasional use of boats to haul livestock between the mainland and an island, pre-statehood use by an excursion boat, other hauling described by the government as being sporadic and for short terms, and evidence that the lake was deep enough to afford passage at statehood. Id. at 11-12. In City of Centralia v. FERC, 851 F.2d 278 (9th Cir. 1988), the Ninth Circuit found a portion of the Nisqually River in Washington (specifically, a section called the "Mudflats") to be navigable based on evidence that it was accessible by boat at mid- to high-tides, that small ferries were used to carry passengers across the river, and that at times logs were floated on this section.<sup>11</sup> In State of Alaska v. United States, 662 F. Supp. 455 (D. Alaska 1987), the Court found the Gulkana River to be navigable, even though typically frozen for half the year, based on: an undocumented historical account of a trip by native Americans in the 1700's or 1800's; modern day use by recreationists in motorboats, inflatable rafts and canoes; and evidence of current depths ranging from 12 inches to 6 feet. Id. at 466-68. And despite the state's mischaracterization of the case, the court in North Dakota v. Andrus did not merely rule on

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<sup>11</sup> The court was determining navigability for purposes of federal regulatory jurisdiction under the commerce clause, but the court noted that the test of navigability for title purposes was "nearly identical." 851 F.2d at 281.

the admissability of evidence, but rather expressly affirmed a finding of navigability based on a few historical accounts and evidence of current recreational use. 671 F.2d at 278.

The review of the law and facts above shows that the state's prediction of a legal "quagmire" in determining navigability of Arizona rivers is completely unfounded. The federal courts have developed a consistent body of law that sets forth a very liberal test of navigability for purposes of the Equal Footing Doctrine. The test has been employed to adjudicate the navigability of numerous rivers in a wide variety of settings across the nation.

C. The State's Title To Riverbeds Vested Automatically At Statehood, And Is Not Merely A "Potential" Claim.

Despite the overwhelming evidence that many Arizona rivers were navigable at statehood, defendants continue to insist that the state holds only a potential claim to riverbeds, while the private claimants remain the "true" owners. Plainly, the state's claim to the riverbeds is more than a "potential" one - its title to the beds of navigable waters vested "automatically" at the "instant" of admission to the Union. Arizona v. California, 373 U.S. 546, 597 (1962); Illinois Steel v. Bilot, 425 N.W. 418, 425 (Wisc. 1901). And the law is unambiguous that land grants and titles are to be strictly construed in favor of the sovereign, particularly where the beds of watercourses are involved. See cases cited in Pl. Open. Br. at 22.<sup>12</sup> Likewise, persons

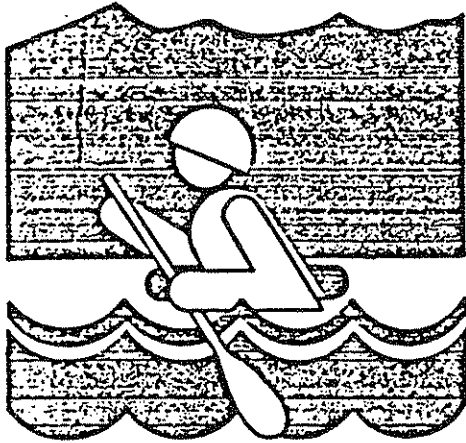
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<sup>12</sup> The state seeks to distinguish the facts in these cases, but does not refute the basic principles they establish: namely the rule of title construction in favor of the sovereign and the strong identification of riverbeds with the sovereign.





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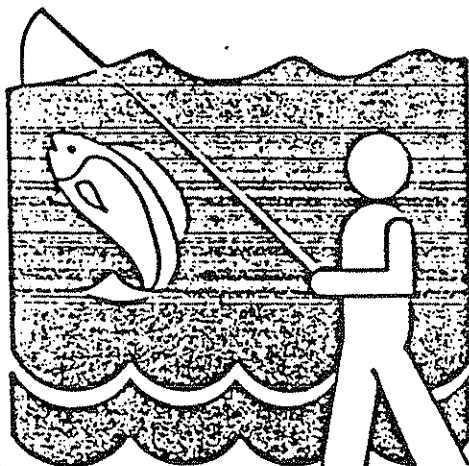
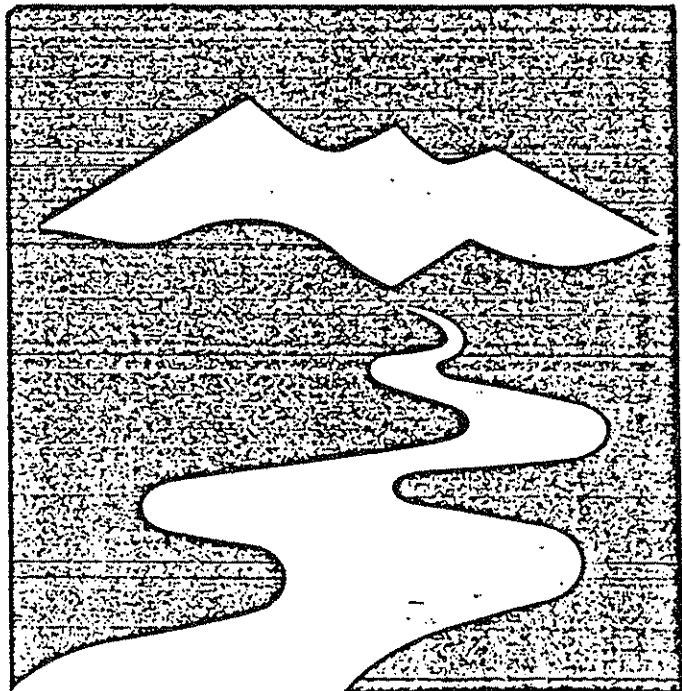


# Methods of Assessing Instream Flows for Recreation

COOPERATIVE  
INSTREAM FLOW  
SERVICE GROUP

INSTREAM  
FLOW  
INFORMATION  
PAPER: NO. 6

FWS/OBS-78/34  
JUNE 1978



## Cooperating Agencies:

Fish and Wildlife Service  
Environmental Protection Agency  
Heritage Conservation and Recreation Service  
Bureau of Reclamation

FWS/OBS-78/34  
June 1978

METHODS OF ASSESSING INSTREAM  
FLOWS FOR RECREATION

Instream Flow Information Paper No. 6

by

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<sup>1</sup>Detailed to the Cooperative Instream Flow Service Group from the Heritage Conservation and Recreation Service.

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## ABSTRACT

The Instream Flow Group (IFG) has conducted research into methods of quantifying instream flow needs for fish, wildlife, and recreation. This paper describes two techniques developed by IFG for performing recreational instream flow studies. The single cross section method is relatively simple and provides a base flow figure which will provide for the boating activities which make use of the of river. The incremental method is more sophisticated and may be used to develop recommendations regarding streamflows required for various types of recreation, or to provide a recreation analysis of any streamflow. Streamflow suitability criteria for recreation are presented for both methods.

## INTRODUCTION

It has been long recognized that there are many competing demands for the use of stream water. Diverting stream water for irrigation, water supply, and energy developments can deplete streamflows to the point where opportunities for recreation and the associated environmental values of the stream are seriously impaired. Numerous water planning studies, both basin-wide and project oriented, have emphasized the need to quantify the amount of water required to support recreation, fish and wildlife resources, and to maintain aesthetic conditions.

The tools and techniques for estimating streamflows required for recreation and aesthetics, and for insuring reasonable consideration of recreation and aesthetics in the allocation of stream water, are currently undergoing study. Instream flow requirements and values for recreation, in the past, have often been based only upon the amount required to maintain a fishery. However, several studies have indicated that recreation and aesthetic requirements, at times, may not be the same as for a fishery.

This paper presents the techniques of assessing instream flows for recreation. These techniques were developed by the Cooperative Instream Flow Service Group and closely parallel techniques used to assess instream flows for fisheries. The data collection procedures, the physical and hydraulic simulation of the stream, and the computer models which analyze the data are the same for both fisheries and recreation. The major difference between the two techniques is the response of the individual fish or recreationist to various physical parameters of

stream flow. These responses to stream flow by different user groups are the criteria which are basic to the methods introduced here..

The first method is called the single cross section approach. This method is useful primarily for identifying flows below which a recreation activity is not feasible and results in a so called "minimum" flow recommendation.

The second method is called the incremental method. With this method the recreation planner is able to analyze various flows and determine the recreation potential of a stream at different flows.

This paper is being distributed with four objectives in mind. These are:

1. To bring the problem of preserving instream flows to the attention of recreation agencies and the research community in order to encourage more research in this vital and neglected area.
2. To discuss the development of the recreation probability-of-use curves and of recreation criteria in general, which are necessary for quantifying instream water requirements for recreation.
3. To obtain review and comment on the recreation criteria and probability-of-use curves, and to request data which may be used to test or improve the criteria or curves.
4. To describe the two approaches for assessing stream flows and discuss how various recreation planning processes can be served by their application.

Both methods of instream flow analysis discussed in this paper utilize computer modeling techniques. Both approaches also require that streamflow data be collected. The single cross section approach, as its name implies, requires that information be collected at only one location on the stream. The incremental method requires that data be collected at multiple locations on the stream. In addition to cross sectional data, data relating the streamflow parameters to recreation potential are necessary. These data are termed recreation criteria.

Recreation criteria for instream flow methodologies are the recreation activity information bases necessary to describe a relationship between the quantity of water flowing in a stream, and the quantity and

quality of a particular recreation activity which takes place in the stream.

#### SINGLE CROSS SECTION METHOD

This method requires that only a single cross sectional measurement be taken across a stream. The product of such an approach is a determination of the lowest flow acceptable for recreation. The approach is based on the assumption that a single cross section, properly located, can define a minimum flow requirement. Such a cross section is located at an area displaying the least depth across the entire stream. When this area provides minimum depths for boat passage, the flow at this level may be defined as a minimum acceptable flow. It is assumed that when sufficient water to support boating is available in these critical areas, other areas will have sufficient water to support most of the other instream recreation activities. This approach is best applied to those streams in which flows are expected to be higher than the minimum most of the time.

Criteria for this approach are set forth in Table 1. Criteria have been developed for boating activities only, but for various types of boating craft. Only minimum criteria are presented because this approach provides information on "minimum flows." Criteria are measured in terms of stream depth and width. Velocity is not considered because a minimum velocity is not considered necessary for this approach.

Table 1. Required stream width and depth for various recreation craft as determined by single cross section method.

Recreation Craft	Required depth (ft)	Required width (ft)
Canoe-kayak	0.5	4
Drift boat, row boat-raft	1.0	6
Tube	1.0	4
Power boat	3.0	6
Sail boat	3.0	25

The criteria of Table 1 are minimal and would not provide a satisfactory experience if the entire river was at this level. However, the cross section measured for this method is the shallowest in the stream reach. Therefore, these minimum conditions will only be encountered for

a short time during a boating trip, and the remainder of the trip will be over water of greater depths and widths. An important assumption is that all water greater than the minimum is equally useful for the activity (i.e., more is better until bank-full stage).

A computer program (IFG-1) has been developed which predicts width and depth across the transect of any stage (water surface elevation). The output shows discharge and the width with depth equal to or greater than a specific depth. Different water surface elevations may be put into the computer model which are translated into flow in cubic feet per second. When a flow provides the minimum width and depth necessary for an activity, discharge may be considered minimum. Such a minimum indicates that significant losses, if not elimination of this activity, will occur if minimum flow is not equaled or exceeded.

#### THE INCREMENTAL METHOD

This method, more sophisticated than the single cross section method, describes a relationship between the amount of water in a reach of stream and the associated recreation potential. The incremental method can describe the potential for any recreation activity at any streamflow. A major difference between the methods is that the single cross section method can only be used to identify low flow and cannot be used to assess the recreation potential at any other flow; the incremental method can be used to assess the potential at other flows or to calculate the change in recreation potential caused by a change in stream flow.

The incremental method involves a modeling procedure whereby the surface area of a stretch of stream is calculated. In addition to the total surface area of the reach of stream, the area which has certain depths and velocities is calculated. The usable surface area for each activity is then calculated by use of depth and velocity requirements.

It is necessary to make three assumptions regarding the relationship between the quantity of water and the recreation uses of the water: (1) water depth and water velocity are the two streamflow components which are most important in determining whether or not a certain recreation activity may be safely and pleasurably engaged in<sup>1</sup>; (2) there are

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<sup>1</sup>Other parameters such as water quality and temperature are also very important in determining the amount of instream recreation use but in many cases are not significantly influenced by flow. Width is also important but is considered outside of the computer model (i.e., width is not a part of the calculation of usable surface area).





## AFFIDAVIT

STATE OF ARIZONA)  
County of Maricopa)

ss

ORIGINAL

My name is Jerry Van Gasse, President of Arizona White-water Expeditions (AWE), an Arizona proprietorship with offices in Tempe. AWE is a commercial river running company, offering rafting and kayaking trips to members of the public on the Salt, Gila, Verde, San Francisco, and Virgin Rivers. I have a total of nine years experience as a professional river guide, and have participated in more than two-hundred trips on rivers in Arizona and other states. The U.S. Forest Service and the Bureau of Land Management have issued official permits to AWE to conduct commercial river trips on the Verde and Gila Rivers. In addition, AWE has applied for a permit to conduct commercial trips on Tonto Creek.

We run approximately twenty trips each year on the Salt River in the period from December through May. On the Verde River, we lead approximately six trips per year during the period January through March. We conducted five trips on the San Francisco/Gila Rivers beginning just this year during the period of February through April. The trip starts at Clifton on the San Francisco and ends at the confluence of the Gila and Bonita Creek. We also have a commercial permit for river trips on the Virgin River, and have floated this stream in the period of March through May. Based on my experience, all of these rivers are very suitable for river travel during the

periods indicated, and most are routinely navigable at other times as well.

In addition to my commercial trips, I have rafted or kayaked a number of other Arizona rivers out of personal interest. These include: Tonto Creek, Cherry Creek, the Black River, the White River, and West Clear Creek. I found each of these streams to be very suitable for river travel.

Based on my experience, I believe that riverbeds and banks must be protected from destruction by private development to maintain their viability as recreational resources. I have observed substantial destruction to the bed of Tonto Creek as a result of tractor plowing by ranchers. I have also encountered numerous fences constructed in the bed of the Virgin River which have impaired and impeded the passage of my raft along that river. I believe that additional private development in and along the beds of the above-mentioned rivers will greatly interfere with our operations and severely detract from use and enjoyment of these areas by the public.

Further affiant saith not.

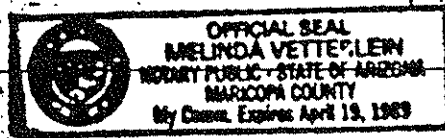
Dated this 14<sup>th</sup> day of July, 1987.

Jerry Van Gasse  
Jerry Van Gasse

Subscribed and sworn to before me this 14<sup>th</sup> day  
of July, 1987

Melinda Vetterlein  
Notary Public

My commission expires:





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STATE OF ARIZONA )  
 ) ss.  
County of Maricopa )

Janet E. Cantley, being first duly sworn on her oath,  
states:

1. I currently reside at 335 W. Pebble Beach, Tempe, Arizona 85282.
2. I am Curator of Photographs at the Tempe Historical Museum at 3500 S. Rural Road, Tempe, Arizona 85282.
3. Duties of the Curator of Photographs include maintenance, conservation, and reproduction of the historical photographs of the collection.
4. According to museum records, the photograph labelled "Photo #1" was reproduced from the negative of an original photograph loaned by the Tempe Daily News. The photograph depicts the Tempe State Bridge in 1914. A copy of this photograph is attached to this affidavit as "Photo #1."
5. According to museum records, the photograph labelled "Photo #2" was reproduced from the negative of an original photograph loaned by the Salt River Project. The photograph depicts the Hayden's Ferry c. 1887. A copy of this photograph is attached to this affidavit as "Photo #2."

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6. According to museum records, the photograph labelled "Photo #3" was reproduced from the negative of an original photograph loaned by Helen Harter. The photograph depicts a Salt River Swimming Hole in 1923. A copy of this photograph is attached to this affidavit as "Photo #3."

7. Photographs labelled "Photo #1", "Photo #2", and "Photo #3" are reproduced from negatives maintained in the photograph collection of the Tempe Historical Museum.

Janet E. Cantley  
Janet E. Cantley

SUBSCRIBED AND SWORN to this 2nd day  
of May, 1988.

Bonita A. Cotter  
Notary Public

My commission expires:  
My Commission Expires Sept. 21, 1991

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Tempe State Bridge, Tempe, Arizona.

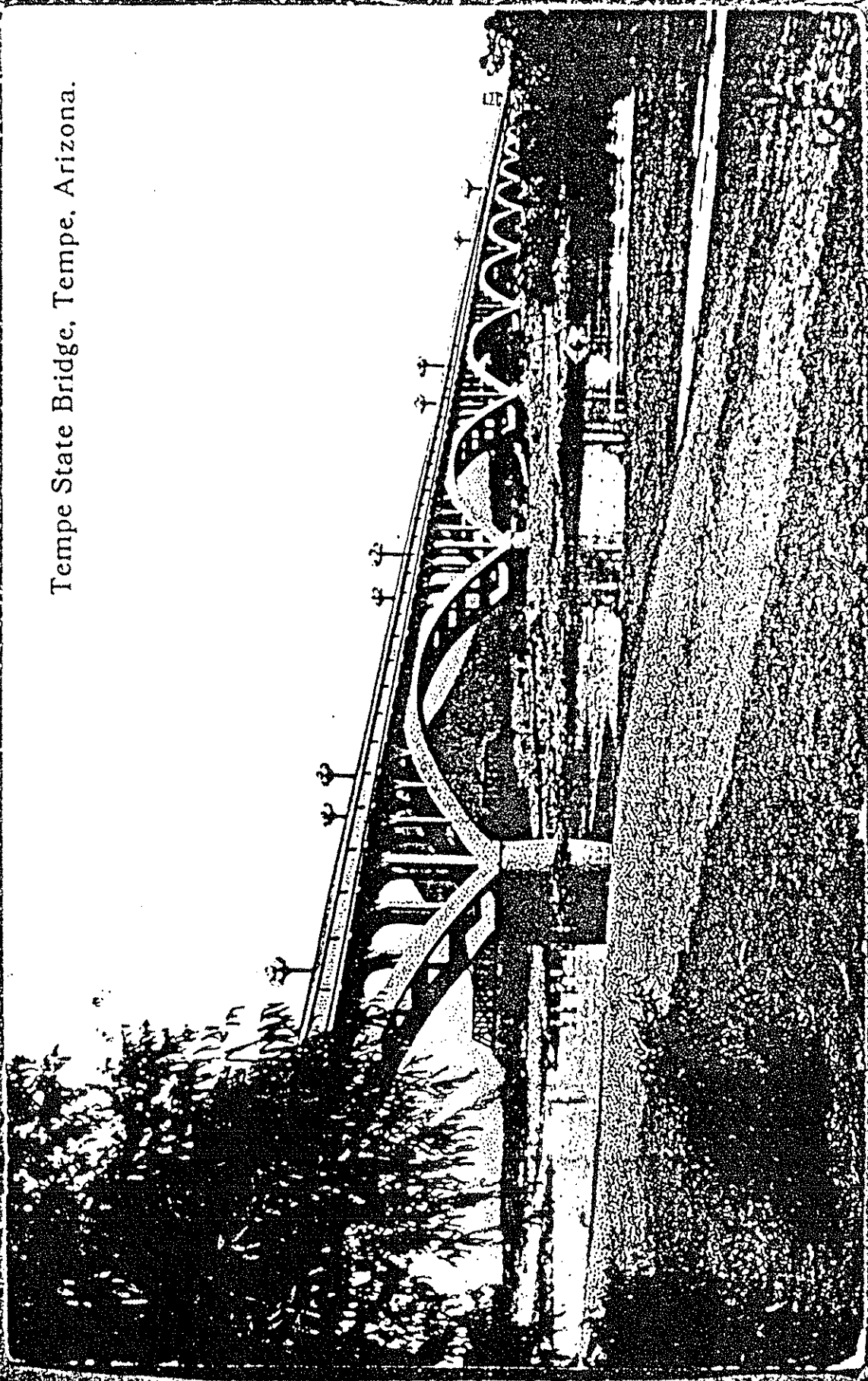


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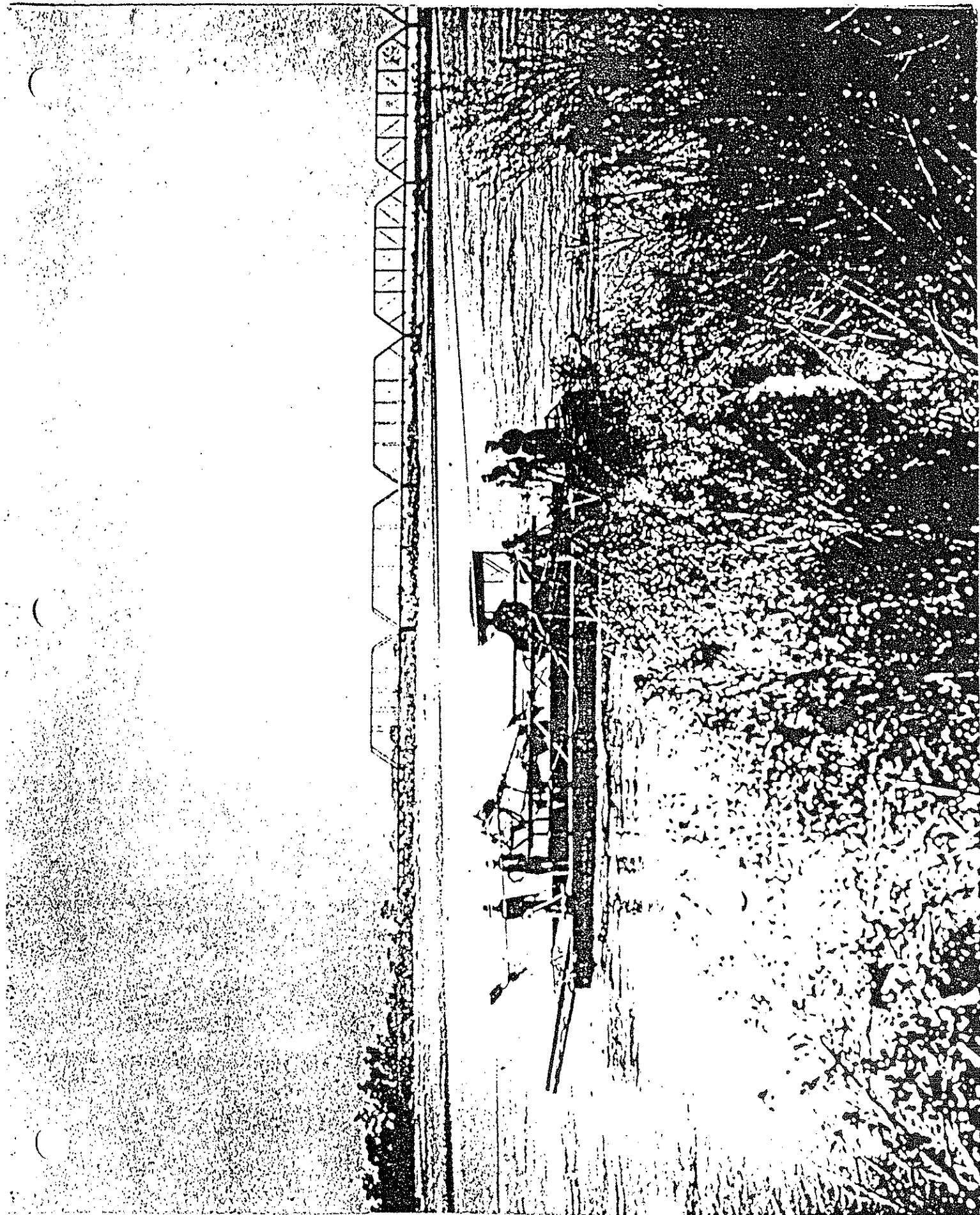


PHOTO #2



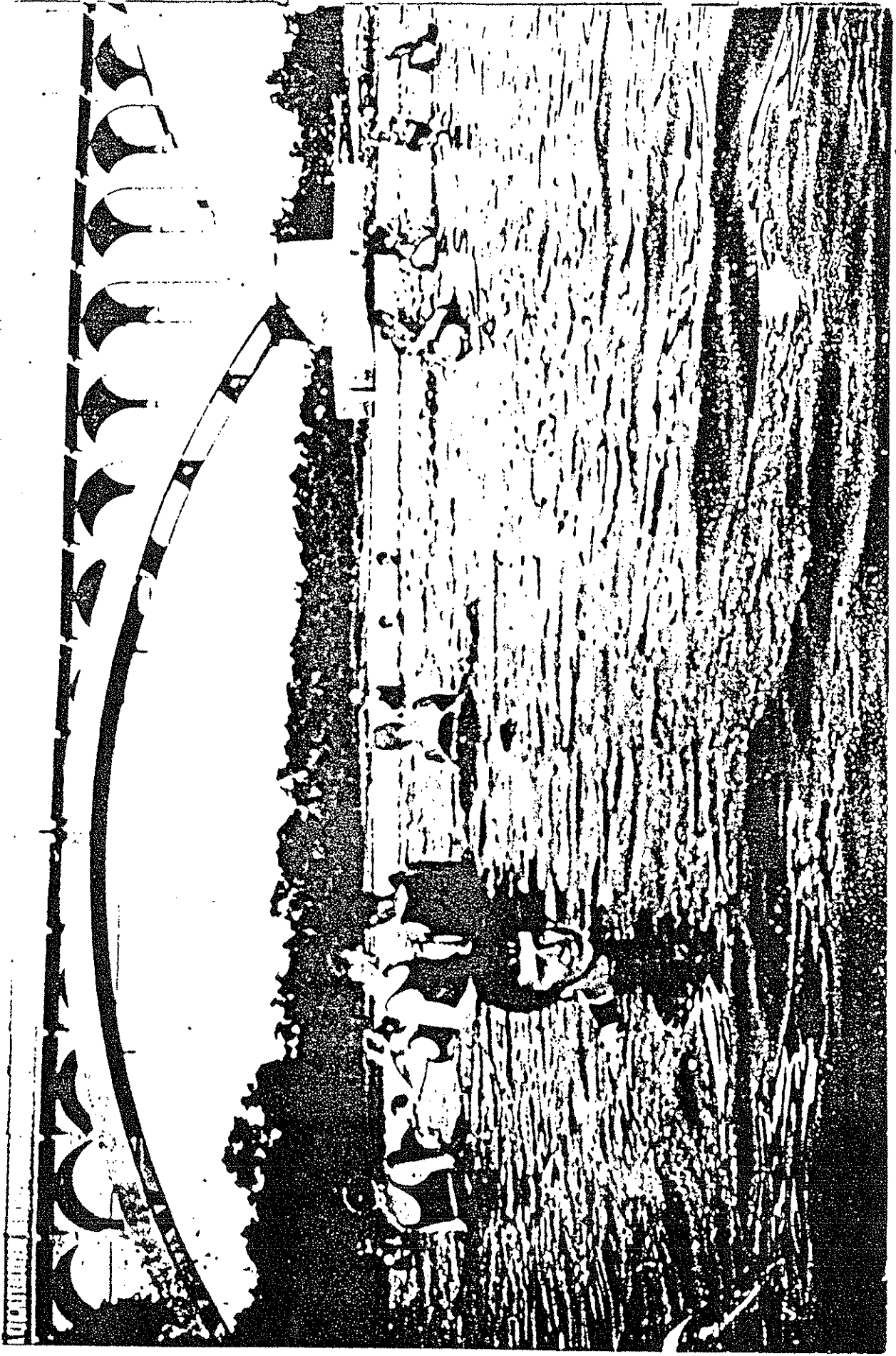


PHOTO #3

Terms for the Loan of an Object from the Tempe Historical Society, 3500 S. Rural Road, Tempe, Arizona 85282.

The Borrower agrees to credit the Tempe Historical Society and the Tempe Historical Museum for the loan of the object(s) in all publicity and exhibitions, handouts, and publications; to return the object(s) in the condition in which they were loaned; to return them to the Museum on or before the expiration date of this agreement, to reimburse the Museum for any loss or damage incurred to the loaned object(s). The borrower is responsible for being familiar with the Museum's policies and procedures as they relate to loans.

The Borrower may not photograph, make a replica of, repair or otherwise alter the loaned object(s) unless permission is herein expressly given: \_\_\_\_\_

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## AFFIDAVIT

ORIGINAL

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STATE OF ARIZONA )  
 ) ss  
 County of Pima )

My name is James Anthony Slingluff. I have twenty-two years of canoeing experience. I have canoed extensively in Arizona since 1984.

I have canoed each of the following sections of Arizona rivers on multiple occasions (exceptions noted) and believe each to be very suitable for river travel in the seasons indicated at the boating skill level noted.

1. Salt River:

A. Highway 60 bridge to Horseshoe Bend; all seasons; intermediate boating skills.

B. Horseshoe Bend to Highway 288 bridge; all seasons; beginning boating skills.

C. Stewart Mountain Dam to Granite Reef Dam; subject to dam releases (ordinarily in summer); beginning boating skills.

2. Verde River:

A. Perkinsville to TAPCO power plant (Clarkdale); all seasons; beginning boating skills (except for two particular rapids).

B. Dead Horse Park to Thousand Trails Campground; Fall/Winter/Spring; beginning boating skills.

C. Beasely Flat to Childs; Fall/Winter/Spring; intermediate boating skills.

1 D. Childs to Horseshoe Lake; Fall/Winter/Spring;  
2 beginning boating skills.

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4 3. Little Colorado River, Grand Falls to Black Falls;  
5 snowmelt, monsoons; beginning boating skills.

6 4. Wet Beaver Creek:  
7 A. Ranger Station to Montezuma Castle, one trip;  
8 snowmelt, monsoons; advanced boating skills.

9 B. Montezuma Castle to confluence with Verde; snowmelt,  
10 monsoons; beginning boating skills.

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12 5. Dry Beaver Creek, Highway 179 to Interstate 17, one trip;  
13 snowmelt, monsoons; intermediate boating skills.

14 6. Oak Creek:  
15 A. YMCA Camp to Page Spring, one trip; snowmelt,  
16 monsoons; intermediate boating skills.

17 B. Page Spring to Cornville; Fall/Winter/Spring;  
18 beginning boating skills.

19 C. Cornville to confluence with Verde; all seasons;  
20 beginning boating skills.

21 I have encountered other recreationists (boaters, hikers,  
22 and/or fishermen) on all the aforementioned sections of the Salt,  
23 Verde, Little Colorado, Wet Beaver, Dry Beaver and Oak Creek.

24 Further affiant saith not.

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1 Dated this 15 day of July, 1987.

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James Anthony Slingluff  
James Anthony Slingluff

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Subscribed and sworn to before me this 15th day of  
July, 1987.

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Leta B. Chapman  
Notary Public

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My commission expires: \_\_\_\_\_  
My Commission Expires February 5, 1989

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## AFFIDAVIT

SALT RIVER

007

STATE OF ARIZONA     )  
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 County of Coconino )

ORIGINAL

My name is George Marsik, President of Worldwide Explorations, Inc., an Arizona corporation with offices in Flagstaff. Worldwide Explorations is a commercial river running company, offering rafting and kayaking trips to members of the public on the Salt and Verde Rivers. I have been with Worldwide Explorations for five years, and have a total of eleven years experience as a professional river guide. I have participated in literally hundreds of river trips on a variety of rivers both in Arizona and in other states. The United States Forest Service has issued official permits to Worldwide Explorations to conduct commercial river trips on the Salt and Verde Rivers.

We conduct approximately forty river trips each year on the stretch of the Verde running from Camp Verde to Sheep Bridge. The river ordinarily has sufficient water for such trips during the months of October through April. In my opinion, this stretch of the river would be useable for such trips year around were it not for water diversions for agricultural irrigation.

The Verde River has been designated by Congress and President Reagan for protection under the National Wild and Scenic Rivers Act. Because of this legislation, the Verde River from Beasley Flat to Sheep Bridge has been guaranteed the protection that this unique resource deserves. The outstanding attributes of the Verde River are unique in the world. It probably has the finest riparian habitat in the state of Arizona and the Southwest. Numerous biological studies have detailed the richness and diversity of life along its banks.

The segment of the Verde River that was designated Wild and Scenic is not the only section on the river that provides critical habitat for threatened and endangered species. Because of its topography, climate and area of drainage, the Verde River as a whole provides and maintains much critical habitat that is essential for



protecting and sustaining many species that are threatened and endangered. Loss of any segments of this critical habitat would diminish the ecosystem's ability to provide sufficient quantity of territory to allow for diversity.

On the Salt River, Worldwide Explorations conducts approximately 100 trips per year between the Highway 60 bridge and the Highway 288 bridge. We conduct trips within this stretch year around.

Preservation of the river bottom and riparian wildlife habitat is critical to maintaining the recreational and aesthetic values of these rivers. I have observed sand and rock mining operations in the bed of the Verde River that have destroyed acres of riparian habitat, diverted river flows, and severely impaired the scenic beauty of the river channel. In my opinion, further private development in and along the beds of the Salt and the Verde Rivers will substantially impair our operations and the use and enjoyment of these areas by the public.

Affiant saith nothing further.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 1987.

  
George Marsik

Subscribed and sworn to before me this 14<sup>th</sup> day of July, 1987.

  
Notary Public

My commission expires: 9-1-90