DECLARATION OF DAVID A. WEEDMAN

REGARDING THE GILA RIVER

1. I have a Bachelor of Arts Degree from the University of Arizona. I graduated from the Interdisciplinary Studies Program with a triple major in Ecology and Evolutionary Biology, Geology, and Natural Resource Management. I have been employed by Arizona Game and Fish Department since 1991.
2. I have reviewed the statements I made to ANSAC on November 16, 2005 and reconfirm that they are true and correct.
3. I have been a fisheries biologist with the Arizona Game and Fish Department since 1991. I have worked in or around riparian ecosystems my entire time with the Department. I spent 9 years working on threatened and endangered fishes, followed by 6 years as a central Arizona fisheries biologist on the Salt, Verde, Agua Fria, rivers and 7 lakes of central Arizona; Roosevelt, Apache, Canyon, Saguaro, Pleasant, Bartlett and Horseshoe. Since 2005 I have been in the Aquatic Habitat Program in the Habitat Branch of the Department. In this capacity I have worked on multiple facets of riparian ecosystem management, restoration, and protection. I am well-versed in Arizona water law. I routinely review local, state and federal projects for their potential to adversely affect aquatic and riparian ecosystems and I provide feedback to project proponents on avoiding, minimizing, or mitigating those adverse effects.

4. Beaver
    a. Beaver eat numerous riparian trees including cottonwood, willow, birch, maple, aspen, alder, and cherry trees. They will also eat aquatic vegetation including cattails, lilies, sedges and rushes.
    b. Beaver build dams out of a collection of logs, branches, sticks, twigs, mud, rocks, or any other material they can find to slow, stop, and pool water in a flowing stream.
    c. Beaver build dams to serve multiple functions, but safety is the primary factor. The pooled water provides more secure habitat for beavers and allows them to easier escape predators by swimming instead of waddling on the ground. Pooled water allows beavers to build lodges with underwater access tunnels for additional protection from predators, especially for raising their young. When water pools behind a beaver dam it also floods dry ground which allows for the beaver to have swimming access to new trees that it can eat or cut down for dam building. By flooding areas it provides easier opportunity for beavers to transport larger logs by floating instead of dragging. Beaver in many areas are also known to excavate canals to access additional areas. Where pools of sufficient depth are naturally present and where dam building is difficult because of a river's geomorphology, beaver may be less successful at maintaining functional dams.

d. Some beavers will excavate dens in the banks of rivers or streams instead of building a lodge. The entrance is normally underwater with an upward angled access tunnel leading to a dry cavity. Bank dens can be 6 to 20 feet away from the river edge depending on the size of the beaver colony.
e. If the beaver cannot find a suitable place for a traditional lodge, they can build a den in the bank of the river. Suitability for lodges may be influenced by stream morphology . Suitability may also be limited by low abundance of trees for lodge and dam building. Repeated seasonal high flows that destroy lodges and dams may also encourage beavers to dwell in the bank instead of repeating attempts to rebuild lodges.
f. Beaver are likely to be found in lower gradient rivers with flowing water and trees. If both of these are present, beavers would be highly probable occupants absent the interference of mankind. Beaver were present in the Gila River system in historical times, and were harvested in significant numbers as interstate commerce. Beaver were likely harvested using site-built boats in addition to other methods of trap-setting and pulling.
g. Dams in the main channel (if they could be built at all) would be likely destroyed by seasonal high flows. Therefore beaver possibly dammed only side or backwater channels of the Gila or created dams in the tributaries.

5. Big River Fish
    a. Colorado pikeminnow
        i. Colorado pikeminnow were present in the Colorado, Gila (lower and above San Carlos Reservoir pre-dam), Salt, Verde (up to at least Perkinsville) and San Pedro (upper river at Fairbank). Minckley in 1973 documents their occurrence based on literature records or recent collections.
        ii. Colorado pikeminnow were also known in historical times as Colorado River squawfish, Colorado salmon, and white salmon.
        iii. The average size of the Colorado pikeminnow is dependent upon habitat size and quality. They were commonly known to reach 40-50 pounds at 3-4 feet in length in larger river systems. According to Robert R. Miller in his 1961 publication of *Man and the Changing Fish Fauna of the American Southwest*, lengths of 6 feet and weights over 100 pounds were probable.
        iv. Different river conditions were required at different times of year to meet specific life-history requirements. During late winter-early summer sufficient depth was necessary for migration up-river for spawning. Minimum depths of 1-2 feet would be necessary for adults, but migration would be easier at greater depths. Summer survival of adults required sizeable pools of sufficient depth to provide habitat and cover from predators. Suitable pools would have areas exceeding 3-4 feet deep. However, scour holes and lateral pools would likely provide deeper habitat for over-summering. Smaller streams would provide needed pool/riffle/run habitat for young of year survival and downstream

migration to larger streams and rivers where they would continue growth to sexual maturity. It is probable that not all individuals migrated up/down stream to fulfill life history needs.

v. Colorado pikeminnow were called Salmon because of their tendency to migrate, their size and their suitability for food. According to Minckley 1973, Colorado pikeminnow were used as food by Native Americans and European settlers alike prior to and at the time of statehood. They disappeared from the Gila River basin by 1937.

vi. According to a published report by F.M. Chamberlain in 1904 and cited in Miller 1961 and Minckley 1973, pikeminnow were harvested commercially from at least the lower Salt River for sale in adjacent towns.

b. Razorback sucker

i. Razorback sucker were historically present in the Colorado, Gila (lower and above San Carlos Reservoir pre-dam), Salt, Verde (up to at least Perkinsville) and San Pedro (upper river at Fairbank). Minckley in 1973 documents occurrence based on literature records or recent collections.

ii. The Razorback sucker was also known as the Humpback sucker.

iii. Razorback suckers' average size was 1.5-2 feet and 6-10 pounds, but they can grow as large as 2.5 feet and 13 pounds. Razorback suckers were similar in size to modern Largemouth bass found in Arizona waters.

iv. Razorback suckers require different river conditions at different times of year to meet specific life-history requirements. During late winter-early summer sufficient depth was necessary for migration up-river for spawning. Minimum depths of 1-2 feet would be necessary for adults, but migration would be easier at greater depths. Summer survival of adults required sizeable pools of sufficient depth to provide habitat and cover from predators. Suitable pools would have areas exceeding 3-4 feet deep. However, scour holes and lateral pools would likely provide deeper habitat for over-summering. Smaller streams would provide needed pool/riffle/run habitat for young of year survival and downstream migration to larger streams and rivers where they would continue growth to sexual maturity. It is probably that not all individuals migrated up/down stream to fulfill life history needs

v. According to Minckley in 1973, Razorback sucker were used as food by Native Americans and European settlers alike prior to and at the time of statehood.

vi. According to a published report by F.M. Chamberlain in 1904 and cited in Miller 1961 and Minckley 1973, suckers were harvested commercially from at least the lower Salt River for sale in adjacent towns.

c. Humpback Chub and Bonytail Chub
   i. Humpback chub and Bonytail chub were found historically in the Colorado, Little Colorado, Gila, and Lower Verde. Their presence has been documented in historic records and museum specimens, and by Minckley in 1973.
   ii. Chub average size was 1 foot long and 3 pounds for adults. I estimate the largest were not much more than 1.5 feet long and 4 pounds. They were comparable in size to many modernly occurring fish including most trout, walleye, and bass.
   iii. Chub require variable river conditions based on specific life history needs of the season. They occur in eddies and pools for loafing and feeding but can navigate swift rapids for migration when desired. Chub persist and reproduce in slack water (ponds/reservoirs) as well as flowing water.

I declare under penalty of perjury that, to the best of my knowledge, the foregoing is true and correct.

Executed this 30 day of May, 2014.

David A Weedman