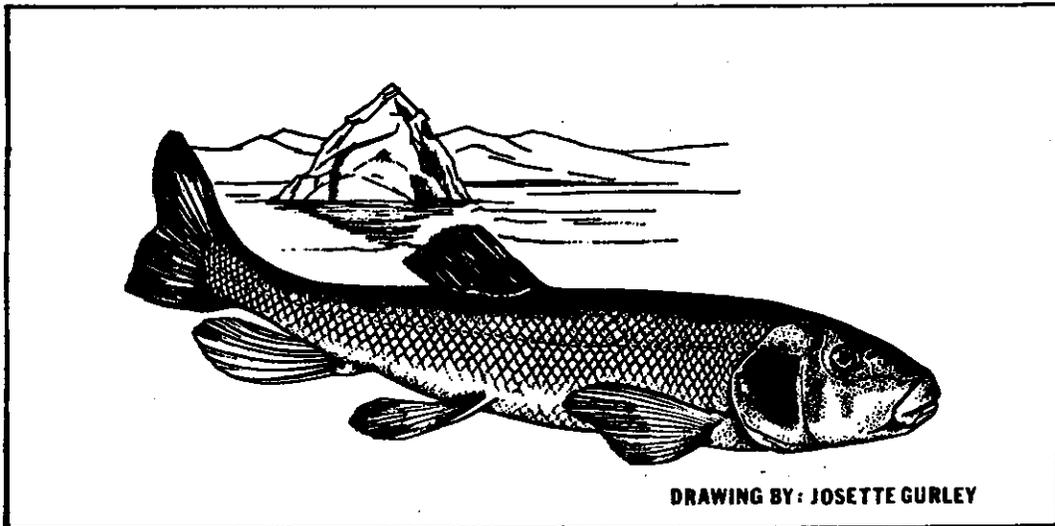


CUI·UI

RECOVERY PLAN



DRAWING BY: JOSETTE GURLEY

CUI-UI RECOVERY PLAN

Prepared by the
Cui-ui Recovery Team

December 1977

TEAM MEMBERS

Earl Pyle, Team Leader, U.S. Fish and Wildlife Service, Reno, Nevada
John Frazier, Pyramid Lake Paiute Indian Tribe, Nixon, Nevada
Donald King, U.S. Fish and Wildlife Service, Reno, Nevada
Kay Johnson, Nevada Department of Fish and Game, Reno, Nevada
Dale Lockard, Nevada Department of Fish and Game, Reno, Nevada
Thomas J. Trelease, Team Advisor, Verdi, Nevada

Published by
U.S. Fish and Wildlife Service
Endangered Species Program
Region 1
Portland, Oregon


Approved

Director,
U.S. Fish & Wildlife Service
Title

JAN 23 1978

Date

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CUI-UI RECOVERY PLAN

PART I INTRODUCTION

The history of the cui-ui¹ (Chasmistes cujus) and the Pyramid Lake Paiute Indian Tribe is so intimately entwined that the unwritten, ancestral name for the tribe is Kuyuidokado (Wheeler, 1969) or Ku-yu-wi-kut-teh (Hermann, 1973) meaning "sucker eaters". Spawning runs of cui-ui and cutthroat trout (Salmo clarki henshawi) provided a readily available and dependable source of food. There can be no doubt the shores of Pyramid Lake were highly valued as a haven against the uncertainty and hardship of obtaining food in the arid and often inhospitable lands of the Great Basin.

Non-Indian immigrants beginning to settle the area during the latter part of the 19th century, often joined the Indians in harvesting the seemingly inexhaustible hordes of cui-ui and cutthroat trout, which appeared from the depths of Pyramid Lake and gathered at the mouth of the Truckee River for their annual spawning run. Simultaneously, upstream activities accompanying development of the white man's culture were signaling an end to an era. Within a generation the Pyramid Lake cutthroat trout had begun to decline in numbers and disappeared from the face of the earth during the decade of the 1930's. The myriad of cui-ui diminished until only a dwindling few appeared at the river delta each Spring instinctively trying to repeat a spawning journey cui-ui have made throughout the ages.

Very little is known about the life history of the cui-ui and action to arrest its decline has consisted of applying general fishery information. This recovery plan attempts to increase our knowledge about this unique fish and to

1/ Most commonly pronounced as "kwee-wee". The Paiute pronunciation is closest to "koeee-ooee".

initiate the actions needed to restore the species to a strong and viable population.

FORMER STATUS

The cui-ui is a species of fish belonging to a genus which, presumably, was present throughout the Great Basin in ancient times when recession of the glaciers left vast bodies of water throughout much of the northern part of the United States. As drier periods caused the water to recede, and inter-connecting waterways vanished, subpopulations were isolated and the integrity of the genus was lost as distinct species evolved. Three species are now recognized, each restricted to separate drainage systems (Bailey, R.M., et al., 1960). The short-nose sucker (Chasmistes brevirostris) has been confined to the Klamath Lake system of California and Oregon, and the June sucker (Chasmistes lioris) to Utah Lake. The cui-ui was restricted in Nevada to the sister lakes, Pyramid (now included within the Pyramid Lake Paiute Indian Reservation) and ill-fated Winnemucca Lake (LaRivers, 1962). Sharing a common drainage system, but separated by a narrow band of mountains, Pyramid and Winnemucca Lakes were remnants of Pleistocene Lake Lahontan, an enormous body of water that covered as much as 8,000 square miles of present day California and Nevada.

The cui-ui has strong anadromous tendencies, as did the now extinct Pyramid Lake cutthroat trout, and their annual spring migration was an event for festive gathering of ancestral Paiutes. The Pyramid Lake Tribe and neighboring tribes came to capture the migrating fishes as they concentrated at the mouth of the Truckee River and ascended to their spawning grounds. Great numbers of cutthroat trout and cui-ui were taken for feasting while others were prepared, by drying and smoking, as a staple food item to be consumed throughout the year or bartered to other tribes for needed goods.

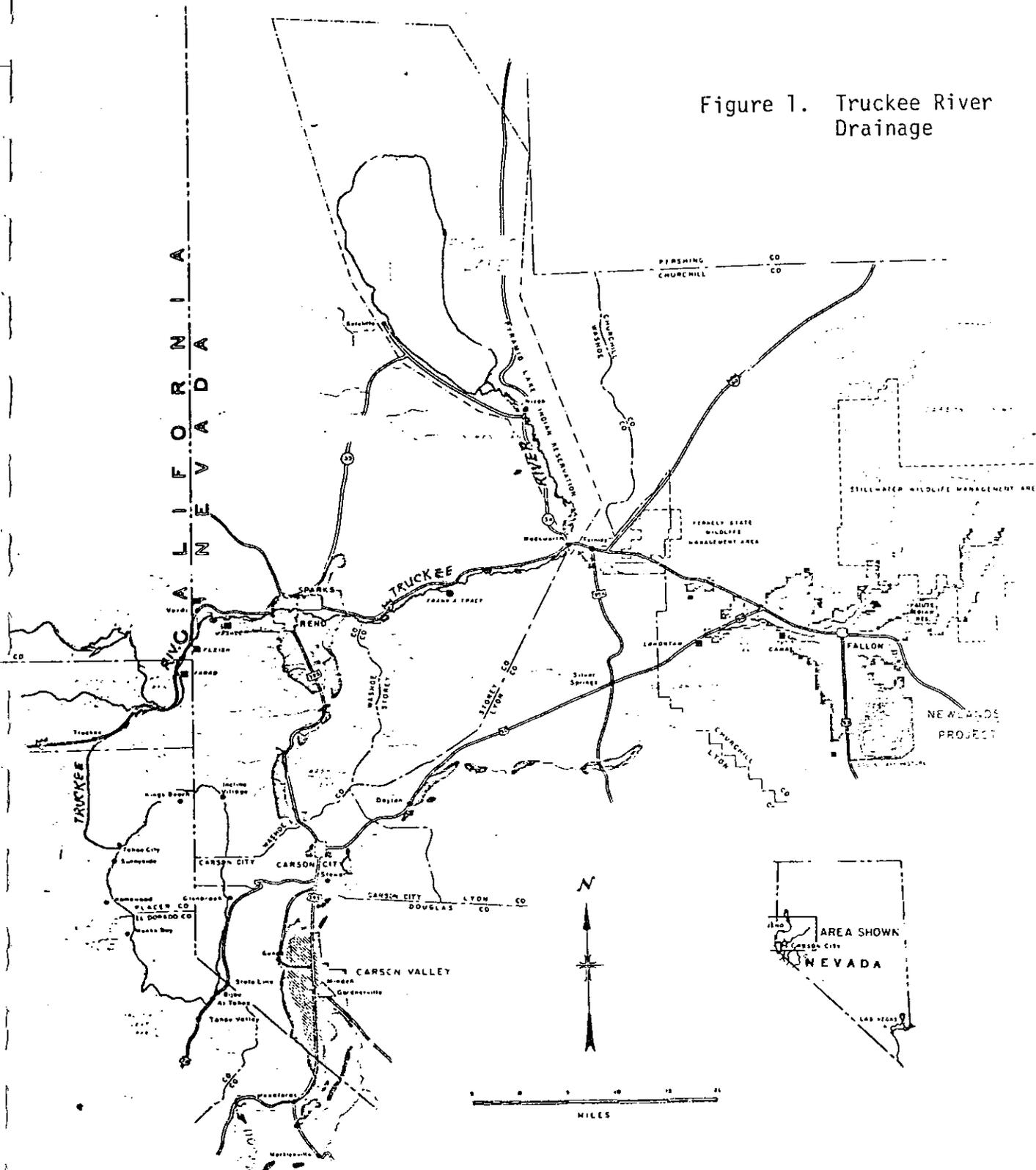
More recently, as non-Indians began to occupy the area, many tons of trout were removed from the lake each year for sale in the immediate vicinity as well as being shipped to many parts of the United States (Wheeler, 1969).

REASONS FOR DECLINE OF THE FISHERY

The Truckee River, originating in the Sierra Nevada Mountains, flows through Lake Tahoe then descends from the mountains into Nevada's fertile, but arid lowlands (see Figure I). It flows in a northeasterly direction for nearly 100 miles before terminating in the Pyramid Lake basin. This is the only permanent stream flowing into the basin and the water level of the lake is almost entirely dependent upon inflow from the Truckee River to counter-balance evaporation and seepage. As immigrants became more numerous in the area, increased demands were placed upon Truckee River water for domestic, industrial, and agricultural uses, and more and more diversions were placed in the river to irrigate adjoining lands.

The Bureau of Reclamation, in 1905, completed Derby Dam and canal which transports Truckee River water through the intervening hills to join with the Carson River to supply water for the Newlands Project, a federally sponsored agricultural enterprise, and for generation of electrical power. Decreasing the quantity of Truckee River water reaching Pyramid Lake resulted in the lake's water level declining nearly eighty feet during the present century and Winnemucca Lake became completely desiccated (ca. 1938). Concurrently, insufficient springtime flows, an impassable delta, and the inability of ascending spawners to pass above Derby Dam combined to lead to the extinction of the Pyramid Lake cutthroat trout (ca. 1938). These same factors caused an alarming decrease in the cui-ui population as manifested by declining numbers in the spawning run.

Figure 1. Truckee River Drainage



PART II

RECOVERY PLAN OBJECTIVES AND RATIONALE

The primary objective of the Cui-ui Recovery Plan is to restore the species to a non-endangered status and reclassify from endangered to threatened. If it were possible to return to 19th century conditions, the perpetuation of the species would be assured. The Pyramid Lake Basin had achieved a natural balance which resulted in an extremely productive fishery. This balance was upset by man's withdrawal of water from the system. It is our purpose to protect the existing cui-ui, to augment the present population by artificial culture and to protect and restore as much of the essential habitat¹ as possible. But most important is to initiate studies to elucidate the reproductive requirements of cui-ui so that necessary action can be taken to assure that the cui-ui will be able to re-establish a viable population.

ACCOMPLISHMENTS

Many individuals including Tom Trelease, Al Jonez, Kay Johnson, Sebastian Coli, and Jack Dieringer of the Nevada Fish and Game Department; Professor Ira LaRivers, University of Nevada at Reno; Donald King, U.S. Fish and Wildlife Service and Warren Tobey, Pyramid Lake Paiute Indian Tribe, gathered information to document the cui-ui's decline and provided a rationale for restoring the species. The efforts of these men, along with many other concerned conservationists, and from data submitted by Dr. Robert R. Miller, University of Michigan, and the Nevada Fish and Game Department, culminated in listing the cui-ui as an endangered species in the Federal Register, Vol. 32(48), March 11, 1967. The Pyramid Lake Paiute Tribe acted in concert

¹/ Essential Habitat Description, see Appendix B

to preserve the species by first, imposing a daily bag limit, and later (1969) by prohibiting non-Indians from fishing for cui-ui.

Restoration and management of the cui-ui are hampered by the lack of sufficient knowledge about its life history and ecology. Snyder (1917) was the first to publish basic life history information about the cui-ui. Nearly a quarter century passed before interested biologists began to record observations of cui-ui during the course of their activities with game fish in Pyramid Lake. Professor Ira LaRivers and Tom Trelease, during the decade of the 1940's, observed with alarm the effects of decreasing flows in the Truckee River on the spawning population of cui-ui and the effects of increased total dissolved solids on certain lake inhabitants (Trelease, 1952; LaRivers, 1962).

Trelease began basic work on determining feeding habits and aging specimens of the spawning population. Biologists Al Jonez and Kay Johnson continued basic cui-ui life history studies in conjunction with their fishery research at Pyramid Lake during the 1950's and 1960's (Jonez, 1955; Johnson, 1958). David L. Koch, a University of Nevada student under Professor LaRivers' direction, conducted additional life history studies of the cui-ui, in cooperation with the Pyramid Lake Paiute Indian Tribe, Nevada Department of Fish and Game, and the U.S. Fish and Wildlife Service during 1971 and 1972 (Koch, 1972).

Substantial progress has been made upon priority items which were included within previous restoration proposals:

1. A fishway to provide cui-ui and Lahontan cutthroat a means of access to spawning grounds was completed in 1976. This represents a key step toward restoration; however, optimism

must be tempered by concern for the quality of the habitat and utilization of the fishway by the cui-ui. Much research must be conducted on conditions within the river, lake, and fishway to assure that the habitat complements continued survival of the species.

2. Personnel of the U.S. Fish and Wildlife Service have developed facilities and techniques for artificially spawning, hatching, and rearing cui-ui to swim-up stage for release into Pyramid Lake. Nearly 7.5 million fry were distributed into the lower Truckee River and the lake during 1973-1976. The success of this effort cannot be immediately determined because of a lack of suitable assessment techniques and must await sexual maturation of the released fry to determine if the spawning population has been increased. There is reason to believe the contribution to the population will be significant, based upon the success of this type of stocking with other species in various parts of the nation (Forney, 1975).

Nevada Department of Fish and Game biologists have reared cui-ui larvae to the adult stage. Their goal is to determine if cui-ui brood stock can be reared and maintained under artificial conditions and provide viable progeny. The specimens have provided knowledge of life history, demonstrated cui-ui can be reared in waters other than Pyramid Lake, and will provide continuing data on reproduction when mature.

Artificial culture can be regarded as a contingency measure, as well as a means of more rapidly increasing population numbers and should be continued until natural propagation has been successfully re-established. Various members of the Pyramid Lake Paiute Tribe have, with program support from governmental agencies, received training in netting, fish transport, and artificial culture techniques so that they can assume more direct responsibility for the operation of fish culture facilities.

Efforts must be intensified in order to gain more information and understanding of the cui-ui's needs. Equipment must be procured and techniques developed for sampling the lake habitat to gather information on population size, composition, distribution, and critical requirements with regard to interactions with other lake organisms, food chain, and water chemistry. The fluvial portion of their life cycle must be as thoroughly studied; however, equipment will differ and sampling techniques may prove to be even more difficult because of the physical characteristics of the habitat and small size of the juveniles that will be included in the studies.

SPECIFIC PROBLEM AREAS

Diminished flows within the Truckee River have created both actual and potential problems. The most obvious has been the inability of adult fish to traverse the delta area and gain access to their historical spawning grounds. More subtle, and perhaps just as limiting to cui-ui survival is an accelerated accumulation of total dissolved solids within the lake and deterioration of the stream spawning habitat.

The concentration of total dissolved solids in Pyramid Lake has increased by nearly 50 percent during the period corresponding to the increased use of Truckee River water for agricultural, domestic and industrial purposes.

Comparative data are not available on the rate of increase of total dissolved solids prior to the present century. Nevertheless, it is reasonable to conclude that the decreased inflow of fresh water into Pyramid Lake to counterbalance evaporation (estimated to be approximately 400,000 acre feet per year) has resulted in a greatly accelerated rate of accumulated total dissolved solids which, if continued, can be expected to have an enormous impact upon the biota of the lake. Recorded water analyses show that total dissolved solids increased from 3486.1 ppm in 1882 to 3980 ppm in 1933, or a 14 percent increase, but during the period from 1933 to 1968, the increase was from 3980 ppm to 5420 ppm, or a 36 percent increase (Environmental Protection Agency, 1971). LaRivers (1962) observed that several species of snails have recently become extinct and the only evidence of their having been a member of the Pyramid Lake bio-community is the tons of snail shells deposited on beaches around the basin. Recent studies have shown that at least one species of snail still exists in Pyramid Lake, although in an apparently stunted form (Robertson, 1976).

Alterations in the composition and quantity of life in other lakes, which have undergone similar changes in salt content, have been well documented (Lasker, et al., 1972; May, 1972; McCarraher and Thomas, 1968; Mitchum, 1971; Rawson and Moore, 1944). A comprehensive survey of the biota of Pyramid Lake is being conducted and studies are underway to determine the effects of increased total dissolved solids on the plant and animal life of the lake in order to support efforts to maintain a level of total dissolved solids which is within limits of tolerance.

A stream under normal flow conditions operates to keep the silt it carries in suspension as well as to agitate and cleanse the gravel within the

stream bed. If the cleansing action breaks down, as for example, under conditions of diminished flows, siltation can render the spawning habitat unsuitable. A recent study of spawning substrate within the lower Truckee River indicates that deposition of sediment within the gravel has impeded subsurface flow of water thus decreasing the ability of the spawning beds to provide life-sustaining habitat for cutthroat trout ova and fry (McBrayer and Ringo, 1974). If additional studies indicate spawning areas have been similarly affected, extensive stream bed renovation may be necessary.

CUI-UI RECOVERY PLAN OUTLINE

Prime Objective: To restore the Cui-ui to non-endangered status;
to reclassify from endangered to threatened.

1. To maintain a self-sustaining population at optimum level in Pyramid Lake.
 11. To protect Cui-ui population.
 111. To develop interagency cooperation to protect cui-ui populations.
 1111. Protect population of stream spawning cui-ui in Truckee River.
 1112. Protect all age-class cui-ui in Pyramid Lake to insure optimum breeding stock.
 112. To assess predator depredation.
 1121. Determine predation on juvenile cui-ui by other fish: i.e. Sacramento perch and Lake chub.
 1122. Determine predation on cui-ui eggs by other fish.
 1123. Determine predation on all age cui-ui by birds: i.e. pelicans, herons, etc.
 113. To act on predation findings in #112.
 12. To restore and maintain essential habitat in Pyramid Lake and inflowing streams.
 121. To conduct life history studies for application in protecting cui-ui habitat.
 1211. Study chemical, biological, and physical factors affecting cui-ui.
 1212. Conduct age and growth studies of various life stages.
 1213. Study and characterize reproductive cycle of cui-ui.
 1214. Assess population including natural reproduction.
 1215. Conduct behavioral studies.

- 122. To restore and maintain Truckee River access and egress for cui-ui.
 - 1221. To maintain and operate fishways if needed.
 - 12211. Design, construct and modify fishways if needed.
 - 12212. Determine needs for fishways.
 - 12213. Operate Marble Bluff Fishway.
 - 12214. Maintain Numana Dam Fishway and ladder.
 - 1222. To maintain and operate diversion screens if needed.
 - 12221. Design and construct diversion screens if needed.
 - 12222. Determine needs for diversion screens.
 - 12223. Operate and maintain screens at Numana Dam.
- 123. To restore and maintain Truckee River habitat.
 - 1231. To determine how to restore river habitat.
 - 12311. Determine optimum habitat requirements for cui-ui needed to maintain and restore habitat conditions.
 - 12312. Determine existing habitat conditions.
 - 12313. Conduct literature review and compilation.
 - 1232. To take action to maintain or restore optimum habitat conditions identified in #1231 and as needed.
 - 12321. Control animal damage to stream bank soils and vegetation.
 - 12322. Regulate stream channelization efforts.
 - 12323. Enforce water pollution regulations.
 - 12324. Establish and maintain optimum flow for spawning and habitat protection.
 - 12325. Remove as many barriers to fish passage as possible.
 - 12326. Restore stream canopy.
 - 12327. Periodically remove trash and renovate stream.
 - 12328. Reduce competing "rough" fish populations and predation to eggs.
- 124. To maintain suitable Pyramid Lake habitat and initiate actions needed for optimum conditions.
 - 1241. To determine how to obtain lake habitat for cui-ui.
 - 12411. Determine optimum lake habitat requirements for cui-ui.
 - 12412. Determine existing lake conditions.
 - 12413. Conduct literature review and compilation on Pyramid and similar lake habitats, including

- effects of total dissolved solids.
- 12414. Determine the effects of total dissolved solids on egg development.
- 12415. Determine effect of total dissolved solids on lake limnology.
- 12416. Determine quality and quantity of inflow and other factors needed to maintain optimum lake habitat conditions.
- 12417. Determine effects of total dissolved solids on juvenile development.

1242. To conduct actions to maintain or restore optimum habitat conditions as identified in #1241 and as needed.

13. To determine critical habitat as designated under the 1973 Endangered Species Act.

14. To augment population with hatchery-reared cui-ui until natural reproduction is established.

141. To assess survival of hatchery-reared cui-ui in Pyramid Lake.

142. To construct, operate, and maintain spawning channels, nursery ponds and hatchery facilities; produce two million fry annually.

1421. Design and construct hatchery, nursery ponds, spawning channels, etc.

1422. Develop hatchery-rearing techniques.

14221. Develop juvenile-rearing techniques.

14222. Develop broodstock-rearing techniques.

1423. Train tribal members in fish cultural techniques.

1424. Operate hatchery and improve existing fish cultural facilities.

14241. Enlarge existing facilities as needed.

14242. Operative hatchery facilities.

14243. Improve and protect the Hardscrabble hatchery water supply.

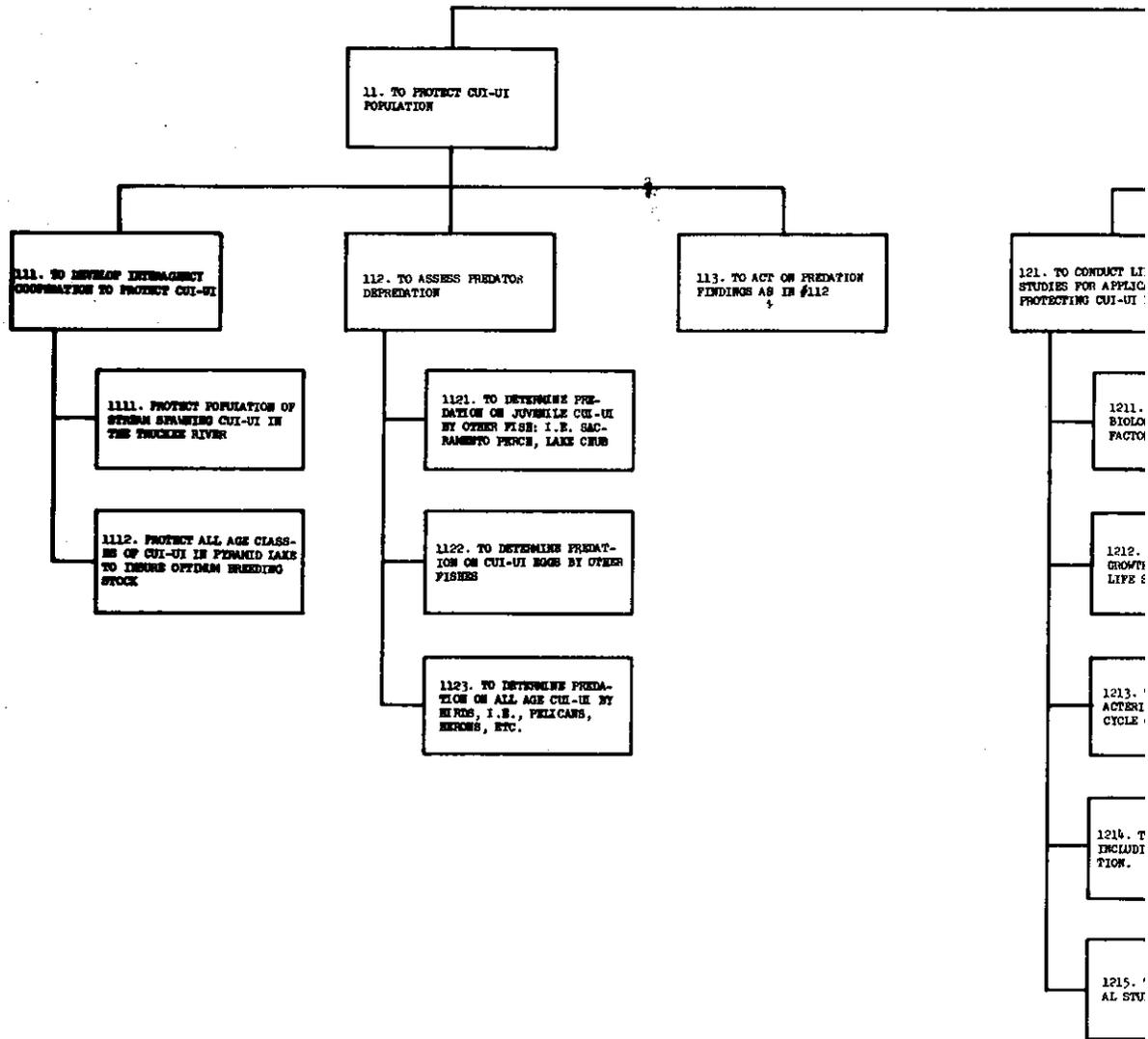
142431. Acquire Peigh ranch.

142432. Take other stream protective actions as required.

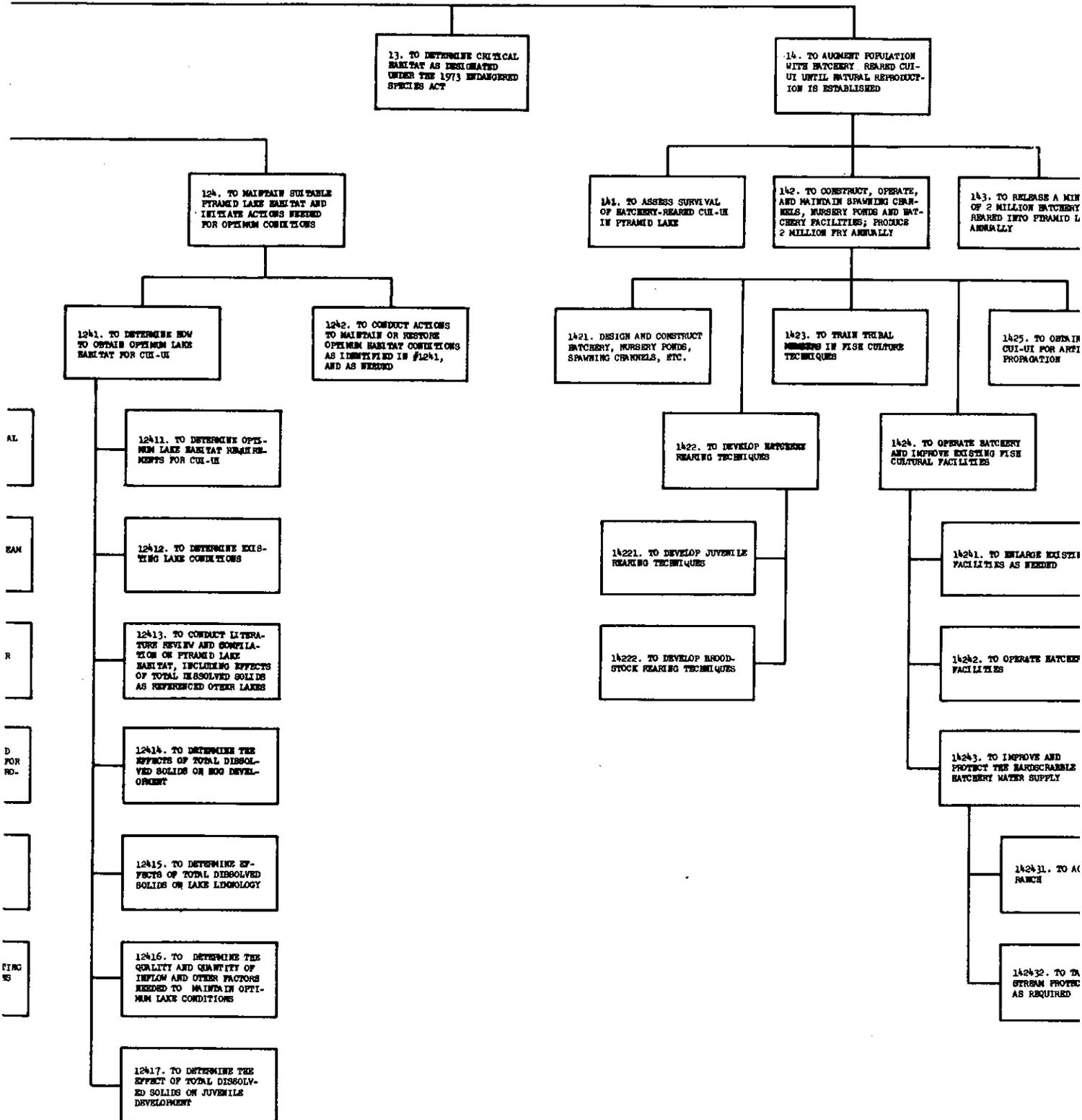
1425. Obtain adult cui-ui for artificial propagation.

143. To release a minimum of two million hatchery-reared cui-ui into Pyramid Lake annually.

2. To establish viable subpopulations at other suitable sites if needed.
 21. To select suitable sites.
 211. Evaluate various habitats.
 212. Select suitable habitats; interrelate with #121.
 213. Obtain necessary approval for transplants.
 22. To obtain transplant seed stocks.
 23. To make transplants.
 24. To monitor transplants.
3. To educate the public on the Cui-ui recovery effort.
 31. Develop informational leaflets and distribute.
 32. Provide current information to the news media on progress of Cui-ui restoration program.



PRIME OBJECTIVE: TO RESTORE CUI-II TO NONDANGERED STATUS; RECLASSIFY FROM ENDANGERED TO THREATENED STATUS.



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ACTION NARRATIVE¹

A. LANDS

1. 142431 Peigh Ranch acquisition. The land acquisition of the old Peigh Ranch should be considered to protect the needed water supply for Hardscrabble Creek cui-ui hatchery. Cui-ui failed to ascend the Marble Bluff Fishway during the Spring of 1976 and 1977 and substantiates continuing artificial culture until sufficient natural propagation is achieved. Parcels of patented land within and outside Pyramid Lake Indian reservation should also be considered. Hydrological studies should be made on Hardscrabble Creek to assure a firm water supply. To safeguard the water supply in Hardscrabble Creek, the recovery team recommends securing the upstream water rights and placing it in public ownership.

B. INVESTIGATIONS

1. 1214 Assess Cui-ui population. Studies are now underway to assess the population of cui-ui in Pyramid Lake, including natural reproduction.
2. 1213 Investigate factors affecting life cycle cui-ui population.
1211
A study extending over a three-year time span will be needed to investigate the factors affecting the cui-ui life cycle population, including chemical, physical and biological elements.

¹/ Listed by priority and work element plan number.

3. 14221 Develop juvenile-rearing techniques. Methods for artificially rearing larval cui-ui have been developed at Pyramid Lake. Refinement of methods and development of additional facilities to permit rearing cui-ui to a larger size are needed. Larger fish are also needed for planting purposes as well to mark them and aid in identifying on re-capture.
4. 14222 Develop brood stock rearing techniques. Methods for artificially rearing cui-ui to sub-adults have been developed by Nevada Department of Fish and Game. Additional facilities are needed not only for increased production, but also for improvement of techniques. It is recommended that this activity be done at the Washoe Rearing Pond (NFG) in Reno. Work accomplished in each of these two areas (14221 and 14222) will complement one another and provide knowledge of the cui-ui's response to culture in waters of differing chemical composition.
5. 141 Assess survival of hatchery-reared cui-ui. Extensive pond culture is needed to provide cui-ui large enough and in the quantity necessary for marking. Two men over a four-year time span will be needed to evaluate survival to sexual maturity.
6. 12412 Determine existing lake conditions to aid in maintaining suitable lake habitat.
12411 Determine optimum lake habitat requirements for cui-ui.
12414 Determine effects of total dissolved solids on egg development. These investigations are presently being con-

- ducted with funds provided by the Bureau of Indian Affairs.
7. 12415 Conduct limnological studies. These investigations regarding total dissolved salts (TDS) are currently being conducted with funds provided by the Bureau of Indian Affairs.
 8. 1213 Conduct reproductive studies. Conduct reproductive cycle evaluation in conjunction with 12114. Activity at Washoe rearing ponds (NFG) in Reno.
 9. 1215 Conduct behavioral studies. Conduct behavioral study concurrently with 1213 and 1212; one additional investigator needed for three-year study. Work at Washoe rearing ponds (NFG) in Reno.
 10. 1212 Conduct age and growth studies. The studies are now in progress utilizing funds provided by the Bureau of Indian Affairs, and includes larval differentiation between cui-ui and Tahoe sucker.
 11. 1121 Assess predator depredation. The types and extent of pre-
1122 dation on cui-ui must be determined in order to establish
1123 rational control. Predation may be on juvenile cui-ui, and/or eggs by other fish or on cui-ui by various birds.
 12. 142432 Assess and implement other stream protective actions as may be required to insure suitable Hardscrabble Creek water supply. This may include but not be limited to pollution, erosion or barriers.

C. ADMINISTRATION

1. 14242 Operate cui-ui hatchery. This effort should continue at least until natural reproduction is re-established.
2. 1425 Obtain adult cui-ui for artificial propagation.

3. 143 Release a minimum of two million hatchery-reared cui-ui into Pyramid Lake annually.
4. 12324 Maintain optimum stream flow. Investigations now in progress will provide basis for guidance in assuring stream flows for spawning and habitat protection.
5. 123 Restore and maintain river habitat. The quality of the historical cui-ui spawning grounds is suspect. An intensive investigation, possibly leading to extensive renovation, will be necessary. Two men will be required for the three-year study to be carried out by elements 1231 and 1232.
 - 12312 Determine existing habitat conditions in Truckee River.
 - 12311 Determine optimum habitat requirements to maintain and restore habitat conditions in Truckee River.
6. 12413 Conduct literature review. Review pertinent literature
12313 from Pyramid and similar lakes and also Truckee River on TDS effects.
7. 12327 Periodically remove barriers to fish passage including trash and fallen trees.
8. 12325 Remove existing man-made barriers in river to allow fish passage.
9. 12323 Enforce water pollution regulations. Investigate violation of water pollution regulations leading to notification of enforcement authorities.
10. 12321 Control riverbank damage. The team recommends consideration to fence essential habitat along the Truckee River stream banks from Derby Dam to Pyramid Lake (about 35

- miles) to prevent livestock damage to vegetation.
Control of bank-dwelling animals to stabilize stream bank soils and minimize erosion and protect plants.
11. 12326 To restore stream canopy. To shade water areas for cui-ui nesting by planting trees and shrubs for cover.
 12. 113 Act on predation findings in #1121, 1122 and 1123 as needed.
 13. 12322 Regulate river channelization. Various agencies, including the U.S. Fish and Wildlife Service, are monitoring activities affecting the Truckee River. They will initiate action to notify appropriate authorities to prevent inappropriate channelization that would affect cui-ui passage and reproductive activity.
 14. 14241 Improve existing fish cultural facilities. The recovery team recommends additional ponds and water sources should be developed at Hardscrabble to rear cui-ui to a larger size before release (to enhance their chances for survival), but also to provide larger size cui-ui juveniles for better marking and recapture.
 15. 1423 Train tribal members in cui-ui culture techniques. Training members of the Pyramid Lake Indian Tribe in the various operations necessary for cui-ui culture has been an important goal since the inception of the culture program in 1973. This training program should be continued in constantly-expanding form.
 16. 1421 Design and construct spawning and rearing facilities. Present rearing facilities are located on and near Hardscrabble Creek on the western shores of Pyramid

Lake. Work element 14241 is planned to improve and supplement these existing facilities. This work element (1421) is intended to provide spawning channels and ponds on the Truckee River prior to its entrance into Pyramid Lake and at a distance of nearly twenty miles from existing facilities.

17. 1111 Protect population of stream spawning cui-ui in Truckee River.
18. 1112 Protect all age class cui-ui in Pyramid Lake to insure optimum breeding stock. Protection of breeding stock is essential if cui-ui are to survive until they are restored to self-sustaining population. Relate this element with #1111; team recommends no taking of fish except for hatchery propagation purposes.
19. 12328 Reduce "rough" fish populations. Surveys will be conducted to determine "rough" fish species present and the extent of their competition with cui-ui. As determined necessary, measures will be taken to reduce the size of "rough" fish populations.
20. 13 Determine critical habitat as designated under the Endangered Species Act of 1973. The proposed determination of cui-ui critical habitat is recommended by the recovery team to the Director of the FWS. Critical Habitat final determination is applicable to all Federal Agencies under Section 7 of the Endangered Species Act of 1973.
21. 212 Select suitable transplant sites. Sites will be considered for suitability and those selected will be

retained for possible future use in the event the habitat at Pyramid Lake deteriorates to the point transplants become necessary.

22. 12212 Determine needs for fishways. When cui-ui spawning runs are re-established in the Truckee River, barriers to fish passage which cannot be removed, must be surmounted with adequately designed fishways.
- 12211 Modify fish passage way, dredge fishway terminus at delta of Truckee River.
23. 12222 Determine needs for diversion screens.
24. 12221 Design and construct diversion screens if needed. Diversion ditches must be adequately screened to prevent loss of cui-ui from the main stream.
25. 1221 Maintain and operate fishways and diversion screens if
1222 needed. Operation of these facilities in the Truckee River will require Personnel and equipment.
- 12211 Design, construct, and modify fishways if needed; - in progress.
- 12213 Operate Marble Bluff fishway.
- 12214 Maintain Numana Dam fishway and ladder.
- 12223 Operate and maintain diversion screens at Numana Dam.
26. 124 Maintain lake habitat. For the most part, the lake habitat is dependent upon inflow, and constant surveillance of conditions within the river is necessary to protect lake habitat. If surveillance detects correctable conditions, the proper authorities must be notified.

- 12416 Determine quality and quantity of inflow and other factors needed to maintain optimum lake habitat conditions.
27. 12417 Determine effects of total dissolved solids on juvenile development.
28. 1242 Take actions to maintain or restore optimum lake habitat conditions as identified under #1241 and as needed.
29. 21 Select suitable transplant sites for sub-populations.
211 Evaluate various potential habitats for transplants.
212 Select suitable habitats; inter-relate with #121.
213 Obtain necessary approval for transplants from agencies concerned.
30. 22 Obtain transplant seed-stocks from hatchery and pond-reared sources.
31. 23 Transplant sub-populations. Transplant sites #212 will have been selected. If conditions deteriorate further within the habitat and the present population continues to decline, sub-populations will be transferred to appropriate sites.
32. 24 Monitor transplants to determine fish's condition and relative success of population establishment at new site.

D. PUBLIC RELATIONS

1. 31 Develop information leaflets. Gather historical information, including photographs, interviews, and published data in order to prepare an informative booklet for distribution. Supplemental leaflets should be prepared as changing conditions warrant.

2. 32 Provide information for news media. Develop appropriate news releases to promote public awareness of recovery objectives.

PART III

SCHEDULE OF PRIORITIES, RESPONSIBILITIES, AND COSTS

Group Priority	Name of Action	Designation	Responsibility		Target Date	Estimated Costs			
			Lead	Cooperators		FY 77	FY 78	FY 79	FY 80
A. LANDS									
1	Peigh Ranch acquisition and hydrological investigation	142431	FWS, Tribe	BIA, BLM	1978	-	500,000		
B. INVESTIGATIONS									
1	Asses cui-ui population	1214	FWS, BIA	Tribe, TRFSG	Ongoing	Investigation in Progress			(costs included w/ item 5)
2	Investigate factors affecting cui-ui population	1213 1211	FWS	BIA, NFG, Tribe	1980	-	50,000	50,000	50,000
3	Develop juvenile rearing techniques	14221	FWS, Tribe	FWS, NFG	Ongoing	-	-	89,000	40,000
4	Develop brood stock rearing techniques	14222	NFG	FWS, Tribe	Ongoing		75,000	20,000	20,000
5	Assess survival of hatchery-reared cui-ui	141	FWS/Tribe	BIA	1982	10,000	12,000	100,000	45,000
6	Determine existing lake conditions	12412	BIA	Tribe, FWS	1978	<u>1/</u> Investigation in Progress			
	Determine effect of TDS on egg development	12414	FWS	Tribe, BIA	1978	<u>2/</u> Investigation in Progress			
	Determine optimum lake habitat requirements	12411	BIA	Tribe, FWS	1978	<u>1/</u> Investigation in Progress			
7	Conduct limnological studies	12415	BIA	FWS	1978	<u>1/</u> Investigation in Progress			
8	Conduct reproductive studies	1213	NFG	Tribe, BIA, FWS	1980		4,000	4,000	4,000
9	Conduct behavioral studies	1215	NFG	BIA, FWS	1980		15,000	15,000	15,000
10	Conduct age and growth studies	1212	BIA	Tribe	1980	<u>2/</u>	<u>2/</u>	40,000	40,000
11	Assess predator depredation	1121/1122/ 1123	FWS	Tribe, NFG	1979		6,000	9,000	
12	Investigate & take actions to protect Hardscrabble water supply	142432	BLM, NFG, Tribe	FWS, BIA	Ongoing	To be determined			
						<u>1/</u> Funds from BIA to W.S. Sigler & Associates			
						<u>2/</u> Funded by BIA, some studies underway now			
•	Action changed, see explanation				priority C-14.				

PART III

SCHEDULE OF PRIORITIES, RESPONSIBILITIES, AND COSTS

Group Priority	Name of Action	Plan Designation	Responsibility		Target Date	FY 77	FY 78	FY 79	FY 80
			Lead	Cooperators					
C. ADMINIS- TRATION									
1	Operate cui-ui hatchery	14242	FWS	Tribe	Ongoing			40,000	40,000
2	Obtain adult cui-ui for propagation	1425	FWS	Tribe	Ongoing	20,000	22,000	15,000	10,000
3	Release hatchery-reared cui-ui into Pyramid Lake	143	FWS	Tribe	Ongoing			2,000	2,000
4	Maintain optimum stream flow (Truckee River)	12324	Federal Court	NFG,BR,EPA	Ongoing		1,000	1,000	1,000
5	Determine, restore & maintain river habitat	12312 12311	*FWS,NFG	Tribe,TRFSG,NFG	1978		50,000	50,000	50,000
6	Literature review on lake & river re: TDS; compile data	12413 12313	NFG	FWS	1979		1,000	1,000	-
7	Periodically clean fish passage of trash, etc.	12327	**NFG,Tribe	FWS,BIA,BR, TRFSG	1980		40,000	30,000	
8	Remove existing man-made barriers in river	12325	**NFG,Tribe	FWS,BIA,BR	1979		10,000	10,000	10,000
9	Enforce water pollution regulations & standards	12323	DEP	NFG,EPA	Ongoing		2,000	2,000	2,000
10	Control river bank damage (fence essential habitat)	12321	NFG,Tribe	BIA,BR	Ongoing		394,600	2,500	2,500
11	Restore stream canopy	12326	Tribe,NFG	FWS,BIA,BR	Ongoing		15,000	15,000	14,000
12	Act on predation findings in #112	113	NFG,Tribe	FWS	Ongoing		2,500	2,500	2,500
13	Regulate river channelization	12322	Tribe,EPS,DWR	NFG,FWS,EPA	Ongoing		1,000	1,000	1,000
*** 14	Improve existing fish cultural facilities	14241	Tribe/FWS		1979		75,000	48,000	45,000
15	Train tribal members in cui-ui culture techniques	1423	Tribe	FWS	Ongoing		<u>1</u> /20,000	20,000	20,000
16	Design and construct spawning channels and rearing facilities	1421	BIA	Tribe,FWS	1980			100,000	2,500

* on reservation-FWS; off reservation-NFG ** on reservation-Tribe; off reservation-NFG 1/ Tribe funded

*** The present water supply from Hardscrabble Creek has seriously diminished and no longer a dependable source for the Cui-ui hatchery operation. The Pyramid Lake Indian Reservation, through (PLITE), have offered suitable water from their well to supply the proposed relocated Cui-ui hatchery (as of Nov. 1977). This new site is near their trout hatchery and west of Suitcliff and State Highway 33.

PART III

SCHEDULE OF PRIORITIES, RESPONSIBILITIES, AND COSTS

Group Priority	Name of Action	Designation	Responsibility		Target Date	Estimated Costs			
			Lead	Cooperator		FY 77	FY 78	FY 79	FY 80
17	Protect stream-spawning cui-ui	1111	Tribe	FWS,NFG	Ongoing		10,000	10,000	10,000
18	Protect all age class cui-ui in lake	1112	Tribe	FWS,NFG	Ongoing		8,000	8,000	8,000
19	Reduce "rough" fish populations as re- quired in Truckee River	12328	FWS,NFG	Tribe	1980		Cost to be determined		
20	Determine critical habitat under Endangered Species Act of 1973	13	FWS	BR,EPA,Team, NFG	1977	1,400	In progress (FWS-Wash.D.C.)		
21	Select transplant sites	212	NFG,Tribe	FWS	1978		2,500	3,000	
22	Determine needs for fishways	12212	NFG,FWS,BR	Tribe	1979		To be determined		
	Design & construct fishways	12211	FWS	Tribe	1978		12,000	16,000	
	Dredge Fishway Terminus				1978		30,000	30,000	30,000
23	Determine need for diversion screens	12222	NFG,Tribe	FWS	1979		15,000	To be determined	
24	Design & construct diversion screens	12221	BR	FWS	1980		To be determined		
25	Maintain & operate fishways & diversion screens: Marble Bluff, Numana fishway and ladder, Numana Dam screens	12211 12213 12214 12223	FWS FWS FWS FWS	Tribe Tribe Tribe Tribe	Ongoing Ongoing Ongoing Ongoing	50,000	80,000	80,000	80,000
26	Determine quality & quantity of inflow to lake for optimum habitat	12416	FWS,Tribe	EPA,DEP,NFG, BIA	Ongoing		1,000	1,000	1,000
27	Determine effects of TDS on juvenile development	12417	FWS,Tribe	BIA	1978	1/ Investigation in progress			
28	Take action to restore & maintain optimum habitat in lake	1242	FWS,Tribe		Ongoing		To be determined		
29	Evaluate, select & obtain approval for subpopulation sites & transplants	211 212, 213	NFG	BR,FWS,Tribe	1980		To be determined		
30	Obtain transplant seed-stocks	22	NFG,Tribe	FWS	As needed			5,000	6,000
31	Transplant sub-populations	23	NFG,Tribe	FWS	As needed			1,000	1,000
32	Monitor transplants	24	NFG	FWS	As needed			-	2,000

1/ Funded by BIA

PART III

SCHEDULE OF PRIORITIES, RESPONSIBILITIES, AND COSTS

Group Priority	Name of Action	Designation	Responsibility		Target Date	Estimated Costs				
			Lead	Cooperators		FY 77	FY 78	FY 79	FY 80	
D. PUBLIC RELATIONS										
1	Develop informational leaflets a distribute	31	NFG	FWS, Tribe	Ongoing		3,000			
2	Provide information for news media	32	NFG	FWS, Tribe	Ongoing		Unknown			
TOTAL (in thousands)						81.4	1,459	781	554	

Agency Abbreviations

1. BIA - U. S. Bureau of Indian Affairs
2. BR - U. S. Bureau of Reclamation
3. DWR - State of Nevada Water Resources Division of State Engineer
4. EPA - U. S. Environmental Protection Agency
5. DEP - State of Nevada Division of Environmental Protection
6. FWS - U. S. Fish and Wildlife Service
7. NFG - State of Nevada Department of Fish and Game
8. TRFSG - Truckee River Fishery Study Group
9. Tribe - Pyramid Lake Paiute Indian Tribe
10. Team - Cui-ui Recovery Team

APPENDIX A

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APPENDIX B

Proposed Cui-ui Essential Habitat

Section 7 of the Endangered Species Act of 1973 (PL93-205) instructs the Secretary of the Interior to take appropriate action to prevent destruction or modification of habitat considered essential to the survival of any endangered or threatened species. The Secretary, after consultation with individuals and organizations aware of the needs of the species proposes that the following lands and waters in the State of Nevada be considered essential habitat for the survival of the cui-ui (Chasmistes cujus). On the basis of the best information currently available, these lands and waters appear to comprise the most important habitats and also the minimal amount of habitat the species needs for survival. These waters support the entire world's population of (Chasmistes cujus) and, as essential habitat, contain the following vital needs:

1. Space for normal growth, movements, or territorial behavior;
2. Nutritional requirements;
3. Sites for breeding, reproduction, or rearing of young;
4. Cover of shelter; or
5. Other biological, physical, or chemical requirements such as water of proper temperature and chemical composition.

Any proposal for changed use or modification of these lands and/or waters should be carefully evaluated for possible effects on the survival of the cui-ui.

Essential habitat in the following described areas - (Mt. Diablo meridian):

Truckee River area: (In Washoe & Storey Counties)
The main channel of the Truckee River beginning at Derby Dam, (T20N R23E, NW 1/4 of Sec.19) - and extending downstream approximately 35 miles to its confluence with Pyramid Lake (T23N R23E, Sec. 19).

Pyramid Lake within the following areas: (In Washoe County)

T23N, R22E, R23E	
T24N, R21E, R22E, R23E	The area of Pyramid Lake below the
T25N, R20E, R21E, R22E	3795 foot elevation above mean sea
T26N, R20E, R21E, R22E	level.
T27N, R21E, R22E	

Hardscrabble Creek area: (In Washoe County)

Hardscrabble Creek from its headwaters in T24N R20E, Sec. 12,13, & 24 and extending downstream approximately 7 miles to its confluence with Pyramid Lake in T24N R21E, Sec. 15, 16, 18, 19, 20, 21.

PROPOSED ESSENTIAL HABITAT ZONES

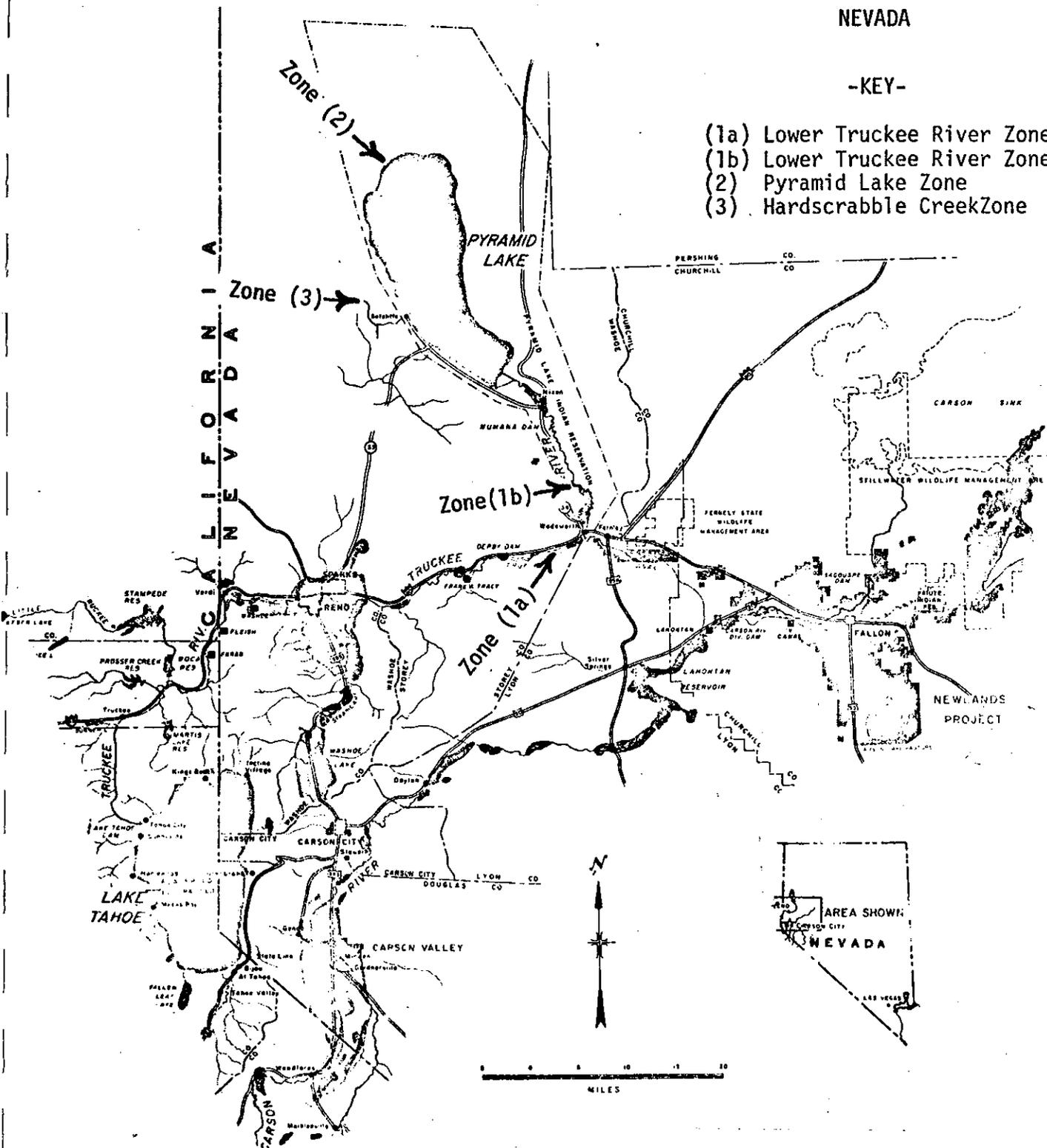
FOR THE CUI-UI IN

WASHOE AND STOREY COUNTIES

NEVADA

-KEY-

- (1a) Lower Truckee River Zone
- (1b) Lower Truckee River Zone
- (2) Pyramid Lake Zone
- (3) Hardscrabble Creek Zone



(1 a)

TRUCKEE RIVER ZONE

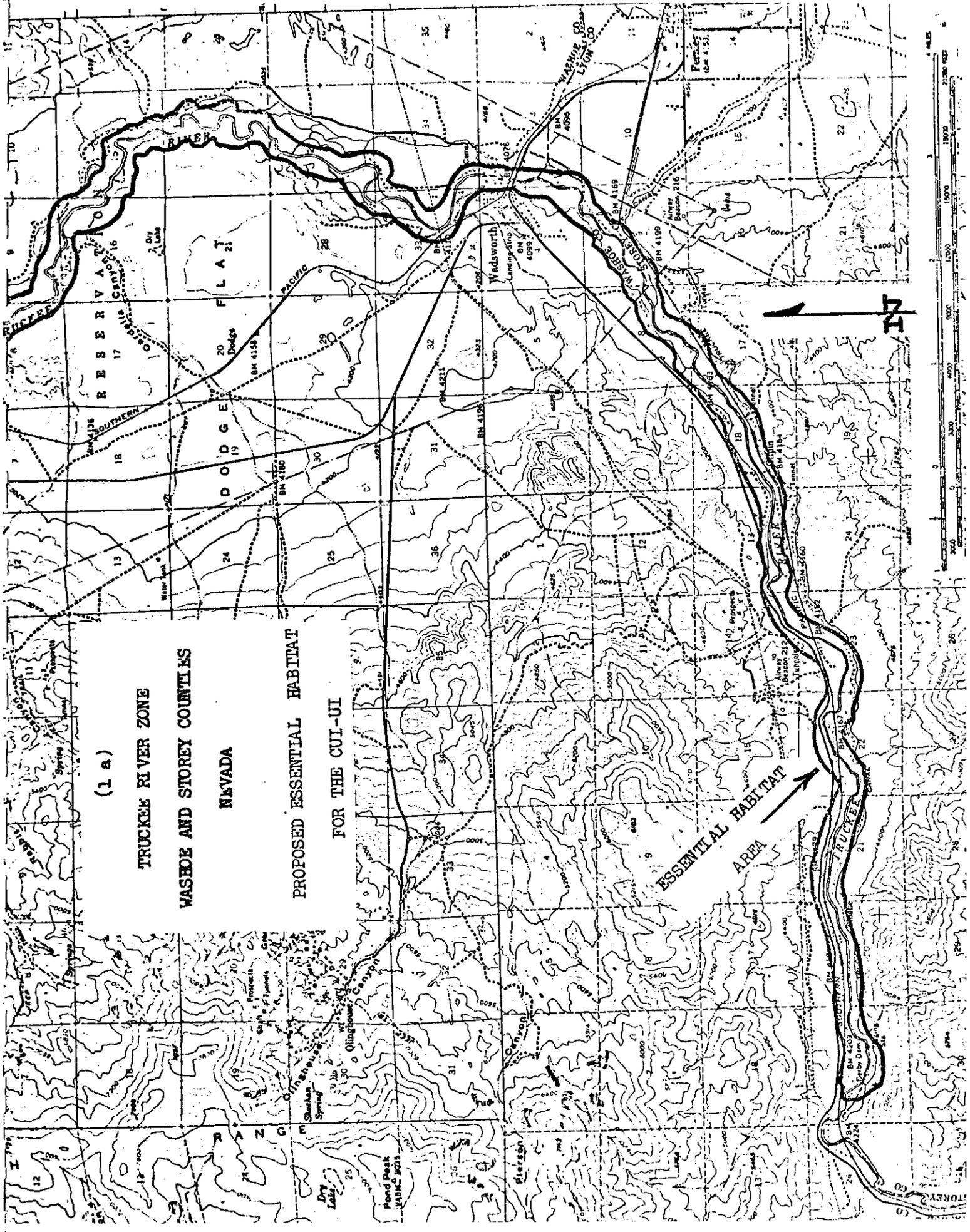
WASHOE AND STOREY COUNTIES

NEVADA

PROPOSED ESSENTIAL HABITAT

FOR THE CUI-UI

ESSENTIAL HABITAT
AREA



(1 b)

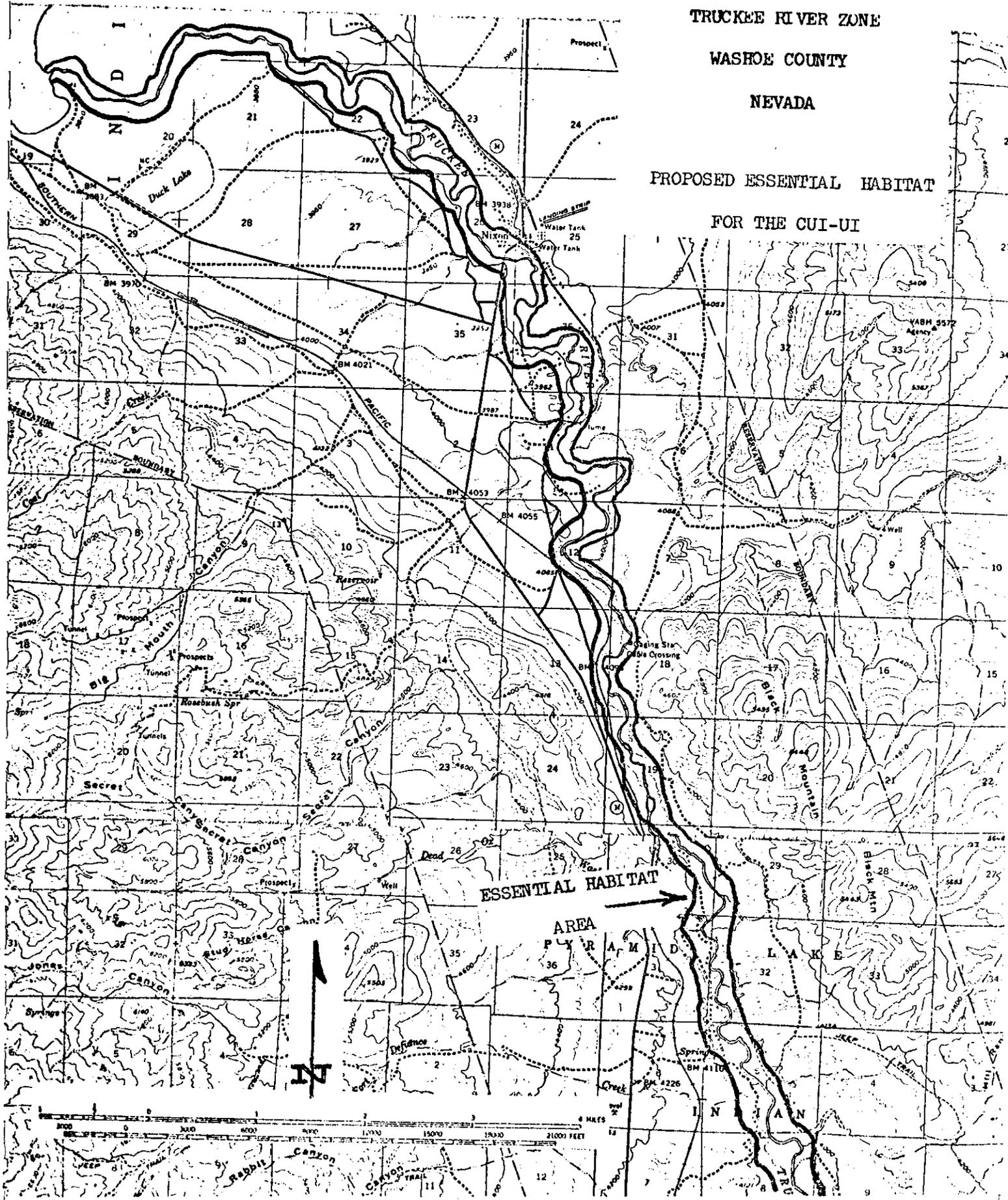
TRUCKEE RIVER ZONE

WASHOE COUNTY

NEVADA

PROPOSED ESSENTIAL HABITAT

FOR THE CUI-UI

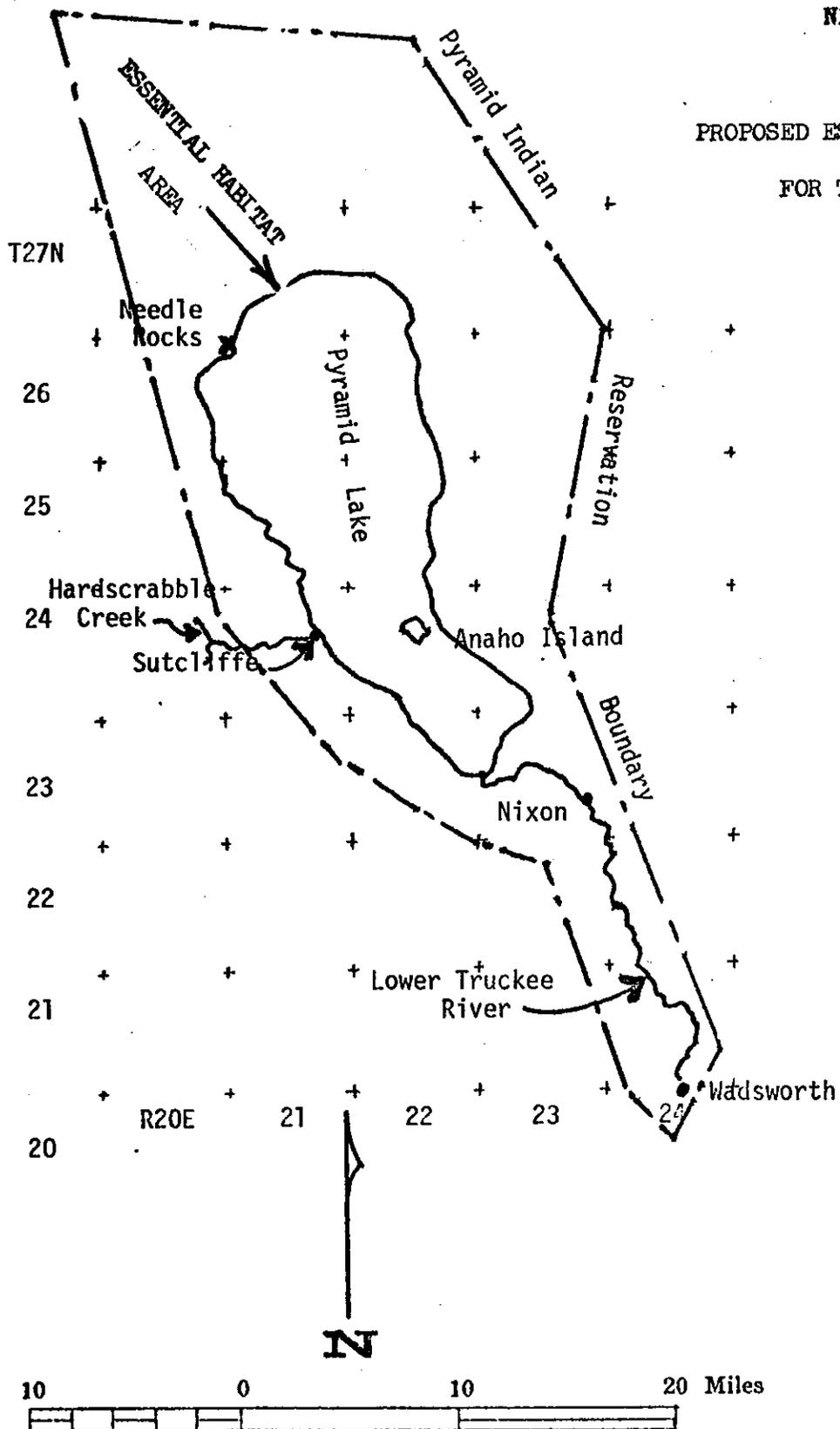


PYRAMID LAKE ZONE

WASHOE COUNTY

NEVADA

PROPOSED ESSENTIAL HABITAT
FOR THE CUI-UI



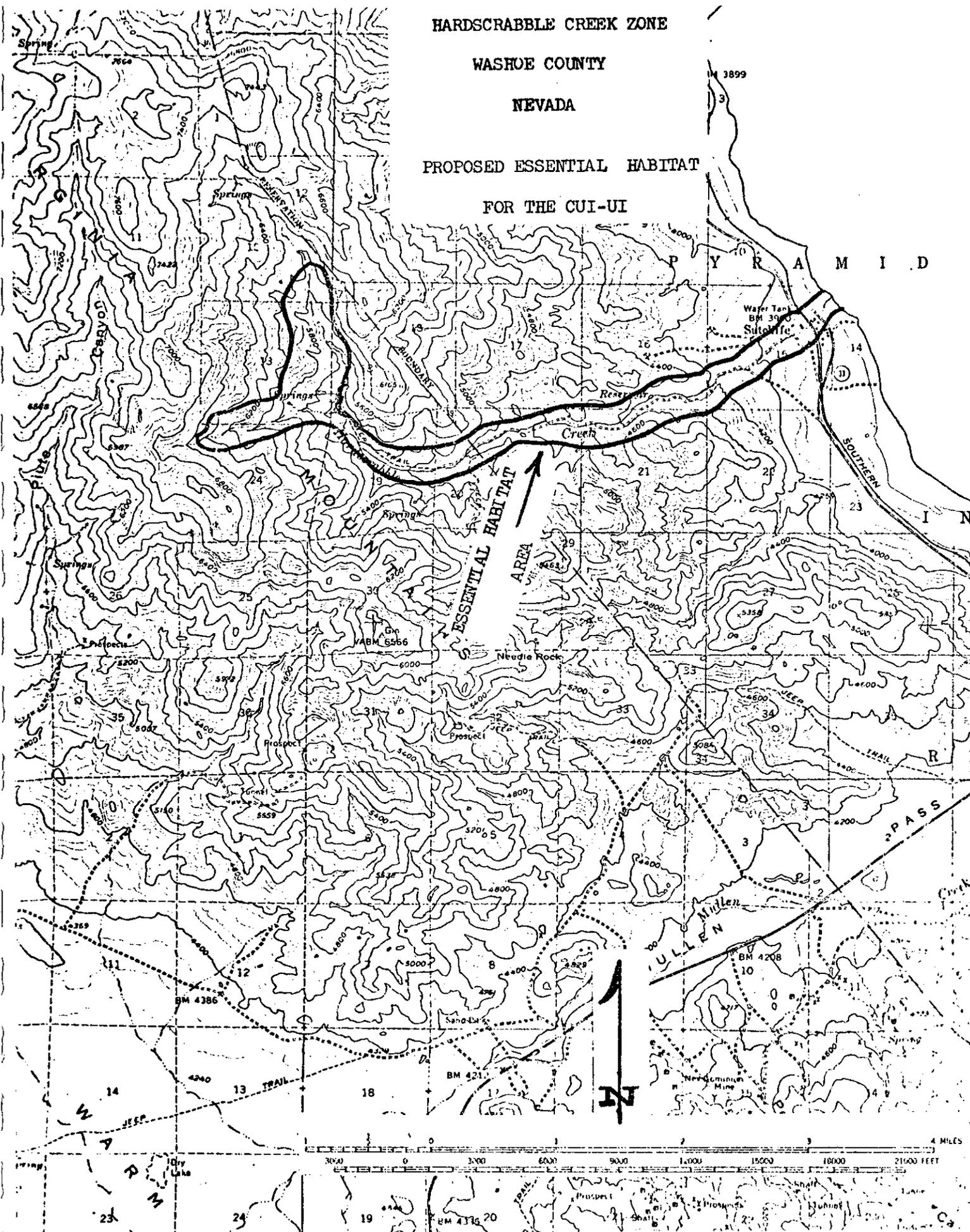
HARDCRABBLE CREEK ZONE

WASHOE COUNTY

NEVADA

PROPOSED ESSENTIAL HABITAT

FOR THE CUI-UI



APPENDIX C

Letters of Comment



DEPARTMENT
OF FISH
AND GAME

GLEN K. GRIFFITH
DIRECTOR

MIKE O'CALLAGHAN
GOVERNOR

600 VALLEY ROAD P.O. BOX 10678 RENO, NEVADA 89510 TELEPHONE (702) 784-6214

September 9, 1977

Mr. E. B. Chamberlain, Jr.
Assistant Regional Director
Federal Assistance
Fish & Wildlife Service
P.O. Box 3737
Portland, Oregon 97208

Dear Mr. Chamberlain:

I am in receipt of your letter of August 29th regarding the draft Cui-ui Recovery Plan and a copy of same.

We are still concerned about the proposed critical habitat area as we had indicated to you earlier. The plan calls for the establishment of a critical habitat zone through the historic range of the Cui-ui within the Truckee River. Obviously, the Cui-ui have not ascended more than a few miles of the lower river for spawning purposes for many years.

The recovery plan is designed in part to evaluate the need of the Cui-ui in the way of habitat requirements as they relate to the environment of the lower river. Therefore, we think it is inappropriate at this time to establish a critical habitat zone throughout the historic range and would recommend to you that this decision be withheld pending evaluation of the recovery plan study results. An option agreeable to us at this time would be to consider only the river lying within the Pyramid Indian Reservation as the present critical habitat.

I am also concerned by your question to me if we can accept the tasks assigned in the plan and can we incorporate them into our budget process. We have been informed through various recovery teams that once the Recovery Plan is adopted it is presented through channels for total Congressional funding. We have not initiated any budgetary plans through our agency as we were told that items approved within the plan would be funded (if approved) through the U.S. Congress.

Mr. E. B. Chamberlain
Page 2
September 9, 1977

We will be working on a potential master endangered species agreement with you and hope to be in a position to consummate such sometime after our 1979 Legislative session which will be solicited for our matching funds.

The following specific comments are made in reference to Part III of the document:

Page 20: Under B., Investigations, 4 - change Lead Agency from NGF to NFG.

Page 21: Under C., Administration, 4., - strike EPS as a cooperator.

Under C., Administration, 9., - replace FWS with EPS as Lead Agency. This item falls within the jurisdiction of the Nevada Environmental Protection Service.

With your acceptance of the foregoing comments, we support and approve the proposed Cui-ui Recovery Plan.

Sincerely,


Glen K. Griffith
Director



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX
100 CALIFORNIA STREET
SAN FRANCISCO, CALIFORNIA 94111

E. B. Chamberlain, Jr., Assistant Regional Director
U. S. Department of the Interior
Fish & Wildlife Service
1500 N. E. Irving Street
P. O. Box 3737
Portland, Oregon 97208

OCT 12 1977

Dear Mr. Chamberlain:

Thank you for your letter of August 29, 1977 which provided EPA the opportunity to review and comment upon the Draft Cui-ui Recovery Plan. The following comments are provided for your consideration.

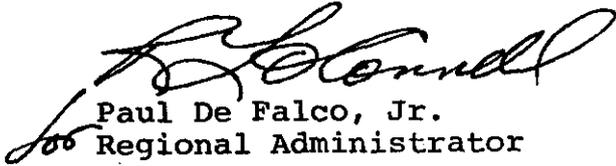
The report indicates that a considerable amount of information remains to be obtained on the optimum habitat conditions for the Cui-ui, especially water quality and water quantity requirements. Thus, our comments of June 30 (attached) are still applicable.

EPA will affirmatively act to support the recovery team efforts by carrying out the five administrative tasks assigned EPA in Part III of the Draft Report. Our prime emphasis will be on Truckee River pollution abatement and prevention through Sections 201, 208, and 402 of the Federal Water Pollution Control Act Amendments of 1972 (FWPCA). EPA's pollution control activities are and will be coordinated with the Nevada Division of Environmental Protection.

The time schedules provided in the Draft Report for various investigations to determine the habitat requirements of the Cui-ui appear to extend beyond EPA's schedules for the determination of the nature of wastewater treatment and disposal facilities for the cities of Reno and Sparks (September 1978) and for the development of an Areawide Water Quality Management Plan for Washoe County (June 1978). Since it appears that the chemical, physical, and biological water quality criteria for the Cui-ui cannot be determined within these time periods, EPA requests your assistance in developing interim criteria for the Cui-ui that maybe used in these planning activities. We believe that these planning activities are sufficiently flexible to accommodate revisions necessitated by any information subsequently developed, however, we hope that this will not be necessary.

We will continue to coordinate our activities with the Reno office of the Fish and Wildlife Service and look forward to periodic briefings by the Recovery Teams on their investigative efforts to assure that our planning is based upon the most up-to-date knowledge. We also urge that, due to the importance of the Endangered Species Act to water resources and water quality management in Nevada, the Fish and Wildlife Service take special steps to continue to involve state and local governments and agencies in the fish protection and restoration programs.

Sincerely,



Paul De Falco, Jr.
Regional Administrator

Attachment

cc: Rebecca Hanmer, Office of Federal Activities
Bruno Menicucci, Mayor, City of Reno
James Lilliard, Mayor, City of Sparks
Richard Heikka, Washoe Council of Governments
Bruce Arkell, Nevada State Planning Coordinator
Norman Hall, Nevada Department of Conservation
and Natural Resources
James Vidovich, Pyramid Lake Paiute Indian Tribe



STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
CAPITOL COMPLEX
CARSON CITY, NEVADA 89710

TELEPHONE: (702) 885-4670

September 14, 1977

E.B. Chamberlain, Jr.
Assistant Regional Director
Federal Assistance
U.S. Department of Interior
Fish and Wildlife Service
P.O. Box 3737
Portland, Oregon 97208

Re: Draft of the Cui-Ui Recovery Plan

Dear Mr. Chamberlain:

Nevada's Division of Environmental Protection has reviewed the subject plan and has the following comments concerning it:

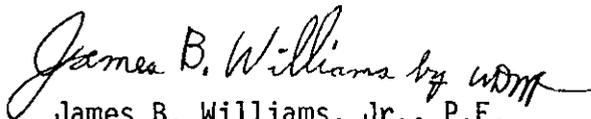
A. I strongly agree with the statement at the top of page 6 that more information about the Cui-Ui's needs in terms of critical requirements with respect to habitat and life cycle is needed. In fact this appears to be the key step before going any further.

1. Page 7; The control of sedimentation can also be accomplished by the control of erosion. Erosion controls are being considered in the 208 Water Quality Management Plan which is being prepared by the Washoe Council of Governments. The Tribe should be working closely with WCOG to assure that concerns of the Tribe are addressed in the 208 planning effort.
2. Page 12; A-1; Why do the Cui-Ui fail to ascend the Marble Bluff fishway?
3. Page 14; 4.12324; The inputs of maintaining optimum stream flows upon the residents of Nevada who use the Truckee River for a water supply, should be assessed in this plan.
4. Page 15, 9.12323; It is not clear as to who will do the enforcing. The State of Nevada Division of Environmental Protection (DEP) has the primary responsibility for the enforcement of "water quality" regulations and standards and is enforcing same.
5. Page 15, 10.12321; I believe that the recommendation for fencing off the entire Truckee River below Derby Dam is premature. Additional investigations should be conducted including alternatives and mitigating measures (providing water to wildlife and livestock) before such a recommendation is made. The costs of the fencing should be identified in the plan.

6. Page 19; D - Public Relations; Information distributed to the public should include the costs and benefits of implementing the plan (both social and economic).
7. Page 21, C - 4; The flows in the Truckee River are controlled by the Federal Court through the Water Master. I don't believe the agencies listed have any direct control over maintaining optimum stream flows.
8. Page 21; C - 9; The State of Nevada's DEP has primary responsibility for the enforcement of "water pollution" regulations and standards. Also, NFG provides assistance on enforcement and has authority for enforcing. With the exception of EPA, the other agencies included in this section (FWS, Tribe, BIA) have no authority to enforce "water pollution regulations". Also, the State spends considerably more than \$2000 per year towards enforcement of water pollution control regulations in the Truckee River Basin.
9. Page 23; There should be a line showing the totals of the costs.
10. Page 23; Footnote 5; EPS should read DEP - Division of Environmental Protection.
11. The plan should assess the costs of implementing the plan and the impacts upon the residents of Nevada who utilize water from the Truckee River for their livelihood.

B. In summary, knowledge of the critical environmental and life cycle requirements of the Cui-Ui is necessary prior to spending millions of dollars on hastily planned solutions which may not be the best or effective solutions. If any critical habitat is designated, a complete social-economic-environmental impact statement needs to be developed to let not only the general public but also the decision makers know the complete ramifications of the designation.

Yours truly,



James B. Williams, Jr., P.E.
Construction Grants Officer
Water Pollution Control

tb

cc: John Wise
Nevada Fish & Game
Public Works Directors, Reno & Sparks



DESERT RESEARCH INSTITUTE
University of Nevada System

Vice President for Administration

Reno, Nevada 89506
(702) 673-4750

September 14, 1977

Mr. E. B. Chamberlain, Jr.
Assistant Regional Director
U. S. Department of the Interior
Fish and Wildlife Service
1500 N. E. Irving Street
P. O. Box 3737
Portland, Oregon 97208

Reference: AFA-SE

Dear Mr. Chamberlain:

I am answering your request to Dr. Lloyd P. Smith, President of the Desert Research Institute, to comment on the Draft Cui-ui Recovery Plan. The plan appears to be well thought out and if the recommended programs are carried out successfully, the cui-ui may one day be able to be taken off the endangered species list.

The Draft Cui-ui Recovery Plan, however, has some serious omissions in relation to work that has been done on the species in the past and research efforts that are presently taking place at Pyramid Lake. Specific comments on the plan with references are enclosed for your consideration.

The Desert Research Institute is willing to participate and assist in the recovery of the cui-ui in any way that your agency feels we can. If you have specific questions or ways in which we can assist, you should contact Dr. David L. Koch, Acting Executive Director of our Bio-Resources Center here at Reno.

I want to thank you for the opportunity to comment on the Draft Cui-ui Recovery Plan and again offer our assistance if it is needed.

Sincerely,

Mark H. Dawson
Vice President for Administration

MHD/ea
encl

xc: President Lloyd P. Smith
Dr. Robert Putz, Washington, D. C.

.COMMENT ON

DRAFT CUI-UI RECOVERY PLAN

- p. 2, top ¶ The cui-ui were probably also present in Walker Lake. However, the cui-ui present good evidence that Walker Lake dried to a much lower state in recent times in that the cui-ui are not present there today. Therefore, the Walker Lake habitat was lost to the cui-ui which further substantiates their current restricted status. Walker Lake, like Pyramid and Winnemucca Lakes, is a remnant of Pleistocent Lake Lahontan.
- p. 4, ¶ 2 David L. Koch should be included with the many individuals that gathered information to document the cui-ui decline. He carried out the most intensive study of the cui-ui life history done up until 1970 and much of the information he developed is now being used by your agency.
- p. 5, ¶ 1 (Koch, 1972) should also included:
- Koch, D. L. 1976. Life history information on the dui-ui lakesucker (Chasmistes cujus, Cope 1883) in Pyramid Lake, Nevada. Occas. Pap. Biol. Soc. Nev., 40:1-12.
- Koch, D. L. and G. P. Contreras. 1973, Hatching technique for the cui-ui lakesucker (Chasmistes cujus, Cope 1883). Prog. Fish-Cult. 34(1):61-63.
- Koch, D. L. 1973. Reproductive characteristics of the cui-ui lakesucker (Chasmistes cujus, Cope 1883) and its spawning behavior in Pyramid Lake. Trans. Am. Fish. Soc., 1973 (1):145-149.
- Koch, D. L. and G. P. Contreras. 1972. Swimming ability and the effects of stress on the cui-ui lakesucker (Chasmistes cujus, Cope 1883). Occas. Pap. Biol. Soc., 30:1-8.
- p. 15, Item 1. The ability of the cui-ui to utilize the Truckee River and the fishway cannot be overemphasized. A great deal of work needs to be done in this area.

COMMENT (continued)

p. 5, Item 2. It is a little presumptuous to state that "Personnel of the U. S. Fish and Wildlife Service have developed facilities and techniques for artificially spawning, hatching, and rearing cui-ui to swim-up stage for release into Pyramid Lake." The first facilities for artificially hatching cui-ui and rearing them to swim-up for release into Pyramid Lake were developed and built at Hardscrabble Creek by Dr. David L. Koch with the assistance of the Pyramid Lake Paiute Tribe. The Fish and Wildlife Service was not involved when the techniques were developed. The Fish and Wildlife Service took over the cui-ui hatching operations in 1973 and modernized the facilities. However, the techniques being used now are those worked out by Dr. Koch.

There is still a great need to conduct basic research on the survivability of the cui-ui swim-ups that are planted into Pyramid Lake.

p. 7 A determination needs to be made as to what types of spawning substrate are required by the cui-ui. Being that very few spawning observations have been made (Koch, 1973) and these restricted to Pyramid Lake in spring areas, a great deal is yet to be learned about the cui-ui requirements in the Truckee River.

p. 20 Investigations

6. Determine existing lake conditions - the current lead responsibility lies with W. F. Sigler and Associates with funding provided by the BIA.

7. Same as above.

10. Same as above.

p. 21 Administration

4. Which streamflows? Hardscrabble Creek or Truckee River?

p. 22 19. Reduce "rough" fish populations as required - Where? In the Truckee River or Pyramid? This will be extremely expensive and probably not be effective for any length of time. It will also be extremely difficult to evaluate the effectiveness of the control program.

28. The optimum habitat in the lake has to be determined before it can be restored and maintained.

COMMENT (continued)

Appendix B - Proposed essential habitat

The reasons for the determination of critical habitat appear sound. However the inclusion of the Truckee River from Derby Dam to Pyramid Lake is questioned. Historically, the evidence indicates that the cui-ui probably did not migrate much above Wadsworth, Nevada, if any. The cui-ui are not present there today. From Wadsworth to Pyramid Lake, included as critical habitat, would seem more realistic since the entire critical habitat would be within the Pyramid Lake Paiute Reservation.





United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Nevada State Office
Room 3008 Federal Building
300 Booth Street
Reno, Nevada 89509

IN REPLY REFER TO

6840
(N-931.7)
Refer to:
AFA-SF

Mr. E. B. Chamberlain, Jr.
Assistant Regional Director
Federal Assistance
Fish and Wildlife Service
1500 N.E. Irving Street
P.O. Box 3737
Portland, Oregon 97208

SEP 14 1977

Dear Mr. Chamberlain:

The preliminary draft of the Cui-ui recovery plan appears to cover what is needed to protect the species. The only place the Bureau of Land Management would be involved in is the Hardscrabble Creek drainage. There is approximately $\frac{1}{4}$ mile of live stream from the springs downstream, on public lands. The remainder is private lands. There is no public access up Hardscrabble Creek.

The upper watershed is used by a small band of wild horses and some deer. There are some inactive mining claims in the drainage.

Impacts from present activities on the public lands within the watershed should be minimal. You should be aware that the Virginia Mountains have a high potential for uranium and mining activity may increase in the future.

Thank you for the opportunity to comment and if we can be of assistance with the recovery plan in the future, please feel free to call on us.

Sincerely yours,

E. I. Rowland
State Director, Nevada

cc:
N-030





DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814

REPLY TO
ATTENTION OF

SPKED-W

29 September 1977

Mr. E. B. Chamberlain, Jr.
Assistant Regional Director
Fish and Wildlife Service
1500 N. E. Irving Street
P.O. Box 3737
Portland, OR 97208

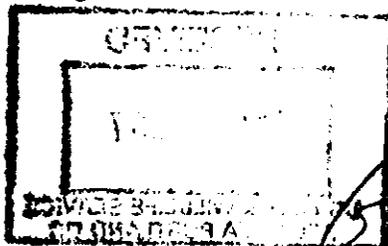
Dear Mr. Chamberlain:

This is in response to your letter of 29 August 1977 (reference AFA-SE) transmitting a draft report, Cui-ui Recovery Plan, dated February 1977. The Cui-ui Recovery Plan identifies investigative and administrative needs to determine requirements for recovering the Cui-ui from its endangered species classification. The draft report notes that the decline in Cui-ui population is due to reduced Truckee River flows, an impassible delta, and the inability of spawners to pass above Derby Dam.

As you may know the Corps of Engineers is currently conducting an investigation of water resources problems, particularly alternatives for providing flood protection to the Reno, Sparks, and Truckee Meadows areas. The range of alternatives being investigated includes nonstructural measures, reservoirs on the Truckee River and tributaries, channel modifications, or a combination of these, in an effort to develop a plan that would provide a high degree of flood protection without significantly impacting adversely on fish and wildlife resources.

We recognize the presence of the endangered Cui-ui in the Truckee River system and its protection and possible enhancement will be a prime concern in project formulation. Our studies will recognize and address each of the actions that are ultimately adopted by the recovery team.

Close coordination between the Corps of Engineers, the Fish and Wildlife Service, the Nevada Department of Fish and Game, and the Cui-ui Recovery Team in the conduct of our respective programs will insure that adequate consideration is given to the recovery of this species.



Sincerely yours,

George C. Weddell
GEORGE C. WEDDELL
Chief, Engineering Division



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF OUTDOOR RECREATION
PACIFIC SOUTHWEST REGIONAL OFFICE

IN REPLY REFER TO:

2100

BOX 36062

450 GOLDEN GATE AVENUE
SAN FRANCISCO, CALIFORNIA 94102

SEP 21 1977

Memorandum

To: Regional Director, Fish and Wildlife Service, Pacific Region

From: Regional Director

Subject: Draft Recovery Plan for the Cui-Ui

We have reviewed the subject plan, transmitted by your letter of August 29, 1977 (your reference: AFA-SE), and have the following comments.

This Bureau has no responsibility for implementation of the plan as indicated in Part III of the draft. The plan proposes acquisition of the Peigh Ranch. Recreation uses of this land, which would be compatible with the recovery plan, should be considered in the acquisition and development. It may be possible to coordinate such recreation planning with the needs of the Bureau of Land Management and/or the Pyramid Lake Indian Tribe.

We appreciate the opportunity to review your plan.


Frank E. Sylvester



United States Department of the Interior

BUREAU OF RECLAMATION

MID-PACIFIC REGIONAL OFFICE
2800 COTTAGE WAY
SACRAMENTO, CALIFORNIA 95825

IN REPLY
REFER TO: MP-170
565.

SEP 30 1977

Mr. R. Kahler Martinson
Regional Director
U.S. Fish and Wildlife Service
P.O. Box 3737
Portland, Oregon 97208

Dear Mr. Martinson:

As requested we have reviewed the draft copy of "Cui-UI Recovery Plan" which accompanied the letter of August 29 from Assistant Regional Director Chamberlain. Our Lahontan Basin Projects Office in Carson City also has reviewed the draft plan and the comments which follow include those of both offices.

We are pleased to find the Bureau of Reclamation listed among the cooperators in several of the projected tasks and as a lead agency in the design and construction of fishways and fish screens. You should be aware, however, that we are in doubt about our authority under the Washoe Project Act to spend further nonreimbursable funds for fishery purposes. Consequently, we have no fishery activity scheduled on the Truckee River system beyond fiscal year 1978 when our current memorandum of agreement (Contract No. 14-06-200-7606A) expires. This leads to the question of your source of authority. The transmittal letter refers to the Endangered Species Act of 1973 but there is no mention of this authority in the recovery plan itself. We suggest that a section regarding authority be included and that it cover the topic of funding the proposed studies. Will the Fish and Wildlife Service obtain the funds and transfer them to the other lead agencies and cooperators or will you expect each agency to finance its own activity?

The plan lacks any mention of environmental effects. Restoration of other biota on the Truckee River to support the Cui-UI will be significant. We suggest, therefore, that the plan be expanded to include at least an environmental assessment.

On pages 14, 17, and 19 the plan refers to reestablished natural spawning and population. Shouldn't the plan say something about a target fish population? How will you know when the population is self-sustaining and the Cui-ui can be reclassified from endangered to nonendangered?

We find that the recovery plan in Paragraph 5.123 on page 15 states that the "historical Cui-ui spawning grounds is suspect." Where are these historical spawning grounds - or to put it another way - how far up the Truckee River might the Cui-ui have gone under natural conditions? You will recall that the Pyramid Lake Fishway had to have special accommodations for the weak-swimming Cui-ui. Perhaps these weak swimmers never went very far up the Truckee even under natural conditions. This, of course, directly affects the number of fishways and diversion screens that might have to be provided.

The table in Part III is entitled "Schedule of Priorities, Responsibilities and Costs," but the columns headed "Group Priority" and "Target Date" are confusing. The priorities seem to be simply an enumeration within a group - not a designation of which tasks need to be done first and which could be deferred. Likewise we cannot tell whether the target date is for the initiation of a task or its completion. In this connection it seems to us that completing the funding, design, and construction of fishways and diversion screens by 1980 (if that is what you mean) is too ambitious.

The recovery plan seems to regard artificial propagation as strictly a contingency measure. If it can be made to work, however, it may be the most economical and perhaps the only politically possible expedient if natural propagation must take place in the Truckee River. The competition for the use of that stream for a multitude of purposes is increasing every day, as you know. If the Cui-ui can be succored (pun intended) through the use of hatcheries, it would seem wise to retain that option.

Also what are the possibilities of establishing the Pyramid Lake Cui-ui in other watersheds as well? Perhaps it could thrive in the Klamath Lake system which supports the short-nose sucker or in Utah Lake which has the June sucker. At any rate it seems that the recovery plan ought to include the consideration of alternate and additional habitats.

We also believe the recovery plan ought to describe more fully the work of the Truckee River Fishery Group and the evidentiary

studies going on at Pyramid Lake in connection with the basic Winters Doctrine water rights suit. There should be an explanation of what use, if any, can be made of the results of these studies in furthering the recovery of the Cui-ui.

We note that the Bureau of Reclamation receives prominent mention in the last paragraph on page 2 wherein the demise of the cutthroat trout and the near-extinction of the Cui-ui are attributed to the works of our agency. Would it be asking too much to request that you mention us also in Item 1 on page 5 where you describe the fishway completed in 1976 as a key step toward restoration of the Cui-ui? We built the fishway too, you know. Incidentally the proper name of the fishway is the Pyramid Lake Fishway - not the Marble Bluff Fishway as appears in a few places in the recovery plan.

You may also be interested to learn that Reclamation is funding the installation of a Geostationary Operational Environment Satellite system at the USGS Nixon recorder station. We also are having automatic devices for the monitoring and remote reporting of streamflow at the river station at Derby Dam as well as automatic riverflow control devices there. These will help to establish more accurate and reliable control of the flows in the Truckee River below Derby Dam.

Thank you for the opportunity to review the Cui-ui Recovery Plan.

Sincerely yours,

B. E. Martin

B. E. Martin
Regional Director

FILED 100