

TAVASCI MARSH RESTORATION
FINAL ENVIRONMENTAL ASSESSMENT

YAVAPAI COUNTY, ARIZONA
JUNE 24, 1993

Cooperators:

Lead Agency: Arizona Game and Fish Department
Phelps Dodge Development Corporation
National Park Service - Tuzigoot National Park
Arizona State Parks Board - Dead Horse Ranch State Park
U.S. Forest Service - Coconino National Forest
U.S. Fish and Wildlife Service

COMPILED BY:

Rodney J. Mouton, Habitat Enhancement Specialist
and
Lawrence K. Riley, Environmental Compliance Program Supervisor

ARIZONA GAME AND FISH DEPARTMENT
2221 W. GREENWAY ROAD
PHOENIX, ARIZONA 85023

ABSTRACT: This Draft Environmental Assessment contains three alternative development plans and one "No Action" alternative. The proposed "Preferred Alternative" for the restoration of Tavaschi Marsh is identified and the effects of the project on biological, social, recreational opportunities and local economics are discussed in the Finding Of No Significant Impact. Appendices with supporting and public response data are included.

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I. Purpose and Need

The site known as Tavaschi Marsh has historically been a wetland area residing in an oxbow fed by Shea Spring and a diversion of water from the Verde River. Over the past 60 years, the site was drained and managed for livestock pasturage and hay production. The purpose of the proposed action is to restore 60 acres of Tavaschi Marsh to a wetland condition to improve its value for wildlife, for environmental education, and for wildlife-oriented recreation. Restoration would be accomplished by construction of two stop-log type water-level control structures placed in ditches that currently drain the marsh area. Marsh redevelopment could be augmented by construction of observation platforms, nature trails and signage, parking facilities, and supplemental revegetation with native plants.

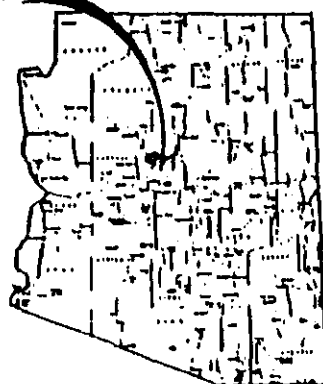
The importance of restoring Tavaschi Marsh is highlighted by the rarity of wetlands in Arizona. The most recent SCORP [Statewide Comprehensive Outdoor Recreation Plan] (Arizona State Parks, 1989) identified the compelling need to restore and preserve Arizona's remaining wetlands. That plan described streams and wetlands as resources in crisis:

"Over the past century, Arizona has lost much of its rich natural heritage. Moreover, there is no indication that this trend is abating." "Regardless of cause, the restructuring of Arizona's native stream and wetland system has resulted in drastic alterations to natural values. Most telling has been the impacts on native fish and wildlife." "There is an urgent need to conserve the state's streams and wetlands and to utilize opportunities to restore streams and wetlands for future generations to use and enjoy."

Tavaschi Marsh is located within an isolated oxbow, located along the Verde River near Clarkdale, Arizona (Fig. 1). It was created approximately 10,000 years ago when natural climatic conditions altered the river's original course. A portion of the oxbow is currently occupied by Pecks Lake, a man-made impoundment maintained by diversion of water from the Verde River. Phelps Dodge Corporation, the property owner, plans to develop recreational and residential housing on the properties surrounding the lake. To the south of Tavaschi Marsh is Tuzigoot National Monument, attesting to the cultural and archaeological values of the vicinity; the Verde River Green Way, attesting to the values placed upon the riparian and wetland values of the Verde River; and Dead Horse Ranch State Park, attesting to the recreational values of the vicinity.

The Arizona Game and Fish Department and Phelps Dodge Development Corporation (the landowner) have agreed to cooperatively manage Tavaschi Marsh as a wetland. The agreement (Appendix A) stipulates that the marsh shall be managed for wildlife habitat purposes, and that management decisions and modifications to the site shall

PROJECT LOCATION



VICINITY MAP

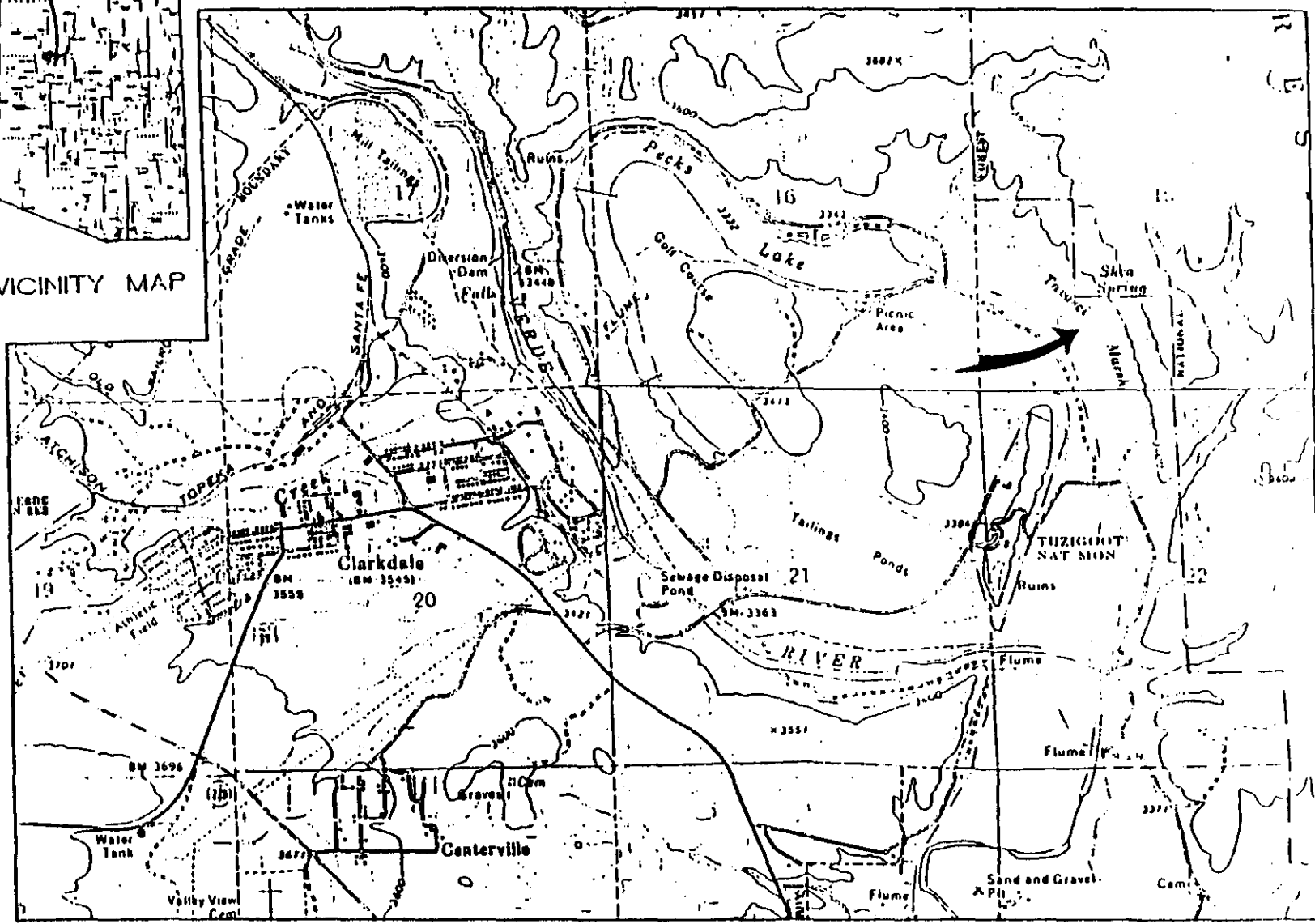


Figure 1. Tavaschi Marsh proposed project location.

require the consent of both parties. Because of the cooperative relationship of the Department and Phelps Dodge Development Corporation on this site, and the authorities of neighboring land and resource management agencies (National Park Service, Arizona State Parks, Coconino National Forest, and U.S. Fish and Wildlife Service), efforts were undertaken to plan Tavaszi Marsh developments cooperatively.

Scoping meetings were held among the cooperators in February and March of 1992 to identify development alternatives and issues (pp 1,2 Appendix B). Draft design alternatives were presented to the public at the "Verde River Days" celebration at Dead Horse Ranch State Park (September 26, 1992), and issues were further scoped at a public meeting held October 14, 1992 at the Cottonwood Civic Center (pp 3-9 Appendix B). Issues identified by the Department, our cooperators, and the public included:

- > Will the quality or the quantity of water discharged from Tavaszi Marsh be reduced?
- > Will the existing riparian and wetland vegetation on the site be enhanced or negatively affected? Are there rare native species that may be lost due to wetland expansion or facility construction?
- > Will wildlife utilization of the marsh change? Could threatened or endangered species be jeopardized by expanding the marsh or constructing facilities?
- > Will construction and flooding affect cultural or archaeological sites?
- > Will the public and Phelps Dodge Development Corporation continue to have access to the road between Dead Horse Ranch State Park and Pecks Lake?
- > Will parking facilities be provided near the center of the wildlife management area for elderly and school-aged visitors?
- > Will the planned facility mesh with residential development plans by Phelps Dodge Development Corporation and recreational development plans by Arizona State Parks Board and the communities of Clarkdale and Cottonwood?

The cooperators concluded that the two major goals of Tavaszi Marsh restoration were:

1. Primarily to protect, enhance, restore, and monitor the native biological diversity of Tavaszi Marsh; and

2. Secondly to provide educational and recreational uses of the marsh compatible with its sensitive nature.

II. The Proposed Action and Alternatives

The action alternatives all revolve around wetland restoration using water level control. The action alternatives differ with respect to the degree of public access provided and the degree of recreational facility development.

Alternative 1. Marsh Restoration with Recreational Development and Controlled Recreational Access. (THE PREFERRED ALTERNATIVE AND THE PROPOSED ACTION)

The key to this alternative (Fig. 2) is the development of two small water-level control structures within the ditches that currently drain Tavasci Marsh. These two small stop-log type structures (pp 22-25 Appendix B) would allow flexible control of surface elevation and areal extent of the marsh. At full pool, the marsh would be extended from its current 30 acres to approximately 60 acres.

Three observation platforms would be placed in proximity to the marsh area for birding and educational programs. One viewing deck with approximately 1,700' of barrier-free access trail is proposed within National Park Service boundaries at Tuzigoot National Monument. Another deck, also providing barrier-free access, is to be centrally located within the marsh management area. These barrier-free access trails will be constructed to meet suggested specifications of the Americans with Disabilities Act. A third deck is proposed for the north end of the marsh management area.

Two miles of nature trail, with informational signage, would be constructed for educational and interpretive purposes. Substantial portions of the trail would be handicapped accessible. Three trailhead access points are proposed: At Dead Horse Ranch State Park, Tuzigoot National Monument, and local access at the north boundary of the wildlife management area (a proposed Town of Clarkdale Park).

Two parking areas are proposed for construction to accommodate visitors. The primary area would be located at Dead Horse Ranch State Park for visitors accessing the trails from the southern boundary of the wildlife management area. Another site, approximately 60 ft by 60 ft, would be provided for the general public near the center of the management area. This site would later become available only on a limited basis when traffic can legally be restricted. The site would become available only to targeted groups of visitors (handicapped visitors, elderly visitors, or for visits by educational groups). The existing parking area at Tuzigoot National Monument would be modified to accommodate wheelchair access.

TAVASCI MARSH

Management Area Boundary
Proposed Nature Trails
Approximate Scale 1:2000

Figure 2

Led Access Gate

Proposed Clarkdale

Observation

TULACON NATIONAL MONUMENT

Limited Access Gate

DEAD HORSE RANCH
STATE PARK

Lastly, local native plants including cottonwood and willow trees would be replanted to speed revegetation of disturbed areas and provide visual screening. No reintroduction of wildlife species or any special status plants is proposed.

Construction and implementation of the proposed action would be phased over three years.

FISCAL YEAR	ACTION
FY 1992-93	Construction of water control structures, one parking area near the center of the wildlife management area, one observation deck, 80% of interpretive trail system, revegetation at the marsh perimeter, and limited-access gating for vehicular traffic
FY 1993-1994	Construct one parking area within Dead Horse Ranch State Park and 1700 ft of handicapped access trail with a handicapped accessible observation deck at Tinigoos National Monument
FY 1994-95	Construct one observation deck near the southern boundary of Trvenci Marsh, site of a proposed Town of Clarkdale park.

Alternative 2. Marsh Restoration with Controlled Recreational Access.

This alternative includes the water control feature described for Alternative 1 and restricted vehicular access with limited parking near the center of the wildlife management area for elderly, handicapped, or educational group visitors.

Interpretive trails, observation platforms, handicapped access facilities, additional parking facilities, and revegetation would not be included in the project.

Alternative 3. Marsh Restoration with Uncontrolled Access.

This alternative includes only the water control feature of Alternative 1. Access to the marsh area, both vehicular and foot access, would be uncontrolled.

Interpretive trails, observation platforms, parking facilities, handicapped access facilities, and revegetation would not be included in the project.

Alternative 4. No Action.

None of the features described in Alternative 1 would be developed. The site would be monitored by the Department, but efforts would not be undertaken to expand the aerial extent of the marsh, control water surface elevation of the marsh, control access, or provide interpretation for educational purposes.

Early scoping discussions with cooperating agencies and public groups discounted the need for the proposed excavation of deep water habitats within the proposed expanded marsh area due to the marsh's close proximity of Peck's Lake. The possible residential development at the periphery of Peck's Lake may be cause to re-evaluate the need for deep water habitat in the future.

Comparison of Effects of the Alternatives

Each action alternative described for Tavasci Marsh restoration takes a step toward realizing the goals identified by the cooperators on the project. It is anticipated that current wildlife and wetland values present at Tavasci marsh will persist into the future. The aerial extent of the wetland may in-fact increase as beaver dams are constructed near the outlet from the marsh, however, the only management options for controlling the aerial extent or water surface elevation at the marsh would be destruction of beaver dams and/or removal of beaver.

Action alternatives that include features for flexible control of the marsh (stop-log type control structures) allow managers to select aerial extent, water surface elevation, and appropriate seasonal changes in the marsh to optimize its management.

In the matrix on the following page, all of the alternatives are displayed with their anticipated effects on the issues and concerns identified during scoping. Additional detail can be found in the Affected Environment and Environmental Consequences sections of this assessment, as well as in the index.

ISSUES	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	NO ACTION
Meet marsh protection, enhancement, and monitoring objectives	Provides for protection, restoration, enhancement, and monitoring of the Tavasci Marsh area	Provides for protection, restoration, and monitoring of Tavasci Marsh area	Provides for restoration and monitoring of Tavasci Marsh area	Allows for some degree of natural restoration of the Tavasci Marsh area and monitoring
Meet educational and recreational objectives	Provides for educational and interpretive access to all publics	Can be used for education and recreation, though no facilities other than parking are provided	Same as NO ACTION	Can be used for education and recreation, uncontrolled recreational access will have secondary effects on the marsh
Water Quality and Quantity	Same as No Action	Same as No Action	Same as No Action	No effect
Wetland, riparian, and special status vegetation	Wetland and riparian vegetation enhanced. Special status plants unaffected.	Similar to Alternative 1, but no riparian revegetation enhancement by replanting.	Same as Alternative 2.	Riparian and wetland vegetation may be enhanced by beaver pond development.

ISSUES	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	NO ACTION
Wildlife	Waterfowl and shorebird habitat would increase to approximately 60 acres	Same as Alternative 1	Similar to Alternative 1. uncontrolled recreational access may result in reduced habitat value to nesting waterfowl or shorebirds	Current 30+ acres could be increased by beaver pond construction. Unlimited recreational access may result in reduced habitat value
Cultural and Archeological resources	Same as No Action	Same as No Action	Same as No Action	No effects
Public vehicular access	Vehicular access, except for "special user" groups, would be restricted when legal to do so	Same as Alternative 1	Same as No Action	Uncontrolled, Unrestricted
Access/parking to "special user" publics	Provided	Provided	Same as No Action	Not Provided
Compatibility with local development plans	Ties development elements of NPS, ASP, Phelps Dodge, and Town of Clarkdale together	Same as No Action	Same as No Action	Fits within current area plans, but does not add or complement recreational or educational amenities

III. Affected Environment

Location and Topography

Tavasci Marsh, found on the Clarkdale USGS quadrangle, is located in the southwest 1/4 of Section 15 and the northwest 1/4 of Section 22 or Township 16 North, Range 3 East of the Salt-Gila Base and Meridian. The land is currently owned by Phelps Dodge Corporation and cooperatively managed with the Arizona Game and Fish Commission.

The marsh lies within an abandoned oxbow of the Verde River, immediately east of the Town of Clarkdale. Peck's lake is located to the west of the marsh in the same oxbow, but shares little surface connection with the marsh. Drainage from the Lake flows through the Tavasci Ditch on the west side of the marsh and exits the marsh area toward the Verde River via culvert. Tuzigoot National Monument bounds the Marsh on the west, proposed residential development by Phelps Dodge will complete that western and northern boundary. The Coconino National Forest bounds the area on the east and north, and Dead Horse Ranch State Park and the Verde River Greenway bound the area on the south. Aerial photography and contour mapping of the site has been acquired by the Arizona Game and Fish Department.

Water Quality and Quantity

The marsh is fed by Shea Spring, discharging approximately 500 gallons per minute, near the northeast corner of the marsh area. There is little apparent surface water connection between Peck's Lake and the surface water of the Marsh (Sullivan and Richardson, 1992). Those authors indicated that water quality was good, and that the marsh vegetation (bulrush in particular) functions to remove nitrogen. They suggested the prior use of the marsh for livestock grazing may have resulted in some degradation to water quality and the short-term capacity of the wetland vegetation to improve the quality of water passing through the marsh.

Wetland, Riparian, and Special Status Vegetation

National Wetlands Inventory (NWI) maps prepared by the US Fish and Wildlife Service indicate the area to be palustrine emergent wetland. Dominant wetland vegetation types include cattail, bulrush, giant reed, and spikerush (Sullivan and Richardson, 1992). Riparian scrub-shrub plants found bordering the area at the bases of steep slopes and cliffs include velvet mesquite and hackberry. Cottonwood, Gooding willow, and Tamarix are found in moist areas around the periphery of the marsh, especially at its southern end. Arizona cliff rose, a federally endangered plant is known to exist in the vicinity of Tavaszi Marsh. Cliff rose is typically found in association with limestone soils along cliff faces, and is not known to exist in wetland marsh areas.

Wildlife and Special Status Wildlife

Sullivan and Richardson (1992) provided an overview of wildlife associated with Tavaszi Marsh and Peck's Lake. In general, the site gets use by upland wildlife (including javelina, and mule deer), as well as riparian and aquatic wildlife. Limited wildlife surveys have been performed on the site. Among the wildlife reported from the site or vicinity of the site is the following:

- | | |
|-----------|---|
| Fishes | (mosquito fish, largemouth bass, smallmouth bass, bluegill sunfish, etc.) |
| Waterfowl | (common loon, pied-billed grebe, eared grebe, western grebe, snow goose, Canada goose, wood duck, green-winged teal, mallard, northern pintail, blue-winged teal, cinnamon teal, northern shoveler, gadwall, American widgeon, canvasback, redhead duck, ring-necked duck, lesser scaup, common goldeneye, bufflehead, hooded merganser, common merganser, red-breasted merganser, ruddy duck, and tundra swan) |

Shorebirds

(white pelican, double-crested cormorant, least bittern, American bittern, great blue heron, great egret, snowy egret, cattle egret, green-backed heron, black-crowned night heron, white-faced ibis, Virginia rail, sora, common moorhen, coot, killdeer, black-necked stilt, American avocet, greater yellowlegs, lesser yellowlegs, solitary sandpiper, willet, spotted sandpiper, whimbrel, longbilled curlew, marbled godwit, western sandpiper, long-billed dowitcher, common snipe, Wilson's phalarope, red-necked phalarope, Franklin's gull, Bonaparte's gull, California gull, Caspian tern, Forester's tern, black tern, etc.)

Raptors

(Osprey, bald eagle, northern harrier, sharp-shinned hawk, Cooper's hawk, common black-hawk, zone-tailed hawk, red-tailed hawk, ferruginous hawk, golden eagle, American kestrel, prairie falcon, and peregrine falcon)

Riparian birds

(white winged dove, mourning dove, yellow billed cuckoo, common nighthawk, common poorwill, Vaux's swift, white-throated swift, belted kingfisher, ladder-backed woodpecker, olive-sided flycatcher, southwestern willow flycatcher, black phoebe, say's phoebe, vermilion flycatcher, ash-throated flycatcher, brown-crested flycatcher, Cassin's kingbird, western kingbird, purple martin, verdin, marsh wren, phainopepla, Bell's vireo, gray vireo, solitary vireo, warbling vireo, common yellowthroat, yellow-breasted chat, etc.)

Herpetofauna

(red-spotted toad, Arizona toad, southern spadefoot toad, midland chorus frog, northern leopard frog, Chiricahuan leopard frog, lowland leopard frog, Sonoran mud turtle, Clark spiny lizard, southern plateau fence lizard, tree lizard, short-horned lizard, great plains skink, many-lined skink, little striped whiptail, coachwhip, common kingsnake, sonoran mountain kingsnake, black-necked garter snake, wandering garter snake, black-tailed rattlesnake, western rattlesnake, Mojave rattlesnake, etc.)

Mammals

(red bat, northern grasshopper mouse, coyote, raccoon, beaver, river otter, mountain lion, bobcat, javelina, mule deer, etc.)

The dominant wildlife habitat feature of the project site is the wetland area in Tavaschi Marsh.

The Arizona Heritage Data Management System was consulted for records of special status wildlife in the immediate vicinity of the Marsh. The following species were reported:

common black-hawk	State candidate and Forest sensitive species.
roundtail chub	Federal candidate, State threatened, and Forest sensitive
Mexican gartersnake	Federal candidate, State candidate, and Forest sensitive
Page springsnail	Federal candidate

The Page springsnail is spring/seep dependent, and is associated with the outflow at Shea Springs. It was reported extirpated in the 1970s.

The roundtail chub is reported from the nearby Verde River, but is not known to occur in Tavaschi Marsh. Likewise, for the Mexican garter snake, it is known from riparian areas along the Verde.

Common black-hawk is known to nest in the immediate vicinity. Black-hawk forage on small mammals and reptiles and amphibians common in riparian and wetland areas.

Cultural and Archaeological Resources

The presence of archaeological resources in the area is highlighted by the presence of Tuzigoot National Monument which features and preserves archaeological and cultural resources. The Monument is on the National Register of Historic Places, and the Congressionally-approved administrative boundaries of the site include Tavaschi Marsh. (While the Marsh is within the boundaries of the Monument, it has not been acquired by the National Park Service, and is still in the ownership of Phelps Dodge Development Corporation). Surveys conducted on site and review of other recent surveys produced no new sites or isolated occurrences of cultural resources on the marsh.

Public Vehicular Access

Vehicular travel by gravel road between Peck's Lake and Dead Horse Ranch State Park is currently unrestricted. During flooding on the Verde River, the low water crossing at Dead Horse Ranch State Park is unusable. The only mode of access is the Tuzigoot Bridge to Clarkdale via the gravel road to Peck's Lake.

Special User Access and Parking

"Special users" include handicapped persons, the elderly, and youth groups visiting the area for educational purposes. Currently no parking facilities exist in proximity to the marsh for "special users" or other visitors. Visitors generally park along the gravel access road between Peck's Lake and Dead Horse Ranch State Park.

Compatibility with Local Development Plans

There are multiple jurisdictions within the immediate vicinity of the Tavaschi Marsh area. Cooperating agencies in this endeavor all have a stake in developments at Tavaschi Marsh. While the Town of Clarkdale is not listed as a cooperator, the residents of the Town (both current and potential new residents in the area considered for development by Phelps Dodge Development Corporation) certainly will utilize the area. Tourism and visitation to sites such as Peck's Lake, Tavaschi Marsh, The Verde River Greenway, and Dead Horse Ranch State Park are important economic concerns for the local communities.

The proposed observation deck and associated access trail at Tuzigoot National Monument is compatible with legislation, purpose, and management objectives established by the National Park Service for the Monument.

IV. Environmental Consequences

There are several resources that are unaffected by any alternative.

Special status plants, in particular the Arizona cliff rose, are unaffected by any alternative. Arizona cliff rose does not occupy marshy sites, and would not occur at the expanded marsh or construction sites.

Some special status wildlife species would be unaffected by any alternative. The Page springsnail has been reported as extirpated; and the Mexican garter snake and the roundtail chub utilize the Verde River per se and would not necessarily be affected by the alternatives (pp 10-14 Appendix B). Section 7 [Endangered Species Act of 1973] consultation with the U.S. Fish and Wildlife Service determined that there would be no effect on listed wildlife species.

Water quality and quantity will not be affected by either construction activities or expansion of the marsh. The Department is committed to construct temporary check dam structures while permanent water-level control structures are installed in order to avoid increasing turbidity in the discharge from the marsh. The discharge from Shea Spring will continue to flow through the marsh,

and following a short filling period discharge will be unaffected. A Clean Water Act Section 401 certification has been acquired from the Arizona Department of Environmental Quality for compliance with the State's Water Quality Standards (pp 15-26 Appendix B). The Department also secured a permit from the US Army Corps of Engineers (Clean Water Act Section 404) for construction of the water control structures (pp 27-30 Appendix B).

Cultural and Archaeological resources were not identified during on-site surveys. Clearances from the State Historic Preservation Officer at Arizona State Parks have been secured (pp 31-42 Appendix B). If human remains or cultural or archaeological artifacts are unearthed during construction, work will cease immediately and the State Historic Preservation Officer will be contacted for direction. Likewise, the Park Archaeologist for Tuzigoot National Monument will be consulted to assist in determining how best to protect, document, or salvage the artifacts in compliance with the State Historic Preservation Act, the National Historic Preservation Act, and the Native American Graves and Repatriation Act.

With respect to all other resources, each of the alternatives differ and are addressed independently.

Alternative 1. Marsh Restoration with Recreational Development and Controlled Recreational Access. (THE PREFERRED ALTERNATIVE AND THE PROPOSED ACTION)

Of the alternatives analyzed, this is the only one that completely meets the stated objectives of the cooperators. The alternative provides protection, restoration, and enhancement of the Tavaschi Marsh wetland and provides interpretive/educational access to the public at large. Handicapped access, interpretive trails, parking, and viewing sites are provided under this alternative.

Wetland and Riparian vegetation is enhanced through extension of the flooded area at Tavaschi Marsh. There is an anticipated increase in the area of palustrine emergent marsh vegetation of approximately 30 acres. Water levels in the flooded wetland area can be flexibly modified to feature native vegetation. Riparian plantings would be used to accelerate the succession of the area to riparian/wetland land cover, to provide habitat for riparian associated wildlife, and to provide visual screening for aesthetic purposes. A preliminary vegetation management plan is included as pages 43 - 44 in Appendix B.

Wildlife on the site would be enhanced. Nesting habitat, foraging habitat, and cover waterfowl, riparian birds and wildlife, and raptors would increase. Special status wildlife species that could be affected would be the common black-hawk, which nests and forages in the vicinity, and the southwestern willow flycatcher. Control of recreational access and restriction of activities to established

roads and trails will minimize effects to these species by reducing disturbance effects to the nest site and to foraging patterns. Revegetation of Gooding willow, Fremont cottonwood and native hackberry at or near the new high-water perimeter would serve to benefit these species through habitat expansion. Fishes resident in the Marsh would experience an increase in available habitat by as much as 30 acres.

Public vehicular access across the gravel access road is important for emergency access to Phelps Dodge properties and Dead Horse Ranch State Park. Road access will not be restricted until bridge crossings are installed and serve the public safety needs of both areas. When it is legally permissible to restrict access to the road, it will be gated. Public Safety agencies, Dead Horse Ranch State Park, and Tuzigoot National Monument restricted and limited access via the road. Phelps Dodge Development Corp., as per the cooperative management agreement, retains the right to maintain and use existing roads and paths through the Riparian Areas for access throughout their property.

Parking and Access facilities for "Special Users" are provided under this alternative. Handicapped access to at least one of the observation platforms and a portion of the interpretive trail system will be provided. Parking facilities for handicapped, elderly, and educational groups will be provided near the center of the wildlife management area.

Development of the alternative was closely coordinated with the cooperators to insure compatibility with local development plans, and incorporates the surrounding facilities into the development plan. Facilities were meshed with development at Dead Horse Ranch State Park, Tuzigoot National Monument, Phelps Dodge, and proposed recreational development for the Town of Clarkdale. Addition of developed recreational and educational amenities would increase visitation to Dead Horse Ranch State Park, Peck's Lake, and the local community with commensurate economic benefits.

Alternative 2. Marsh Restoration with Controlled Recreational Access.

This alternative only partially meets the objectives of the cooperators. The alternative provides protection and restoration of the wetland area, but does not provide for interpretive/educational access to the public at large.

Handicapped access, interpretive trails, and viewing sites are not provided under this alternative.

Wetland and Riparian vegetation is enhanced as in the previous alternative, however, riparian plantings would be used to accelerate the succession of the area to riparian/wetland land cover.

Wildlife on the site would be enhanced as described in the previous alternative.

Public vehicular access across the gravel access road would be provided as described in the previous alternative.

Parking and Access facilities for "Special Users" are provided under this alternative. No viewing or interpretive facilities would be provided for "special users". Parking facilities for handicapped, elderly, and educational groups would be provided near the center of the wildlife management area.

Development of the alternative was closely coordinated with the cooperators to insure compatibility with local development plans and with the purpose and management of Tuzigoot National Monument. No viewing or interpretive facilities would be provided. The site would not constitute a developed recreational facility for the local community or the cooperators, and would result in limited economic benefit to the local community and cooperators.

Alternative 3. Marsh Restoration with Uncontrolled Access.

This alternative only partially meets the objectives of the cooperators. The alternative provides protection and restoration of the wetland area, but does not provide for interpretive/educational access to the public at large. Handicapped access, interpretive trails, and viewing sites are not provided under this alternative. Uncontrolled recreational access may offset some of the wetland and wildlife values described for the alternative.

Wetland and Riparian vegetation is enhanced as described in the previous alternative. Wildlife on the site would be enhanced as described in the previous alternative.

Public vehicular access across the gravel access road would be uncontrolled and unrestricted.

Parking and Access facilities for "Special Users" would not be provided under this alternative.

No attempt is made to ensure compatibility with local development plans. The protection and restoration of Tavaschi Marsh fits within existing area plans and is compatible with the purpose and management of Tuzigoot National Monument, but the alternative would not add to or complement those plans. The site would not constitute a developed recreational facility for the local community or the cooperators, and would result in limited economic benefit to the local community and cooperators.

Alternative 4. No Action.

The No Action alternative would neither meet the enhancement and restoration goals of the cooperators nor the educational and recreational goals they identified. Wetland and riparian vegetation could be enhanced by beaver reflooding portions of the marsh area. The site would undoubtedly be used by recreationists and naturalists, but educational/interpretive opportunities and opportunities to limit recreational impacts would be foregone. Wetland and Riparian vegetation would be maintained. Occupation by beaver could result in uncontrolled expansion of the Marsh area.

Wildlife on the site would be maintained commensurate with the wetland habitat. Uncontrolled recreational access could offset those enhancements via disturbance of nesting and foraging activities.

Public vehicular access across the gravel access road would be uncontrolled and unrestricted.

Parking and Access facilities for "Special Users" would not be provided under this alternative.

No attempt is made to ensure compatibility with local development plans. The protection and restoration of Tavaszi Marsh fits within existing area plans and are compatible with the purpose and management of Tuzigoot National Monument, but the alternative would not add to or complement those plans. The site would not constitute a developed recreational facility for the local community or the cooperators, and would result in limited economic benefit to the local community and cooperators.

V. Coordination and Consultation

The development of the Tavaszi Marsh restoration plan was done in consultation with the following agencies and organizations: National Park Service, Arizona State Parks Board, Dead Horse Ranch State Park, Tuzigoot National Monument, Northern Arizona Audubon Society, Phelps Dodge Corporation, U.S. Fish and Wildlife Service, Arizona State University, Prescott College, University of Arizona Cooperative Extension Service, The Nature Conservancy, Arizona Riparian Council, Coconino National Forest and the U.S. Army Corps of Engineers.

Direct input from the general public came during scheduled public meetings and events discussed on page 2 of this Final Environmental Assessment.

TAVASCI MARSH RESTORATION PROJECT
Finding Of No Significant Impact (FONSI)

The Arizona Game and Fish Department proposes to restore and enhance the marshland character of Tavaschi Marsh. An environmental assessment has been completed and the preferred alternative to construct two small water level control structures, three observation decks, two parking areas and related nature trails with informational signage has been selected. This alternative was selected on the basis of two objectives: (1) Restore the marsh to optimize biological diversity, and; (2) Provide public recreational and educational opportunities where the primary biological objective would not be significantly impacted. The preferred alternative was developed with public input and tempered by the applicable local, state and federal regulations.

The preferred alternative will be designed to restore and enhance the historical marsh wetland characteristics. The proposed closure of the road is supported by all land management agencies and private organizations with land holdings adjacent to the management area. Limited vehicular access is proposed through Dead Horse Ranch State Park (although access fees are proposed by Arizona State Parks Board), and through the north access road (non-fee). Appropriate agencies and representatives of interested organizations will be provided keys to the gates for vehicle access. The need for vehicular access by interested organizations and groups will be evaluated on a case by case basis. The educational and informational signage system will be designed in cooperation with interested conservation groups and will be coordinated to follow the same format as adjacent land management agencies' signage as much as possible.

The Arizona Game and Fish Department assumes the accuracy and intent of the information contained in the Environmental Assessment based upon consultations with Dead Horse Ranch State Park, the National Park Service, contract archaeologists, the State Historical Preservation Officer, the U.S. Fish and Wildlife Service, Coconino National Forest, Phelps Dodge Development Corporation, the Arizona Department of Environmental Quality, the U.S. Army Corps of Engineers, the Arizona Riparian Council, Prescott College Environmental Studies Program, Arizona State University, the Northern Arizona Audubon Society, and the public at large.

The Arizona Game and Fish Department has determined that the preferred alternative for the renovation of Tavaschi Marsh will not significantly impact the human environment.

Recommended:	<u><i>P. Henry (Acting)</i></u>	<u>8-25-93</u>
	Assistant Director, Special Services Division, AGFD	Date
Recommended:	<u><i>[Signature]</i></u>	<u>8/25/93</u>
	Assistant Director, Wildlife Management Division, AGFD	Date
Recommended:	<u><i>Allen E. Henderson</i></u>	<u>8/30/93</u>
	Superintendent, Tuzigoot N.M., NPS	Date
Recommended:	<u><i>G. Cunningham</i></u>	<u>8-31-93</u>
	General Superintendent, Southern Arizona Group, NPS	Date
Approved:	<u><i>T.W. Spalding ACTING</i></u>	<u>8 SEP 93</u>
	Director, AGFD	Date
Approved:	<u><i>Stanley L. Blough</i></u>	<u>9/1/93</u>
	Regional Director, Western Region, NPS	Date