UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
3616 W. Thomas, Suite 6
Phoenix, Arizona 85019

2-21-91-F-200

August 7, 1991

David F. Jolly
Regional Forester
U.S. Forest Service
517 Gold Avenue, S.W.
Albuquerque, New Mexico 87102-0084

Dear Mr. Jolly:

This responds to your request of April 25, 1991, for formal consultation pursuant to Section 7 of the Endangered Species Act (Act) of 1973, as amended, on the proposed livestock grazing under the Bar V Bar and Campaign Allotment Management Plan (AMP) in Gila County, Arizona. The species of concern is the Gila topminnow (Poeciliopsis occidentalis occidentalis). The 90-day consultation period began on May 1, 1991, the date your request was received in our office. Consultation was extended until August 7, 1991, by mutual consent, to allow additional information on the grazing schedule to be furnished by the Forest Service (USFS).

The following biological opinion is based on information provided in the February 28, 1991 biological evaluation (BE), the May 1991 draft Environmental Assessment (EA), conversations with Linny Warren (Tonto Basin Ranger District Range and Wildlife Staff) and John Fowler (permittee), data in our files, and other sources of information.

BIOLOGICAL OPINION

It is my biological opinion that implementation of livestock grazing under the proposed management system, including structural improvements, as set forth in the BE for the Bar V Bar and Campaign AMP is not likely to jeopardize the continued existence of the Gila topminnow.

BACKGROUND INFORMATION

Species Description

The Gila topminnow was listed as an endangered species on March 11, 1967. No critical habitat has been designated for this species. The Gila topminnow is a small, livebearing fish found in the Gila, Sonora, and de la Concepcion River drainages in Arizona, New Mexico, and Sonora, Mexico (Minckley 1973, Vrijenhoek et al. 1985). It was once among the commonest fishes of the Gila River and its tributaries (Hubbs and Miller 1941). Destruction of its habitat through water diversion, stream downcutting, backwater draining, vegetation clearing, channelization, water impoundment,

and other human uses of natural resources; plus competition with and/or predation by nonnative fish species, most notably mosquitofish (Gambusia affinis), have resulted in extirpation of the Gila topminnow throughout most of its range (USFWS 1984, Meffe et al. 1983).

Campaign Creek and Upper Horrell Springs lie within the historic range of Gila topminnow and were stocked with Gila topminnow in 1983 as part of the recovery effort for that species (Brooks 1986). The Gila topminnow stock was from Boyce-Thompson Arboretum and is of mixed Monkey Spring, Cocio Wash, and Bylas Springs genetic lineage (Bagley et al. 1990). Stocking of Gila topminnow into Upper Horrell Springs was conducted under a Memorandum of Understanding (MOU) between the Fish and Wildlife Service (FWS), USFS, and Arizona Game and Fish Department (AGFD). Section 7 consultation on the MOU was concluded on May 13, 1982. A May 20, 1983 amendment added Upper Horrell Springs and Campaign Creek as sites to be stocked under that consultation. The consultation concluded that existing uses at the reintroduction sites did not constitute jeopardy to the survival of the Gila topminnow. Existing uses included stock watering, trailing, and dipping as well as non-livestock related uses. Change in the existing livestock management as proposed in the BE requires additional consultation to consider new and modified effects to the Gila topminnow.

Upper Horrell Springs are several small hillside seeps and two moderate sized springs on the east side of Campaign Creek in T2N, R12E, SE 1/4 S11, SW 1/4 S12, and NE1/4 S14. Both moderate sized springs have been modified with springboxes for domestic water supply to the Reevis Mountain School. Upper Horrell Springs are the primary water source for the perennial portion of Campaign Creek. Campaign Creek is a small stream with a perennial section about 1 to 2 miles long in T2N, R12E, S1, 11, 12, and 14. It is tributary to the Salt River in Lake Roosevelt, although only flood flows reach the reservoir. Riparian vegetation includes cottonwood, willow, walnut, cattails, grasses, sedges, and rushes. Vegetation density is much higher on the ungrazed private land than on USFS land. The stream is rocky with a high proportion of pools.

Project Description

The February 28, 1991 BE states that only the concept (not implementation) of the grazing management system was evaluated and that separate BE's would be completed for all structural improvements needed to implement the system. However, sufficient location and descriptive information is provided on those improvements to assess their impacts to the Gila topminnow. Therefore, it was agreed, via telephone with Linny Warren of the Tonto Basin Ranger District, that the impacts of structural improvements to the Gila topminnow would be covered in this consultation. This will allow the grazing system to be implemented. No further formal consultation on Gila topminnow will be required for the structural improvements unless changes are proposed to the improvements which would result in new or different effects to the Gila topminnow from those considered in this biological opinion.

The two prescribed burns which are included in the BE as proposed non-structural projects are not covered by this consultation. When sufficient information is available on those proposed burns, their effects on listed species must be analyzed in a BE and a separate Section 7 consultation will be required if the proposed burns may affect the Gila topminnow or other listed species.

The related projects which are listed in the draft EA, but not addressed in the BE are also not covered by this consultation. These projects include fish habitat improvement in the lake, parking areas, cultural resource interpretation, and goose forage enhancement. The effects of these projects should be the subject of separate BE's and additional Section 7 consultation if they may affect any listed species.

The proposed action is to graze 575 head of cattle on the Bar V Bar and Campaign allotments on the Tonto Basin Ranger District of the Tonto National Forest, Gila County, Arizona under a management system prescribed in an AMP. The Bar V Bar and Campaign Allotments are located on the south side of the Salt River basin near the upper end of Lake Roosevelt. These two allotments include 34,158 acres and comprise the entire watershed for Campaign Creek (Figure 1). Elevation ranges from about 2,400 to 5,700 feet. Vegetation types include Sonoran desert scrub, semi-desert grassland, interior chaparral, Madrean evergreen woodland, and Fremont cottonwood riparian.

The Bar V Bar and Campaign allotments are currently grazed by 575 head of cattle on a continuous yearlong basis. Under the proposed AMP, the same number of cattle would continue to graze the allotments yearlong but under a controlled, rotating pasture system with shorter grazing periods interspersed with periods of no grazing.

The two allotments would be managed under one AMP. They would be separated into 15 regular use pastures and 6 special use pastures (Figure 2). The special use pastures (Gans Hole, HN, Tule, Dry, Heifer, and Horse) would be used for bulls, heifers, yearlings, or horses from time to time, as needed. The lower elevation area would be managed in 11 pastures (Figure 3, Table 1). Grazing would be of short duration, varying from 10 to 65 days with each pasture entered no more often than once a year. Use of each pasture would be rotated throughout the year to allow for growing season rest. The higher elevation pastures (Two Bar, Jackson, Reevis, and Granite) would be managed in a rest-rotation system (Figure 4, Table 1). Duration in each pasture would be four months, rotating through a four-year cycle of winter, spring-summer, and summer-fall grazing followed by a full year of no grazing.

The proposed grazing system would require construction of numerous structural projects including spring developments, pipelines, stock troughs, fencing, corrals, road maintenance and construction, water storage tanks, water troughs, horizontal wells, trick tanks, and cattleguards (Table 1). These structural improvements are scattered throughout the various pastures (Figures 5 and 6).

EFFECTS OF THE ACTION

Environmental Baseline

The Campaign Creek population of Gila topminnow has been one of the longest surviving and largest of the reintroduced populations. However, no Gila topminnow have been seen in Campaign Creek in 1991, despite several efforts to collect them. The cause of the apparent decline or loss of the Campaign Creek population is unknown. It may be due to flooding which occurred in late winter 1991, below-average winter temperatures in the winter of 1990-91, natural population fluctuations, or unidentified habitat changes.

Standard policy in the joint FWS-AGFD biennial monitoring of Gila topminnow provides for a population to be declared extirpated only after no topminnow have been found during at least two thorough samplings over a minimum period of at least two years. Gila topminnow populations naturally fluctuate and may reach very low levels. At those low levels it is extremely difficult to locate or sample the existing individuals. A monitoring effort which reports no Gila topminnow found does not necessarily mean the population is extirpated. Several instances have occurred where no topminnow could be found one year and yet were abundant the next. Further monitoring of the Campaign Creek population will be needed to determine its actual status. Since this population has done well for seven years, supplemental stocking may be considered to help restore the population.

The recent advent and present extensive population of longfin dace (Agosia chrysogaster) in Campaign Creek may indicate that habitat changes are occurring. Longfin dace and Gila topminnow are both native Gila basin fishes and coexist both historically and presently. However, longfin dace were not reported from Campaign Creek prior to 1989. Peter Bigfoot, of the Reevis Mountain School, has said that he stocked Campaign Creek with crayfish (a predatory nonnative) and an unknown fish. He obtained the fish from a stockpond on the way to Globe. A stockpond is an unlikely source for longfin dace, but no other fish have been found in the creek.

For whatever reason, the Gila topminnow population in Campaign Creek is in serious condition. Although this may be a natural fluctuation from which the population will recover with no assistance, it may also be a result of adverse impacts from resource uses of the watershed, introduction of predatory crayfish, or other human-caused factors. All actions proposed for this area must be carefully scrutinized to avoid adverse impacts to this already depleted population.

Direct and Indirect Effects of the Proposed Action

Implementation of livestock grazing under the management system proposed for the Bar V Bar and Campaign AMP would be expected to have mixed adverse and beneficial impacts to the survival and recovery of the Gila topminnow. Continued grazing of cattle in the watershed and riparian zone of Upper Horrell Springs and Campaign Creek would result in continuing adverse

impacts to the habitat of the Gila topminnow. However, improved management of livestock on the allotments including shorter grazing periods combined with periods of no grazing would probably result in improved watershed and riparian conditions. If this occurs, then habitat for Gila topminnow may be improved and their status enhanced.

Livestock grazing detrimentally affects the watershed, streambanks, channel substrate, and stream channel morphology, increases the frequency and severity of flooding, reduces aquatic habitat complexity, reduces riparian vegetation, and may indirectly reduce the amount of perennial surface flow (Platts 1981, Chaney et al. 1990, Schulz and Leininger 1990, Pearsons and Li 1991). Gila topminnow appear relatively tolerant of a wide variety of habitat conditions and can usually survive in the short-term in heavily degraded habitat. However, their long-term survival and ability to withstand stochastic catastrophic events, such as major floods and droughts, probably depends upon a complex environment providing a diversity of habitat factors.

The proposed fences, cattleguards, corrals, road maintenance and construction, and trick tanks are not expected to have any adverse effects upon the Gila topminnow. The contribution of these projects to the overall improvement of livestock management on these two allotments will have long-term beneficial impacts to the Gila topminnow.

Development of ten springs in the Campaign Creek watershed and drilling of two horizontal wells, plus the accessory pipelines, troughs, and storage tanks are not expected to have substantial effects on Gila topminnow. Diversion of spring flows or groundwater into storage and watering facilities has a potential to affect the amount of surface flow in Campaign Creek. However, the amount of water used for a livestock watering facility is relatively small and the proposed developments are not expected to have a measurable effect of flows in Campaign Creek.

Cumulative Effects of the Proposed Action

Cumulative effects are those effects of future non-Federal (State, local government, or private) activities on endangered or threatened species or critical habitat that are reasonably certain to occur during the course of the Federal activity subject to consultation. Future Federal actions are subject to the consultation requirements established in Section 7 and, therefore, are not considered cumulative in the proposed action.

Future anticipated non-Federal actions in the Campaign Creek watershed include continued diversion of a portion of Upper Horrell Springs for use at the Reevis Mountain School, continued residence and food crop production at the Reevis Mountain School, and increases in recreational use.

INCIDENTAL TAKE

Section 9 of the Act, as amended, prohibits any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish and wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered a prohibited taking provided that such taking is in compliance with the incidental take statement. **The measures described below are nondiscretionary, and must be undertaken by the agency or made a binding condition of any grant or permit issued to the applicant, as appropriate.**

The FWS anticipates that livestock grazing and management under the proposed Bar V Bar and Campaign AMP would result in incidental take of Gila topminnow through destruction and loss of habitat. Reliable estimates of populations are not obtainable due to sampling limitations and to the rapid population changes inherent in a short-lived species with high fecundity. Therefore, the incidental take anticipated as a result of this proposed action cannot be directly quantified as loss of individual Gila topminnow. Indirect quantification of incidental take as an amount of habitat to be lost or damaged is also difficult due to the pervasive, cumulative aspect of the habitat impacts. Incidental take of Gila topminnow will include reduction in reproductive success and increased loss of individuals in flood events, droughts, and other catastrophic events. The take will occur because of grazing-induced alterations of channel morphology; reduction in habitat complexity through bank trampling, vegetation reduction, and sedimentation; alteration of watershed water retention capabilities; and other factors. The proposed livestock management system is expected to improve watershed and riparian conditions, thus reducing the past level of incidental take. Therefore, greater than anticipated incidental take will be identified as occurring if the provisions of the proposed livestock management system are changed or violated.

If, during the course of the proposed action, greater than anticipated incidental take is identified, the USFS must reinitiate consultation with the FWS immediately to avoid violation of Section 9. Operations must be stopped in the interim period between the initiation and completion of the new consultation if it is determined that the impact of the additional taking will cause an irreversible and adverse impact on the species, as required by 50 CFR 402.14(i). The USFS should provide an explanation of the causes of taking.

Reasonable and Prudent Measures

The FWS believes the following reasonable and prudent measures are necessary and appropriate to minimize the incidental taking authorized by this biological opinion.

1. The proposed action shall be conducted in a manner which will minimize take of Gila topminnow and their habitat.

2. Complete and accurate records shall be maintained of any action which may result in take of Gila topminnow and their habitat.

Terms and Conditions

In order to be exempt from the prohibitions of Section 9 of the Act, the following terms and conditions, which implement the reasonable and prudent measures described above, must be complied with.

1. To implement reasonable and prudent measure number 1, the dates of livestock entry and withdrawal, number of head of cattle, structural developments, and other aspects of the proposed grazing and its management will be implemented, maintained, and enforced as proposed in the BE and draft AMP.

2. To implement reasonable and prudent measure number 2, records of grazing under the proposed management system will be maintained. Any changes in, or violations of, the proposed management plan will be reported, in writing, to the FWS at least 30 days prior to implementation of proposed changes, or within 30 days following violation. The reporting does not superseded the requirement for formal consultation if proposed changes may affect any listed species.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term conservation recommendations has been defined as FWS suggestions regarding **discretionary agency activities** to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's 7(a)(1) responsibility for these species.

1. We recommend that the USFS, in cooperation with AGFD, conduct annual monitoring of the Gila topminnow population in Campaign Creek. Currently the AGFD monitors the Campaign Creek Gila topminnow every other year. We recommend that the USFS conduct or fund monitoring in the years not presently covered by AGFD. Copies of all data obtained should be furnished to the FWS.

2. We recommend that, following an initial three year recovery period, riparian vegetation monitoring be conducted on an annual basis. We request that copies of all riparian monitoring data and results be furnished to the FWS as soon following compilation as practicable.

3. If riparian vegetation monitoring on Campaign Creek indicates a need for a "riparian management pasture", we recommend that the FWS be involved in planning and design of the pasture. Formal consultation would be required if establishment of the riparian management pasture may affect the Gila topminnow.

In order for the FWS to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species or their habitats, the FWS requests notification of the implementation of any conservation recommendations.

CONCLUSION

This concludes formal consultation on the actions outlined in the BE on livestock grazing under the proposed Bar V Bar and Campaign AMP. As required by 50 CFR 402.16, reinitiation of formal consultation is required if: (1) the amount or extent of incidental take is reached; (2) new information reveals effects of the agency action that may impact listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (3) a new species is listed or critical habitat designated that may be affected by the action.

If we can be of further assistance, please contact Sally Stefferud or me (Telephone: 602/379-4720 or FTS 261-4720).

Sincerely,

Sam F. Spiller

Sam F. Spiller
Field Supervisor

cc: Director, Arizona Game and Fish Department
Regional Director, Fish and Wildlife Service, Albuquerque, NM (FWE/SE)
Director, Fish and Wildlife Service, Washington, D.C. (HC)
Forest Supervisor, Tonto National Forest, Phoenix, AZ
District Ranger, U.S. Forest Service, Roosevelt, AZ

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Figure 1

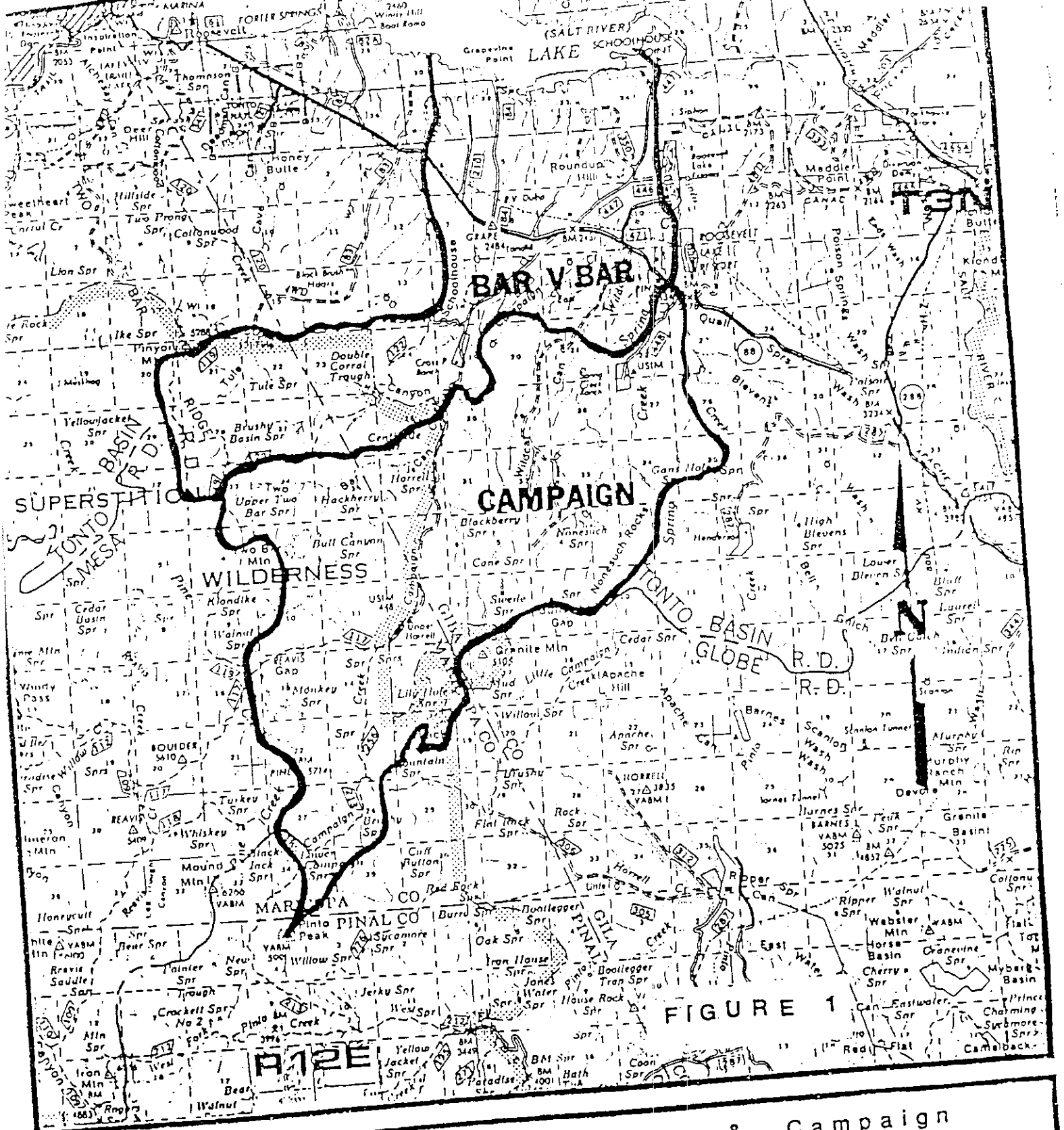

FIGURE 1

VICINITY MAP

Tonto Basin Ranger Dist

Tonto National Forest

Bar V Bar & Campaign Management Plan

Allotment Boundary

Wilderness Boundary

1/2" Mile

GILA TOP MIRROW

Figure 2

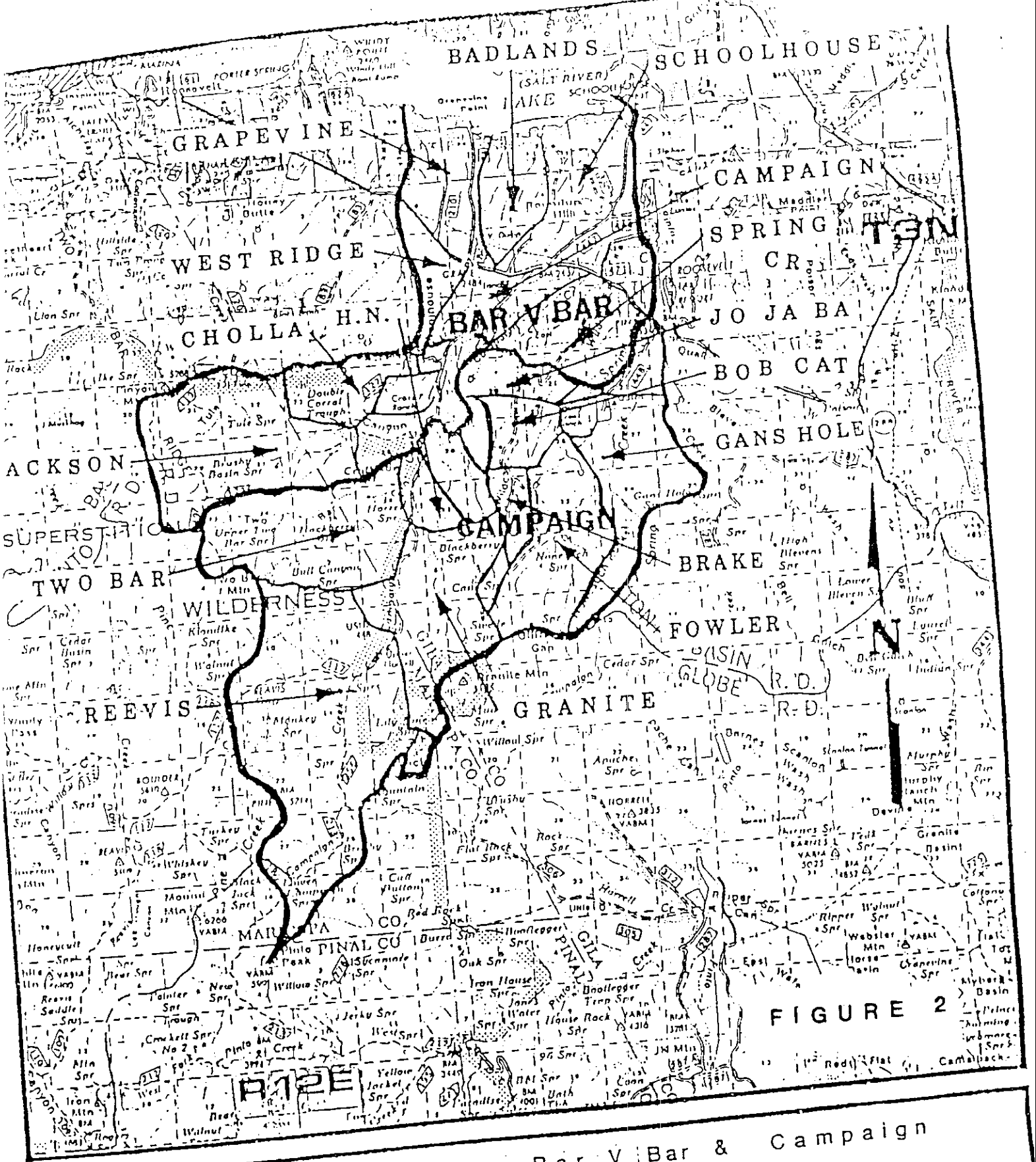

FIGURE 2

PASTURE MAP

Tonto Basin Ranger Dist

Tonto National Forest

Bar V Bar & Campaign Management Plan

Allotment Boundary

Wilderness Boundary

1/2" Mile

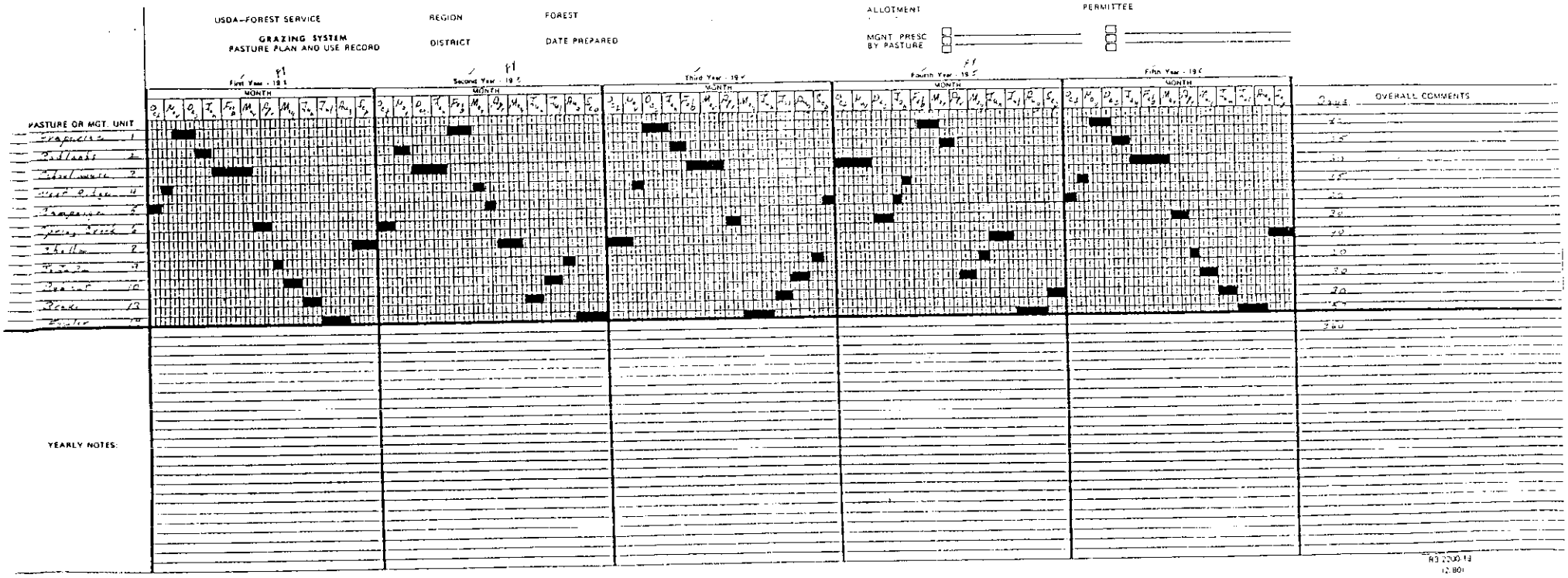

Figure 3
Livestock grazing schedule on lower elevation pastures, Bar V Bar and Campaign allotments

Figure 4

Livestock grazing schedule on higher elevation pastures, Bar V Bar and Campaign allotments

Bar V Bar

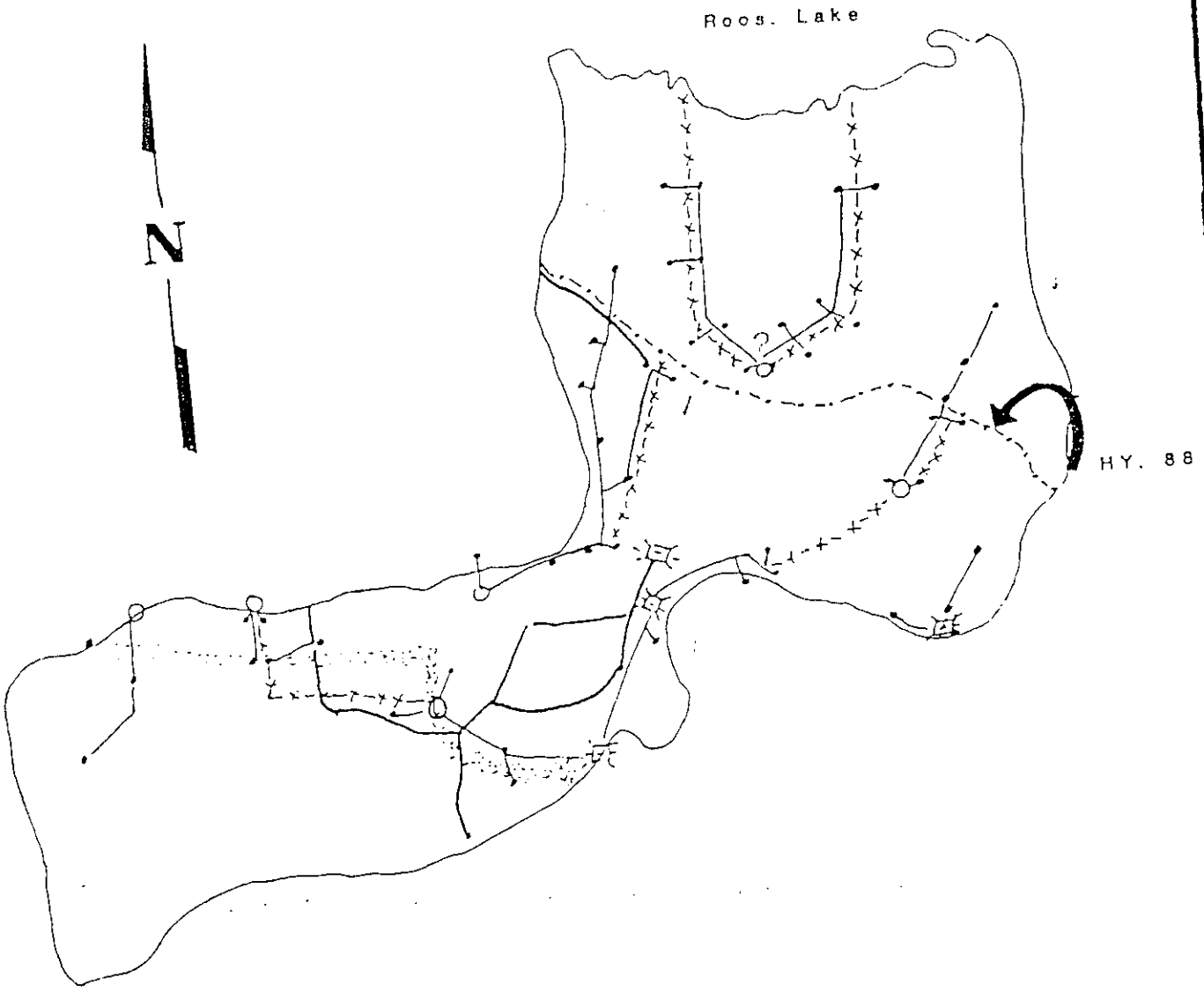

FIGURE 3

PROJECT MAP

Tonto Basin Ranger Dist

Tonto National Forest

3/4 1 Mile

LEGEND

Fence XXX
Cattleguard
Pipeline
Drinker
Corral
Storage

Figure 6

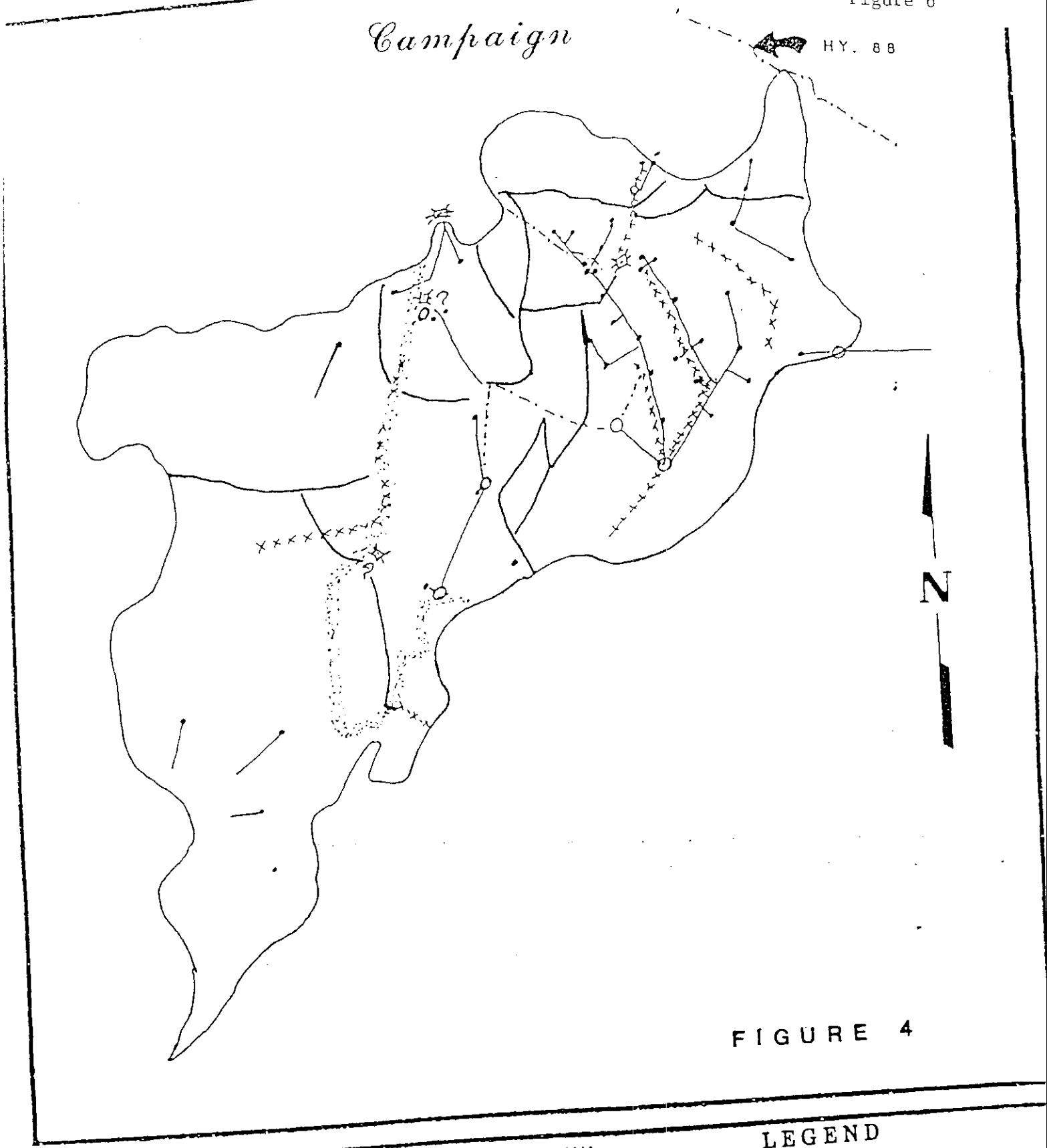
Campaign
HY. 88
N
FIGURE 4
LEGEND
Fence
Drinker
Cattleguard
Corral
Pipeline
Roads
Storage
Fire
3/4 1 Mile
PROJECT MAP
Tonto Basin Ranger Dist
Tonto National Forest

TABLE 1 (Modified from Feb. 28, 1991 Biological Evaluation)

PASTURE NO.	PASTURE NAME	CAPACITY ACRES	GRAZING SCHEDULE DATES (fiscal yr)	ANIMALS	STRUCTURAL PROJECTS NAME	TYPE	LOCATION	COMMENTS TYPE OF CONSTRUCTION
1	Grapevine	1,550	1992 - 11/06-12/15 1993 - 01/25-03/05 1994 - 12/01-01/10 1995 - 2/10 - 3/15 1996 - 11/11 - 12/15	375 " " " "	Schoolhouse Wash drinkers	Steel or Cement	T 3 N, R 12 E, sec. 1, NE, NE, NE	Install 2 water troughs, one on each side of Hwy 188. Set in gravel & install in existing line from Schoolhouse Allotment
					Grapevine Pasture Fence	Conventional barb wire	Begins T 3 N, R 13 E, sec. 8, SE, NW, SE, Ends T 4 N, R 13 E, sec. 32, NE, SW, NW	Construct 2 miles of fence (FS standards) Wildlife Specs.
					Grapevine BC pipeline & drinkers	1" plastic 250 psi pipeline & troughs	Begins T 3 N, R 13 E, sec 8, SE, NW, SE, Ends T 3 N, R 13 E, sec. 5, NE, SW, NW	Construct 1 1/2 miles of pipeline & install 4 drinkers in steel or cement troughs. Pipe will be buried if possible with equipment
2	Badlands	1,085	1992 - 12/16-01/09 1993 - 11/01-11/25 1994 - 01/10-02-05 1995 - 03/15-04/10 1996 - 12/15-01/10	375 " " " "	Grapevine BC drinkers	Steel or Cement	A-Cross fence in same location as above	Install 3 drinkers in Badlands Pasture off new pipeline
					BC Corral	Steel or Cement	T 3 N, R 13 E, sec. 8, SE, NE, SW	Construct pipe handling corral 2" well casing & 1" sucker rod.
					Schoolhouse drinkers	Steel or	T 3 N, R 13 E, sec. 8, SE, NE, SW, Last Drinker T 3 N, R 13 E, sec. 4, NE, SW, SW	Install 3 drinkers in Badlands Pasture.
3	Schoolhouse	2,330	1992 - 01/10-03/15 1993 - 11/26-01/25 1994 - 02/06-04/05 1995 - 10/01-11/30 1996 - 01/11-03/10	375 " " " "	Schoolhouse Pasture Fence	Conventional barb wire	Begins T 3 N, R 13 E, sec. 8 SE, NW, SE, Ends T 4 N, R 13 E, sec. 33, SE, NW, SE	Construct 2 miles of fence (FS standards) Wildlife Specs.
					Campaign Well pipeline & drinker	1" plastic 250 psi pipeline & troughs	Begins T 3 N, R 13 E, sec. 10 SW, SW, NW, Ends T 3 N, R 13 E, sec. 10, NE, NW, NE	Construct 1 miles of pipeline & install 3 drinkers in steel or cement troughs. Pipe will be buried if possible with equip.

BAR V BAR TABLE cont'd

PASTURE NO.	PASTURE NAME	CAPACITY ACRES	GRAZING SCHEDULE DATES (fiscal yr)	ANIMALS	STRUCTURAL PROJECTS NAME	TYPE	LOCATION	COMMENTS TYPE OF CONSTRUCTION
4	West Ridge	600	1992 - 10/21-11/05 1993 - 03/06-03/20 1994 - 11/15-11/30 1995 - 01/15-02/10 1996 - 10/21-11/10	375 " " " "	Substitute tank, pipeline & drinkers	1" plastic 250 psi pipeline & steel or cement	Begins T 3 N, R 13 E, sec. 18 NE, SW, SW, Ends T 3 N, R 13 E, sec. 6, SE, SW, NE	Construct 2 miles of pipeline & install 6 drinkers. Pipe will be buried if possible with equipment.
					West Ridge drinkers	Steel or cement	T 3 N, R 13 E, sec. 8, SW, NW	Install 2 drinkers off existing pipeline.
					Substitute Tank fence	Conventional barb wire	Begins T 3 N, R 13 E, sec. 19, NE, SW, SW, Ends T 3 N, R 13 E, sec. 8, SW, NW, NE	Construct 1 1/2 miles of fenct to Hwy 188 (FS standards) Wildlife specs.
5	Campaign	855	1992 - 10/01-10/20 1993 - 03/21-04/10 1994 - 09/10-09/30 1995 - 01/01-01/14 1996 - 10/01-10/20	375 " " " "	Campaign Creek Road Cattleguard	15' Cattleguard	T 3 N, R 13 E, sec. 17, SW, NW, NW	Install steel cattleguard at least 15' wide on well traveled road.
					Campaign Well pipeline	1" plastic 250 psi pipeline, steel or cement	Begins T 3 N, R 13 E, sec. 16 NE, NW, NW, Ends T 3 N, R 13 E, sec. 10, SW, SW	Construct 1/2 mile of pipeline & install 4 drinkers. Pipe will be buried if possible with equipment.
					Campaign Well fence	Conventional bar wire	Begins T 3 N, R 13 E, sec. 17, SW, NW, SW, Ends T 3 N, R 13 E, SW, SW, SE	Construct 2 miles of fence to Hwy 188 fence (FS standards) Wildlife specs.
					Campaign Well storage tank	10,000 gal steel rim	T 3 N, R 13 E, sec. 16, NE, NW, NW	Construct a steel bolted tank with cement base.
6	Spring Creek	1,220	1992 - 03/16-04/15 1993 - 10/01-10/30 1994 - 04/01-04/30 1995 - 12/01-12/30 1996 - 03/16-04/15	375 " " " "	Spring Creek Pasture drinkers	Steel or cement	1st T 3 N, R 13 E sec. 17, SE, NW, NW, 2nd T 3 N, R 13 E, sec. 16, E SW, SW, SE	Install 2 drinkers from extended pipelines of other pastures.
					Wildcat pipeline	1" plastic 250 psi pipeline, steel or	Begins T 3 N, R 13 E, sec. 21 NE, NE, SW	Construct 1/2 mile of pipeline & install 2 drinkers. Pipe will be buried if

BAR V BAR TABLE cont'd

PASTURE NO.	PASTURE NAME	CAPACITY ACRES	GRAZING SCHEDULE DATES(Fiscal Yr)	ANIMALS	STRUCTURAL PROJECTS NAME	TYPE	LOCATION	COMMENTS TYPE OF CONSTRUCTION
						cement		possible with equipment.
					Spring Creek pipeline & drinkers	1" plastic 250 psi pipeline, steel & cement	Begins T 3 N, R 13 E, sec. 22 SW, NE, SW, Ends T 3 N, R 13 E, sec. 22, NE, NW, NW	Construct 3/4 mile of pipeline & install 3 drinkers. Pipe will be buried if possible with equipment.
					Bobcat Tank cattleguard	10' cattle-guard.	T 3 N, R 13 E, sec. 21, NE, NW, NW	Install steel cattle-guard at least 10' wide on Wildcat Rd.
8	Cholla	1,665	1992 - 08/20-09/30 1993 - 04/20-05/30 1994 - 10/01-11/10 1995 - 06/01-07/10 1996 - 08/20-09/30	375 " " " "	Cholla Pasture fence	Conven-tional barb wire	Begins T 3 N, R 13 E, sec. 24 SW, SW, SW, Ends T 3 N, R 13 E, sec. 14, SW, NW, NW	Construct 2 miles of fence (FS standards) Wildlife sepcs.
					Schoolhouse Well pipeline & drinkers	1" plastic 250 psi pipeline steel or cement	Begins T 3 N, R 13 E, sec. 13, SW, NE, SW, Ends T 3 N, R 13 E, sec. 18, dead center	Construct 1 1/4 miles of pipeline & install 3 drinkers. Pipe will be buried if possible with equip-ment.
					Schoolhouse well storage	10,000 gal steel rim	T 3 N, R 13 E, sec. 13, SW, NE, SW	Construct a steel bolted tank with cement base.
					Cottonwood Ridge storage tank	10,000 gal steel rim	T 3 N, R 13 E, sec. 14, NW, SW, SW	Construct a steel bolted tank with cement base.
8	Cholla				Cottonwood Ridge pipeline & drinkers	1" plastic 250 psi pipeline steel & cement	Begin T 3 N, R 13 E, sec. 14, NW, SW, SW, Ends T 3 N, R 13 E, sec. 14, SE, SW, NE	Consturct 1 mile of pipeline & install 5 drinkers. Pipe will be buried if possible with equipment.
9	Jojoba	890	1992 - 04/16-05/05 1993 - 07/26-08/15 1994 - 08/26-09/15 1995 - 05/11-05/30 1996 - 04/11-04/30	375 " " " "	Wildcat maintenance road	Two track Rd. for water maint.	Begins T 3 N, R 13 E, sec. 19 SW, NE, SW, Ends T 3 N, R 13 E, sec. 29, SW, SE, NW	Construct 2 track Rd. for maintenance of water facility under FS regulations. Place in road access plan to Tonto.

BAR V BAR TABLE cont'd

PASTURE NO.	PASTURE NAME	CAPACITY ACRES	GRAZING SCHEDULE DATES (fiscal yr)	ANIMALS	STRUCTURAL PROJECTS NAME	TYPE	LOCATION	COMMENTS TYPE OF CONSTRUCTION
					Bobcat Fence	Conventional barb wire	Begins T 3 N, R 13 E, sec. 20, SE, NE, NE	Construct 2 miles of fence (FS standards) wildlife specs.
					Bobcat Windmill storage tank	10,000 gal steel rim	T 3 N, R 13 E, sec. 20, SE, NE, SW	Construct a steel bolted tank with cement base.
					Ranch pipeline & drinkers	1" plastic 250 psi pipeline steel & cement	Begins T 3 N, R 13 E, sec. 19 NE, SE, SE, Ends T 3 N, R 13 E, sec. 17, SE, NE, SE	Construct 1 1/2 miles of pipeline & install 3 drinkers
					Bobcat Windmill pipeline	1" plastic 250 psi pipeline, steel & cement	Begins T 3 N, R 13 E, sec. 20, SE, NE, NE	Construct 1 mile of pipeline & install 4 drinkers
10	Bobcat	1,110	1992 - 05/01-05/30 1993 - 06/21-07/20 1994 - 07/21-08/20 1995 - 04/16-05/15 1996 - 05/01-05/30	375 " " " "	Cane extension pipeline & drinkers	1" plastic 250 psi pipeline steel & cement	Begins T 3 N, R 13 E, sec. 29, SW, SW, NE, Ends T 3 N, R 13 E, sec. 29, NE, NW, SW	Construct 1 1/2 mile of pipeline from main line of Cane Spring. Install 4 drinkers.
					Wildcat cattleguard	10' cattle-guard	T 3 N, R 13 E, sec 29, SE, SW, NE	Install steel cattle-guard at least 10' wide.
13	Brake	1,120	1992 - 06/01-06/30 1993 - 05/26-06/25 1994 - 06/25-07/25 1995 - 09/01-09/30 1996 - 06/01-06/30	375 " " " "	Cane Spring pump station	Portable pump	T 2 N, R 13 E, sec. 5, NE, SE, SW	Utilize pump to storage tanks to gravity flow water to various points & drinkers.
					Cane Spring Storage Tank	10,000 gal solid steel	T 2 N, R 13 E, sec. 5, NE, SE, SW	Install a complete steel tank due to remote area.
					Brake Pasture fence	Conventional barb wire	Begins T 2 N, R 13 E, sec. 4, SW, NE, SW, Ends T 3 N, R 13 E, sec. 29, SE, SE, NE	construct 2 1/2 miles of fence (FS standards) Wildlife specs.
					Cane Spring Pipeline	1" plastic 250 psi	Begins T 2 N, R 13 E, sec. 5	Construct 3 1/2 miles of pipeline & install

BAR V BAR TABLE cont'd

PASTURE NO.	PASTURE NAME	CAPACITY ACRES	GRAZING SCHEDULE DATES (fiscal yr)	ANIMALS	STRUCTURAL PROJECTS NAME	TYPE	LOCATION	COMMENTS TYPE OF CONSTRUCTION
					Cane Spring pipeline	Pipeline steel or cement	NE, SE, SW, Ends T 3 N, R 13 E, sec. 29	Construct 3 1/2 miles of pipeline & install 9 drinkers
					Cane Spring Road Gate	Steel gate	T 2 N, R 13 E, sec. 5, NE, NE, SE	Install gate if deemed necessary to manage or control area for livestock or wildlife.
14	Fowler	2,015	1992 - 07/01-08/20 1993 - 08/10-09/30 1994 - 05/01-06/20 1995 - 07/10-08/30 1996 - 07/01-08/15	375 " " "	Fowler Pasture Fence	Conventional barb wire	Begins T 2 N, R 13 E, sec. 8, NE, SW, SE, Ends T 2 N, R 13 E, sec. 5, SE,SE,NE	Construct 3/4 mile of fence (FS standards) Wildlife specs.
					Nonsuch pipeline & drinkers	1" plastic 250 psi pipeline	Begins T 2 N, R 13 E, sec. 5, SE, SE, SE, Ends T 3 N, R 13 E, sec. 33, NE,SW,NE	Construct 2 1/2 miles of pipeline & install 6 drinkers
					Granite Tank pipeline & drinkers	1" plastic 250 psi pipeline steel or cement	Begins T 2 N, R 13 E, sec. 4, NE, NW, SW, Ends T 3 N, R 13 E, sec. 29, SE,SE,NE	Construct 1 1/2 miles of pipeline & install 7 drinkers
7	Jackson	3,340	1992 - Rest 1993 - 11/01-02/28 1994 - 03/01-06/30 1995 - 07/01-10/30 1996 - Rest	200 " " " "	Tule storage tank	10,000 gal steel rim	T 3 N, R 12 E, sec. 14, NW,SW,SW	Construct a steel bolted tank with cement base.
					Tule Spring pipeline & drinkers	Develope 1" plastic 250 psi pipeline Steel or cement	Begins T 3 N, R 12 E, sec. 14, NW, SW, SW, Ends T 3 N, R 12 E, sec. 21, SE,SW,SE	Construct 1 mile of pipeline & install 5 drinkers & box spring
16	Two Bar	2,825	1992 - 11/01-02/28 1993 - 03/01-06/30 1994 - 07/01-10/30 1995 - Rest 1996 - 11/01-02/28	200 " " " "	Bull Canyon Fence	Conventional barb wire	Begins T 2 N, R 12 E, sec. 2, SE, NE, SE, Ends T 3 N, R 12 E, sec. 36, SE,NE,SW	Construct 2 miles of fence & build fence in natural structures (FS standards) Wildlife specs.
					Hackberry Spring pipeline & drinkers	Develope spring 1" 250 psi pipeline	Begins T 3 N, R 12 E, sec. 36, SW,SW,NE, Ends T 3 N, R 12 E,	Construct 1 mile of pipeline in sec. 36 & 2. Install 6 drinkers & box spring.

BAR V BAR TABLE cont'd

PASTURE NO.	PASTURE NAME	CAPACITY ACRES	GRAZING SCHEDULE DATES (fiscal yr)	ANIMALS	STRUCTURAL PROJECTS NAME	TYPE	LOCATION	COMMENTS TYPE OF CONSTRUCTION
16	Two Bar				Hackberry Spr.	Steel or Cement drinkers	sec. 36, NW,NE,SE	
17	Granite	2,625	1992 - 07/01-10/30 1993 - Rest 1994 - 11/01-02/28 1995 - 03/01-06/30 1996 - 07/01-10/30	200 " " " "	Blackberry Spring Road	One way road for maint. of water facility	Begins T 2 N, R 13 E, sec. 8 NW,NW,SE, Ends T 2 N, R 13 E, sec. 5, NE,SE,SW	Construct one way maintenance road for water system (FS regs). Place in Road Access Plan on Tonto
					Blackbery Spr. pipeline	1" plastic 250 psi pipeline steel or cement drinkers.	Begins T 2 N, R 13 E, sec. 6 NE,NE,SE, Ends T 3 N, R 12 E, sec. 36, SE,NE,NE	Construct 1 mi. of pipeline & install 3 drinkers.
					Horrell storage tank	10,000 gal steel tank	T 3 N, R 12 E, sec. 36, SE,NE,NE	Install a steel tank on cement base for support.
					Horrell cattle guard	15' cattle guard	T 3 N, R 12 E, sec. 36, NE,SE,SE	Install old cattle-guard grids on timbers. Very light use road.
					Swede Spring storage tank	10,000 gal steel rim tank	T 2 N, R 13 E, sec. 7, SE,SE,NE	Construct steel bolted tank with cement base.
					Swede Spring pipeline	1" plastic 250 psi pipeline steel or cement drinkers	Begins T 2 N, R 13 E, sec. 7 SE,SE,NE, Ends T 2 N, R 13 E, sec. 8, NW,NW,SW	Construct 3/4 mi. of pipeline & install 2 drinkers.
					Granite Pasture storage tank	10,000 gal steel rim tank	T 2 N, R 13 E, sec. 8, NW,NW,SW	Construct a steel rim tank bolted with cement base.
					Swede Spring Drinker	Cement trough	T 2 N, R 13 E, sec. 8, SW,SE,NE	Construct water cement water trough.
					Lily Hole Spr. fence.	Conventional barb wire.	Begins T 2 N, R 12 E, sec. 13 SW,NE,NE	Construct 1/2 mi. of fence (FS standards) wildlife specs.
18	Reevis	6,015	1992 - 03/01-06/30 1993 - 07/01-10/30 1994 - Rest 1995 - 11/01-02/28	200 " " "	Reevis School cattleguard	10' cattle guard	T 2 N, R 12 E, sec. 12, SW,NE,NE	Install steel cattle-guard on rd. to Reevis Mt. School
					Reevis Corral	Working	T 2 N, R 12 E,	Construct steel

BAR "V" BAR TABLE cont'd

PASTURE NO.	PASTURE NAME	CAPACITY ACRES	GRAZING SCHEDULE DATES(fiscal yr)	ANIMALS	STRUCTURAL PROJECTS NAME	TYPE	LOCATION	COMMENTS TYPE OF CONSTRUCTION
13	Reevis		1996 - 03/01-06/30	200	Reevis Corral	corral	sec. 12, SW,NE,NE	corral, 2" well casing, 1" sucker rod & cement into ground.
					Monkey Spring pipeline	1" plastic 250 psi pipeline & steel drinkers.	Begins T 2 N, R 12 E, sec. 15, SW,NE,SW	Construct 3/4 mi. of pipeline on top of ground & install 2 drinkers.
					Reevis Spring & pipeline	Develop spr. 1" plastic 250 psi steel drinkers	Begins T 2 N, R 12 E, sec. 14, SW,SW,SW, Ends T 2 N, R 12 E, sec. 14, SE,NW,NW	Box spring & install drinker & construct 1/2 mi. of pipeline with 2 drinkers.
					Black Mt. Spr. & pipeline	Develop spring 1" plastic 250 psi steel dirnker	Begins T 2 N, R 12 E, sec. 23, NE,SW,SE, Ends T 2 N, R 12 E, sec. 23, SE,NW,NW	Box spring & install drinker & construct 1/4 mi. of pipeline with 2 drinkers
					Fowler Spring & drinker	Develop spr. & install steel drinker	T 2 N, R 12 E, sec. 23, SE,SW,SW	Box spring & install a steel trough.
15	Guns Hole	2,630	Used only as bull, heifer, yearling pasture as needed & approved by District Ranger.	?	Rogers Spring pipeline	1" plastic 250 psi pipeline steel or cement drinkers.	Begins T 3 N, R 13 E, sec. 22, SW,NW,SE, Ends T 3 N, R 13 E, sec. 27, NE,NE,NE	Construct 3/4 mi. of pipeline & install 2 2 drinkers.
					Nonesuch pipeline & drinker	1" plastic 250 psi pipeline & steel drinkers.	Begins T 2 N, R 13 E, sec. 2 NE,SW,SE	Construct 1/2 mi. of pipeline & install 2 drinkers. This will only be implemented if a pump system is set up in Pinto Creek
					Nonesuch storage tank	fiberglass 3,000 gal. tank.	T 2 N, R 13 E, sec. 2, NE,NW,SW	Install a storage tank by helicopter when pumping system is installed.

DAR V BAR TABLE cont'd

PASTURE NO.	PASTURE NAME	CAPACITY ACRES	GRAZING SCHEDULE DATES (fiscal yr)	ANIMALS	STRUCTURAL PROJECTS NAME	TYPE	LOCATION	COMMENTS TYPE OF CONSTRUCTION
15	Gans Hole				Pinto Creek pipeline & pumping system & drinkers.	Galvanized pipe 1" with portable pump in Pinto Creek	Begins T 2 N, R 13 E, sec. 1, NW,NW,SE, Ends T 2 N, R 13 E, sec. 2, NE,NW,SW	Construct galvanized pipe to pump water from Pinto Creek to storage & 2 drinkers
12	Neck HN	1,076	Used only as bull, heifer, yearling pasture as needed & approved by District Ranger.	?				
--	Misc. (Tule, Dry, Heifer, & Horse) Pastures	780	Same as above					

PASTURE NO.	PASTURE NAME	ACRES	DATES	ANIMALS	NON-STRUCTURAL PROJECTS NAME	TYPE	LOCATION	COMMENTS TYPE OF PROJECT
8	Cholla	1,200	May 15 - July 1	Place them on right after burn. Let rest during growing season	Cholla Burn	Prescribe fire on small sec of pasture Hot burn.	T 3 N, R 13 E all or part of sec. 13,14,23,24	Burn with Terra Torch in small units with electric fence to keep cattle off after they were placed on to eat cholla after spines were burned off.
14	Fowler	2,000	May 15 - July 1	Rest burn area for 2 growing seasons & put cattle on during off season to graze browse species.	None-such burn	Prescribe fire on decedent browse species to allow wild life & livestock to be able to utilize	T 2 N, R 12 E all or part of sec. 3,4,9.	Burn with ping pong machine & allow enough rest during growing season to let plants sprout.