CC DINATED RESOURCE MANAGEMENT PLA

YAVAPAI RANCH

INTRODUCTION

The 110,000 acre Yavapai Ranch is unique in Arizona in that it is composed of private land (51%) and National Forest land (49%) divided almost entirely in a checkerboard pattern. Because of the divided land ownership and also because of the number of agencies involved, the management plan for the Ranch was developed as a Coordinated Resource Management Plan (CRMP). To satisfy the USDA Forest Service requirements following the National Environmental Policy Act (NEPA) and Forest Service requirements for multiple use considerations, development of the CRMP followed Forest Service Integrated Resource Management (IRM) format and selection of a preferred alternative from a full range of reasonable alternatives considered.

NARRATIVE

On December 4, 1990, Gary Fullmer, Chino Valley District Ranger signed a Decision Notice and Finding of No Significant Impact for the Yavapai Ranch CRMP electing to implement Alternative L. This Environmental Assessment includes vegetation treatments, structural improvements, validation of road and trail use and maintenance designations, dispersed recreational use, fire suppression activities, grazing treatments, and demonstration of grazing best management practices within the project area. The environmental assessment was also tiered to the Prescott National Forest Land Management Plan. The area encompassed by this Coordinated Resource Management Plan (CRMP) and the activities planned are illustrated on the attached map.

Ranger Fullmer stated, "I selected Alternative L because it best addresses issues identified for the Ranch, specifically improvement of wildlife habitat and watershed condition and comes closest to meeting the goals and objectives of the cooperating landowner. Full support for the alternative to be implemented by the private landowner is essential due to the checkerboard land ownership pattern. Alternative L provides the most intensive level of grazing management which is necessary to best utilize livestock as a vegetation management tool to improve wildlife habitat and watershed conditions."

The decision incorporated criteria identified in the Environmental Assessment prepared by the Chino Ranger District with the help of a number of state and federal agencies as well as private concerns and interested publics. Internal scoping consisted of consultation with Soil Conservation Service and Forest Service staff specialists in the following fields: geology, recreation, wildlife, range, forestry, engineering, air quality, soils, hydrology, environmental policy compliance and forest planning. External scoping consisted of mailings to approximately fifty (50) individuals and groups, a series of open scoping meetings, and numerous telephone and personal contacts.

The Environmental Assessment for the CRMP evaluated criteria in the following categories: Vegetation treatments, structural improvements, validation of road and trail use and maintenance designations, dispersed recreational use, fire

suppression activities, grazing treatments, and implementation of best management practices on the Ranch. The Environmental Assessment is also consistent with the Prescott National Forest Land Management Plan and its' accompanying Environmental Impact Statement.

One result of the Decision Notice, an Intergovernmental Agreement between the Arizona Department of Environmental Quality (ADEQ) and the Chino Winds Natural Resource Conservation District (NRCD) was signed under Section 319 of the Clean Water Act (CWA). The Intergovernmental Agreement authorized activities and tasks known as the Chino Winds Demonstration Project, which is included in the overall Coordinated Resource Management Plan for the Ranch.

The Chino Winds Demonstration Project (Demo Project) will implement best management practices for grazing activities on the Yavapai Ranch. The initial phase of the Demo Project will implement a time controlled multiple pasture grazing system on approximately 16,000 acres in the Cienega area of the Ranch.

Grazing on the balance of the Ranch (New Water, Deep Well, Sullivan and Center units) will be scheduled using biological plan and control charts. Due to the insufficient quantities of water and large pasture sizes, these areas will be managed with a combination of time control and longer duration best pasture rotations. It is the intention of all parties that the Demo Project area and the type of management it represents be evaluated critically for extension to other areas of the Ranch as funding for the necessary water and fencing improvements becomes available.

THE CHINO WINDS DEMONSTRATION PROJECT

The Chino Winds Demonstation Project was outlined in the Intergovernmental Agreement Between the Arizona Department of Environmental Quality and the Chino Winds Natural Resource Conservation District. According to that document:

"The Chino Winds Demonstration Project will implement a time control multiple pasture grazing system using time control principles and best management practices to improve water quality on rangelands characterized by a mix of public and private ownership. The initial phase of project implementation will require establishment of baseline data to document the following:

a. the current status of water quality of the Yavapai Ranch;

b. the current condition of vegetative cover in the project implementation areas;

c. the current attitude of the public toward implementation of the model CRMP and water quality Demo Project on the Yavapai Ranch.

"The CRMP for the Yavapai Ranch represents the application of Best Management Practices for livestock grazing activities following guidelines of the Arizona Non Point Source Water Quality Program."

"The flow of surface water from the Demo Area is intermittent, as is most of the water from rangelands throughout Arizona. As a result, water quality

primarily is affected by sediment load. This variability in water flow and sediment content results in a situation in which it is extremely difficult to document changes in water quality as a result of management changes. This has been previously documented in the Walnut Gulch and Beaver Creek watershed research projects in Arizona."

"However, vegetative cover is a surrogate measurement for water quality. Vegetative cover will reflect responses to management cover is included as a major factor in erosion prediction models such as the Universal Soil Loss Equation, the USDA Forest Service EROSON program and the WEPP model which is currently under development for predicting erosion changers associated with mangement changes on rangeland. Measurement of changes in vegetative cover over time as correlated to specific management changes is , therefore, a practical means of indicating changes in water quality associated with the implementation of Best Managment Practices. The nature of the vegetative ground cover, live plant basal cover, shrub and tree canopy cover, or litter, are also important in the prediction of sediment yield. Tree and shrub canopy is less effective in reducing sediment yield as is cover at the ground level."

"Due to the variable and low rainfall amounts for rangelands in Arizona, vegetative cover is both seasonally and annually variable. As a result, several to many years may be required before the combined effects of favorable precipitation and management result in significant improvement in vegetative cover. It is, therefore, essential that data be collected over time to document those changes attributable to changes in management."

Forms for monitoring and for biological planning have been made available by the Center for Holistic Resource Management. In addition, the University of Arizona Cooperative Extension and School of Renewable Natural Resources may choose to develop site specific evaluation tools, including forms.

RESOURCE OBJECTIVES

1. Improve horizontal and vertical diversity of vegetation. Achieve a minimum of 50-60% of potential range site with an upward trend on grassland/shrub areas. Obtain a balanced diversity in woodland equal to 25% early seral ecological status; 25% mid seral ecological status; 25% late seral ecological status; and 25% climax ecological status.

2. Improve ground cover around permanent water to a minimum of 50%. Increase aquatic plant occurrence to 50% of the edge of open water. Improve ecological status of riparian vegetation to 80% of potential.

3. Improve habitat capability for emphasis wildlife species including turkey, pronghorn, abert squirrel, mule deer, elk, waterfowl, and upland game birds.

The Arizona Game and Fish Department have agreed that:

a. management for a viable antelope herd is desirable, and

b. initial population estimates for elk are 50 head primarily in the Juniper Mesa area. Elk will not be permitted to damage the resting pastures on any time control area. The G & F Comission sets population

numbers and hunt regulations for the management of number and species. A strategic plan for individual species of big game in the State consistent with Forest Plans and State Comprehensive Plans is currently being developed.

4. Improve economics of Yavapai Partnership operation. In the event the profitability of the cattle operation of the Ranch declines, the Yavapai Ranch Partnership may cease grazing on Forest Service land and utilize the privately held land for other purposes, such as development.

5. Increase distribution and dependability of available water sources for livestock and wildlife.

6. Establish Grazing Best Management practices and a demonstration area which includes:

Meadow seeding and improved water distribution to increase plant productivity and ground cover.

Adding troughs, pipelines, and fences to increase dependable water, allow better distribution of livestock use and wildlife movement, and provide flexibility in scheduling grazing treatments.

7. Maintain existing diversity in Ponderosa pine stands and achieve at least 15% old growth. Especially develop and cultivate stands in Pine Creek drainage.

8. Maintain or improve habitat for potentially occurring Threatened, Endangered, and Sensitive species and non-game species.

9. Increase law enforcement presence on public and private land to prevent: depreciative behavior, including vandalism to improvements; theft of wood or cattle; trespass in private areas signed as closed to the public; poaching and/or illegal hunting of game; and desecration of archeological sites.

10. Validate Forest Plan road and trail use designations, recontruction schedule, construction schedule, and road closure schedule that will serve public and private access. Validate maintenance levels and develop agreement for road maintenance.

11. Identify cultural resources and protect from ground disturbing activities.

12. Improve watershed condition by increasing ground cover to at least 50%. Reduce soil erosion on all lands with special emphasis on lands with less than 15% slope.

13. Develop cooperative fire management guidelines for both private and FS land.

14. Bring all wildlife, watershed and range structural improvements to acceptable standards.

15. Develop needed wi ife, watershed, and range struc al improvements and remove unneeded structures.

16. Improve administration of wood product operations on private land and develop coordination with operations on federal land with an integrated approach.

17. Manage forage utilization by wildlife and livestock within carrying capacity in accordance with Arizona Wildlife and Fisheries Comprehensive Plan.

18. Provide for educational opportunities.

DESIRED FUTURE CONDITION BY HABITAT TYPE

The following desired future conditions (DFC's) will be the objectives by site which management prescriptions will strive to achieve. Monitoring will play a key role in the assessment of whether or not we are moving toward or away from the stated goal for each of the following habitat types.

The strategic team, cosignators of this agreement, will jointly review monitoring data and existing conditions at least annually. From these meetings stocking rate adjustments and future developments and shifts in management emphasis and intensities will be used to continue to approach the DFC.

1. GRASSLAND-Achieve a balance of cool and warm season grass species. Maintain vertical and horizontal diversity and species diversity among grasses, forbs and low shrubs.

2. TREATED PINON-JUNIPER-On better sites maintain an open savannah with a vigorous, diverse browse component with a good balance of cool and warm season, mid to high successional grasses intermixed with a good balance of forbs. On poorer sites allow for a more dense stand of woodland with the same browse and grassland description.

3. PINON-JUNIPER/CHAPARREL-Mosaic of palatable browse speces with a good grass understory integrated with the woodland type.

4. LIMESTONE HILLS-Maintain existing forb and browse component with scattered juniper, understory made up of desirable grass component.

5. PINON-JUNIPER SAVANNAH-Broad mosaic of clumpy stands of juniper surrounded by an open grassland community which displays a high diversity and high vigor.

6. WOODLAND HILLS-

i. In areas with greater than 25% slope: Maintain palatable browse; maintain species diversity of fibrous-rooted plants; and, maintain woodland canopy of less than 70%.

ii. In areas with less than 25% slope: Manage stands to create a mosaic across the landscape of early, mid and late successional woodland.

Maintain woodland canopy of 40-60% consisting of large trees with little to no understory in a mosaic with openings greater than 100 feet which have a high degeree of vertical and horizontal cover and a high degree of species diversity and vigor.

7. RIPARIAN-(Mud, and Pine Springs)-maintain areas in stable late successional mid to high elevational decidious canopy. Provide ground cover for nesting and foraging areas for turkey.

8. WILDERNESS-Manage for late successional mixed Pine Oak Woodland. Livestock use would only be under emergency drought reserve strategies compatible with wilderness values.

9. PONDEROSA PINE-Manage to maitain old growth characteristics. Old growth stages will be represented by high structural diversity such as down logs, snags, interspersed dense stands of pine and scattered trees with occasional openings. Understory trees (subdominant trees) will be maintained for stand diversity. Maintain a good balance of cool and warm season grasses within the understory of scattered pine and openings. Grasses will be maintained whereby wildlife forage is available, on portions, at all times of the year.

ROLES AND RESPONSIBILITIES

The USDA Forest Service in cooperation with the Yavapai Ranch and the cooperating agencies will implement this CRMP. The roles for completing this work in the Demo Area were highlighted in a document signed by all participating organizations in September of 1991. Assigned responsibilities are incorporated in that agreement as follows:

Work Item	Responsible agency
CRM Plan Development	Forest Service (FS) will have lead in working in cooperation with SCS and Yavapai Ranch Partnership.
Public Information, News Releases, Video Documentation	Cooperative Extension will have lead, working with FS assistance on video documentation and other participants on public information and news releases.
Engineering Technical Assistance (Pipeline, well, irrigation system, storage tanks, etc.)	SCS will have lead working in cooperation with other participants
NEPA and Archaeological clearances	Each participant will work cooperatively with others but will be responsible for their own agency
Develop fuelwood removal plan and juniper retreatment	State Land Department will have lead through state and private forestry working in cooperation with other participant

Develop grazing management and stocking strategies	FS will have lead working in cooperation with the SCS and Yavapai Ranch Part.
Monitoring of vegetation change and surrogate water Quality indicators	University of Arizona through Dr. Phil Ogden will lead the design and write-up with field assistance from SCS and USFS
Plant Materials Assistance Pasture planting	SCS will have lead in cooperation with other participants

It is the intention of the parties to continue with the responsibilities and transfer appropriate elements developed in the Demonstration Area to applicable areas of the remainder of the Ranch.

Implementation of this CRMP will require the cooperative efforts of the following parties:

Work Item	Responsible Party
Prevention of depreciative behavior, including vandalism to any and all improvements	Forest Service, Yavapai Co. Sheriff, Yavapai Ranch Partnership
Prevention of theft of wood or cattle	Forest Service, Yavapai Co. Sheriff, Yavapai Ranch Partnership
Prevention of trespass in private areas signed as "Closed to the Public"	Forest Service, Yavapai Co. Sheriff, Yavapai Ranch Partnership
Enforcement of State Game laws	Az. Game and Fish Dept.
Develop cooperative fire management guidelines for private and NFS lands	Division of Forestry-AZ. State Land Dept., Yavapai Ranch Partnership, Forest Service.

We will adhere to the Prescott National Forest Access Management Plan on NFS lands. We will also update and review the Policy to assure that current access to private lands is not be denied. In addition, we continue to observe the National Policy that reasonable access to any private land will be granted if request is made. Further, 36 CFR 212.7 (d) states that no cooperator shall be required to maintain a road beyond the extent of their use.

STRUCTURAL AND NONSTRUCTURAL DEVELOPMENT SCHEDULE
(Locations of proposed developments are plotted on the attached allotment map which is a part of this plan.)

The Decision Notice for this CRM identified the following site specific projects which MAY be undertaken:

Description	Cost	Contributor(s)
1197 acre Fuelwood Cut harvest	$3,500	NRCD/Permittee/FS
4232 Acre PJ Mechanical Retreatment	$54,000	NRCD/Permittee/FS
144 acres of erosion control seeding	$14,000	NRCD/Permittee/FS
5886 acres of wildlife habitat impr.	$30,000	Permittee/FS
5150 acres ignited prescribed fire	$25,000	Permittee/FS
	Total: $126,500	

Upgrade existing Range improvements to meet wildlife standards

Additional structures will be scheduled for construction or reconstruction as follows:

31.5 miles of fence, (additional electric fences may be used to further subdivide grazing units to meet vegetation management objectives.)

18.5 miles of pipelines with drinkers and storage facilities

10 wells with storage facilities

Total: $90,000 NRCD/Permittee

(See Schedule of Quarterly Deliverables-Yavapai Ranch ADEQ Plan, Appendix 4)

5 water spreaders

T19N R5W Sec. 9	$10,400	Permittee/FS
T19N R6W Sec. 8	$2150	Permittee/FS
T19N R6W Sec. 1	mgt. will correct	Permittee/FS
T20N R6W Sec. 8	mgt. will correct	Permittee/FS
T20N R6W Sec 20	$5750	Permittee/FS

4 erosion control structures

T19N R5W Sec. 28	$400	Permittee/FS
T20N R7W Sec. 32	$2,600	Permittee/FS
T19N R7W Sec. 17	$2,800	Permittee/FS
T19N R7W Sec. 7	$400	Permittee/FS
Total:	$24,500	

(See 2510 Structural and non-structural Memo 9/12/90 and 9/13/90 for specific locations costs and treatments, Appendix 3).

Implementation of these items is contingent upon available funding.

The Demo Project has been funded by a CWA Section 319 (h) grant from the Arizona Department of Environmental Quality and matching funds from the Yavapai Ranch Partnership. It is possible that these two parties may be able to fund future projects.

It is expected that the Prescott National Forest will be a major partner in funding for additional projects. A Letter of Intent between Yavapai Ranch Partnership and Prescott National Forest, as signed by the Forest Supervisor, stated: "It is understood that the Forest Service will consider the outlined range improvements as high priority for budgeting of Range Betterment and other available funds subject to appropriation. It is also understood that fincancial obligation of Yavapai Ranch Partnership for range improvements will be consistant with sound financial principles and subject to the availability of funds without borrowing for such purpose."

As wildlife would be a major beneficiary of these improvements, funding sources such as Challenge Cost Share and Heritage funding may also be utilized to fund some of these improvements.

Other agencies which are part of this CRMP may also be involved in the funding of future improvements.

When on private lands, in the event of a conflict between the policies of the various governmental agencies, the policies of the agency funding the project in question will have precedence. The Yavapai Ranch Partnership shall not be held liable in any such dispute between agencies.

GRAZING MANAGEMENT STRATEGIES

Although livestock grazing is perceived simplistically as animals feeding on grass plants, the activity is significantly more complex. The principle animal impact profoundly affects four fundamental processes in the ecosystem--succession, water cycles, mineral cycles, and energy flow. Good biological planning manages land, domestic animals and wildlife so that:

a. in periods of rapid growth, the land can produce maximum amounts of high quality forage and cover on an increasing or sustained basis;

b. an adequate amount of forage and/or cover is produced for livestock and wildlife through the non-growing months;

c. vertical cover for wildlife and the nutritional requirements of livestock and wildlife are adequately met;

d. animals are subjected to a minumum of physical handling stress;

e. the needs of livestock, wildlife, and other land uses are accommodated;

f. the watershed and ecosystem goals can be achieved.

Time control grazing requires managers to plan, monitor progress continuously, control deviations as soon as possible, and replan whenever necessary. Even though this plan-monitor-control-replan sequence proceeds without gaps and covers emergency situations, livestock operations also require that evaluations are conducted twice a year. Evaluations contrast planned and actual grazing activities to determine and document relative degrees of management progress.

The first planning pe[illegible]d is for the growing season and [illegible]ould be completed a month or so before its onset. Projection should be open-ended since it is not possible to precisely predict the duration or amount of seasonal forage production. A range of recovery periods can be used during the growing season to adjust projections to actual daily growth rates. Shorter and longer recovery periods reflect the length of time that the grasses require for recovery. The faster the growth the shorter the recovery period; the slower the growth, the longer the recovery period. Monitoring aids in determining the relative length of recovery required for the system. The plan initially assumes longer recovery periods since it is unknown when fast daily growth will occur. When monitoring documents that rapid growth is occurring, the plan is adjusted to reflect this condition..

A second plan is prepared for the non-growing season (closed plan). It should be done toward the end of the growing season when the amount of forage reserves that will be available for the non-growth period are known. Since the relative amount of forage will not change, the second plan can be projected to the onset of the next growing season. The closed plan should project forage for consumption through the normal dormant season, plus include a prudent allotment for wildlife (forage and vertical cover), a drought reserve, and an ecosystem maintenance component.

When livestock water is inadequate within a given area, grazing rotation will be altered to account for this in concert with available forage and proper management practices. Hopefully this will be less of a likelihood as additional waters are developed.

Division of Units

For planning purposes, the Ranch is divided into three herd units or cells: Cienega, Center, and West.

1. Cienega Unit

   The Cienega Unit consists of the Demo Area and when completed will be the prototype cell for the Ranch. This cell will be utilized in the spring of 1992 if project improvements are completed. The potential of such a cell enable using the cattle as a tool to improve the ground cover, provide better water and mineral cycles and increase species diversity to the benefit of wildlife, including game animals and birds, and cattle substantially.

   The Biological Plan and control Charts (Appendices A-C) show the proposed utilization of this unit. Since this rotation will be the Ranch's first experience at time control grazing, it is likely that considerable modifications to these charts will be necessary until more experience is developed.

2. Center Unit

   Though the Center Unit is for the most part poorly fenced and watered, some

control of cattle possible via opening and closing gates on water lots around the developed water. The Biological Plan and Control Charts for the Center Unit (Appendices D-F) should at least serve as a starting point for desired cattle movement.

3. West Unit

The northern half of this Unit is poorly fenced; the soulthern half is somewhat better fenced. Water supply is marginal in the southern half and poorly distributed in the northern half.

Because the critical antelope fawning occurs in the western portion of the Unit, particulary in the southwestern quarter, cattle grazing on this area will be deferred until May in an attempt to provide the maximum possible cover for fawn. A secondary goal is to forage and horizontal diversity. This strategy will result in a short term heavy utilization of the northern half of the West Unit during winter months. (Appendices I-J). This use occurring during the winter months dormant season will not have an adverse effect on cover and species diversity.

Did this occur ?

If the ecosystem reponds as planned, the intensive grazing management system designed for the Cienega Unit can be extended to the West Unit. Better condition and forage utilization will benefit cattle and wildlife especially the antelope.

Once the Cienega Demo Area is fully developed (Phase 1), attention may be given to the New Water area (Phase 2). Once completed, the bulk of the livestock can be supported in these two areas. Additional development, Phase 3, will be completed to allow for appropriate management of the central portion of the allotment known as the Sullivan-Winter/Summer Unit. A portion of this area will be included into each of the two time control units.

During this interim the balance of the livestock will be managed in two additional herds with an emphasis being placed upon antelope habitat management in the 4 southwestern pastures of the New Water Unit. The number of livestock here will be approximately 350 head and will be managed under a time control system providing spring rest for the Antelope, west, south, and Corner Pastures as displayed on the Pasture Plan. This will be updated as additional fences shown on the map are accomplished in out years. Eventually two Time Control units may be operational with about an even split of preference will be accomplished with the central portion of the ranch providing wildlife habitat and occasional grazing with livestock to meet objectives or as a part of the enclosed Backup Grazing Plan. Should both time control cells become operational, permitted numbers of livestock may be increased if monitoring indicates that this is advisable.

BACKUP PLAN

If the need to revert back to traditional grazing management strategies arises, the backup plan will be the rest rotation plan prepared by the Soil Conservation Service in 1986. Stocking rates will revert to that of Alternative F as written in the Decision Notice.

MONITORING PLAN

Monitoring is the process by which the progress toward goals may be measured and data provided to make decisions to change the plan when goals are not being met. The monitoring data must be considered in light of information to meet short term or day to day operational goals, mid term goals of one to a few years, and long term goals. Monitoring, documenting the data, and interpreting the data are essential to the implementation and successful continuation of a ranch and allotment operation.

Monitoring, however, must not be so complex as to be discouraged. The data to be collected must answer specific questions which need to be answered relative to goals, the data must be easily collect, recorded and analyzed, and data must be objective (readily duplicated by different individuals over time).

Because of the size of the Ranch, the small number of employees, and their inexperience with monitoring, not all of the proposed monitoring may be possible, either by type or to the extent shown in the following subsections. It is hoped that with more experience, whatever monitoring initially implemented could be expanded.

Proposed Monitoring Data Needs and Responsibility

1. Completion of plan and annual updates and modifications - Ranch and Forest Service

The initial management plan is to be considered a starting point. The ranch and the Forest Service will work closely together to write an Annual Operating Plan each year. This plan will be reviewed at least annually by the Ranch and Forest Service to determine if modifications should be made to the plan.

2. Annual evaluation by personnel of cooperating agencies and organizations - Forest Service

After evaluation of monitoring data habitat conditions will be determined at least on an annual basis by the cooperating agencies. If habitat conditions and or watershed condition decreases, managment strategies will be modified to improve conditions. Modifications may include adjusting herd size,, altering game management, and/or redesigning pastures. These changes will be discussed at one of the quarterly evaluation meetings and incorporated into the Annual Operating Plan. At least annually cooperators will be provided an opportunity to provide formal comment on progress.

3. Precipitation

   a. Daily record at ranch headquarters - Ranch

      A rain gauge maintained at headquarters with an individual responsible for recording daily rainfall and providing a monthly summary is a minimum level of data required.

   b. Storage gauges at selected monitoring sites - Forest Service

A 2-foot long section of 3- to 4-inch PVC pipe with a cap on one end serves well as a rain gauge. These could be located at selected sites, contain a small amount of oil in the gauge to prevent evaporation and read seasonally to supplement the daily rainfall data from the headquarters.

4. Vegetation

It is impossible to provide statistically sound and objective vegetation data which covers the entire ranch. Only a small sample can be made, so specific data must be collected on carefully selected areas which are chosen to provide specific answers. These specific data, then, need to be supplemented with photographs and narrative observations on a regular basis.

a. Seasonal forage available - Ranch and Forest Service

Range Readiness & Standing Crop

On a seasonal basis, Ranch and Forest Service personnel need to evaluate the forage available for livestock and wildlife and make adjustments to the grazing schedule and stocking rate in specific pastures as needed. This is a short term operational need and does not need to involve detailed data, but be a regular item to be documented. The estimation of available forage/cover improves as a record of stocking rates, utilization and seasonal precipitation is documented.

b. Forage remaining on key areas when livestock are removed from pastures - Ranch and Forest Service

Utilization Key Areas

At least one key area per pasture should be identified on which forage utilization is documented at the end of a livestock grazing period on each pasture. These key areas should be selected by Ranch and Forest Service personnel with assistance of cooperators. The method to document utilization may vary to meet the needs at the specific key areas, but a measure of stubble height of key forage species may provide objective data needed.

c. Plan frequency plots on key areas for long term trend - University of Arizona Extension Service

There will be some key areas on the ranch, whether in wood cutting areas or where there are expected to be major changes in livestock impacts, in which the objective is to document the change in plant composition. Measurement of plant frequency along with cover data and photographs can document the medium and long term changes very well. One to two hundred 40- x 40-cm quadrants located by pacing along parallel transects within a permanently located macroplot is the recommended method for collecting these data. A suggested data form is attached as Appendix L.

Data on at least three or four of these key areas should be collected annually and cooperators on the ranch plan as well as volunteers used to collect the data and interpret results in the field. These data

collection events can be used as a good basis for communication relative to accomplishments of a plan.

d. Browse density and age class plots in key areas for long term trend - University of Arizona Extension Service

For key areas of browse vegetation where the health of the browse community over time is of concern, a belt transect in which density of plans by age classes may be the data desired. These transects, like the plant frequency transects can be read on a regular basis with group participation.

e. Soil Surface & Coverage - Ranch and Forest Service

It may be useful to construct 100 point random tramsect plots. In these plots, starting points would be marked and photographed and the points chosen by random (dart). The data would be recorded on forms developed for that purpose. (See examples in Appendices J-L.) Suggested locations might include Antelope Pasture.

f. Demonstration Area

(1a) Soil surface and cover - University of Arizona Extension Service

For the Demonstration Area, the monitoring requirements are specific to document soil condition and cover as a measurement of watershed condition. The initial plan here is to collect cover data using a 10-point frame. For each key area (macroplot) selected, fifty to 100 frame placements will result in 500 to 1000 points at which cover data are recorded. The frame placement will be along paced transects with data for each transect treated as a replication for statistical analysis by analysis of variance. A suggested data form is included as Appendix M.

Tentatively selected locations for macroplots in the Demonstration Area within Township 19 N and Range 5 W are:

- A pair of macroplots (one grazed and one ungrazed) on a loamy upland range site in fair condition in Section 17 and in Pasture 7A.

- A pair of macroplots (one grazed and one ungrazed on a loamy upland range site in good condition in Section 16 and in Pasture 7B.

- A pair of macroplots (one grazed and one ungrazed) on a limy upland range site in fair condition in Section 4 and in Pasture 8.

- A pair of macroplots (one grazed and one ungrazed) on a

loa bottom range site in poor cond on in Section 22 and in Pasture 3B.

- A pair of macroplots (one in wood cutting area and one in untreated area) also will be located.

(1b) Soil Surface and Cover - Ranch and Forest Service

If desired, 100 point random transects could also be done. Tentative locations might be in Pastures 1, 2 and 6.

(2) Key plant growth rates - Ranch

To plan for the time control movements of livestock within the Demonstration Area pastures on a seasonal basis, rate of growth of selected plant species need to be observed and documented. Observations on a few specific plans, grazed and ungrazed, can document this data need.

(3) Forage reserve in pastures - Ranch

At the end of the spring and summer growing seasons estimations of reserve forage available in the Demonstration Area pastures should be made to update the forward planning process.

5. Livestock

a. Dates of use and number of animals per pasture - Ranch

Receiving plan, not actual

These data are a log of the number of animals into and out of pastures on specific dates. These data answer the questions on how many livestock grazed the area and wehen and are importaant in the interpretation of vegetation data as well as planning use in future years.

b. Annual pounds of livestock sold - Ranch

This is an annual accounting document if livestock production goals are being attained.

c. Demonstration Area
Forward planning chart - Ranch

For the Demonstration Area, the HRM forward planning chart should be maintained. This will provide all of the data relative to livestock grazing on the Demonstration Area.

6. Wood Harvest - Forest Service

Cords of firewood harvested from the Ranch provide a record of the stated goals for this activity. Design of cutting blocks layout and locations

will be consistant with wildlife needs and Forest Plan standards and guidelines.

7. Wildlife - Arizona Game and Fish Department

The Arizona Game and Fish Department, Kingman Regional Office and the area

Wildlife Manager will design and cooperate in the collection of habitat data useful in evaluating the effects of the CRMP on wildlife habitat. This data will be incorporated in our group evaluations of the overall effectiveness of the CRMP. No specific methods are outlined at this point, as this information needs to be consistent with Fish and Game data collection. Their data should be made a matter of record for plan monitoring and collected and reported in a manner to help determine the effect of plan implementation on wildlife species.

8. Budgets

(1) Annual Costs of Improvements - Ranch and Forest Service

Annual cost of improvements and increased management should be evaluated to monitor the added economic costs of plan implementation and operation.

(2) Demonstration Area - Chino Winds Natural Resource Conservation District and Arizona Department of Environmental Quality

The Chino Winds Natural Resource Conservation District and Arizona Department of Environmental Quality have responsibility of monitoring quarterly budgets for the Demonstration Area. This procedure is established.

9. Public Perception

a. Log of public comments relative to ranch - Ranch - Forest Service

A log of public comments to Ranch and Forest Service as well as cooperator personnel should be maintained and reviewed annually when updating the plan.

b. Demonstration Area - University of Arizona Extension Service

For the Demonstration Area, the University of Arizona Extension Service will document changes in public perception resulting from the demonstration project. The details of this program will be included as an addendum to this monitoring program.

It will be necessary for all involved with monitoring to educate the public to the benefits - and limitations - of such monitoring. Though monitoring can be an objective measure of progress, even dramatic changes in grassland succcession and cover proceeds slowly in areas of low rainfall. It may require five to ten years before the major

pattern of the Ranch. This would require separate agreements. For the purposes of this document, the land ownership pattern shall remain the same, and nothing in this document implies any prescriptive or legal rights to transportation, access, public use easement etc.

2. It is anticipated that the major part of the private land will remain open to the public for hunting under the rules and regulations of the Arizona Game and Fish Department and dispersed recreational use under Forest Service Regulation. However, nothing in this CRMP gives the public any legal right to hunt, cross, or use for dispersed recreational purposes on the private land. The current privilege of the public to hunt, cross or use for dispersed recreational purposes on the major part of the private land is by permission and license of the Yavapai Ranch Partnership which may be restricted or withdrawn at any time.

3. All parties hereto are encouraged to follow the Forest Service transportation plan as shown on the official access plan. Nothing provided herein shall limit rights of reasonable access of Yavapai Ranch Partnership to its private land. In the following emergency circumstances, the parties may cross public and private land in areas not accessible by roads covered by the transportation plan without the prior approval of the Forest Service or the Yavapai Ranch Partnership:

(a) To bring emergency services to persons or livestock unable to leave under their own power;

(b) To find and repair leaks in pipelines;

(c) To repair fences in order to retain cattle in their designated pastures;

(d) To prevent illegal activity, including depreciative behavior, theft, violation of fire restrictions, illegal wood cutting trespass in private areas signed as closed to the public, poaching and/or illegal hunting of game, or desecration of archaeological sites;

(e) Fire suppression; or,

(f) Retrieval of game;

(g) Dead wood cutting.

Mechanical vehicles are prohibited in all wilderness areas except to provide emergency services, with the prior approval of the Forest Supervisor.

4. This CRMP will ser not only to coordinate activity etween the parties involved, but is also to be used in place of the traditional allotment management plan between the Forest Service and the Yavapai Ranch Partnership. It shall have a term of ten years from the date hereof. It may be modified or amended only by an agreeement, in writing, between the parties.

COORDINATED RESOURCE MANAGEMENT

FOR

THE

YAVAPAI RANCH

AGREED TO BY: _____ 4/22/92
GENERAL PARTNER, YAVAPAI RANCH — DATE

_____ 4/23/92
CHINO VALLEY DISTRICT RANGER — DATE

_____ 5/19/92
SOIL CONSERVATION SERVICE — DATE

_____ 5 20 92
CHINO WINDS NRCD — DATE

_____ _____
ARIZONA COOP EXTENSION, PRESCOTT — DATE

_____ 5/22/92
ARIZONA STATE LAND DEPARTMENT — DATE

_____ 5/22/92
ARIZONA COOP EXTENSION, U OF A — DATE

_____ 5/14/92
AZ DEPT. OF ENVIRONMENTAL QUALITY — DATE

REVIEWED BY:

_____ _____
AZ GAME AND FISH DEPARTMENT — DATE