Windmill West
Allotment Management Plan (AMP)

Flagstaff and Red Rock Ranger Districts

Coconino National Forest

Prepared by: Gary Hase, Jr. **Date** 12-29-2015

Gary Hase, Jr.
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Agreed to/
Reviewed by: _____ **Date** 12-29-15

Dustin Ross
Permittee

Approved by: Debra Mollet **Date** 1/4/2016

Debra L. Mollet
Deputy District Ranger

DECISION SUMMARY

The environmental analysis of grazing use on the Windmill West Allotment was required by the Rescission Act of 1995 and followed current guidance from Forest Service Handbook 2209.13, Chapter 90 (Grazing Permit Administration; Rangeland Management Decisionmaking). The environmental analysis was completed in accordance with all applicable laws, regulations, policies and plans; including, but not limited to the Clean Air Act, the Clean Water Act, the Endangered Species Act, the Federal Land Policy and Management Act, the National Forest Management Act, the National Historic Preservation Act and the Archeological Resource Protection Act.

The Decision Notice and Finding of No Significant Impact for the Windmill West Allotment was signed by Michael T. Elson, District Ranger, Flagstaff Ranger District on September 24, 2014. Information specific to this Allotment Management Plan can be found in the Decision Notice and Finding of No Significant Impact and in the Project Record for the Environmental Assessment for the Windmill West Allotment.

RESPONSIBLE OFFICIAL

The Windmill West grazing allotment encompasses NFS lands on both the Flagstaff Ranger District and the Red Rock Ranger District of the Coconino National Forest.

Per the letter dated September 15, 2014, the responsibility for grazing permit administration, grazing allotment management, and decision authority for the environmental analysis for the Windmill West grazing allotment has been delegated to the District Ranger of the Flagstaff Ranger District.

ANNUAL OPERATING INSTRUCTIONS

Annual Operating Instructions (AOI) will be issued prior to the beginning of each grazing season (summer and winter) and are part of the Term Grazing Permit as indicated in Part 2, Section 8, paragraph (a). Annual Operating Instructions will be developed cooperatively with the permittee and will include instructions and/or information related to the following: authorized livestock numbers; period of use; pasture grazing schedule; drought management; grazing strategy; allowable utilization standards; grazing intensity standards; monitoring; mitigation measures; range improvements; salting/protein block practices; portable water hauling; fire protection; and motor vehicle use/restrictions. As needed, other instructions may be included in the AOI. The AOI may be amended during the grazing season due to climatic changes that affect resource conditions, management needs, or other unexpected changes affecting the allotment. Developing these plans each grazing season and making the necessary adjustments throughout the season as conditions change provides the needed flexibility for livestock operations in the Southwest.

ALLOTMENT MANAGEMENT

The Windmill West Allotment is located southwest of Flagstaff, Arizona and is roughly bounded by Highway 89A on the east, the City of Cottonwood to the south, the Verde River and the Sycamore Wilderness to the west, and the Navajo Army Depot to the north. The allotment contains approximately 120,176 acres. Approximately 108,121 acres within the allotment are National Forest System land with the remainder being either private or state land.

Permitted Livestock Grazing Area
The permitted livestock grazing area includes the following main grazing pastures and livestock trails/driveways (see Allotment Maps dated November 20, 2015):

1. **Summer Use Pastures**
   Winter Cabin Holding, East Barney, West Barney, Harding Point, Mexican Pocket, Fry Park East, Fry Park West, Lockwood Springs, Mill Park, Metz, and Rogers Lake.

2. **Winter Use Pastures**
   Black Tank, Casner Mountain, Wheatfield, Black Mountain, Sugarloaf, Greasy West, Greasy East, Red, Duff Mesa, Duff Flat, DK Unit, Malpais, Dutch Kid, Strip, Sheepshead Holding, and North Gyberg.

3. **Livestock Trails and Driveways**
   Mooney Trail and the Winter Cabin Driveway

Pastures Closed to Grazing
In accordance with the Decision Notice and Finding of No Significant Impact for the Windmill West Allotment that was signed on September 24, 2014, the following pastures have been closed to livestock grazing and are no longer part of the Windmill West allotment: North Sycamore, South Sycamore, Winter Cabin (except the Winter Cabin Driveway), Loy Canyon, Secret Mountain, South Gyberg, #51, and #60. Since these pastures are no longer part of the Windmill West allotment they are not shown on the Allotment Maps dated November 20, 2015.

Permitted Livestock
Permitted livestock numbers for the permitted grazing area will be a maximum of 565 head of adult cattle or 6,780 AUMs (equivalent of 565 head of adult cattle for twelve months).

Annual Authorized Livestock Numbers
Annual authorized livestock numbers will be based on existing conditions, available water and forage, and predicted forage production for the year. Annual authorized livestock numbers will not exceed permitted numbers and therefore will always be between 0 and 6,780 AUMs. Adjustments to the annual authorized livestock numbers may occur during the grazing season; adjustments may be in the form of additional livestock or a reduction in livestock numbers. These adjustments will be based on current conditions verified by range inspections. If additional livestock are added during the grazing season, the maximum permitted Animal Unit Months (6,780) will not be exceeded.

Season of Use
The permitted season of use will be yearlong.

Pasture Management

Livestock use of pastures on the allotment will occur using either a deferred-rotation or a deferred rest-rotation management system which will allow for plant growth and recovery. Having the option to use either a deferred-rotation or a deferred rest-rotation grazing system will allow the Forest to adjust livestock management to meet variable resource conditions and Forest management needs. Generally pastures will be grazed only once during the grazing year. However, pasture re-entry may be needed to facilitate livestock movement on the allotment. Pastures will be grazed no more than once per year unless authorized by the Responsible Official when conditions warrant. Pasture re-entry will only be authorized if it has been determined through range inspections that soil, water and vegetation conditions are appropriate, and that utilization guidelines for the pasture will not be exceeded as a result of re-entry.

Forage Utilization Guideline

Utilization is defined as the proportion or degree of current year's forage production that is consumed or destroyed by animals (including insects). It is a comparison of the amount of herbage left compared with the amount of herbage produced during the year. Utilization is measured at the end of the growing season when the total annual production can be accounted for and the effects of grazing in the whole management unit can be assessed.

A management guideline of conservative use (30-40 percent forage utilization as measured at the end of the growing season) will be employed to maintain or improve rangeland vegetation and long term soil productivity. Within riparian areas, allowable use will not exceed 20 percent on the woody vegetation when measured at the scale of the pasture. Both the herbaceous and woody vegetation utilization guidelines represent the utilization level for combined livestock and wildlife use. Annual reductions in the forage utilization guideline may be necessary based on resource conditions.

Additional information regarding the Utilization guideline can be found in the Monitoring section of the Allotment Management Plan.

Grazing Intensity Guideline

Grazing intensity (or Seasonal Utilization) is defined as the amount of herbage removed through grazing or trampling during the grazing period. Grazing intensity will be measured at the end of each pasture's livestock grazing period.

Grazing intensity will be managed to allow for the physiological needs of plants. For the summer range, conservative to moderate grazing intensity (30-50 percent) will be the management guideline in the late spring to early summer months when sufficient opportunity exists for plant regrowth. During the remainder of the summer grazing period, grazing intensity will be managed at conservative levels (30-40 percent) when the potential for plant regrowth is limited. For the winter range, grazing intensity will also be managed at conservative levels (30-40 percent). On both summer and winter ranges, grazing intensity will be managed to allow for the physiological needs of plants. Annual reductions in the grazing intensity guideline may be necessary based on resource conditions.

Additional information regarding the Grazing Intensity guideline can be found in the Monitoring section of the Allotment Management Plan.

Summer and Winter Range Use Period
Generally, the Summer Range use period will be 6 months and the Winter Range use period will be 6 months. However, the actual use period and movement between the summer and winter ranges will be based on vegetation, climatic conditions, and operational needs of the permittee.

Pasture Grazing Period
The length of the grazing period within each pasture will be approximately 5 to 60 days and will be based upon climatic conditions, existing and predicted forage production, pasture size, authorized livestock numbers and the need to provide for plant regrowth following grazing. Other factors that may occasionally affect the grazing period include drought and wildfires.

Pasture Use Restrictions
1. Rogers Lake Pasture. May not be used prior to July 15 unless the fence identified in Item #1 of the New Structural Range Improvements section (page 6) is constructed.
2. Fry Lake East Pasture. May not be used prior to July 15 unless the fence identified in Item #2 of the New Structural Range Improvements section (page 6) is constructed.
3. North Gyberg Pasture. See restrictions for Arizona Cliffrose in the Mitigation Measures for Special Status Species section (pages 8 and 9).

Mooney Trail Use
Cattle may be moved between the summer range and winter range using the Mooney Trail in the Black Tank Pasture. The Mooney Trail is a joint livestock/recreational trail about 4.5 miles long, extending from section 35-T19N-R4E on the Flagstaff Ranger District south to section 16-T18N-R4E on the Red Rock Ranger District. Use of the Mooney Trail will generally occur twice a year; once in the late Spring (late May/early June) when cattle are moved from the winter range to the summer range and again in the late Fall (late October/early November) when cattle are moved from the summer range to the winter range. When the Mooney Trail is in use as a livestock driveway, the trail will be closed to public access. A trail assessment will be conducted by a Forest trail specialist and a rangeland management specialist before and after the livestock drive to ensure safety of the permittee and general public.

Winter Cabin Livestock Driveway Use
Cattle may be moved between the Winter Cabin Holding pasture and the Lockwood Springs pasture using the Winter Cabin Livestock Driveway. Cattle are to be actively herded and driven between the pastures when using the driveway. The Winter Cabin Livestock Driveway will not be used as a holding or grazing pasture.

Use of Mineral/Nutrient Supplements
Mineral and protein supplements (typically salt and protein blocks) are generally necessary in range livestock operations and can be used to improve livestock distribution. The following guidelines will be used when placing salt and protein blocks:

1. In general, salt and protein blocks should not be placed within ¼ mile of water or riparian areas.
2. To aid in livestock distribution, salt and protein blocks should generally be placed in areas of light forage utilization.

3. Salt and protein blocks should not be placed in areas of depleted range, erosive soils, or sensitive plant or animal species.
4. Salt and protein blocks will be located away from known cultural resources.
5. No more than three blocks (50 lb. blocks) of salt/protein will be placed at any location at any one time.
6. The use of portable salt/protein block containers is encouraged but not mandatory.

Temporary Livestock Water

Temporary sites for livestock water may be needed and should be used as necessary to assist in livestock distribution. The following requirements will apply to temporary livestock water locations:

1. Coordinate with the District Rangeland Management Specialist to identify temporary livestock water locations and access routes for individual pastures prior to the grazing period.
2. To aid in livestock distribution, the temporary livestock water locations should generally be in areas of light forage utilization.
3. Temporary livestock waters should not be located in areas of depleted range, erosive soils, or sensitive plant or animal species.
4. Temporary livestock waters will be located away from known cultural resources.
5. Temporary livestock water locations will be moved, or will no longer be supplied with water, when the desired forage utilization levels have been reached in the area surrounding the temporary livestock water (utilization levels determined ¼ to ½ mile from the temporary water).
6. Escape ramps for small mammals and birds will be placed in all water troughs and open water storage tanks.
7. Temporary livestock water storage tanks and troughs will be removed by the end of the summer or winter grazing period.

STRUCTURAL RANGE IMPROVEMENTS

Existing Structural Range Improvements

Structural range improvements assigned to you for maintenance are listed in you Term Grazing Permit and are also identified on the allotment map. These improvements are to be fully maintained annually to comply with permit requirements (Part 2, Section 8i). The grazing permittee is responsible for all maintenance materials, supplies and equipment necessary to properly maintain all range structural improvements. The Forest will replace range structural improvement materials and/or supplies at the end of the improvement's life; when maintenance and repair is no longer feasible to keep the improvement properly functioning. The following specific guidelines apply to the operation, maintenance, and reconstruction of existing structural range improvements:

1. Permittee will notify the District Rangeland Management Specialist at least 60 days prior to the beginning of any maintenance work that requires the use of heavy equipment.
2. Any construction of replacement fencing will be done in accordance with specifications developed to facilitate wildlife passage.

3. Water will be left in permanent water troughs when cattle leave pastures.
4. Damage to or destruction of agaves should be avoided during structural improvement maintenance and reconstruction.
5. The spread of potential and existing noxious or invasive weeds by heavy equipment used in the maintenance or construction of structural range improvements will be prevented by cleaning the heavy equipment before entering the area and by avoiding weed infestations during travel.
6. Prevention measures from the State of Arizona Aquatic Invasive Species Management Plan (AZGFD 2011) will be employed to avoid spreading aquatic invasive nuisance species and pathogens during tank cleaning activities.
7. Prior to ground disturbing activities, archaeological sites within the project area will be identified and marked for avoidance. If any new sites are discovered during maintenance or reconstruction activities, they will be reported to the District or Forest archeologist and ground-disturbing work will be halted.
8. If heavy equipment is needed to maintain or reconstruct structural range improvements the work will only occur when the soils are dry enough to support heavy equipment without creating compaction or ruts. Exceptions may be made in emergencies or when higher soil moisture is needed as part of the maintenance or reconstruction activity.
9. Any maintenance you perform must conform to the standards specified by your District Rangeland Management Specialist.

In addition to the guidelines provided above, your Rangeland Management Specialist may provide additional standards/requirements for the operation, maintenance, and reconstruction of existing structural range improvements. Any operation, maintenance, or reconstruction activities you perform must conform to the standards specified by your District Rangeland Management Specialist.

New Structural Range Improvements

Prior to construction of any of the following structural range improvements, National Historic Preservation Act Section 106 compliance must be completed. Additionally, the following structural range improvements will follow site-specific construction guidelines issued by your Rangeland Management Specialist.

1. In order to protect the wetland vegetation in Roger's Lake, approximately 0.5 miles of fence will be constructed along the section line between sections 31 and 6 in the Roger's Lake Pasture to create a new pasture, North Roger's Lake. A gate will be constructed along the fence to allow livestock grazing to occur in North Roger's Lake pasture after July 15 and provided wildlife utilization of riparian species in North Roger's Lake pasture has not exceeded 20 percent utilization of woody vegetation or 40 percent utilization of other emergent vegetation. The proposed fencing will be constructed to specifications that facilitate safe wildlife passage.

2. Approximately 1.5 miles of livestock exclosure fence may be constructed if necessary to protect wetland vegetation in Fry Lake and to permit livestock grazing of the Fry Lake East pasture prior to July 15. The livestock exclosure fence would include a fenced lane

to the existing earthen stock pond in Fry Lake to allow for livestock watering. The proposed fencing will be constructed to specifications that facilitate safe wildlife passage.

3. Lockwood Spring may be fenced if monitoring indicates the needed to protect the spring and associated riparian areas from domestic livestock and wildlife browsing. If construction of the exclosure fence is necessary, the fence will be constructed of non-galvanized steel pipe or a combination of wooden posts and non-galvanized steel pipe. The exclosure fence would still allow livestock and wildlife access to the existing drinkers but would restrict access to Lockwood Spring. The Lockwood spring box would be plumbed to allow a portion of the water to discharge near the spring's natural emergence area.

VEGETATION TREATMENTS

Vegetation treatments that will improve soil condition, herbaceous cover, and watershed health may occur on up to 3,179 acres within the following pastures on the Windmill West allotment: Black Tank, Greasy East, Greasy West, and Malpais. The following guidelines are to be used for implementation of the vegetation treatments:

1. **NHPA Compliance:** Prior to implementation of vegetation treatments, National Historic Preservation Act Section 106 compliance must be completed for the proposed treatment areas.
2. **Treatment Areas - Locations:** Exact locations for the treatment areas were not identified in the Environmental Analysis because of limitations in the accuracy of the modeling used to identify potential treatment areas. Prior to implementation, final treatment areas will be determined by field surveys, repeat aerial imagery and the following criteria:
    - Treatment areas will be located in areas with unsatisfactory or impaired soil conditions.
    - Treatment areas will be located in areas where the potential juniper canopy cover (as identified in TES) is less than 10%, and current juniper canopy cover exceeds 10%.
3. **Treatment Areas - Size:** Treatment areas within the identified pastures are limited to the following: Black Tank pasture = 1,151 acres; Greasy East pasture = 280 acres; Greasy West pasture = 113 acres; Malpais pasture = 1,635 acres. Total of all vegetation treatment areas will not exceed 3,179 acres.
4. **Treatment Method:** Hand thinning of juniper trees to reduce the canopy cover and lopping and scattering of the resultant slash on site to aid in soil protection and nutrient cycling.
5. **Livestock Deferment:** Observations in similar treatment areas indicate that there are minimal impacts on herbaceous vegetation recovery from ongoing cattle grazing. However, if post-treatment monitoring shows cattle are congregating in treatment areas and impacting herbaceous vegetation establishment or recovery, pastures that include treatment areas may be deferred or rested from grazing (through use of the rest-rotation schedule) for up to one year after treatment to facilitate vegetation recovery.

6. **Reseeding:** In areas where pre-treatment canopy cover exceeds 40%, seeding may be necessary to facilitate vegetation recovery. If necessary, hand broadcast seeding will be done with a native grass and herbaceous seed mix consistent with TES potential vegetation composition.

DROUGHT MANAGEMENT STRATEGY

Allotment management may need to be adjusted during drought conditions. Following the Region 3 supplement to the Grazing Permit Administration Handbook 2209.13-2006-1, the Standardized Precipitation Index (SPI) combined with site-specific information will be used to assess drought conditions and determine necessary adaptive management alternatives. Forest Service Region 3 and Coconino National Forest drought management policies identify numerous adaptive management actions for mitigating grazing effects during drought. Any adaptive management actions necessary due to drought conditions will be decided on by the Responsible Official in consultation with the Rangeland Management Specialist and the grazing permittee. The following specific management actions may be used on the Windmill West Allotment during periods of drought:

1. Stocking levels (livestock numbers) may need to be reduced. Reductions may be necessary prior to the permitted season of use and/or during the permitted season of use.
2. Season of use may need to be shortened. Depending on the severity of the drought and the stocking level, a reduced grazing season may be necessary.
3. Pasture use periods may need to be shortened, and this may ultimately result in an early exit from the allotment.
4. Pastures may need complete rest from livestock use. How long a pasture, or pastures, will be rested depends on the severity of the drought.
5. Utilization and/or grazing intensity levels may need to be reduced. Depending on the severity of the drought and the stocking level, reduced utilization and/or grazing intensity levels will likely result in shortened pasture use periods and may ultimately result in an early exit from the allotment.
6. Lack of livestock water, or poor distribution of livestock water, may result in reduced pasture/allotment use periods.
7. Livestock use of planned rested pastures due to drought will not be authorized.

MITIGATION MEASURES FOR SPECIAL STATUS SPECIES

Mexican Spotted Owl

To minimize disturbance to the Mexican spotted owl (MSO), the use of mechanized equipment such as chainsaws and ATV/UTVs; spring branding; new construction of fences, corrals, or buildings; or cleaning, maintenance, or construction of stock tanks and drinkers with pipelines and storage tanks will not be permitted inside of Protected Activity Centers (PACs) during the MSO breeding season (March 1st –August 31st). Grazing-related activities in PACs during this sensitive period are limited to routine herding of livestock and fence maintenance.

The locations where mechanized equipment cannot be used during the MSO breeding season will be discussed with the grazing permittee during meetings to develop Annual Operating Instructions.

Arizona Cliffrose
North Gyberg Pasture will be grazed in accordance with Arizona Cliffrose Recovery Plan guidance, which currently states that the pasture will be rested every other year, only grazed from October-January, and that monitoring will occur (USDI FWS 1995). If the Recovery Plan is updated, management of the North Gyberg Pasture will reflect any change in guidance. If additional populations of Arizona cliffrose are detected outside of North and South Gyberg Pastures, protective measures will be implemented in compliance with the Arizona Cliffrose Recovery Plan to avoid and minimize impacts from cattle if necessary.

Additional information regarding monitoring of utilization on Arizona Cliffrose can be found in the Monitoring section of this Allotment Management Plan (page 10).

Arizona Bugbane
The guidance of the Arizona Bugbane Conservation Assessment and Strategy will be followed (USDA Forest Service 1995). The Lockwood Pasture (Fernow Draw) fence will be maintained to protect the Arizona bugbane population. The Coconino National Forest, in cooperation with the permittee and Fish and Wildlife Service (FWS), will collaborate and decide the appropriate action for long-term persistence of the species through revisions of the Conservation Strategy.

Agaves
Damage to or destruction of agaves should be avoided during vegetation treatments, structural improvement construction and maintenance.

Waterfowl
To protect nesting habitat for waterfowl, Fry Lake East and North Rogers Lake pastures will not be used by livestock from May 1 to July 15 unless the fences identified in Item #1 and #2 of the New Structural Range Improvements section (page 6) are constructed.

MONITORING

Two types of monitoring will be used for monitoring resource conditions and livestock management; implementation monitoring and effectiveness monitoring. Soil assessments and monitoring for utilization of Arizona cliffrose will also be performed on the allotment in coordination with the soil and botany programs. Both qualitative and quantitative monitoring methods will be used in accordance with the Interagency Technical References, Region 3 Rangeland Analysis and Management Training Guide, and the Region 3 Allotment Analysis Handbook. Monitoring frequency varies by each activity and will be accomplished collaboratively by Forest Service personnel, permittee, and cooperating agencies.

Implementation Monitoring
Implementation monitoring will be conducted on an annual basis and will include the following:

Permit Compliance: Throughout each grazing season, Forest Service personnel will monitor activities on the allotment to ensure compliance with Permit terms and conditions, the Allotment Management Plan, and the Annual Operating Instructions.

Livestock Actual Use: Permittee will keep accurate records regarding actual livestock numbers and pasture use dates on the form supplied as part of the Annual Operating Instructions. This form will be submitted to the Forest Service at the end of the grazing season.

Range Readiness: Range readiness is assessed prior to the start of the summer and winter grazing periods by Forest Service personnel to determine if vegetative conditions are ready for livestock grazing. For the summer grazing period, the range is considered ready for grazing once cool season grasses have leafed out, forbs are in bloom, and brush and aspen have leafed out. These characteristics indicate the growing season has progressed far enough for plants to replenish root reserves so that grazing will not seriously impact the forage plants. For the winter grazing period, the range will be considered ready for grazing when forage plants have recovered from the previous winter grazing period and sufficient forage exists to support authorized livestock numbers.

Grazing Intensity: Grazing intensity monitoring will occur within each of the main grazing pastures during, or immediately after, the period when livestock are grazing the pasture. Grazing intensity is defined as the amount of herbage removed through grazing or trampling during the grazing period. Grazing intensity will be used by the Forest Service and the permittee to control actual pasture moves. Livestock may need to be moved out of a pasture sooner if the grazing intensity guideline is reached before the planned move date. Likewise, livestock may stay longer in a pasture if grazing intensity is below the established guideline when the planned move date arrives. Grazing intensity measurements will be taken at locations within pastures using the "key area" concept. These key areas reflect the effects of livestock grazing within the entire pasture.

Utilization: Utilization monitoring will occur at the end of the growing season within each of the main grazing pastures. Utilization is defined as the proportion or degree of current year's forage production that is consumed or destroyed by animals (including insects). It is a comparison of the amount of herbage left compared with the amount of herbage produced during the year. Utilization is measured at the end of the growing season when the total annual production can be accounted for and the effects of grazing in the whole management unit can be assessed. Utilization measurements will be taken at locations within pastures using the "key area" concept. These key areas reflect the effects of livestock grazing within the entire pasture.

Utilization measurements can indicate the need for management changes prior to this need being identified through long term monitoring. If monitoring shows that the utilization guideline was exceeded in a pasture, the grazing schedule and/or cattle numbers will be

adjusted for the following year. If utilization is exceeded after these adjustments are made, then changes will be made to the grazing management system.

Utilization on Arizona Cliffrose: Monitoring of livestock and wildlife utilization on the current year's growth of Arizona Cliffrose would occur before, during, and after periods of livestock use. Three permanent utilization transects have been established in the North Gyberg pasture in areas that contain Arizona Cliffrose and are accessible to livestock. Utilization of current year's growth on Arizona Cliffrose will be determined using the Extensive Browse Method as described in Interagency Technical Reference, Utilization Studies and Residual Measurements (1996).

If necessary, and in consultation with the U.S. Fish and Wildlife Service, the utilization monitoring method may be changed or modified in the future. Additionally, if a new recovery plan for Arizona Cliffrose is developed in the future, the requirements for utilization monitoring may be revised and/or eliminated in accordance with the new recovery plan.

Forage Production and Ground Cover: Forage production assessments will be made to determine stocking levels for the summer and winter grazing periods and may also be used during the grazing season to determine if adjustments in the stocking level should be made. Qualitative assessments of ground cover will also be made and used as an indicator of condition and trend; observed changes may indicate the need to conduct effectiveness monitoring (condition and trend) prior to the scheduled interval.

Precipitation: Precipitation is currently recorded at 2 sites that approximate the precipitation for the allotment. Additional precipitation gauges may be placed on the allotment for more localized information.

Allotment Inspection: A written summary will be completed each year by Forest Service personnel to document the overall history of that year's grazing. This document will include a monitoring summary, livestock actual use, weather history, and a discussion of the year's accomplishments and problems. Information from this report will be used in preparing the following year's grazing plan.

Effectiveness Monitoring

Effectiveness monitoring will be used to evaluate the success of management in achieving the desired conditions. Effectiveness monitoring will occur within key areas on permanent transects at an interval of 10 years or less and will be accomplished collaboratively by Forest Service personnel, grazing permittee, and cooperating agencies. Effectiveness monitoring may also be conducted if data and observations from implementation monitoring (annual monitoring) indicate a need. Effectiveness monitoring will include the following:

Forage Production: Forage production surveys will be conducted using the best available methods at that time. Forage production data will be used as a tool to manage this allotment, but will not be the sole measurement to establish carrying capacity.

Vegetation and Ground Cover Monitoring: 20 long term vegetation and ground cover monitoring plots are located on the Windmill West allotment. These plots were established as Parker Three-Step monitoring clusters in the 1950's/1960's and were converted to Pace Frequency transects and 1/10 acre ocular vegetation canopy cover plots in 2000. Data was last collected from these plots in 2008 and 2009.

The Pace Frequency method will be used to collect vegetation frequency and ground cover data. This data will reflect changes and trends plant species abundance, plant species distribution and ground cover.

Ocular plant canopy cover plots (0.10 acre plots) will be used to document vegetation canopy cover by plant species. This data will allow for a comparison between existing conditions and the desired vegetative community conditions described in the Environmental Assessment for the Windmill West Allotment.

The monitoring methods identified for effectiveness monitoring may be changed or modified in the future as new methods are developed and/or the need arises for additional resource information. Any new monitoring methods adopted will be methods sanctioned and endorsed by the scientific and professional communities.

ADAPTIVE MANAGEMENT

Adaptive management will continue to be used on the allotment to maintain and improve the vegetation, soil, and watershed conditions to meet desired conditions. Adaptive management allows the Forest Service to adjust the timing, intensity, duration and frequency of livestock grazing in response to changing ecological conditions, climatic conditions, and management activities. If monitoring indicates that changes are needed, management will be modified in cooperation with the permittee and the changes will be implemented through the Annual Operating Instructions. Changes may include administrative decisions such as the specific number of livestock authorized annually, specific dates of grazing, intensity of grazing, the class of animal, or modifications in pasture rotations. Adaptive management changes in livestock management will not exceed the limits established in the environmental analysis decision document for the timing, intensity, duration, and frequency of livestock grazing.