

ENVIRONMENTAL ASSESSMENT

REAVIS AND TORTILLA STUDY AREA

GRAZING STRATEGY AND ASSOCIATED IMPROVEMENTS

USDA Forest Service
Mesa Ranger District
Maricopa County, Arizona

Lead Agency:

USDA Forest Service

Responsible Official:

ARTHUR L. WIRTZ
District Ranger

For Further Information contact:

J. RUSSELL ORR
Tonto National Forest
Mesa Ranger District
P.O. Box 5800
Mesa, AZ 85211

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REAVIS - TORTILLA ENVIRONMENTAL ASSESSMENT

CHAPTER 1 - PROJECT SCOPE

A. **Document Preparation:** Supporting documents utilized to create this environmental assessment are listed in the Appendix. These documents are on file at the Mesa Ranger District Office.

B. **Background - Purpose and Need:** The term grazing permit for the Reavis and Tortilla Allotments was canceled in May 1995 because of non-compliance with the conditions of the permit. Examination of previous NEPA documentation, management plans, and analysis reports showed that these documents did not adequately address the current issues involved with issuing a new term grazing permit on these allotments. This document is being prepared in conjunction with an updated allotment analysis so that a decision can be made concerning future livestock grazing on the referenced allotments.

The history of livestock grazing management on the Reavis and Tortilla Study Area can be found in the previous permit folders and allotment analysis folders for the Reavis and Tortilla Allotments.

Specific project objectives defined for the Reavis and Tortilla Study Area include:

1. Protect unique ecosystems (riparian and ponderosa pine).
2. Maintain the quality of water yielded from the study area.
3. Avoid additional conflict in recreation areas that are currently receiving heavy use.
4. Protect wildlife habitat, especially habitat for threatened, endangered, and sensitive species.
5. Permit livestock grazing on areas of full capacity range.

C. **Proposed Action:** Issue a ten year term grazing permit for the Reavis and Tortilla Allotments along with a grazing strategy and associated improvements necessary to properly manage livestock on the allotments.

D. **Decision to be made:** The District Ranger will decide whether or not to issue a new term grazing permit for the Reavis and Tortilla Allotments. If a new term grazing permit is issued, the District Ranger will decide whether to issue a permit based on the previous grazing system and permit, or to issue a permit based on the 1995 analysis and grazing strategy recommendations.

The District Ranger's decision, if to issue a new term grazing permit, will be implemented through an allotment management plan and a 10 year grazing permit.

E. Issues

The Forest Service has made extensive efforts to identify the major issues associated with the proposed action. In summary, the Forest Service involved members of the public, private groups, and state and other federal agencies by doing the following:

Sending a letter to determine interest in the proposed action.

Developing a list of interested publics for the analysis process.

Sending a draft list of issues to determine any additional issues or concerns.

Meeting with Arizona Game and Fish and U.S. Fish and Wildlife personnel to discuss issues and possible resolutions.

Sending a draft list of alternatives for resolving the issues. This list was sent to all participants for comments and suggestions.

Sending a copy of the environmental assessment for comments.

Public involvement and agency discussions resulted in the development of the key issues for consideration in the analysis. The key issues are listed below.

1. Protection of unique ecosystems (riparian and ponderosa pine).
2. Protection of water quality.
3. Protection of wildlife habitat.
4. Avoiding additional conflicts in heavy use recreation areas.
5. Capability of the area to support livestock grazing.

F. Evaluation Criteria

Objective 1

Area of unique ecosystems adversely affected - Measured in acres.

Objective 2

Area where ground cover would be adversely affected - Measured in acres.

Objective 3

Area of recreational use conflicts - Measured in acres.

Objective 4

Area of wildlife habitat adversely affected - Measured in acres.

Objective 5

Area of full capacity range available for livestock grazing - Measured in acres.

G. Project Location: The Reavis and Tortilla Study Area includes 66,000 acres (27,000 acres of full capacity range) south of Canyon and Apache Lakes located in the east end of the Superstition Wilderness. The area is situated on the Mesa Ranger District, Tonto National Forest, Maricopa County, Arizona. A general area map is located in the appendix (Appendix A).

H. Additional NEPA Analysis: These alternatives include all the reasonably foreseeable connected actions. The environmental effects estimated for this project consider the site specific effects of all foreseeable actions and mitigation measures. No additional environmental analysis would be done when the analyzed actions are actually implemented unless noted otherwise. If new information or unforeseen and unanalyzed actions become necessary in the future, additional site specific environmental analysis would be done before implementation. Monitoring of the grazing strategy may require future changes to the proposed unit management scheme, which would require additional NEPA analysis.

CHAPTER 2 - ALTERNATIVES

A. Alternative Development - Alternatives were developed that addressed the issues identified during public review. These alternatives were sent to the individuals, organizations and agencies on the scoping list for their comments and suggestions. A forest ID team was then utilized in the review of the draft alternatives. Final alternatives and a preferred action were developed using suggestions and comments from the public review and from the ID team.

The ID team compared seven alternatives:

Alternative 1, No Action - A term grazing permit would not be issued for livestock grazing on the Reavis and Tortilla Study Area. No range developments would be constructed, reconstructed, maintained or removed. The Reavis and Tortilla Study Area would remain in management level B in the Tonto Forest Plan.

Alternative 2, No Grazing - The Reavis and Tortilla Study Area would be moved to management level A during the Tonto Forest Plan revision. No grazing permit would be issued for the area.

Alternative 3 - Issue a term grazing permit for the same stocking rate, class of livestock and allotment area as the December 1990 term grazing permit. A term permit would be issued for 1800 yearlings from November 15th to June 15th within the current Reavis and Tortilla Allotment boundaries. Class of livestock would be limited to yearlings with actual numbers depending on the entry weight of the animals.

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Alternative 4 - Issue a yearlong term grazing permit for the stocking level and area determined by the 1995 allotment analysis. A term grazing permit would be issued for 250 cattle for the areas classified as full capacity range. Areas listed as no capacity would be removed from allotment boundaries and placed in management level A during the Tonto Forest Plan revision.

Alternative 5 - Issue a yearlong term grazing permit for 550 cattle utilizing the same area as permitted in the December 1990 term grazing permit. This alternative would be a conversion of the 1800 head, seven month permit to a yearlong cow-calf operation.

Alternative 6 - Issue a seasonal term grazing permit for 500 cattle on the units identified as full capacity range in the 1995 analysis. Cattle would be permitted to graze from November 1st until April 31st each year.

Alternative 7 - A new term grazing permit would not be issued. The areas identified as full capacity range in the 1995 analysis would be available for incorporation into adjoining allotments. Grazing strategies on adjoining allotments would be modified prior to the areas being added. The modified grazing strategies would be subject to NEPA review. (Alternative 7 is the preferred Action)

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B. Alternatives dropped from detailed study: No alternatives were dropped.

C. Alternative Comparison:

Alternative 1 - This is the "No Action" alternative required by the National Environmental Policy Act and regulations. This alternative represents continuation of the existing situation of no grazing permit, but does not resolve the conflict with direction in the Tonto Forest Plan. The current plan specifies that the Reavis and Tortilla Study Area will be utilized at management level B. Range developments would not be removed, maintained, reconstructed or constructed. Specific mitigation and monitoring requirements would not be implemented.

Alternative 2 - No Grazing - This alternative would require the Reavis and Tortilla Study Area be moved to management level A during the next Tonto Forest Plan revision. No term grazing permit would be issued. Following the move to management level A, range developments would be scheduled for removal. A list of the developments that would be removed is included in Appendix D.

Alternative 3 - Issue a term grazing permit for the same stocking rate, class of livestock and allotment area as the December 1990 term grazing permit. A term permit would be issued for 1800 Yearlings from November 15th until June 15th. The 1800 head of yearlings would be based on a 300-450 Lb. entry weight. Different weights would require adjustments as outlined in the Forest Service Permit Administration Manual. Assuming use of all accessible areas (37,679 acres), the stocking rate for this alternative would be 4.3 acres per animal unit month.

there was no 1990 permit; 33 needs to compare as far as I know

A. Management Constraints

37,679 acres available, 37,679 acres available full capacity
Plan on 1995 analysis

Shipping tickets would be required for all livestock entering and leaving the allotments.

Salt would be placed at least 1/4 mile from water developments, trails, roads and riparian areas. Salt grounds would be moved each season to prevent the establishment of permanent salt grounds. Any salt remaining at the end of the season (June 15) would be removed within 15 days.

The Horse Mesa Unit and the Crested Wheat Pasture of the Reavis Allotment would not be available to livestock permitted on the allotment.

The grazing period for the Lewis and Pranty Pasture would be determined annually by the Forest Service. The pasture would not be used at other times.

Livestock would be placed in the areas designated on the alternative map (see Appendix C) with a letter "A" when they first enter the allotments. Salt, herding and drift would be utilized to move livestock from the "A" areas to "B" areas during the course of the grazing season (see Appendix E). No livestock would be allowed in the "B" areas prior to April 1st each year.

Livestock arriving on the allotments or gathered from the allotments would not be held longer than 24 hours on National Forest Land before dispersing onto the allotments, or shipping. Livestock held longer than 24 hours would need to be placed on the base property.

All structural range developments listed in the term grazing permit but not scheduled for reconstruction would be maintained prior to livestock entering the allotments (see Appendix D).

Range developments scheduled for reconstruction would be completed prior to livestock entering the allotments. These developments are essential for management. The Forest Service would supply materials for reconstruction projects if funding is available. All labor required for these projects would be the responsibility of the permittee (see Appendix D).

Range developments scheduled for removal would be the responsibility of the Forest Service. These developments would not have to be removed prior to implementation of management (see Appendix D).

An allotment management plan to implement this alternative would be developed and made part of the Term Grazing Permit. This plan would be based on the previously approved Allotment Management Plan. The AMP would define agency and permittee responsibility for completing each development project. Permit modifications would be made to reflect permittee responsibilities on applicable projects. All projects would be completed to Forest Service Standards.

B. Mitigation requirements

A resource specialist would visit the staked or flagged location of all potential ground disturbing development projects to survey for cultural resources. Clearance would be obtained prior to any ground disturbance.

A resource specialist would visit the staked or flagged location of all development projects to certify the findings in the Biological Evaluation prior to project implementation.

C. Monitoring requirements

Annual range inspections would be conducted on both allotments. These inspections would document the following:

1. Livestock distribution.
2. Location of salt grounds.
3. Utilization on key forage species.
4. Utilization on woody and herbaceous species in riparian areas.
5. Development maintenance.
6. Compliance with the grazing schedule.

At the end of the third season of use, production-utilization studies would be conducted on both allotments. These studies would be combined with the results of the yearly inspections and transect summaries to determine the proper stocking rate. Adjustments in permitted use would be made if necessary.

Existing permanent trend transects on both allotments would be reread prior to the first grazing season. These transects would be reread at the end of the third grazing season.

Four cover-frequency transects would be established in upland areas on each allotment during the first grazing season. These transects would be reread at the end of the third grazing season.

D. Implementation Schedule - The proposed schedule is listed below:

Year 1 - Develop Allotment Management Plan. Construct, reconstruct and maintain structural range developments.

Year 2 - Construct, reconstruct and maintain structural range developments.

Year 3 - Initiate grazing strategy. Reread permanent trend transects. Establish cover-frequency transects. Conduct a range inspection.

Year 4 - Conduct a range inspection.

Year 5 - Conduct a range inspection.

Year 6 - Conduct a production-utilization study on both allotments. Reread permanent trend transects and cover-frequency transects. Determine proper stocking rate for the allotments and adjust the permit if necessary.

Alternative 4 - Issue a term grazing permit for the stocking rate and area determined by the 1995 allotment analysis. A term grazing permit would be issued for 250 cattle yearlong for the area classified as full capacity range in the analysis. The total full capacity range would be 27,005 acres with a stocking rate of 9 acres per animal unit month. The area listed as no capacity would be placed in management level A (no grazing) during the Tonto National Forest Management Plan revision and would not be included in the allotment boundary for the new grazing permit.

A. Management Constraints

Two growing seasons of rest would be scheduled for each growing season of use for both the cool season and the warm season forage species.

A grazing schedule for the units is included in Appendix E.

All structural range developments listed in the term grazing permit but not scheduled for reconstruction would be maintained prior to livestock entering a unit (see Appendix D).

Range developments scheduled for construction or reconstruction would be completed prior to livestock entering a unit. These developments are essential for management. The Forest Service would supply materials for these projects if funding is available. All labor required would be the responsibility of the permittee (see Appendix D).

Range developments scheduled for removal would be the responsibility of the Forest Service. These developments would not have to be removed prior to implementation of management (see Appendix D).

An allotment management plan to implement this alternative would be developed and made part of the Term Grazing Permit. The AMP would define agency and permittee responsibility for completing each development project. Permit modifications would be made to reflect permittee responsibilities on applicable projects. All projects would be completed to Forest Service Standards. The requirement for scheduled growing season rest for cool season and warm season forage species would be addressed in the allotment management plan.

B. Mitigation requirements

A resource specialist would visit the staked or flagged location of all potential ground disturbing development projects to survey for cultural resources. Clearance would be obtained prior to any ground disturbance.

A resource specialist would visit the staked or flagged location of all development projects to certify the findings in the Biological Evaluation prior to project implementation.

C. Monitoring requirements

Annual range inspections would be conducted on all utilized units. These inspections would document the following:

1. Livestock distribution.
2. Utilization on key forage species.
3. Utilization on woody and herbaceous species in riparian areas.
4. Development maintenance.
5. Compliance with the grazing strategy.

Existing permanent trend transects on the units would be reread prior to initial use of the units by livestock. These transects would be reread at six year intervals.

Two cover-frequency transects would be established on each unit prior to use of the units by livestock. These transects would be reread on three year intervals.

D. Implementation Schedule - The proposed schedule is listed below:

Year 1 - Develop Allotment Management Plan. Construct, reconstruct and maintain range developments.

Year 2 - Construct, reconstruct, and maintain range developments.

Year 3 - Reread permanent trend transects, establish cover-frequency transects, initiate livestock use, conduct a range inspection.

Alternative 5 - Issue a yearlong term grazing permit for 550 cattle utilizing the same area permitted in the December 1990 term grazing permit. The allotments would be utilized in a four-pasture rest-rotation grazing strategy that would provide both cool season and warm season rest for forage species. This alternative would be a conversion of the previous 1800 head seasonal yearling permit to a yearlong operation. Pastures for this alternative are shown on the alternative map (see Appendix C). The grazing schedule is shown in Appendix E. Assuming use of all accessible areas (37,679 acres), the stocking rate for this alternative would be 5.7 acres per animal unit month.

A. Management constraints

All structural range developments listed in the term grazing permit but not scheduled for reconstruction would be maintained prior to livestock entering the allotments (see Appendix D).

Range developments scheduled for construction or reconstruction would be completed prior to livestock entering the allotments. These developments are essential for management. The Forest Service would supply materials for these

projects if funding is available. All labor required would be the responsibility of the permittee (see Appendix D).

Range developments scheduled for removal would be the responsibility of the Forest Service. These developments would not have to be removed prior to implementation of management (see Appendix D).

An allotment management plan to implement this alternative would be developed and made part of the Term Grazing Permit. The AMP would define agency and permittee responsibility for completing each development project. Permit modifications would be made to reflect permittee responsibilities on applicable projects. All projects would be completed to Forest Service Standards.

B. Mitigation requirements

A resource specialist would visit the staked or flagged location of all potential ground disturbing development projects to survey for cultural resources. Clearance would be obtained prior to any ground disturbance.

A resource specialist would visit the staked or flagged location of all development projects to certify the findings in the Biological Evaluation prior to project implementation.

C. Monitoring requirements

Annual range inspections would be conducted on both allotments. These inspections would document the following:

1. Livestock distribution.
2. Location of salt grounds.
3. Utilization on key forage species.
4. Utilization on woody and herbaceous species in riparian areas.
5. Development maintenance.
6. Compliance with the grazing schedule.

At the end of the third season of use, production-utilization studies would be conducted on both allotments. These studies would be combined with the results of the yearly inspections and transect summaries to determine the proper stocking rate. Adjustments in permitted use would be made if necessary.

Existing permanent trend transects on both allotments would be reread prior to the first grazing season. These transects would also be reread at the end of the third grazing season.

Four cover-frequency transects would be established in upland areas on each allotment during the first grazing season. These transects would be reread at the end of the third grazing season.

D. Implementation Schedule - The proposed schedule is listed below:

Year 1 - Develop Allotment Management Plan. Construct, reconstruct and maintain structural range developments.

Year 2 - Construct, reconstruct and maintain structural range developments.

Year 3 - Initiate grazing strategy. Reread permanent trend transects. Establish cover-frequency transects. Conduct a range inspection.

Year 4 - Conduct a range inspection.

Year 5 - Conduct a range inspection.

Year 6 - Conduct a production-utilization study on both allotments. Reread permanent trend transects and cover-frequency transects. Determine proper stocking rate for allotments and adjust the permit if necessary.

Alternative 6 - Issue a seasonal term grazing permit for the stocking level and area determined by the 1995 allotment analysis. A term grazing permit would be issued for 500 cattle on the units identified as full capacity range in the 1995 analysis. Cattle would be permitted to graze from November 1st until April 31st each year. Total full capacity range would be 27,005 acres with a stocking rate of 9 acres per animal unit month. The area listed as no capacity would be placed in management level A (no grazing) during the Tonto National Forest Management Plan revision and would not be included in the allotment boundary for the new grazing permit.

A. Management constraints

At least one year rest for every two years of use would be provided for each of the units (see Appendix E). *www*

All structural range developments listed in the term grazing permit but not scheduled for reconstruction would be maintained prior to livestock entering a unit (see Appendix D). *?*

Range developments scheduled for construction or reconstruction would be completed prior to livestock entering a unit. These developments are essential for management. The Forest Service would supply materials for these projects if funding is available. All labor required would be the responsibility of the permittee (see Appendix D). *good*

Range developments scheduled for removal would be the responsibility of the Forest Service. These developments would not have to be removed prior to implementation of management (see Appendix D).

Shipping tickets would be required for all livestock entering or leaving the units.

Salt would be placed at least 1/4 mile from water developments, trails, roads and riparian areas. Salt grounds would be moved each season to prevent the establishment of permanent salt grounds. Any salt remaining at the end of the season (April 31) would be removed within 15 days.

Livestock arriving on the units or gathered from the units would not be held longer than 24 hours on National Forest Land before dispersing onto the units or shipping. Livestock held longer than 24 hours would be placed on the base property.

An allotment management plan to implement this alternative would be developed and made part of the Term Grazing Permit. The AMP would define agency and permittee responsibility for completing each development project. Permit modifications would be made to reflect permittee responsibilities on applicable projects. All projects would be completed to Forest Service Standards. The requirement for one year rest for every two years of use would be addressed in the allotment management plan.

B. Mitigation requirements

A resource specialist would visit the staked or flagged location of all potential ground disturbing development projects to survey for cultural resources. Clearance would be obtained prior to any ground disturbance.

A resource specialist would visit the staked or flagged location of all development projects to certify the findings in the Biological Evaluation prior to project implementation. a

C. Monitoring requirements

Annual range inspections would be conducted on all utilized units. These inspections would document the following:

1. Livestock distribution.
 2. Utilization on key forage species.
 3. Utilization on woody and herbaceous species in riparian areas.
 4. Development maintenance.
 5. Compliance with the grazing strategy.
- Annual
inspections*

Existing permanent trend transects on the units would be reread prior to initial use of the units by livestock. These transects would be reread at six year intervals.

Two cover-frequency transects would be established on each unit prior to use of the units by livestock. These transects would be reread on three year intervals.

D. Implementation Schedule - The proposed schedule is listed below:

Year 1 - Develop Allotment Management Plan. Construct, reconstruct and maintain range developments.

Year 2 - Construct, reconstruct and maintain range developments.

Year 3 - Reread permanent trend transects, establish cover-frequency transects, initiate livestock use, conduct a range inspection.

Alternative 7 - No new term grazing permit would be issued. The areas identified in the 1995 analysis as full capacity range would be available for addition to adjoining allotments. Grazing strategies on adjoining allotments would be modified prior to addition of the full capacity units. The area listed as no capacity would be placed in management level A (no grazing) during the Tonto National Forest Management Plan revision and would not be included in adjoining allotments.

A. Management Constraints

Modified grazing strategies on adjacent allotments would be subject to NEPA review. Implementation of this alternative would not require the issuance of a new term grazing permit. Permitted livestock numbers on the adjoining allotments could be modified at the same time the grazing strategies are modified.

Range development requirements, except for removal, would be addressed at the time the units are incorporated with an existing grazing strategy.

Range developments scheduled for removal would be the responsibility of the Forest Service. These developments would not have to be removed prior to implementation of livestock management on the full capacity units (see Appendix D).

B. Mitigation requirements

These would be required when the units are included with adjacent grazing allotments.

C. Monitoring requirements

These would be required when the units are included with adjacent grazing allotments.

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CHAPTER 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

A. Vegetation

1. Affected Environment

Riparian Communities - Riparian communities on the Reavis and Tortilla Study Area comprise approximately 2% of the total study area (1361 acres). This 2% can be divided into two categories; Mixed Broadleaf and Cottonwood Willow. Mixed Broadleaf totals more than 95% of the riparian acreage. The two categories are defined as follows:

Mixed Broadleaf - This riparian deciduous forest occurs along the rubble-bottomed perennial or near perennial streams within this area. The community is at a higher elevation than the Cottonwood-Willow community and is the characteristic riparian for the study area. Typical tree species include Sycamore (*Platanus wrightii*), Alder (*Alnus oblongifolia*), Willow (*Salix gooddingii*), Walnut (*Juglans major*), Ash (*Fraxinus velutina*), Cottonwood (*Populus fremontii*) and other winter deciduous trees. Past grazing use in these areas has been extremely variable with heavy use in areas such as Tortilla Ranch and Reavis Ranch and virtually no use in rough canyon bottoms such as lower Fish Cr  ek and Lower Tortilla Creek. Approximately 80% of the riparian areas can be classified as confined systems in relation to livestock grazing. Confined systems are those located in narrow steep canyons where any livestock use would be limited to the riparian area because of topographic features (cliffs and steep slopes). Confined riparian systems could be heavily impacted by livestock use.

Cottonwood-Willow - The Cottonwood-Willow Community begins to occur at the lowest elevations of the study area. This community is dependent upon and maintained by periodic spring flooding, but because of the narrow, confined nature of most of the lower elevation riparian areas, The sand and gravel bars necessary for regeneration of these trees are limited.

Upland Communities - The study area upland communities can be divided into five categories; Semi-desert Grassland (12,927 acres), Interior Chaparral (18,200 acres), Coniferous Forest (674 acres), Pinyon-Juniper Woodland (4841 acres) and Sonoran Desert Scrub (27,417 acres).

Semi-desert Grassland - This community is generally located at a higher elevation than Sonoran Desert Scrub, but lower than Interior Chaparral. Exceptions to this pattern occur because of soil type and aspect. Grassland will often be found on south facing slopes with Interior Chaparral found on the north face. Large areas of Semi-desert Grassland can be found in upper Tortilla Creek, Upper LaBarge Creek and along the Castle Dome Divide. Plants common to this community include; Wright Buckwheat (*Eriogonum wrightii*), Menodora (*Menodora scabra*), Beargrass (*Nolina microcarpa*), Squirreltail (*Sitanion hystrix*), Mesquite (*Prosopis juliflora*), Holly-grape (*Mahonia haematocarpa*), Mountain Laurel (*Rhus ovata*), Juniper (*Juniperus coahuilensis*), Sideoats grama (*Bouteloua curtipendula*), Plains lovegrass (*Eragrostis*

intermedia), Snakeweed (*Gutierrezia sarothrae*), Shrub Oak (*Quercus turbinella*), Sotol (*Dasyliiron wheeleri*), Mountain Mahogany (*Cercocarpus montanus*), Catclaw Mimosa (*Mimosa biuncifera*), Three-awn (*Aristida*), Yucca (*Yucca baccata*), Hollyleaf Buckthorn (*Rhamnus crocea*), Desert Ceanothus (*Ceanothus greggii*), Pricklypear (*Opuntia phaeacantha*), Turpentine Bush (*Aploppapus laricifolius*), Junegrass (*Koeleria macrantha*), and Lehmann Lovegrass (*Eragrostis Lehmanniana*).

Interior Chaparral - This community is characterized by evergreen shrubs and is found on northern aspects at the lower elevations and over the general area at higher elevations. The chaparral communities at lower elevations are generally open and usable by livestock. The higher elevation communities have a greater percentage of manzanita, occur on steep slopes and form a dense thicket that livestock will not utilize. Common shrubs in the chaparral include; Mountain Mahogany (*Cercocarpus montanus*), Skunkbush Sumac (*Rhus trilobata*), Desert Ceanothus (*Ceanothus greggii*), Yellow Silktassel (*Garrya flavescens*), Wright Silktassel (*Garrya wrightii*), Hollyleaf Buckthorn (*Rhamnus crocea*), Mountain laurel (*Rhus ovata*), Manzanita (*Arctostaphylos pringlei* and *Arctostaphylos pungens*), Catclaw Mimosa (*Mimosa biuncifera*), and Shrub Oak (*Quercus turbinella*) with inclusions of Juniper (*Juniperus coahuilensis* and *Juniperus deppeana*), Pinyon (*Pinus californiarum*), Arizona Cypress (*Cupressus arizonica*) and Emory Oak (*Quercus emoryi*).

Coniferous Forest - Isolated stands of Ponderosa Pine (*Pinus ponderosa*) are located in the headwaters of Reavis Creek and Pine Creek with small stands extending north along the riparian corridors for several miles. These trees are thought to be relics of forests originally continuous to the southern part of Arizona from Rocky Mountain forests. Pinyon (*Pinus californiarum*), Juniper (*Juniperus coahuilensis*), and Oak (*Quercus grisea*) are interspersed among the Ponderosa Pine, with a shrub understory of Manzanita (*Arctostaphylos pungens*) and Wright Silktassel (*Garrya wrightii*).

Pinyon-Juniper Woodland - This community, thought to have originated in the Mexican Sierra Madre, is a blending of vegetative types along the eastern boundary of the study area. Pinyon (*Pinus californiarum*) is the predominate tree with Juniper (*Juniperus coahuilensis* and *Juniperus deppeana*) and Oak (*Quercus grisea*, *Quercus palmeri*, *Quercus emoryi*, and *Quercus turbinella*) interspersed. Shrubs include Red Mahonia (*Mahonia haematocarpa*), Sageretia (*Sageretia wrightii*), Serviceberry (*Amelanchier utahensis*) and Hollyleaf Buckthorn (*Rhamnus crocea*). Other plants include Cactus (*Opuntia spinosior*, *Opuntia phaeacantha* and *Opuntia chlorotica*), Yucca (*Yucca baccata*), Green Sprangletop (*Leptochloa dubia*), Plains Lovegrass (*Eragrostis intermedia*) and Sideoats Grama (*Bouteloua curtipendula*).

Sonoran Desert Scrub - three separate and distinct areas represent this biotic community within the study area. The largest is associated with the volcanic formations of Fish Creek Mountain, Tortilla Mountain, and Horse Mesa. These areas are characterized by cliffs, rock outcrops and very shallow, poorly developed soils (Lithic Torriorthents). Small islands of moderately deep to deep soils occur within these areas. The areas with moderately deep to deep soils support Jojoba (*Simmondsia chinensis*), Yellow Palo Verde (*Cercidium microphyllum*), Cactus (*Opuntia fulgida*, *Opuntia bigelovii*, *Opuntia*

acanthocarpa, *Opuntia leptocaulis*, *Cereus giganteus*, *Echinocereus engelmannii* and *Mammillaria microcarpa*), Curley Mesquite (*Hilaria berlanderi*), Snakeweed (*Gutierrezia sarothrae*), Fairy Duster (*Calliandra eriophylla*), Brittle Bush (*Encelia farinosa*), Rothrock Grama (*Bouteloua rothrockii*), Three-awn (*Aristida*), and Catclaw Mimosa (*Mimosa biucifera*). The areas of shallow soil and rock outcrop support Hopseed Bush (*Dodonea viscosa*), Ocotillo (*Fouquieria splendens*), Agave (*Agave chrysantha*), *Crossosoma* (*Crossosoma bigelovii*), Threeawn (*Aristida* sp.), Club Moss (*Selaginella* sp.), Cactus (*Opuntia acanthocarpa*) and various other plants that can survive where there has been very little soil development.

The second area is located in upper LaBarge Creek. This area is within the Superstition Volcanic Field, but has considerably more soil development than the area discussed above. Common plants in the area include Saguaro (*Cereus giganteus*), Yellow Palo Verde (*Cercidium microphyllum*), Jojoba (*Simmondsia chinensis*), Wolf Berry (*Lycium parishii*), Catclaw (*Acacia greggii*), Ratany (*Krameria grayii* and *Krameria parviflora*), Cactus (*Opuntia fulgida*, *Opuntia bigelovii*, *Opuntia acanthocarpa*, *Opuntia engelmannii*, *Echinocereus engelmannii* and *Mammillaria microcarpa*), Mesquite (*Prosopis velutina*) Desert Hackberry (*Celtis pallida*), Threeawn (*Aristida* sp.), Fairy Duster (*Calliandra eriophylla*), Snakeweed (*Gutierrezia sarothrae*) and Sideoats Grama (*Bouteloua curtipendula*).

The third area is located in Lewis and Pranty Creek and in Pine Creek just below the Semi-Desert Grassland Community. Soils are mostly moderately deep and have originated from decomposed granite. The area supports a good cover of Sonoran Desert Scrub including Jojoba (*Simmondsia chinensis*), Yellow Palo Verde (*Cercidium microphyllum*), Blue Palo Verde (*Cercidium floridum*), Saguaro (*Cereus giganteus*), Fairy Duster (*Calliandra eriophylla*), Catclaw (*Acacia greggii*), Snakeweed (*Gutierrezia sarothrae*), Wright Buckwheat (*Eriogonum wrightii*), Cactus (*Opuntia acanthocarpa*), Desert Hackberry (*Celtis pallida*), Yucca (*Yucca baccata*) and Mesquite (*Prosopis juliflora*).

2. Environmental Consequences

Unique Ecosystems (Riparian and Ponderosa Pine)

Alternative 1 - The No Action alternative would maintain the current situation of no livestock grazing. No unique ecosystems would be affected by livestock grazing.

Alternative 2 - The No Grazing alternative would maintain the current situation of no livestock grazing. No unique ecosystems would be affected by livestock grazing.

Alternative 3 - This alternative would stock the entire area previously included in the Reavis and Tortilla Allotments with 1800 Yearlings from November 15th until June 15th. Areas classified as unique ecosystems would be open to grazing. This type of grazing strategy would concentrate livestock in riparian areas for the entire grazing season including the months of May and June when riparian regeneration is especially vulnerable to livestock use. It

would also stock the allotment areas with more than twice the number of livestock determined proper during the 1995 analysis. Of the 1361 acres of riparian on the allotments, approximately 1000 acres would be adversely affected by this alternative. The remaining 361 acres is an estimate of the riparian community that could not be accessed by livestock. Of the 674 acres of Ponderosa Pine on the allotments, Approximately 50%, or 337 acres, has an understory accessible to livestock and would be adversely affected.

Alternative 4 - This alternative would stock only those areas determined as full capacity range in the 1995 analysis. Unique ecosystems effected would include 175 acres of riparian that are not considered as confined. A grazing strategy would provide two growing seasons rest for every growing season of use for these areas. However, because of the lack of reliable water, the one warm growing season of use could result in six months of concentrated use in the riparian communities adversely affecting these areas.

Alternative 5 - This alternative would convert the previous permit to a yearlong cow-calf operation. The previous Tortilla and Reavis Allotment areas would be used. Effects on unique ecosystems would be severe. The stocking rate would be almost double the estimated rate identified in the 1995 analysis. All accessible riparian and Ponderosa Pine areas would be utilized, and during the growing season livestock could concentrate in these areas for as long as six months adversely affecting the resources.

Alternative 6 - This alternative would stock only those areas determined as full capacity range in the 1995 analysis. Unique ecosystems affected would include 175 acres of riparian that is not confined. This alternative would not utilize riparian during the warm growing season and would not place livestock on the area when water is considered a limiting factor. No adverse effects to unique ecosystems would be expected.

Alternative 7 - A new term grazing permit would not be issued. No unique ecosystems would be affected by livestock grazing.

	<u>Alt. 1</u>	<u>Alt. 2</u>	<u>Alt. 3</u>	<u>Alt. 4</u>	<u>Alt. 5</u>	<u>Alt. 6</u>	<u>Alt. 7</u>
Acres of Unique Ecosystems Adversely affected.	0	0	1337	175	1337	0	0

Upland Communities

Alternative 1 - The No Action alternative would maintain the current situation of no livestock grazing. No upland communities would be affected by livestock grazing.

Alternative 2 - The No Grazing alternative would maintain the current situation of no livestock grazing. No upland communities would be affected by livestock grazing.

Alternative 3 - This alternative would stock the entire area previously included in the Reavis and Tortilla Allotments with 1800 Yearlings from

November 15th until June 15th. This type of grazing strategy would permit livestock on areas that have been determined as no capacity range in the 1995 analysis resulting in conflicts with recreational use, unique ecosystems, wildlife habitat and fragile soils. This alternative would also stock the area with more than twice the number of livestock determined proper in the 1995 analysis. Of the total 37,229 acres of no capacity upland communities, approximately 13,937 acres could be adversely affected by this alternative. Of the 26,830 acres of full capacity upland communities an estimated 13,415 acres could be adversely affected because of the excessive stocking rate.

Alternative 4 - This alternative would stock only those areas determined as full capacity range in the 1995 analysis. Upland communities affected would include 26,830 acres. A grazing system would provide two growing seasons rest for every growing season of use for these areas. No adverse effect on upland communities would be expected with this alternative.

Alternative 5 - This alternative would convert the previous permit to a yearlong cow-calf operation. The previous Tortilla and Reavis Allotment areas would be used. This type of grazing strategy would permit livestock on areas that have been determined as no capacity range in the 1995 analysis resulting in conflicts with recreational use, unique ecosystems, wildlife habitat and fragile soils. This alternative would also stock the areas with almost twice the number of livestock determined proper in the 1995 analysis. Of the total 37,229 acres of no capacity upland communities, approximately 13,937 acres could be adversely affected by this alternative. Of the 26,830 acres of full capacity upland communities an estimated 13,415 acres could be adversely affected because of the excessive stocking rate.

Alternative 6 - This alternative would stock only those areas determined as full capacity range in the 1995 analysis. Upland communities affected would include 26,830 acres. This alternative would provide growing season rest for both cool season and warm season vegetation. No adverse effects to upland communities would be expected.

Alternative 7 - A new term grazing permit would not be issued. No upland communities would be affected by livestock grazing.

Acres of Upland Community Adversely affected. (Does not include Ponderosa Pine)	<u>Alt. 1</u>	<u>Alt. 2</u>	<u>Alt. 3</u>	<u>Alt. 4</u>	<u>Alt. 5</u>	<u>Alt. 6</u>	<u>Alt. 7</u>
	0	0	27,352	0	27,352	0	0

Threatened, Endangered and Sensitive plant species - The following threatened, endangered or sensitive plant species have been documented in the study area.

Perityle saxicola, Fish Creek Rock Daisy - Forest Service Sensitive
 Erigeron pisacatus, Fish Creek Fleabane - Forest Service Sensitive
 Abutilon parishii, Pima Indian Mallow - Forest Service Sensitive
 Echinocereus triglochidiatus var. arizonicus, Arizona Hedgehog Cactus - Listed
 Endangered (unconfirmed)
 Colubrina californica, California Snakebush - Forest Service Sensitive

A detailed description of these plants is included in the Biological Evaluation for this study area.

The above Federally Listed species is located in an area that is inaccessible to livestock. The existence of this listed plant still has to be confirmed.

Based on the situation noted above, the following evaluation can be made.

	<u>Alt. 1</u>	<u>Alt. 2</u>	<u>Alt. 3</u>	<u>Alt. 4</u>	<u>Alt. 5</u>	<u>Alt. 6</u>	<u>Alt. 7</u>
Effect on Listed Plant Species	NO EFFECT	NO EFFECT	NO EFFECT	NO EFFECT	NO EFFECT	NO EFFECT	NO EFFECT

B. Wildlife

1. Affected Environment

The study area includes six general ecosystems which are supporting habitat for a wide variety of wildlife species. The effect of livestock grazing on these wildlife species is related primarily to the condition of the ecosystems. Currently, the ecosystems in the study area are in healthy, functioning condition with the exception of a few areas, mainly riparian, that still show the evidence of past overgrazing.

Threatened, Endangered and Sensitive wildlife species that have been documented in the study area include.

- Agosia chrysogaster, Longfin Dace - Forest Service Sensitive
- Falco peregrinus anatum, American Peregrine Falcon - Listed Endangered
- Haliaeetus leucocephalus, Bald Eagle - Listed Threatened
- Rana yavapaiensis, Lowland Leopard Frog - Forest Service Sensitive
- Strix occidentalis lucida, Mexican Spotted Owl - Listed Threatened
- Gopherus agassizii, Sonoran Desert Tortoise - Forest Service Sensitive
- Heloderma suspectum, Gila Monster - Forest Service Sensitive
- Parabuteo unicinctus, Harris Hawk - Forest Service Sensitive

2. Environmental Consequences

Alternatives that maintain the current ecosystem health would not have an adverse effect on wildlife species. Based on previous comparisons, Alternatives 1, 2, 6, and 7 would meet this requirement. Alternative 4 would meet this requirement with the exception of 175 acres of riparian that may be adversely affected. Alternatives 3 and 5 would result in degradation of all ecosystems with the greatest effect showing in the riparian areas.

	<u>Alt. 1</u>	<u>Alt. 2</u>	<u>Alt. 3</u>	<u>Alt. 4</u>	<u>Alt. 5</u>	<u>Alt. 6</u>	<u>Alt. 7</u>
Acres of Wildlife Habitat adversely affected	0	0	28,689	175	28,689	0	0

A detailed description of threatened, endangered and sensitive wildlife species is included in the Biological Evaluation for this study area.

	<u>Alt. 1</u>	<u>Alt. 2</u>	<u>Alt. 3</u>	<u>Alt. 4</u>	<u>Alt. 5</u>	<u>Alt. 6</u>	<u>Alt. 7</u>
Effect on Listed Wildlife Species	NO EFFECT	NO EFFECT	MAY EFFECT	NO EFFECT	MAY EFFECT	NO EFFECT	NO EFFECT

C. Soil and Water

1. Affected Environment

The Reavis-Tortilla study area is dominated by two geology types; andesite lavas and tuffs (Ktv) and granite (Gr). The vegetation is largely divided into lower elevation desert scrub, mid elevation semi-arid grasslands, and higher elevation chaparral or juniper. Some pine forests occur in the extreme highest elevations.

The largest portion of the Reavis/Tortilla study area is composed of soils derived from andesitic lavas and tuffs.

The soils on the flats and low hills in lower elevations of these areas support sparse desert vegetation. These soils (Lithic Torriorthents, LSM, 2) are very shallow and poorly developed and occur with extensive expanses of rock outcrop. These soils are very fragile. Most of the vegetative cover comes from club moss (*Selaginella sp.*) or lichens. If this cover is destroyed, these soils are very susceptible to erosion.

The soils on the steep slopes at lower elevation support a denser covering of desert vegetation. Most of the soils formed in colluvium and are deeper than the soils formed in residuum on the flats. The soils on the steep slopes (Ustochreptic Torriorthents, LSM, 2) are moderately deep with a loamy texture high in rock fragments. Rock outcrop in these areas is also extensive. Because of steep slopes, these soils are susceptible to sheet erosion.

The mid elevation rhyolite soils support a mixture of shrubs and grasses. The soils on the flats are very shallow and poorly developed (Lithic Ustorhents, LSM, 3). Extensive areas of rock outcrop occur with these soils. These soils are very fragile. Most of the vegetative cover comes from club moss (*Selaginella sp.*) or lichens. If this cover is destroyed, these soils are very susceptible to erosion.

The soils on the steeper slopes, at mid elevation, formed in a combination of colluvium and residuum. They are mostly moderately deep with a very rocky loam or clay loam subsoil (Aridic Haplustalfs, LSM, 3). Rock outcrop is also extensive in these areas. Because of steep slopes, these soils are susceptible to sheet erosion.

Most of the higher elevation rhyolite soils support juniper or chaparral vegetation. The soils formed in a combination of colluvium or residuum and are mostly moderately deep with a very rocky clay loam or loam subsoil (Typic Haplustalfs, LSM, 4). Rock outcrop is also common in the area. Because of steep slopes, these soils are susceptible to sheet erosion. The very highest elevation soils and some north slopes may support pine stands.

Most of the rest of the allotment consists of soils derived from granite. These soils tend to be mostly moderately deep and support a fairly dense stand of Sonoran desert vegetation. The dominant soils (Ustalfic Haplargids, LSM, 2) have an extremely gravelly sandy loam surface over an extremely gravelly clay loam subsoil. Soils on concave slopes tend to be deeper with less clay in the subsoil. The sheet erosion hazard on these granite soils tends to be low however, the risk of gully erosion is very high, especially the soils in the concave positions on the landscape.

The Reavis and Tortilla Study Area is entirely within the Salt River drainage. Fish Creek, a tributary of the Salt River, drains approximately 56% of the study area. Tributaries to Fish Creek include Rogers Canyon, Rough Canyon, Paradise Canyon, Goat Canyon, Lost Dutch Canyon and Lewis and Pranty Creek. With the exception of upper Lewis and Pranty Creek, these tributaries are in steep canyons surrounded by volcanic cliffs and rock outcrop. The watersheds are stable with good ground cover, but the sheer volume of rock outcrop results in heavy runoff following a significant precipitation event. These periods of heavy runoff do not result in any major changes in the drainages which withstand the events because of the high percentage of rock outcrop associated with the drainage bottoms.

The upper end of Lewis and Pranty Creek is in an area where soils originate from decomposing granite. This area, unlike the rest of Fish Creek, has very little rock outcrop. Most of the area has a good cover of vegetation which protects the soil during most precipitation events, but during flood events such as those experienced in 1980, 1981 and 1993, considerable soil can be moved downstream.

Other tributaries to the Salt River that drain a portion of the study area include Pine Creek (22%), Tortilla Creek (18%) and Labarge Canyon (4%). Upper Pine Creek, Tortilla Creek and Labarge Canyon have soils derived from volcanic rock. Lower Pine Creek, like the upper Lewis and Pranty drainage, is characterized by soils derived from decomposed granite.

Generally, watershed conditions within the study area are good and will remain in that condition as long as current ground cover is protected.

2. Environmental Consequences

The effects on soil and water resources resulting from implementation of the alternatives would be the same as those previously identified for vegetation resources. Any alternative that results in degraded vegetation conditions would result in the degradation of soil and water resources.

	<u>Alt. 1</u>	<u>Alt. 2</u>	<u>Alt. 3</u>	<u>Alt. 4</u>	<u>Alt. 5</u>	<u>Alt. 6</u>	<u>Alt. 7</u>
Acres of adverse impact on soil and water resources	0	0	28,689	175	28,689	0	0

D. Air

1. Affected Environment

Handwritten note: visibility

Air quality data is currently being collected by a visibility camera that records the Superstition Wilderness from a vantage point north of Saguaro Lake. The area being photographed includes the Tortilla and Reavis Allotment areas. There is also an air quality monitoring station at Lost Dutchman State Park on the west end of the Superstition Mountains. Both of these recording stations were established to document the effect of the Phoenix Metropolitan Area on the air quality of the Superstition Wilderness. They have documented decreased air quality in the area.

2. Environmental Consequences

The grazing strategies associated with the various alternatives would have no effect on air quality within the study area with the exception of Alternatives 3 and 5, these alternatives would decrease ground cover and increase the amount of soil surface exposed to wind erosion. With increased wind erosion, particulates would increase, further degrading air quality in the area.

No prescribed burns would be conducted in any of the grazing strategies so there would be no effect on air quality from smoke.

Development projects associated with the various alternatives would result in very little ground disturbance and would not utilize motorized equipment in most cases. There would be little effect on air quality as a result of any of the planned development projects.

	<u>Alt. 1</u>	<u>Alt. 2</u>	<u>Alt. 3</u>	<u>Alt. 4</u>	<u>Alt. 5</u>	<u>Alt. 6</u>	<u>Alt. 7</u>
Effect on Air Quality.	No Change	No Change	Increased Particulates	No Change	Increased Particulates	No Change	No Change

E. Other Effects - Capability of the Study Area to Support Livestock Grazing (Issue 5)

Affected Environment

A review of past analysis data for the Reavis and Tortilla Study Area showed that the information included was not adequate to address the various resource concerns currently being examined in this report. During 1995 additional analysis work was completed to determine how much of the study area could be

utilized by livestock without adversely affecting a number of different resources. Resource areas of particular concern included: Soils; Water Quality; Unique Ecosystems (Ponderosa Pine and Riparian); Recreation; and Wildlife Habitat. Also included in the analysis update was an estimate of the cost involved with various livestock grazing strategies.

The following list details the resource areas where adverse effects would be anticipated. The list also shows areas that would not be utilized by livestock because of physical features. The two categories were combined to give the acreage within the study area that is considered as No Capacity Range.

Fragile Soils - An area of 2,421 acres located on the north end of the Tortilla Allotment is characterized by very shallow soils and rock outcrop. Forage production in this area is low. Any concentrated livestock use would adversely affect the soil resource. Although some areas of deeper soils occur within the area described, it would not be possible to separate the areas. Livestock utilization of these small areas with deeper soils would result in adverse effects on the adjacent areas of fragile, shallow soils.

Rock Outcrop, Cliffs and Steep Slopes - Approximately 29% of the study area or 19,068 acres is occupied by cliffs, bedrock and steep slopes. These areas are mostly inaccessible to livestock and based on experience from adjoining allotments with similar topography, would not receive significant use by livestock.

Interior Chaparral - Chaparral within the study area can be classified into two general categories. The first is located primarily on the Tortilla Allotment and has a low component of Manzanita. This area of chaparral is open enough that most of the area can be utilized by livestock. The second category of chaparral occurs in the headwaters of Reavis, Fish and Pine Creeks on the Reavis Allotment. This chaparral area has a greater component of Manzanita and is not open enough for any significant livestock use. This second category of chaparral comprises approximately 8% of the study area, or 4,968 acres.

Areas of Concentrated Recreation Use - Four areas of concentrated recreation use were identified where livestock grazing would have an adverse effect on recreation resources. These four areas include approximately 1% of the study area:

Tortilla Ranch - 119 acres
Reavis Ranch and vicinity - 276 acres
Angel Basin - 29 acres
Fish Creek Hill - 48 acres

In all four locations, the area of concern for recreation resources overlapped at least one other area of resource concern.

Unique Ecosystems - This resource area can be further divided into Riparian and Ponderosa Pine. The Riparian ecosystems of concern within the study area are in areas confined by steep slopes and cliffs. Any livestock use would be

concentrated in the riparian area. Management of these areas for livestock use would be difficult without adversely affecting riparian. The total area of confined riparian ecosystems within the study area is approximately 2% or 1,186 acres. Small areas of Ponderosa Pine occur south of Reavis Ranch on the Reavis Allotment. These stands of pine are remnants of previous forests that are now isolated and they support unique plant and animal life. The total area of Ponderosa Pine within the study area is approximately 1% or 674 acres.

Additional No Capacity area includes approximately 15% of the study area, or 10,097 acres. This area is isolated by topography or fence location from the other full capacity range.

No Capacity Rangeland within the study area (acres)

<u>Fragile Soils</u>	<u>Rock Outcrop, Cliffs, Steep Slopes</u>	<u>Chaparral</u>	<u>Concentrated Recreation Use</u>	<u>Unique Ecosystems</u>	<u>Isolated Areas</u>
2,421	19,068	4,968	472	1,860	10,097

A cost comparison was completed for the range development work necessary to implement a grazing strategy on the study area. The following table outlines these costs. Costs are averaged for the particular type of development and may be higher for some and lower for others. These figures reflect only Forest Service costs. Permittee costs for labor and material are not shown.

Alternative 1 - No development costs.

Alternative 2 - No development costs.

Alternative 3

Development Removal - \$0

Development Construction - \$16,000.00

Development Reconstruction - \$28,250.00

Development Maintenance - \$0

Total \$44,250.00

Alternative 4

Development Removal - \$0

Development Construction - \$42,500.00

Development Reconstruction - \$16,250.00

Development Maintenance - \$0

Total \$58,750.00

Alternative 5 - Costs same as Alternative 3.

Alternative 6 - Costs same as Alternative

Alternative 7 - No development costs.

Total Development Cost (Forest Service)

<u>Alt. 1</u>	<u>Alt. 2</u>	<u>Alt. 3</u>	<u>Alt. 4</u>	<u>Alt. 5</u>	<u>Alt. 6</u>	<u>Alt. 7</u>
\$0	\$0	\$44,250	\$58,750	\$44,250	\$58,750	\$0

ALTERNATIVE SUMMARY

1 - Meets objective

0 - Does not meet objective

<u>OBJECTIVE</u>	<u>ALT. 1</u>	<u>ALT. 2</u>	<u>ALT. 3</u>	<u>ALT. 4</u>	<u>ALT. 5</u>	<u>ALT. 6</u>	<u>ALT. 7</u>
Protect Unique Ecosystems	1	1	0	0	0	1	1
Maintain the Quality of Water	1	1	0	1	0	1	1
Avoid Recreational Conflicts	1	1	0	1	0	1	1
Protect Wildlife Habitat	1	1	0	0	0	1	1
Permit Livestock Grazing	0	0	1	1	1	1	1
	4	4	1	3	1	5	5

CHAPTER 4 - LIST OF PREPARERS

Identification of ID Team

- Norm Ambos, Tonto National Forest, Soils
- Lisa Bizios, Tonto National Forest, Fisheries
- Greg Hansen, Mesa Ranger District, Recreation
- Gary Holder, Tonto National Forest, Range
- Janet Johnson, Tonto National Forest, Riparian
- Connie Lane, Mesa Ranger District, Recreation
- Lynette Mason, Tonto National Forest, Hydrology
- Russell Orr, Mesa Ranger District, Range
- Lauren Turner, Mesa Ranger District, Wildlife
- Pete Weinel, Tonto National Forest, Recreation

CHAPTER 5 - PUBLIC INVOLVEMENT

Public involvement for development of the Reavis and Tortilla Study Area Grazing Strategy involved establishing a list of interested publics, agencies and organizations; utilizing these groups, agencies and individuals along with ID Team specialists to identify the issues to be addressed; utilizing the same review for the development of alternatives and finally identifying a preferred action using the ID Team.

Identification of public, organization and agency review

John Alcock

Arizona Department of Environmental Quality

Arizona Game and Fish Department - Region VI

Arizona Grazing Clearinghouse

Arizona Riparian Council

Jean Baker

Barcat, Inc.

George Bathen

Charles Bedore

Neal Berg

Jeff Burgess

Society for Conservation Biology - Central Arizona Chapter

Chuckwalla Wilderness Adventures, Inc.

Superstition Area Land Trust

Colorado Outward Bound School

Pete Conklin

Lisa Cozzetti

Bob Dare

Arizona Wildlife Federation

Landi Fernley

Forest Guardians

Bob Brawdy

Greater Gila Biodiversity Project

Robert F. Green

Hayhook Ranch

Mr. and Mrs. Gary Hinmon

Hole in the Wall Stables

Bobbie Holladay

Lynn Jacobs

J-B Cattle Company

JB's Custom Mule Packing and Guiding Service

Steve Johnson

John Kevin

Rudi Lambrechtse

David Land

Don Lauchner

Lost Dutchman Outfitters

Mark Lucas

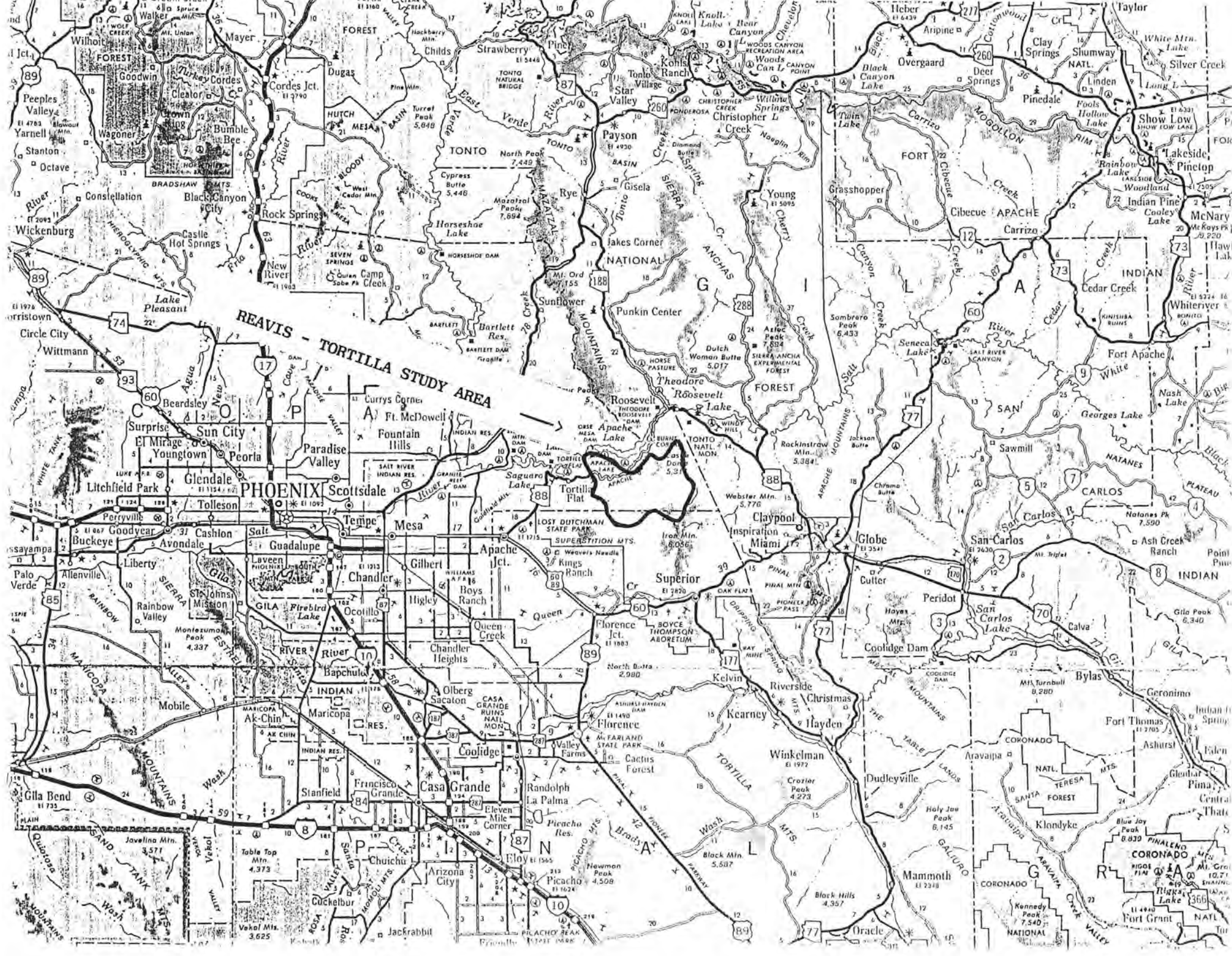
Martin Ranch

Miller Ranch, Inc.

Jerry Nelson
John Pamperin
Peralta Outfitters
Jim Powers
Prescott College
Reevis Mountain School of Self Reliance
Rich Risner
Richard Rowe
Mike Seidman
Sonoran Bioregional Diversity Project
Southwest Natural History Association
Don Steuter
Sunshower, Inc.
Superstition OK Corral Stables, Inc.
Tom Taylor
Marsha Tomazin
U.S. Fish and Wildlife Service
Jim Vaaler
Frank Welsh
Wilderness Adventures
Maricopa Audubon Society
Tom Wright
Angelique Zelle
Arizona Desert Bighorn Sheep Society
Salt River Pima-Maricopa Indian Community
Ft. McDowell Indian Community
Tonto Apache Tribe
White Mountain Apache Tribe
San Carlos Apache Tribe
Yavapai-Prescott Tribe
The Hopi Tribe
Pueblo of Zuni
Camp Verde Yavapai-Apache Indian Community

APPENDIX

- A. VICINITY MAP
- B. SUPPORTING DOCUMENTS
- C. ALTERNATIVE MAPS
- D. RANGE DEVELOPMENT REQUIREMENTS
- E. ALTERNATIVE GRAZING SCHEDULES



APPENDIX B - SUPPORTING DOCUMENTS

REAVIS ALLOTMENT ANALYSIS - 9/65, 7/85, 12/95

TORTILLA ALLOTMENT ANALYSIS - 5/61, 9/84, 12/95

THE APACHE RANCH, INC. PERMIT FOLDER - 12/90

R.J. COOPER PERMIT FOLDER - 5/79

FLOYD A. STONE PERMIT FOLDER - 9/69, 1/76

STONE AND LOCKWOOD PERMIT FOLDER - 6/67

TONTO NATIONAL FOREST PLAN - 10/85

REAVIS - TORTILLA STUDY AREA BIOLOGICAL EVALUATION - 5/96

REAVIS - TORTILLA ENVIRONMENTAL ASSESSMENT - 12/85

REAVIS - TORTILLA MANAGEMENT PLAN - 12/90

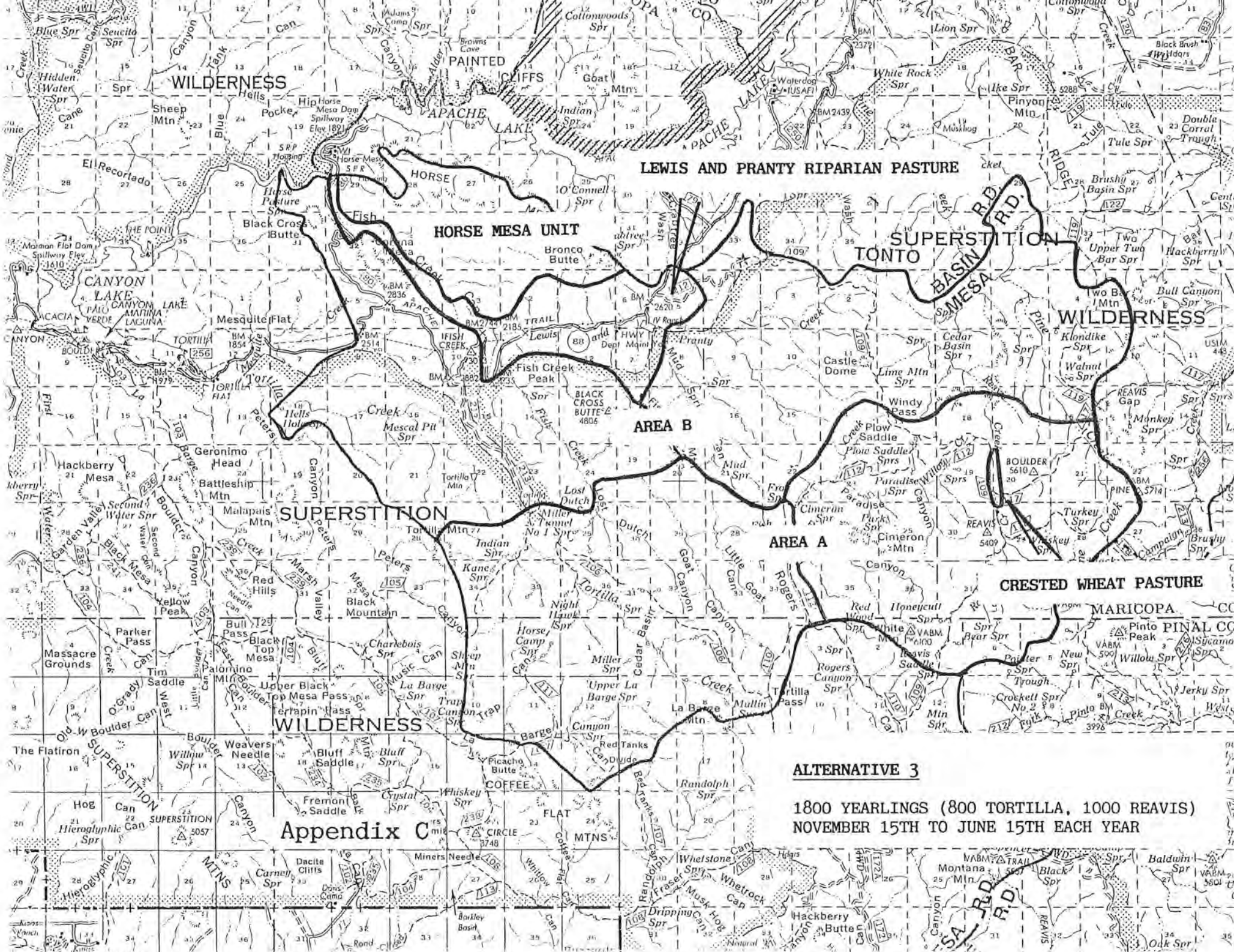
RANGE ANALYSIS AND MANAGEMENT TRAINING GUIDE - 12/95

RANGE ANALYSIS AND MANAGEMENT HANDBOOK - 4/88

GRAZING AND LIVESTOCK USE PERMIT SYSTEM MANUAL - 3/91

BIOTIC COMMUNITIES OF THE AMERICAN SOUTHWEST - UNITED STATES AND MEXICO, DAVID E. BROWN - 10/82

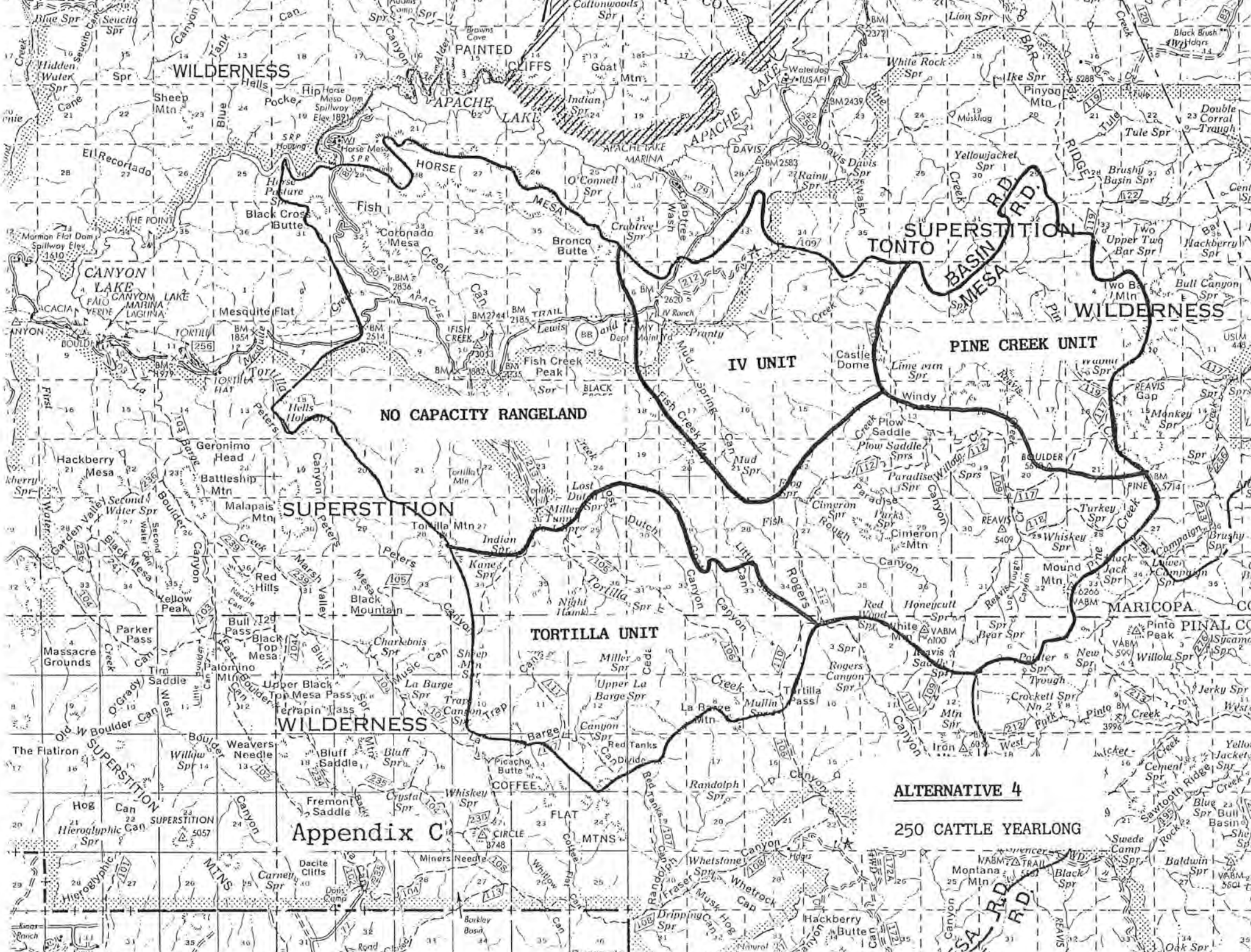
VEGETATION AND FLORA OF THE SUPERSTITION WILDERNESS AREA, CENTRAL ARIZONA - KATHLEEN C. RICE - 8/94



Appendix C

ALTERNATIVE 3

1800 YEARLINGS (800 TORTILLA, 1000 REAVIS)
 NOVEMBER 15TH TO JUNE 15TH EACH YEAR



WILDERNESS

NO CAPACITY RANGELAND

SUPERSTITION

TORTILLA UNIT

IV UNIT

PINE CREEK UNIT

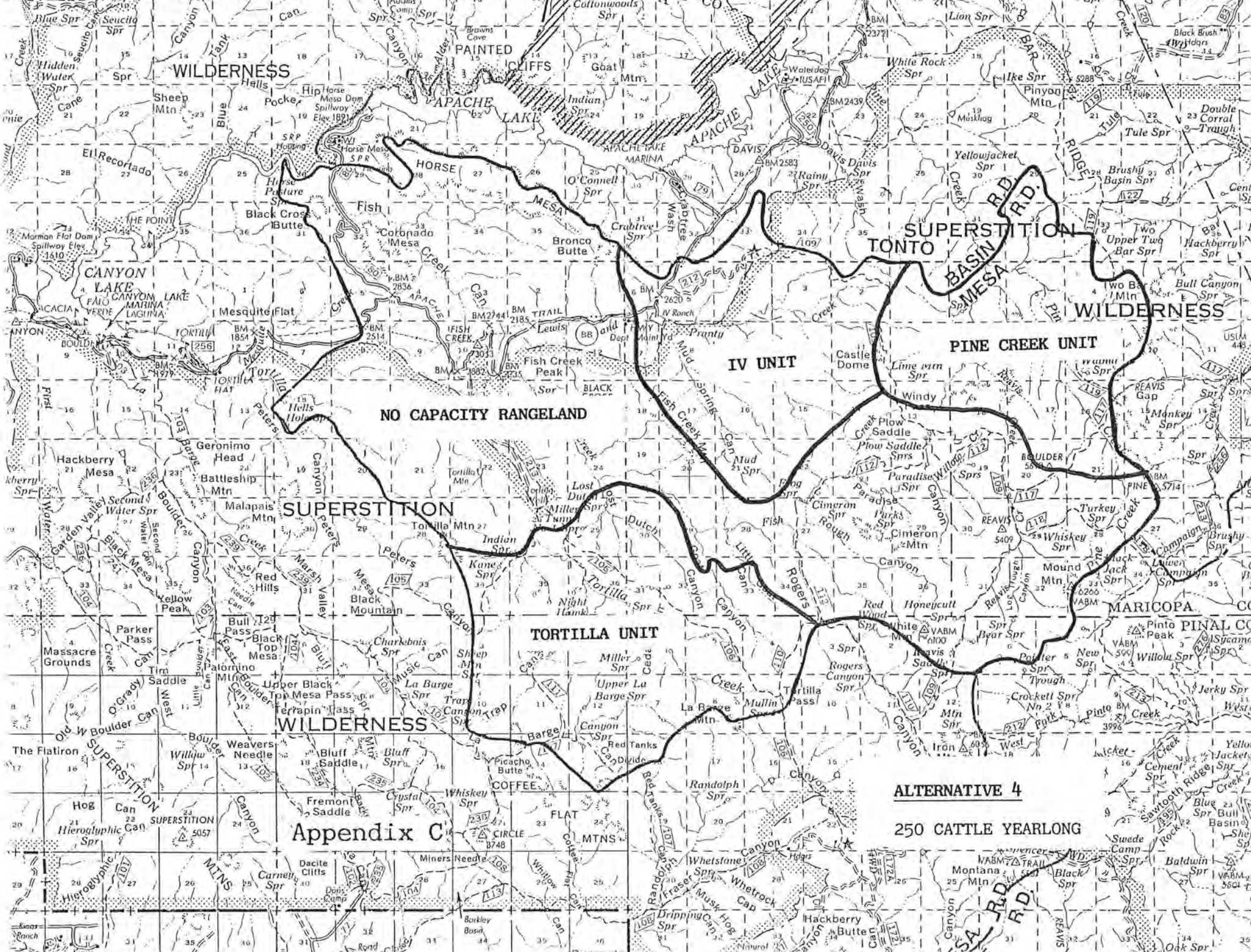
TONTO BASIN R.D.

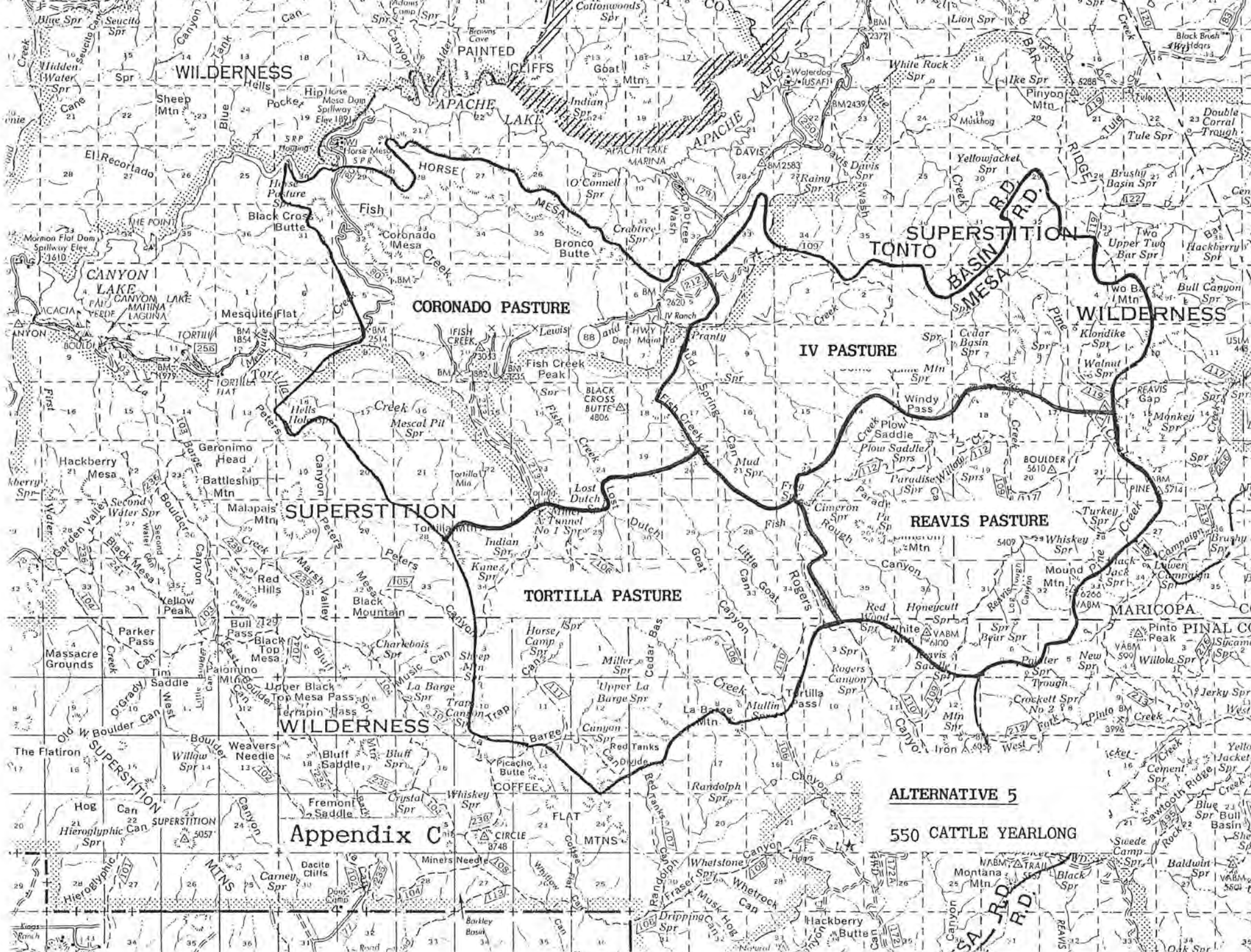
MESA R.D.

ALTERNATIVE 4

250 CATTLE YEARLONG

Appendix C

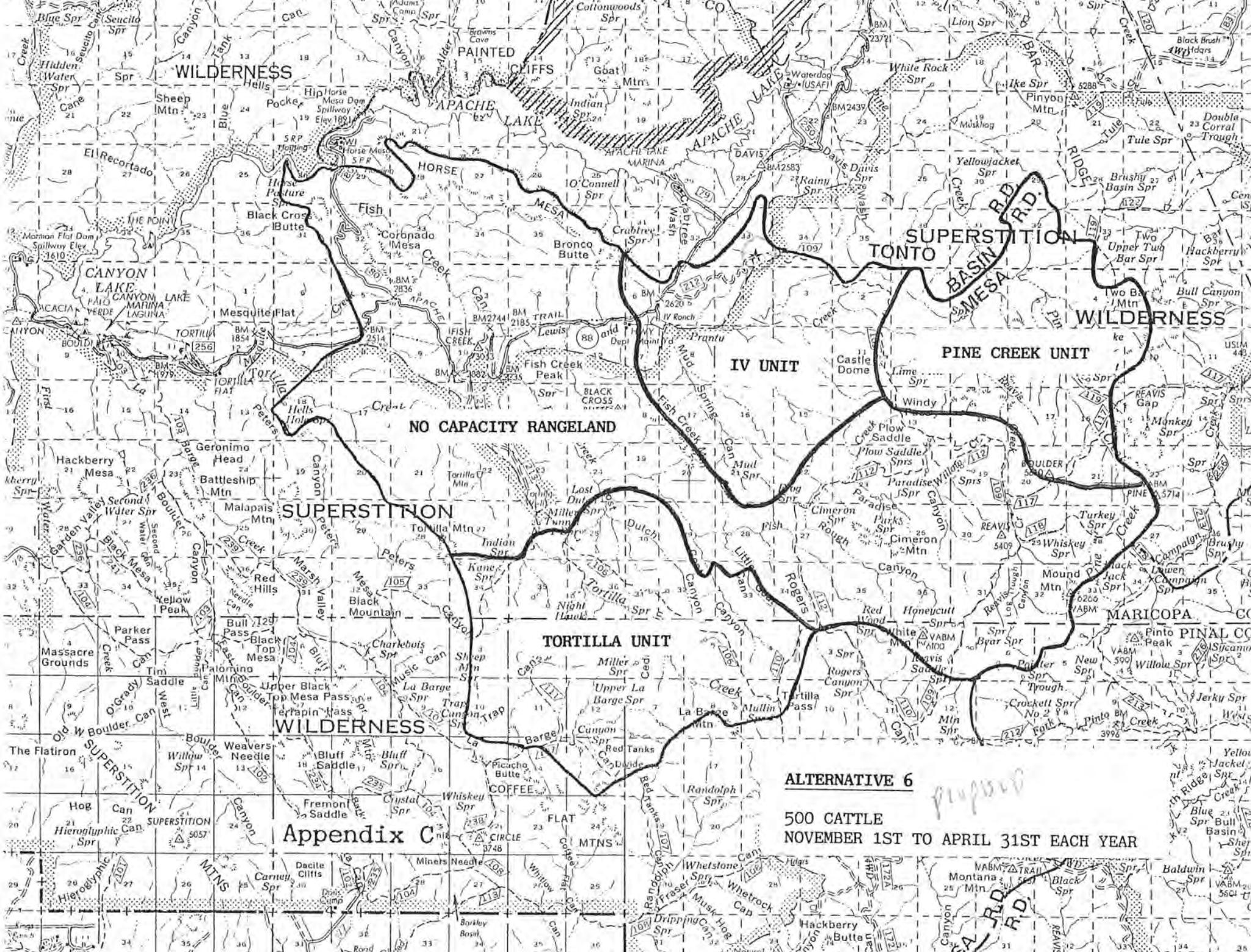




Appendix C

ALTERNATIVE 5

550 CATTLE YEARLONG



NO CAPACITY RANGELAND

IV UNIT

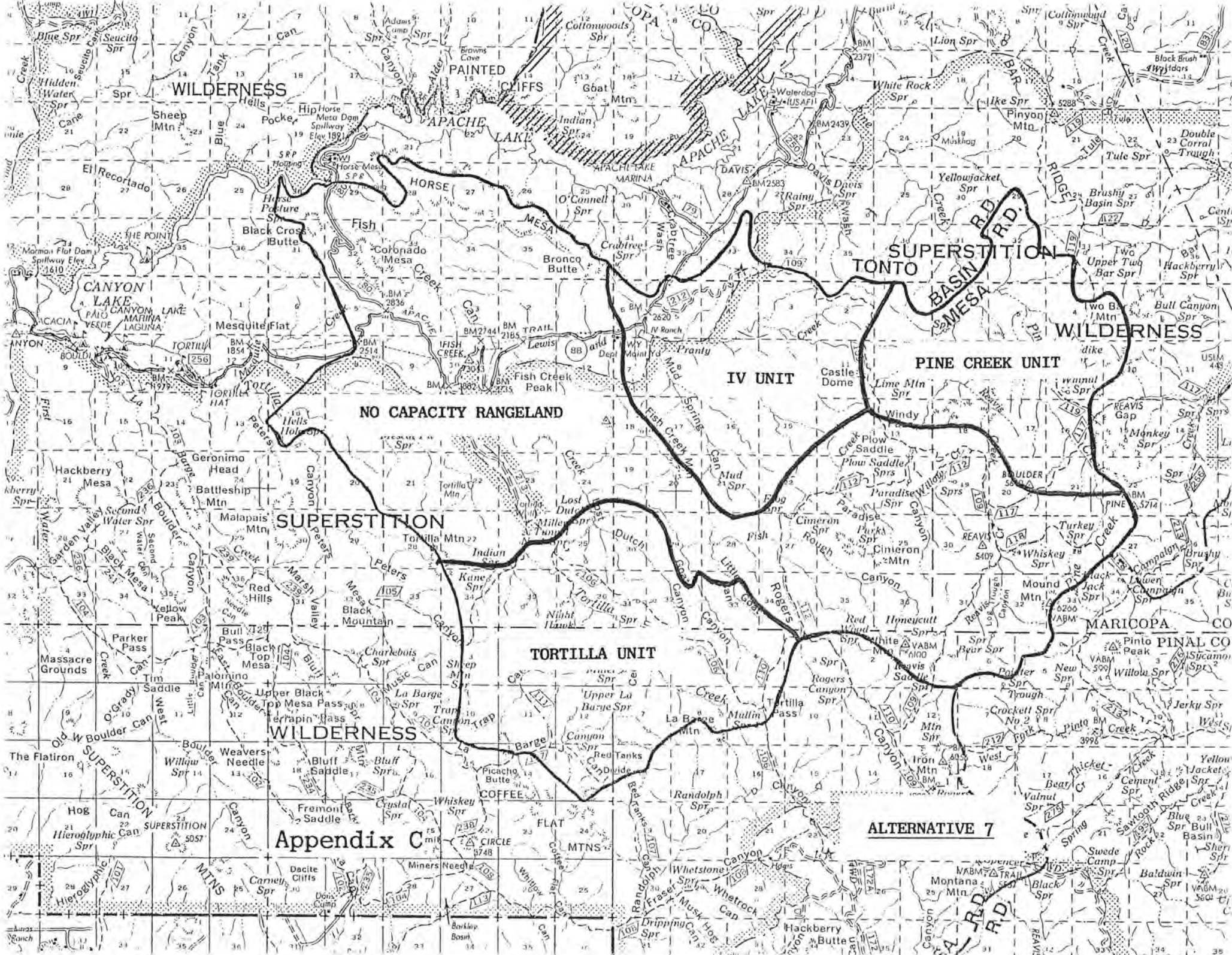
PINE CREEK UNIT

TORTILLA UNIT

ALTERNATIVE 6

500 CATTLE
NOVEMBER 1ST TO APRIL 31ST EACH YEAR

Appendix C



Appendix C

ALTERNATIVE 7

APPENDIX DALTERNATIVE 2 - RANGE DEVELOPMENT REQUIREMENTSRemovalTortilla Allotment

<u>Development Number</u>	<u>Development Name</u>
005275	Tortilla - Superstition
005276	Tortilla - Reavis
005279	Tortilla Creek Drift
005277	Tortilla Pasture
000981	Well Holding Pasture
005278	Yearling Pasture
004572	Dug Well
005306	Tortilla Well
005283	Cedar Basin Corral
005284	Horse Camp Corral
005282	Shipping Corral
005281	Tortilla Corral

Reavis Allotment

005213	Reavis - Superstition
005187	Castle Dome Division
005223	Frog Creek Trap
005221	Lower Flow Saddle Trap
005220	Flow Saddle Trap
000959	Rock Corral Trap

000856	Stone Patent Pasture
000953	Upper Field Pasture
000960	WR Holding Pasture
000970	Horse Mesa Drift
000964	Cimeron Spring Corral
000957	Homestead Corral
000966	Lower Plow Saddle Corral
005192	Ranger Corral
005190	Rock Corral
005191	Rogers Corral
000956	Reavis Barn

ALTERNATIVE 3 - RANGE DEVELOPMENT REQUIREMENTS

Construction

Tortilla Allotment

Approximately 1.5 miles of fence in the vicinity of Tortilla Ranch to establish the north boundary of the Area A (\$4,000 - Forest Service materials).

Reavis Allotment

Approximately 4.5 miles of fence to establish the north boundary of the Area A (\$12,000 - Forest Service materials).

Maintenance

Tortilla Allotment

<u>Development Number</u>	<u>Development Name</u>
002053	Tortilla - Millsite
005276	Tortilla - Reavis
005285	Coronado Mesa Tank
005286	Tortilla Mountain Tank

Reavis Allotment

000971	Reavis - Apache Lake
OR0852	Reavis - Roosevelt
R05024	Reavis - Bar V Bar
005227	Reavis - Brushiest
005187	Castle Dome Division
000856	Stone Patent Pasture
004573	Stone Tank

ReconstructionTortilla Allotment

<u>Development Number</u>	<u>Development Name</u>	<u>Estimated Cost of Reconstruction</u>
		<u>Forest Service</u>
005288	Brads Water	\$500
005282	Shipping Corral	\$3,000
005284	Horse Camp Corral	\$500
005283	Cedar Basin Corral	\$500
005289	Tunnel Spring	\$0
005290	Kane Spring	\$0
005292	Upper Labarge Spring	\$500
005294	Horse Camp Spring	\$500
005297	Frog Tank Spring	\$500
005300	Nighthawk Spring	\$500
005302	Sheep Mountain Spring	\$500
005303	Mullin Spring	\$500
005306	Tortilla Well	\$9,000
005281	Tortilla Corral	\$2,000

005278	Yearling Pasture	\$500
005279	Tortilla Creek Drift Fence	\$1,000
005275	Tortilla - Superstition ABF	\$2,000
	<u>Reavis Allotment</u>	
005195	Walnut Spring	\$500
005196	Plow Saddle Spring	\$500
005197	Paradise Spring	\$500
005198	Cimeron Spring	\$500
005208	Klondike Spring	\$500
005216	Cedar Basin Spring	\$500
005213	Reavis - Superstition ABF	\$1,000
000970	Horse Mesa Drift Fence	\$250
000964	Cimeron Spring Corral	\$1,000
000966	Lower Plow Saddle Corral	\$1,000

Removal

Tortilla Allotment

<u>Development Number</u>	<u>Development Name</u>
005277	Tortilla Pasture
000981	Well Holding Pasture
004572	Dug Well

Reavis Allotment

005223	Frog Creek Trap
005221	Lower Plow Saddle Trap
005220	Plow Saddle Trap
000959	Rock Corral Trap
000953	Upper Field Pasture

000960	WR Holding Pasture
000957	Homestead Corral
005192	Ranger Corral
005190	Rock Corral
005191	Rogers Corral
000956	Reavis Barn

ALTERNATIVE 4 - RANGE DEVELOPMENT REQUIREMENTS

New Construction

Tortilla Unit

A new shipping corral in the vicinity of Tortilla Ranch. This corral would also serve as a facility for recreational stock. The corral would be utilized only for shipping and would be outside of the area where grazing would be permitted (\$5,000 - Forest Service materials and labor).

Approximately 1.5 miles of fence in the vicinity of Tortilla Ranch to establish the north boundary of the unit (\$4,000 - Forest Service materials).

Approximately .5 mile of fence just west of Angel Basin to establish the east boundary of the unit (\$1,500 - Forest Service materials).

Additional short pieces of fence may be necessary to establish the unit boundary along the east and north sides. These would be constructed on an as needed basis following the initiation of the grazing strategy.

IV Unit

Approximately .5 mile of fence 1/4 mile west of the ADOT maintenance yard. This fence would establish the western boundary of the IV Unit. This fence would require a cattleguard across State Route 88 (\$15,000 - Forest Service materials and labor).

A new shipping corral in the vicinity of State Route 88 and Forest Road 212. This corral would also serve as a facility for recreational stock (\$5,000 - Forest Service materials and labor).

Pine Creek Unit

Approximately 4.5 miles of fence to establish the south boundary of this unit (\$12,000 - Forest Service materials).

MaintenanceTortilla Unit

<u>Development Number</u>	<u>Development Name</u>
002053	Tortilla - Millsite

IV Unit

000971	Reavis - Apache Lake
005187	Castle Dome Division Fence
004573	Stone Stock Tank

Pine Creek Unit

OR0852	Reavis - Roosevelt
R05024	Reavis - Bar V Bar

ReconstructionTortilla Unit

<u>Development Number</u>	<u>Development Name</u>	<u>Estimated Cost of Reconstruction</u>
		<u>Forest Service</u>
005303	Mullin Spring	\$500
005292	Upper La Barge Spring	\$500
005288	Brad's Water	\$500
005302	Sheep Mountain Spring	\$500
005283	Cedar Basin Corral	\$500
005294	Horse Camp Spring	\$500
005284	Horse Camp Corral	\$500
005300	Night Hawk Spring	\$500
005290	Kane Spring	\$0
005289	Miller Tunnel Spring	\$0

000981	Well Holding Pasture	\$250
005275	Tortilla - Superstition	\$1,000
005278	Yearling Pasture Fence	\$500
005306	Tortilla Well	\$9,000

Pine Creek Unit

005208	Klondike Spring	\$500
005195	Walnut Spring	\$500
005216	Cedar Basin Spring	\$500

Removal

<u>Development Number</u>	<u>Development Name</u>
000964	Cimeron Spring Corral
005223	Frog Creek Trap
005190	Rock Corral
000959	Rock Corral Trap
005221	Lower Plow Saddle Trap
005220	Plow Saddle Trap
000953	Upper Field Pasture
000960	WR Holding Pasture
000970	Horse Mesa Drift Fence
000957	Homestead Corral
005276	Tortilla - Reavis
005213	Reavis - Superstition
000966	Lower Plow Saddle Corral
005192	Ranger Corral
005191	Rogers Corral

000956	Reavis Barn
005277	Tortilla Pasture
005279	Tortilla Creek Drift Fence
004572	Dug Well
005282	Shipping Corral
005281	Tortilla Corral
000856	Stone Patent Pasture Fence

ALTERNATIVE 5 - RANGE DEVELOPMENT REQUIREMENTS

Construction

Tortilla Allotment

Approximately 1.5 miles of fence in the vicinity of Tortilla Ranch to establish the north boundary of the Tortilla Pasture (\$4,000 - Forest Service materials).

Reavis Allotment

Approximately 4.5 miles of fence to establish the north boundary of the Reavis Pasture (\$12,000 - Forest Service materials).

Maintenance

Tortilla Allotment

<u>Development Number</u>	<u>Development Name</u>
002053	Tortilla - Millsite
005276	Tortilla - Reavis
005285	Coronado Mesa Tank
005286	Tortilla Mountain Tank

Reavis Allotment

000971	Reavis - Apache Lake
OR0852	Reavis - Roosevelt
R05024	Reavis - Bar V Bar

005227	Reavis - Brushiest
005187	Castle Dome Division
000856	Stone Patent Pasture
004573	Stone Tank

Reconstruction

Tortilla Allotment

<u>Development Number</u>	<u>Development Name</u>	<u>Estimated Cost of Reconstruction</u>
		<u>Forest Service</u>
005288	Brads Water	\$500
005282	Shipping Corral	\$3,000
005284	Horse Camp Corral	\$500
005283	Cedar Basin Corral	\$500
005289	Tunnel Spring	\$0
005290	Kane Spring	\$0
005292	Upper Labarge Spring	\$500
005294	Horse Camp Spring	\$500
005297	Frog Tank Spring	\$500
005300	Nighthawk Spring	\$500
005302	Sheep Mountain Spring	\$500
005303	Mullin Spring	\$500
005306	Tortilla Well	\$9,000
005281	Tortilla Corral	\$2,000
005278	Yearling Pasture	\$500
005279	Tortilla Creek Drift Fence	\$1,000
005275	Tortilla - Superstition ABF	\$2,000

Reavis Allotment

005195	Walnut Spring	\$500
005196	Plow Saddle Spring	\$500
005197	Paradise Spring	\$500
005198	Cimeron Spring	\$500
005208	Klondike Spring	\$500
005216	Cedar Basin Spring	\$500
005213	Reavis - Superstition ABF	\$1,000
000970	Horse Mesa Drift Fence	\$250
000964	Cimeron Spring Corral	\$1,000
000966	Lower Plow Saddle Corral	\$1,000

Removal

Tortilla Allotment

<u>Development Number</u>	<u>Development Name</u>
005277	Tortilla Pasture
000981	Well Holding Pasture

Reavis Allotment

004572	Dug Well
005223	Frog Creek Trap
005221	Lower Plow Saddle Trap
005220	Plow Saddle Trap
000959	Rock Corral Trap
000953	Upper Field Pasture
000960	WR Holding Pasture
000957	Homestead Corral
005192	Ranger Corral
005190	Rock Corral

005191 Rogers Corral

000956 Reavis Barn

ALTERNATIVE 6 - RANGE DEVELOPMENT REQUIREMENTS

New Construction

Tortilla Unit

A new shipping corral in the vicinity of Tortilla Ranch. This corral would also serve as a facility for recreational stock. The corral would be utilized only for shipping and would be outside of the area where grazing would be permitted (\$5,000 - Forest Service materials and labor).

Approximately 1.5 miles of fence in the vicinity of Tortilla Ranch to establish the north boundary of the unit (\$4,000 - Forest Service materials).

Approximately .5 mile of fence just west of Angel Basin to establish the east boundary of the unit (\$1,500 - Forest Service materials).

Additional short pieces of fence may be necessary to establish the unit boundary along the east and north sides. These would be constructed on an as needed basis following the initiation of the grazing strategy.

IV Unit

Approximately .5 mile of fence 1/4 mile west of the ADOT maintenance yard. This fence would establish the western boundary of the IV Unit. This fence would require a cattleguard across State Route 88 (\$15,000 - Forest Service materials and labor).

A new shipping corral in the vicinity of State Route 88 and Forest Road 212. This corral would also serve as a facility for recreational stock (\$5,000 - Forest Service materials and labor).

Pine Creek Unit

Approximately 4.5 miles of fence to establish the south boundary of this unit (\$12,000 - Forest Service materials).

Maintenance

Tortilla Unit

<u>Development Number</u>	<u>Development Name</u>
002053	Tortilla - Millsite

IV Unit

000971 Reavis - Apache Lake
 005187 Castle Dome Division Fence
 004573 Stone Stock Tank

Pine Creek Unit

OR0852 Reavis - Roosevelt
 R05024 Reavis - Bar V Bar

ReconstructionTortilla Unit

<u>Development Number</u>	<u>Development Name</u>	<u>Estimated Cost of Reconstruction</u>
		<u>Forest Service</u>
005303	Mullin Spring	\$500
005292	Upper La Barge Spring ?	\$500
005288	Brad's Water	\$500
005302	Sheep Mountain Spring	\$500
005283	Cedar Basin Corral	\$500
005294	Horse Camp Spring	\$500
005284	Horse Camp Corral	\$500
005300	Night Hawk Spring	\$500
005290	Kane Spring	\$0
005289	Miller Tunnel Spring	\$0
000981	Well Holding Pasture	\$250
005275	Tortilla - Superstition	\$1,000
005278	Yearling Pasture Fence	\$500
005306	Tortilla Well	\$9,000

Pine Creek Unit

005208	Klondike Spring	\$500
005195	Walnut Spring	\$500
005216	Cedar Basin Spring	\$500

Removal

<u>Development Number</u>	<u>Development Name</u>
000964	Cimeron Spring Corral
005223	Frog Creek Trap
005190	Rock Corral
000959	Rock Corral Trap
005221	Lower Plow Saddle Trap
005220	Plow Saddle Trap
000953	Upper Field Pasture
000960	WR Holding Pasture
000970	Horse Mesa Drift Fence
000957	Homestead Corral
005276	Tortilla - Reavis
005213	Reavis - Superstition
000966	Lower Plow Saddle Corral
005192	Ranger Corral
005191	Rogers Corral
000956	Reavis Barn
005277	Tortilla Pasture
005279	Tortilla Creek Drift Fence
004572	Dug Well

005282	Shipping Corral
005281	Tortilla Corral
000856	Stone Patent Pasture Fence

ALTERNATIVE 7 - RANGE DEVELOPMENT REQUIREMENTS

Removal

<u>Development Number</u>	<u>Development Name</u>
000964	Cimeron Spring Corral
005223	Frog Creek Trap
005190	Rock Corral
000959	Rock Corral Trap
005221	Lower Plow Saddle Trap
005220	Plow Saddle Trap
000953	Upper Field Pasture
000960	WR Holding Pasture
000970	Horse Mesa Drift Fence
000957	Homestead Corral
005276	Tortilla - Reavis
005213	Reavis - Superstition
000966	Lower Plow Saddle Corral
005192	Ranger Corral
005191	Rogers Corral
000956	Reavis Barn
005277	Tortilla Pasture
005279	Tortilla Creek Drift Fence
004572	Dug Well

005282	Shipping Corral
005281	Tortilla Corral
000856	Stone Patent Pasture Fence

USDA - FOREST SERVICE

REGION

FOREST

GRAZING SYSTEM

03

TONTO

MANAGEMENT UNIT ALLOCATIONS

DISTRICT

DATE PREPARED

MESA

4/5/96

UNIT

PERMITTEE

PINE, IV AND TORTILLA

LEGEND:



PINE

IV

TORTILLA



MANAGEMENT UNIT	MONTH												NOTES
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
First Year -----													
PINE	[Shaded]												
IV	[Shaded]												
TORTILLA	[Shaded]												
	[Grid]												
	[Grid]												
	[Grid]												
	[Grid]												
	[Grid]												
Second Year -----													
PINE	[Shaded]												
IV	[Shaded]												
TORTILLA	[Shaded]												
	[Grid]												
	[Grid]												
	[Grid]												
	[Grid]												
	[Grid]												
Third Year -----													
PINE	[Shaded]												
IV	[Shaded]												
TORTILLA	[Shaded]												
	[Grid]												
	[Grid]												
	[Grid]												
	[Grid]												
	[Grid]												
Fourth Year -----													
PINE	[Shaded]												
IV	[Shaded]												
TORTILLA	[Shaded]												
	[Grid]												
	[Grid]												
	[Grid]												
	[Grid]												
	[Grid]												

USDA - FOREST SERVICE

REGION

FOREST

GRAZING SYSTEM

03

TONTO

MANAGEMENT UNIT ALLOCATIONS

DISTRICT

DATE PREPARED

MESA

4/5/96

UNIT

PERMITTEE

PINE, IV, TORTILLA

LEGEND:



PINE
IV
TORTILLA



Blank lines for legend entries.

Table with columns for Management Unit, Month (JAN-DEC), and Notes. Rows are grouped by First Year, Second Year, Third Year, and Fourth Year, with sub-rows for PINE, IV, and TORTILLA units. Shaded cells indicate allocations.

Do these units...
only 3 units...
was aren't going to be moved...
much, all but...

APPENDIX F - comments from the 30 day comment period and responses.

* The Forest Service wants to take grazing allotments and give them to neighboring ranchers.

Response: The Forest Service is not taking anything by conducting this study. There is not currently a grazing permit for the Reavis and Tortilla Study Area and there is not a grazing permittee. The study is evaluating if a new term grazing permit should be issued and if so, what the grazing strategy will be.

* Taking allotments away from established "base" property owners would set a terrible precedent that would threaten the stability of the neighboring ranchers as well as the entire ranching industry.

Response: The private land currently owned by Apache Lake Ranch, LLC is not base property for any Forest Service term grazing permit.

Any action involving a term grazing permit on the Reavis and Tortilla Study Area will be according to established regulations and will not set any precedents for future permit actions. This process will also not have any effect on the ranching industry.

* These areas are valuable for recreation and having cattle graze on them would greatly reduce the wilderness experience for most people.

Response: Properly managed livestock grazing on the Reavis and Tortilla Study Area is not expected to have a negative impact on the wilderness resource. Individual perceptions of livestock use in the area are different, so emphasis will be on protecting the visual landscape of the area.

* The recreational use of these areas continue to increase and in many cases are over used. Adding cattle would accelerate the degradation of the area.

Response: The areas of heavy recreational use were included in the analysis of the study area. These areas have been excluded from livestock use to prevent resource damage. Livestock use in the other areas of full capacity range within the study area will not conflict with heavy recreation use.

* Economically these areas are more valuable for recreational pursuits than cattle grazing.

Response: The Reavis and Tortilla Study Area is capable of supporting both recreational use and livestock use if both are properly managed.

* You have costs on all the other alternatives so why not on Alternative 7.

Response: Costs were not included for Alternative 7 because these costs would not be determined until the areas are added to adjacent allotments. It is expected that these costs would be similar to Alternative 6.

* Much of what is considered "capable" grazing land is interspersed with rugged terrain and thin soils which reduce its capability to be grazed without harm.

Response: The area designated as full capacity range in the 1995 analysis does not include the isolated areas that are interspersed with rugged terrain and thin soils. The full capacity areas are continuous with definable boundaries.

* The cost of improvements alone is prohibitive.

Response: Improvement costs for this proposed strategy are similar to other grazing strategies that have been implemented on the Tonto National Forest.

* The extent of fences, corrals, tanks and spring developments necessary to support a grazing operation here will greatly reduce the untrammelled wilderness quality.

Response: The extent of development for the grazing strategy will have little effect on the wilderness qualities of the area. Many of the developments that are planned, currently exist and will be reconstructed. New developments will be located and constructed to minimize any effect on the visual quality of the area.

* It is as least as important in environmental assessments to evaluate the status of those species that should be common in each of the biotic communities that comprise the land in question.

Response: The impact of the various alternatives on wildlife species that are not threatened, endangered or sensitive was evaluated in cooperation with the Arizona Game and Fish Department. Emphasis is on maintaining the habitat necessary to support these species.

* The riparian communities in the study area have been and will be negatively impacted by grazing.

Response: Although some of the riparian areas in the study area still show signs of improper livestock management from the past, the proposed grazing strategy has been designed to protect these unique ecosystems. No negative impacts to riparian are expected with this strategy.

* In the discussion about the effects of Alternative 6 upon riparian habitat, you claim that winter grazing will have "no adverse effects" upon the areas of riparian habitat.

Response: If stocking rates are correct, and the winter grazing is properly managed, then our experience has shown that riparian areas can be utilized by livestock during the dormant season without any observed adverse effects.

* What about the effects livestock grazing may have upon the areas fire regime.

Response: There is currently much debate about the effect of livestock grazing on fire in a number of biotic communities. This issue may never be completely resolved. Managing for properly functioning ecosystems will be the goal of this grazing strategy. This management may include both prescribed and natural fire.

* The amount of ground cover has long been recognized as an important factor in determining the rate of erosion, but that may not be the only factor.

Response: An easily measured attribute of watersheds is necessary for monitoring the effects of management practices. Ground cover is recognized as an easily measured and accurate indicator of watershed condition and trend.

implication is studies to determine use of grazing

* I am concerned that the 1995 capability studies were conducted merely to address the "capability" of the allotments not their suitability.

Response: The 1995 analysis was conducted to determine the capability of lands within the study area to support livestock grazing. The Tonto Forest Plan identified this area for grazing management level B. The 1995 study was conducted to refine that designation and was not intended to be a suitability study.

intensity

* Those areas identified as capable appear to be all too well aligned with currently active allotments.

astute comment

Response: The capability determination was based on a number of factors, the most important being topography. The alignment with adjacent grazing allotments is the result of the relationship of the capability factors with the existing allotment boundaries.

* One concern is that the EA is devoid of a discussion of the effects of the proposed action on T&E species.

Response: T&E species are discussed in detail in the Biological Evaluation for this study area. This evaluation is an appendix to the EA.

* Opening part of the Superstition Wilderness to grazing and the associated pressures, when the wilderness will already be subject to substantial human pressures, seems unreasonable to me.

Response: The proposed grazing strategy was designed to minimize conflicts between recreational use and livestock use. Livestock grazing is a legitimate use in wilderness areas as long as it is in balance with the other resource demands of the area.

* The EA is inadequate because it excludes a cost/benefit analysis for each alternative.

no cost/benefit studies

Response: The purpose of the EA is to compare a number of alternatives for issuing a new term grazing permit on the Reavis and Tortilla Study Area. The

cost information provided for the alternatives was adequate to allow the decision maker to compare the alternatives. *implication: we don't need benefits.*

* Impacts to watersheds on the allotments are not adequately assessed.

Response: The EA determined which alternatives would have a negative effect on the stability of the watersheds and which would maintain that stability. This information was adequate for the decision maker to compare alternatives in relation to the effects on watersheds.

* The Forest Service has failed to analyze the possibility of Cryptosporidium contamination in tributaries of the Salt River within the proposed allotments.

Response: The Salt River tributaries currently drain many areas that are grazed by livestock. No evidence that Cryptosporidium contamination is a problem has been presented. *Someone should present it.*

* The cost associated with cattle grazing cannot be justified.

Response: The cost of implementing a grazing strategy on the study area is similar to other grazing strategies that are currently in place. These costs as outlined in the EA are covered by range betterment funds. These funds are derived directly from grazing fees paid by Forest Service grazing permittees and are utilized for on the ground range development.

* One need look no farther than the 3 Bar Range to understand the disastrous harm which can result when a higher elevation desert vegetation type is not grazed by domestic livestock.

Response: The Lone Fire of 1996 which is referenced by this statement was the result of extreme fire conditions and not the lack of livestock grazing. Over one third of the acreage burned in this fire was in active livestock grazing allotments.

1/3 of Lone Fire was on grazed land

* It is will cost a fair amount of taxpayer dollars to make the necessary range improvements for some of the alternatives. Yet if improvements that are currently on the land are to removed, the cost is zero.

Response: The costs outlined for each alternative in the EA, are the range betterment dollars necessary to complete the developments required for the grazing strategy. These are funds that are collected from grazing fees specifically for the construction of range developments, and they reflect the actual cost to the government to implement a grazing strategy. There will be costs involved with the removal of developments, but these costs are not required for the implementation of the grazing strategy and were not considered in the comparison of the alternatives.

* There was not enough historical background provided concerned public to get a full picture of the history.

Response: Historical data for this study area is quite extensive. This information was not added to the EA in an attempt to keep the assessment brief and to the point. Sources of historical information are listed in the appendix under supporting documents. These documents are available at the Mesa Ranger District Office.

* Grazing is an "objective" that is diametrically opposed to the other four "objectives".

Response: If properly managed, grazing is compatible with protecting unique ecosystems, maintaining water quality, avoiding recreational conflicts and protecting wildlife habitat.

* While concentrated recreational use comprises only one percent of the study area, dispersed recreation activity no doubt comprises 100% of the study area.

Response: Dispersed use does include most of the study area and some encounters between livestock and recreational users will occur. Correct stocking rates and a grazing strategy that disperses livestock and provides schedules rest for grazed range should minimize the effect of these encounters.

* Nothing in your assessment addresses cultural resources of the area.

Response: The mitigation requirements outlined for each of the action alternatives state that all ground disturbing activity associated with the grazing strategy will require survey and clearance for cultural resources.

* If you select some commercial cattle alternative the Forest Service must assure manpower to monitor the arrangements in the field, and provide money and legal resources to enforce the agreement with commercial profit users.

Response: Monitoring requirements for each action alternative are outlined in the EA. These monitoring activities were developed to meet existing time and money constraints within the Forest Service. Enforcing the grazing strategy requirements will be accomplished using the Forest Service term grazing permit. The provisions of the grazing strategy become a part of that permit.

* Commercial for profit activity on public lands should be phased out, especially in wilderness areas.

Response: Laws passed by Congress have included livestock grazing as a legitimate use of National Forest lands and wilderness areas.

* All costs for commercial use of public lands should be born by the users, not by the general non-commercial public.

Response: Much of the cost of implementing a grazing strategy on the Reavis and Tortilla Study Area will be absorbed by the grazing permittee. These costs are not reflected in the EA. The costs that are reflected in the EA are range

betterment dollars derived from grazing fees paid by Forest Service grazing permittees.

* Cattle under alternatives 3,4,5,6 and 7 mean that the streams and stream bank areas will continue to be severely damaged.

Response: During the last 20 years livestock have grazed on the area for only 10 months and it has been over 30 years since yearlong livestock use was permitted. Most of the stream areas have recovered considerably since that time. The EA outlines which of the alternatives would again damage these areas and which would provide protection.

History

* As the cattle have been legally removed from the area in question the cattle should be kept out.

Response: The term grazing permit for the Reavis and Tortilla Allotments was canceled because of non-compliance with the terms of the permit. The cancellation was not intended to close the area to livestock grazing. The Reavis and Tortilla Study Area has been identified for livestock management level B in the Tonto Forest Plan. This level controls livestock numbers so that livestock use is within present grazing capacity. Improvements are minimal and constructed only to the extent needed to protect and maintain the range resource in the presence of grazing. The 1995 analysis was utilized to refine the level B designation and determine what part of the study area is capable of supporting livestock grazing. A term grazing permit will be issued for the areas capable of supporting grazing.

* Best Management practices should be implemented to protect watershed condition and riparian areas, to maintain adequate vegetative cover, to minimize the discharge to sediment, nutrients, bacteria and manure to the Salt River via the Salt River, Pine Creek, Crabtree Wash, Fish Creek and unnamed washes to all waters of the State/water of the U.S.

Response: Analysis of alternatives determined which actions would have negative impacts on watershed conditions. These alternatives were eliminated by the EA comparison process.

* A monitoring program should be implemented to evaluate the effectiveness of Best Management Practices in protecting watershed condition and waters of the State.

Response: Each alternative has identified monitoring requirements.