



United States
Department of
Agriculture

Forest
Service

Malheur
National
Forest

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John Day, OR 97845
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File Code: 1950/4060-3

Date: March 28, 2008

Route To:

Subject: Proposed Shaketable Research Natural Area

To: Regional Forester

Enclosed is the Environmental Assessment and Decision Notice for the designation of the Shaketable Research Natural Area (RNA). This RNA was proposed in the Malheur National Forest Land and Resource Management Plan (1990). The enclosed decision establishes the RNA for perpetuity.

GARY L. "STAN" BENES

Enclosures



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Office Memorandum • UNITED STATES GOVERNMENT

U. S. FOREST SERVICE
BOX 4137
PORTLAND 8, OREGON

TO : Forest Supervisors - Whitman, Umatilla, Malheur DATE: February 5, 1946
FROM : Recreation & Lands, Frank B. Folsom
SUBJECT: U, CLASSIFICATION, Natural Areas

At a recent meeting of the Regional Natural Area Committee, the need for an Eastern Oregon natural area typical of the ponderosa and mixed types was brought out. At present we have no natural area east of the Ochoco. What we need is one or more additional areas which will include both ponderosa pine slopes and north slopes typical of the mixed type of the Blue Mountains.

Possibly such areas can be located within or immediately adjacent to the already existing Blue Mountain Experimental Forest and the Starkey Experimental Range. If this is not feasible, it should be possible to locate some other suitable sites - perhaps one each on the Umatilla, Whitman and Malheur.

While this job is not first priority, it is evident that unless some action is taken before very long, we will have passed up the opportunity to select sites which adequately represent the types we are after. This being the case, it is hoped that you will be able to give the matter attention this year and let us have a report not later than December 1.

Enclosed is an outline of the specifications for natural areas.

Frank B. Folsom

Enclosure

Berry C. Cox

DECISION NOTICE/DESIGNATION ORDER
Finding of No Significant Impact

Shaketable Research Natural Area
(Forest Plan Amendment #64)

USDA Forest Service
Malheur National Forest
Blue Mountain Ranger District
Grant County, Oregon

An environmental assessment (EA) that discusses the Shaketable Research Natural Area (RNA) on the Blue Mountain Ranger District is available for public review at the Forest Supervisor's Office, Malheur National Forest in John Day, Oregon.

DECISION

I am deciding to select the proposed action as described in the 2005 *Shaketable Research Natural Area Environmental Assessment* (EA). Specifically, I am deciding to designate 385 acres located 15 miles (23 km) southeast of Dayville, Oregon (Figure 1) as the Shaketable RNA. -The legal location of this tract covers Section 13 of T.15 S., R. 27 E., and Sections 17, 18, 19 and 20 of T.15 S., R. 28 E., in Grant County.

This decision is a non-significant amendment to the Malheur National Forest Land and Resource Management Plan (Forest Plan) and the RNA will be managed in compliance with all relevant laws, regulations and Forest Service Manual direction regarding Research Natural Areas.

RATIONALE

My decision to establish the Shaketable RNA responds to the need to preserve an example of a significant natural ecosystem, preserve gene pools for this community type, and provide an educational and research area for study of these ecosystems. This designation formally recognizes that the site is representative of western juniper/low sagebrush/bunchgrass, low sagebrush/Idaho fescue, rigid sagebrush/Sandberg's bluegrass, and bitterbrush/bunchgrass woodland identified by the Oregon Natural Heritage Advisory Council (Oregon Natural Heritage Advisory Council 2003). This site, currently tracked as a proposed RNA in Management Area (MA) 9, would be tracked as part of the MA-9 permanent RNA network.

PUBLIC INVOLVEMENT

Public comments on the proposal were invited with a scoping letter to interested parties on May 25, 2005. On October 5, 2005 a legal notice was published in the Blue Mountain Eagle notifying the public that the EA was available for review and comment. One comment was received and is available upon request from the Malheur National Forest.

RNA acres within MA-9 to approximately 1,658 acres. Areas proposed as RNAs in MA-9 were treated similar to designated RNAs under the description, goals and general management standards for the management area. In this respect, the proposed RNAs were anticipated by the Forest Plan to be designated at some future time. The designation of Shaketable as a RNA will not alter the multiple use goals and objectives of the Forest Plan. The Forest Plan identified the area proposed as Shaketable RNA as an important addition to the RNA network, however; the amendment does not effect the establishment of any other proposed RNA.

2. Due to specific on-site analysis, the management area boundaries for the Shaketable RNA (MA-9) would be increased from the 1990 Forest Plan proposal of 375 acres to 385 acres. This change would allow an example of western juniper/low sagebrush/bunchgrass, low sagebrush/Idaho fescue, rigid sagebrush/Sandberg's bluegrass, and bitterbrush/bunchgrass woodland to serve as a benchmark for comparison with areas of similar vegetation that are intensively used. The amendment will increase the RNA network by 385 acres. Shaketable RNA is currently embedded within MA-10 Shaketable Semiprimitive Nonmotorized (SPNM) area, which is also part of the Shaketable Inventoried Roadless Area as mapped under the Roadless Area Conservation Rule (USFS, 2001a). Shaketable SPNM is approximately 8,997 acres and managing an additional 385 acres as MA-9 would only affect 4% of the Shaketable SPNM area.
3. Although the amendment will officially designate the Shaketable RNA, the management prescription for the area would not change from current management. The amendment does not change the goals and objectives for other resources in the Forest Plan. Since the area has been managed under MA 9 since 1990, there would be no expectation of a change in timber, wildland fire or range management. Therefore, anticipated changes brought about by this amendment in the levels of resource activities and outputs projected for this planning period are not expected to be measurable.
4. The amendment is intended to facilitate achievement of management prescriptions for a continuous research natural area (RNA) network. Region 6 developed a network of RNAs designated to "illustrate adequately or typify for research or education purposes, the important forest and range types in each forest region, as well as other plant communities that have special or unique characteristics of scientific interest and importance." This amendment provides for the designation of a RNA for perpetuity.

Summary: Amendment determination of significance:

The Malheur Forest Plan was approved in 1990 and is currently in the process of being revised. Amendment #64 will result in permanent designation of the Shaketable RNA, would remain in effect in perpetuity and would be included in any revised Forest Plans as a designated RNA.

The planning area for the Malheur National Forest is about 1.5 million acres (Forest Plan, p. I-2). Under the Forest Management Plan, Research Natural Areas fall into

the research natural area will have no impact for sensitive plant species because there would be no environmental effects. In addition there are no listed aquatic species present within the designated area. There will be no negative impact on sensitive aquatic species.

- 7) The proposed action is consistent with federal, state and local laws and requirements imposed for the protection of the environment.

IMPLEMENTATION

Legal Notice of this decision will appear in the Oregonian, as newspaper of record for Regional Forester Decisions in Oregon, as well as in the Blue Mountain Eagle, the newspaper of record for the Malheur National Forest. A copy of the legal notice will be mailed to all persons stating interest in the project. Implementation of this decision shall not occur within 7 calendar days following publication of the legal notice in the Oregonian.

APPEAL OPPORTUNITIES

This decision is subject to appeal under 36 CFR 217 but does not require notice and comment under 36 CFR 215. Any Notice of Appeal of this decision must be fully consistent with 36 CFR 217.9 (Content of Notice of Appeal) and must include the reasons for appeal. Written notice of appeal must be postmarked or received by the Appeal Deciding Officer, Abigail Kimbell, within 45 days of the date the legal notice appears in the Oregonian. Submit written notice of appeal to:

Chief, USDA Forest Service
ATTN: NFS Appeals
14th and Independence SW
P.O. Box 96090
Washington, D.C. 20090-6090



Regional Forester

April 24, 2008
Date

DESIGNATION ORDER/DECISION NOTICE

An Order establishing Shaketable Research Natural Area


By virtue of the authority vested in me by the Secretary of Agriculture under regulations 7 CFR 2.42 and 36 CFR 251.23, this is my Designation Order to establish the Shaketable Research Natural Area. The Shaketable Research Natural Area shall be comprised of lands described in the section of the Establishment Record entitled "Location".

Regional Forester John Butruille recommended the establishment of the Shaketable Research Natural Area in the Malheur National Forest Land and Resource Management Plan dated May 25, 1990 which is incorporated into this document by reference. That recommendation was the result of an analysis of the factors listed in 36 CFR 219.25 and Forest Service Manual 4063.41. The results of the Regional Forester's analysis are documented in the Final Environmental Impact Statement for the Malheur National Forest Land and Resource Management Plan. The Establishment Record for the Shaketable Research Natural Area is available to the public.

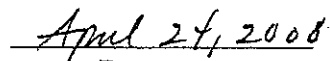
The Shaketable Research Natural Area will be managed in compliance with all relevant laws, regulations and Manual direction regarding Research Natural Areas. The Shaketable Research Natural Area will be administered in accordance with the management direction identified in the Establishment Record. The Malheur National Forest Land and Resource Management Plan is hereby amended to be consistent with the management direction identified in the Establishment Record and this Designation Order. This direction will remain in effect unless amended pursuant to 36 CFR 219.10. This is a non-significant amendment of the Malheur National Forest Land and Resource Management Plan.

Based on the Environmental Analysis documented in the Malheur National Forest Land and Resource Management Plan, the Environmental Impact Statement, and the Establishment Record, I find that designation of the Shaketable Research Natural Area is not a major Federal action significantly affecting the quality of the human environment.

The Forest Supervisor of the Malheur National Forest shall notify the public of this amendment and will mail a copy of the Designation Order and amended direction to persons on the Malheur National Forest Land and Resource Management Plan mailing list.



Regional Forester



Date

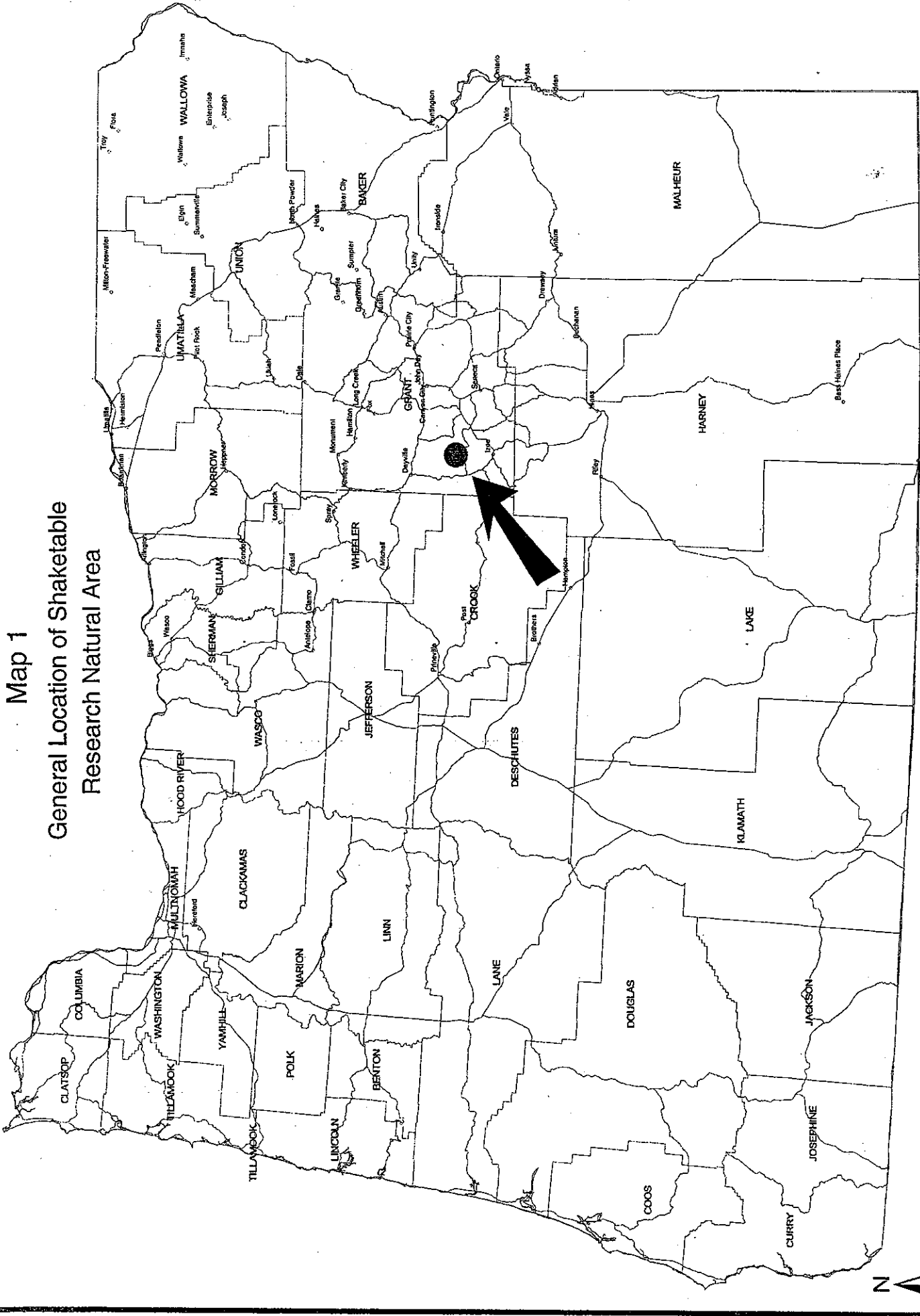
UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE



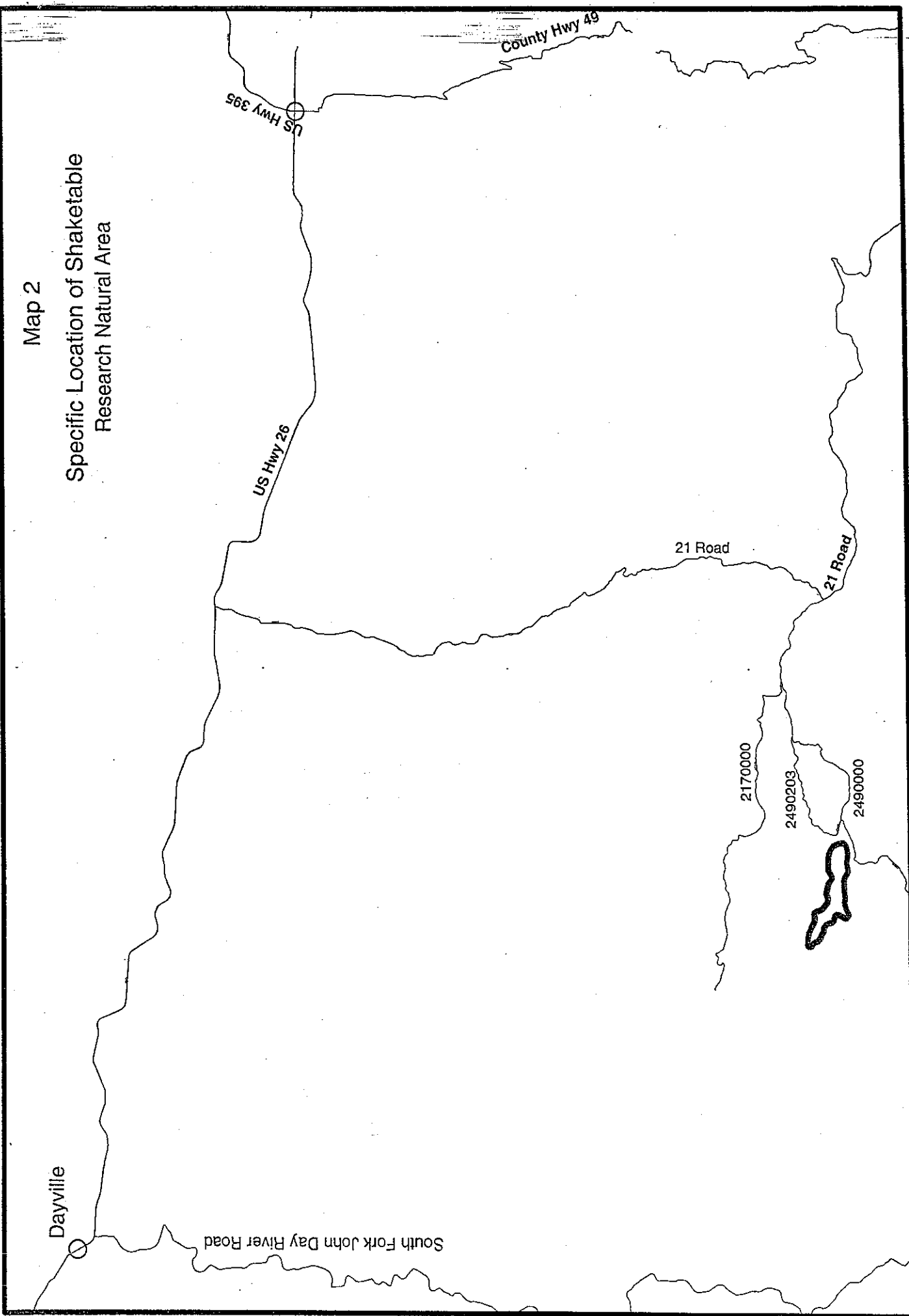
MAPS

- 1) **General Location**
- 2) **Specific Location**
- 3) **Topographic Map**
- 4) **Plant Associations**
- 5) **Soil Mapping Units**

Map 1
General Location of Shaketable
Research Natural Area

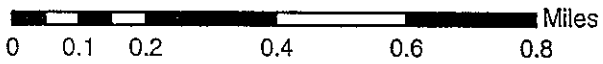
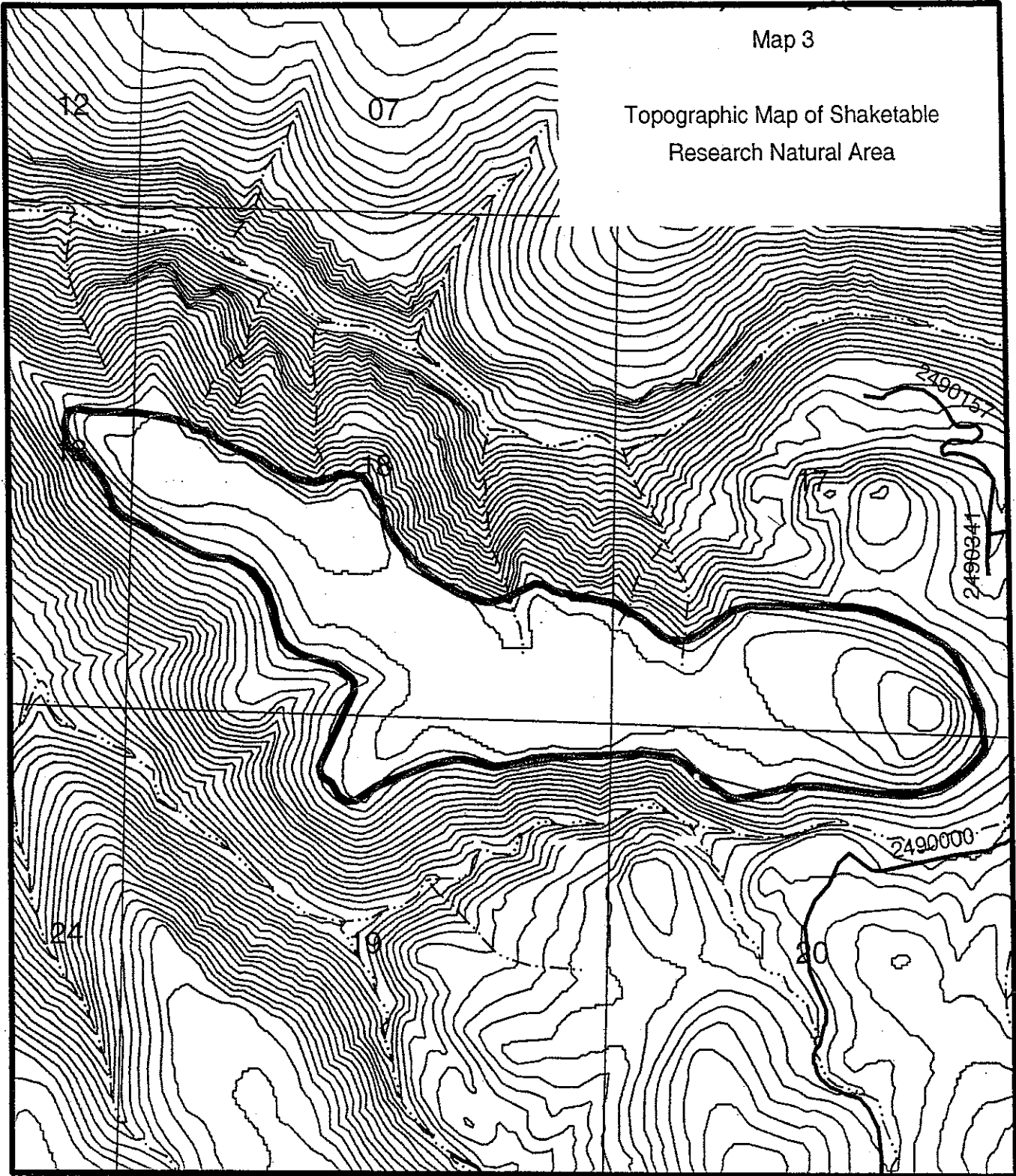


Map 2
Specific Location of Shaketable
Research Natural Area



Map 3

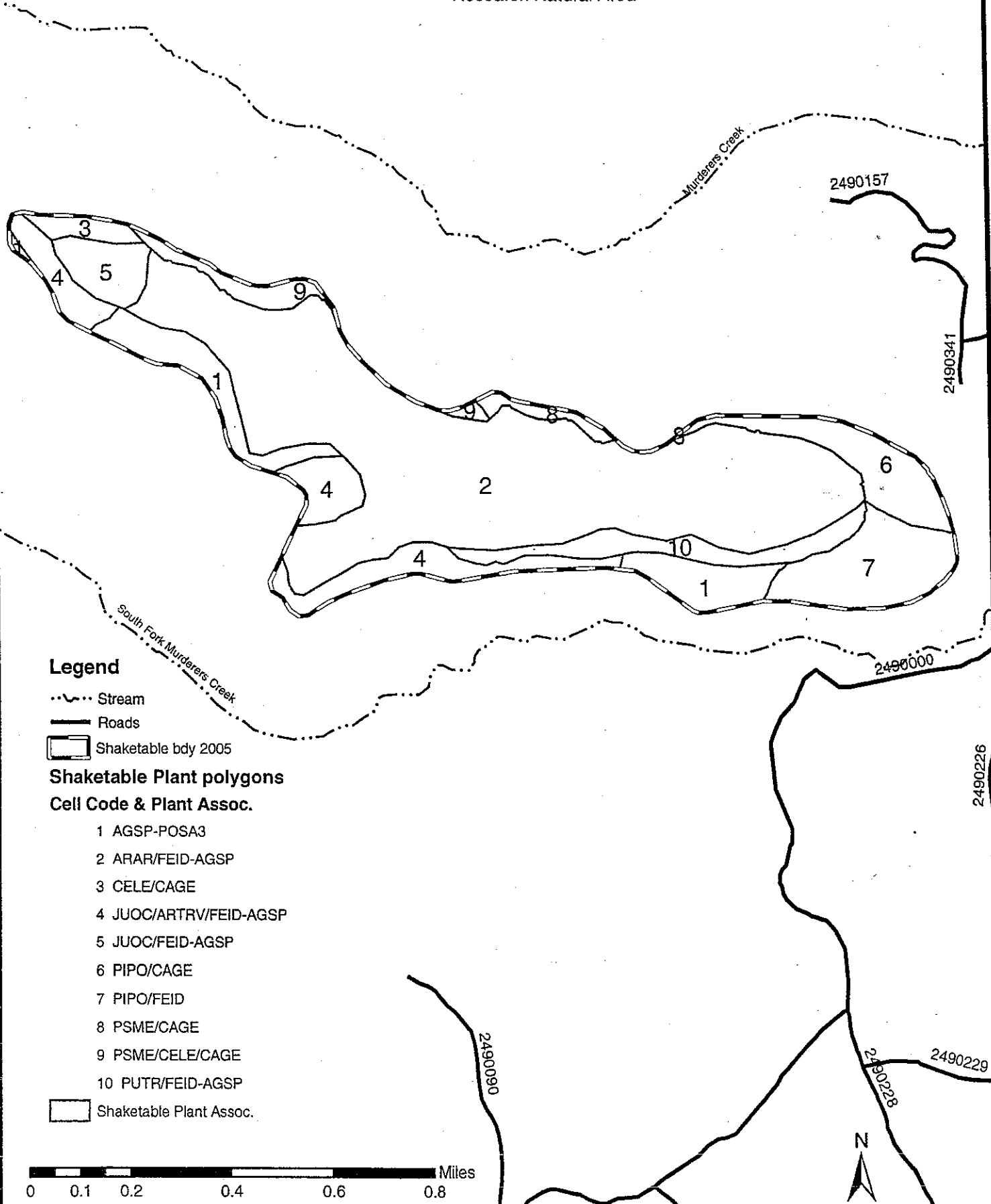
Topographic Map of Shaketable
Research Natural Area



Map produced by K. shull 3/22/05

Map 4

Plant Associations for Shaketable
Research Natural Area



Legend

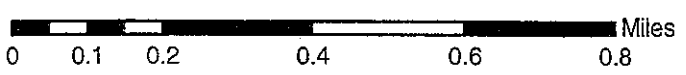
- Stream
- Roads
- Shaketable bdy 2005

Shaketable Plant polygons

Cell Code & Plant Assoc.

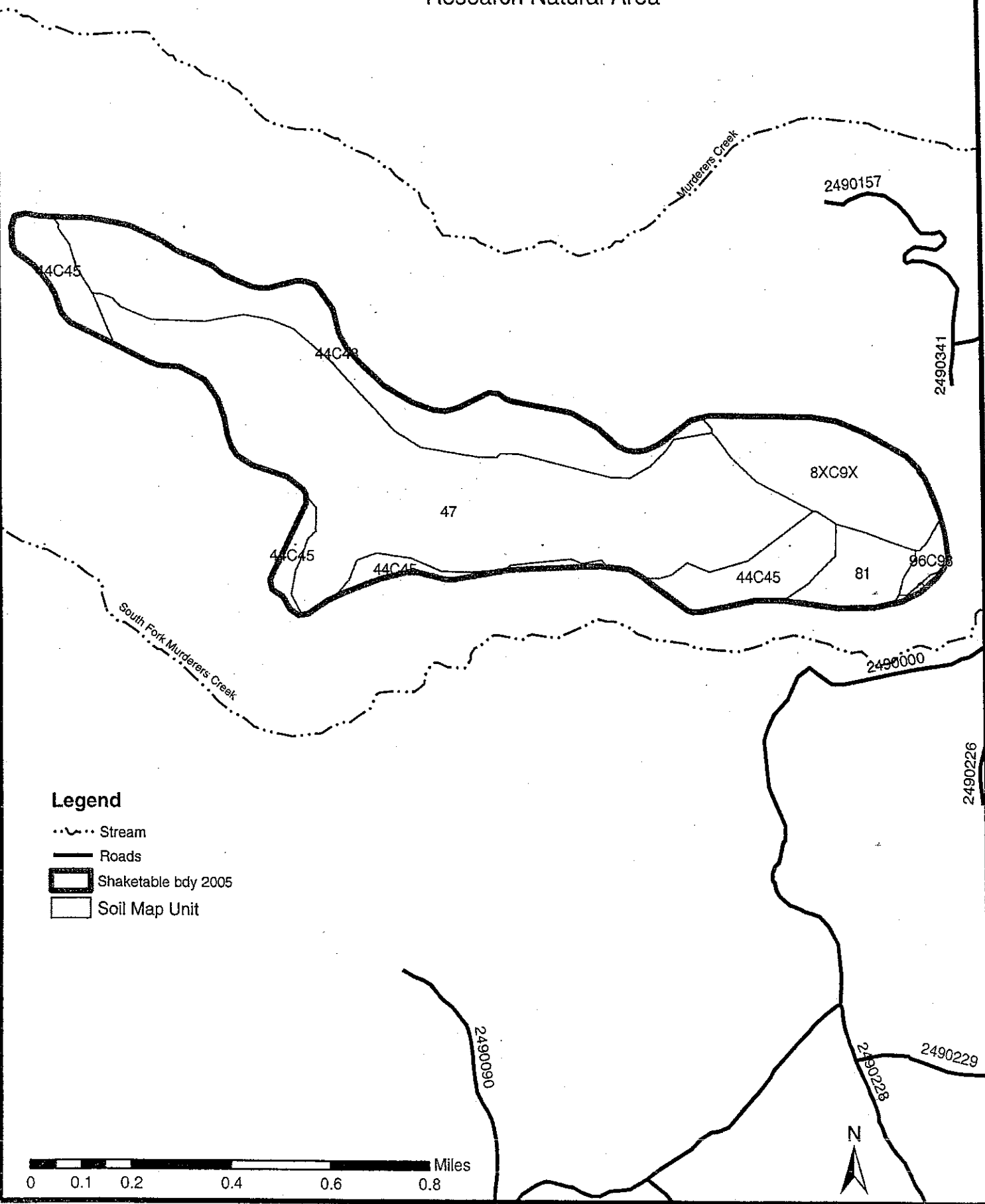
- 1 AGSP-POSA3
- 2 ARAR/FEID-AGSP
- 3 CELE/CAGE
- 4 JUOC/ARTRV/FEID-AGSP
- 5 JUOC/FEID-AGSP
- 6 PIPO/CAGE
- 7 PIPO/FEID
- 8 PSME/CAGE
- 9 PSME/CELE/CAGE
- 10 PUTR/FEID-AGSP

- Shaketable Plant Assoc.



Map 5

Soil Mapping Units for Shaketable Research Natural Area



Legend

- Stream
- Roads
- ▭ Shaketable bdy 2005
- ▭ Soil Map Unit

0 0.1 0.2 0.4 0.6 0.8 Miles



UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE



ENVIRONMENTAL ASSESSMENT

SHAKETABLE RESEARCH NATURAL AREA

ENVIRONMENTAL ASSESSMENT

USDA, Forest Service
Blue Mountain Ranger District
Malheur National Forest
Grant County, Oregon

Lead Agency:

USDA Forest Service
Malheur National Forest
P.O. Box 909
John Day, OR 97845

Responsible Official:

Regional Forester
Pacific Northwest Region
P.O. Box 3623
Portland, OR 97208

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INTRODUCTION

This environmental assessment evaluates the proposal to amend the Malheur National Forest Land and Resource Management Plan, changing the status of the proposed Shaketable Research Natural Area (RNA) on the Blue Mountain Ranger District to an established RNA status. This assessment will document the analysis of the Proposed Action and the No Action Alternative.

Environmental Setting

Shaketable RNA is located in T. 15 S., R 27 E., Section 13 and in T. 15 S., R. 28 E., Sections 17 – 20 which is approximately 15 miles (23 km) southeast of Dayville, Oregon (see maps in Appendix A). The RNA is composed of intact plant communities that can serve as benchmarks for comparison with areas of similar vegetation that are intensively used. The proposed RNA is located entirely within the boundaries of the Shake Table Semiprimitive Nonmotorized Area (MA-10). The majority of the RNA is also within the boundary of the Shake Table Inventoried Roadless Area, as designated under the Roadless Area Conservation Rule (USDA Forest Service 2001a). See Appendix A. A full description of the Shaketable RNA is found in the Establishment Record.

PURPOSE AND NEED FOR ACTION

The purpose of formally establishing Shaketable RNA is to contribute to a network of RNAs designated to “illustrate adequately or typify for research or education purposes, the important forest and range types in each forest region, as well as other plant communities that have special or unique characteristics of scientific interest and importance” (36 CFR 251.23). The proposed Shaketable RNA contributes to this network of RNAs by providing an example of Western juniper/low sagebrush/bunchgrass, low sagebrush/Idaho fescue, rigid sagebrush/Sandberg’s bluegrass, and bitterbrush/bunchgrass woodland identified by the Oregon Natural Heritage Advisory Council (Oregon Natural Heritage Advisory Council 2003). An evaluation by the Regional RNA Committee, pursuant to direction in the Forest Service Manual (FSM) 4063.04b, identified this vegetation type as suitable and desirable for inclusion in the national network. Establishment of this RNA will provide long-term protection and recognition of this vegetation type.

Shaketable RNA was proposed as a candidate RNA in the 1990 Final Environmental Impact Statement for the Malheur National Forest Land and Resource Management Plan (Forest Plan), and the 1990 Land and Resource Management Plan Record of Decision (USDA Forest Service 1990a, 1990b, 1990c). This environmental assessment tiers to the Malheur Land and Resource Management Plan Final Environmental Impact Statement and Record of Decision (1990) and incorporates by reference the accompanying Land and Resource Management Plan (Forest Plan), as amended.

Site conditions have not significantly changed since the RNA was proposed during the land management planning process. Since the majority of the RNA is located within an Inventoried Roadless Area (IRA), the main mechanism for change would be wildfire. In 2006, there were several spot fires associated with the Shaketable Complex Fire within the IRA. Figure 2, located in the Appendix, shows that the spot fires varied in size and location. None of the spot fires were located within or adjacent to the boundaries of the RNA.

An Establishment Record has been prepared and completed for Shaketable RNA. It now remains to formally convert this RNA from candidate to established status. This conversion is accomplished by amending the Forest Plan through a Designation Order/Decision Notice. The purpose of amending the Forest Plan is to formally establish this RNA as a part of the Research Natural Area System.

PROPOSED ACTION

The proposed action is to formally establish Shaketable RNA, which was a proposed RNA in the Forest Plan. This RNA will be managed according to the direction provided in the management plan (Chapter IV, MA-9, pages IV-95 and IV-96). This proposed action of formally designating the RNA by the Regional Forester, will amend the Forest Plan.

Issues

A Nature Conservancy specialist initiated and prepared a draft Establishment Record in 1997. The draft was edited in 2005 to reflect changes in the size of the proposed Shaketable RNA and other editorial changes suggested by the regional RNA specialist.

Public participation in this project began when a scoping letter and map were mailed to interested publics on October 15, 1997. Two comments were received, one with comments favorable to establishing the RNA and one opposed. At that time the Shaketable RNA was proposed to be expanded from 375 acres to 1,170 acres. The one respondent opposed to establishing the RNA disagreed with increasing the size because the additional plant communities were different ecosystems that needed to be independently analyzed. The respondent expressed concern that significant changes in Forest Plan land allocations were involved and the effects on management of other resources and changes in outputs needed to be disclosed.

Public scoping was initiated again on May 25, 2005. Letters were sent to 13 interested parties. On October 5, 2005 a legal notice was published in the Blue Mountain Eagle notifying the public of the availability for review of the Environmental Assessment. The Shaketable Proposed RNA is about 385 acres, resulting from a minor refinement of the boundaries of the 375 acre area identified in the 1990 Forest Plan. The additional plant communities proposed in the 1997 scoping for Shaketable RNA have been removed. The Forest received one comment from the same organization (but by a different representative of that organization) who made comments against the proposal in 1997. The respondent is

opposed to formal designation as an RNA, but not opposed to allocating and managing the area as RNA. The respondent wrote that the formal establishment would take away the ability to protect and preserve the area because it is ripe for a large fire, which would destroy the very things the Forest Service was trying to protect. He is opposed to an increase in the size of the RNA.

ALTERNATIVES

Proposed Action

This action would designate in perpetuity approximately 385 acres on the Blue Mountain Ranger District, Malheur National Forest as the Shaketable RNA (see the Establishment Record section titled Location and Boundaries, page 3, USDA Forest Service 2005). Once established, the Forest Service Pacific Northwest Research Station would develop a management plan specific to Shaketable RNA. Management of the area will be followed as outlined in the Forest Plan, pages IV-95 and IV-96 (USDA Forest Service 1990b). The objective is to maintain the natural condition of the area. There would be no permitted livestock grazing, although incidental use the same as in the past may occur; no fuelwood, timber products, or minerals will be removed; fire suppression will be limited; recreational use will be discouraged; and no roads or trails will be constructed.

No Action

Under the No Action Alternative, the candidate area would continue to be managed as a proposed RNA as directed in the Forest Plan. Management direction will continue until the Forest Plan is revised or replaced. The only difference between this no action alternative and the proposed action is the formal designation of the area as a RNA.

ENVIRONMENTAL EFFECTS

Proposed Action

Amending the Forest Plan to formally establish Shaketable RNA is an administrative action lacking environmental effects. Consequently, neither alternative will have an effect on public health, safety, cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers areas deemed ecologically critical, sites listed or eligible for listing in the National Register of Historic Places, endangered or threatened species or its habitat determined to be critical under the ESA of 1973, or threaten a violation of Federal, State, or local law imposed for the protection of the environment. The Proposed Action is not highly controversial as evidenced by the number and tone of the responses received from the public during the 1997 and 2005 scoping process. The Action being proposed does not involve unique or unknown risks. It does not establish a precedent as proposed Research Natural Areas have been established on the Malheur National Forest and elsewhere in Region 6. Since this is an administrative action, there will be no cumulatively significant impacts on the environment.

In addition, there are no known significant mineral resources within the area. The RNA is within land open to oil and gas leasing, but there are not any active leases. If oil was discovered under the butte, we would request side-cast drilling from the bottom disturbed lands, therefore, not disturbing habitats within the RNA. Recreation use is minimal and is expected to remain so. As there are no commercially valuable timber resources in the area, no loss of timber utilization is anticipated. No threatened or endangered plants or animals would be affected by establishment of the area. No roads or trails exist within the area nor is there a need for such. Environmental consequences disclosed in the Forest plan Final Environmental Impact Statement are still valid, and conditions and effects have not changed. The only difference between the two alternatives is that the Proposed Action gives the designation more permanency. This could foreclose future options in the unlikely event of something new becoming known. See the Establishment Record, Impacts and Possible Conflicts, pp. 22 – 24 (located in the Appendix) for more details (USDA Forest Service 2005).

CONSULTATION WITH OTHERS

This proposed action was identified in a May 25, 2005 scoping letter with opportunity for public comment. This action has also been listed in the Schedule of Proposed Actions since Spring 2005. Public comments are in Appendix of this document.

REFERENCES

Oregon Natural Heritage Advisory Council. 1993. Oregon Natural Heritage Plan. Division of State Lands, State of Oregon, Salem, Oregon. 158 pp.

Oregon Natural Heritage Advisory Council. 2003. Oregon Natural Heritage Plan. State Land Board, State of Oregon, Salem, Oregon. 174 pp.

USDA Forest Service, 1990a. Final Environmental Impact Statement, Land and Resource Management Plan. Malheur National Forest. John Day, Oregon.

USDA Forest Service, 1990b. Land and Resource Management Plan. Malheur National Forest. John Day, Oregon.

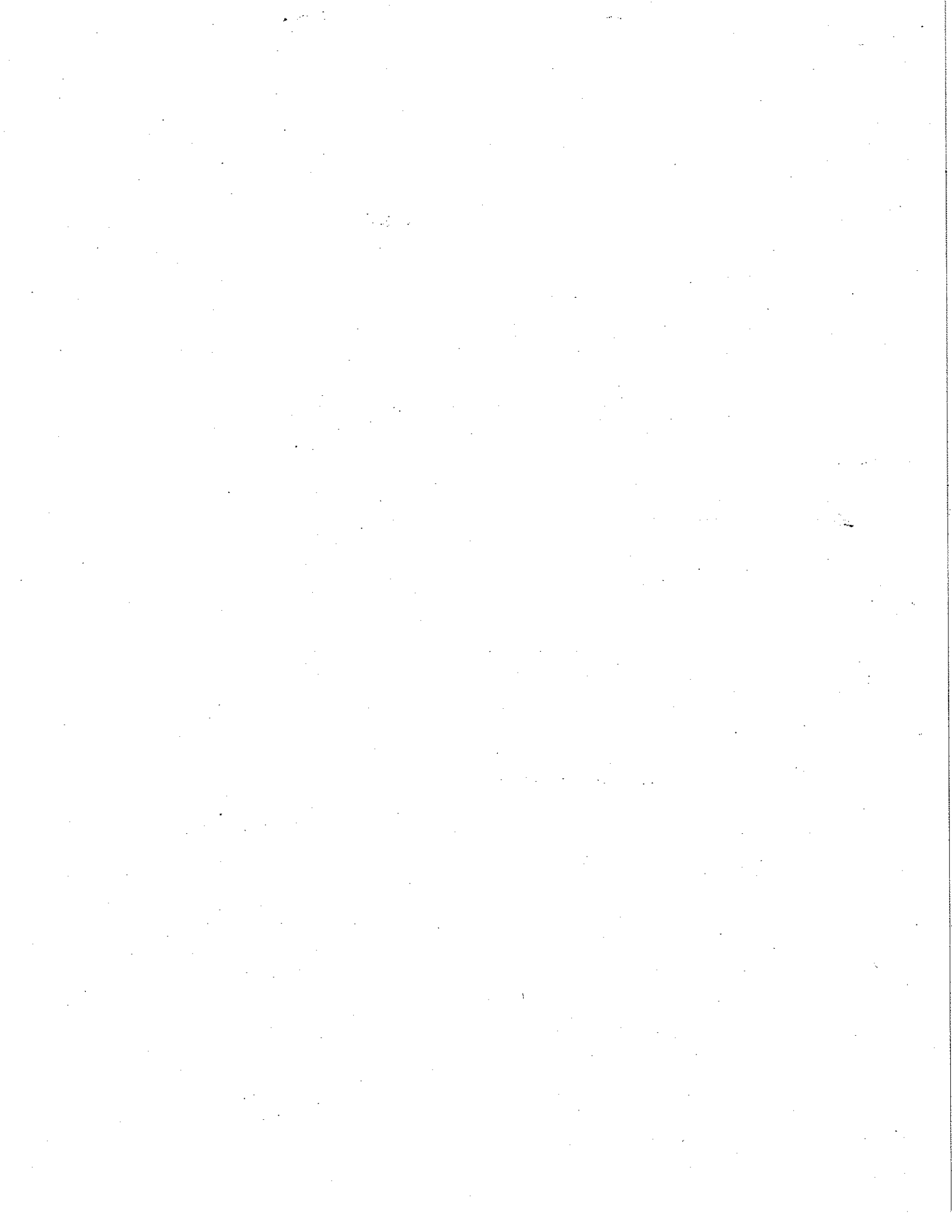
USDA Forest Service, 1990c. Land and Resource Plan, Record of Decision. Malheur National Forest. John Day, Oregon.

USDA Forest Service. 2005. Establishment Record for Shaketable Research Natural Area. Malheur National Forest, Grant County, Oregon.

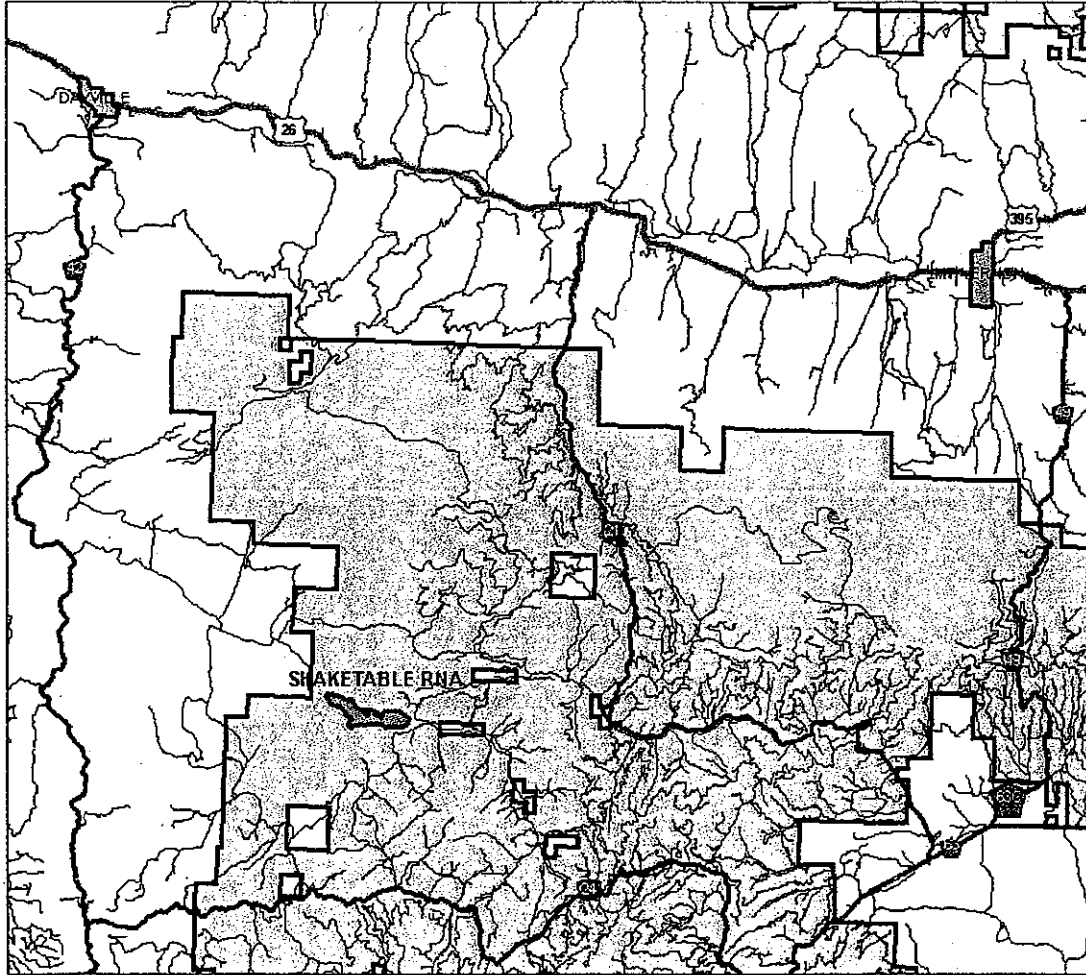
APPENDIX A - MAPS

VICINITY MAP





PROPOSED SHAKETABLE RNA – SHAKETABLE COMPLEX FIRE
PERMIMETERS AND SHAKETABLE SEMIPRIMITIVE NONMOTORIZED AREA



Proposed Shaketable RNA - Malheur N.F.
Vicinity Map



Legend

-  National Forest
-  Roads
-  towns polygon
- RNA**
-  Proposed RNA-Shaketable

Proposed Shaketable RNA - Malheur N.F.
Shaketable Complex Fire (2006) Fire Perimeters
and Shaketable Semiprimitive Nonmotorized (MA-10)





0 0.1 0.2 0.4 0.6 0.8 Miles


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
Legend

MAS

 Semiprimitive Nonmotorized MA-10


 National Forest

 Roads

 40' Contours

 Shaketable Fire_August-31-2006

RNA

 Proposed RNA - Shaketable

APPENDIX B – PUBLIC COMMENT AND FOREST RESPONSE



Malheur Lumber Company
P.O. Box 160 • John Day, Oregon 97845
(541) 575-2054 FAX 575-2057

June 1, 2005

Roger Williams, Supervisor
Malheur National Forest
P.O. Box 909
John Day, OR 97845

Re: Dugout Creek and Shaketable RNA designation proposal.

Dear Mr. Williams,

I am very familiar with both of these areas and I am opposed to formal designation as RNA's for the following reasons:

1. The Dugout area is ripe for a large fire due to heavy fuel loading in the area east of the North Fork of the Malheur River. I have watched this area for 20 years as the old growth died and fell over creating heavy fuels. What good is a burned RNA that is supposed to support wildlife and ecological diversity?
2. The size of these areas has been arbitrarily increased since the 1990 proposal, which now includes areas in need of management.
3. Formal designation of these areas as RNA's is a death sentence for wildlife and plant life. To see this, all one has to do is look at designated wilderness and roadless areas that have burned in the last 10 years, destroying the very things they were supposed to protect.

I am not opposed to allocating and managing these two areas as RNA's, but do not take away the ability to protect and preserve these areas by formal designation. Formal designation of these areas is the very best way I know of to destroy them.

Sincerely,

Walt Gintis

Walt Gintis

cc: Mike Tatum ✓
Kristine Shull

identified in the Forest Plan. Any change to the size of Shaketable is not an intentional increase or decrease, but due to mapping differences.

Fire risk in the Dugout Creek proposed RNA is no more or less than the area surrounding it. Management plans for fire, insects, and disease protection will be developed and will include natural resource guidelines to protect the research natural areas from activities that would reduce their research value. Study plans may provide specific direction for the management of the research natural areas. As a general guide, fires that endanger research natural areas will be extinguished as quickly as possible in a way that will cause minimal damage to the area. Natural fires would be allowed to burn only within a prescription designed to accomplish objectives of the specific natural area.

It is an honor to have areas on the Malheur National Forest that exemplify the criteria necessary to be considered for research natural area establishment. Please know that every effort available will be used to maintain the areas in near natural condition.

Sincerely,



ROGER W. WILLIAMS
Forest Supervisor

cc: Steve Cossette, Carole Holly, Jennifer Harris, Brooks Smith, Mike Montgomery, Jill Dufour

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE



ESTABLISHMENT RECORD

SIGNATURE PAGE

For

RESEARCH NATURAL AREA ESTABLISHMENT RECORD

Shaketable Research Natural Area

Malheur National Forest

Grant County, Oregon

The undersigned certify that all applicable land management planning and environmental analysis requirements have been met and that boundaries are clearly identified in accordance with FSM 4063.21, Mapping and Recordation and FSM 4063.41 5.e(3) in arriving at this recommendation. Establishment of Shaketable RNA for the described purposes is recommended by the following:

Prepared by Dick Vander Schaaf Date 1-28-08
Dick Vander Schaaf,
The Nature Conservancy

Recommended by Bob Miller Date 3-28-08
for Brooks Smith, District Ranger,
Blue Mountain Ranger District

Recommended by Gary L. Benes Date 3-28-2008
Gary L. Benes, Forest Supervisor,
Malheur National Forest

Concurrence of Bov Eav Date 4/3/08
Bov Eav, Director,
Pacific Northwest Research Station

TITLE PAGE

Establishment Record for
Shaketable Research Natural Area
within Malheur National Forest
Grant County, Oregon

ESTABLISHMENT RECORD FOR
SHAKETABLE RESEARCH NATURAL AREA
WITHIN MALHEUR NATIONAL FOREST
GRANT COUNTY, OREGON

INTRODUCTION

Shaketable Research Natural Area (RNA) is located in the Blue Mountains Physiographic Province of Oregon and borders the High Lava Plains Physiographic Province. The site represents the sagebrush steppe with a dominant natural community of low sagebrush (*Artemisia arbuscula*)¹ shrubland and Idaho fescue as the dominant grass species. Rigid sagebrush (*Artemisia rigida*) can be found in large patches within the low sagebrush community as well as a number of grass species including junegrass (*Koeleria cristata*), bluebunch wheatgrass (*Agropyron spicatum*) and one-spike oatgrass (*Danthonia unispicata*). Mountain mahogany (*Cercocarpus ledifolius*), western juniper (*Juniperus occidentalis*) and bitterbrush (*Purshia tridentata*) also occur at the site in a western juniper savanna community that occupies rimrock habitat as well as portions of the upper plateau. Ponderosa pine (*Pinus ponderosa*) occurs sporadically in the western juniper savanna. The site covers the top of a ridge system on the plateau between the South Fork and mainstem of Murderers Creek, a major tributary of the South Fork John Day River. Due to steep, rough terrain the site is somewhat excluded from most livestock grazing with no timber harvest, therefore the RNA is in excellent natural condition. This proposed RNA is located within the Shaketable Semi-Primitive Non-Motorized Area, a congressionally designated area.

Land Management Planning

Shaketable RNA was proposed as an RNA by the Malheur National Forest to meet three unfilled natural area cell needs for western juniper/low sagebrush/bunchgrass (*Juniperus occidentalis*/*Artemisia arbuscula*/bunchgrass), low sagebrush/Idaho fescue (*Artemisia arbuscula*/*Festuca idahoensis*), and bitterbrush/bunchgrass (*Purshia tridentata*/bunchgrass) (Oregon Natural Heritage Advisory Council 1993)². Shaketable area was included as a proposed RNA in the FEIS for the Malheur National Forest (USDA Forest Service 1990a), in the Forest Plan (USDA Forest Service 1990b) and in the Record of Decision (USDA Forest Service 1990c).

¹ Nomenclature for vascular plants follows Hitchcock and Cronquist (1973) and Little (1979) for trees.

² Authors' names in parentheses refer to references cited.

ESTABLISHMENT RECORD FOR
SHAKETABLE RESEARCH NATURAL AREA
WITHIN MALHEUR NATIONAL FOREST
GRANT COUNTY, OREGON

INTRODUCTION

Shaketable Research Natural Area (RNA) is located in the Blue Mountains Physiographic Province of Oregon and borders the High Lava Plains Physiographic Province. The site represents the sagebrush steppe with a dominant natural community of low sagebrush (*Artemisia arbuscula*)¹ shrubland and Idaho fescue as the dominant grass species. Rigid sagebrush (*Artemisia rigida*) can be found in large patches within the low sagebrush community as well as a number of grass species including junegrass (*Koeleria cristata*), bluebunch wheatgrass (*Agropyron spicatum*) and one-spike oatgrass (*Danthonia unispicata*). Mountain mahogany (*Cercocarpus ledifolius*), western juniper (*Juniperus occidentalis*) and bitterbrush (*Purshia tridentata*) also occur at the site in a western juniper savanna community that occupies rimrock habitat as well as portions of the upper plateau. Ponderosa pine (*Pinus ponderosa*) occurs sporadically in the western juniper savanna. The site covers the top of a ridge system on the plateau between the South Fork and mainstem of Murderers Creek, a major tributary of the South Fork John Day River. Due to steep, rough terrain the site is somewhat excluded from most livestock grazing with no timber harvest, therefore the RNA is in excellent natural condition. This proposed RNA is located within the Shaketable Semi-Primitive Non-Motorized Area, a congressionally designated area.

Land Management Planning

Shaketable RNA was proposed as an RNA by the Malheur National Forest to meet three unfilled natural area cell needs for western juniper/low sagebrush/bunchgrass (*Juniperus occidentalis*/*Artemisia arbuscula*/bunchgrass), low sagebrush/Idaho fescue (*Artemisia arbuscula*/*Festuca idahoensis*), and bitterbrush/bunchgrass (*Purshia tridentata*/bunchgrass) (Oregon Natural Heritage Advisory Council 1993)². Shaketable area was included as a proposed RNA in the FEIS for the Malheur National Forest (USDA Forest Service 1990a), in the Forest Plan (USDA Forest Service 1990b) and in the Record of Decision (USDA Forest Service 1990c).

¹ Nomenclature for vascular plants follows Hitchcock and Cronquist (1973) and Little (1979) for trees.

² Authors' names in parentheses refer to references cited.

The site also contains high quality representations of an additional natural community, some of which fills cell needs in the Oregon Natural Heritage Plan (Oregon Natural Heritage Advisory Council 1993). The area includes rigid sagebrush/Sandberg bluegrass (*Artemisia rigida/Poa sandbergii*) and was determined to fill a cell need in the 2003 revision of the Heritage Plan.

Shaketable includes the following RNA cell needs (or elements) in Blue Mountains Physiographic Province:

TERRESTRIAL ECOSYSTEMS

1. Western juniper/low sagebrush/bunchgrass community.

61. Low sagebrush/Idaho fescue community.

64. Rigid sagebrush/Sandberg's bluegrass

69. Bitterbrush/bunchgrass community.
(Oregon Natural Heritage Advisory Council 2003).

OBJECTIVE

The objective of the Shaketable RNA is to preserve in as undisturbed a condition as possible the low sagebrush/bunchgrass community and adjoining western juniper savanna and bitterbrush/bunchgrass community. The RNA will serve as a reference area for study, as a baseline area for determining long-term ecological changes, and as a monitoring area to determine effects of management techniques and practices applied to similar ecosystems.

JUSTIFICATION

Shaketable RNA was selected to meet unfilled RNA cell needs for low sagebrush, bitterbrush, and Western juniper communities within the forest zone. The site is representative of transition areas in the Blue Mountains and contains diverse, high quality natural communities (Oregon Natural Heritage Advisory Council 1993 and 2003).

PRINCIPAL DISTINGUISHING FEATURES

Shaketable RNA contains the following principal features:

1. **Low sagebrush/bunchgrass community:** Low sagebrush, in combination with rigid sagebrush, comprises the largest natural community on the RNA, dominating most of the ridge

top where Shaketable is located. The community apparently has not burned for some time as the shrubs are mature and the understory is well developed. Idaho fescue is the dominant bunchgrass in the understory with a wide diversity of forbs present. Scattered western juniper and bitterbrush occurs in the community.

2. **Bitterbrush/bunchgrass community:** On the plateau, within the low sagebrush community, there are sizable patches of bitterbrush/bunchgrass communities. The bitterbrush patches are found on slightly deeper, sandy textured soils compared to low sagebrush sites, which typically occupy shallow rocky soils. The bitterbrush is small in stature but is quite dense. The shrubs show signs of cropping by wildlife.

3. **Western juniper/big sagebrush-bitterbrush/Idaho fescue community:** Western juniper, mixed with ponderosa pine is located along the rimrock surrounding the plateau. The community extends nearly to the eastern boundary of the RNA where ponderosa pine dominates the overstory. The woodland is sparsely covered by western juniper and has a relatively dense cover of bitterbrush, Wyoming big sagebrush (*Artemisia tridentata* var. *wyomingensis*), and a healthy cover of bunchgrasses dominated by Idaho fescue. Herbaceous species are diverse with *Erigeron bloomeri*, *Antennaria dimorpha*, *Balsamorhiza serrata*, and *Crepis acuminata* being common.

LOCATION

Maps 1, 2, and 3 show the location of Shaketable RNA. The RNA is located on the Blue Mountain Ranger District of the Malheur National Forest. The center of the RNA is at latitude 44°16' 00" north and longitude 119° 24' 12" west. The 385 acre (156 ha.) site lies within Township 15 South, Range 28 East, Sections 17-20, and Township 15 South, Range 27 East Willamette Meridian, Section 13 (Map 3).

Boundary

Basis of bearing is astronomic north. Basis of elevation is mean sea level as shown on the USGS 7.5 minute topographic quadrangle map Aldrich Mtn. South, Oreg. 1972. A specific boundary description is in Appendix A.

Area

Total area for the Shaketable Research Natural Area is 385 acres (156 hectares). The original acreage identified in the Forest Plan is 375 acres (152 hectares). During the establishment effort in 1997, public scoping was completed for an increase in the size of this RNA to 1,170 acres. It was decided by the Blue Mountain District Ranger to establish the boundary for Shaketable as

described in the Forest Plan, with the eastern boundary modified to exclude the gathering pasture. The reason for the change from what was proposed in the 1997 effort was the specific plant communities identified as targets in the Oregon Natural Heritage Plan (2003) did not include the forested communities adjacent to the plateau. Also there would be less concern with livestock grazing by maintaining the boundary above the riparian areas where grazing routinely occurs and less chance of livestock finding their way up the steep sideslopes to the plateau. Ending the eastern boundary at the Horse Mountain Gathering pasture would exclude plant communities that would not be in near natural conditions.

Elevations

Elevations range from 4,440 feet (1354 m) at the western edge of the RNA to 4745 feet (1446 m) at eastern end of the plateau.

Access

The Shaketable RNA is located on the western edge of the Malheur National Forest (Map 2) approximately 15 miles south southeast of Dayville, Oregon. To access the RNA from Dayville proceed 13 miles east on Hwy 26 to Fields Creek, Forest road 21, and follow that road south 15 miles until it dead ends into the Murderers Creek road, Forest road 2170. Take road 2170 west 2.5 miles to road 2490 and follow road 2490 approximately 2.5 miles to the eastern edge of Shaketable RNA. An unimproved road, 203, heads west from road 2490 to a livestock control gate where one can park their vehicle and proceed upslope on foot to the top of Shaketable RNA.

Maps

Shaketable RNA is located on the USGS 7.5 minute topographic quadrangle map, Aldrich Mtn. South, Oreg. 1972. The Malheur National Forest Recreation Map, 1987, is useful for ownership and general access information, however, this map does not delineate the RNA boundaries.

Photos

The following aerial photos of the Shaketable RNA site are available at the Forest Supervisor's Office and at the Ranger District Office:

3001-127 (7-27-2001)	2701-065 (7-27-2001)
3001-128 (7-27-2001)	2701-066 (7-27-2001)

AREA BY TYPES

Vegetation of the RNA has been surveyed (Vander Schaaf 1989, 1997) during initial recommendation of the site for RNA status as well in preparation for the first draft of this document in 1997. The following determination of cover types and habitat types and their estimated covers have been made from the survey information and from air photo interpretation. Map 4 depicts the locations of the natural communities or associations described below.

The most current information regarding the forested portion of the RNA is described in the plant association guide of Johnson and Clausnitzer (1992). Four plant associations have been identified in the RNA (Map 4), all of which correlate to types described in Johnson and Clausnitzer (1992).

	<u>GIS Acres</u>	<u>Calculated Hectares</u>
<u>SAF Cover Types</u> (Eyre 1980)		
210 Interior Douglas-fir	14	6
237 Interior ponderosa pine	52	21
238 Western Juniper	48	19
Shrubland	238	97
Grassland	33	13
Total	385	156

Kuchler Types (Kuchler 1966)

11 Western ponderosa pine (<i>Pinus</i>)	52	21
12 Douglas-fir forest (<i>Pseudotsuga</i>)	14	6
24 Juniper steppe woodland (<i>Juniperus-Artemisia-Agropyron</i>)	48	19
51 Wheatgrass bluegrass (<i>Agropyron-Poa</i>)	33	13
55 Sagebrush steppe (<i>Artemisia - Agropyron</i>)	215	87
Other shrubland (<i>Cercocarpus-Purshia</i>)	23	10
Total	385	156

Plant Associations (Johnson and Clausnitzer 1992)

1) Douglas-fir/elk sedge (<i>Pseudotsuga mensiezii</i> / <i>Carex geyeri</i>)	4	2
2) Douglas-fir/mountain mahogany/elk sedge (<i>Pseudotsuga mensiezii</i> / <i>Cercocarpus ledifolius</i> / <i>Carex geyeri</i>)	10	4
3) Ponderosa pine/elk sedge (<i>Pinus ponderosa</i> / <i>Carex geyeri</i>)	22	9
4) Ponderosa pine/Idaho fescue (<i>Pinus ponderosa</i> / <i>Festuca Idahoensis</i>)	30	12
5) Western juniper/Idaho fescue-bluebunch wheatgrass (<i>Juniperus occidentalis</i> / <i>Festuca idahoensis</i> - <i>Agropyron spicatum</i>)	12	5
6) Western juniper/mountain big sagebrush/Idaho fescue-bluebunch wheatgrass (<i>Juniperus occidentalis</i> / <i>Artemisia tridentata</i> ssp. <i>vaseyana</i> / <i>Festuca idahoensis</i> - <i>Agropyron spicatum</i>)	36	15
7) Bitterbrush/Idaho fescue-bluebunch wheatgrass (<i>Purshia tridentata</i> / <i>Festuca idahoensis</i> - <i>Agropyron spicatum</i>)	18	7
8) Low sagebrush/Idaho fescue-bluebunch wheatgrass (<i>Artemisia arbuscula</i> / <i>Festuca idahoensis</i> - <i>Agropyron spicatum</i>)	215	87
9) Mountain mahogany/elk sedge (<i>Cercocarpus ledifolius</i> / <i>Carex geyeri</i>)	5	2
10) Bluebunch wheatgrass/Sandberg's bluegrass (<i>Agropyron spicatum</i> / <i>Poa sandbergii</i>)	33	13
Total	385	156

PHYSICAL AND CLIMATIC CONDITIONS

Physical Conditions

Shaketable RNA occupies the upper plateau of a long ridge system in the western portion of the Blue Mountains Physiographic Province. The RNA includes the entire plateau, which stretches for two miles (3.2 km). The side slopes are steep and capped with rimrock, particularly along the southern edge of the plateau, limiting access to the top of the ridge. The steep slopes indicate the boundary of the RNA. Shallow soils predominate over much of the RNA, making the site quite xeric. Soils are derived primarily from aerially deposited pumice mixed with decomposed underlying bedrock.

The top of the plateau is nearly level to gently sloped descending from a high point at the east end down to a low saddle in the middle of the ridge and then again sloping upward toward the northwest. Several deep clefts occur along the edges of the plateau providing easier access to the top than the steep slopes where rimrock occurs. Soils on the plateau are mostly shallow with pockets of deeper soil evident from vegetation patterns and all having high rock content. The exposed rock and the underlying bedrock include more recent flows of Columbia River basalt as well as deeper sedimentary rock which may date back to the Paleozoic era. A small amount of exposed serpentinite rock is located near the northeast corner of the RNA but it appears to not intrude into the site for any appreciable distance. The geologic quadrangle, the Canyon City Quadrangle (1966), shows the primary bedrock being Columbia River basalt.

Climatic Conditions

The eastern Oregon climate is characterized by warm summers and cold winters with precipitation ranging between 8-20 inches (23-51 cm). Most of the limited precipitation falls as snow during the winter with significant rains often falling during the spring as well. Summers are dry with evening thunderstorms occurring in July and August that typically contribute more lightning than rain. Shaketable RNA is within the Blue Mountains Physiographic Province and receives typical eastern Oregon mountain weather. Summer winds are predominantly from the northwest and are usually light to moderate. East winds may occur in the fall and spring, blowing at higher velocities and causing drying conditions that enhance the fire hazard for the season. During the winter, storms come in from the southwest bringing snow while occasional storms from the northwest bring frigid weather.

The closest recording NOAA weather station with complete yearly records is located in Seneca, Oregon, 30 miles (48 km) to the east of the RNA. A weather station situated at Dayville, Oregon is closer to the RNA but it does not have consistent data to determine average conditions because of missed recordings at the station. Climatic conditions at Seneca should be a fair approximation for Shaketable RNA with differences between the two sites being attributed to the fact that the RNA is located in more mountainous terrain compared to Seneca, which resides in a high valley setting. These differences would likely result in slightly lower average temperature at Seneca than are found at the RNA. The station receives an annual precipitation of 13.15 inches (33.40 cm) and the mean annual temperature is 39.8 °F (4.3 °C) (National Oceanographic and Atmospheric Administration 1995). The Blue Mountains receive significant precipitation during the summer in association with thunderstorms, especially in August and September. Nevertheless, much of the annual precipitation occurs as snow during the winter months. Summer high temperatures regularly reach into the high 80's °F (low 30's °C), while winter lows often dip into the 20's °F (-2 to -7 °C) or lower. The monthly climatic data for Seneca averaged over the past 54 years is listed below (National Oceanographic and Atmospheric Administration 1995).

Climatic Records for Seneca, Oregon
 Elevation 4661 feet (1421 m);
 (National Oceanographic and Atmospheric Administration 1995)

Month	Temperature		Precipitation	
	°F	°C	inches	cm
January	20.9	-6.2	1.36	3.45
February	26.2	-3.2	1.02	2.59
March	32.0	0	1.18	3.00
April	38.7	3.7	.99	2.51
May	45.9	7.7	1.34	3.40
June	53.5	11.9	1.11	2.82
July	59.0	15.0	.58	1.47
August	57.9	14.4	.87	2.21
September	49.0	9.4	.66	1.68
October	40.4	4.7	.91	2.31
November	31.5	-0.3	1.49	3.78
December	23.1	-4.9	1.64	4.16
Mean Annual	39.8	4.3		
Total Precipitation			13.15	33.40

DESCRIPTION OF VALUES

Flora

The flora of Shaketable RNA is representative of sagebrush steppe vegetation that is common to both the High Lava Plains and the Blue Mountains physiographic provinces. There are three main plant associations that are targeted. The other 7 plant associations have sagebrush steppe characteristics and have plants in common with the target plant associations. The flora has not been systematically collected or studied other than those taxa encountered during surveys conducted during the course of the drafting of the Establishment Record and taxa recorded in

ecological inventory plots at the site. No state or federal threatened, endangered or sensitive plant species are known to occur within the RNA. Species identifications were determined from Hitchcock and Cronquist (1973) and Hickman (1993) and trees were determined from Little (1979). Observations and plot data collected by the US Forest Service Area Ecologist, Charlie Johnson (personal communication), and Vander Schaaf (1989, 1997) have resulted in the following list of plants.

Scientific name	Common name
TREES	
<i>Juniperus occidentalis</i>	western juniper
SHRUBS AND SUBSHRUBS	
<i>Artemisia arbuscula</i>	low sagebrush
<i>Artemisia tridentata</i> <i>ssp. vaseyana</i>	mountain big sagebrush
<i>Berberis repens</i>	creeping Oregon grape
<i>Cercocarpus ledifolius</i>	mountain mahogany
<i>Prunus emarginata</i>	bitter cherry
<i>Purshia tridentata</i>	bitterbrush
<i>Ribes cereum</i>	squaw currant
<i>Rosa sp.</i>	rose
<i>Symphoricarpos alba</i>	snowberry
FORBS	
<i>Achillea millefolium</i>	yarrow
<i>Agoseris aurantiaca</i>	orange agoseris
<i>Agoseris grandiflora</i>	large agoseris
<i>Antennaria dimorpha</i>	low pussy-toes
<i>Arenaria congesta</i>	capitate sandwort
<i>Astragalus filipes</i>	basalt milkvetch
<i>Allium acuminatum</i>	tapertip onion
<i>Balsamorhiza hookeri</i>	Hooker's balsamroot
<i>Balsamorhiza sagitata</i>	arrowleaf balsamroot
<i>Blepharipappus scaber</i>	blepharipappus
<i>Calochortus macrocarpus</i>	sagebrush mariposa lily
<i>Castilleja applegatei</i>	Applegate's paintbrush
<i>Cirsium utahense</i>	Utah thistle
<i>Clarkia amoena</i>	clarkia
<i>Collomia grandiflora</i>	large-flowered collomia
<i>Crepis acuminata</i>	long-leaved hawkweed
<i>Cryptantha intermedia</i>	common cryptantha

<i>Delphinium nuttallianum</i>	upland larkspur
<i>Epilobium paniculatum</i>	fireweed
<i>Erigeron bloomeri</i>	scabland fleabane
<i>Erigeron chrysopsidis</i> var. <i>austineae</i>	dwarf yellow fleabane
<i>Eriogonum microthecum</i>	slenderbush buckwheat
<i>Galium aparine</i>	goose-grass
<i>Haplopappus carthamoides</i>	rabbitbrush goldenweed
<i>Hieracium albertinum</i>	western hawkweed
<i>Lactuca serriola</i>	prickly lettuce
<i>Lathyrus lanszwertii</i>	thick-leaved peavine
<i>Lewisia rediviva</i>	bitterroot
<i>Lithospermum ruderale</i>	wayside gromwell
<i>Lomatium triternatum</i>	nineleaf lomatium
<i>Lupinus caudatus</i>	tailcup lupine
<i>Lupinus lepidus</i> var. <i>utahense</i>	prairie lupine
<i>Madia citriodora</i>	lemon-scented tarweed
<i>Mentzelia dispersa</i>	bushy mentzelia
<i>Microsteris gracilis</i>	microsteris
<i>Penstemon deustus</i>	hot rock penstemon
<i>Phacelia heterophylla</i>	virgate phacelia
<i>Phacelia humilis</i>	low phacelia
<i>Phlox hoodii</i>	Hood's phlox
<i>Phlox pulvinata</i>	cushion phlox
<i>Potentilla sp.</i>	cinquefoil
<i>Polygonum majus</i>	wiry knotweed
<i>Scutellaria angustifolium</i>	narrowleaved skullcap
<i>Sedum stenopetalum</i>	wormleaf stonecrop
<i>Senecio integerrimus</i>	western grounzel
<i>Tragopogon dubium</i>	yellow salsify
<i>Zigadenus venenosus</i>	meadow deathcamas

GRAMINOIDS

<i>Agropyron spicatum</i>	bluebunch wheatgrass
<i>Bromus brizaeformis</i>	rattlesnake brome
<i>Bromus carinatus</i>	mountain brome
<i>Bromus commutatus</i>	hairy brome
<i>Bromus tectorum</i>	cheatgrass
<i>Carex geeyeri</i>	elk sedge
<i>Danthonia unispicata</i>	onespike oatgrass
<i>Festuca idahoensis</i>	Idaho fescue

<i>Koeleria cristata</i>	prairie junegrass
<i>Poa sp.</i>	bluegrass species
<i>Poa sandbergii</i>	Sandberg's bluegrass
<i>Sitanion hystrix</i>	bottlebrush squirreltail
<i>Stipa occidentalis</i>	Western needlegrass

Shaketable RNA has ten plant associations represented within its boundaries (Map 4). The plateau is dominated by the low sagebrush steppe association and 2 juniper and ponderosa pine associations that are similar except for the dominant shrub or grass understory. Soil depth is a key environmental determinant for plant communities, with the sagebrush steppe association having shallow rocky soils. The sagebrush steppe association is found on the top of the plateau with the western juniper and ponderosa pine associations found primarily in the rimrock that encircles the plateau.

Low sagebrush with Idaho fescue in the understory is the most common plant association on the Shake Table plateau. The association occurs where soils are slightly deeper and less rocky than where rigid sagebrush is found. The low sagebrush type is quite variable in density of plants as well as in percent cover of understory bunchgrasses. Grass species are also variable with Idaho fescue being the most common species overall but in some areas of more shallow soil there is a considerable amount of Sandberg's bluegrass. In other areas, mixed in with the fescue, is one spike oatgrass (*Danthonia unispicata*) as well as some western needle-and-thread (*Stipa occidentalis*) and prairie junegrass (*Koeleria cristata*). There are places where desert pavement covers considerable open space between the low sagebrush shrubs.

The two western juniper associations occur as an uneven, and sometimes as a narrow band of vegetation in the rimrock at the edge of the plateau. The association is not continuous around the whole of the plateau but is best represented at the eastern end of the site. There are also occurrences of this association on the plateau intermixed with the sagebrush steppe vegetation and it is the dominant association at the northwest tip of the plateau.

Along the southern edges of the plateau where soils are deeper and have a more sandy texture there are areas dominated by bitterbrush (*Purshia tridentata*) with Idaho fescue in the understory. These unusual stands of bitterbrush are almost always adjacent to the western juniper woodlands located in the rimrock. The bitterbrush often appears to be restricted to areas which occupy small terraces slightly below the level of the plateau.

Encircling much of the plateau is a series of rimrock formations that rise vertically 10-20 feet (3-6 m) above the steep hill slopes below. The rimrock is not continuous around the plateau nor is it composed of a single sheer face but rather it is in the form of a number of large rocks and boulders interspersed with pockets of shallow soil. This narrow but distinctive band is dominated by the western juniper/mountain mahogany plant association which has a mostly Idaho fescue understory. The western juniper formation continues onto the plateau at the

prominent rise at the east end of the RNA as well as on the long narrow extension of the plateau in the northwest corner of the site. In more level places the western juniper has considerable bitterbrush in the understory while at the lower ends of the band there may be mountain big sagebrush (*Artemisia tridentata ssp. vaseyana*) entering the association.

Fauna

Vertebrate species have not been systematically studied or inventoried in Shaketable RNA. The site is within the Murderers Creek wild horse territory and there is wild horse use evident on the upper plateau of the RNA. Observations of animal species noted during surveys conducted at the site as well as surveys on nearby areas are included below. The following terrestrial vertebrates are ones most likely to be encountered in the RNA (Burt and Grossenlieder 1976; National Geographic Society 1987; Nussbaum et al 1983).

<u>Scientific name</u>	<u>Common name</u>
Iguanidae	
<i>Phrynosoma douglasii</i>	Short-horned lizard
<i>Sceloporus occidentalis</i>	Western fence lizard
<i>Sceloporus graciosus</i>	Sagebrush lizard
<i>Uta stansburiana</i>	Side-blotched lizard
Scincidae	
<i>Eumeces skiltonianus</i>	Western skink
Teiidae	
<i>Cnemidophorus tigris</i>	Western whiptail snake
Boidae	
<i>Charina bottae</i>	Rubber boa
Colubridae	
<i>Coluuber constrictor mormon</i>	Western yellowbelly racer
<i>Hypsiglena torquata</i>	Night snake
<i>Masticophis taeniatus</i>	Striped whipsnake
<i>Pituophis melanoleucus</i>	Gopher snake
<i>Thamnophis elegans</i>	Western terrestrial garter snake
<i>Thamnophis sirtalis</i>	Common garter snake
Viperidae	
<i>Crotalus viridus</i>	Western rattlesnake

Ambystomatidae

Ambystoma macrodactylum

Long-toed salamander

Bufo

Bufo boreas

Western toad

Pelobatidae

Speo intermontana

Great Basin spadefoot toad

Cathartidae

Cathartes aura

Turkey vulture

Accipitridae

Buteo jamaicensis

Red-tailed hawk

Buteo regalis

Ferruginous hawk

Buteo swainsonii

Swainson's hawk

Aquila chrysaetos

Golden eagle

Falconidae

Falco sparverius

American kestrel

Falco mexicanus

Prairie falcon

Phasianidae

Alectois chukar

Chukar

Bonasa umbellus

Ruffed grouse

Callipepla californica

California quail

Meleagris gallopavo

Wild turkey

Caprimulgidae

Chordeiles minor

Common nighthawk

Trochilidae

Archilochus alexandri

Black-chinned hummingbird

Selasphorus platycercus

Broad-tailed hummingbird

Selasphorus rufus

Rufous hummingbird

Stellula calliope

Calliope hummingbird

Picidae

Picoides albolarvatus

White-headed woodpecker

Colaptes auratus

Northern flicker

Tyrannidae

Empidonax minimus

Least flycatcher

Empidonax oberholseri

Dusky flycatcher

Empidonax trailii

Willow flycatcher

Empidonax wrightii
Myiarchus cinerascens
Sayornis saya
Tyrannus verticalis

Gray flycatcher
Ash-throated flycatcher
Say's phoebe
Western kingbird

Hirundinidae

Hirundo pyrrhonota
Stelgidopteryx serripennis
Tachycineta bicolor
Tachycineta thalassina

Cliff swallow
Northern rough-winged swallow
Tree swallow
Violet-green swallow

Corvidae

Perisoreus canadensis
Cyanocitta stelleri
Corvus corax
Gymnorhinus cyanocephalus

Gray jay
Steller's jay
Common raven
Pinyon jay

Paridae

Parus atricapillus
Parus gambeli

Black-capped chickadee
Mountain chickadee

Troglodytidae

Catherpes mexicanus
Salpinctes obsoletus
Thryomanes bewickii
Troglodytes aedon

Canyon wren
Rock wren
Bewick's wren
House wren

Muscicapidae

Catharus ustulatus
Sialia currucoides
Sialia mexicana
Turdus migratorius

Swainson's thrush
Mountain bluebird
Western bluebird
American robin

Laniidae

Lanius ludovicianus

Loggerhead shrike

Bombycillidae

Bombycilla cedrorum

Cedar waxwing

Sturnidae

Sturnus vulgaris

European starling

Vireonidae*Vireo solitarius*

Solitary vireo

Emberizidae*Amphispiza belli*

Sage sparrow

Dendroica coronata

Yellow-rumped warbler

Dendroica nigrescens

Black-throated gray warbler

Dendroica petechia

Yellow warbler

Oporonis agilis

MacGillivray's warbler

Wilsonia pusilla

Wilson's warbler

Chlorura chlorura

Green-tailed towhee

Sternella neglecta

Western meadowlark

Passerina amoena

Lazuli bunting

Passerculus sandwichensis

Savannah sparrow

Pheucticus melanocephalus

Black-headed grosbeak

Pooecetes gramineus

Vesper sparrow

Chondestes grammacus

Lark sparrow

Spizella breweri

Brewer's sparrow

Junco hyemalis

Dark-eyed junco

Melospiza melodia

Song sparrow

Molothrus ater

Brown-headed cowbird

Vermivora ruficapilla

Nashville warbler

Fringillidae*Carpodacus cassinii*

Cassin's finch

Carpodacus mexicanus

House finch

Loxia curvirostra

Red crossbill

Carduelis pinus

Pine siskin

Coccothraustes vespertinus

Evening grosbeak

Pinicola enucleator

Pine grosbeak

Soricidae*Sorex merriami*

Merriam's shrew

Sorex obscurus

Dusky shrew

Sorex preblei

Malheur shrew

Sorex vagrans

Vagrant shrew

Vespertilionidae*Myotis lucifugus*

Little brown myotis

Myotis yumanensis

Yuma myotis

Myotis evotis

Long-eared myotis

Myotis subulatus

Western small-footed bat

Myotis volans

Long-legged myotis

Myotis californicus
Anthrozous pallidus
Lasionycteris noctivagrans
Eptesicus fuscus
Euderma maculata
Pipistrellus hesperus
Plecotus townsendii

California myotis
Pallid bat
Silver-haired bat
Big brown bat
Spotted bat
Western pipistrelle
Townsend's big-eared bat

Leporidae

Lepus americanus

Snowshoe hare

Sciuridae

Eutamias minimus
Eutamias amoenus
Citellus beldingi
Citellus columbianus
Citellus lateralis
Marmota flaviventris
Tamiasciurus hudsonicus

Least chipmunk
Yellow-pine chipmunk
Belding's ground squirrel
Columbian ground squirrel
Golden-mantled ground squirrel
Yellow-bellied marmot
Red squirrel

Geomyidae

Thomomys talpoides

Northern pocket gopher

Heteromyidae

Perognathus parvus
Dipodomys ordi

Great Basin pocket mouse
Ord kangaroo rat

Cricetidae

Clethrionomys gapperi
Microtus longicaudus
Microtus montanus
Microtus richardsoni
Onychomys leucogaster
Peromyscus crinitus
Peromyscus maniculatus
Reithrodontomys megalotis
Neotoma cinerea
Lagurus curtatus

Southern red-backed vole
Longtail vole
Mountain vole
water vole
Northern grasshopper mouse
Canyon mouse
Deer mouse
Western harvest mouse
Bushy-tailed woodrat
Sagebrush vole

Zapodidae

Zapus princeps

Western jumping mouse

Erethizontidae

Erethizon dorsatum

Porcupine

Canidae

Canis latrans

Coyote

Ursidae

Ursus americanus

Black bear

Mustelidae

Gulo gulo

California wolverine

Mustela erminea

Short-tailed weasel

Mustela frenata

Long-tailed weasel

Taxidea taxus

Badger

Felidae

Felis rufus

Bobcat

Felix concolor

Mountain lion

Cervidae

Odocoileus hemionus

Mule deer

Cervus canadensis

Elk

Antilocapridae

Antilocapra americana

Pronghorn

Bovidae

Ovis canadensis

Bighorn sheep

Aquatic

There are no aquatic habitats represented at Shaketable RNA. On top of the plateau two wildlife guzzlers were installed that collect precipitation and make it available to wildlife within fenced enclosures. The guzzlers are not situated in conjunction with any springs or seeps at the site and therefore have no aquatic features associated with them.

Geology

The geology of Shaketable RNA has not been studied in detail and texts of Oregon geology do not address the area except in the most general terms (Baldwin 1964). The site is near, however, some of the more well studied geologic formations in the state, including the John Day and

Rattlesnake Formations, which are well known for their rich fossil deposits that date from the Eocene, approximately 35 million years ago. The earliest formations which appear at the surface of the RNA are ultramafic intrusions of serpentinite, a complex metamorphosed sedimentary deposit that is known for its concentrations of heavy metals. These deposits, located only at the extreme northeastern corner of the RNA, date from the Triassic period. The remainder of the RNA is composed primarily of Columbia River basalt that dates from 15-18 million years ago. The geologic quadrangle for the area, the Canyon City Quadrangle (USDI Geological Survey 1966), shows the primary bedrock for the site as being Columbia River basalt.

The site occupies a long ridge system whose nearly level top is essentially a plateau. The top of the ridge is capped with Columbia River basalt, a very hard formation that flowed from ground fissures during the Miocene and covered vast areas of the Pacific Northwest. The formation is composed of numerous individual flows. Shake Table's distinctive plateau-like appearance is directly related to the erosion resistance of the Columbia River basalt. It is likely that disconformities in the flows allowed precursors to Murderers Creek to flow in the approximate area of its present day channel thereby bypassing the resistant layers of basalt and downcutting the more easily eroded underlying sedimentary layers. The downcutting was relatively rapid resulting in steep hill slopes while the basalt cap on top of the plateau has continued to resist subsequent erosion from the elements.

The most recent geologic event that has affected the site was the explosion of Mt. Mazama over 7,000 years ago, which sent air borne pumice over the High Lava Plains and the Blue Mountains, creating deposits that ranged widely in depth depending upon proximity to the site of origin and colluvial action. The rapid decomposition of the pumice resulted in unique soils being formed in the Blue Mountains which then fostered many of the vegetative communities that are present there today.

Soils

The soils in the Shaketable RNA are generally characterized as being shallow, gravelly residual soils on slopes of less than 15%. The RNA has extremely shallow rocky soils that limit vegetation growth to low sagebrush communities. The Malheur Forest Soil Resource Inventory (1974) shows seven soil mapping units present within the boundary of the RNA (Map 5). Mapping units are analogous to soil types with special reference made to the landforms on which they are found as well as to the vegetation present on them. Some of the mapping units shown on Map 5 are combined with the letter "C" between the mapping units, which is not used in the following descriptions.

Mapping Unit 3:

Soil map unit 3 may have inclusions of various other landtypes. Typically this soil occurs along stream bottoms and other areas that are wet for a portion of the summer. These areas may or may

not be sub-irrigated during the growing season. The surface soils are generally high in organic matter. Soil texture ranges from silt loam to loam to clay loam and some clays. Soil depth is greater than 24 inches. Slopes generally range from 1 to 15%. Dominant vegetation on this soil is Kentucky bluegrass and tufted hairgrass. This soil can be highly susceptible to gully and streambank erosion if ground cover and streambank vegetation are allowed to deteriorate.

Mapping Unit 8X/9X:

Soil mapping units 8X and 9X are considered to represent miscellaneous landtypes that have a wide range of undefined soil characteristics. At Shaketable RNA these mapping units are located in the northeast corner of the site, including the steep slopes that descend from the highest point on the RNA. Slopes range from 15 to 100 percent and can have a variable aspect. Bedrock is typically highly stratified and variable with inclusions of serpentinite noted from the extreme eastern edge of the RNA. Soil texture varies from loam to clay and there may be an 8 to 12 inch recent volcanic ash surface layer in places. Dominant vegetation includes ponderosa pine and Douglas-fir in the overstory and pinegrass, elk sedge, and bunchgrasses in the understory. The mapping unit has had landslide and slump activity in the past.

Mapping Unit 44/45:

Soil mapping units 44 and 45 are found together in this mapping unit complex, intermixed at a level that is too fine to distinguish between at the scale they were mapped. The mapping unit complex occurs on steep south-facing slopes that have gradients of 30 to 70 percent. Soil depths are shallow, ranging from 4 to 15 inches. The soil is a gravelly to cobbly loam soil derived from weathered basalt and andesite. Gravel and cobble content increase with soil depth, ranging upwards to 70 percent by volume. The surface layer is very dark grayish brown to dark brown gravelly and cobbly loam with weak, fine and very fine, crumb and granular structure. Rock fragments cover 40 to 70 percent of the soil surface. Where soils are deeper the site supports western juniper and mountain mahogany but where soils are very shallow big and low sagebrush is the dominant vegetation. Understories in both types are bunchgrasses including bluebunch wheatgrass, Idaho fescue and Sandberg's bluegrass.

Mapping Unit 44/48:

Soil mapping units 44 and 48 are found together in this mapping unit complex, intermixed at a level that is too fine to distinguish between at the scale they were mapped. The mapping unit complex occurs on steep north-facing slopes that have gradients of 30 to 70 percent. Soil depths vary greatly with mapping unit 44 having soil depths ranging from 8 to 15 inches while mapping unit 48 has deeper soils ranging from 18 to 48 inches in depth. In places that correlate more closely with mapping unit 48, the surface soil is a silt loam 6 to 12 inches thick that is derived from volcanic ash that originated from Mt. Mazama. In other sites within the complex there is no volcanic ash derived surface soil and the soil is essentially equivalent to the subsoil which is described as a gravelly cobbly loam and clay loam derived from weathered basalt, andesite and tuffaceous interflow material. Gravel and cobble content increase with soil depth, ranging upwards to 50 percent by volume. The surface layer is very dark grayish brown to brown silt

loam and it is characterized by having massive structure. The subsurface layer is dark brown to brown with some reddish brown gravelly or cobbly loam and clay loam; the soil has moderate to strong, fine angular and subangular blocky structure. Where soil depth is sufficient the mapping unit complex supports ponderosa pine and Douglas-fir with pinegrass and elk sedge in the understory but where soils are shallow they support western juniper, mountain mahogany and bunchgrasses.

Mapping Unit 47:

Soil mapping unit 47 occupies the upper plateau of Shake Table, an area that has level to rolling terrain and considerable surface rock. Soils in this mapping unit are excessively drained and classed as gravelly to very gravelly and cobbly loam that has been derived from weathered basalt and andesite. Soil depths range from 4 to 12 inches. Soil color is very dark grayish brown to dark brown and the structure is weak, fine to very fine, crumb and granular with 30 to 70 percent gravel and cobble by volume. The mapping unit supports stiff and low sagebrush with an understory of bluebunch wheatgrass and Sandberg's bluegrass.

Mapping Unit 81:

Typically map unit 81 is found on upland flats, sideslopes, and toeslopes with gradients less than 30%. It has deep soils with depth ranging from 24 to 72 inches. It supports ponderosa pine with ground cover of fescue, elk sedge, and pinegrass. This soil is moderately well to poorly drained with moderately slow permeability in the surface soil, and very slow in the subsoil. It has a clay loam surface soil and a gravelly and cobbly clay loam and clay subsoil. Soil material is derived from altered tuffs and breccias.

Mapping Unit 96/98:

Map unit 96 and 98 are found together on Shake Table. These soils are typically found on southerly-facing ridge tops and slopes with gradients less than 30 percent. They support ponderosa pine, juniper, big sagebrush, and mountain mahogany with ground cover of wild onion, wheatgrass, fescue, Sandberg's bluegrass, and elk sedge. One difference in map units 96 and 98 is the depth of soils and the extent of drainage in the soil. Soil in map unit 96 is deeper, 12 to 24 inches, that support pine, is well to moderately well drained, and has gravel and cobble content from 20 to 40%. Soil in map unit 98 is shallow, 4 to 12 inches, is excessively drained, and has gravel and cobble content ranging from 50 to 80%. These soils have loam to very gravelly and cobbly loam and gravelly and cobbly loam to clay loam derived from serpentine and peridotite bedrock.

Lands

Shaketable RNA is bordered all the way around by lands which are managed by the Malheur National Forest. The west end is within ½ mile of land managed by the Murderers Creek Wildlife Management Area of the Oregon Department of Fish & Wildlife (ODFW). Land

around the RNA is classified as Management Area 10 in the Malheur Forest Plan (1990a) and is managed for semi-primitive non-motorized recreation. One of the primary goals for the management area is to protect existing environmental quality. No new roads will be constructed within Management Area 10. There is no scheduled timber harvest but livestock grazing is permitted in accordance with Forest wide standards with the exception that livestock improvements will not be compatible with the primary direction of the area. Less than a quarter mile to the east of the RNA is a different Malheur Forest management area, Management Area 4A--Big-Game Winter Range. The goal of this area is to maintain usable forage for big game on potential winter range. Timber harvest and livestock grazing may occur within Management Area 4A as long as forage and habitat concerns of big game are given priority in potential management actions.

Land near the western boundary of the RNA, in the ODFW Murderers Creek Wildlife Management Area, is managed to provide habitat for a variety of game species including mule deer, elk, upland game birds, and nongame species which are found in the area. The wildlife management area is centered on Murderers Creek but also includes portions of the South Fork John Day River as well as lands on the north slopes of Aldrich Mountain. The ODFW lands are not actively managed or manipulated and are in high quality natural condition.

The entire RNA and surrounding land under Forest Service and ODFW ownership is within the Murderers Creek Wild Horse Territory. This area is managed to maintain the Murderers Creek wild horse herd at 100 animals (USDA 1990a).

Cultural

Obsidian flakes have been found on Shake Table by casual observers. The area may have been used as a travel corridor between the South Fork John Day River and Bear Valley in prehistoric times. No historical structures exist at the site. A complete cultural resources inventory has not been conducted in the RNA.

IMPACTS AND POSSIBLE CONFLICTS

Grazing Resources

Shaketable RNA is within the Murderer's Creek grazing allotment on the Blue Mountain Ranger District of the Malheur National Forest. The steep slopes and lack of water in the RNA limited grazing pressure and signs of grazing were mostly observed to the north on a small section of the lower north-facing slope. At the time Shaketable RNA was proposed, it was in excellent natural condition due to steep, rough terrain that largely excludes livestock grazing. In the past few years

range use by livestock has changed, largely due to issues of grazing in riparian areas and litigation. Permittees have been diligent about moving livestock out of the sensitive riparian areas along Murderer's Creek and South Fork Murderer's Creek surrounding Shake Table. The result has been a slight increase in use on the plateau. Within the last 2 years there was one report of 150 trespass cows on the plateau, but the livestock report was unconfirmed. The incidental use in recent years is not expected to have altered the plant communities or condition. The plateau is within a wild horse territory and has a horse trap at one point along the southeast boundary. The wild horse herd has been in the area for years and still the RNA area was identified as a place that was in excellent condition. Regular monitoring of livestock use on the plateau will need to be completed regularly, yearly or every other year. If livestock use increases above what is thought as incidental use, a change in the grazing strategy may be necessary to protect the natural conditions within the RNA.

Mineral Resources

There are no reported hardrock mining claims in Shaketable RNA. Mineral resources are not usually associated with lands such as those found within the RNA. The RNA will be proposed for withdrawal of mineral entry upon formal establishment.

Timber Resources

The RNA is surrounded by Malheur National Forest lands whose primary goal is to provide semi-primitive non-motorized recreation opportunities (Management Area 10). Lands within this management area are considered to be unsuitable for timber harvest. To the east of this management area are lands within Management Area 4A whose primary goal is to maintain mule deer winter range but may be classified as suitable for timber management so long as it is compatible with the primary goal (USDA Forest Service 1990b). Designation and establishment of the RNA will remove the site from potential timber harvest but even without designation the site would have likely been classified as unsuitable (Management Area 10).

There are no timber resources within the RNA boundary and scheduled timber harvest will not occur in the RNA. There are no roads crossing Murderer's Creek to access the timber resource along the northern boundary of the RNA. The RNA and adjacent Forest Service managed land is within a semi-primitive non-motorized recreation area, therefore the possibility for timber harvest is remote on land adjacent to the RNA.

Watershed Values

No significant watershed values are within the RNA boundary. There are significant watershed values near Shaketable RNA, as the site is located above the confluence of two forks of Murderers Creek, the mainstem and the South Fork, which is a major tributary of the South Fork of the John Day River system in central Oregon. Murderer's Creek is a large drainage basin which is known for having extensive riparian systems in relatively good condition. The portions of Murderer's Creek near the border of the RNA are below steep terrain and exhibit narrow riparian systems. The drainage contains high quality native fisheries including inland redband trout and steelhead and supplies a substantial quantity of water to the South Fork of the John Day, which also has a summer steelhead run. Shake Table functions as a large moisture collection area in high quality natural condition. The shallow soils that predominate over most of the site preclude much long-season storage of moisture but the site, nevertheless, figures prominently in the overall water quality for Murderer's Creek.

Recreation Values

Shaketable RNA receives limited recreation use, primarily in the fall from hunters. Casual recreation use has not seriously impacted the RNA to date. Recreational use and identification of the site as an RNA on general forest recreation maps should be discouraged.

Wildlife and Plant Values

There have been no listed threatened or endangered wildlife or plant species located within the RNA to date. Two sensitive species, California wolverine and the gray flycatcher, have the potential to occur within the boundary. The gray flycatcher is suspected of occurring on the Malheur and may be found along the openings at the eastern edge of the RNA. California wolverine are documented on the Malheur and may travel through the RNA, due to its low human use and unroaded character. The RNA does not have habitat values for a wolverine home range. Establishing the area as an RNA would have no affect on either of those species, and may help to protect habitat.

In the early 1980's a resource management plan was coordinated between federal and state agencies and Oregon State University. One of the projects from that plan was the installation of guzzlers for wildlife. Two guzzlers were installed on Shake Table with the intent to provide a water source for antelope, and other big game, and especially for upland game birds such as the chukar. Conditions along the streams at the bottom of the plateau were less than desired, due to overgrazing by livestock. The guzzlers provided a water source to upland game birds and helped with distribution of the birds to areas where forage and cover was available. The group of people who established the plan was concerned that if livestock distribution spread out, the cattle may end up grazing on the plateau. For that reason, exclosures, about 1/4 acre, were constructed around each of the guzzlers. Records for the guzzlers show a high need for maintenance since

the late 1980's. There have been ongoing problems with rusty float valves, leaky tank, shut off valve not turned off in the fall, and neither guzzler has been turned back on since 1999. There was a valid reason for installing the guzzlers and either maintenance needs to be done on both of them or they should be removed, along with the enclosure fencing.

Special Management Area Values

There are no congressionally designated or special management areas within or adjacent to the RNA such that establishment of the RNA will not affect any of these types of areas.

The RNA is within the Murderer's Creek Wild Horse Territory which is an administrative designation that is recognized by the Malheur National Forest, the Murderers Creek Wildlife Management Area (ODFW), and the Bureau of Land Management. This territory has a management objective to maintain a wild horse herd averaging 100 head with a range of 50-140 head. Use by wild horses with the RNA is occasional and does not interfere with the overall composition and structure of vegetation for which the area was selected.

Adjacent Private Lands

There are no private lands immediately adjacent to the RNA.

MANAGEMENT PRESCRIPTION

Management and protection of Shaketable RNA will be directed towards maintaining natural ecological processes. Activities that disturb or modify ecological processes will be discouraged or eliminated.

Shaketable RNA is included, along with other RNAs, in the Malheur National Forest Plan in Management Area 9 (USDA Forest Service 1990b). Standards and guidelines for management of the area are described in the Forest Plan.

Vegetation Management

Standards and guidelines for RNAs, Management Area 9, address vegetation management under several main resource headings (USDA Forest Service 1990b). The overall management direction for all RNAs is to preserve the naturally occurring physical and biological processes. No scheduled timber harvest will occur in the natural area and firewood cutting will be prohibited.

Wildfire will be actively suppressed unless a fire management plan approved by the Director of the Pacific Northwest Research Station provides for letting natural fires burn under specific prescriptions. Fire suppression will use methods and equipment that will minimize disturbance to the special features of the area. Prescribed burning will be used only as specified in approved research projects or when needed to meet RNA management goals.

Other natural ecological processes such as insect and disease outbreaks shall not be suppressed within the RNA unless they threaten lands outside the RNA boundaries. Monitoring of the RNA is recommended in order to track any outbreaks that may occur.

Introduced species and weedy native species are a concern at the RNA. At this time cheatgrass (*Bromus tectorum*) is the only known significant weed infestation in the RNA, occurring scattered in patches across the plateau in sagebrush steppe vegetation. Monitoring in the form of annual surveys of the RNA should be conducted to detect weedy invasions and to track the spread of cheatgrass into other natural communities in the natural area.

Transportation Plan

No roads or trails occur in the RNA nor are any planned for this area. No conflicts exist between transportation plans and establishment of the RNA.

Fences and Protective Barriers

Fencing for livestock exists along the eastern edge of the RNA. A drift fence exists at the northwest corner and extends east and west from the bottom of the steep slope to nearly the top of the plateau. Livestock would be permitted within the boundary only where essential to maintain a specific vegetative type for which the RAN is established (USDA Forest Service 1990b). Boundary fencing may be used where necessary to exclude livestock.

Signs currently exist at the northwest portion of the upper plateau of the RNA indicating that the National Forest boundary is nearby. Signs will need to be placed around the boundary after the establishment process is complete.

ADMINISTRATION RECORDS AND PROTECTION

Administration and protection of Shaketable RNA will be the responsibility of the Malheur National Forest. The District Ranger, Blue Mountain Ranger District, has direct responsibility for management of the RNA.

The Director of the Pacific Northwest Research Station will be responsible for any studies or research conducted in the area, and requests to conduct research in the RNA should be referred to that office. The RNA Scientist in the Research Station is designated as the lead contact person for all such requests. The Director will evaluate research proposals and coordinate all studies and research in the area with the District Ranger. All plant and animal specimens collected in the course of research conducted in the area will be properly preserved and maintained within university or federal agency herbaria and museums, approved by the Pacific Northwest Research Station.

Records for the Shaketable RNA will be maintained in the following offices:

Forest Supervisor, Malheur National Forest, John Day, Oregon
District Ranger, Blue Mountain Ranger District, John Day, Oregon
Director, Pacific Northwest Research Station, Portland, Oregon
Forest Sciences Laboratory, Corvallis, Oregon

Archiving

The Portland office of the Pacific Northwest Research Station will be responsible for maintaining the Shaketable RNA research data file and list of herbarium and species samples collected. The Forest Sciences Lab in Corvallis, Oregon maintains research data and lists of species for all RNAs in the Region, in conjunction with the Oregon Forest Science Databank. Computerized files for the RNA will be maintained at the Forest Sciences Lab.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE



APPENDIX

- 1) Malheur Forest Plan References**
- 2) Legal Description of Shaketable RNA Boundary**

United States
Department of
Agriculture

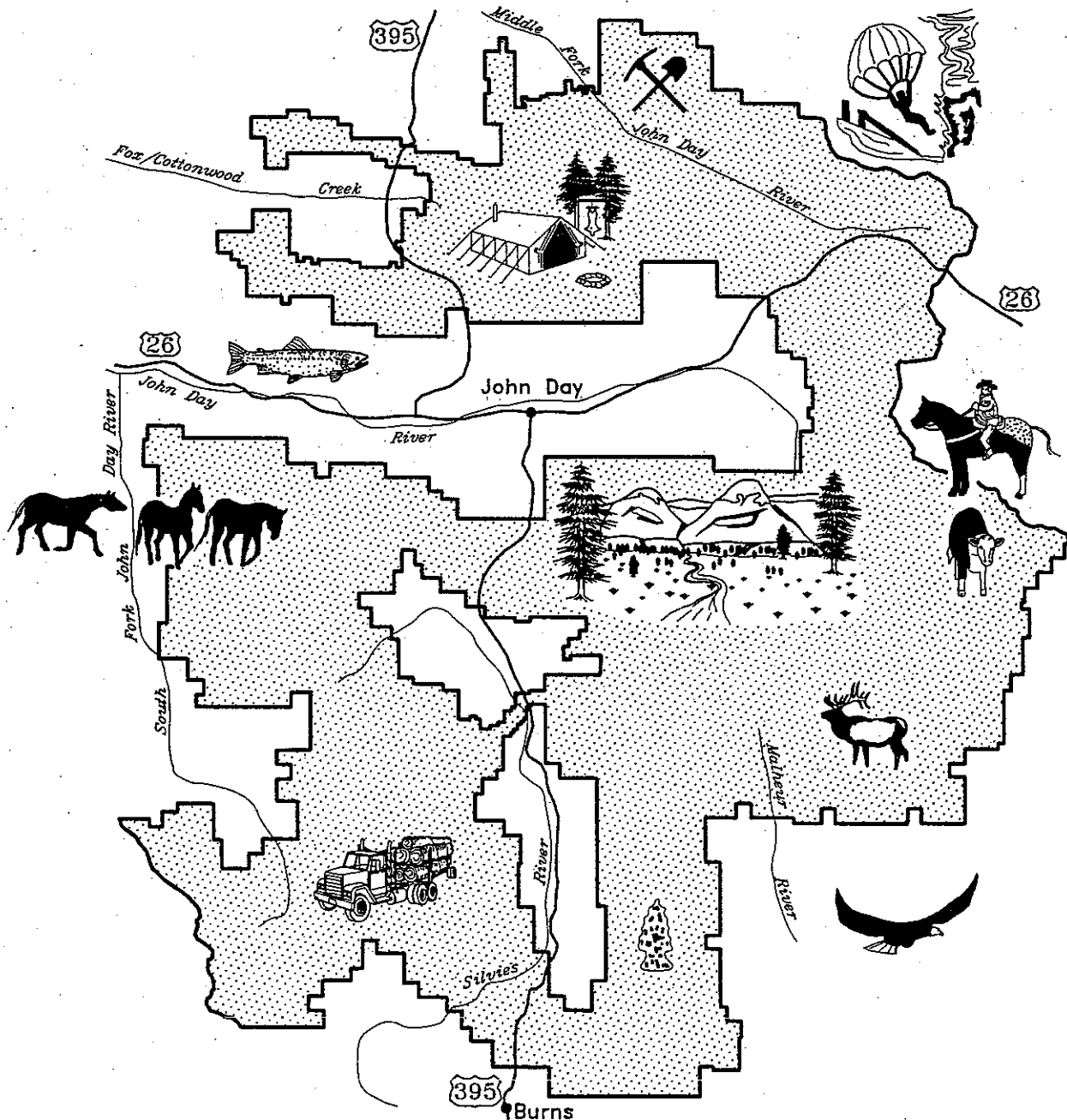
Forest Service

Pacific
Northwest
Region

1990

Land and Resource Management Plan

Malheur National Forest



MANAGEMENT AREA 9 (750 acres) - RESEARCH NATURAL AREAS (RNAs)

1. Description Management Area 9 contains one existing research natural area (RNA), Canyon Creek and four proposed RNAs, Dixie Butte, Baldy Mountain, Dugout Creek, and Shaketable. Canyon Creek and Baldy Mountain are both within the Strawberry Mountain Wilderness (Management Area 6A). The Shaketable area is located in the Shaketable Semi-Primitive Non-Motorized area. The Dixie Butte Proposed Research Natural Area is located near the top of Dixie Butte. Dugout Creek is located near the North Fork Malheur River campground. The acres within this management area are only those acres outside the wilderness (Shaketable, Dixie Butte and Dugout Creek). These areas are shown on management area maps.

2. Goals Provide areas for nonmanipulative research, observation, and study of undisturbed ecosystems. Maintenance of the natural processes within each area will be the prime consideration. Proposed areas shall be managed to maintain their RNA qualities.

3. Standards General management direction for RNAs is described below. For the existing Canyon Creek Research Natural Area more specific management direction is contained in its establishment report. For proposed RNAs, more specific direction will be developed upon establishment and incorporated into this Forest Plan as amendments.

RESOURCE ELEMENT STANDARDS

The Forest-wide management direction included in Chapter IV, Section E, of this Plan applies to this management area unless superseded by the following standards:

- Recreation**
 - 1. Prohibit recreational use that threatens research or educational values.
 - 2. Prohibit developed recreation sites.
 - 3. Discourage dispersed recreation sites.
- Visuals**
 - 4. Manage to achieve retention visual quality level (see Management Area 14, Standard No. 17).
- Wilderness**
 - 5. Ensure that, where RNAs overlap with wilderness, wilderness use is consistent with RNA objectives and that research activities will also be compatible with wilderness management.
- Fish and Wildlife**
 - 6. Dead and defective tree habitat will be provided at natural levels.
- Range**
 - 7. Permit livestock grazing only where essential to maintain a specific vegetative type for which the RNA was, or will be, established. Boundary fencing may be used to exclude livestock.
- Timber**
 - 8. Exclude scheduled timber harvest. Lands are classified as 'unsuitable' for timber management.

MANAGEMENT AREA 9

Minerals

9. Prohibit firewood cutting.

Lands

10. Recommend withdrawal upon establishment if not already withdrawn.

Facilities

11. Retain National Forest lands.

12. Allow temporary structures, such as gauging stations and instrument shelters, only if needed to meet research natural area objectives. The Pacific Northwest Experiment Station Director must approve, in consultation with the Forest Supervisor, any improvements or temporary facilities.

Roads

13. Build new roads only when they contribute to RNA objectives or to the protection of the RNA. Maintain existing roads as directed by management area objectives.

Trails

14. Maintain existing trails commensurate with use. Reconstruct trails where needed to provide for public safety and to reduce environmental damage.

15. Move existing trails out of RNAs as the opportunity occurs.

Utility Corridors

16. Manage this area as a Category 1 Avoidance area for the location of utility corridors.

Protection

Fire Management

17. Use prescribed burning, if needed, to perpetuate the vegetation for which the RNA was established or proposed.

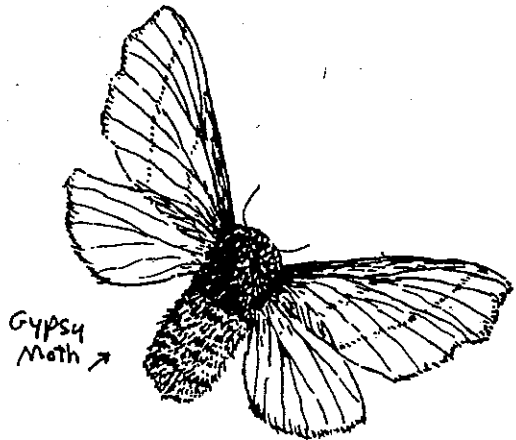
18. Control all wildfires within RNAs as quickly as possible. However, if fires within any area are desirable, develop a fire management action plan to allow planned and natural ignitions to burn when within prescription.

Insects and Disease

19. Take action against endemic or epidemic levels of insects or diseases in accordance with the direction given in the establishment report.

4. Schedule of Management Practices

No management practices are scheduled for Management Area 9.



United States
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Agriculture

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Pacific
Northwest
Region

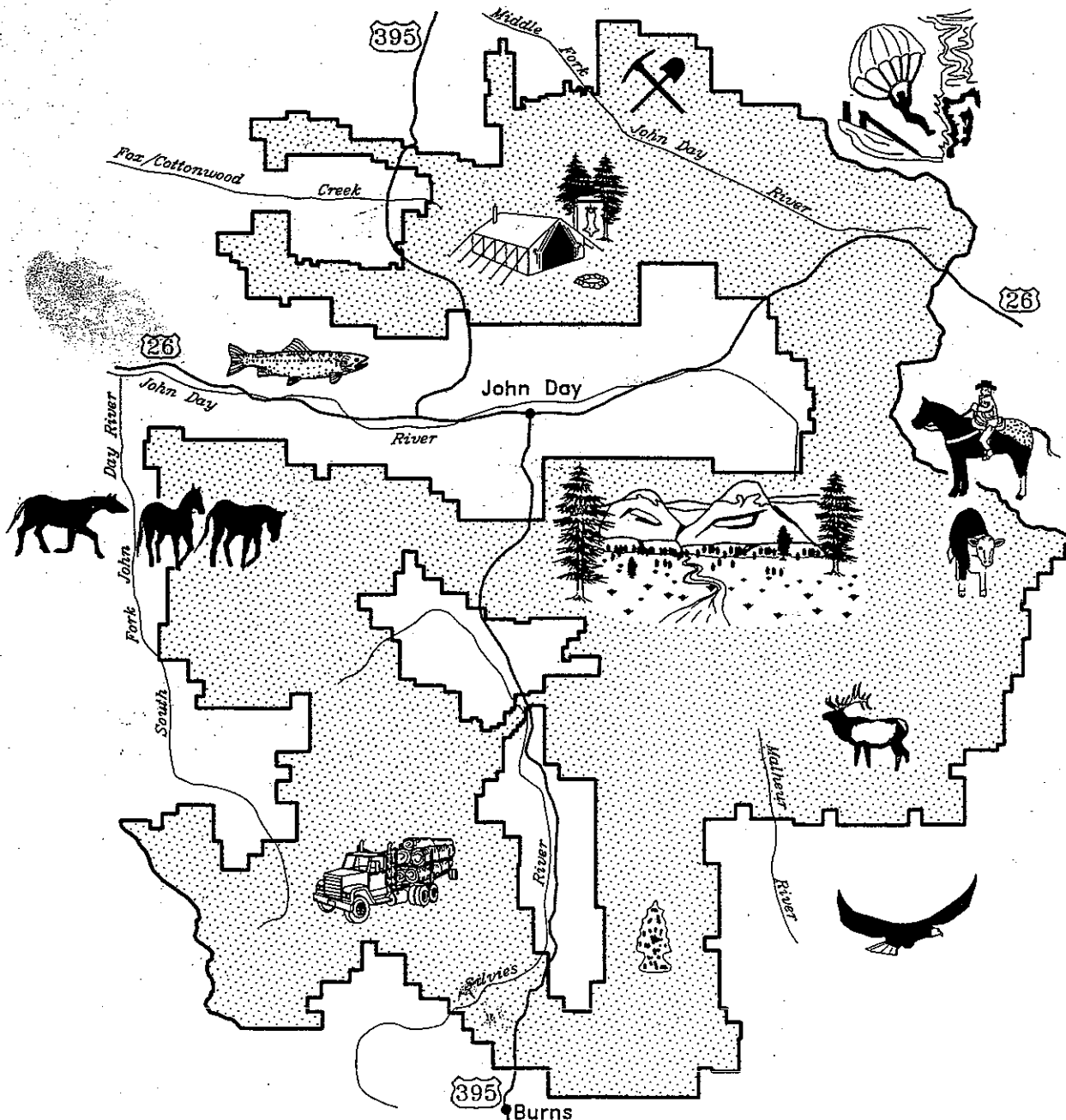
1990



Appendices - Final Environmental Impact Statement

Land and Resource
Management Plan

Malheur National Forest



- e. Management Area 5 (1) Purpose:
This was developed to address the issue of winter roost habitat for bald eagles. The purpose was to confine activities in suitable areas to those which maintain and enhance this habitat.
- (2) Criteria and Assumptions:
Use uneven-aged timber management to maintain stands or enhance roost habitat.
- Comply with the Bald Eagle Recovery Plan.
- Develop standards and costs using management practices to achieve above objectives.
- f. Management Areas 6A, 6B and 6C (1) Purpose:
This was developed to address the issue of how to manage the Forest's two existing wildernesses and any proposed wildernesses.
- (2) Criteria and Assumptions:
The wilderness prescription would be applied to the Wildernesses.
- Wilderness prescriptions are applied to roadless areas proposed for wilderness designation.
- g. Management Area 7 (1) Purpose:
This was developed to address the preservation and protection of areas with outstanding natural scenic views.
- (2) Criteria and Assumptions:
Commodity production is subordinated to preservation of aesthetic values.
- Recreation management is generally at the semiprimitive, nonmotorized level.
- Develop standards and costs to meet the above objectives.
- h. Management Area 8 (1) Purpose:
This was developed to address the preservation and protection of areas of significant historical, geological, botanical, zoological, paleontological, or other special characteristics.
- (2) Criteria and Assumptions:
Commodity production is subordinated to preservation of special interest values.
- The primary use of these areas is dispersed nonmotorized recreation.
- Standards and costs are developed to meet the above objectives.
- i. Management Area 9 (1) Purpose:
This was developed for application to Research Natural Areas. This prescription was designed to provide continued management of the existing Canyon Creek Research Natural Area, and as an option for designating additional areas for the same type of management.

(2) Criteria and Assumptions:

Where existing uses are in effect, and no change in management is contemplated, pattern management practices after current approved direction. Develop standards and costs using commonly accepted management practices currently in use.

j. Management Area 10

(1) Purpose:

To provide recreation opportunities for people seeking a high degree of isolation from the sights, sounds, and results of human activity.

(2) Criteria and Assumptions:

Commodity production is subordinated to preservation of isolated areas with minimum alteration.

Develop standards and costs to meet the above objectives and accepted management practices.

k. Management Area 11

(1) Purpose:

To provide motorized recreation opportunities for people seeking a natural-appearing environment with a moderate degree of isolation.

(2) Criteria and Assumptions:

Commodity production is subordinated to preservation of a natural-appearing environment.

Develop standards and costs consistent with the above objectives and accepted management practices.

l. Management Area 12

(1) Purpose:

To provide recreation opportunities for people seeking developed facilities such as campgrounds, picnic areas, boating sites, etc.

(2) Criteria and Assumptions:

Applies to sites classified as development level 3 or higher.

No commodity production.

Develop standards and costs consistent with above objectives and accepted management practices.

m. Management Area 13

(1) Purpose:

This was developed to address the issue of managing tentatively suitable timber lands for old-growth dependent species of plants and animals. The purpose was to provide for suitable existing and future old-growth habitat while still permitting timber harvesting to occur. The prescriptions were designed to answer the question of what levels of old growth must be managed Forest-wide in order to maintain minimum viable populations of old growth dependent species, as well as provide for ecosystem diversity and other aesthetic values..

To whom it may concern:

The following is a product of computer projections and as such the bearings are rounded to the nearest 30' and the distances to the nearest 50 feet. The calls to the topography and monuments hold. This description was produced with a GIS map with an ortho overlay, any attempt to reproduce this description on the ground should be done using the map and ortho in conjunction with this description.

This description lays in Sec. 13, T15S, R27E; and Secs. 17, 18, 19, and 20, T15S, R28E, W.M. County of Grant, State of Oregon. Point #1 is in the SW1/4NE1/4 of Sec 13, T15S, R27E.

Point #1 is 5/8"X30" rebar in a mound of stone. (When I can get out to the area I will put GPS coordinates on the pins that are called.)

- 1) Beginning at a point which is a 5/8"X30" rebar on the top of the main ridge running northwesterly and is the true point of beginning;
- 2) thence S85E 850 ft to a point on the top of the mountain and the point of a ridge running northerly;
- 3) thence S89E 150 ft to a point;
- 4) thence S66E 400 ft to a point on the face of the mountain and the top of a minor ridge running northerly;
- 5) thence S63E 500 ft to a point on the face of the mountain and the top of a minor ridge running northerly;
- 6) thence S68E 700 ft to a point on the face of the mountain;
- 7) thence S80d30'E 100 ft to a point on the face of the mountain and the bottom of a draw running northerly;
- 8) thence N77E 250 ft to a point on the face of the mountain and the top of a minor ridge running northerly;
- 9) thence N89d30'E 250 ft to a point on the face of the mountain and the top of a minor ridge running northerly;
- 10) thence S35E 300 ft to a point on the face of the mountain and the bottom of a minor draw running northerly;
- 11) thence S20E 350 ft to a point on the face of the mountain and the bottom of a minor draw running northerly;
- 12) thence S37E 400 ft to a point on the face of the mountain and the bottom of a minor draw running northerly;
- 13) thence S54E 450 ft to a point on the top of the mountain and the head of a minor draw running northerly;
- 14) thence S69d30' 400 ft to a point on the top of the mountain;
- 15) thence N85E 300 ft to a point on the face of the mountain and the bottom of a draw running northerly;
- 16) thence N65d30'E 300 ft to a point on the face of the mountain and the point of a ridge running northerly;
- 17) thence N63d30'E 300 ft to a point on the face of the mountain;

- 18) thence S67d30'E 250 ft to a point on the face of the mountain and the head of a minor draw running northerly;
- 19) thence S79E 450 ft to a point on the face of the mountain and the top of a minor ridge running northerly;
- 20) thence S76E 250 ft to a point on the face of the mountain and the head of a minor draw running northerly;
- 21) thence S61d30'E 700 ft to a point on the face of the mountain;
- 22) thence S88d30'E 100 ft to a point on the face of the mountain and the bottom of a draw running northerly;
- 23) thence N57d30'E 400 ft to a point on the face of the mountain and the bottom of a minor draw running northerly;
- 24) thence N59E 250 ft to a point on the face of the mountain and the top of a ridge running northerly;
- 25) thence S88d30'E 1450 ft to a point on the face of the mountain;
- 26) thence S62E 1000 ft to a point at the existing fence and a 5/8"X30" rebar;
- 27) thence along the fence S18d30'E 1050 ft to a point at the existing fence and a 5/8"X30" rebar;
- 28) thence S54W 850 ft to a point on the face of the mountain;
- 29) thence N85d30'W 1250 ft to a point on the face of the mountain and the top of a minor ridge running southerly;
- 30) thence S79W 400 ft to a point on the face of the mountain and the bottom of a minor draw running southerly;
- 31) thence S81d30'W 500 ft to a point on the face of the mountain;
- 32) thence N57W 750 ft to a point on the face of the mountain and the bottom of a minor draw running southerly;
- 33) thence N59W 100 ft to a point on the face of the mountain;
- 34) thence N87d30'W 250 ft to a point on the face of the mountain and the bottom of a minor draw running southerly;
- 35) thence S85W 1650 ft to a point on the face of the mountain and the bottom of a minor draw running southerly;
- 36) thence N77d30'W 400 ft to a point on the face of the mountain;
- 37) thence S72W 1000 ft to a point on the face of the mountain;
- 38) thence S55W 150 ft to a point on the face of the mountain and the top of a minor ridge running southerly;
- 39) thence S81W 200 ft to a point on the face of the mountain;
- 40) thence N38d30'E 400 ft to a point on the face of the mountain;
- 41) thence N22E 950 ft to a point on the face of the mountain and the bottom of a draw running southwesterly;
- 42) thence N50W 300 ft to a point on the face of the mountain;
- 43) thence N 68d30'W 450 ft to a point on the face of the mountain and the top of a ridge running southwesterly;
- 44) thence N56d30'W 150 ft to a point on the face of the mountain;
- 45) thence N14W 600 ft to a point on the face of the mountain;
- 46) thence N42d30'W 200 ft to a point on the face of the mountain and the bottom of a minor draw running southwesterly;
- 47) thence N55W 200 ft to a point on the face of the mountain;

- 48) thence N83d30'W 350 ft to a point on the face of the mountain;
- 49) thence N62W 1100 ft to a point on the face of the mountain;
- 50) thence West 150 ft to a point on the face of the mountain;
- 51) thence N28W 800 ft to a point on the face of the mountain;
- 52) thence N10d30'E 350 ft to a point on the face of the mountain;
- 530 thence N81d30'E 100 ft to a rebar and the POB.