USDA Forest Service

North Shasta Wildlife Burn

REGIONAL PRESCRIBED FIRE REVIEW REPORT

May 2006

Pacific Southwest Region
Shasta-Trinity National Forest

I. OVERVIEW

NORTH SHASTA WILDLIFE BURN PROJECT

On April 30, 2004, the District Ranger on the Shasta-Trinity National Forest (Forest), Shasta-McCloud Management Unit (District), signed a Decision Memo (DM) for the North Shasta Wildlife (NSW) Burn Project. The project was analyzed as the "North Mt. Shasta Wildlife Habitat Enhancement Project" for actions that had been categorically excluded (CE) from documentation in an Environmental Analysis or Environmental Impact Statement using CE #6 (timber stand and/or wildlife habitat improvement activities which do not include the use of herbicides, or do not require more than one mile of low standard road construction).

The project area was reviewed by an interdisciplinary (ID) team that determined there were no extraordinary circumstances or significant impacts to the environment. The ID team conclusion included a finding of no effects to cultural resources, soils or hydrology, and sensitive or threatened and endangered species or to their critical habitats.

The NSW Burn Project is a multi-year wildlife habitat enhancement project. The project area is dominated by brush fuel-types. The purpose of the NSW Burn Project was to convert approximately 1,800 acres of a mature and decadent shrubfield to an early successional condition. Burning would be done on 12 areas ranging in size from 27 to 362 acres. The project area is relatively flat with slopes no greater than 10 to15 percent. Soils are sandy with pumice gravel and moderate to low erodibility. There are no streams within the areas proposed for burning. The benefits of the project include forage for deer and other wildlife species and reduced hazard from wildland fire.

The NSW Burn Project appeared in the Forest's Schedule of Proposed Actions, and a scoping letter was sent to all interested parties. In response, the District received one letter and one telephone call, both in support of the project.

On March 10, 2005, the Deputy Forest Supervisor approved the NSW Burn Plan which was consistent with the purpose and objectives found in the project's DM and resource specialist reports. The prescribed fire complexity rating for the NSW Burn Plan was moderate.

The District initiated the NSW Burn Project on Monday, February 13, 2006, burning 75 acres, and on Tuesday, February 14, burning an additional 10 acres. The project continued on Thursday, February 23, 2006, and Friday, February 24, burning an additional 70 acres and 61 acres, respectively.

During the early morning of Sunday, February 26, 2006, Yreka Interagency Communications Center Dispatch reported active fire at the NSW Burn Project area. Evidence at the scene suggests that this fire may have been caused by burning fuel (a remnant from the prescribed fire burn project) pushed by significant wind gusts through containment lines. The wildfire, later called the Hotlum Fire, burned approximately 3,000 acres, and spread to both sides of US Highway 97, near the town of Weed in Siskiyou County, California. Mandatory evacuation efforts of the Mt. Shasta Vista subdivision began when the fire jumped the highway. The fire burned brush, sage, juniper, mountain mahogany, manzanita, ponderosa pine, and damaged several buildings and vehicles.

GENERAL WEATHER

Based on data gathered from the Remote Automated Weather Station located at the Weed Airport (Weed RAWS), February 2006 began with light precipitation for the first four days of the month, with a total of 0.27 inches. Dry, mild weather existed between February 5 and February 16, 2006. Maximum temperature of 65 degrees was recorded on February 10. A weak weather system brought a few hundredths of an inch of precipitation to the area between February 17 and February 18. Dry and mild weather returned to the area between February 19 and February 26, 2006. The month ended with wet weather, the last two days receiving 1.73 inches of precipitation. In total, the area received precipitation 1.72 inches below normal and daytime temperatures were higher than normal.

SPECIFIC WEATHER

Based on data gathered from the portable RAWS located on-site at the NSW Burn Project area, the maximum temperature for re-ignition of the burn on Thursday, February 23, 2006, was 60 degrees and the minimum relative humidity was 23 percent, both occurring as normally expected during mid-afternoon. Afternoon winds were light northwesterly 5 to 7 miles per hour (mph) with no wind gusts.

On the second day of the burn, Friday, February 24, afternoon temperatures were a little cooler and the relative humidity was somewhat higher. The maximum temperature that afternoon was 54 degrees and the minimum relative humidity was 33 percent. Afternoon winds were lighter than the previous day averaging only 1 to 2 mph from the north, with no wind gusts.

On Saturday, February 25, the maximum afternoon temperature reached 59 degrees, the relative humidity decreased, and the wind speed began to increase. The minimum afternoon relative humidity reached 13 percent by 3:00 p.m. and hit its lowest point of 11 percent at 10:00 p.m. The highest hourly wind speeds of 8 mph were recorded at 6:00 p.m. However, winds were gusting to 14 mph by mid- to late-morning and to 20 mph by early afternoon. Winds were out of the southeast to southwest during this period.

On the day of the escape, Sunday, February 26, there was no change in afternoon temperatures with a maximum temperature of 60 degrees. This is about 10 degrees above the monthly normal. The lowest afternoon relative humidity remained in the teens, with the lowest readings between 12 and 15 percent. The main weather change on this day was the increase in wind speeds. Winds continued out of the southeast to southwest 10 to 15 mph from the early morning hours through the afternoon with wind gusts mainly between 25 and 30 mph. The strongest wind gusts occurred at 2:00 p.m. according to the Weed RAWS (gusts to 70 mph). There was no data available after 1:00 p.m. from the portable RAWS.

WEATHER FORECASTS

Site specific weather forecasts (spot forecasts) for this project area can be obtained from either the National Weather Service in Medford, Oregon, or from the Predictive Services Unit (PSU) at the USDA Forest Service Northern Operations Center in Redding, California.

A site specific weather forecast for the NSW Burn Project was prepared by the Redding PSU on Wednesday, February 22, 2006. This spot forecast covered the outlook period from Wednesday night through Sunday, February 26, 2006. This was the weather forecast that was used for the Thursday, February 23, burn operations.

The detailed weather forecast for Thursday correctly predicted all weather elements. Sunday's cold front came through the area later than predicted in

the outlook period weather forecast. The forecast predicted maximum temperatures and wind speeds lower than actually measured and afternoon minimum relative humidity percentages higher than actually measured.

A second site specific weather forecast prepared by the Redding PSU for the NSW Burn Project was issued on Friday, February 24, 2006, for that day's burn operations. As with the previous site specific weather forecast, the predicted weather elements for the first three periods (Friday, Friday night, and Saturday) were accurate. The outlook period for Sunday, February 26 through Tuesday, February 28, called for "eye level winds south-southeast to west-southwest generally 7 to 15 mph with gusts 20 to 28 mph, probably strongest Sunday." The strongest sustained wind speeds reported by the portable RAWS on Sunday morning were 15 mph with wind gusts to 35 mph.

II. CHRONOLOGY OF EVENTS

Thursday, February 23, 2006:

- At 11:50 a.m., the test burn was started for the NSW Burn Project.

- At 12:00 p.m., burn operations began on the south side of Unit C of the project.

- In the afternoon, burn operations were moved into the perimeter of Unit C.

- At 4:30 p.m., burning was completed on the north side and east side perimeter of Unit C.

- The NSW Burn Project was patrolled until 5:30 p.m.

- At 5:30 p.m., all burning resources were released from NSW Burn Project.

Friday, February 24, 2006:

- At 12:00 p.m., the test burn was started for the NSW Burn Project.

- At 12:30 p.m., burning was continued in Unit C of the project.

- At 1:00 p.m., burn operations were relocated to south facing slopes of Unit C to improve burning conditions.

• At 4:00 p.m., burning personnel began ignition on the upper northwest area of Unit B.

• At 5:14 p.m., burning was completed for the NSW Burn Project.

Saturday, February 25, 2006:

• At 11:45 a.m., Division 7 patrolled the NSW Burn Project.

• At 1:00 p.m., Battalion Chief BC-71 was notified by Division 7 to organize assistance from Fire Engine E-62 and begin mop-up of 50 feet along the north dozer line of Unit C.

• At 4:46 p.m., E-62 departed from the NSW Burn Project area while Division 7 continued to patrol the area.

• At 6:00 p.m., Division 7 departed from the NSW Burn Project area.

• At 11:30 p.m., Division 7 received a call from California Department of Forestry and Fire Protection (CDF) Battalion Chief BC-2613 that he was responding to the NSW Burn Project area with three CDF Fire Engines; Division 7 called Battalion Chief BC-61 and Fire Captain 62 to also respond to the project area along with Division 7.

Sunday, February 26, 2006:

• At 12:00 a.m., Division 7 arrived at the NSW Burn Project and determined that all fire was within control lines.

• At 12:02 a.m., BC-61 and Fire Captain 62 arrived at the NSW Burn Project.

• At 12:30 a.m., Division 7 communicated and coordinated with other fire resources at the NSW Burn Project (Fire Engines E-2663, E-1212, E-3110, E-62; and BC-2613).

• At 1:27 a.m., 2 to 3 acres of fire were reported outside the north dozer line boundary of Unit C. One dozer and two fire crews were ordered for the project area.

- At 2:30 a.m., Division 7 ordered two additional Fire Engines and one Water Tender Operator to replace E-62 and E-2663 for dayshift operations.

- At 2:49 a.m., CDF Dozer D-2640 arrived at the project area to improve Unit C's north dozer line.

- At 4:00 a.m., two CDF fire crews arrived at the project area to start constructing hand line; little to no fire activity is reported.

- At 4:08 a.m. and 5:11 a.m., two CDF Fire Engines (E-1212 and E-3110) were released from the project area as the fire is quiet.

- At 8:00 a.m., BC-71 arrived at the Unit C project area; Division 7 briefed BC-71 about the current fire situation.

- At 8:34 a.m., Battalion Chief BC-51 arrived at the project area and concurred with Division 7 that there are no holding problems; "No open flame showing, winds still blowing 20-30 mph."

- At 11:00 a.m., Division 7 departed the project area with radio traffic quiet.

- At 11:41 a.m., BC-71 ordered an additional dozer and two fire crews for the NSW Burn Project.

- At 11:45 a.m., the Weed RAWS recorded declining relative humidity, steady winds at 35 mph, and wind gusts at 50 mph.

- At 11:59 a.m., the NSW Burn Project was declared a wildland fire.

III. FINDINGS

The following section documents the region's findings of factual events leading up to and possibly causing the apparent escaped NSW Burn Project. It is not intended to be an investigation of Forest personnel or the subsequent wildfire.

1. The DM for the NSW Burn Project was signed on April 30, 2004, by the Shasta-McCloud District Ranger and is in compliance with all established laws, regulations, and policies.

2. The NSW Burn Plan was approved by the Deputy Forest Supervisor on March 10, 2005, and is consistent with the purpose and objectives found in the project's DM and resource specialist reports.

3. The NSW Burn Plan was created utilizing regional format Version 4. Regional policy states that each Prescribed Fire Burn Plan is written in the standard regionally approved format, which is currently Version 5.

4. The project was rated at a moderate complexity in the NSW Burn Plan.

5. The NSW Burn Project was an on-going burn operation that started on February 13 and other portions continued on February 14, February 23, and February 24, 2006.

6. An on-site live fuel moisture sample near the portable RAWS was taken on January 26, 2006, with a reading of 120.4 percent. The live fuel moisture in the NSW Burn Plan called for a mid-range of 120 percent, with the hot range at 99 percent and the cold range at 140 percent.

7. The NSW Burn Project unit lay-outs originally followed reforestation units. Some units contained "dog-legs." The NSW Burn Project Unit B and C boundaries were modified on-site during implementation. The NSW Burn Project file did not contain documentation for these unit boundary modifications.

8. On Thursday, February 23, 2006, the NSW Burn Project was ignited following a successful test burn, with 70 acres burned that day.

9. The spot weather forecast and on-site fire weather observations for Thursday, February 23, 2006, indicated temperatures in the mid-50s and northwest to north wind direction conditions. The fire prescription parameters in the NSW Burn Plan called for the temperature and the wind direction mid-range to be "61-80" degrees with "south-southwest-southeast" winds, respectively. The NSW Burn Plan states that the information obtained from the spot forecast must ensure that site conditions will be within designated fire prescription parameters. On-site fire weather observations indicated warming temperatures reaching prescription parameters in the afternoon.

10. On Friday, February 24, following a successful test burn, the NSW Burn Project continued and an additional 61 acres burned that day.

11. All key fire personnel involved in all aspects of the NSW Burn Project had appropriate-level qualifications and experience - with the exception of the Burn Boss trainee for the Friday, February 24, 2006, burn operations. The Burn Boss for the Friday, February 24, burn operations was qualified as a Type 2 Burn Boss; however, the Burn Boss trainee was not. Regional policy states that a Type 2 Burn Boss will execute prescribed fire burn plans rated at a moderate complexity level.

12. The spot weather forecast issued Friday morning, February 24, predicted winds of 3 to 7 mph and wind gusts of 9 to12 mph. On-site fire weather observations indicated actual wind speed gusts of 3 to 5 mph. The wind speed mid-range in the NSW Burn Plan called for "2-7" mph. The NSW Burn Plan states that the information obtained from the spot forecast must ensure that site conditions will be within designated fire prescription parameters.

13. The outlook period from Friday's, February 24, spot weather forecast predicted sustained winds of 4 to 8 mph with wind gusts of 11 to 15 mph for Saturday, February 25, and sustained winds of 7 to15 mph with wind gusts of 20 to 28 mph for Sunday, February 26, 2006.

14. On Saturday, February 25, the NSW Burn Project area was patrolled and a 50-foot mop-up conducted by Division 7 and E-62.

15. The Burn Boss was not identified in the NSW Burn Plan for Saturday's, February 25, operational shift. The Forest's Fire Management Plan states that the available qualified burn bosses are listed by name in the burn plan prior to implementation.

16. Daily spot weather forecasts were not requested for Saturday, February 25, or Sunday, February 26, 2006. The Weather Collection and Forecasts Section of the NSW Burn Plan states that spot forecast information is requested daily during burning and mop-up operations.

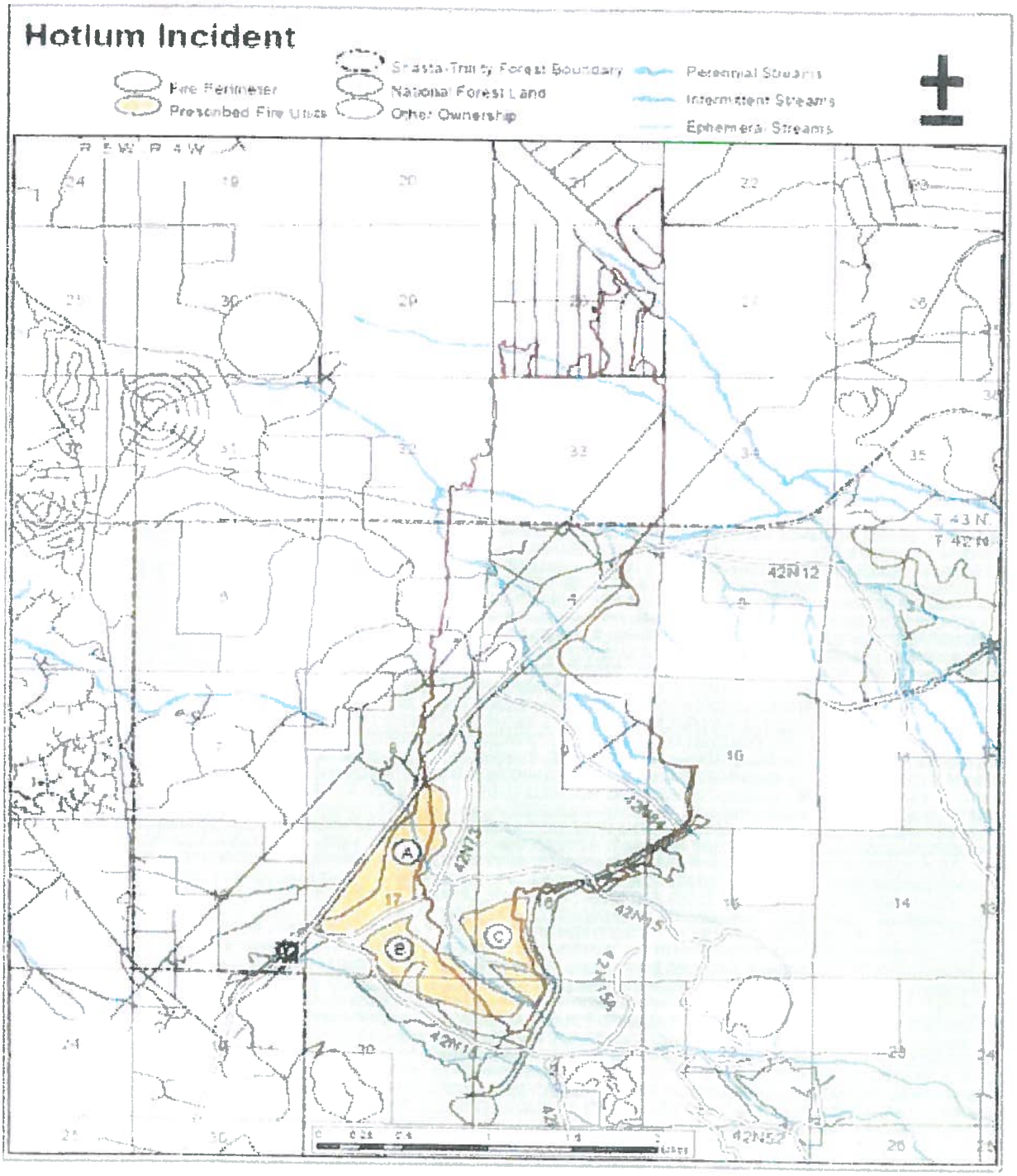
17. Both the Weed RAWS and portable RAWS reported poor relative humidity recovery and increasing winds during late-evening Saturday, February 25/early-morning Sunday, February 26, 2006. Fire resources were dispatched to the NSW Burn Project during this time.

18. The weather conditions at the NSW Burn Project area met "red flag" criteria during late-evening, Saturday, February 25, and early Sunday, February 26, 2006. However, no evidence was found to indicate that a red flag warning was issued by the National Weather Service.

IV. FOLLOW-UP ACTIONS

The Forest will draft an action plan that will include a schedule of items that need to be addressed to minimize future resource damage and future prescribed fire escapes. The Regional Forester will review and finalize the action plan, and will incorporate the lessons learned into training courses that will strengthen the Region's Prescribed Fire Program.

HOTLUM FIRE – SHASTA-TRINITY NF



United States Department of Agriculture | Forest Service | Pacific Southwest Region

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Vallejo, CA 94592
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File Code: 5140
Route To: (1230)

Date: March 3, 2006

Subject: Letter of Delegation -- Escaped Prescribed Fire Review, Shasta-Trinity National Forest

To: Forest Supervisor, Shasta-Trinity National Forest

I am directing that a Regional Escaped Prescribed Fire Review be conducted of the prescribed burn which appears to have resulted in the Hotlum Wildfire on the Shasta-Trinity National Forest on February 26, 2006. A report of the findings of the review will be competed in accordance with the Office of the General Counsel direction and will constitute an attorney work product, consistent with direction in Departmental Regulation 2510-001, section 7.

I am delegating to Art Gaffrey full authority to act as Team Leader on behalf of the Region in conducting this review which is to be based on the direction found in FSM 5140-1 and the *Interagency Standards for Fire and Fire Aviation Operations (2005)*. This delegation will remain in effect until I have received the final written report of, and been briefed by, the review team. The Office of the General Counsel contact for this effort is Jeff Moulton, Deputy Regional Attorney.

The purpose of this review is to document the factual events leading up to, and resulting in, the apparent escaped prescribed fire, and is not intended to be a review or investigation of the subsequent wildfire. The objectives of this review are to:

1. Determine if the project planning, layout, and Prescribed Fire Plan were adequate for the project and complied with policy and guidance related to prescribed fire planning and implementation;
2. Determine if the prescription, actions, and procedures set forth in the Prescribed Fire Plan were followed; and
3. Determine the level of awareness and the understanding of the personnel involved, in regard to procedures and guidance.

The review team will include Berni Bahro, Regional Fuels Planner; Bob Patton, Fire Behavior Analyst - Eldorado National Forest; Cathleen Thompson, Writer/Editor - Regional Office; Ron Hamilton, Meteorologist - Regional Office South Zone Fire Operations Center; and Kit Bailey, Forest Fire Management Officer. The team may be augmented with additional team members and support personnel as needed.

The review team is currently scheduled to convene for an in-briefing with key Forest and District staff at 0900 hr on Tuesday March 7, 2006 at the Shasta-Trinity Forest Supervisor Headquarters

(3644 Avtech Parkway, Redding, CA) and a preliminary close-out meeting with key Forest and District staff and personnel will need to be scheduled for no later than Thursday March 9th.

Forest, District, and any other personnel involved in prescribed fire program management, planning, implementation, and monitoring need to be available for the review team to interview as needed during that time period.

The Shasta-McCloud Management Unit, Shasta-Trinity National Forest, and Regional North and South Zone Fire Operations Centers will provide logistical support for the team as needed.

Upon completion of the review, the review team is to provide a written report of findings, and to specifically identify any items that need to be addressed by the Shasta-Trinity National Forest or the Region. At a minimum the escaped fire review report will include the following elements:

1. Examination of the planning processes including NEPA documents, unit layout, and strategic considerations used in project development;
2. An analysis of seasonal severity, weather events, and on-site conditions leading up to the wildfire declaration;
3. An analysis of the actions taken leading up to the wildfire declaration for consistency with the Prescribed Fire Plan;
4. An analysis of the Prescribed Fire Plan for consistency with policy;
5. An analysis of the prescribed fire prescription and associated environmental parameters
6. A review of the qualifications and experience of key personnel involved;
7. A summary of causal agents contributing to the wildfire declaration; and
8. Examination of local prescribed fire operational, and decision making, procedures.

Special attention to documentation is critical. In support of the review team's documentation, the Shasta-Trinity National Forest will set up a file that includes all pertinent information including, but not limited to:

- The NEPA documents and strategic considerations used in the development of the project;
- The Prescribed Fire Plan, including complexity analysis and summary, contingency plan, unit layout and maps, and information regarding availability of contingency fire fighting resources;
- A Chronology of events including the prescribed fire report, organizational structure, briefings, and notification procedures and contacts;
- Unit logs and individual statements;
- Weather forecasts including any spot forecasts;
- Weather information taken on site and Remote Automated Weather Station (RAWS) and National Fire Danger Rating system (NFDRS) data for the day of the escape from the nearest station(s); and
- Photos.

After receipt of the written report, the Shasta-Trinity National Forest is to provide a written action plan and timeline addressing any items identified by the review team which need to be addressed to minimize future resource damage and future escapes from occurring.

/s/ Thomas L. Tidwell (for)
BERNARD WEINGARDT
Regional Forester

cc: Kathy Murphy
Joe Millar
Michael Lococo
Ray Hermit
Cathleen J Thompson
Sharon Heywood
Ralph Domanski
Tom Tidwell
Rob Griffith
Bernhard Bahro
Art L Gaffrey
Ray Quintanar
Ron Hamilton
Kit Bailey

– North Shasta Wildlife Escaped Prescribed Fire Review Action Plan –

1. Administration			
1.1	Issue communication to the Forest suspending all prescribed fire operations on the Shasta-Trinity National Forest (SHF).	**Responsibility:** Forest Supervisor **Due Date:** 2/26/2006	**Status:** Completed.
1.2	Complete administrative reviews, evaluations and Action Plan from review findings.	**Responsibility:** Forest Supervisor **Due Date:** 9/30/2006	**Status:** As the review identified findings relative to the NSW Prescribed Fire project, a Lesson Learned approach has been adopted and implemented across the Unit. Action Plan submitted to the RO on 6/12/2006.
1.3	Upon successful completion of the Escaped Fire Action Plan items, the Forest Supervisor will lift the burning suspension.	**Responsibility:** Forest Supervisor **Due Date:** 9/30/2006	**Status:** Ongoing. Action Plan items are being implemented at this time.
1.4	Ensure Line Officers understand and are implementing lessons learned from this incident, including their roles in the NEPA – burn plan implementation process. **This is an iterative action, to be monitored over time.**	**Responsibility:** Forest Supervisor **Due Date:** 9/30/2006	**Status:**

APC

2. Burn Plan Development			
2.1	In order to continue the NSW Prescribed Fire Project, the District will be required to completely redo the burn plan from beginning to end. Incorporate findings from the review as a part of development of the burn plan.	**Responsibility:** District Ranger **Due Date:** TBD	**Status:** District Fuels Specialist hired, with appropriate qualifications, experience and skills.
2.2	Develop burn plan prescriptions that allow for a full range of seasonal conditions; consider site and weather conditions and are commensurate with meeting project objectives. **This is an iterative action, to be monitored over time.**	**Responsibility:** Forest Fuels Specialist **Due Date:** 5/19/2006 (Burn Boss Refresher) and 6/13/2006 (Fuels Meeting)	**Status:** Discussed as lesson learned item at Burn Boss refresher sessions (4/6/06 and 5/17/06). Will be an agenda item for the 6/13/2006 Forest Fuels Meeting.
2.3	Ensure all prescribed fire burn plans are in the current format and in compliance with NEPA analysis and project decision. **This is an iterative action, to be monitored over time.**	**Responsibility:** Forest Fuels Officer, FMO and Forest Supervisor **Due Date:** Discussions - 5/19/2006 (Burn Boss Refresher) and 6/13/2006 (Fuels Meeting). Review Completion – July 31, 2006	**Status:** Discussed as lesson learned item at Burn Boss refresher sessions (4/6/06 and 5/17/06). Will be an agenda item for the 6/13/2006 Forest Fuels Meeting.

3. Prescribed Fire Policy			
3.1	Per RF Letter, conduct Prescribed Fire Burn Boss Refresher training, to also include a review of the new FSM 5140. Incorporate lessons learned into refresher training to prompt discussion and understanding.	**Responsibility:** Forest Supervisor **Due Date:** 5/19/2006	**Status:** Two sessions; completed on 4/6/2006 and 5/17/2006.
3.2	Maintain situational awareness for changing weather and fuel conditions during prescribed fire burning operations. **This is an iterative action, to be monitored over time.**	**Responsibility:** DFMO/Burn Boss **Due Date:** 5/19/2006	**Status:** Agenda and emphasis item at 5/11/2006 Division and Battalion Chiefs meeting. Discussed as lesson learned item at Burn Boss refresher sessions (4/6/06 and 5/17/06).
3.3	Adhere to the burn plan during project implementation. Ensure the use of the burn plan amendment process when a decision is needed to continue project implementation outside of the burn plan elements. **This is an iterative action, to be monitored over time.**	**Responsibility:** Burn Boss **Due Date:** 5/19/2006	**Status:** Agenda and emphasis item at 5/11/2006 Division and Battalion Chiefs meeting. Discussed as lesson learned item at Burn Boss refresher sessions (4/6/06 and 5/17/06).
3.4	Ensure frequent consultations with the local fire weather forecaster during prescribed fire burning and mop-up operations. Continually ask for updates and provide feedback as necessary. **This is an iterative action, to be monitored over time.**	**Responsibility:** Burn Boss **Due Date:** 5/19/2006	**Status:** Agenda and emphasis item at 5/11/2006 Division and Battalion Chiefs meeting. Discussed as lesson learned item at Burn Boss refresher sessions (4/6/06 and 5/17/06).
3.5	Burn boss transitions will be formally documented within the burn plan and communicated at the district and forest level (RICC). **This is an iterative action, to be monitored over time.**	**Responsibility:** Burn Boss **Due Date:** 5/19/2006	**Status:** New protocol established at RICC for providing status of burn boss in WildCAD summary by specific project. Agenda and emphasis item at 5/11/2006 Division and Battalion Chiefs meeting. Discussed as lesson learned item at Burn Boss refresher sessions (4/6/06 and 5/17/06).

4. Roles and Responsibilities			
4.1	Ensure that all personnel, including trainees, are qualified as required in FSH 5109.17, Section 25; and notification to fill trainee positions is made in a timely manner. **This is an iterative action, to be monitored over time.**	**Responsibility:** DFMO / Burn Boss **Due Date:** 5/19/2006	**Status:** Agenda and emphasis item at 5/11/2006 Division and Battalion Chiefs meeting. Emphasis item at March Leadership days. Discussed as lesson learned item at Burn Boss refresher sessions (4/6/06 and 5/17/06).

U.S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C. 20250

DEPARTMENTAL REGULATION

Number: 2510-001

SUBJECT: Claims Against the United States

DATE: January 25, 1995

OPI: Office of the General Counsel

All claims arising from a single occurrence should be added together for the purpose of this delegation.

b Agency Tort Contacts. Each agency will designate a Tort Contact to manage all agency related activities, including training and supervision of personnel. The Tort Contact will be the sole liaison with OGC, unless the agency chooses to designate field personnel to serve as Tort Contacts with Regional Attorneys. The Tort Contact should not routinely delegate responsibility for dealing with OGC to subordinates.

The Tort Contact should review all submissions to OGC for adequacy, completeness, and compliance with these procedures.

Persons who are designated as agency Tort Contacts should be familiar with the FTCA and with litigation, and should receive periodically additional training to keep current with developments in the field of claims management.

The name, address, and telephone number of each Tort Contact and at least one alternate should be sent to the Assistant General Counsel, Research and Operations Division, OGC, Washington, D.C. 20250, and updated as changes in personnel occur.

c Investigation. When an agency receives a claim or learns of an incident likely to result in a, claim, it is responsible for ensuring that an investigation of the incident is undertaken and for the preservation of all relevant evidence. Any such investigation is conducted at the request of OGC, and any report derived from such investigation is considered attorney work product.

d Time Requirements. When an agency receives a claim or potential claim, it must be date stamped and signed immediately by the person who receives it. After agency processing, a claim must be forwarded to OGC no later than 4 months after it

Decision Memo

North Mt. Shasta Wildlife Habitat Enhancement Project

USDA Forest Service
Shasta-McCloud Management Unit
Shasta-Trinity National Forest
Siskiyou County, CA
Sections 3,4,6,7,&18, T42N,R3W, MDB&M
Sections 1,8,12,16,17,20&21, T42N,R4W,MBB&M
Sections 20,21,28,29,31-33, T43N,R3W,MDB&M

Background

This proposed project is to use prescribed fire to move approximately 1800 acres of mature and decadent shrubfield to an early successional condition. Burning would be done on twelve areas ranging in size from 27 to 362 acres (see project map). The project area is relatively flat with slopes no greater than 10-15%. Soils are sandy with some pumice gravel and moderate to low erodibility. There are no streams within the areas proposed for burning.

The benefits of this project are increased forage for deer and other wildlife species and reduced hazard of wildland fire.

The proposed project area is within matrix lands, prescription III (Roaded Recreation), as defined in the Shasta-Trinity Land and Resource Management Plan, pages 4-45&46. Vegetation treatment by burning is one of the emphasized management practices.

Currently within the Whitney 5th Field Watershed there are approximately 20,600 acres of mature and decadent shrubfields. The dominant shrubs are Green leaf manzanita, Big sage, Snowbrush, rabbitbrush, Antelope bitterbrush, and Mountain mahogany. Scattered within these shrubfields are some Ponderosa pine, Western Juniper and Canyon live oak. A variety of forbs and herbs also occur within these shrubfield[1]

The project area is also key deer winter range and supports of population of both black tail and Rocky Mountain mule deer. In recent years, the deer population in northeastern California has declined more than any other area in the state.[2] A major factor in this deer population decline is the lack of early successional vegetation communities in forestlands. The primary mechanism to establish those communities is fire, either wildfire or prescribed.[3]

In this Great Basin shrub community deer historically have relied on bitterbrush for feeding during the fall and early winter and on sagebrush for the bulk of the winter. Mahogany stands, when available, also provide valuable forage and cover.[4]

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[1] North Mt. Shasta Wildlife Enhancement Project Plant List
[2] An Assessment of Mule and Black-tail Deer Habitats and Populations in California, with special emphasis on public lands administered by the BLM and USFS. February 1998, Collaborative Report
[3] Collaborative Report, page 22
[4] Collaborative Report, page 28

The project area has been reviewed by an interdisciplinary team which has determined there are no extraordinary circumstances or significant impacts to the environment. These findings include no effect to sensitive or T&E species or their critical habitats, no effect to cultural resources, no effects to soils or hydrology. [5]

Decision

I have decided to implement the use of prescribed fire for wildlife habitat enhancement on approximately 1800 acres of National Forest System lands as described above and on the project map. Implementation will occur over a 3-5 year period. All burning will be done under approved Burn and Smoke Management Plans. Burning will be done between October and March.

To prevent the spread of noxious weeds, all off-road equipment will be washed prior to entering the project area and a 100 foot no burn area will be left along State Route 97. Burned areas will be monitored for the presence of noxious weeds for 3 years following burning. If noxious weeds are found, a program of control will be developed.

Prior to burning the unit archaeologist will be contact to locate and flag any archaeological sites within or adjoining the areas to be burned.

This action is categorically excluded from documentation in an environmental impact statement or an environmental assessment because a review by an interdisciplinary team has determined no extraordinary circumstances or impacts that would have a significant affect on the environment. This action is categorically excluded under FSH 1909.15, Section 31.2, #6, Timber stand and/or wildlife habitat improvement activities which do not include the use of herbicides or do not require more than one mile of low standard road construction.

Public Involvement

The proposal was provided to the public and other agencies for comment during scoping between March 3, 2004 and March 31, 2004 by publishing a news release in the Mt. Shasta Herald. Letters were also sent to nine individuals and organizations that are known to be interested in projects on the Shasta-McCloud Management Unit. This project has also been listed the Forest Schedule of Proposed Actions since January, 2004. As a result of scoping, one letter in support of the project was received from the Klamath Forest Alliance and one phone call in support of the project was received from Bob Schaefer, California Department of Fish and Game.

Findings Required by Other Laws

This decision is consistent with Shasta-Trinity National Forest Land and Resource Management Plan as required by the National Forest Management Act. The project was designed in conformance with forest plan standards and incorporates appropriate Forest Plan guidelines for Matrix lands with a Roaded Recreation Prescription.

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[5] NEPA Checklist for the North Mt. Shasta Wildlife Habitat Enhancement Project

Implementation Date

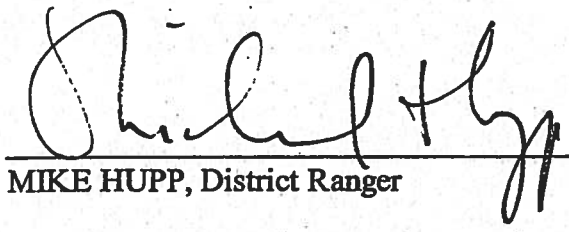
Implementation of this proposal may take place immediately upon my issuance of this decision.

Administrative Review or Appeal Opportunities

My decision is not subject to appeal pursuant to 36 CFR 215.12 "The following decisions are not subject to appeal under this part: (f) Decisions for actions that have been categorically excluded from documentation in an EA or EIS pursuant to FSH 1909.15, Chapter 30, section 31."

Contact Person

For additional information concerning this decision or the Forest Service appeal process, contact Debbie Derby, Wildlife Biologist, Shasta-McCloud Management Unit, 204 W. Alma Street, Mt. Shasta, CA, 96067, (530) 926-9661.



MIKE HUPP, District Ranger

4/30/04

Date

United States Department of Agriculture
Forest Service
McCloud Ranger Station
P.O. Box 1620
McCloud, CA 96057
(530) 964-2184
(530) 964-2692 – TDD
http://www.r5.fs.fed.us/shastatrinity

File Code: 1950 Date: April 04, 2005

Subject: North Mt.Shasta Wildlife Habitat Enhancement Project

To: Project File

Re: Review of the North Mt.Shasta Wildlife Habitat Enhancement Project pursuant to FSH 1909.15, Chapter 18.01.

On April 30 2004 Shasta-McCloud Management District Ranger Mike Hupp approved the decision memo for the North Mt.Shasta Wildlife Habitat Enhancement Project. Burning was slated to be completed between October and March in order to mitigate botany concerns. Due to unfavorable weather conditions the project was unable to go forth within. the original time frame. Burning will now take place in April..

Forest Service policy at FSH 1909.15, Chapter 18.01 states:

> "If new information or changed circumstances relating to the environmental impacts of a proposed action come to the attention of the responsible official after a decision has been made and prior to the completion of the approved program or project, the responsible official must review the information carefully to determine its importance.
>
> If, after an interdisciplinary review and consideration of new information within the overall program or project, the responsible official determines that a correction, supplement, or revision to an environmental document is not necessary, implementation should continue. Document the results of the interdisciplinary review in the appropriate program or project file."

An interdisciplinary review was conducted of the decision memo and its supporting documents. This review considered the changed circumstances that have occurred since approval of the decision Memo and identified the proposed change as the best method of moving the area towards the desired future condition for the North Mt.Shasta Wildlife Habitat Enhancement Project area. District botanist Rhonda Posey was consulted and has determined that no negative botany issues would exist if the burn were to take place in April.

Determination

Based on an interdisciplinary review of the decision memo and the most recent information on the project, it is my determination that the decision memo adequately considers and discloses the significant issues and environmental impacts of the project. Therefore, I determine that a correction, supplement, or revision to the decision memo is not necessary to proceed with implementation of the North Mt.Shasta Wildlife Habitat Enhancement Project..

Finding

The original Decision Memo dated April 30,2004 are still valid and implementation of the project should proceed with the modification described above.

MICHAEL HUPP
District Ranger

U.S. Forest Service - Pacific Southwest Region

PRESCRIBED FIRE BURN PLAN
FOR
NORTH SHASTA WILDLIFE BURN
ON
SHASTA-McCLOUD MANAGEMENT UNIT

FY 2005 THRU 2009

APPROVED BY: ____________ **Date** 3/10/05
FOR **FOREST SUPERVISOR or delegated official**

TECHNICAL REVIEW: ____________ **Date** 2/18/2005

PREPARED BY: ____________ **Date** 1/31/05

REVIEWED BY: ____________ **Date** 2/23/05 **REVIEWED BY:** ____________ **Date** ______

REVIEWED BY: Julie Titus **Date** 3/8/05 **REVIEWED BY:** ____________ **Date** ______

BURN BOSS: ________________ **Date** ______ **BURN BOSS:** ________________ **Date** ______

BURN BOSS: ________________ **Date** ______ **BURN BOSS:** ________________ **Date** ______

NEPA DOCUMENTATION APPROVED BY & DATE: C.E. signed by Mike Hupp DR 3/31/04

This approved plan constitutes authority to use prescribed fire, actions taken by approved personnel, acting within the scope of their authority.
Version 4 01/06/01

PRESCRIBED FIRE BURN PLAN
U.S.FOREST SERVICE R-5

1. **BURN ORGANIZATION**

COMPLEXITY LEVEL II

APPROVING LINE OFFICER
FOREST SUPERVISOR

PRESCRIBED FIRE MANAGER
(1 TBA Pre-Operations; if needed)

PRESCRIBED FIRE BURN BOSS
(1 TBA Pre Operations)

IGNITION SPLST	HOLDING SPLST	MOP UP& PATROL	HELIBASE MGR
(1 - TBA Pre-Operations)	(1 -TBA Pre-Operations)	TBA	N/A
LIGHTER (S)	HOLDING CREW		
2 (minimum)	2 (minimum)		

*** SEE APPENDIX A – SMMU Personal Rx Fire Qualifications List ***

2. **PROJECT AREA & UNIT DESCRIPTION** (VICINITY, PROJECT MAP ATTACHED)

LOCATION: T43N R3W SEC 20,21,28,31,32,33
T42N R3W SEC 4,5,6,7,14
T42N R4W SEC 1,12,16,17,20,21

TOTAL BURN AREA SIZE (ACRES): **TOTAL = 1807 ac.**

TOPOGRAPHIC FEATURES

ELEVATION (FEET ABOVE M.S.L.): 4400

TOP: 5365

BOTTOM: 3557

SLOPE (%) 0 – 10% ASPECT: FLAT

FUEL CHARACTERISTICS

VEGETATION TYPES: Scattered Ponderosa Pine Overstory with Sage and Mountain Mahogany mixed with annual grasses.

FUEL MODEL (SPECIFY SYSTEM): NFFL Fuel models 2 & 6

FUEL LOADING (TOTAL TONS/ACRE): 5.0 to 20.0 tons/acre

FUEL DISTRIBUTION (TONS/ACRE BY SIZE CLASS):

Size Class	Time Lag Fuel Class	Tons/Acres
0" – ¼"	1hr	1.5
¼" – 1"	10hr	2.5
1" – 3"	100hr	2

FUEL ARRANGEMENT: Natural fuels

FUEL CONTINUITY: 100% continuity of needle cast sedge, grass and woody debris.

SURFACE FUEL DEPTH: 4 – 12"

DUFF DEPTH: 1 – 4"

DESCRIBE VEGETATION UNDER 12' TALL (INCLUDE LIVE & DEAD %): Sage, Bitterbrush, annual grasses and light litter.

DESCRIBE VEGETATION OVER 12' TALL: Scattered Ponderosa pine, Old growth Mountain Mahogany.

3. RESOURCE MANAGEMENT GOALS & OBJECTIVES

GOALS FROM THE LMP - Forest stand densities are managed at levels to maintain and enhance growth and yield and to improve and protect forest health and vigor recognizing the natural role of fire.

The resource objectives are diverse. Although reducing fire risk from stand replacement wildfire is a primary objective, there are additional wildlife, range and silvicultural benefits of which fire is a catalyst.
The general description is as follows:

OBJECTIVES	
FIRE/FUELS	Alter stand structure and residual fuel loading to reduce wildfire hazard, simulate its natural fire regime and accomplish the following: • Duff consumption not to exceed 60% • Fuel accumulations reduced (especially in the < 1" category) • Strive to achieve Condition Class I stand parameters (per NFP direction).
SILVICULTURE	Provide non-selective thinning of shade tolerant species resulting in better stand vigor and health.
WILDLIFE	Introduction of fire to promote new growth of existing forbs/grass species for deer forage and small animals in critical winter habitat.
PRIVATE LANDS	Protect private lands by building fire lines, provide adiquate resources to suppress any spots that might threaten private lands.

4. RANGE OF ACCEPTABLE RESULTS EXPECTED

Factor		Acceptable Range
1) Duff Consumption		30 – 60 %
2) Consumption	0-3"	40 – 90 %
	1-3"	40 – 75 %
	3-10"	30 – 60 %

3) Average Removal		5 – 10 tons/acre
4) Scorch Height/ % Tree Crown affected	9 - 12" DBH	< 25 feet / < 55%
5) Mortality	>-- 12"	< - 10%
	9 – 12" DBH	10 - 20 %
	4 – 8" DBH	20 – 50 %
	< 4" DBH	50 – 100 %

5. PROTECTION OF SENSITIVE FEATURES

Known archeological features have been identified and will be protected from any disturbing activitles during preparation, burning and mop-up stages of the project. Wildlife guzzlers are found scattered on the edge of several units. A 50' buffer of vegetation will be protected around guzzlers with-in unit boundaries (see attached map). In the event that any new features discovered during burning operations, the area will be flagged and avolded.

6. PROJ ECT FINANCING:

ESTIMATED BURN OPERATION COST: $ 216,600 for 1805 acres
ESTIMATED COST/ACRE: $ 120.00 / ACRE

The project could cover several Fiscal Years with a target of approximately 500ac per year.

This project will be accomplished with appropriated WFHF funds and grant money.

7. PRESCRIBED FIRE PRESCRIPTION

FUEL MODEL:	2/ 50% & 6/50%		
Environmental Variables:	**HOT**	**MID RANGE**	**COLD**
Relative Humidity %	17	18 - 40	40+
Wind Speed (MFWS)	8	2 - 7	1
Wind Direction		S-SW-SE ✓	
Temperature (Dry Bulb %)	81	61 - 80 ✓	60
Live Fuel Moisture %	99	120	140
Dead Fuel Moisture % 1hr. T/L	5	6 - 8	9
10hr. T/L	6	7 - 13	14
100hr. T/L	9	10 - 14	15
1000 Hr. T/L	–	–	–
Soil / Duff Moisture %			
Probability of Ignition			
Season		Fall - spring	

PREDICTED FIRE BEHAVIOR: Fuel Model 2/6

Environmental Variables:	**HOT**	**MID RANGE** (Same as above)	**COLD**
Flame Length (ft)	4 - 7	2 – 4	1 - 2
Effective Wind Speed (mph)	8	5	2
Scorch Height (ft)	24.0	16.0	2.0
Forward Spread Rate (chains/hour)	10.7	8.8	2.0
Backing Spread Rate (chains/hour)	0.4	0.3	0.1
Spotting Distance (miles)	0.2	0.1 – 0.2	0

** For BEHAVE fire modeling data see **Appendix B**

** Fuel Model outside unit is primarily FM 2&6. The worse case scenario fire behavior modeling output predictions assume that an unexpected increase in winds and decrease in RH occurs during burn operations. (SEE APPENDIX B for BEHAVE runs)

FIRE BEHAVIOR OUTSIDE OF UNIT BOUNDARIES: USING WORST CASE WEATHER

	HOT
Rate of spread (chains/hour)	26.9
Flame length (feet)	5-8
Effective wind speed (MPH)	18
Forward spread rate (chains/hour)	26.9
Spotting distance (miles)	.5

8. WEATHER COLLECTION & FORECASTS

DATA COLLECTION:

INSTRUMENT LOCATION (S): Marked on Project Map
ELEVATION (S) (FEET ABOVE M.S.L.): 3,700'
DATA TO BE COLLECTED:

- Relative Humidity
- Wind Speed & Direction
- Temperature
- 10-hr fuelstick moisture

SAMPLING PERIOD: Weather will be collected several days prior to scheduled ignition and hourly during burn operations.

FORECASTS:

FORECAST CENTER: Redding Fire Weather Service Center

FORECAST SPECIFICATIONS: Spot Forecast information will be requested 24 hour prior to first day of planned ignition and daily during burning and mop-up operations. The information obtained from the spot forecast must ensure that site conditions will be within designated fire prescription parameters.

ACTIONS TO BE TAKEN IF ADVERSE WEATHER CONDITIONS OCCUR: If unpredicted adverse weather occurs during operations or if conditions go outside prescription parameters all ignition will cease as determined by the Burn Boss. A new spot forecast will be requested and the Burn Boss will decide determination of further burning operations.

9. SMOKE MANAGEMENT & AIR QUALTIY

SEE APPENDIX C – SMOKE MANAGEMENT PLAN

NORTHEAST PLATEAU AIR BASIN: All burning will be in compliance with requirements of the Siskiyou County, Northeast Plateau Air Quality Control District. Request for variance will be done formally as per needs at the time of desired prescriptions. Burn plan and ignition dates will be on file at the McCloud Ranger Station in McCloud, CA.

SMOKE DISPERSAL: This project is not expected to pose a threat to populated communities or sensitive wildlife habitat nesting areas. The nearest human population (Town of Weed) is approximately 5 miles S of this project (community of Lake Shastina) is approximately 5 miles west.

***** For detailed Smoke Management Information see APPENDIX C**

10. FIRING/IGNITION PROCEDURES

Firing will be accomplished with hand held drip torch ignition. This will enable burners to adjust firing patterns to enhance control and meet the fire effects objectives. Strip head firing or spot/jackpot firing will be used. Firing will begin on the downwind side of the unit to begin creating a buffer and avoid a head fire situation. Specifics such as distance between burn strips or spots will be adjusted by Ignition Specialist and Burn Boss with the goal of achieving desired results. Techniques such as "ringing" trees will be used to reduce scorch to designated trees if conditions warrant the need. Exact firing pattern will be dependent on wind direction and speed and site conditions at the time of ignition as directed by Ignition Specialist.

11. PROVISIONS FOR TEST FIRE & RECORDING RESULTS

A test burn is mandatory. Burn Boss will determine location for test burn. The following must be met (answered with a Y) and documented:

a) Test burn site is representative location in planned fire area to test key fire behavior characteristics prescribed to meet management objectives. **Y / N**
b) Smoke dispersal and lift sufficient. **Y / N**
c) Smoke direction within prescription. **Y / N**
d) Fuel consumption acceptable. **Y / N**
e) Fire behavior acceptable. **Y / N**
f) Observed fire behavior within holding capabilities. **Y / N**

12. HOLDING PROCEDURES

If actions needed to keep the fire within project boundaries exceed predetermined definition of holding actions, suppression action will be taken.
[For Information on potential escape contingency procedures please see section #15.]

EQUIPMENT NEEDS: Minimum of one 200 gal. pump unit (trailer or engine unit). Water storage on-site may be with folda-tanks or a water tender if at the warm end of prescription.

PERSONNEL PLACEMENT: All required burn operation personnel will be on project site.

WATER (SOURCES, PUMP LOCATIONS): No natural water sources are found with-in the project area. Water source will be established with water tenders or folda-tanks. Location of water sources will be determined by Burn Boss based on daily burn operation needs.

LINE CONSTRUCTION: Line construction will be accomplished by district personal prior to burn operations. Line clean out, if necessary, will be accomplished by hand or by machine.

MOP UP & PATROL PROCEDURES: Mop-up will be required as determined by the Prescribed Fire manager or the Burn Boss. Mop-up will be activated where unacceptable fire effects within the unit are apparent. This action will adhere to the accomplishment of resource objectives and constraints. No perimeters are planned for mop-up unless weather patterns or fire behavior deems this necessary. Conditions that may activate mop-up are as follows:

1) Unpredicted Change in weather or site conditions causing problems for holding operations.

2) Air quality- Large residual fuels or stump holes that appear to have significant impacts on air quality will be extinquished after a reasonable amount of time.

3) Large Old Growth trees- Areas around the base of these trees may require mop-up if smoldering persist that could damage surface root systems.

4) Large residual Logs- Large logs that continue to burn beyond the desired consumption parameters will be considered for mop-up where practical to do so.

5) Standing Snags- Standing snags over 20" DBH will be extinquished if practical and safe.

NOTE: Tracking/Reporting procedures will change once a project has moved into Patrol Status @ Contingency Level #4 with site and weather conditions remaining stable at the cold end of the prescription per daily on-site monitoring. The project status will be tracked on the Rx Fire Accomplishment report form in the Duty Officer folder. This will be updated daily by Unit Duty Officer coordinating with Burn Boss(es) or Fuels Officer and tracked through RICC until the unit is declared out.

[For information on Post Burn mop-up contingency procedures please see section #19.]

In post-ignition operations stage, Burn Boss will designate patrol personnel and determine the necessary interval for patrolling the site.

13. FIREFIGHTER, PUBLIC SAFETY & SPECIAL CONDITIONS

ALL EMERGENCY SITUATIONS REQUIRING MEDICAL ASSISTANCE SHALL BE COORDINATED THROUGH THE ECC. IF CRITICAL BURNS OCCUR, TRANSPORT TO REDDING MEDICAL CENTER FOR EMERGENCY MEDICAL SERVICES/BURN UNITS. THE BURN BOSS WILL BE NOTIFIED AND MAKE DECISIONS REGARDING ACTIONS TO BE TAKEN AND NOTIFICATIONS TO BE MADE.

A Job Hazard Analysis is in **APPENDIX D** of this document. All personnel who are within the active burn unit will have PPE for wildfire and Prescribed fire operations and meet all NWCG skill and physical guidelines for their position.

A. COMMUNICATIONS & RADIO NEEDS:

Communications will be mobile and hand held radios. The actual number used will be dependent upon the needs of the daily operations. As the organization shows a maximum and minimum the communications need will be adjusted accordingly. The following will be a minimum:

ASSIGNMENT	TACTICAL CREW NET 168.200	LOGISTICAL MC DIST NET 173.275	SUPPRESSION FOREST NET 171.075
Prescribed Fire Mngr		X	X
Burn Boss	X	X	X
Firing Boss	X	X	
Firing Crew Member	X		
Holding Crew	X	X	X

Patrol Leader		X	X

B. PUBLIC SAFETY (SIGNING, NOTIFICATION)

There are no known Public Safety issues anticipated on this project. However to mitigate potential problems the following will be implemented before and during ignition:

1) General public notification will begin approximately 2 weeks prior to planned burn operations. Patrol burn area before ignition to insure no public (campers, or other public users) are within daily operational area. Notification will include private landowners as well as local communities.

2) Signing of major access routes near project area during active burning.

3) Traffic Control will be established on all State or county roads if visibility drops below 400 feet or is anticipated to drop below 400 feet. On Forest roads, traffic control measures will occur when visibility drops below or is anticipated to drop below 250 feet.

C. MEDICAL FACILITY

All medical emergencys will be evaluated and treated at Mercy Mt. Shasta Hospital, 914 Pine St. Mt. Shasta Ca. Phone: 926-6111. Transport by Mt. Shasta Ambulance, phone 911; or request air Ambulance.Serious injury or burn care would be transported to Mercy Medical Center, Clairmont Heights, Redding ca. Phone: 225-6000. transport by Mercy Air Ambulance after being stabilized at Mercy Mt. Shasta.

D. SAFETY AND HEALTH/JOB HAZARD ANALYSIS ATTACHED
****** SEE APPENDIX D FOR JHA***

E. HELICOPTER OPERATIONS (REFER TO AREIAL IGNITION GUIDE)
N/A

14 PUBLIC INFORMATION PRE BURN INFORMATION/COORDINATION

In the project planning process, public involvement is accomplished through the Environmental Analysis scoping process at the time it is written. Additional involvement through planned public education programs may be conducted on an ongoing basis. Public notification for burn operations is posted in the local newspaper prior to estimated start of burn season. Local radio stations are informed roughly 24 hours prior to planned burn operations.

PRE-BURN NOTIFICATIONS

WHEN	CONTACT	HOW	WHO WILL DO
1. 1-2 Weeks Prior	Press Release for Local Press	926-5214	Fuels or BB
2. 72 Hrs Prior	Post notice at local Post Offices	Go to P.O.s	Fuels or BB
3. 72 Hrs Prior	Redding Fire Wx Service for 3-day outlook	226-2730	Fuels or BB
4. 48 Hrs Prior	CHP (if on well-used rd/hwy)	841-6000	Fuels or BB
5. 48 Hrs Prior	Northeast Plateau APCD	841-4029	Fuels or BB
6. 24-48 Hrs Prior	Redding Fire Wx Service for spot forecast	226-2730	Fuels or BB
7. 24 Hrs Prior	Local Radio Stations (1) KSYC (2) KWHO (3) KZRO (4) KMJC	1) 842-4158 2) 926-5946 3) 926-1332 4) 926-2124	Fuels or BB
8. 24 Hrs Prior	ECC for coordinating contingency resources	242-2400	Fuels or BB
9. 24 Hrs Prior	McCloud River Railway	964-2147	Fuels or BB
10. 24 Hrs Prior	District Ranger	926-9600	Fuels or BB
11. 24 Hrs Prior	Forest Fire Staff or Forest Supervisor	244-2978	Fuels or BB
12. 24 Hrs Prior	Local Fire Dept (McCloud)	964-2422	Fuels or BB
13. 24 Hrs Prior	McCloud & Mt. Shasta Ranger Stations (give front desk form for receiving calls)	926-4511	Fuels or BB

BURN DAY NOTIFICATION

WHEN	CONTACT	HOW	WHO WILL DO
1. Morning of burn	Redding ICC	242-2400	BB
2. Morning of burn	Yreka ICC	842-7066	BB
3. Morning of burn	Blackfox Lookout (if staffed)	Radio or 925-1619	BB

4. Morning of burn	Northeast Plateau APCD	841-4029	Fuels or BB

15. **PRESCRIBED FIRE CONTINGENCY PLAN:**

Shasta-Trinity National Forest Prescribed Fire Contingency Plan

Contingency Level Determination:

Contingency level determination is based on site prescription environmental variables established to meet project objectives (specified in section # 6 of the BP). The fire prescription is developed using the BEHAVE fire prediction modeling tool producing fire behavior outputs that are determined to meet project objectives. The following is a general guideline from the fire prescription to determine the contingency resources.

Fire Prescription	Hot	Upper Mid-range	Lower Mid-range	Cool
Contingency Level	1	2	3	4

The following resources are considered to be minimum Contingency Forces. The Burn Boss may request additional resources during all phases of the project as he/she determines to be necessary. The contingency resources should be able to respond to the project site within 2 hours of activation.

Contingency Level	#1	#2	#3	#4
Patrol (1 person)				1
Engines	2	2	1	
Crews(s)	1			
Water Tenders	1	1		

Note: Level 4 is considered to be for periods of Low Fire Danger.

Prior to Ignition and During Operations:

- The burn boss will identify which resources are actually available within the desired response time for each project and contact RICC with this information.
- The project includes ignition day and mop-up/patrol period.
- Prior to ignition, the burn boss will validate that contingency forces are available (working with RICC).
- (If multiple projects) The Rx Mgr. will identify, notify and status the contingency resources for each prescribed fire (working with RICC).
- The RICC will monitor and notify the burn boss of any changes in resource status.
- Burn Boss (or Rx Mgr.) will determine when a project moves from initial contingency level. RICC will be notified of the change followed up by documentation using this form and attaching to the burn plan.

Tracking/Reporting procedures will change once a project has moved into Patrol Status @ Contingency Level #4 with site and weather conditions remaining stable at the cold end of the prescription per daily on-site monitoring. The project will be tracked on the Rx Fire Accomplishment report form in the Duty Officer folder. This will be updated daily by Unit Duty Officer coordinating with Burn Boss(es) or Fuels Officer and tracked through RICC until the unit is declared out.

- Burn Boss will be aware of Regional Preparedness Levels on a daily basis.

Counter Measures for Slop-over(s):

In the event a prescribed fire project requires additional personnel and equipment for slopover(s) and small spots immediately adjacent to the planned fire area, but still within the scope of the project burn plan, the Burn Boss will:

- Contact Redding ECC and order forces as needed to contain the event.

Declaration of Wildfire, ICS Organization and Rx fire personnel roles:

If the Burn Boss's determines that the resources on scene or en-route are inadequate to contain the burn, the Burn Boss will declare the prescribed fire a Wildfire and will:

1) Notify RICC that the prescribed fire has become a wildfire.

2) RICC will notify Forest FMO, Line Officers and other agencies as appropriate.

3) Burn Boss or qualified designee will become the Incident Commander and manage the planned prescribed fire area and escape as one incident until otherwise relieved.

4) District FMO/District Ranger or delegate will begin the WFSA.

The contingency plan level*adjustments for this project will be determined by the Burn Boss and documented in the chart below until unit reaches Contingency Level 4 Patrol Status and is then tracked in the Rx Fire accomplishment form (in Duty Officer Folder), tracked with RICC and updated on a daily basis. (BURN BOSS TRANSITION DOCUMENTATION).

Date													
Contingency Level													
Burn Boss Initials													

* Contingency level 1 is the highest and level 4 is the lowest.

16. **POST BURN SUMMARY AND DOCUMENTATION**

A. **ATTAINMENT OF OBJECTIVES:**

Resource Goals & Objective	Not Met	Met
1.Re-introduce fire back into the ecosystem	( )	( )
2.Reduce the risk of stand replacement fires	( )	( )
3.Reduce fuel loading	( )	( )
4.Provide mosaic burn for wildlife enhancement	( )	( )
RX Burn Objective		
1. Kill 50 – 100 % of the brush	( )	( )
2. Scorch height of 5 - 20 feet	( )	( )
3. Retain 3 –5 large snags per acre.	( )	( )
4. Retain 30 - 60% soil cover	( )	( )
5. Tree mortality (species)		
50 to 100% for trees < 4" Dbh.	( )	( )
20 to 50% for trees 4 - 8 inches Dbh.	( )	( )
20 to 10% for trees 9 - 12 inches Dbh.	( )	( )
up to 10% for trees > 12 inches Dbh.	( )	( )
	( )	( )
7.Other.	( )	( )

- Burn objectives will be estimated immediately following the burn, and measured with a stand exam at the end of the first growing season.

Narrative for Objectives "NOT MET"

_____
_____
_____
_____
_____
_____
_____

POST BURN CHECKLIST:	COMPLETED Y/N	DATE
1.Hazard trees extinguished and/or put on the ground.	_____	
2.Roadside culverts cleaned-out and winterized.	_____	
3.Fence lines inspected and repaired.	_____	
4.Water bars installed on hand-lines.	_____	
5.Soil stabilization work completed.	_____	
6.Visual Quality mitigation completed.	_____	

- Notify the appropriate District and/or S.O. Specialist of adverse impact(s) resulting from the burn.
- A Copy of this Post Burn Summary will be submitted to the district/forest monitoring coordinator upon the completion of the burn.

Signature of monitor:_____JobTitle_____

B. ACTUAL CONDITIONS:

Date/Time of Ignition_____/_____Days Since Rain_____Seasonal Precip_____

Fuel Moisture: 1 Hr%_____ 10 Hr%_____ 100 Hr_____ 1000 Hr_____ NFDRS 1000_____

Live____ Duff____ MFWS____ WDIR____ Temp____ RH_____ Cloud Cover (CCVR)___

WEATHER DOCUMENTATION									INTENSITY		
DATE	TIME	% CCVR	TEMP	RH	MFWS	WDIR	ROS	FL	Hot	Med.	Cool

C. SMOKE CONDITIONS: Direction of Smoke Movement: _____

Convection column or smoke plume: Well Formed ( ) Weak ( )

Height above fire: 5000'+ ( ) 500 - 5000' ( ) < 500' ( )

Describe smoke conditions day after ignition:

_____

_____

_____

D. **SHORT TERM FIRE EFFECTS AND RESULTS (Narrative):**

BURN OPERATION NOTES:

17. **BURN DAY GO-NO-GO CHECKLIST**

To be filled out daily by burn boss and filed in project folder.

A "no" response to any item means stop!!!

BURNING OPERATIONS

1. Are **ALL** fire prescription criteria met Y/N?
2. Is the fire weather forecast favorable Y/N?
3. Are **ALL** personnel required in the prescribed fire burn plan on site Y/N?
4. Have **ALL** personnel been briefed on safety hazards, escape routes and safety zones Y/N ?
5. Is **ALL** of the required equipment in place and in working order Y/N?
6. Have **ALL** personnel been briefed on the prescribed fire burn plan requirements Y/N?
7. Are sufficient backup resources available for containment of escapes Y/N?
8. Can the burn be executed according to plan and will it meet management objectives Y/N?

HELICOPTER OPERATIONS

9. Have **ALL** aviation safety requirements been met Y/N?
10. Have aerial hazards been noted Y/N?
11. Have pilots been appraised of unavoidable flight hazards Y/N ?
12. Have pilots been reminded of hazards Y/N?
13. Have over flights been avoided and personnel placed away from flight paths Y/N?

SMOKE MANAGEMENT

14. Are **ALL** smoke management prescription specifications met Y/N?

IF ALL QUESTIONS ABOVE HAVE BEEN ANSWERED "YES" YOU MAY PROCEED WITH IGNITION.

CERTIFIED BY:_____ **DATE:**_____

TITLE:_____

Daily Positions: **RX Burn Boss** _____

Daily Positions:

RX Burn Boss	_____
Ignition Specialist	_____
Holding Specialist	_____
Other	_____

Prescribed Fire Complexity Rating System Guide Worksheet

Instructions: This worksheet is designed to used with the Prescribed Fire Complexity Rating descriptors on Page 6.

Project Name North Shasta Wildlife Number _____

Complexity elements:

1. Potential for Escape

Risk	Rationale
Preliminary Rating: Low ***Moderate*** *High*	The burn units fall with-in a roaded recreation area that breaks up units and a portion of the surrounding area. The area is subject to high wind events that could increase potential of escapes. Most ladder fuel situations occur in patches away from points of concern and critical holding points.
Final Rating: **Low** *Moderate High*	Burn Plan prescription and spot weather forecast should reduce risk other than unforeseen or unpredicted events.
Potential Consequences	**Rationale**
Preliminary Rating: Low ***Moderate*** *High*	Private land adjacent to one unit and Klamath N.F. adjacent to several units on the north boundary of project.
Final Rating: **Low** *Moderate High*	Little or no damage to natural resources values would be expected. Adjoining National Forest land on the Klamath N.F. have had fuel reduction treatment over the last two years (2003-2004). Burn plan calls for fire line and resources to protect private lands.
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate High*	Burn is very straight forward

Final Rating: **Low** *Moderate* *High*	

2. The Number and Dependency of Activities

Risk	Rationale
Preliminary Rating: *Low* **Moderate** *High*	Several activities depend on solid coordination between the burners, holders, ECC and Burn Boss to maintain a safe operation.
Final Rating: *Low* ***Moderate*** *High*	No Change.
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Coordination failure(s) could result in a elevated risk of escape and or serious safety issues for implementation personnel or the public.
Final Rating: *Low* **Moderate** *High*	Burn plan has communication plan built in.
Technical Difficulty	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Continuous or nearly continuous communication between the Burn Boss, Ignition Specialist, and Holding Bosses is needed to manage the risk of escape and firefighter safety.
Final Rating: *Low* **Moderate** *High*	Communication procedures are identified in the burn plan

3. Off-Site Values

Risk	Rationale
Preliminary Rating: *Low* **Moderate** *High*	Some of the northern units will border Klamath National Forest.
Final Rating: *Low* **Moderate** *High*	
Potential Consequences	**Rationale**

Final Rating: **Low** ***Moderate*** ***High***	
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** ***Moderate*** ***High***	Protection of off site values requires no special management, equipment or skills.
Final Rating: **Low** ***Moderate*** ***High***	

4. On-Site Values

Risk	**Rationale**
Preliminary Rating: **Low** ***Moderate*** ***High***	Some special features (wildlife guzzlers & arch sites) are found with-in several units.
Final Rating: **Low** ***Moderate*** ***High***	All features are identified on maps and will be addressed in operational briefings. Pre-burn protection measures will be taken.
Potential Consequences	**Rationale**
Preliminary Rating: **Low** ***Moderate*** ***High***	
Final Rating: **Low** ***Moderate*** ***High***	
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** ***Moderate*** ***High***	Resource values with-in project area are easy to protect.
Final Rating: **Low** ***Moderate*** ***High***	

5. Fire Behavior

Risk	**Rationale**

Preliminary Rating: *Low* **Moderate** *High*	Moderate due to two fuel models.
Final Rating: *Low* **Moderate** *High*	
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Fire outside unit boundaries would be about the same as that experienced in the unit.
Final Rating: *Low* **Moderate** *High*	
Technical Difficulty	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Care must be taken to ensure that all resources are adequately protected. The number and size of slopovers should not require additional resources.
Final Rating: *Low* **Moderate** *High*	

6. Management Organization

Risk	Rationale
Preliminary Rating: *Low* **Moderate** *High*	Several levels of supervision are required. (Burn Boss, Holding Boss, Ignition Specialist, Lighters and Holders).
Final Rating: *Low* **Moderate** *High*	
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Problems related to supervision, communications may cause safety violations and or increased risk of escape.
Final Rating: *Low* **Moderate** *High*	
Technical Difficulty	**Rationale**

Preliminary Rating: **Low** *Moderate High*	All required personal are available on local unit and are familiar with local factors.
Final Rating: **Low** *Moderate High*	

7. Public and Political Interest

Risk	Rationale
Preliminary Rating: **Low** *Moderate High*	Project is in limited use area with limited media interest expected. Project has strong support from Siskiyou County, CA Dept. of Fish and Game, CA Deer Foundation
Final Rating: **Low** *Moderate High*	

Potential Consequences	Rationale
Preliminary Rating: **Low** *Moderate High*	
Final Rating: **Low** *Moderate High*	
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate High*	Routine media releases will be given prior to burn.
Final Rating: **Low** *Moderate High*	

8. Fire Treatment Objectives

Risk	Rationale
Preliminary Rating: **Low** *Moderate High*	Objectives are limited and easily achieved.
Final Rating: **Low** *Moderate High*	

Potential Consequences	Rationale
Preliminary Rating: **Low** *Moderate High*	Failure to meet objectives would have few or no impacts on natural resources. Other opportunities to meet objectives are available.
Final Rating: **Low** *Moderate High*	
Technical Difficulty	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Continuous monitoring is needed to ensure burn objectives are being met.
Final Rating: *Low* **Moderate** *High*	

9. Constraints

Risk	Rationale
Preliminary Rating: *Low* **Moderate** *High*	On site water must be brought in with water tenders, portable tanks. Most or all air resources will be off contract. Limited burn windows.
Final Rating: *Low* **Moderate** *High*	
Potential Consequences	**Rationale**
Preliminary Rating: **Low** *Moderate High*	Some weather related constraints may cause the loss of some burn windows.
Final Rating: **Low** *Moderate High*	
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate High*	Constraints do not increase the difficulty of completing the project.
Final Rating: **Low** *Moderate High*	

10. Safety

Risk	Rationale
Preliminary Rating: *Low* **Moderate** *High*	Most safety hazards have been mitigated, but some remain that require special caution. Ignition procedures need to be monitored to provide safety for all personal on the burn.
Final Rating: **Low** *Moderate* *High*	These mitigations have been covered in the JHA.
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Moderate potential exists for serious accidents related to fatigue, such as vehicle accidents, and prolonged walking on un-even terain, such as strains and sprains.
Final Rating: *Low* **Moderate** *High*	
Technical Difficulty	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Some extra caution will be needed to manage the safety risk to lighters and holding personal. Special mitigation to protect public health and safety are not anticipated.
Final Rating: *Low* **Moderate** *High*	Area roads will be scouted and blocked prior to ignition to insure public safety.

11. Ignition Procedures/Methods

Risk	Rationale
Preliminary Rating: *Low* **Moderate** *High*	The firing sequence and timing are somewhat critical to meet project objectives and manage safety risk through the burn units.
Final Rating: *Low* **Moderate** *High*	
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Firing methods and procedures must be coordinated across all units of the burn.
Final Rating: *Low* **Moderate** *High*	
Technical Difficulty	**Rationale**

Preliminary Rating: *Low* **Moderate** *High*	There is no need for special firing patterns, but coordination is needed when firing units.
Final Rating: *Low* **Moderate** *High*	

12. Interagency Coordination

Risk	Rationale
Preliminary Rating: **Low** *Moderate High*	Entire project is on National Forest lands.
Final Rating: **Low** *Moderate High*	
Potential Consequences	**Rationale**
Preliminary Rating: **Low** *Moderate High*	Project can be completed as planned.
Final Rating: **Low** *Moderate High*	
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate High*	No interagency issues.
Final Rating: **Low** *Moderate High*	

13. Project Logistics

Risk	Rationale
Preliminary Rating: *Low* **Moderate** *High*	Some logistical support will be needed, such as communications, ground transportation, and personal support.
Final Rating: **Low** *Moderate High*	All supplies are readily available on the unit.

Potential Consequences	Rationale
Preliminary Rating: **Low** *Moderate* *High*	
Final Rating: **Low** *Moderate* *High*	
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	No logistical support operation is anticipated.
Final Rating: **Low** *Moderate* *High*	

14. Smoke Management

Risk	Rationale
Preliminary Rating: **Low** *Moderate* *High*	Smoke exposure or amounts are not expected to cause health or safety concerns for either firefighters or the public.
Final Rating: **Low** *Moderate* *High*	
Potential Consequences	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	
Final Rating: **Low** *Moderate* *High*	
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	
Final Rating: **Low** *Moderate* *High*	

COMPLEXITY RATING SUMMARY

RISK	OVERALL RATING
MODERATE	MODERATE
POTENTIAL CONSEQUENCES	**OVERALL RATING**
MODERATE	MODERATE
TECHNICAL DIFFICULTY	**OVERALL RATING**
MODERATE	MODERATE

SUMMARY COMPLEXITY RATING MODERATE

RATIONALE: This project rates a moderate due to the degree of coordination and communications needed to safely conduct the ignition operations. Although the risk of escape is low the consequences are moderate due to the proximity of adjoining Klamath N.F. lands. Both safety risk and the escaped fire risk are mitigated by low fuel loadings, spring burn window, generally low intensity prescribed fire behavior, and ability to safely halt burning along road networks throughout the project area.

Prepared by: Michael S. Rothenberger Date: January, 2005

Recommended - MHR 2/23/05

Approved by: _____ Date: _____

19. SHF - POST BURN MOP UP CONTINGENCY PLAN

This document describes the weather conditions that would trigger the activation of post burn contingency actions with the objective of minimizing the potential for escape. It is the responsibility of the assigned prescribed fire manager to monitor weather forecasts and on-site conditions and to order the appropriate contingency action as outlined in this plan. **NOTE:** *Section #12 of the burn plan describes the mop-up procedures utilized on a management unit project under commonly experienced circumstances.*

Activation of the Mop-up plan levels are based upon the potential for prescribed burns to spot across control lines using the following fuel and weather characteristics. 1) Probability of Ignition is a factor of the receptiveness of the receiving fuel bed to new ignitions from firebrands. 2) Wind speed determines the horizontal force driving firebrands across fire line(s) and into the receptive fuel bed. These two factors, both of which are measurable on site or can be predicted from weather forecasts, will be used to identify activation levels utilizing a matrix. Three levels of Probability of Ignition (PI) will be used and are categorized as follows.

PI of: 10-40: Low potential for new ignitions
50-60: Moderate potential for new ignitions
70+ : High potential for new ignitions

Weather records were reviewed for a 20-year period to indicate the frequency of winds within three levels. The three wind speed levels will be used based on the frequency of their occurrence and their effect on spotting. Wind speed(s) are 10-minute average readings at the 20' level.

0-12 mph: 85% occurrence: Minimal effect on holding
13-24 mph: 12% occurrence: Significant effect on holding
25+ mph: 3% occurrence: Adverse effect on holding

FY2003 was the first year a Mop-up contingency plan was to be implemented on the SHF. This plan will be reviewed after each burn season and adjusted as needed to assure that the required actions for the expected levels of risk are appropriate.

A Wildland Fire Situation Analysis (WFSA) will be prepared upon wildfire declaration.

Notifications: Burn Boss will notify Prescribed Fire Manager (or the acting Duty Officer) and RICC *and follow Escaped Fire Contingency Plan Procedures in Section #15 (resources appropriate to the most current contingency level designation).*

The chart below will be used to determine the level of action required based on the actual and/pr predicted weather conditions.

Probability of Ignition	20' wind speed	Mop up* distance	Patrol* Frequency	Available* Resources
10-40	0-12	Burn Boss	Burn Boss	Burn Boss
	13-24	Burn Boss	Burn Boss	Burn Boss
	25+	50 feet	1 patrol/day	5 firefighters
50-60	0-12	Burn Boss	Burn Boss	Burn Boss
	13-24	50 feet	1 patrol/day	5 firefighters
	25+	100 feet	2 patrol/day	10 firefighters
70+	0-12	50 feet	2 patrol/day	10 firefighters
	13-24	100 feet	3 patrol/day	10 firefighters
	25+	150 feet	Continuous	20 firefighters

Notes:
*1. Burn Boss to dictate required actions (where numerical figure is absent)

2. Mop up: the declaration of regional contingency levels III by the forest or region will require 100% Mop up of all units.

3. Patrol Frequency: Number of times in a 24 hour period that the entire fireline will be walked.

4. Available resources: numbers of firefighter qualified personnel available to respond to an escape. This is in excess of patrol needs.

Additional Notes:

- Burn Personnel may find PI tables and 20' wind conversion factors in the green fire behavior pages of their fireline handbook. (p. B-55 and B-33)

On SHF, circumstances that will most likely activate this plan occur during spring projects where the spring rains do not occur or during a fall project that is followed by an unexpected wind event.

20. TECHNICAL REVIEW

Checklist for Review of Prescribed Fire Burn Plans

Project Name North Shasta wildlife District Mt Shasta

BR Plan is in compliance with the NEPA document for this project.

BR Objectives, Desired Results & Tolerable Deviations clearly outlined.

BR Prescription adequate to meet objectives & have a safe burn.

BR Plan includes a prediction of expected fire behavior.

BR Plan provides for requesting a spot weather forecast on moderate and high complexity burns.

BR Plan requires a test burn.

BR Problem areas or sensitive areas identified clearly.

BR Plan includes organization needed and instructions for overhead.

BR Maps adequate.

BR Escape Contingency Plan adequate.

BR Safety Plan adequate.

BR Smoke sensitive areas identified & Smoke Management Plan adequate.

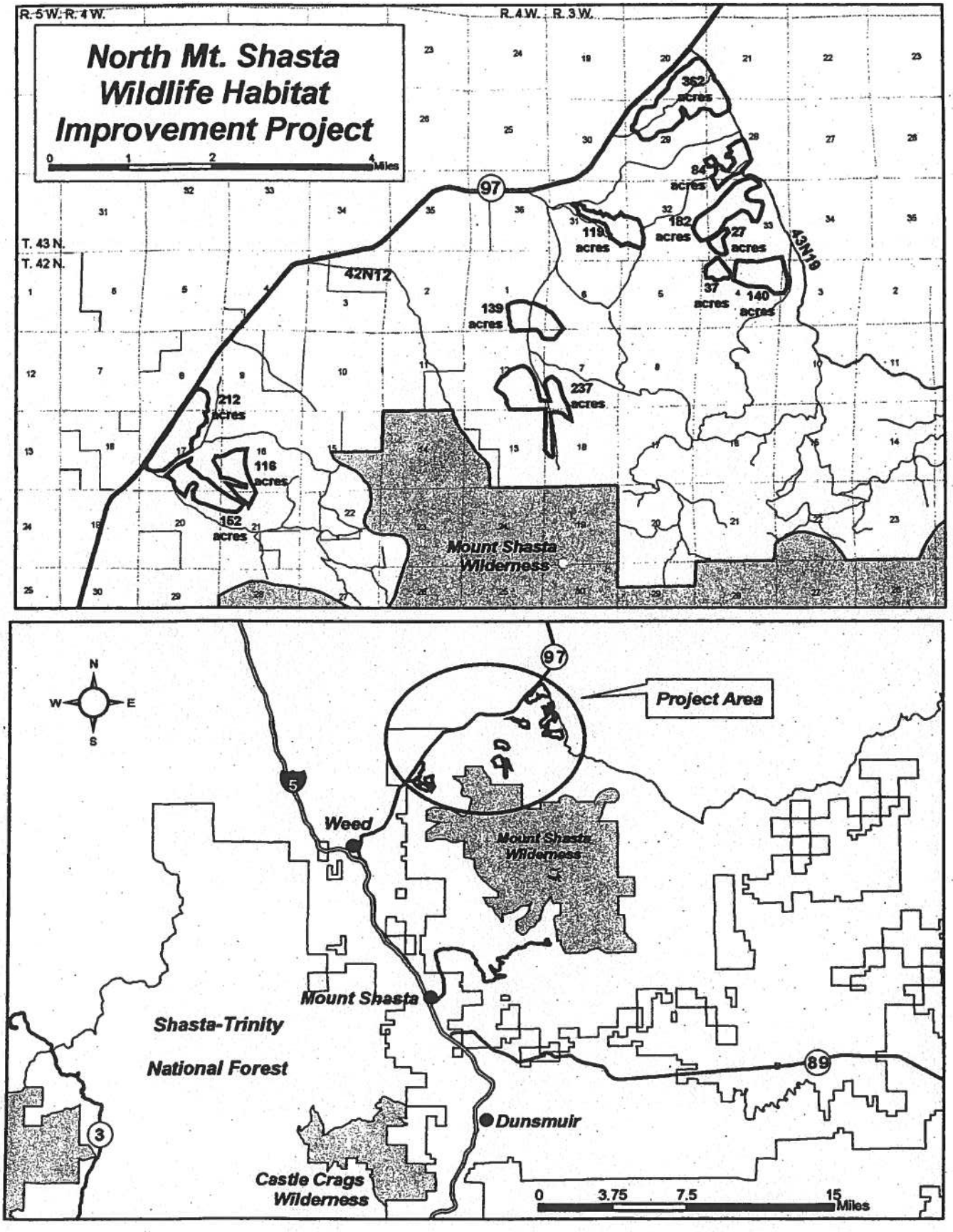
BR Required documentation submitted to APCD or AQMD for burn permit.

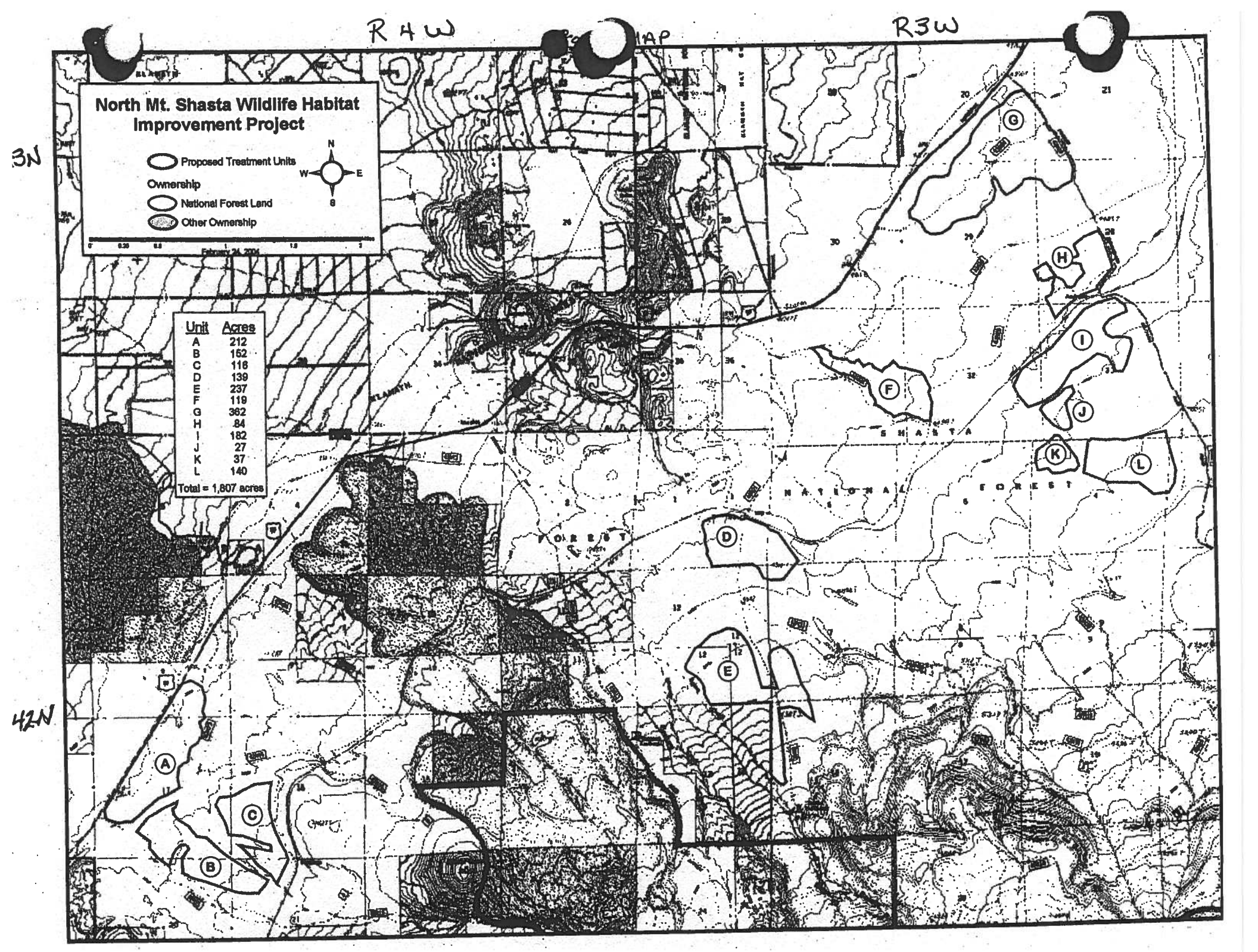
BR RECOMMENDED FOR APPROVAL.

INSTRUCTIONS: Technical Reviewer shall complete this checklist and attach it to the prescribed burn plan. Initial each box to indicate item found satisfactory. Enter N/A (not applicable) for those items reviewed and found not applicable.

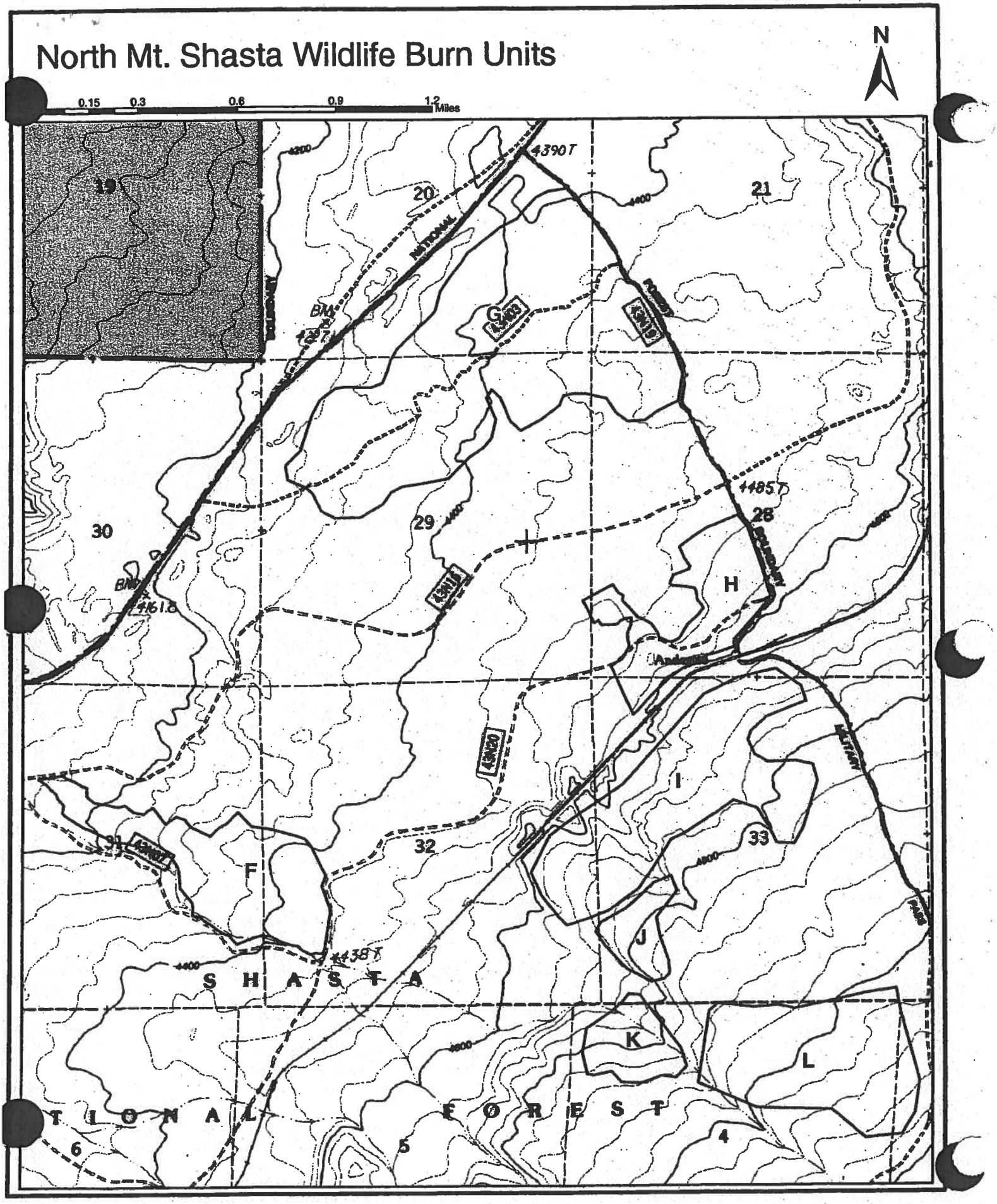
Technical Review Completed by: Brian Nunez Date 02/18/2005

Prescribed Fire Qualification RxB1

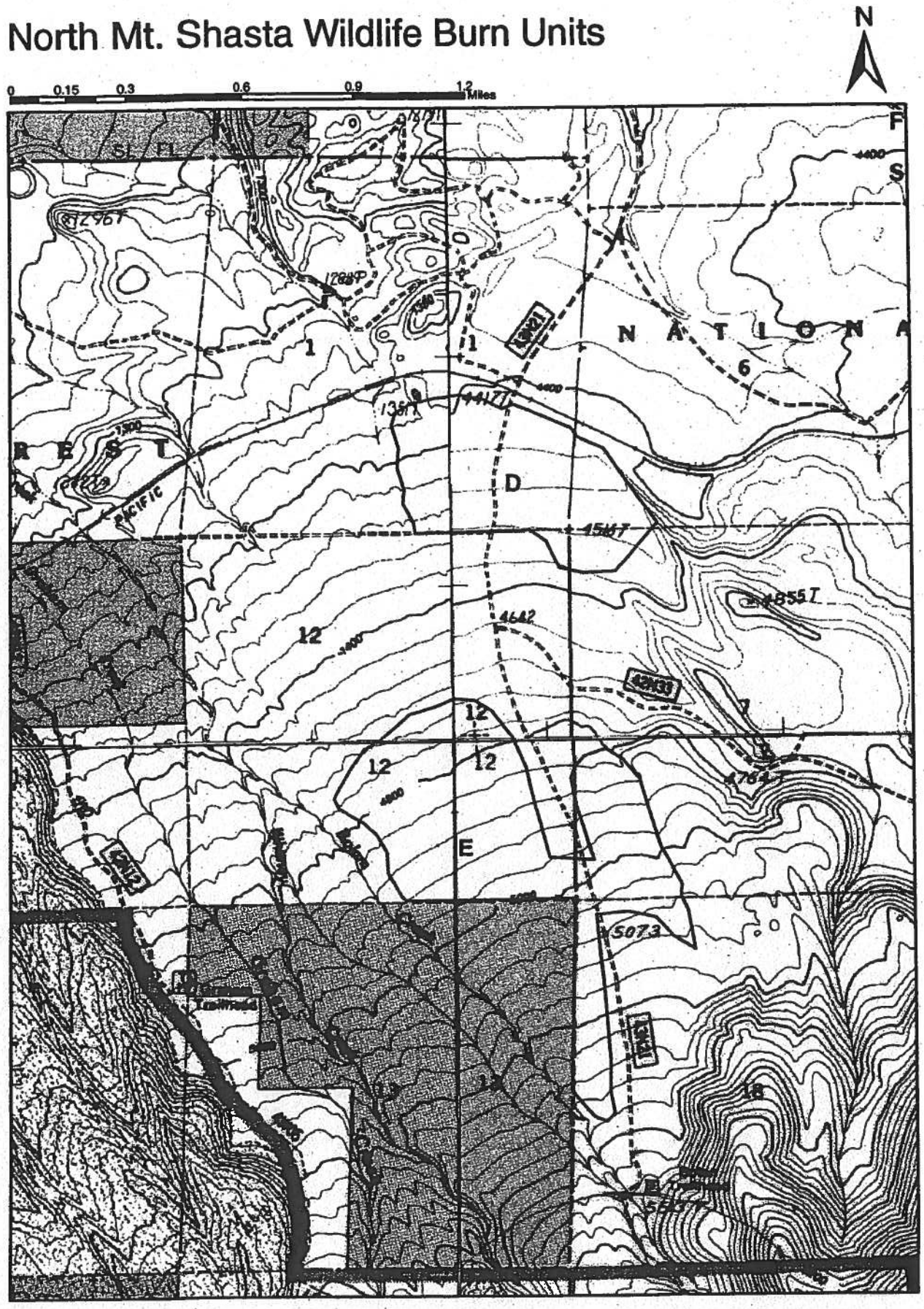

North Mt. Shasta
Wildlife Habitat
Improvement Project
0 1 2 4 Miles
R. 5 W. R. 4 W.
R. 4 W. R. 3 W.
T. 43 N.
T. 42 N.
97
42N12
43N10
352 acres
84 acres
119 acres
182 acres
27 acres
37 acres
140 acres
139 acres
237 acres
212 acres
116 acres
152 acres
Mount Shasta Wilderness
N
W
E
S
Project Area
5
Weed
Mount Shasta Wilderness
Mount Shasta
Shasta-Trinity
National Forest
89
3
Dunsmuir
Castle Crags Wilderness
0 3.75 7.5 15 Miles


R4W
R3W
3N
42N
North Mt. Shasta Wildlife Habitat Improvement Project
Proposed Treatment Units
Ownership
National Forest Land
Other Ownership
N
W
E
S
February 24, 2004
Unit Acres
A 212
B 152
C 116
D 139
E 237
F 119
G 362
H 84
I 182
J 27
K 37
L 140
Total = 1,607 acres
SHASTA
NATIONAL FOREST

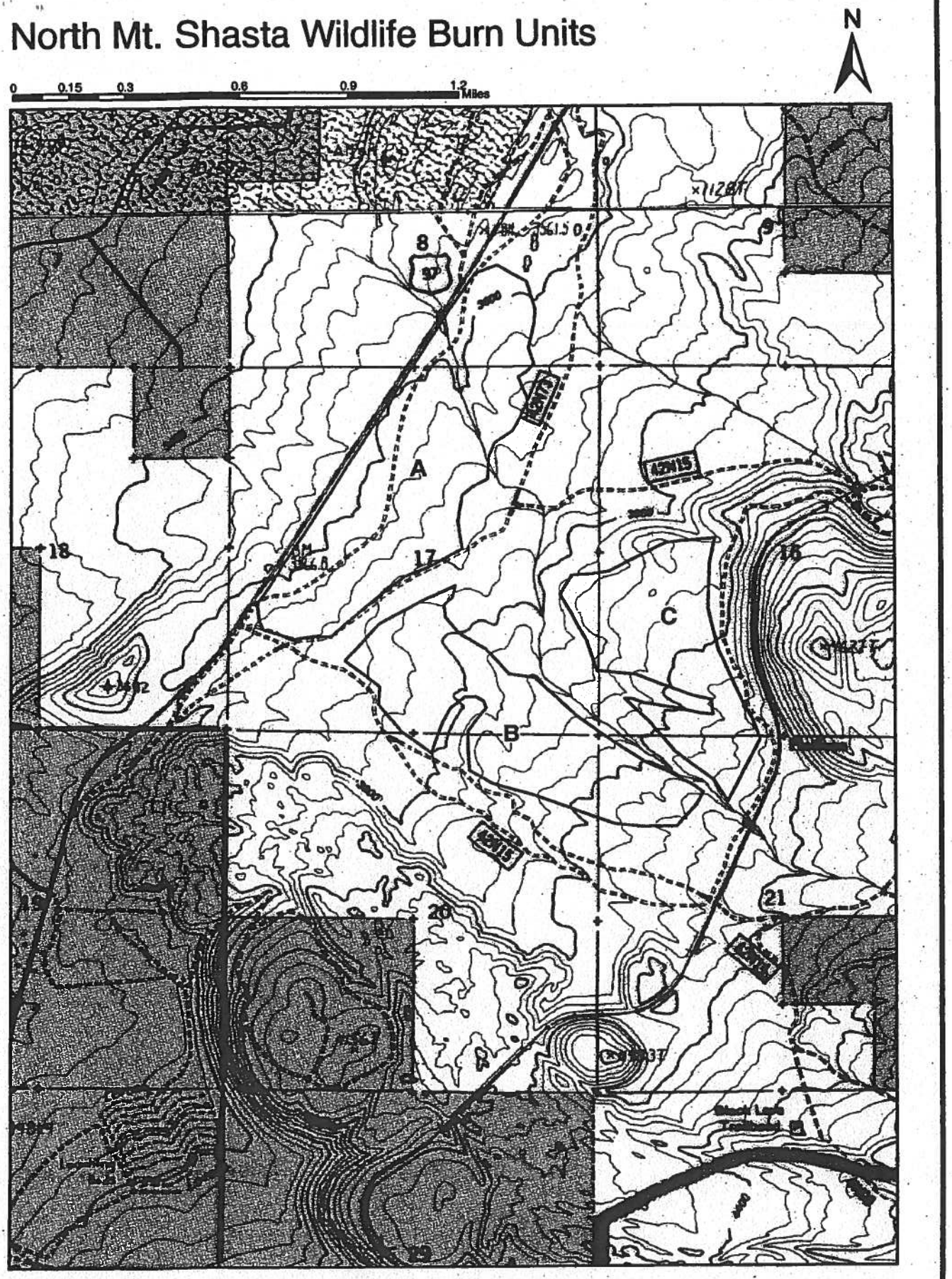
North Mt. Shasta Wildlife Burn Units

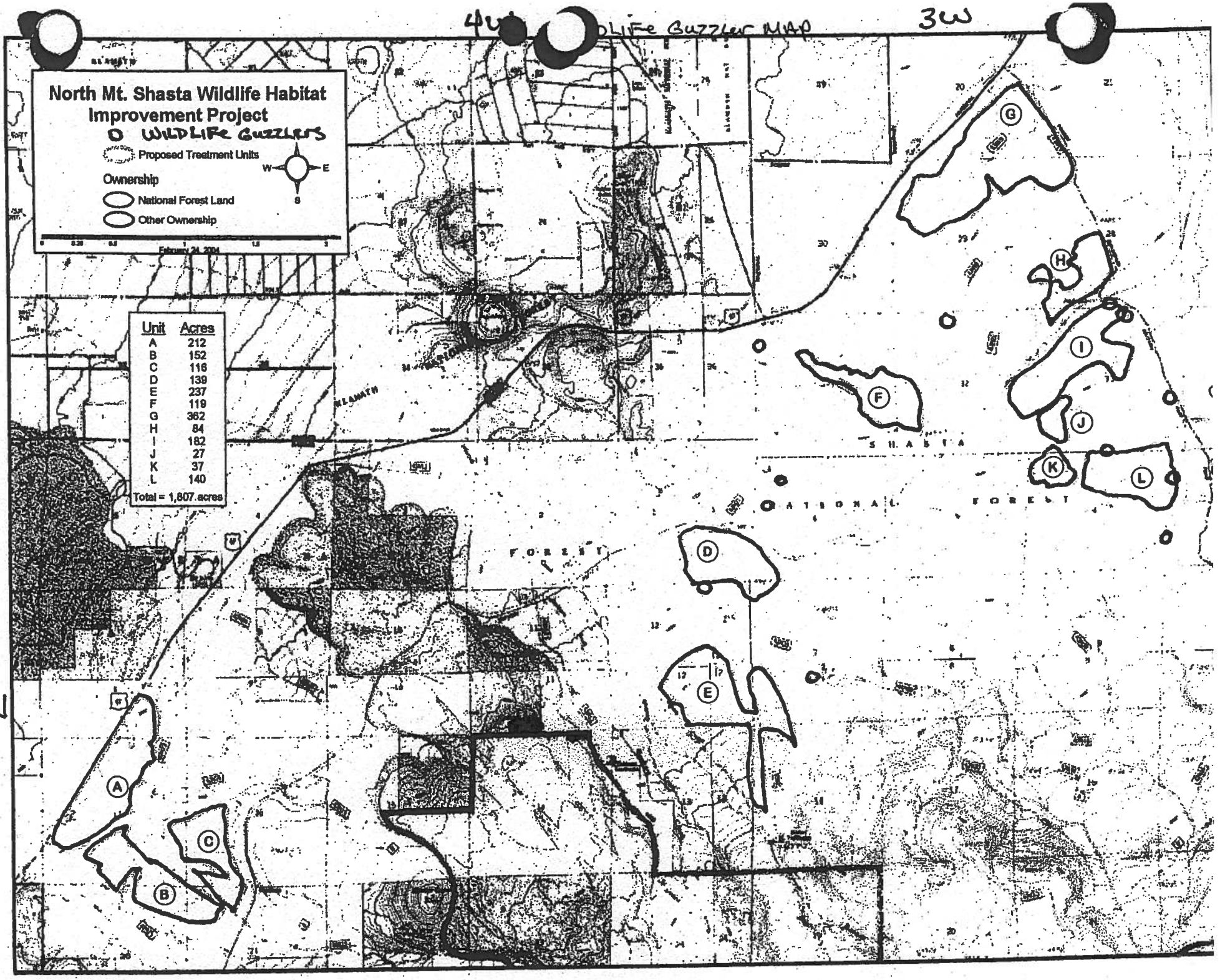


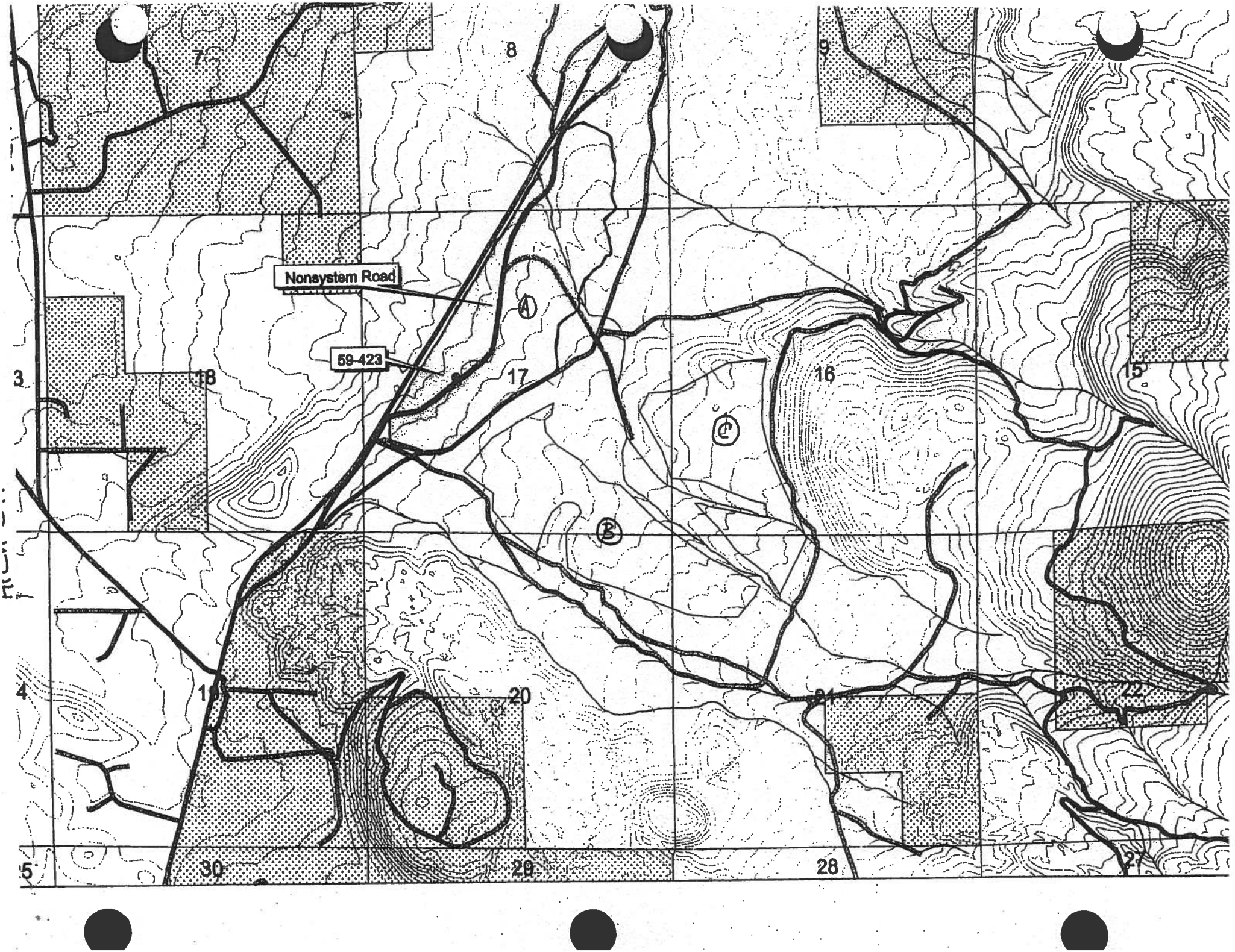
North Mt. Shasta Wildlife Burn Units

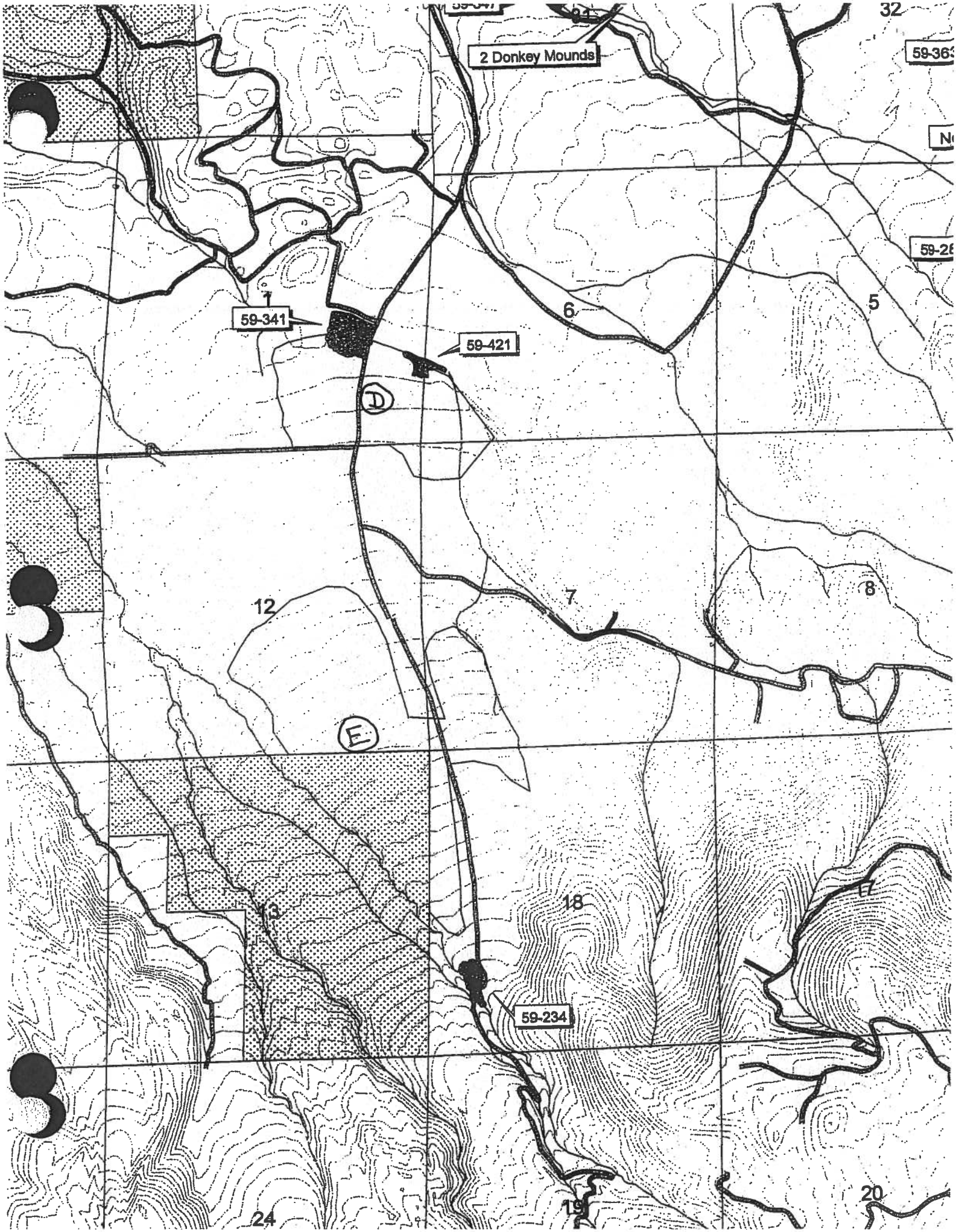


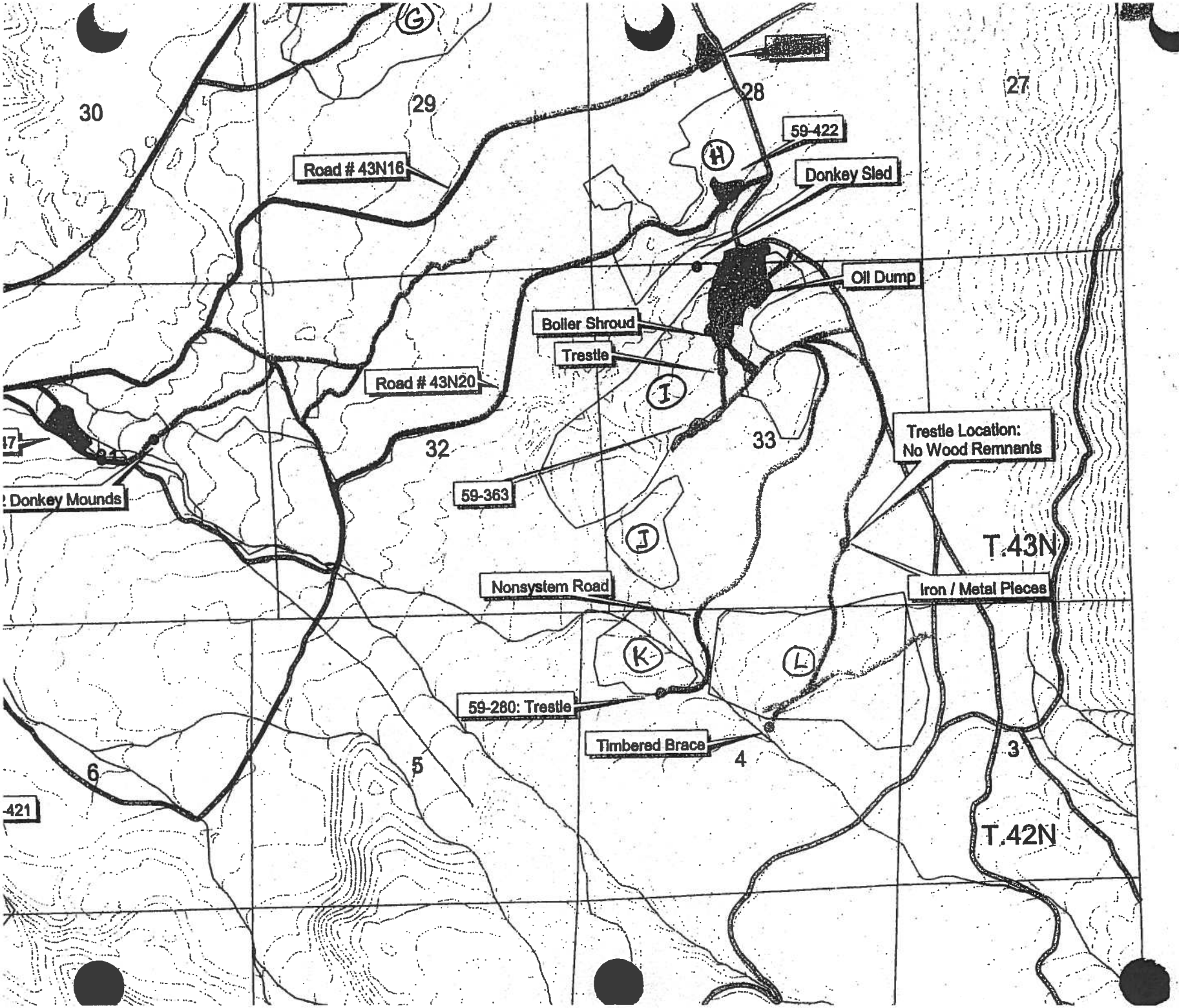
North Mt. Shasta Wildlife Burn Units




4W
WILDLIFE GUZZLER MAP
3W
North Mt. Shasta Wildlife Habitat Improvement Project
WILDLIFE GUZZLERS
Proposed Treatment Units
Ownership
National Forest Land
Other Ownership
W
E
S
February 24, 2004
Unit Acres
A 212
B 152
C 116
D 139
E 237
F 119
G 362
H 84
I 182
J 27
K 37
L 140
Total = 1,807 acres
KLAMATH
SHASTA
NATIONAL FOREST
FOREST
3N
42N


Nonsystem Road
59-423
A
B
C
7
8
9
3
18
17
16
15
4
19
20
21
22
5
30
29
28
27


2 Donkey Mounds
59-341
59-421
59-234
D
E
32
6
5
7
8
12
3
18
17
19
20
24


30
29
28
27
Road # 43N16
59-422
Donkey Sled
Oil Dump
Boiler Shroud
Trestle
Road # 43N20
32
33
59-363
Donkey Mounds
Trestle Location:
No Wood Remnants
T.43N
Nonsystem Road
Iron / Metal Pieces
59-280: Trestle
Timbered Brace
6
5
4
3
T.42N
G
H
I
J
K
L

APPENDIX B

BEHAVE FIRE MODELING FOR: North Shasta Wildlife Burn

The following pages are the BEHAVE fire modeling inputs and outputs.

Be aware of the limitations of this modeling program. BEHAVE is a static program which will not account for the following:

- Change in terrain or slope
- Change in fuel moisture change with fuel type change
- Change in wind speed or direction
- Change in temperatures (ie; when fire is shaded)
- Change in Relative humidity (ie; when fire enters a moist or shaded area)
- Natural barriers (ie: roads, Railroads, lava rock outcrops or tubes)

Be advised that in many circumstances on the North Shasta Wildlife prescribed fire implementation burn operations, the tactics in an escape will be to utilize the dozer to cut a fuelbreak or to utilize the nearest road as a natural barrier and "burn-out" fuel to create a fuelbreak and suppress the advancement of fire operations. NFFL Fuel model 6 was used as the prominent fuel model outside the unit.

These BEHAVE runs are *just models.* They are best used as guidelines or static examples of what may be experienced on a given site.

Modules: SURFACE, SIZE, SPOT, SCORCH, MORTALITY, RH

Description HoT North Shasta Wildlife burn

Fuel/Vegetation		
First Fuel Model		2
Second Fuel Model		6
First Fuel Model Coverage	%	50
Mean Cover Height	ft	15
Tree Height	ft	150
Crown Ratio		0.40
Mortality Tree Species		PINPON
Spot Tree Species		PINPON
D.B.H.	in	17
Bark Thickness	in	1.2
Fuel Moisture		
1-h Moisture	%	5
10-h Moisture	%	6
100-h Moisture	%	9
Live Herbaceous Moisture	%	99
Live Woody Moisture	%	
Weather		
20-ft Wind Speed	mi/h	10
Wind Adjustment Factor		0.2
Direction of Wind Vector (from upslope)	deg	0
Air Temperature	oF	81
Dew Point Temperature	oF	32
Terrain		
Slope Steepness	%	5
Ridge-to-Valley Elevation Difference	ft	100
Ridge-to-Valley Horizontal Distance	mi	1
Spotting Source Location		RT
Fire		
Number of Torching Trees		1
Elapsed Time	h	1

(continued on next page)

Input Worksheet (continued)

Run Options

Two fuel model weighting method: area-weighted.

Calculations are only for the direction of maximum spread.

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations.

Wind and spread directions are degrees clockwise from upslope.

Wind direction is the direction the wind is pushing the fire.

Output Variables

Rate of Spread (maximum) (ch/h)

Heat per Unit Area (Btu/ft2)

Fireline Intensity (Btu/ft/s)

Flame Length (ft)

Direction of Maximum Spread (from upslope) (deg)

Spread Distance (ch)

Maximum Wind Exceeded?

Area (ac)

Perimeter (ch)

Spotting Distance from Torching Trees (mi)

Scorch Height (ft)

Probability of Mortality (%)

Relative Humidity (%)

Notes

North Shasta Wildlife burn

Rate of Spread (maximum)	10.7	ch/h
Heat per Unit Area	494	Btu/ft2
Fireline Intensity	111	Btu/ft/s
Flame Length	3.9	ft
Direction of Maximum Spread (from upslope)	0	deg
Spread Distance	10.7	ch
Maximum Wind Exceeded?	No	
Area	7.8	ac
Perimeter	32	ch
Spotting Distance from Torching Trees	0.3	mi
Scorch Height	24	ft
Probability of Mortality	8	%
Relative Humidity	17	%

Modules: SURFACE, SIZE, SPOT, SCORCH, MORTALITY, RH

Description		MID North Shasta Wildlife burn
Fuel/Vegetation		
First Fuel Model		2
Second Fuel Model		6
First Fuel Model Coverage	%	50
Mean Cover Height	ft	15
Tree Height	ft	150
Crown Ratio		0.40
Mortality Tree Species		PINPON
Spot Tree Species		PINPON
D.B.H.	in	17
Bark Thickness	in	1.2
Fuel Moisture		
1-h Moisture	%	8
10-h Moisture	%	10
100-h Moisture	%	12
Live Herbaceous Moisture	%	99
Live Woody Moisture	%	
Weather		
20-ft Wind Speed	mi/h	10
Wind Adjustment Factor		0.2
Direction of Wind Vector (from upslope)	deg	0
Air Temperature	oF	70
Dew Point Temperature	oF	32
Terrain		
Slope Steepness	%	5
Ridge-to-Valley Elevation Difference	ft	100
Ridge-to-Valley Horizontal Distance	mi	1
Spotting Source Location		RT
Fire		
Number of Torching Trees		1
Elapsed Time	h	1

(continued on next page)

Input Worksheet (continued)

Run Options

Two fuel model weighting method: area-weighted.

Calculations are only for the direction of maximum spread.

Fireline intensity, flame length, and spread distance are always for the direction of the spread calculations.

Wind and spread directions are degrees clockwise from upslope.

Wind direction is the direction the wind is pushing the fire.

Output Variables

Rate of Spread (maximum) (ch/h)

Heat per Unit Area (Btu/ft2)

Fireline Intensity (Btu/ft/s)

Flame Length (ft)

Direction of Maximum Spread (from upslope) (deg)

Spread Distance (ch)

Maximum Wind Exceeded?

Area (ac)

Perimeter (ch)

Spotting Distance from Torching Trees (mi)

Scorch Height (ft)

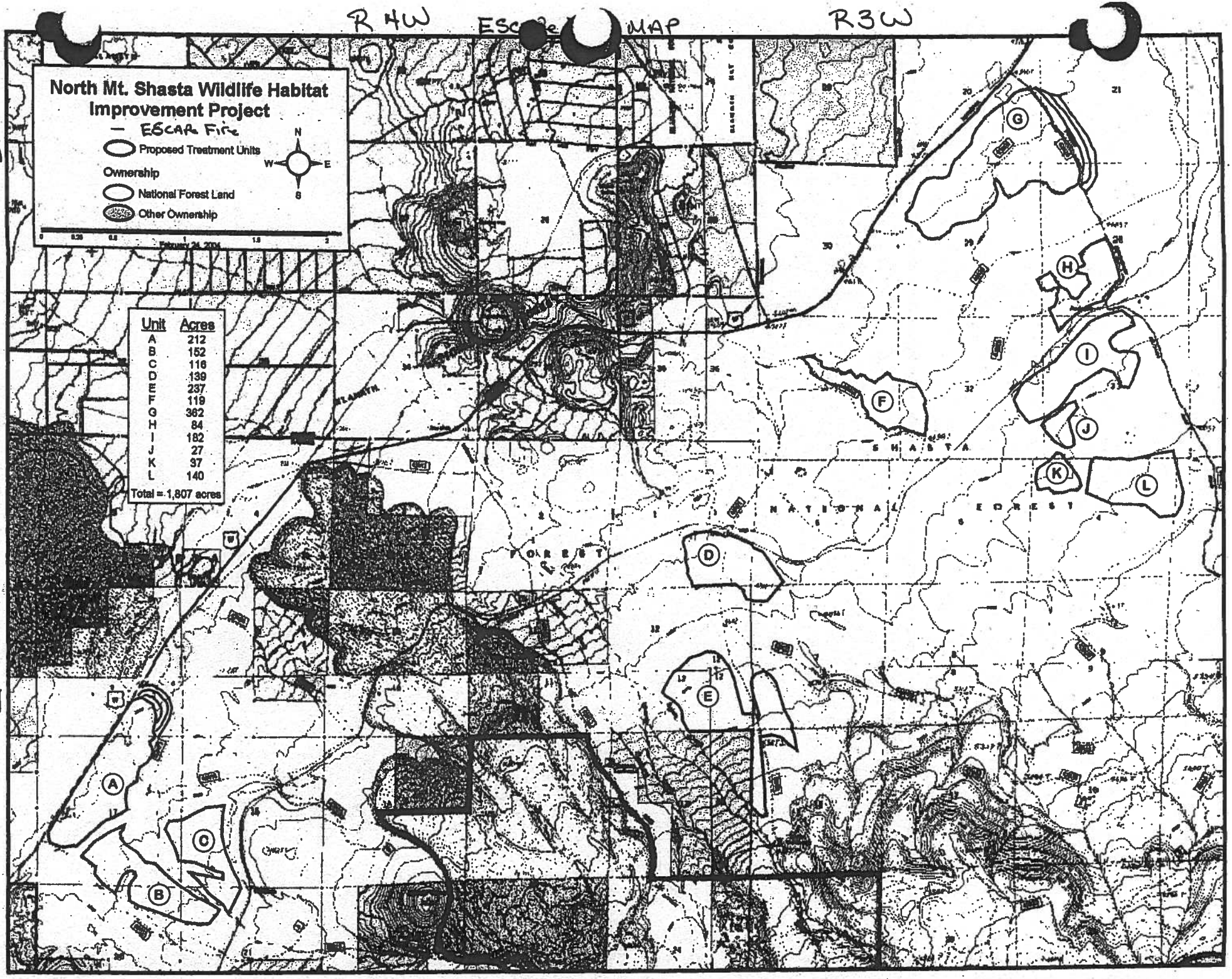
Probability of Mortality (%)

Relative Humidity (%)

Notes

North Shasta Wildlife burn

Rate of Spread (maximum)	8.8	ch/h
Heat per Unit Area	457	Btu/ft2
Fireline Intensity	78	Btu/ft/s
Flame Length	3.3	ft
Direction of Maximum Spread (from upslope)	0	deg
Spread Distance	8.8	ch
Maximum Wind Exceeded?	No	
Area	5.3	ac
Perimeter	27	ch
Spotting Distance from Torching Trees	0.3	mi
Scorch Height	16	ft
Probability of Mortality	8	%
Relative Humidity	24	%


R 4W
ESCAR MAP
R3W
T43N
T42N
North Mt. Shasta Wildlife Habitat Improvement Project
– ESCAR Fire
Proposed Treatment Units
Ownership
National Forest Land
Other Ownership
N
W
E
S
February 24, 2004
Unit Acres
A 212
B 152
C 116
D 139
E 237
F 119
G 362
H 84
I 182
J 27
K 37
L 140
Total = 1,807 acres
SHASTA
NATIONAL FOREST
FOREST

PPENDIX C

NORTHEAST AIR ALLIANCE

SMOKE MANAGEMENT PLAN
For
Butte, Lassen, Modoc, Plumas, Shasta, Siskiyou, Tehama

In accordance with the Air District's Smoke Management Program, this Smoke Management Plan (SMP) is to be completed by the applicant and submitted to the appropriate Air District Official as part of the overall burn plan review process. Once approved by the Air District, this SMP serves as a conditional permit to burn, when used in conjunction with its standard single-page Permit to Burn.

This SMP is required for all prescribed burns (Forest Management, Range Improvement and Wildland Vegetation Management Burning) conducted by land managers within the area encompassed by the Northeast Air Alliance (NEAA). This SMP is **NOT** required for prescribed burn projects less than ten acres in size.

The information required herein is considered the minimum needed to effectively evaluate the effectiveness of smoke management efforts. Individual Air Districts may require supplemental information if the proposed prescribed burn project is:

1) Extremely large,
2) Likely to adversely impact smoke sensitive areas, such as Class I airsheds,
3) Likely to have multi-jurisdictional smoke impacts, or
4) Contains other site-specific complexities, which would require the need for further information.

Information may need to be extracted from the project burn plan on an infrequent basis in order to supplement the SMP. Air District view of individual burn plans would be for informational purposes only. The Air District assumes no approval authority or liabili for individual, project-specific burn plans. The Permittee is responsible for ensuring firefighter and public safety and all other plan elements, which pertain to matters not related to smoke management.

The terms used in this SMP have the same meaning as those defined in the Air District's open burning regulations or the California Code of Regulations, Title 17, Section 80101. Where differences occur, the Air District's definitions apply.

I. General Information

A. Permittee Name and Organization: Shasta – McCloud Management Unit Shasta Trinity N.F.

B. Project Name: North Shasta Wildlife Burn

C. Permit Number: _____ D. Total Acres 1807

E. Legal Location: Township 42N,42N,43N Range 3W,4W,3W Section(s) 4,5,6,7&14 1,12,16,17,20,21 20,21,28,31,32,33

F. Air Quality Management District: North East Plateau

. Indicate the category which best describes this prescribed burn project:

1. _____ **Forest Management Burning:** Use of open, outdoor fires as a part of forest management practice to remove forest debris or for forest management practices which include timber operations, silvicultural practices or forest protection practices.

2. ___X___ **Range Improvement Burning:** Use of open, outdoor fires to remove vegetation for wildlife, game or livestock habitat or for the initial establishment of an agricultural practice on previously uncultivated land.

3. _____ **Wildland Vegetation Management Burning:** Use of prescribed burning conducted by a public agency, or through a cooperative agreement with a private manager or contract involving a public agency, to burn land predominately covered by chaparral (as defined in the California Code of Regulations Title 14, Section 1561.1), trees, grass, or standing brush.

4. _____ **Wildfire Managed for Resource Benefit:** Use of naturally occurring fire (i.e., lightning) exceeding ten acres in size to achieve resource management objectives. NOTE: When a natural ignition fire occurs on a no-burn day, the initial "go/no-go" decision to manage the fire for resource benefit will be a "no-go" unless, after consultation with the Air District, the Air District decides, for smoke management purposes, that the fire can be managed for resource benefit. A "no-go" decision does not necessarily mean that the fire must be extinguished, but that the fire cannot be considered a prescribed fire. A SMP must be submitted within 72 hours of project declaration for those fires that are expected to exceed 10 acres in size.

II. PROJECT INFORMATION

A. ACRES BY TYPE OF BURN

1) Machine Pile Burn _____ 2) Hand Pile Burn _____ 3) Landing Pile Burn _____

4) Broadcast Burn _____ 5) Understory Burn 1807

B. PREDOMINANT VEGETATION TYPE (check all that apply):

1) Brush X 2) Grass X 3) Timber Litter _____ 4) Timber Slash _____

C. DESIRED SEASON OF PROJECT: SPRING ACCEPTABLE ALTERNATIVE: FALL

D. ARB 48/72-HOUR CONTROLLED BURN NOTICE REQUIRED? YES ☐ NO X

E. SPOT WEATHER FORECAST REQUIRED? YES X NO ☐

F. PROJECT/UNIT ELEVATION (feet): Top: 5365' Bottom: 3557'

G. DURATION OF BURN: 1) Ignition: 1-3 Days 2) Burndown: 2-4 Days 3) TOTAL 2 - 9 Days

H. DRYING TIME REQUIRED FOR HAND AND MACHINE PILES: _____ Days

III. EMISSIONS ESTIMATES

A. TOTAL ESTIMATED PARTICULATE MATTER (PM): 19.05 Tons (PFIRS Estimate)

V. WIND PRESCRIPTION

A. SURFACE WIND SPEED AND DIRECTION < 20 FEET: IDEAL: S ACCEPTABLE: SE-SW UNACCEPTABLE: N

B. WIND DIRECTION ALOFT >20 FEET: IDEAL: S ACCEPTABLE: SE-SW UNACCEPTABLE: N

C. IDENTIFY POTENTIAL METEOROLOGICAL CONDITIONS THAT WOULD INHIBIT ACCEPTABLE SMOKE DISPERSAL: Inversion or Northeast – East winds

V. SMOKE DISPERSAL SURVEILLANCE AND MONITORING

Smoke dispersal surveillance and monitoring will be accomplished by the following methods when indicated. If the project is conducted near smoke sensitive areas or if the smoke from the project may impact smoke sensitive areas, smoke monitoring is required on all projects over 250 acres/day and on those projects that would continue burning or producing smoke overnight. It is recommended that the Burner should obtain a current Smoke Transport and Stability Forecast from the Interagency Fire Forecast Warning Unit (IFFWU). The Internet Web Address is: http://fire.nifc.nps.gov/cwcg/nopswx.asp. A test burn shall be conducted on a small portion of the project area prior to project implementation. All weather and surveillance records shall be filed in the project folder and be available for Air District Review upon request.

A. Balloon _X_ RAWS X Aircraft ____ Visual Monitoring X Weather Forecast X Hygrothermograph ____ Belt Weather Kit X

B. METHOD/LOCATION OF VISUAL MONITORING: Designate observer both on site and at a distance to accurately check smoke column direction and dispersal

C. INTERVAL BETWEEN DISPERSAL MONITORING OBSERVATIONS: Same as weather observations: hourly minimum.

VI. IDENTIFICATION OF SMOKE SENSITIVE AREAS (SSA)

Smoke Sensitive Areas (SSA's) include, but are not limited to the following: Population Centers (towns, villages, home sites, subdivisions), hospitals, schools, daycare centers, nursing homes, shopping centers, populated recreation areas, well-attended public events, major roads, airports, mandatory Class I Airsheds, and may include campgrounds and trails extensively used by recreationalists.

A. LIKELY TO IMPACT CLASS I AIRSHED? YES ☐ NO X

B. LIKELY TO IMPACT OTHER SMOKE SENSITIVE AREAS? YES ☐ NO X

C. LIKELY TO IMPACT ANOTHER AQMD OR STATE (Oregon or Nevada)? YES ☐ NO X

D. LOCATION OF PROJECT LIES WITHIN MORE THAN ONE AQMD? YES ☐ NO X
If yes, list other AQMD(s): _____

E. PREVIOUS HISTORY OF ADVERSE SSA SMOKE IMPACTS (does NOT imply disapproval of project)? YES ☐ NO X
If yes, list examples _____

I. MITIGATIONS

Items checked below will be implemented as mitigation measures as part of this SMP.

A. LIMIT IGNITION TO 500 ACRES / PILES per day. (Circle appropriate measure)

B. NO MORE THAN 500 ACRES / PILES SHALL BE BURNED AT ONE TIME. (Circle appropriate measure)

C. ALLOW _____ HOURS BETWEEN IGNITION OF PILES / UNITS. Check here if not applicable X

D. IGNITE BETWEEN 0800 AND 2400 HOURS. (Use military time).

VIII. EVALUATION OF ALTERNATIVES TO BURNING

Projects, which have met applicable National Environmental Policy Act (NEPA) or California Environmental Quality Act (CEQA) requirements, will be considered to have complied with this provision. Either a copy of the applicable environmental document can be attached to this SMP or a sufficiently detailed narrative of how alternatives to burning were carried out in order to reduce fuel loads and emissions.

Documents: 1) North Mt. Shasta Wildlife Improvement CE Date: 2004 Approved by: District Ranger, Mike Hupp

This project is to reduce mature, decadent stands of brush with declining health and vigor by introduction of prescribed fire to promote new growth of bitterbrush and other desirable species in deer winter range.

IX. CONTINGENCIES

Actions shall be taken if adverse smoke impacts affect smoke sensitive areas. Adequate resources or assets will be provided for the items checked below.

A. X HALT IGNITIONS, EXCEPT AS NEEDED TO MAINTAIN CONTROL OF FIRE.

B. ____ ALLOW FIRE TO BURN TO CONTINGENCY CONTROL LINES.

C. ____ SUPPRESS FIRE.

D. ____ BEGIN IMMEDIATE MOP UP.

E. ____ BEGIN MOP UP WITHIN _____ HOURS OF PROBLEM IDENTIFICATION.

F. ____ COMPLETE MOP UP WITHIN _____ HOURS OF INITIATION.

G. ____ DISCONTINUE MOP UP IF FAVORABLE CONDITIONS RETURN.

H. X OTHER (EXPLAIN): No mop-up planned as prescribed fire smoke will not likely impact smoke sensitive area.

X. PUBLIC NOTIFICATION

All of the actions checked below will be taken in order to advise the public and known sensitive receptors that prescribed burning will be conducted in their vicinity and to assure the public that measures will be taken to minimize the smoke impacts.

A. TYPE OF NOTIFICATION		DESCRIBE ACTIVITY AND TIMING
X	RADIO	Local radio stations will be notified 24hrs prior burn operations
X	NEWSPAPER	Notification to local weekly Newspaper 1-2 weeks prior to burn operations
	TELEVISION	
X	POSTERS/FLYERS/LETTERS	Local Post Office (72 hrs) prior burn operations
	PERSONAL CONTACT	
X	SIGNING at appropriate sites	Control burn signing will be placed on all major roads through prescribed fire area
X	OTHER (Explain)	Reference item 14 public information in burn plan for further contacts

B. If potential impacts were identified in Section VI, additional notifications may be required within the potentially impacted area. If required, describe supplemental notifications that will be undertaken to mitigate adverse impacts: _____

XI. COMPLAINT PROCEDURES

Specific information concerning smoke complaints must be given by any complainant. Refusal by the complainant to provide essential information to officials regarding smoke impacts could minimize the urgency of the individual complaint. The person receiving a smoke complaint should make a good faith effort to obtain the following information:

A. Name, location, phone number, and a short description of the situation, the areas affected by the smoke, whether people are physically suffering from smoke exposure and whether there is a public safety concern due to reduced visibility.

B. All smoke-related complaints shall be forwarded as soon as possible to the Air District, but no later than 24 hours after the receipt of the complaint.

C. The Air District will forward to the appropriate Burners any smoke-related complaints, which are received at the Air District Office as soon as possible, but no later than 24 hours after receipt of the complaint.

D. A log of all complaint calls related to burn projects shall be kept in the project file for a period, of no less than, one year after completion of the specific project.

XII. CONTACTING RESPONSIBLE OFFICIALS

A. The Prescribed Fire Manager/Incident Commander/Burn Boss can be reached at the following
McCloud Ranger Station Office (530) 964-2184
Mt. Shasta Ranger Station Office (530) 926-4511
Redding ICC (530) 242-2400

XIII. CERTIFICATION

NA

XIV. MAPS

A map must be attached to this Smoke Management Plan that identifies nearby smoke sensitive areas, burn unit perimeters, available interior control lines (if suitable for this project), and areas subject to smoke inversions due to the burn project. Also, the map must indicate estimated path of unacceptable smoke transport.

XV. REPORTS

For fires greater than 250 acres, a post-burn smoke management evaluation/summary is required to be kept in the project folder. The post burn smoke management evaluation may be subject to review by the Air District.

XVI. APPROVALS

A. SMOKE MANAGEMENT PLAN

Submittal of this Smoke Management Plan (SMP) acknowledges that ignition of this burn project will not occur unless all conditions and requirements as stated in this SMP are met prior to ignition on the day of the burn event, the ARB and the Air District have both declared the day to be a burn day, and the Air District has authorized the burn on the day of the burn.

1. PREPARED BY: Michael S. Rothenberger 2. TITLE: Fuels Officer
3. PREPARER'S ORGANIZATION: U.S.F.S. Shasta Trinity N.F. Shasta McCloud Management Unit
4. PREPARER'S SIGNATURE: Michael S. Rothenberger DATE: 11/1/05

B. AIR DISTRICT SMP DECISION

1. AIR QUALITY MANAGEMENT DISTRICT NAME: _____
2. APPROVED AS SUBMITTED BY: _____ DATE: _____
3. APPROVED WITH CHANGES OR CONDITIONS BY: _____ DATE: _____
4. ARB NOTIFICATION BY: _____ DATE: _____
5. DOCUMENT CHANGES OR CONDITIONS: _____

_____

_____

6. DISAPPROVED AS SUBMITTED BY: _____ DATE: _____

FOR THE FOLLOWING REASONS: _____

_____

_____

_____

_____

APPENDIX – D

FS-6700-7 (2/98)

U.S. Department of Agriculture Forest Service	1. WORK PROJECT/ACTIVITY	2. LOCATION	3. UNIT
	North Shasta Wildlife Burn	Various	SMMU
JOB HAZARD ANALYSIS (JHA) References-FSH 6709.11 and -12 (Instructions on Reverse)	4. NAME OF ANALYST	5. JOB TITLE	6. DATE PREPARED
	M. Rothenberger	Fuels Mgmt. Specialist	09/24/04

7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE
*Travel to, from and on Project.	Motor vehicle accidents Slippery road surfaces,soft shoulders,unimpro ved and narrow roadways. Weather darkness,smoke.	Driving Defensively. Use seat belts. Identify road conditions during briefings. Post Road Guards. Mark hazards. Use Headlights. Perform preuse inspections on equipment. Scout roads and identify turnouts before ignition of project. Maintain communications. Provide road system map for project. Use Backers and chock vehicle tires. Have vehicles facing out.
*Qualifications For assigned Position	Lack of Experience injuries	Workers recruited for burn assignments shall meet age,health, and physical requirements established for regular firefighting duties.(FSH 5109.16) Also meet Prescribed Burn qualifications.
*Briefing	Lack of communications	Provide project briefing before burning will clarify firing order, organization responsibilities, communications, hazards, weather, and expected fire behavior.
*Protective Clothing and equipment	injuries,burns and death	Wear Hard hat with chin strap, safety glasses, Nomex Fire resistant pants and shirts NFPA 1977 compliant. Keep sleeves rolled down. Wear leather,lace type, boots with skid resistant soles, and tops at least 8 inches high. Carry drinking water and fire shelter. Wear OSHA approved firefighting gloves. wear hearing protection when working around equipment where noise level exceeds 90 dba. Wear additional protective equipment as dictated by local conditions and exposure to special equipment.
*Lighters	injuries and death falls,snags,bees, snakes,smoke, burns, rolling material.	Always have an escape route . Maintain LCES. Follow the Standard Fire Orders and Watch Out Situations. Maintain communications with other Lighters and RX Fire Ignition specialist. Hand held radios shall be provided to all lighters. Do not fill drip torches near ignition sources. Do not spill burn mix on clothing.
*Fuel Mixing	Burns, spills, fuel saturated clothing and boots.	No smoking within 25 feet of mixing and filling area. Do not fill or mix in pick up beds with bed liners. Avoid the use of cellular telephones in and around fill or mixing area. Avoid fuel contact with bare hands, clothing and boots. Provide pour spouts. Use only approved fuel containers. Follow fuel mixture ratio in the Health and safety Code Handbook.
*Holding/Mop Up/Patrol Crews	Smoke,burns,Falls, back injuries, bees, posion oak,snags	Wear PPE's listed above. LCES, Follow Standard Fire Orders and Watch out Situations. Receive briefing from Holding and Mop Up Boss. Identify hazards in work area. Flag hazards for others.

	rolling material, injuries. Heat Stress. Dehydration CO Poisoning	Use warning lights and provide traffic control on roadways during smoky and nights operations. Maintaining a high level of aerobic fitness is one of the best ways to protect yourself against heat stress. Drink lots of fluids before,during and after work. Periodically rotate crews from work sites with high smoke levels to areas of less smoke or smoke free areas. Protective clothing and equipment shall be the same as required for firefighting. Crews shall follow all guidelines in the NWCG Fireline Handbook Chapter 5 Firefighting Safety (Rev. 9/98). Maintain communications with the ECC.
* *Emergency Evacuation Procedures (EEP) * * * * * * * * *	Serious illness injuries	Notify RICC, request medical response from the responsible medical first responders. Provide type of injury,location,access, number of patients. Follow USFS and Siskiyou County EMS protocol. On site FS engines shall have BLS equipment to initiate basic life support until responsible medical first responders arrive. Identify EMT's and available medical equipment on project during briefing.

10. LINE OFFICER SIGNATURE	11. TITLE	12. DATE
[signature]	Dist. Ranger	2/11/05

Previous edition is obsolete (over)

JHA Instructions (References-FSH 6709.11 and .12)

The JHA shall identify the location of the work project or activity, the name of employee(s) writing the JHA, the date(s) of development, and the name of the appropriate line officer approving it. The supervisor acknowledges that employees have read and understand the contents, have received the required training, and are qualified to perform the work project or activity.

Blocks 1, 2, 3, 4, 5, and 6: Self-explanatory.

Block 7: Identify all tasks and procedures associated with the work project or activity that have potential to cause injury or illness to personnel and damage to property or material. Include emergency evacuation procedures (EEP).

Block 8: Identify all known or suspect hazards associated with each respective task/procedure listed in block 7. For example:

a. Research past accidents/incidents
b. Research the Health and Safety Code, FSH 6709.11 or other appropriate literature.
c. Discuss the work project/activity with participants
d. Observe the work project/activity
e. A combination of the above

Block 9: Identify appropriate actions to reduce or eliminate the hazards identified in block 8. Abatement measures listed below are in the order of the preferred abatement method:

a. Engineering Controls (the most desirable method of abatement). For example, ergonomically designed tools, equipment, and furniture.

b. Substitution. For example, switching to high flash point, non-toxic solvents.

c. Administrative Controls. For example, limiting exposure by reducing the work schedule; establishing appropriate procedures and practices.

d. PPE (least desirable method of abatement). For example, using hearing protection when working with or close to portable machines (chain saws, rock drills portable water pumps)

e. A combination of the above.

Block 10: The JHA must be reviewed and approved by a line officer. Attach a copy of the JHA as justification for purchase orders when procuring PPE.

Blocks 11 and 12: Self-explanatory.

Emergency Evacuation Instructions (Reference FSH 6709.11)

Work supervisors and crew members are responsible for developing and discussing field emergency evacuation procedures (EEP) and alternatives in the event a person(s) becomes seriously ill or injured at the worksite.

Be prepared to provide the following information:

a. Nature of the accident or injury (avoid using victim's name).
b. Type of assistance needed, if any (ground, air, or water evacuation)
c. Location of accident or injury, best access route into the worksite (road name/number), identifiable ground/air landmarks.
d. Radio frequency(s).
e. Contact person.
f. Local hazards to ground vehicles or aviation.
g. Weather conditions (wind speed & direction, visibility, temp).
h. Topography.
i. Number of person(s) to be transported
j. Estimated weight of passengers for air/water evacuation.

The items listed above serve only as guidelines for the development of emergency evacuation procedures.

JHA and Emergency Evacuation Procedures Acknowledgment

We, the undersigned work leader and crew members, acknowledge participation in the development of this JHA (as applicable) and accompanying emergency evacuation procedures. We have thoroughly discussed and understand the provisions of each of these documents:

SIGNATURE	DATE	SIGNATURE	DATE
_____		_____	
Burn Boss			
_____		_____	
_____		_____	
_____		_____	
_____		_____	
_____		_____	
_____		_____	
_____		_____	

STATE OF CALIFORNIA
DEPARTMENT OF FORESTRY AND FIRE PROTECTION
CALIFORNIA INTER-AGENCY BURNING PERMIT
(98)

California Inter-Agency
BURNING PERMIT

No. 038111

ISSUED TO: Shasta-McCloud Management Unit - Shasta-Trinity N.F.
(Print Full Name)

(Address) (City or Town) (State) (Zip)
TELEPHONE NUMBER. ____ / 926-4511 - Mt. Shasta 964-3184 - McCloud
(Home) (Work)

BURNING LOCATION: North Shasta Wildlife Burn
(Street, Road or Other Description)
SEC. 1, 12, 16, 17, 20, 21, 28, 29 TWP. 42N, 43N R. 3W, 4W

COUNTY OF Siskiyou STATE OF CALIFORNIA.

Burning authorized by this permit hereby applies to:
(Check applicable block below)

- ☐ Burn in incinerator
- ☐ Burn debris in small 4' X 4' plies
- ☐ Burn small plots of grass or weeds in lots or residential premises
- ☐ Burn small parcels or strips for hazard reduction
- ☐ Set off fireworks

Burning shall be confined to hours 8 (A.M.) P.M. to 12 (A.M.) P.M.

This permit valid during period 3-14 (Month & Day) to 12-31 (Month & Day) 2005 (Year)

- ☐ AGRICULTURAL BURNING. CROP TYPE ____ ACRES/TONS 180.7
- ☒ OTHER (Explain) Understory Burn

THIS PERMIT IS SUBJECT TO THE TEMS AND CONDITIONS OF USE AS INDICATED

1. Permittee must not burn during very hot and dry periods when winds are strong enough that burning would be considered unsafe. (Example: wind keeps leaves in motion or extends a light flag or cloth.)
2. The fire shall be: (a) attended at all times by at least one prudent and responsible person; (b) confined within cleared firebreaks or barriers adequate to prevent it from escaping control.
3. When the burning operation authorized by this permit is in an incinerator: (a) a minimum clearance of 10 feet from all flammable material must be provided and maintained; (b) all openings must be screened with nonflammable material with holes not larger than ¼ inch; and (c) must be attended at all times by a responsible person until fire is dead out.
4. This permit does not relieve the permittee of any duty to use reasonable and ordinary care to prevent damage to the property of others or injury to persons as prescribed by law.
5. THIS PERMIT IS VOID DURING PERIODS WHEN BURNING IS PROHIBITED BY STATE LAW, LOCAL ORDINANCE, OR PROCLAMATION OF PUBLIC OFFICERS.
6. This permit is valid only on those days which are not prohibited by the State Air Resources Board pursuant to Section 41855 of the Health and Safety Code or by the local air pollution control district.
7. Before burning call 866-652-2876 Burn only on permissive burn days
   For Air Pollution Control call 841-4030 (Scott) 841-4029 (Etna)
8. Additional terms: All burning under this permit must follow the conditions in the attached SMP

I own or legally control the above described land. I agree to comply with all fire laws, ordinances, and regulations. I further agree to comply with specific terms of this permit.

SIGNED: [signature] DATE: 3/15/05

DIRECTOR OF THE CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION, AGENT

BY [signature]

TITLE Air Pollution Specialist DATE 3-14-05

ISSUING AGENCY SCAPCD DIST./BATT. ____

SEE REVERSE SIDE FOR FURTHER INFORMATION

CAUTION YOU CAN BE HELD LIABLE FOR ESCAPED FIRES
VIOLATIONS OF ANY BURNING PERMIT TERMS ARE A VIOLATION OF STATE LAWS AND RENDERS THE PERMIT NULL AND VOID.

CDF FORM LE-5 (REV. 6/99)

Original (Green) to Ranger, Duplicate (Pink) to Permittee, Triplicate (Yellow) to Local File

III. CERTIFICATION

NA

XIV. MAPS

A map must be attached to this Smoke Management Plan that identifies nearby smoke sensitive areas, burn unit perimeters, available interior control lines (if suitable for this project), and areas subject to smoke inversions due to the burn project. Also, the map must indicate estimated path of unacceptable smoke transport.

XV. REPORTS

For fires greater than 250 acres, a post-burn smoke management evaluation/summary is required to be kept in the project folder. The post burn smoke management evaluation may be subject to review by the Air District.

XVI. APPROVALS

A. SMOKE MANAGEMENT PLAN

Submittal of this Smoke Management Plan (SMP) acknowledges that ignition of this burn project will not occur unless all conditions and requirements as stated in this SMP are met prior to ignition on the day of the burn event, the ARB and the Air District have both declared the day to be a burn day, and the Air District has authorized the burn on the day of the burn.

1. PREPARED BY: Michael S. Rothenberger 2. TITLE: Fuels Officer
3. PREPARER'S ORGANIZATION: U.S.F.S. Shasta Trinity N.F. Shasta McCloud Management Unit
4. PREPARER'S SIGNATURE: [signature] DATE: 1/21/05

B. AIR DISTRICT SMP DECISION

1. AIR QUALITY MANAGEMENT DISTRICT NAME: Siskiyou County APCD
2. APPROVED AS SUBMITTED BY: [signature] DATE: 3-14-05
3. APPROVED WITH CHANGES OR CONDITIONS BY: _____ DATE: _____
4. ARB NOTIFICATION BY: _____ DATE: _____
5. DOCUMENT CHANGES OR CONDITIONS: _____

6. DISAPPROVED AS SUBMITTED BY: _____ DATE: _____
FOR THE FOLLOWING REASONS: _____

FAX TRANSMISSION

SISKIYOU COUNTY AIR POLLUTION CONTROL DISTRICT
525 SO. FOOTHILL DRIVE
YREKA CA 96097
(530) 841-4029
FAX: (530) 842-6690

To: Donna Sager
Mike Rothenberger
Fax #: 964-2938

Date: 3-14-05
Pages: 3 (w/ cover)

From: Scott Dunn

Subject: North Shasta wildlife burn

COMMENTS: Please sign and return a copy of the burn permit
Fax # 842-6690
Thanks,
Scott

06
Burn Permit on file
w/ APCD w/ N wind ao

PERMIT VALID ONE DAY ONLY

No Burn Day Permit Application

Permit #: 038111

Day of Burn: 2/13 & 14/2006

Owner/Permittee: USFS SMMU Date Requested: 02/10/2006

Address: 2019 Forest RD. Zip: 96057 Phone #: 530-964-3749

Location of burn: SE Hwy. 97 42N 3W Acres/tons to burn: 150 acres / 19 tpa

Material to be burned: grass,bitterbrush,manzanitta 1 and 10 hr fuels

Burn permit No: 038111

Ambient AQ standard exceedance forecasted for today? uk

Possible receptor impacts? yes If yes,who? weed:We will conduct a test burn to insure limited impacts

How many No-burn days occurred in the last 7 days prior to today? ~~uk~~ 2 Eco

State below the reasons why denying you this permit to burn today on a No-burn day- "would threaten imminent and substantial economic loss" pursuant to Section of the California Health and Safety Code.

This project has limited burn oportunities. Private contractors and other agencies are scheduled to participate. This is a joint project of various private and federal agencies.

Estimate dollar value of economic loss you will incur if burning is not completed today.

$20,000 grant $50,000 agency $'s

Did you attempt to burn this material before today? y

If not, why? burned 1st unit in 05 but this is first attempt this year. Fuel moistures were too high but are now at an ideal %.

I DECLARE UNDER PENALTY OR PERJURY THAT THE FOREGOING IS TRUE AND CORRECT PURSUANT TO Section 18 of the California Penal Code:

Executed on (date): 2/10/2006 at (time): 15:15

Applicants Signature: Donna J Sager Asst. Fuels Officer

For District use only

AQ Exceedance: ~~Yes~~

Permit Denied: ~~Yes~~

Permit Approved: (Yes)

Fee Paid: ~~Yes~~

Agencies signature: 2/10/2006 Siskiyou County APCD

4/5/2004
9:46 AM
No Burn Day Application

STATE OF CALIFORNIA
DEPARTMENT OF FORESTRY AND FIRE PROTECTION
CALIFORNIA INTER-AGENCY BURNING PERMIT
(REV. 6/88)

California Inter-Agency
BURNING PERMIT No. 038111

ISSUED TO: Shasta-McCloud Management Unit - Shasta-Trinity N.F. (Print Full Name)

(Address) (City or Town) (State) (Zip)
964-3141 McCloud

TELEPHONE NUMBER: (Home) / 934-4511 - Mt. Shasta (Work)

BURNING LOCATION: North Shasta Wildlife Burn (Street, Road or Other Description)

SEC 1,12,14,17,20,28 TWP 42N 43N R. 3W 4W

COUNTY OF Siskiyou STATE OF CALIFORNIA.

Burning authorized by this permit hereby applies to:
(Check applicable block below)

- ☐ Burn in incinerator
- ☐ Burn debris in small 4' X 4' piles
- ☐ Burn small plots of grass or weeds in lots of residential premises
- ☐ Burn small parcels or strips for hazard reduction
- ☐ Set off fireworks
- ☐ AGRICULTURAL BURNING, CROP TYPE
- ☒ OTHER (Explain) understory burn

Burning shall be confined to hours 8 (A.M.) P.M. to 12 (A.M.) P.M.
This permit valid during period 2/19 to 12-31 2006 EO
(Month & Day) (Month & Day) (Year)

(ACRES) TONS 1600

THIS PERMIT IS SUBJECT TO THE TERMS AND CONDITIONS OF USE AS INDICATED

1. Permittee must not burn during very hot and dry periods when winds are strong enough that burning would be considered unsafe. (Example: wind keeps leaves in motion or extends a light flag or cloth.)
2. The fire shall be: (a) attended at all times by at least one prudent and responsible person; (b) confined within cleared firebreaks or barriers adequate to prevent it from escaping control.
3. When the burning operation authorized by this permit is in an incinerator: (a) a minimum clearance of 10 feet from all flammable material must be provided and maintained; (b) all openings must be screened with nonflammable material with holes not larger than ½ inch; and (c) must be attended at all times by a responsible person until fire is dead out.
4. This permit does not relieve the permittee of any duty to use reasonable and ordinary care to prevent damage to the property of others or injury to persons as prescribed by law.
5. THIS PERMIT IS VOID DURING PERIODS WHEN BURNING IS PROHIBITED BY STATE LAW, LOCAL ORDINANCE, OR PROCLAMATION OF PUBLIC OFFICERS.
6. This permit is valid only on those days which are not prohibited by the State Air Resources Board pursuant to Section 41855 of the Health and Safety Code or by the local air pollution control district.
7. Before burning call 866-652-2876 Burn only on permissive burn days
   For Air Pollution Control call 841-4030 (S.14) 841-4029 (Eldon)
8. Additional terms: All burning under this permit must follow the conditions in the attached SMP - allowing for Al-All winds, PREFERRED, EO OR IDEAL

I own or legally control the above described land. I agree to comply with all fire laws, ordinances, and regulations. I further agree to comply with specific terms of this permit.

SIGNED: [signature] DATE: 3/15/05

DIRECTOR OF THE CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION [signature], AGENT

BY [signature] DATE 3-14-05 2/10/2006

TITLE Air Pollution Specialist DIST./BATT.

ISSUING AGENCY SCAPCD

SEE REVERSE SIDE FOR FURTHER INFORMATION

CAUTION YOU CAN BE HELD LIABLE FOR ESCAPED FIRES
VIOLATIONS OF ANY BURNING PERMIT TERMS ARE A VIOLATION OF STATE LAWS AND RENDERS THE PERMIT NULL AND VOID.

AMMENDED AS PER PHONE CONVERSATIONS w/ D. SAGER & JULIE TITUS 2/10/2006 EO.

USDA Forest Service –

Shasta-Trinity National Forest

Fire Management Plan - Appendix E

BURN PLAN FORMAT

Attachment 2

Rx Fire Statusing With ECC
&
Notification Requirements For Rx Fire

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PRESCRIBED FIRE STATUSING WITH ECC

A. The ECC will initiate an incident for each Rx fire use which will remain open until the Rx project is declared out. Each unit will report the following information to ECC:

1. Prior to 0930 day of Rx fire project;
   - name of prescribed fire plan authorizing the project,
   - for Rx fire plans with multiple sites, name of specific site (exactly as identified in the plan),
   - legal location,
   - type burn,
   - total acres planned,
   - name of burn boss,
   - name of rx manager (if applicable),
   - contingency level
2. At the end of each "active" work day the burn boss will notify ECC and provide the following information;
   - acres accomplished,
   - status of burn (i.e. active, mop-up, patrol or out)
   - and name of current burn boss.
3. ECC shall be notified promptly whenever the Rx project status or burn boss changes.
   - Exception; once the burn boss of record officially transfers to the unit Duty Officer daily reporting of burn boss changes will be accomplished by item 4 below.
4. Whenever a unit has any Rx project in an active, mop-up or patrol status a unit Duty Officer will be identified and reported to the ECC. Updates will be provided on a daily basis and whenever the Duty Officer is changed.

B. The ECC will maintain the incident in an open status until the Rx project has been declared out.

C. After each reading of the weather forecast the ECC will confirm with all active burn bosses that they have heard the forecast and document it in the incident notes. The same procedure will be accomplished for any special weather alerts received by the ECC.

D. If a unit has accomplished any acres, changed the status of any Rx project or has any updated project information then the SHF Prescribed Fire Planning & Accomplishment report shall be updated by the COB each Tuesday.

Notification requirements for prescribed fire on the Shasta-Trinity NF

Effective 2003

Project Name	Geographic Location	Type	Acres	Date Planned	Other

Day of Ignition.

Management Unit Inform:
- ECC at least 15 min. **prior to "test" fire.**
- Ranger or acting.

→ ECC Inform:
- Forest Duty Officer of planned "test" fire.

Management Unit Inform
- ECC, **prior to ignition of unit.**

→ ECC Inform of ignition:
- Forest Duty Officer
- Forest Supervisor
- Forest Public Affairs Officer

Include project name, geographic location, burn type, acres & burn boss.

Management Unit Inform:
- ECC **at end of active day;** acres accomplished, burn status & name of burn boss.

Rx Project Status or Burn Boss Change.

Management Unit Inform:
- ECC

Unplanned or substantial event, injury or escape.

Management Unit Inform: (see note 3)
- ECC
- Ranger or acting.

→ ECC Inform:
- Forest Duty officer.
  - Forest Duty Officer will make Regional notifications.
- Forest Supervisor.
- Deputy Forest Supervisor.

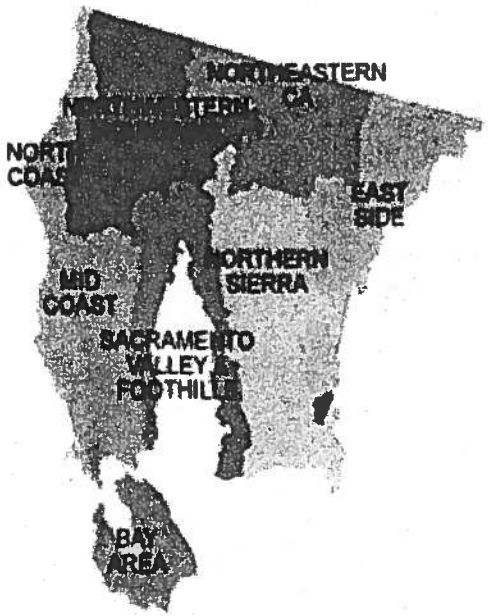
Weekly prior to COB on Tue.

Management Unit:
- Send ECC "Accomplishment" data on PFP&AR & follow up with ph. call to ECC.

→ ECC Provide:
- Accomplishment data to North Ops. as required.

Notes:

1. PFP&AR – SHF Prescribed Fire Planning & Accomplishment Report.
2. If the Forest Supervisor is on leave notifications shall be made to the Deputy Forest Supervisor. If both are unavailable notification shall be made to the Acting Forest Supervisor. The Supervisor or Acting will determine need to make further notifications.
3. Notification time frame is dependent on magnitude of "event" good judgment shall be used. Serious injury, need for additional resources or escape requires immediate notification. Notification of minor "events" shall be prior to close of business for the day.



Northern California
7 Day Significant Fire Potential

Issued: Thursday Feb 23, 2006

Predictive Service Areas	Thu Feb 23	Fri Feb 24	Sat Feb 25	Sun Feb 26	Mon Feb 27	Tue Feb 28	Wed Mar 01
North Coast							
Mid Coast to Mendocino							
Bay Area							
Northwestern Mountains							
Sacramento Valley/Foothills							
Northeastern California							
Northern Sierra							
East Side							

LEGEND:

- **MOIST** - Little/no threat of significant fire development
- **DRY** - Low threat of significant fire development when extreme weather triggers are absent
- **VERY DRY** - Moderate threat of significant fire development when extreme weather triggers are absent
- **HIGH RISK** - Dry or Very Dry fuel conditions combining with one or more of the following extreme weather triggers
- Lightning - dry lightning (LAL 6) or any lightning following an extended dry period

Weather Synopsis:

THIS PRODUCT HAS BEEN DISCONTINUED FOR THE WINTER SEASON. WE WILL RESUME PRODUCTION OF THE 7 DAY SIGNIFICANT FIRE POTENTIAL DURING THE SPRING OF 2006 AS FUELS BEGIN TO DRY OUT.

Fire Potential Discussion:

MONTHLY FIRE WEATHER / FIRE DANGER OUTLOOK
February 2006

1. REPORTING UNIT: Northern California Geographic Area

2. DATE: Jan. 30, 2006

THIS COMING MONTH	BELOW NORMAL		NORMAL	X	ABOVE NORMAL	
THIS SEASON	BELOW NORMAL		NORMAL	X	ABOVE NORMAL	

4. FIRE WEATHER OUTLOOK

Review of January 2006 weather (through the 29th):

The Pacific storm track into North Ops was active during the majority of January, with no dry spells exceeding 5 days. The first half of the month was wetter than normal around the Geographic Area, with the second half of the month near to locally just under normal. This has produced overall month-to-date totals for the south half of North Ops that fit quite well with predictions made in late Dec. (70-115% PON – percent of normal), while in the north half PONs have mostly ranged from 100-200% (see Figure 1). Figure 1 is a graphic depiction of this precip info. Temperature maps show a North Ops pattern varying from about 1° F below normal in the coolest spots to generally 2-5° F above normal (see Figure 2). This temperature pattern is in good agreement with the Redding FWC predictions made in late December. Storms became colder after the first third of January, helping to finally bring more snow into the 4500-5500' elevation range. At higher elevations (above 6000 to 6500 ft) the snowpack is now generally at or above normal in depth, with good to excellent water content.

Most of North Ops was without a major south to SW wind event in January. When winds did get strong, they were typically confined to the NW corner of the state, with peak south to SW ridgetop gusts 55-70 mph ahead of several cold fronts. There was a moderate to locally strong 2-day foehn (NE) wind event under mid month high pressure. Lightning in Jan. was not exceptional, with most of it along the north coast or offshore, and associated with the cold unstable air aloft in or just behind, Pacific cold frontal bands. A majority of North Ops counties had no January lightning at all.

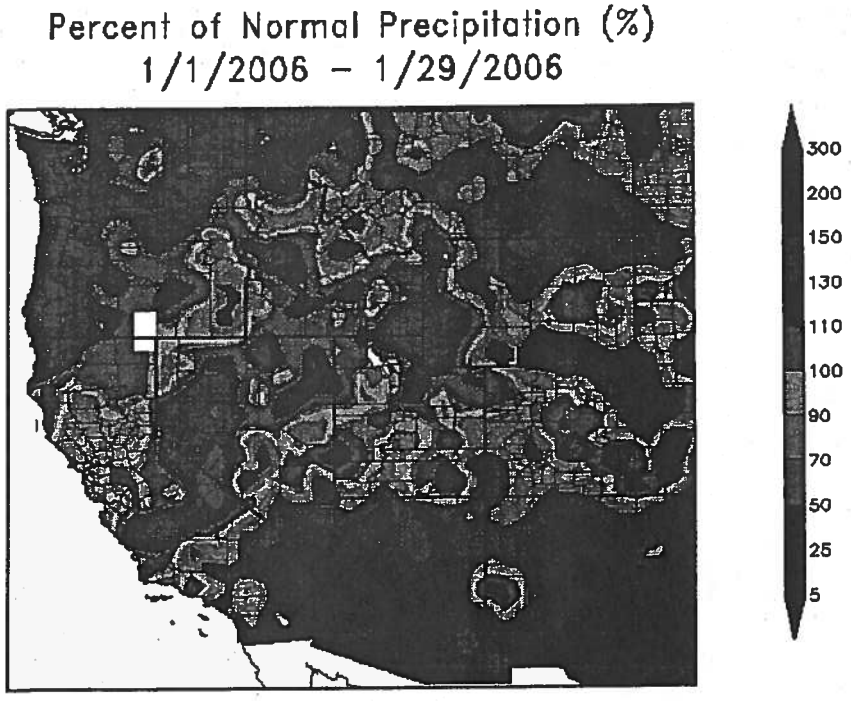
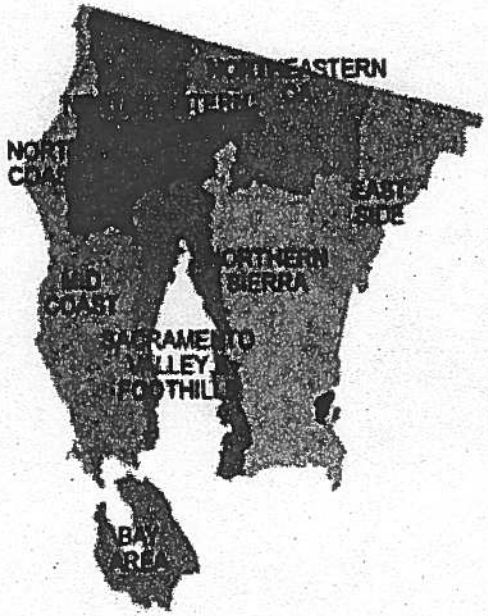


Figure 1

WRITTEN SUMMARY FOR FEBRUARY:

Geographic Area	Northern California
Precipitation Outlook (confidence 60%)	First half of February: Ranging from 75-115% of normal Second half of February: Ranging from 55-100% of normal
Temperature Outlook (confidence 70%)	Near normal to 2.5° F above normal.
Fuels and Fire Danger Concerns	The GACC will have normal fire potential for the month, which means very little, if any.
Prescribed fire implications	If any significant prescribed burning does get started in February, it will most likely be confined to dormant or standing dead brushy fuels, and not occur until after mid-month.
Miscellaneous	The GACC has adequate resources at this time.

For additional input regarding forecast February weather, see the NWS 30- and 90-day temp and precipitation maps for the month. The recently updated forecasts can be found at this URL: **http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/page2.gif**.



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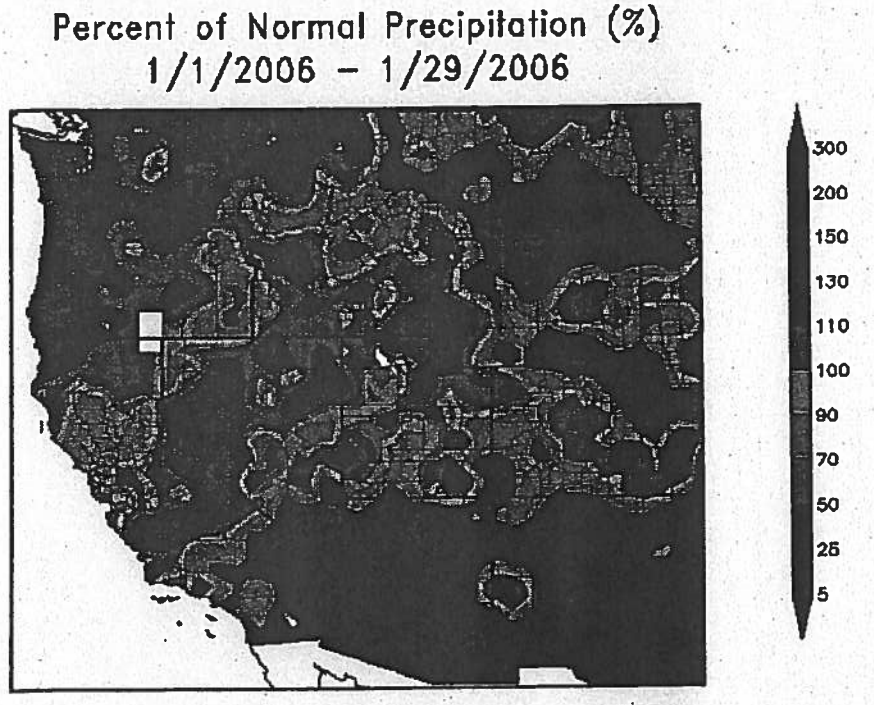
THIS SEASON	BELOW NORMAL		NORMAL	X	ABOVE NORMAL	

4. FIRE WEATHER OUTLOOK

Review of January 2006 weather (through the 29th):

The Pacific storm track into North Ops was active during the majority of January, with no dry spells exceeding 5 days. The first half of the month was wetter than normal around the Geographic Area, with the second half of the month near to locally just under normal. This has produced overall month-to-date totals for the south half of North Ops that fit quite well with predictions made in late Dec. (70-115% PON – percent of normal), while in the north half PONs have mostly ranged from 100-200% (see Figure 1). Figure 1 is a graphic depiction of this precip info. Temperature maps show a North Ops pattern varying from about 1° F below normal in the coolest spots to generally 2-5° F above normal (see Figure 2). This temperature pattern is in good agreement with the Redding FWC predictions made in late December. Storms became colder after the first third of January, helping to finally bring more snow into the 4500-5500' elevation range. At higher elevations (above 6000 to 6500 ft) the snowpack is now generally at or above normal in depth, with good to excellent water content.

Most of North Ops was without a major south to SW wind event in January. When winds did get strong, they were typically confined to the NW corner of the state, with peak south to SW ridgetop gusts 55-70 mph ahead of several cold fronts. There was a moderate to locally strong 2-day foehn (NE) wind event under mid month high pressure. Lightning in Jan. was not exceptional, with most of it along the north coast or offshore, and associated with the cold unstable air aloft in or just behind, Pacific cold frontal bands. A majority of North Ops counties had no January lightning at all.



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Prescribed fire implications	If any significant prescribed burning does get started in February, it will most likely be confined to dormant or standing dead brushy fuels, and not occur until after mid-month.
Miscellaneous	The GACC has adequate resources at this time.

For additional input regarding forecast February weather, see the NWS 30- and 90-day temp and precipitation maps for the month. The recently updated forecasts can be found at this URL:
http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/page2.gif.

NORTHERN CALIFORNIA FIRE WEATHER DISCUSSION AND FIRE DANGER FORECAST INFORMATION – FEBRUARY 22 – 24*, 2006

(GENERAL DISCUSSIONS AND DISCUSSION FOR FDRA 243)

*SOP for General forecast: no report on weekends this time of year

NORTHERN CALIFORNIA FIRE WEATHER DISCUSSION AND FIRE DANGER FORECAST
0930 PST WEDNESDAY FEBRUARY 22, 2006
REDDING FIRE WEATHER CENTER

***** THIS WEATHER PRODUCT CONSOLIDATES THE FIRE WEATHER FORECASTS OF THE NATIONAL WEATHER SERVICE (NWS) INTO A GEOGRAPHIC AREA PRODUCT. SIGNIFICANT DISCREPANCIES ARE COORDINATED WITH THE NWS. *****

FIRE WEATHER WATCHES OR RED FLAG WARNINGS ISSUED BY THE NWS IN EFFECT AS OF THE ISSUANCE OF THIS FORECAST: **NONE...**

Click here to see the latest NWS Fire Weather Watches, Red Flag Warnings, and Forecasts

Discussion: A fair weather pattern will continue over most of North Ops through Thursday, with light to borderline moderate NNE to East winds at low levels. Stronger Pacific westerlies will flatten the high pressure ridge aloft from the north starting Friday. Look for a gradual mid or high cloud increase in many areas Friday p.m., as a weak weather system approaches. The western U.S. high pressure ridge aloft will rebuild on the weekend, but its axis will be shifting east to the Great Basin as it does so. This will allow a series of 2 to 4 stronger, wetter storms to come in to northern CA early to mid next week, first mild and then colder, with the latter possibly producing significant snow events.

HAINES Index	LOW	MID	HIGH
Medford	M	3	3
Oakland	4	5	5
Reno	N/A	3	2

Confidence factors are defined as follows: 5- 90-100%...4-80-89%...3-70-79%...2-60-69% ...1-50-59%

*****Northwestern Mtns PSA*** FDRAs 110, 112, 113, 115, 120, 130, 165, 200, 202, 204, 208, 230, 238, 240, 241, and 243:**

TODAY: Confidence Factor...5

Weather: Mostly sunny, with isolated morning fog patches in drainages.
Max Temps: Near 50 to the mid 60s
Min Humidity: Generally in a 15-37% range
Winds:
Valleys and lower slopes: Variable under 10 mph, mainly North to east in the morning.

Upper slopes and ridges: NNW to NE 7-17 mph, with local gusts in 20s mainly during a.m. hours.

THURSDAY AND FRIDAY: Confidence Factor...5

Weather: Mostly clear skies through mid-morning Friday with isolated morning fog patches in drainages. Increasing mid and high clouds later on Friday – especially in the north half of the PSA.
Max Temps: 50s to lower 60s Thursday and upper 40s to near 60 Friday.
Min Humidity: 18-40% Thursday and 23-46% Friday.
Winds:

Valleys and lower slopes: Variable under 8 mph.

Upper slopes and ridges: NW to NNE 5-13 mph Thursday, becoming mainly South to WSW in the afternoon Friday, at 4-12 mph.

1530 PST WEDNESDAY FEBRUARY 22, 2006
REDDING FIRE WEATHER CENTER

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FIRE WEATHER WATCHES OR RED FLAG WARNINGS ISSUED BY THE NWS IN EFFECT AS OF THE ISSUANCE OF THIS FORECAST: **NONE...**

Click here to see the latest NWS Fire Weather Watches, Red Flag Warnings, and Forecasts

Discussion: Sunny skies and warmer temperatures have been the rule today, under fairly strong high pressure aloft. Light to moderate NW to North winds continue in exposed areas at this time, and may not ease up as much as predicted earlier today. Stronger Pacific westerlies will flatten the high pressure ridge from the north starting Friday. Look for a gradual cloud increase in the far north Friday p.m., as a weak weather system heads to OR. The western U.S. high pressure ridge will rebuild on the weekend, but its axis will be shifting east into the Great Basin as it does so. This will allow a series of 3 or 4 wetter weather systems to come in to northern CA early to mid next week, first mild and then colder, with the latter possibly producing significant snow events.

Northwestern Mtns PSA FDRAs 110, 112, 113, 115, 120, 130, 165, 200, 202, 204, 208, 230, 238, 240, 241, and 243:

TONIGHT: Confidence Factor...5

Weather: Clear skies, with isolated late-night fog patches in the more sheltered drainages west part of PSA.
Max Humidity: From 43-60% on drier ridges to 75%-plus in drainage bottoms.
Winds:

Valleys and lower slopes: Decreasing after dark to north to east, or downcanyon, under 7 mph.

Upper slopes and ridges: NW to NE 5-13 mph, with local gusts 16-22 mph.

THURSDAY AND FRIDAY: Confidence Factor...5

Weather: Mostly clear skies through mid-morning Friday with isolated morning fog patches in drainages. Increasing mid and high clouds later on Friday – especially in the north half of the PSA.
Max Temps: 50s to lower 60s Thursday and upper 40s to near 60 Friday.
Min Humidity: 18-40% Thursday and 23-46% Friday.
Winds:

Valleys and lower slopes: Variable under 8 mph.

Upper slopes and ridges: NW to NNE 5-13 mph Thursday, becoming mainly South to WSW in the afternoon Friday, at 4-12 mph.

****

0930 PST THURSDAY FEBRUARY 23, 2006
REDDING FIRE WEATHER CENTER

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FIRE WEATHER WATCHES OR RED FLAG WARNINGS ISSUED BY THE NWS IN EFFECT AS OF THE ISSUANCE OF THIS FORECAST: **NONE...**
Click here to see the latest NWS Fire Weather Watches, Red Flag Warnings, and Forecasts

Discussion: Little change is expected in the overall weather today and Friday as a weak high pressure ridge continues over the Geographic Area. Notable changes in the weather pattern will start Saturday as a low pressure trough off the British Columbia coast begins to move south and will eventually be just off our coast early next week. Sunday will be the most notable transition day between weather systems with precipitation becoming likely in most areas by Monday morning, and sooner in some areas. Next week will be quite unsettled with periods of rain or mountain snow.

HAINES Index	LOW	MID	HIGH
Medford	3	4	2
Oakland	4	6	4
Reno	N/A	4	3

*****Northwestern Mtns PSA*** FDRAs 110, 112, 113, 115, 120, 130, 165, 200, 202, 204, 208, 230, 238, 240, 241, and 243:**

TODAY: Confidence Factor...5

Weather: Mostly sunny.

Max Temps: mid 50s through the 60s with some lower 70s in the southern valleys.
Min Humidity: 17-35%
Winds:

Valleys and lower slopes: Variable less than 10 mph.
Upper slopes and ridges: W to NNW 4-12 mph

FRIDAY AND SATURDAY: Confidence Factor...4

Weather: Mostly sunny Friday with some high cloudiness later in the day. Variable high cloudiness Saturday.
Max Temps: mid 50s to 70 Friday, 50s and 60s Saturday.
Min Humidity: 20-40% Friday, 25-45% Saturday.
Winds:

Valleys and lower slopes: Variable less than 10 mph Friday, SE to SW 4-15 mph Saturday.
Upper slopes and ridges: SW to NW 3-12 mph Friday, S to SW and increasing to 10-20 mph Saturday.

1530 PST THURSDAY FEBRUARY 23, 2006
REDDING FIRE WEATHER CENTER

***** THIS WEATHER PRODUCT CONSOLIDATES THE FIRE WEATHER FORECASTS OF THE NATIONAL WEATHER SERVICE (NWS) INTO A GEOGRAPHIC AREA PRODUCT. SIGNIFICANT DISCREPANCIES ARE COORDINATED WITH THE NWS. *****

FIRE WEATHER WATCHES OR RED FLAG WARNINGS ISSUED BY THE NWS IN EFFECT AS OF THE ISSUANCE OF THIS FORECAST: **NONE...**

Click here to see the latest NWS Fire Weather Watches, Red Flag Warnings, and Forecasts

[redacted]

Discussion: Friday should be similar to today as a high pressure ridge continues over the Geographic Area. Changes in the weather pattern will start Saturday when a low pressure trough off the British Columbia coast begins to move south and will eventually be just off our coast early next week. Sunday will be the biggest transition day with precipitation becoming likely in most areas late in the day or overnight. Next week will be rather unsettled with periods of rain or mountain snow.

Confidence factors are defined as follows: 5- 90-100%...4-80-89%...3-70-79%...2-60-69% ...1-50-59%

Northwestern Mtns PSA FDRAs 110, 112, 113, 115, 120, 130, 165, 200, 202, 204, 208, 230, 238, 240, 241, and 243:

TONIGHT: Confidence Factor...5

Weather: Clear.
Max Humidity: Mostly over 70%, locally 40-60% on some upper slopes and ridgetops.
Winds:
Valleys and lower slopes: Variable 2-6 mph.
Upper slopes and ridges: NW to NE 2-9 mph

FRIDAY AND SATURDAY: Confidence Factor...4

Weather: Mostly sunny Friday with some high cloudiness later in the day. Variable high cloudiness Saturday.
Max Temps: mid 50s to 70 Friday, 50s and 60s Saturday.
Min Humidity: 20-40% Friday, 25-45% Saturday.
Winds:
Valleys and lower slopes: Variable less than 10 mph Friday, SE to SW 4-15 mph Saturday.
Upper slopes and ridges: SW to NW 3-12 mph Friday, S to SW and increasing to 10-20 mph Saturday.

****

0930 PST FRIDAY FEBRUARY 24, 2006
REDDING FIRE WEATHER CENTER

***** THIS WEATHER PRODUCT CONSOLIDATES THE FIRE WEATHER FORECASTS OF THE NATIONAL WEATHER SERVICE (NWS) INTO A GEOGRAPHIC AREA PRODUCT. SIGNIFICANT DISCREPANCIES ARE COORDINATED WITH THE NWS. *****

FIRE WEATHER WATCHES OR RED FLAG WARNINGS ISSUED BY THE NWS IN EFFECT AS OF THE ISSUANCE OF THIS FORECAST: **NONE...**
Click here to see the latest NWS Fire Weather Watches, Red Flag Warnings, and Forecasts

Discussion: A weak high pressure ridge will continue one more day over the Geographic Area for very similar afternoon weather compared to the past few days. We will begin to see changes Saturday as a low pressure system moves south off shore, and Sunday this system will bring windy conditions to the region with precipitation starting at the coast. Monday is shaping up to be a very wet day in most areas with a decrease Tuesday. The rest of the week will continue to unsettled with another wet weather system expected late Wednesday into Thursday. Snow levels will be rather high with the system Sunday/ Monday, then lower Tuesday when most of the precipitation is done. The system expected later in the week could also have rather low snow levels.

HAINES Index	LOW	MID	HIGH
Medford	3	4	4

Oakland	5	5	4
Reno	N/A	N/A	4

*****Northwestern Mtns PSA*** FDRAs 110, 112, 113, 115, 120, 130, 165, 200, 202, 204, 208, 230, 238, 240, 241, and 243:**

TODAY: Confidence Factor...5

Weather: Mostly sunny.
Max Temps: mid 50s through the 60s with some lower 70s in the southern valleys.
Min Humidity: 17-35%
Winds:
Valleys and lower slopes: Variable less than 10 mph.
Upper slopes and ridges: SW to N 4-12 mph this afternoon.

SATURDAY AND SUNDAY: Confidence Factor...4

Weather: Variable high cloudiness Saturday. Cloudy and windy Sunday with rain or snow developing. Snow level near 6000 ft.
Max Temps: 50s and 60s Saturday, mid 40s and 50s Sunday.
Min Humidity: 25-40% Saturday, above 40% Sunday
Winds:
Valleys and lower slopes: SE to SW 3-12 mph Saturday, SE to S 12-25 mph with gusts to around 40 mph Sunday.
Upper slopes and ridges: SE to SW 5-17 mph Saturday, SE to S 18-30 mph with gusts to around 55 mph Sunday.

1530 PST FRIDAY FEBRUARY 24, 2006
REDDING FIRE WEATHER CENTER

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FIRE WEATHER WATCHES OR RED FLAG WARNINGS ISSUED BY THE NWS IN EFFECT AS OF THE ISSUANCE OF THIS FORECAST: **NONE...**
Click here to see the latest NWS Fire Weather Watches, Red Flag Warnings, and Forecasts

[redacted]

Discussion: A cold low pressure trough in the Gulf of Alaska will be moving south this weekend and will arrive off the coast Sunday. Conditions will become rather windy Sunday as the trough approaches the coast. Quite a bit of moisture will arrive with this system, and late Sunday and Monday are expected

to be quite wet in all areas, especially along and west of the Cascade/Sierra crest where orographic effects will locally enhance the precipitation amounts. Snow levels will be quite high through most of Monday, then lower significantly, most likely once the heaviest precipitation has fallen. Things will remain unsettled all next week, although a short break between systems is expected late Tuesday into early Wednesday before another weather system arrives.

*****Northwestern Mtns PSA*** FDRAs 110, 112, 113, 115, 120, 130, 165, 200, 202, 204, 208, 230, 238, 240, 241, and 243:**

TONIGHT: Confidence Factor...5

Weather: Variable high cloudiness.
Max Humidity: mostly 60% or higher
Winds:
Valleys and lower slopes: Variable less than 7 mph.
Upper slopes and ridges: becoming SE to SW 4-14 mph

SATURDAY AND SUNDAY: Confidence Factor...4

Weather: Variable high cloudiness Saturday. Cloudy and windy Sunday with rain or snow developing. Snow level near 6000 ft.
Max Temps: 50s and 60s Saturday, mid 40s and 50s Sunday.
Min Humidity: 25-40% Saturday, above 40% Sunday
Winds:
Valleys and lower slopes: SE to SW 3-12 mph Saturday, SE to S 12-25 mph with gusts to around 40 mph Sunday.
Upper slopes and ridges: SE to SW 5-17 mph Saturday, SE to S 18-30 mph with gusts to around 55 mph Sunday.

REDDING INTERAGENCY FIRE WEATHER CENTER
1400 PST Wed. February 22, 2006
Spot forecast for the North Mt. Shasta Burn.....Shasta-T NF

T42N R4W Sec 17 Elev 3550-3650 ft Flat aspect 260 ac grass/brush Hotlum drainage

Based on data from portable RAWS SHF06, ending 1215 PST today. 24-hr max/min info: Temps 24/53 RH 84/34% Winds lately NW 1 gusts 4-5 mph

***NOTE: Forecasts winds are for eye-level, per requested ***

Discussion: A ridge of high pressure aloft in centered over the eastern Pacific west of CA today. It will hold fairly strong through Thursday night, then flatten as it sinks slowly southward Friday. You could see increased cloud cover Friday, but Thursday still looks mostly (perhaps entirely) sunny. No significant winds are expected through Friday morning, with generally light NW to North flow on the unit by day. Winds may switch to SW or West Friday afternoon, but will likely stay fairly light. A renewed rebuilding ridge aloft Saturday will shift east to the Great Basin Sunday/Monday. This will allow a series of Pacific weather systems to come to NorCal Sunday p.m. thru at least mid next week, first mild ones then colder ones starting Wednesday.

Tonight: Clear skies, with min temps 24-28 and maximum RH 76-86%. Wind switching after dark to light downslope (0-1 mph), with a few gusts 2-3 mph. Mixing depths lowering to less than 500' AGL, with transport wind SE to East 1-3 mph.

Thursday: Mostly or entirely sunny, with max temps mid 50s and minimum RH 25-32%. Wind calm to downslope 2 mph until around mid morning, then switching to upslope or NW to North 1-2 gusts 4-6 mph. Mixing depths increasing to 1500-2000' AGL, with transport winds switching from light SE early to NW to North 3-6 mph.

Thursday Night: Mostly clear skies, with min temps upper 20s and maximum RH 80-90%. Wind reversing to calm to downslope 2 mph after dark. Mixing/transport forecast similar to Wed. night.

Outlook Friday through Sunday: Scattered clouds Friday morning, becoming broken or overcast mid/high clouds by evening, and maybe by mid afternoon. Skies continuing to vary partly to mostly cloudy Saturday, with a slight chance of sprinkles. Mostly cloudy Sunday with at least light precip becoming likely by evening. Snow level above 5500'.
Max temps 49-53 Friday, cooling to the lower 40s Sunday. Minimum RH 39-48% Friday, 46-54% Saturday and above 55% Sunday. Good to excellent overnight RH recovery. Wind light SE then south Friday a.m., becoming South to WSW 1-4 gusts 6-9 mph in the afternoon. Weekend winds SSE to SW 2-7 mph, with occasional gusts 11-16 mph on the windiest portions of unit.
Snook

REDDING INTERAGENCY FIRE WEATHER CENTER
0955 PST Friday Feb. 24, 2006
Spot forecast for the North Mt. Shasta Burn.....Shasta-Trinity NF

T42N R4W Sec 17 Elev 3557-3650 ft Flat to North aspect 260 ac grass/brush Hotlum drainage
Based on the following site obs taken Thurs. afternoon, and a look at portable RAWS SHF06
Obs from 4000' on a SW-NW aspect

Time(PST)	Sky	Temp	RH	Eye level wind
1400	Clear	59	26%	NW 5-7 mph
1500	Clear	60	23%	NW 2-5 mph
1600	Clear	60	27%	NW 2-5 mph

SHF06 24-hr max/min info: Temps 59/24 RH 24/85% Wind lately calm to light downslope

***NOTE: Forecasts winds are for eye-level, per request ***

Discussion: Upper ridge is a little flatter today, but still no significant change in the north state airmass from past few days. Ridge will arch northward some again on Saturday, but be shifting east as it does so. With the ridge axis into the Great Basin on Sunday, a stronger, moister South to SW flow pattern will develop, leading to **a much wetter week ahead**, with snow levels dropping quite a bit Monday p.m. or night. Look for breezes to have a more SW'erly component by this afternoon, and should be slightly stronger than on Thursday, and definitely stronger SW winds by Sunday. First precip should arrive by afternoon on Sunday, and Sun. night and Monday could turn out quite wet.

Today: Mostly sunny, with a chance of scattered clouds by late afternoon. Max temps 56-61, with minimum RH 21-28%. Wind varying under 3 mph this morning, mainly NW to North, becoming SW to West and increasing this afternoon 3-7 gusts 9-12 mph. Mixing depths rising to 2000' AGL, or a little higher, with transport winds after late morning SW to West 6-10 mph in the afternoon.

Tonight: Skies varying from mostly clear to partly cloudy. Minimum temps 26-30, with maximum RH 78-88%. Wind varying light downslope to South or SW 2-4 mph, with a chance of SW gusts over local ridges to 10-13 mph. Mixing depths lowering to under 500' AGL after dark, with transport winds SW 5-8 mph.

Saturday: Skies varying mostly sunny to partly cloudy. Max temps 54-59, with minimum RH 29-36%. Wind SSW to West by mid or late morning, increasing in the afternoon to 4-8 gusts 11-15 mph.

Outlook Sunday through Tuesday: Mostly cloudy, with at least some precip expected each day, likely heaviest on Sunday night/Monday. You should see at least .50"precip in the 3 days, and maybe well over that. Precip most likely as rain Sun/ Monday morning, then turning to at least wet snow by Monday night. Max temps colder, dipping Tuesday to the upper 30s. Minimum RH 50%-plus on Sunday (minimum earlier in day than usual) then 60%-plus Monday-Tuesday. Eye level winds SSE to WSW generally 7-15 mph, with gusts 20-28 mph., probably strongest Sunday, but maybe similar at times Monday.

Snook

Weather Conditions for TR169

Current time: February 24, 2006 - 2:16 GMT

Most Recent Observations at February 24, 2006 - 1:15 GMT

	1:15	Max since Midnight	Min since Midnight	24 Hour Max	24 Hour Min
Temperature	58.0° F	59.0 at 23:15	25.0 at 14:15	59.0 at 23:15	25.0 at 14:15
Dew Point	23.3° F	31.0 at 19:15	21.4 at 0:15	31.0 at 19:15	21.4 at 0:15
Relative Humidity	26%	92 at 14:15	24 at 23:15	92 at 14:15	24 at 23:15
Wind Speed	0 mph	1 at 23:15	0 at 8:15	1 at 23:15	0 at 4:15
Wind Gust	5 mph	7 at 23:15	0 at 8:15	7 at 23:15	0 at 4:15
Solar Radiation	144.0 W/m*m	522.0 at 21:15	0.0 at 8:15	522.0 at 21:15	0.0 at 4:15
Fuel Temperature	62.0° F	70.0 at 23:15	23.0 at 14:15	70.0 at 23:15	23.0 at 14:15
10 hr Fuel Moisture	9 gm	14 at 16:15	9 at 1:15	14 at 16:15	9 at 1:15
Battery voltage	13.30 volt	14.10 at 18:15	12.40 at 14:15	14.10 at 18:15	12.40 at 14:15

Precipitation accumulated since midnight: 0.00", in 24 hours: 0.00"

Tabular Listing: February 23, 2006 - 2:16 through February 24, 2006 - 2:16 GMT

Time(GMT)	Temperature	Dew Point	Relative Humidity	Wind Speed	Wind Gust	Wind Direction	Quality control	Solar Radiation	Precipitation accumulated	Fuel Temperature	10 hr Fuel Moisture	Battery voltage
	° F	° F	%	mph	mph			W/m*m	in	° F	gm	volt
1:15	58.0	23.3	26	0	5	N	OK	144.0	0.00	62.0	9	13.30
0:15	58.0	21.4	24	0	7	N	OK	257.0	0.00	63.0	9	13.90
23:15	59.0	22.3	24	1	7	NW	OK	194.0	0.00	70.0	10	14.00
22:15	55.0	21.6	27	0	6	NW	OK	298.0	0.00	56.0	10	13.10
21:15	57.0	25.9	30	0	6	WNW	OK	522.0	0.00	68.0	10	14.00
20:15	56.0	30.1	37	0	4	NE	OK	516.0	0.00	66.0	11	14.00
19:15	51.0	31.0	46	0	5	NW	OK	450.0	0.00	56.0	12	14.10
18:15	47.0	29.3	50	0	3	NW	OK	251.0	0.00	49.0	13	14.10
17:15	39.0	29.3	68	0	0		OK	33.0	0.00	38.0	14	12.70
16:15	31.0	28.1	89	0	0		OK	19.0	0.00	29.0	14	12.50
15:15	26.0	24.0	92	0	0		OK	1.0	0.00	24.0	14	12.40
14:15	25.0	23.0	92	0	0		OK	0.0	0.00	23.0	14	12.40
13:15	26.0	23.2	89	0	0		OK	0.0	0.00	24.0	14	12.50
12:15	27.0	23.9	88	0	2	SE	OK	0.0	0.00	24.0	14	12.50
11:15	29.0	24.5	83	0	0		OK	0.0	0.00	25.0	13	12.50
10:15	29.0	24.5	83	0	0		OK	0.0	0.00	26.0	13	12.50
9:15	29.0	23.6	80	0	0		OK	0.0	0.00	27.0	13	12.50
8:15	30.0	24.3	79	0	0		OK	0.0	0.00	27.0	12	12.60
7:15	31.0	23.4	73	0	0		OK	0.0	0.00	28.0	12	12.60
6:15	32.0	24.0	72	0	0		OK	0.0	0.00	28.0	12	12.60
5:15	32.0	23.3	70	0	3	SE	OK	0.0	0.00	30.0	11	12.70
4:15	32.0	21.6	65	0	0		OK	0.0	0.00	31.0	11	12.70

Weather Conditions for TR169

Current time: February 24, 2006 - 16:28 GMT

Most Recent Observations at February 24, 2006 - 16:15 GMT

	16:15	Max since Midnight	Min since Midnight	24 Hour Max	24 Hour Min
Temperature	31.0° F	32.0 at 8:15	24.0 at 15:15	59.0 at 23:15	24.0 at 15:15
Dew Point	26.2° F	26.2 at 16:15	20.2 at 15:15	31.0 at 19:15	20.2 at 15:15
Relative Humidity	82%	85 at 15:15	75 at 8:15	85 at 15:15	24 at 23:15
Wind Speed	0 mph	0 at 8:15	0 at 8:15	1 at 23:15	0 at 17:15
Wind Gust	109 mph	109 at 16:15	0 at 8:15	109 at 16:15	0 at 17:15
Solar Radiation	22.0 W/m*m	22.0 at 16:15	0.0 at 8:15	522.0 at 21:15	0.0 at 4:15
Fuel Temperature	29.0° F	29.0 at 8:15	22.0 at 15:15	70.0 at 23:15	22.0 at 15:15
10 hr Fuel Moisture	14 gm	14 at 16:15	12 at 8:15	14 at 17:15	9 at 1:15
Battery voltage	12.50 volt	12.60 at 8:15	12.40 at 15:15	14.10 at 18:15	12.40 at 15:15

Precipitation accumulated since midnight: 0.00", in 24 hours: 0.00"

Tabular Listing: February 23, 2006 - 16:28 through February 24, 2006 - 16:28 GMT

Time(GMT)	Temperature °F	Dew Point °F	Relative Humidity %	Wind Speed mph	Wind Gust mph	Wind Direction	Quality control	Solar Radiation W/m*m	Precipitation accumulated in	Fuel Temperature °F	10 hr Fuel Moisture gm	Battery voltage volt
16:15	31.0	26.2	82	0	109	SSE	Suspect	22.0	0.00	29.0	14	12.50
15:15	24.0	20.2	85	0	0		OK	1.0	0.00	22.0	14	12.40
14:15	26.0	21.6	83	0	0		OK	0.0	0.00	23.0	14	12.50
13:15	28.0	22.6	80	0	0		OK	0.0	0.00	25.0	13	12.50
12:15	28.0	22.6	80	0	0		OK	0.0	0.00	24.0	13	12.50
11:15	30.0	23.4	76	0	0		OK	0.0	0.00	26.0	13	12.50
10:15	30.0	23.4	76	0	0		OK	0.0	0.00	27.0	13	12.60
9:15	31.0	24.0	75	0	0		OK	0.0	0.00	28.0	12	12.50
8:15	32.0	25.0	75	0	0		OK	0.0	0.00	29.0	12	12.60
7:15	34.0	25.3	70	0	0		OK	0.0	0.00	30.0	12	12.60
6:15	33.0	24.0	69	0	0		OK	0.0	0.00	31.0	11	12.60
5:15	36.0	25.4	65	0	0		OK	0.0	0.00	33.0	11	12.70
4:15	34.0	23.5	65	0	0		OK	0.0	0.00	32.0	10	12.70
2:15	40.0	20.9	46	0	3	SE	OK	23.0	0.00	36.0	10	12.80
1:15	58.0	23.3	26	0	5	N	OK	144.0	0.00	62.0	9	13.30
0:15	58.0	21.4	24	0	7	N	OK	257.0	0.00	63.0	9	13.90
23:15	59.0	22.3	24	1	7	NW	OK	194.0	0.00	70.0	10	14.00
22:15	55.0	21.6	27	0	6	NW	OK	298.0	0.00	56.0	10	13.10
21:15	57.0	25.9	30	0	6	WNW	OK	522.0	0.00	68.0	10	14.00
20:15	56.0	30.1	37	0	4	NE	OK	516.0	0.00	66.0	11	14.00
19:15	51.0	31.0	46	0	5	NW	OK	450.0	0.00	56.0	12	14.10
18:15	47.0	29.3	50	0	3	NW	OK	251.0	0.00	49.0	13	14.10
17:15	39.0	29.3	68	0	0		OK	33.0	0.00	38.0	14	12.70

NOAA Cooperative Institute for Regional Prediction