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RESEARCH NOTES

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UNIVERSITY OF IDAHO

A RUFFED GROUSE DRUMMING COUNT TECHNIQUE FOR NORTHERN IDAHO CONDITIONS

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Wildlife managers are constantly looking for improved methods of estimating wildlife numbers. Ruffed grouse drumming counts have been used with success in eastern United States (Petraborg et al. 1953). This note describes the basis for applying the drumming count method to Idaho ruffed grouse as a yearly indicator of breeding population. Data were collected in Idaho, north of the Salmon River, but the method should be applicable throughout Idaho where conditions are similar.

DRUMMING SEASON

The season of ruffed grouse drumming varies from March until late June. There is variation in the beginning of drumming and the length of drumming, depending upon the elevation, the exposure, and weather. Earliest drumming occurs on exposed south or southwest-facing slopes. The earliest drumming in northern Idaho was recorded at elevations of 1,500 to 2,000 feet on the south-facing slopes of the Lochsa and Selway canyons. Usually, grouse are drumming in these areas by mid-March or late March. At elevations of about 3,000 feet in the grouse habitat of Latah County, drumming usually does not begin until the first week in April (Hungerford, 1951).

Drumming counts made too early or too late in the season are not reliable population indices. Counts made at the peak of the drumming season give a good indication of the population. The drumming season varies in general with the same set of factors that cause variation in plant development. In the same way that plant indicators show range readiness for grazing animals, the use of the staminate catkins of willow ("pussy willows") seems well adapted as an indicator of drumming grouse.*

Willow catkins undergo several stages of development. First, there is a stage in which only the fuzzy, exterior part is visible. This is the "pussy willow" stage. In the second stage, the anthers have reached their full development and are quite obvious on the

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*The common willow on northern Idaho Grouse ranges was identified as Salix Scouleriana Barratt, by Carleton R. Ball of Washington, D. C.

external part of the catkin (the anthesis stage). In the third stage, the anthers have withered away and the catkin has reached its maximum development in length. Shortly after this, the catkins fall from the shrub, having completed their purpose.

Willow catkins in the second stage, (the anthesis stage) indicate the beginning of intensive drumming for ruffed grouse. For the purposes of drumming counts for census studies, data collected beginning at the anthesis stage and for two weeks thereafter, should be completely reliable. The advantage of such an indicator is that full benefit can be taken of the field season during which the grouse are drumming. Variability from one season to another and variability inherent in the altitude and exposure of each grouse range is reflected in the plant indicator. It should be obvious that only the willow growth at the particular grouse range should be used as an indicator. Also, it should be pointed out that a number of willow shrubs should be examined and the average development used as the criterion for beginning drumming counts. A few plants, for instance those on the south-facing slope of a road-cut, will begin developing much earlier than the average. Certain others, having been covered by snow or suppressed by forest stands, will reach this stage of development much later. An average of these, or shrubs in an average sunlight exposure should be used as the criterion for beginning drumming counts.

DRUMMING INTERVALS

The drumming interval and the daily period of drumming are important factors to consider in setting up specifications for drumming counts. Actually, both factors depend upon weather from day to day, and to some extent upon the exposure and the length of daylight. For instance, on a rainy, cloudy morning, drumming may not begin until weather clears, as late as 10:30 or 11:00 a.m. On some days no drumming may be heard, particularly where there is wind and rain or unusually cold weather. Generally grouse begin drumming before daylight and may continue as late as 9:30 p.m. The pattern of drumming does not appear to change greatly as the day proceeds and drumming may be as active between 3:00 and 5:00 p.m. as it is between 6:00 and 8:00 a.m. No sound basis for restricting drumming counts to the sunrise hours was observed. It is suggested, however, that for each drumming count station, the counts be made at similar times each year, for comparable results. The time from daylight (5:00 a.m.) to 9:30 or 10:00 a.m. is most productive of results, particularly during the middle and latter part of the drumming season. No counts should be attempted on cold, windy, or rainy days.

Drumming intervals vary considerably as the season progresses. Drumming tends to be more erratic at the very beginning of the drumming season and toward the end. In general, grouse will drum at a three to five minute interval, although some have been recorded at ten-minute intervals and at two and one-half minute intervals. After drumming begins seriously, as indicated by the willow catkin development, a

four-minute count should include all male grouse drumming in the area of audibility. The observer should move quietly to each counting point and allow a three-minute wait before beginning counts.

LOCATION OF DRUMMING TERRITORIES

Considerable care should be taken in locating the drumming count stations. Drumming territories are located along the ridges or the upper slopes. They may be on the small spur ridges. These may be only sixty to eighty feet above the adjacent ravine. Routes which follow ravines and drainages show little success because grouse drumming on the ridges usually cannot be heard. For intensive drumming count work, the writer has found traversing the ridges on foot to be the most productive way of locating drumming grouse. Ordinarily, following a route once along the ridges and upper slopes is sufficient to locate nearly all grouse drumming in the area. Repeated counts add little or nothing to the data recorded on the first traversing of the route.

A more extensive type of drumming count, based on truck or car travel can be developed using the same basic considerations. Roads should be followed and points should be chosen along the ridges or on the upper slopes. Roads following ravines or streams have little to recommend them as drumming count routes. It is most productive to choose drumming count sites a short distance from the road where the habitat is more undisturbed. From a road traversing a main ridge, the ideal locations of drumming count sites would be at least five chains away from the road along the spur ridges.

A quarter of a mile is about the maximum distance at which a drumming grouse may be heard in northern Idaho forest cover. Count sites located one-half mile apart should be perfectly reliable in avoiding any duplication.

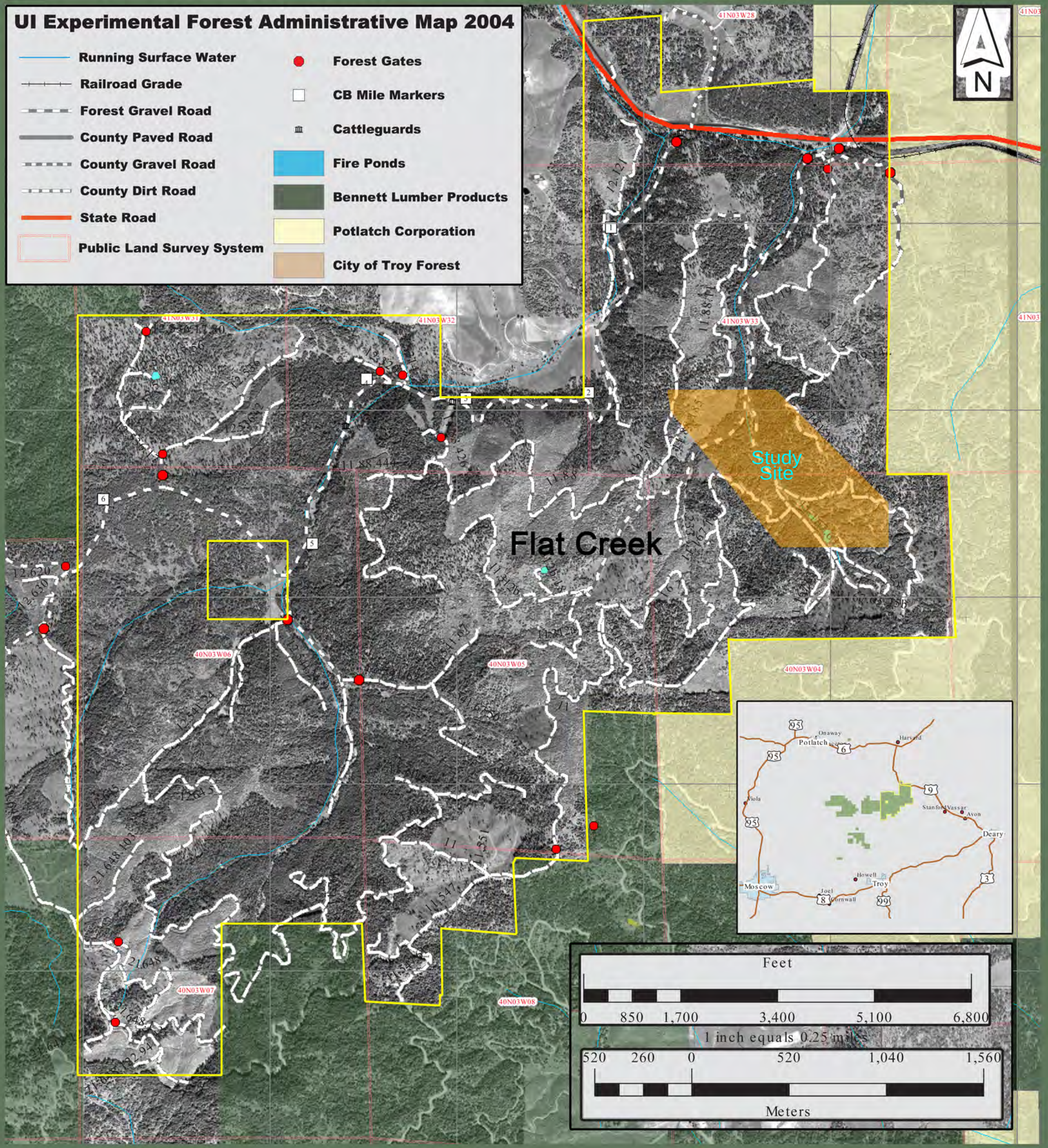
SUMMARY

This paper describes a drumming count method for northern Idaho ruffed grouse, for use to indicate spring breeding populations. Basic observations of the drumming season, intensity and interval are recorded. The use of willow catkins as an indicator of the reliable counting period is described. A four-minute count is recommended. Typical drumming territories are described and suggestions are given for locating drumming count routes.

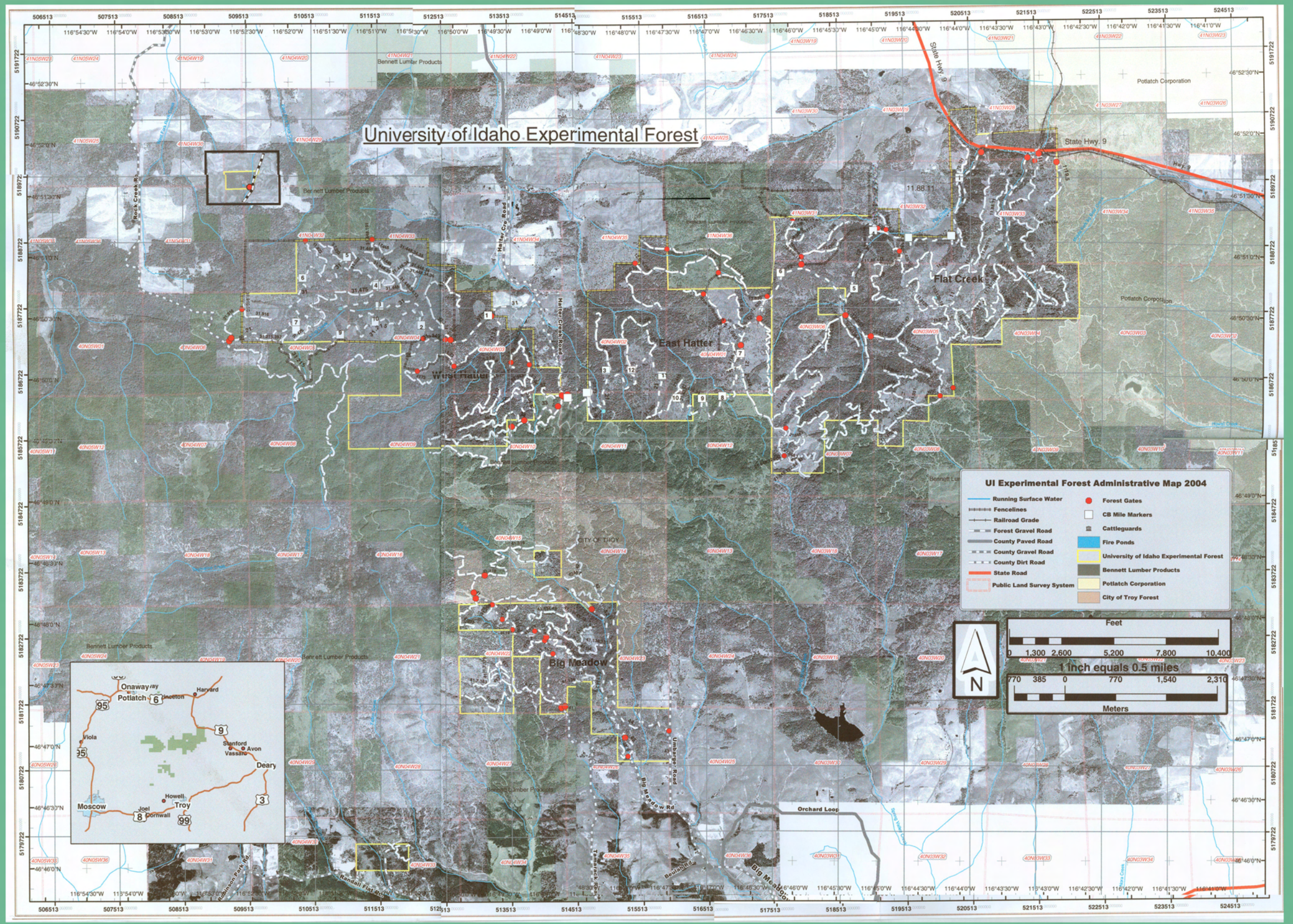
LITERATURE CITED

Hungerford, Kenneth E. 1951. The ecology and management of the Idaho ruffed grouse (Bonasa umbellus phaia). Doctoral Thesis. University of Michigan.

Petraborg, Walter H., Edward G. Wellein, and Vernon E. Gunvalson. 1953. Roadside drumming counts, a spring census method for ruffed grouse. Journal Wildlife Management 17:292-295.


UI Experimental Forest Administrative Map 2004
Running Surface Water
Railroad Grade
Forest Gravel Road
County Paved Road
County Gravel Road
County Dirt Road
State Road
Public Land Survey System
Forest Gates
CB Mile Markers
Cattleguards
Fire Ponds
Bennett Lumber Products
Potlatch Corporation
City of Troy Forest
N
41N03W28
41N03W31
41N03W32
41N03W33
40N03W06
40N03W05
40N03W04
40N03W07
40N03W08
Study Site
Flat Creek
Onaway
Potlatch
Harvard
Viola
Stanford
Vassar
Avon
Deary
Howell
Troy
Moscow
Joel
Cornwall
Feet
0 850 1,700 3,400 5,100 6,800
1 inch equals 0.25 miles
520 260 0 520 1,040 1,560
Meters

Flat Creek



University of Idaho Experimental Forest Map 2004

Location of Complete Research:

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