

Memorandum

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DATE: **September 3, 1994**

TO: **Bill Bertschy, Pingree Park**

FROM: **Phil Omi** *Phil*

RE: **Structure Fire Protection Survey**

CC: **Jim Hubbard, Denny Lynch, Bob Sturtevant, Dave Farmer, Chuck Grier, Fall Forestry students**

In the aftermath of the Hourglass Fire students in F 224 surveyed buildings on the Pingree Park campus to ascertain wildfire hazards. Campus buildings were divided into eight clusters as shown on the attached survey form and map (please see Appendix). Each building cluster was assessed in terms of "defensible space" that would facilitate survival during a wildfire. The results from the class exercise are attached for your information.

In sum, none of the eight clusters was found defensible against wildfire. Common problems included vegetation in close proximity to structures, inadequate tree spacing, and unpruned trees. Infractions pertained to individual buildings or clusters in their entirety. Building materials/spacing pose another problem, especially since burning buildings acts as heat sources to nearby structures. Other observations are noted in the attached, including suggested remedial actions for each cluster.

This survey pertained only to the structures unaffected by the Hourglass Fire. Vegetation management (i.e., fuelbreaks) as a first line of defense for the campus was not considered. Obviously the class findings reflect a fire control bias which must be balanced against overall management objectives for the campus. Although these buildings were fortunate in surviving the Hourglass Fire, I believe the students' findings should be considered in future plans for the campus.

Please contact me if you have any questions about this report. Thanks for your attention and cooperation.

SEP 0 1994

CSFS-SI

SURVEY RESULTS
Specific Problems and Remedies for Building Clusters
Pingree Park Campus
Colorado State University

Cluster #1 Staff Housing

Specific reasons for this determination are detailed below:

1 bldg has asphalt shingles but all others are not in compliance in that they have punky, rotted, wood roofs.
Trees are pruned to adequate height, but they are in too close proximity to the buildings.
Closed tree canopies surround the buildings.
The NW shed is loaded with wood desks & tables and other combustible materials.

Specific remedial actions to be considered include the following:

Small lodgepole pine reproduction and large snags should be removed.
Remove snags and thin canopies near structures.
Mow grasses and live forbs around structures to an area of 3-5ft around.
Remove wood fencing around propane tank and replace with gravel ground cover.
Remove dilapidated, uninhabited landmark cabins.
During times of extreme fire hazard, occasionally sprinkle mowed vegetation.
Using surrounding roads, a fireline can be constructed to encircle the area where a burnout operation could take place in case of an approaching fire front.
Remove dwarf-mistletoe infested trees.
Implement a permanent sump hole in the adjacent creek which can be used with a Mark III pump & or Hale-fyr pump.
Between structures and the creek, there should be at least 2000 ft. of 1 1/2 in hose complete with nozzles and hardware.

Cluster #2 Faculty Cabins

Specific reasons for this determination are detailed below:

Trees in close proximity to buildings
Dead woody material close to buildings
Ladder fuels

Specific remedial actions to be considered include the following:

Maintain good distance between all buildings.

Cabin #1:

Remove dead limbs from around cabins

Cabin #2:

10 feet between crowns.

Remove or prune trims around power line.

Remove dead woody material close to buildings.

Remove dead aspen near power line

Cabin #3:

Expand natural fuelbreaks (aspen) next to cabin.

Remove standing boles next to building.

Cabins #1 and #3:

Prune trees around cabin.

Cluster #3 Storage Sheds

Specific reasons for this determination are detailed below:

There are ground fuels within 5 feet of all structures.

Lodgepole pine and aspen are growing within 5 feet of structures (in one case, part of roof is cut away to allow for tree growth.)

Many trees within zone 1,2, and 3 have branches extending within a foot of the ground litter.

Fire hoses are not properly labeled.

Tree crown sporings are short, creating a clogged canopy over the fringes of most structures.

Cabin #6 has wood skirting for roofing as well as a large amount of woody fuel underneath the structure exposing the wood underside to a possible groundfire.

Specific remedial actions to be considered include the following:

A 3-5 ft fuel-clear bare should be created around all structures.

All trees within an area surrounding each structure should have all branches pinned that are below 8 feet on the stem.

As outlined in CSU service in Action Bulletin #6302, it is recommended that a 3-layer zone be created around the structures within Zone 1, containing a segment with no fuels (3-5 ft from structure), a zone of very limited fuels (10-15 ft from structures), and a zone where small groupings of pruned shrubs and trees would be allowed.

Label all firefighting aids and assure accessibility for firefighters.

Ensure non-flammable roofing and remove fuel under and around structures.

Cluster #4 New Classroom & Adjacent Buildings

Specific reasons for this determination are detailed below:

The ground vegetation is too tall and close to the new classroom.

The surrounding trees are too dense and close to the structures.

The space between the new classroom and the cabin just to the west has a fair amount of dead branches and twigs on the forest floor that could pose as good starter fuel if a fire were to come through.

Specific remedial actions to be considered include the following:

A relatively small amount of work is all that is needed to make cluster 4 comply with the standards described in the endote.

The tall grass in front of the new classroom could be mowed down to 1-2 inches to reduce risk of fire catching to the siding.

The building sits about 3 feet off the ground with the underneath exposed. Metal sheeting should be used to close this space up as well as clearing the debris from underneath.

The surrounding trees should be thinned and limbed to 8-10 feet above roofs to reduce the chance of crown spread.

Dead woody material should be raked up from the surrounding forest floor.

Cluster #5 Rec & Dining Halls, Old Classroom, South Dorm

Specific reasons for this determination are detailed below:

All buildings in Cluster 5 have plants and woody material right up to the walls.

Only 1 roof is metal and all have branches from nearby trees resting on them.

The wood panelling on the buildings is old, dry, and untreated.

Ladder fuels are present within 5 ft of every building, and wood benches and other highly combustible materials are within 10 feet of the dining hall.

There is also a propane tank surrounded by a wood fence.

Specific remedial actions to be considered include the following:

Removal of trees and bushes next to buildings.

Replacement of shingle roofs with tin.

Regular pruning, mowing, and treatment of wood on the buildings will decrease the amount of ladder fuels.

The propane tank should be placed on cement or gravel bed without a wood fence around it.

Cluster # 6 Staff Cabins

Specific reasons for this determination are detailed below:

Tree crown spacing not adequate.

Slash pile provides fire ladder.

Dead woody material too close to cabin.

Specific remedial actions to be considered include the following:

Priority should be thinning trees to 10 ft between crowns.
Slash piles & litter can be easily & quickly cleaned up.

Cluster # 7 NR Student Housing

Specific reasons for this determination are detailed below:

Tree crowns are too close to the cabins' roofs. While the trees are pruned to the minimum height of 8 ft., 6 limbs protrude very close and sometimes onto the roofs and eaves of the cabins.

There are numerous Pinus contorta with crowns growing together in Segment B (15 ft from buildings).

Specific remedial actions to be considered include the following:

Remove all trees touching too close over cabin roofs.
Thin trees to the min 10 ft. crown spacing.
Clean out bush & limbs that are scattered about too close to the cabins.

Cluster #8 Forestry Cabins

Specific reasons for this determination are detailed below:

Limbs are hanging down on cabins.
Trees are very close to cabins.
Dangerous build-up of litter layer and poor assembly of fire wood.

Specific remedial actions to be considered include the following:

Trim branches within 8-10 ft above structures.
Remove all trees between cabins.
Replace roof top with less flammable material.
Clearing of a strip around the set of cabins.
Enforce the stacking of firewood in covered boxes 15 ft away from cabins.
Incorporate a sprinkler system independent of the existing hose system.
Periodic burning of litter layer surrounding area in a 30 ft perimeter.
Provide fire fighting apparatus in a central location around the cabins.

Appendix

Survey Form plus Map

Group # (include names)

Structure Fire Protection Survey
Pingree Park Campus
August 17, 1994

The Pingree Park campus buildings in Cluster ____ (see attached map) are/are not in compliance with standards¹ for creating fire safe zones in forested homesites. As a result, the buildings in this cluster may/may not be defensible in the event of a future wildfire.

Specific reasons for this determination are detailed below:

Specific remedial actions to be considered include the following:

¹ Defensible space includes a series of zones and segments surrounding a home which facilitate survival during a wildfire. This analysis pertains to Zone 1 only. Zone 1 is the area immediately adjacent to a structure (30 ft min., depending on slope), consisting of three segments: A) the area immediately adjacent to the structure (3-5 ft wide) in which no vegetation should be growing nor combustible materials stored; B) the area extending from segment A outward approximately 15 ft, with minimum tree crown spacing of 10 ft and no ladder fuels beneath trees. Limbs should be pruned to 8-10 ft above the surface (firewood and propane tanks may be located in the outer portions of this segment, preferably uphill from the structure); C) the outer segment of Zone 1, in which trees are thinned and pruned as above. For further detail see Service in Action Bulletin no. 6.302 by Frank C. Dennis, Colorado State University Cooperative Extension Service, 1992.

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UNIVERSITY CAMPUS
Pingree Park Campus
Colorado State University

↑ To Tom Benet
Campground

Cirque Meadows Road

Sky Ranch
3000
Falls

To Bear Falls
Springs Pond
Commande Peak

BURNED

Shed
Cabin

Pond

II
1
2
3

IV

III

IV

North
Down

Parking

Conference
Center

Dining Hall
Old Classroom
South Dome

Rec Hall

Project
Cabin

Main Entrance

↑ To Fort Collins

→ To Denny's
Point
Stormy Peak

High
Elements

Horseshoe Bridge

Valley
Circuit

↑ To Cirque Meadows

