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WEATHER DAMAGE TO LODGEPOLE PINE IN THE COAL BRANCH AREA OF ALBERTA IN 1971.

Northern Forest Research Centre
Environment Canada
Edmonton

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WEATHER DAMAGE TO LODGEPOLE PINE IN THE COAL BRANCH AREA OF ALBERTA IN 1971

by

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INTRODUCTION

The most severe winter injury to lodgepole pine stands ever recorded by the Forest Insect and Disease Survey in Alberta occurred in the upper Coal Branch area during the winter or early spring of 1971. By April, many pine stands in an area of about 250 square miles had assumed the reddish-brown appearance characteristic of this form of damage. A cursory examination suggested that considerable tree mortality would probably occur.

This type of injury, commonly referred to as "Red Belt", is a frequent occurrence along the foothills and in the mountain passes of Alberta and in some parts of British Columbia, the Yukon and Northwest Territories. Damage is seldom severe enough to cause serious mortality although this has occurred at a number of locations from the Crowsnest Pass to Nose Mountain, south of Grande Prairie. Damage usually occurs in a distinct band along upper south or west facing slopes although it may be found at all elevations and aspects as is the case

observed would exceed 1000 acres. Most of the dead trees still retain their foliage and only close examination revealed their condition, consequently, ground checks are required before an adequate assessment can be made. However, many more stands appear to be as severely damaged as those examined and it is expected that the total will be many times this figure.

White spruce forms a minor component of the affected stands and does not appear to have suffered as much damage as lodgepole pine although individual spruce trees have been killed. Trembling aspen, balsam poplar, willow and alder have also been damaged.

As a result of this extensive winter damage, forest inventories have been significantly reduced, the fire hazard has been increased and an unsightly condition will exist in the area for some time. The effects on the Tri Creeks Watershed Area are expected to be minimal as most of the damage has occurred on the south flowing drainages.

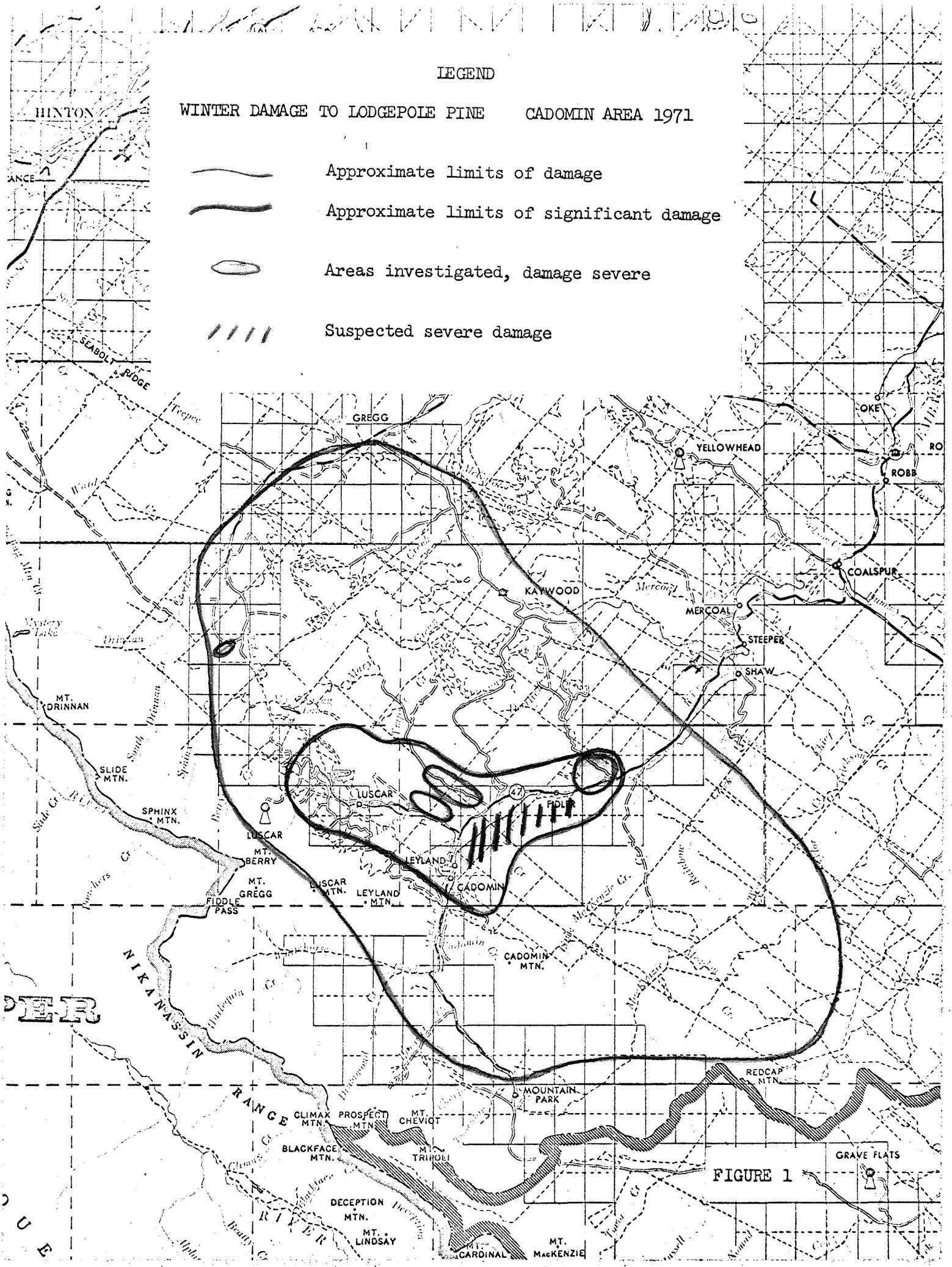
LEGEND
WINTER DAMAGE TO LODGEPOLE PINE CADOMIN AREA 1971
Approximate limits of damage
Approximate limits of significant damage
Areas investigated, damage severe
Suspected severe damage
HINTON
SEABOLT RIDGE
GREGG
YELLOWHEAD
OKE
ROBB
COALSPUR
KAYWOOD
MERCOAL
STEEPER
SHAW
MT. DRINNAN
SLIDE MTN.
SPHINX MTN.
LUSCAR
MT. BERRY
MT. GREGG
FIDDLE PASS
LUSCAR MTN.
LEYLAND MTN.
LEYLAND
CADOMIN
CADOMIN MTN.
NIKANASSIN RANGE
MOUNTAIN PARK
REDCAP MTN.
CLIMAX MTN.
PROSPECT MTN.
MT. CHEVIOT
BLACKFACE MTN.
MT. TRIPOLI
GRAVE FLATS
DECEPTION MTN.
MT. LINDSAY
MT. CARDINAL
MT. MacKENZIE

FIGURE 1

FIGURE 2

Winter injury along Trapper Creek road. Grey areas indicate severe mortality. Note healthy appearing spruce at right.

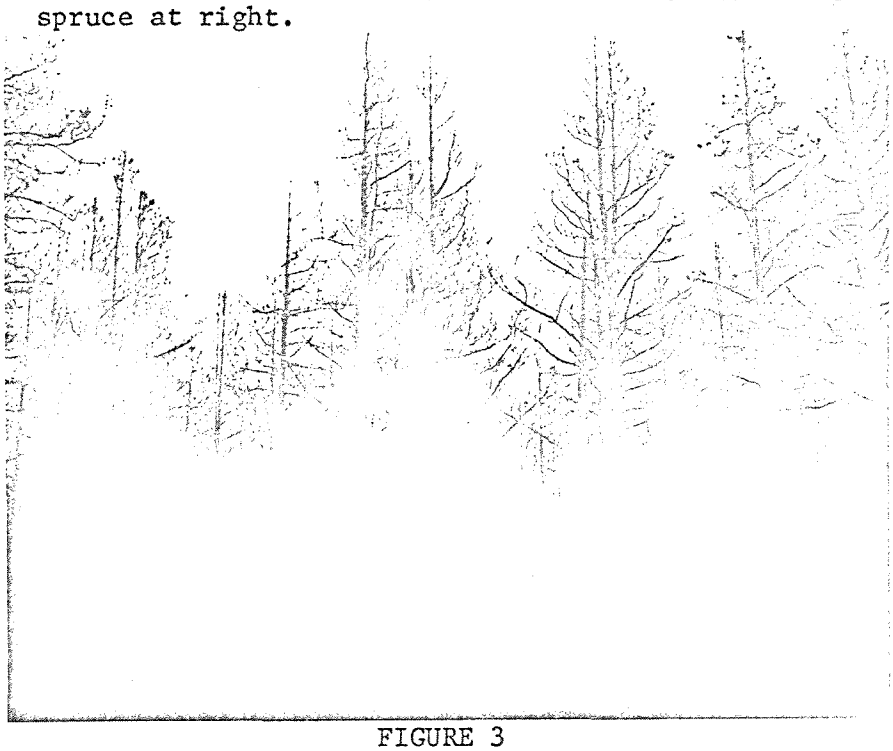

FIGURE 3

Severe mortality caused by winter injury along Eunice Creek road. Note deformities caused by previous winter injury.

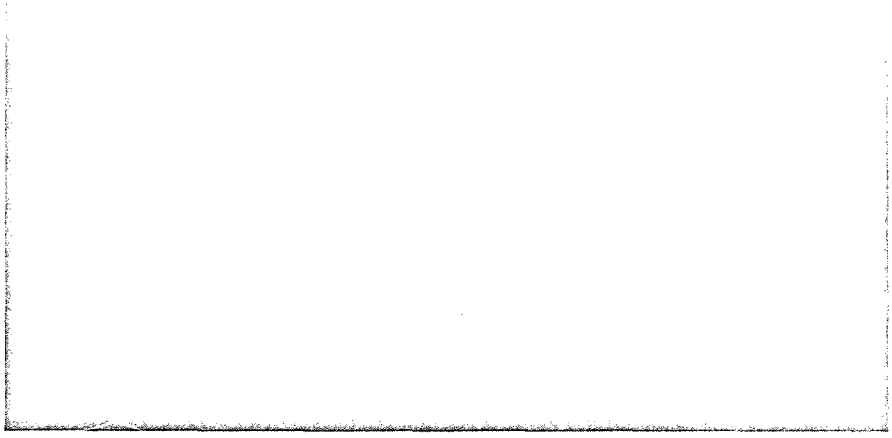

FIGURE 4
Damage to young growth on slope facing west on to Luscar Creek. Uninjured foliage below snow line will probably insure survival with varying amounts of deformity.

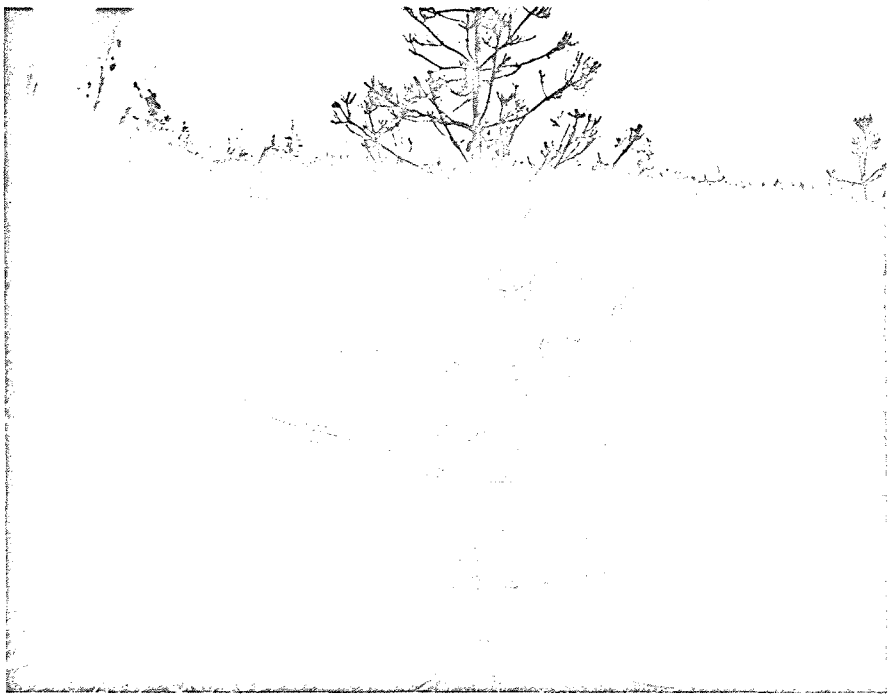

FIGURE 5
Young pine typical of stand pictured above.
Candling is proceeding despite loss of foliage above snow line.