HB
284

HOUSE COMMITTEE REPORT

(9)
Date Referred to Committee: May 10, 1997

FURTHER REFERRALS:

Date of Committee Action: 4-7-98

The RESOURCES Committee considered:

HB 284

HOUSE BILL NO. 284

TIMBER THREATENED BY PESTS OR DISEASE

"An Act relating to infestations and diseases of timber."

recommends it be replaced with the following committee substitute CSHB 284 (RES)

[✓] the same title
[ ] a new title

[ ] additional referral to ______ Committee
[ ] attached amendment(s)

ADOPTS: ______ Letter of Intent

ATTACHES NEW FISCAL NOTE(s): (Dept)

[✓] fiscal note(s) DNR

[ ] zero fiscal note(s)

APPROVES PREVIOUS: (Dept/Date)

[ ] fiscal note(s)

[ ] zero fiscal note(s)

SIGNING WITH RECOMMENDATIONS		DP	DNP	NR	AM
Scott Ogan	OGAN	✓			
Irene Nicholia	NICHOLIA			✓	
[illegible]	JOULE			✓	
Beverly Masek	MASEK			✓	
Ramona L Barnes	BARNES	✓			
B.K. Williams	WILLIAMS			✓	
Joseph R. [illegible]	GREEN	~~✓~~		✓	

CHAIR'S SIGNATURE Scott Ogan

FISCAL NOTE

STATE OF ALASKA — **BILL NO.** HB284

1998 LEGISLATIVE SESSION

Revision Date:

Title: Infestations and diseases of timber

Sponsor: Hodgins

Requestor: (H)RES

Dept Affected: Natural Resources

BRU: Resource Development

Component: Forest Management & Development

Component Serial No. 435

Expenditures/Revenues (Thousands of Dollars)

OPERATING EXPENDITURES	FY99	FY00	FY01	FY02	FY03	FY04
PERSONAL SERVICES	390.6	390.6	390.6	390.6	390.6	390.6
TRAVEL	45.0	45.0	45.0	45.0	45.0	45.0
CONTRACTUAL	180.0	180.0	180.0	180.0	180.0	180.0
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	615.6	615.6	615.6	615.6	615.6	615.6
CAPITAL EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0
CHANGE IN REVENUES (fund code)	0.0	0.0	0.0	0.0	0.0	0.0

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF	615.6	615.6	615.6	615.6	615.6	615.6
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type)						
TOTAL	615.6	615.6	615.6	615.6	615.6	615.6

Estimate of any current year (FY98) cost: $ 0.0

POSITIONS

FULL-TIME	3	3	3	3	3	3
PART-TIME	6	6	6	6	6	6
TEMPORARY	0	0	0	0	0	0

ANALYSIS: *(Attach a separate page if necessary)*

1) This bill would require more extensive insect and disease surveys to identify all infested or diseased areas and to determine where insect or disease outbreaks are likely to spread from one land ownership to another. Estimated cost would be 15 additional surveys @ $10.0/survey = $150.0 contractual services.

2) Declaration of infestation zones would require documentation and publicity. Estimate 15 declarations @ $4.0/action = $60.0 personal services.

3) DNR would need additional funding to develop infestation suppression agreements with all landowners in infestation zone. Estimate 30 agreements @ $3.7 each = $111.0 personal services for 3 weeks of a Forester II's time for each agreements. Plus 15.0 travel.

Cont. on attached page

Prepared by: Jeff Jahnke, Director /mw — Phone: 465-3379

Division: Forestry — Date: 10-Mar-98

Approved by Commissioner: — Date:

Agency: Natural Resources

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ANALYSIS, cont.

4) DNR would require additional funding for salvage on state land. Currently the department relies on CIP funding to offer salvage timber sales in excess of the amount possible under operating funds. Estimated cost = 1 Forester II x 2 regions x 9 months x $5.4/mo = $97.2 + 3 For Tech IIIx 2 regions x 6 months x $3.4/mo = $122.4; + $30.0 travel costs for layout and $30.0 contractual funding for notice and equipment needs. Total = $279.6. On average, this would fund salvage sale design and layout for approximately 5.4 MMBF/year and reforestation on approximately 540 acres. Sales could be in any part of the state depending on the location of infestations and availability of markets.

5) This would require a total of 3 new full-time Forester II positions and 6 new part-time Forest Tech III positions located primarily in Southcentral and Interior Alaska.

6) Change in net revenue is assumed to be zero. Some salvage sales would bring in net revenue, but many would be deficit sales.

SPONSOR STATEMENT

HB 284-"An Act Relating to Infestations and Diseases of Timber"

This legislation amends AS 41.17.082(d) to require the commissioner to implement necessary salvage measures when timber on state or municipal forest land is:

(1) infested or diseased and thereby poses a significant threat to surrounding healthy timber, or

(2) subjected to an environmental catastrophe, and as a result, is susceptible to infestation or disease, to prevent the spread of infestation or disease, the timber shall be salvaged as rapidly as practicable…if possible, salvage should occur before there is a significant loss of merchantability of the timber.

CS FOR HOUSE BILL NO. 284(RES)

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTIETH LEGISLATURE - SECOND SESSION

BY THE HOUSE RESOURCES COMMITTEE

Offered:
Referred:

Sponsor(s): REPRESENTATIVE HODGINS

A BILL

FOR AN ACT ENTITLED

"An Act relating to infestations and diseases of timber."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* **Section 1.** AS 41.17.082(d) is amended to read:

(d) The commissioner may undertake surveys and appraisals to obtain data on regional insect infestations and disease conditions. Upon a determination that an area is infested with forest insects or infected with diseases injurious to forest resources and that the infestation or infection threatens the forest land or timber of adjacent owners, the commissioner shall [MAY] establish the boundaries of an infestation or infection zone. The commissioner shall [MAY] enter into an agreement with an owner or with a governmental agency to control or suppress infestation or infection within the zone **and to implement necessary salvage measures. When timber on state or municipal forest land is (1) infested or diseased and thereby poses a significant threat to surrounding healthy timber, or (2) subjected to an environmental catastrophe and, as a result, is susceptible to infestation or disease, to prevent the spread of infestation or disease, the timber shall be salvaged as rapidly as**

New Text Underlined [DELETED TEXT BRACKETED] practicable considering the available access to the timber and the marketability of the timber. If possible, salvage under this subsection should occur before there is a significant loss of merchantability of the timber. Upon a determination by the commissioner that insect and disease control work within the zone is no longer necessary or feasible, the commissioner shall terminate the zone.

* Sec. 2. AS 41.17.082 is amended by adding a new subsection to read:

(e) The commissioner shall declare an emergency when 100 acres or more of timber is infested or diseased within the boundaries of an infestation or infection zone established under (d) of this section. Upon the declaration of an emergency, the commissioner may

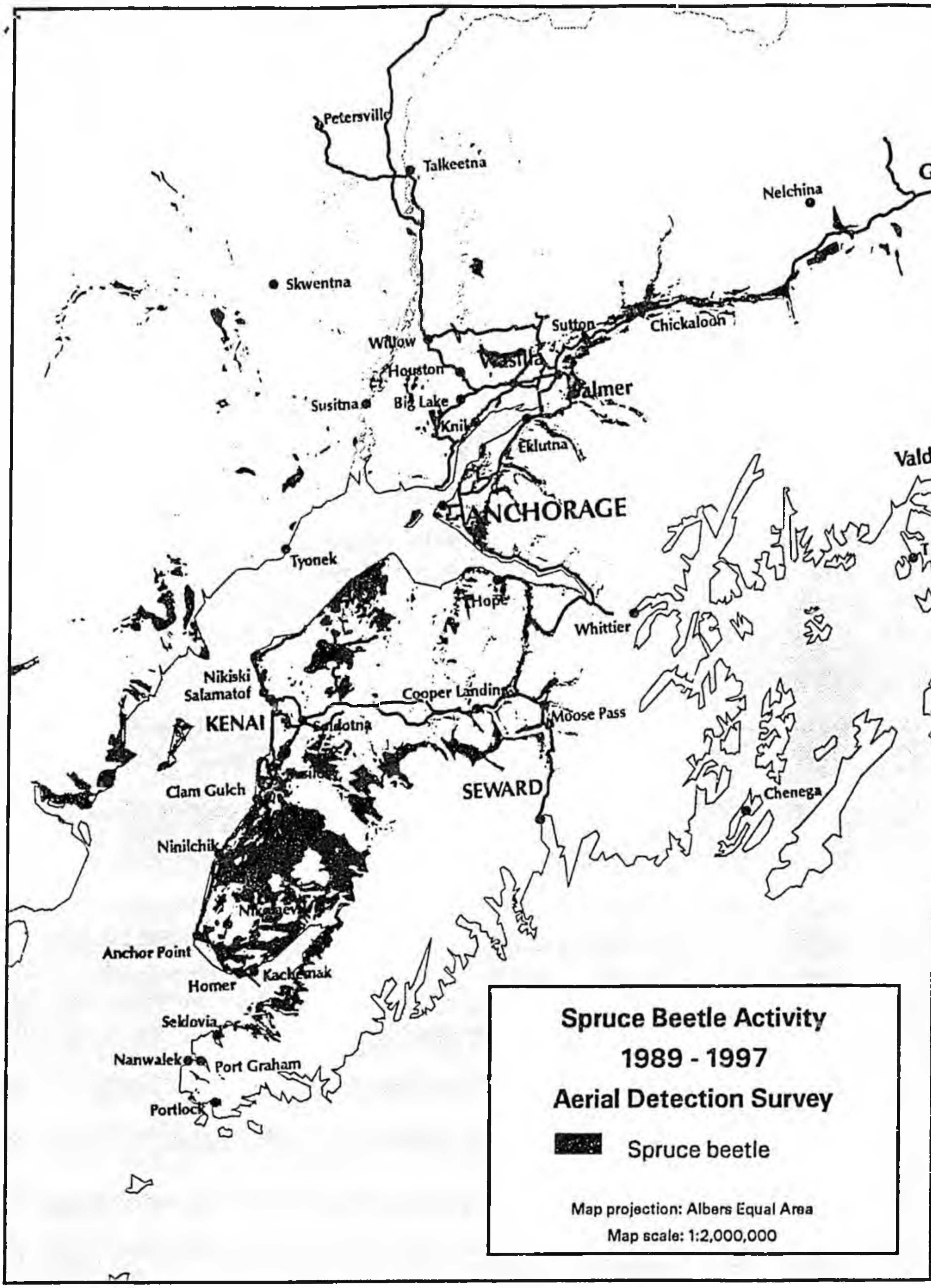
(1) offer emergency and salvage sales under AS 38.05 of infested or diseased state timber or state timber that is threatened with infestation or disease;

(2) harvest infested or diseased state timber regardless of whether the proceeds from the harvested timber will provide a net return to the state;

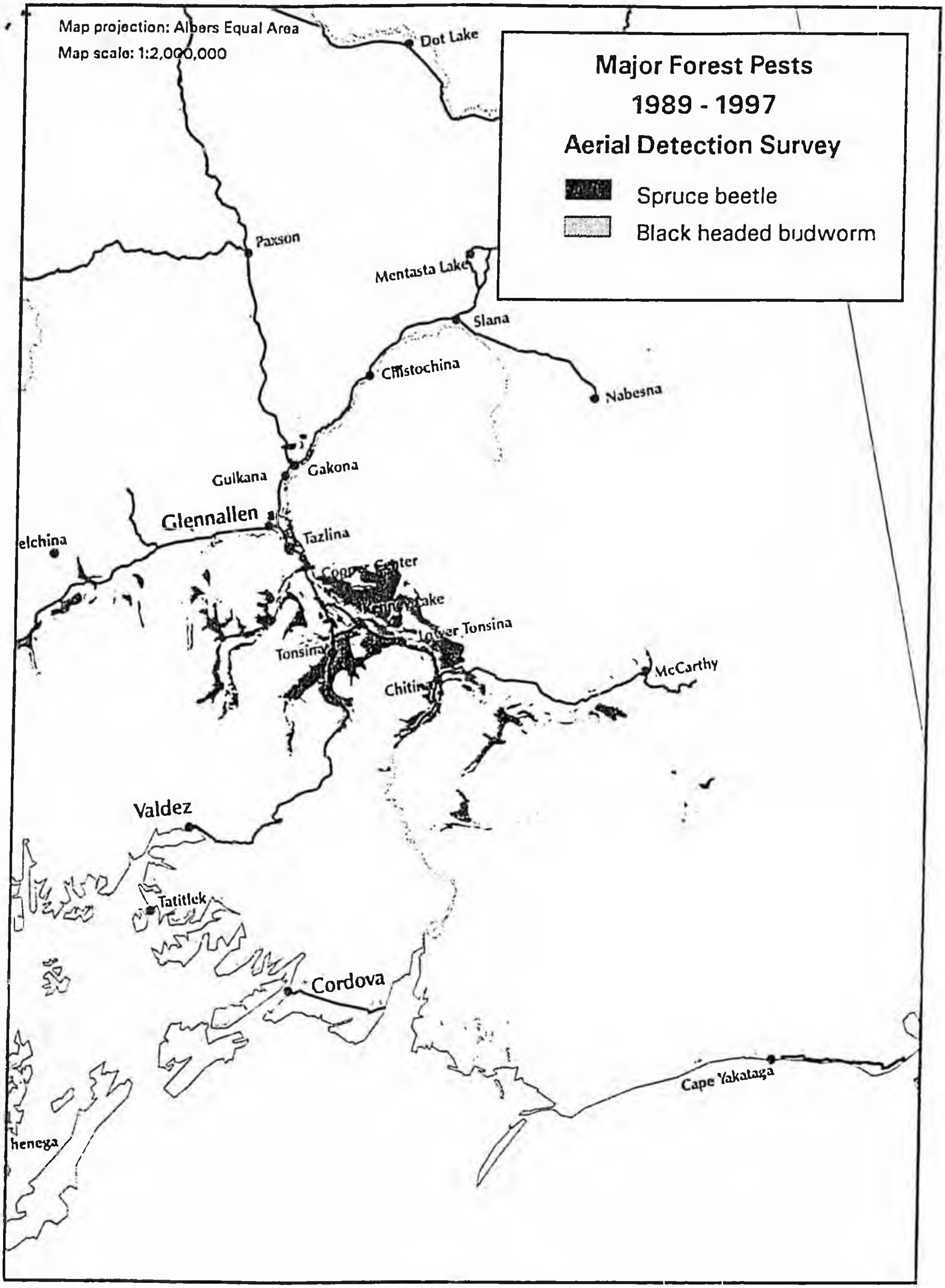
(3) exempt salvage and emergency sales of less than 200 acres from the preparation of a plan of operations under AS 41.17.090;

(4) require reforestation of a greater degree, quantity, and type than otherwise required by this chapter for the reforestation of riparian areas; and

(5) waive a requirement of this chapter and regulations adopted under this chapter, other than a requirement of or a regulation adopted under AS 41.17.115 - 41.17.119, if the commissioner finds that the waiver will substantially contribute to controlling or eliminating the infestation or disease.



Talkeetna
Nelchina
Skwentna
Sutton
Chickaloon
Houston
Susitna
Big Lake
Knik
Eklutna
ANCHORAGE
Tyonek
Hope
Whittier
Nikiski
Salamatof
KENAI
Moose Pass
Clam Gulch
SEWARD
Chenega
Ninilchik
Anchor Point
Homer
Kachemak
Seldovia
Nanwalek
Port Graham
Portlock
Spruce Beetle Activity
1989 - 1997
Aerial Detection Survey
Spruce beetle
Map projection: Albers Equal Area
Map scale: 1:2,000,000


Map projection: Albers Equal Area
Map scale: 1:2,000,000
Major Forest Pests
1989 - 1997
Aerial Detection Survey
Spruce beetle
Black headed budworm
Dot Lake
Paxson
Mentasta Lake
Slana
Nabesna
Gakona
Gulkana
Glennallen
Tazlina
Tonsina
Lower Tonsina
McCarthy
Valdez
Tatitlek
Cordova
Cape Yakataga

TONY KNOWLES, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF FORESTRY

3601 C Street, Suite 1034
Anchorage, Alaska 99503-5937

April 6, 1998

Rep. Bill Hudson, Co-Chair
Rep. Scott Ogan, Co-Chair
House Resources Committee
State Capitol Room 108
Juneau, 99801-1182

Dear Chairmen Hudson and Ogan,

We would like to reaffirm our position on HB 284. The Department of Natural Resources continues to oppose this bill because:

- It would add to agency work load without reducing the impacts of infestations,
- It doesn't provide any effective new tools to address infestations. DNR already has the authority to do emergency sales and below cost sales. The authority to waive the FPA requirements risks water quality and fish habitat protection without effectively combating beetle populations.
- The Spruce Bark Beetle Task Force is drafting its recommendations for actions to respond to the beetle infestation. Legislative changes should wait to be coordinated with Task Force recommendations.

HB 284 would have little or no effect on large infestations because it does not address the main factors that constrain effective responses to insect outbreaks. First, climatic conditions play a key role in determining the size of outbreaks, and are not controllable by agency action. Second, feasible salvage harvesting is limited by weak markets for low value timber, funding for timber sale layout and reforestation, and multiple use concerns about impacts of timber harvest and roading on other resources and activities.

HB 284 increases agency workload and costs by requiring the state to do more intensive insect and disease surveys, and to develop agreements with private landowners, regardless of the owners' interests. Landowners respond to infestations in a variety of ways depending on their management intent and authorities for their land. For example, on the Kenai Peninsula, responses range from no action to aggressive harvesting depending on the landowner. Reforestation actions after harvest also vary depending on the owners' long-term intent for the land and their financial situation.

Implementing this bill will be costly, since it requires action statewide. In 1997, surveys recorded seventeen different types of insects or diseases that damaged more than 100 acres of forest land in Alaska, affecting a total of 2.5 million acres. These sites are scattered around the state, many in areas that are remote. Because of the land ownership patterns in Alaska, many of these outbreaks cross ownership boundaries. It is not feasible or cost-effective to actively fight all these outbreaks. Particularly in remote areas, some level of infestation -- like wildfire -- is a natural disturbance that results in a mix of young and old forest stands, which in turn provide diverse habitats for wildlife.

We respectfully request that you do not forward HB 284 at this time. As soon as recommendations from the Spruce Bark Beetle Task Force are available, we would be glad to work with you on any recommendations that would require changes to state law or additional state funding.

Sincerely,

Marty Welbourn

for Jeff Jahnke
Director

Alaska Department of NATURAL RESOURCES

BRIEFING:

State Spruce Bark Beetle Programs

March 11, 1998

DEPARTMENT OF NATURAL RESOURCES -- DIVISION OF FORESTRY

OVERVIEW

Goals. The goals of the state's bark beetle programs are to accelerate reforestation, reduce wildifre risk, maintain diverse forest types and ages to support a wide variety of public uses, and capture)nomic value from infested trees before they decay.

All sales are designed to protect and enhance forest diversity and support multiple use. Sale design is based on vegetation, land uses, habitat values, beetle impacts, access, and economic feasibility. Site-specific prescriptions are done for each sale. In the Kenai and Copper River areas, DNR has helped fund Department of Fish and Game habitat biologists to help design the sales to protect or enhance fish and wildlife values.

Infested aree. In cooperation with the US Forest Service, DNR annually maps insect-infested areas statewide. Based on these surveys, about 3 to 4 million acres have been infested with spruce bark beetles statewide since 1989. In 1996, active outbreaks were mapped on roughly 1.1 million acres statewide. Aerial surveys for 1997 have been completed, and indicate a decrease in observable spruce beetle activity to approximately 565,000 acres. However, the spruce bark beetle is endemic wherever there is Sitka, white, or Lutz spruce. 1997 ground assessments in the most heavily impacted areas -- southcentral Alaska, the Copper River basin, and the Haines area -- suggest that beetle populations are still very high. Severe outbreaks are expected to continue in parts of these areas for several more years.

Economics of state timber sales. The amount of timber actually purchased and cut depends largely on timber markets. The beetle-killed wood is suitable primarily for pulp or chips, and markets for these products are currently low. Five recent sales on the Kenai Peninsula received no bids due to weak markets. DNR may delay some salvage sales if there is no market for the wood.

DNR requires that all timber sales bear the cost of harvesting, roads, and site preparation. In addition, the sales will bear varying proportions of the costs of contract administration and replanting. For some sales, such as those in the Moose Pass area where timber values and volumes are high, revenue will probably exceed total cost. On small sales, the state will pay most of the replanting and administration costs. The main benefits are that dead and dying wood will be salvaged to provide jobs and wood products, and replanting will accelerate forest regrowth in infested areas.

DNR staffing for timber sales is quite limited. In the Kenai area, we have two full-time forest management positions, and part of two additional positions. In the Haines area one full-time position and one part-time position have forest management responsibilities. No positions in the Copper River area have operating funds for forest management. The DNR timber salvage program depends heavily on capital funding from the legislature, and when fire risk is low, we also use fire-fighting technicians to help prepare timber sales, and we borrow staff from throughout the state to help with salvage sale layout when other duties allow.

Can harvesting control the beetles? State timber sales cannot control the widespread beetle outbreak in southcentral Alaska or Haines. In small areas where infestation is just starting, harvests may slow the spread or reduce the percent of trees attacked. Diverse vegetation types and ages may be the best long-term remedy for beetle outbreaks.

Reforestation. The Alaska Forest Resources and Practices Act (AS 41.17) does not require reforestation on timber sales that are salvage operations like the harvests in beetle-impacted areas. However, DNR has publicly committed to reforesting all state timber sales. Some sites will regenerate naturally after site preparation; most areas will need planting. We will replant with native tree species grown from local seed sources. The timber purchaser pays site preparation costs. Where feasible, DNR requires the purchaser to pay planting costs.

Do bark beetles increase the risk of wildfire? Increased fuel loads and grass cover following the beetle epidemic on the Kenai Peninsula has raised the risk of intense, rapidly-moving fires that would be difficult to control. A January, 1998 assessment of fire risk is available from the Division of Forestry -- *Kenai Peninsula Spruce Beetle Epidemic Fire Danger/Behavior Status Report*. Fire risk is particularly high near some residential areas where the chance of human-caused fire starts is high. For example, in the East End Road area near Homer several factors create high fire danger: dead forest mixed with grassland surrounds numerous homes, clearings along powerline ROWs are narrow, and one lane roads make access difficult.

The best defense against wildland fire is a mosaic of different age classes of green vegetation. Landowners may need to remove dead and dying trees and replant with fire resistant vegetation to minimize the hazard from wildland fires in the wake of a spruce bark beetle infestation. For residential areas, DOF holds informational meetings to help landowners reduce fire hazards.

Beetle-killed trees were not a factor in the Miller's Reach #2 fire in June, 1996. In contrast, the Crooked Creek fire on the western Kenai Peninsula did burn through beetle-killed spruce. The volume of dead vegetation in the fire area directly affected the spread and intensity of the fire, which included active crown fires.

Sustained yield. Under the Alaska constitution and state law, DNR must manage renewable resources for sustained yield. In general, we must achieve and maintain in perpetuity "a high level annual or regular periodic output of the various renewable resources of forest land and water without significant impairment of the productivity of the land and water" (AS 41.17.950(17)). The Supreme Court further determined that this permits timber cutting "at a level that cannot be sustained over a rotation only in unusual circumstances. ... Such circumstances might include such things as salvage cuts where trees have been killed or damaged... ." (SEACC v. Alaska, 1983) To date, DNR salvage harvests have not exceeded the allowable cut for each decade.

Public involvement. State law requires that DNR provide for meaningful public participation in the timber sale process. The public process is lengthy and expensive, but it is also essential on public land. Public concerns have affected the sale process and sale design, and reinforced DNR's commitment to careful harvest and reforestation.

In all areas, the Division of Forestry prepares a Five-Year Schedule of Timber Sales (FYSTS) annually. The schedule provides an overview of state proposals for timber harvest, reforestation, and transportation. A Forest Land Use Plan (FLUP) is also prepared for each individual sale. Schedules and plans are subject to review by agencies and the public before DNR adopts them. In addition to these requirements, DNR has made special efforts to involve the public in forest management in each of the areas with severe beetle infestations as noted below.

KENAI AREA

State land ownership and allowable cut. The State of Alaska owns approximately 2.1 million acres of land in the Kenai Peninsula Borough, or 20% of the total area. Half the state land is in state parks, refuges, and critical habitat areas. Of the 1.1 million acres of the state public domain, 449,000 acres are forested land: 248,000 acres west of Cook Inlet, and 201,000 acres on the Kenai Peninsula and Kalgin Island. The state has selected an additional 410,000 acres of land in the Chugach National Forest that may be state-owned in the future. The estimated annual allowable cut for the Kenai Peninsula is 1,652 acres; for the west side of Cook Inlet and Kalgin Island, it is 1,816 acres. Allowable cuts are regulated over a ten year period. Therefore, 16,520 acres could be harvested each ten years on the Peninsula, and 18,160 acres on Kalgin Island and the west side.

State forest land affected by bark beetles. By 1993, about 90,000 acres of state land on the Kenai Peninsula were infested by bark beetles, and the beetle infestation is still expanding into new areas. Beetles also infest state land on Kalgin Island and state land west of Cook Inlet. The most heavily impacted state land is on the western Kenai Peninsula south of Tustumena Lake to Homer and Kachemak Bay, and in the Moose Pass area.

Affected forests include stands of white spruce, Lutz spruce, and Sitka spruce in either pure stands or mixed stands with birch, cottonwood, or aspen. In infested areas, future stands are likely to be more open, have more grassy areas, and where hardwoods are present, have more hardwood-dominated stands.

State forest management. Prior to 1994, DNR sold an average of 200 acres of timber sales per year. Starting in 1994, in response to the infestation, the amount of state timber offered has greatly increased. Since 1994, DNR has offerred 23 salvage sales totaling 10,009 acres on the

Kenai Peninsula and Kalgin Island. Twenty-one of these sales have been purchased, and two remain available for purchase over-the-counter. One salvage sale prepared by DNR in the Moose Pass area also included Mental Health Trust land. The current draft Five-year Schedule of sales proposes about 23,740 acres of sales over the next five years on the Kenai Peninsula.

Additional public outreach. DNR has made special efforts to involve the public in forest management decisions in the Kenai area.

- Establishing a citizen's advisory panel led by the Kenai Peninsula Borough mayor that reviewed all sales on the FY 94-98 Five-Year Schedule, including the FY 95 and FY96 sales. DNR adopted all the unanimous recommendations of the panel, and made many changes to respond to recommendations that weren't unanimous.
- Holding public meetings on timber sales in nearby communities and scheduling field trips to the larger proposed sales.
- Conducting a workshop on the proposed Caribou Hills timber sale with a variety of interest groups and agencies.
- Involving the public in development of a Forest Health Management Plan for the Kenai.
- Working with the US Forest Service and a citizens' advisory committee during joint federal-state forest management projects for the Cooper Landing and Moose Pass areas.
- Meeting with media representatives and including them in field trips to harvest areas.
- Preparing a handout on the infestation for tour companies that use the Kenai Peninsula.
- Steadily improving the Five-year Schedules and Forest Land Use Plans to ensure that the public gets clear, complete information on planned sales.
- Participating in public forums such as the Pratt Museum series on spruce bark beetles.
- Participating in interagency planning efforts including the Kenai Area Plan, Kenai Spruce Bark Beetle Task Force, Interagency Forest Ecology Study Team, and interagency brown bear conservation strategy.

How will timber sales affect other land uses? <u>Tourism and recreation</u>: Most of the sales including those in the Falls Creek-Ninilchik area and on Kalgin Island will have little impact on recreation and tourism. These sales are in flat, low country off the main road system. They receive little current recreation use or tourism, and will not be visible to road travelers. Harvested areas will be visible to air traffic between Anchorage and Homer.

Sales in the Moose Pass area have the greatest potential to affect scenery, recreation, and tourism. Large beetle-killed areas also have the potential to affect these activities. The USFS analyzed recreation and scenic impacts on state and federal land. The state is using this information to design sales to minimize these impacts.

<u>Fishing</u>: Protecting fish habitat and water quality is the main goal of the state's Forest Resources and Practices act. The Act prohibits harvesting within 100 feet of anadromous and high value fish streams on all state land. On the Kenai, we use wider buffers for key areas, such as the Ninilchik River corridor. Buffers and required best management practices prevent significant impacts to fish habitat.

Wildlife habitat and use: Kenai forest lands also provide upland wildlife habitat and areas for hunting and wildlife viewing. Whether we harvest timber or not, the composition of Kenai forests and habitat will change as beetles kill extensive areas of spruce. By encouraging regrowth of mixed hardwood-spruce forests and accelerating regeneration, more diverse stands will be grown. Timber harvests should have a neutral to beneficial impact on habitat for most wildlife species. DNR is funding the Department of Fish and Game to participate in the design of state timber sales.

Timber sale access. Timber access is one of the most controversial issues for the Kenai forests. ADF&G has expressed concern on the impacts of new access on wildlife, especially bears. DNR proposes no new permanent roads for state timber sales. Temporary roads and winter roads will provide access. Most access will use existing trails, such as seismograph lines. Temporary roads will be put to bed after harvesting and reforestation is complete. The timber purchaser pays road construction and maintenance costs during the life of the sale. In the Moose Pass area, we are considering designing some sales for helicopter logging to minimize road access.

Timber harvest methods. DNR designs harvest methods for each sale based on the extent of beetle damage and opportunities for natural regeneration. In general, we propose salvaging the dead, dying, and immediately threatened spruce trees. We will leave most hardwoods, smaller spruce, seed trees, stream buffers and leave areas for wildlife, and trees that aren't threatened by beetles. In some areas, beetles have killed nearly all trees, and the harvest will approach a clearcut patch. In others, many trees will be left.

Appeals and litigation. On September 22, 1994, Trustees for Alaska and four other groups appealed the FY95-99 FYSTS in Anchorage Superior Court. There was no administrative appeal of the schedule. On October 25, the same groups asked the Anchorage Superior Court for an emergency stay of the auction of eight small timber sales. The Court denied the stay and the sales were auctioned. Trustees added the eight sales and the Falls Creek sale to their original lawsuit and expanded the list of appellants to nine groups and one individual. Since then, the individual, petitioned the court to withdraw from the suit and the court granted his petition.

On November 30, 1994 the same groups appealed the Kalgin Island FLUP to the DNR Commissioner. The Commissioner denied the appeal and Trustees requested reconsideration of the denial. The Department of Law counseled that reconsideration cannot be granted under current statutes. Trustees asked the Anchorage Superior Court for an emergency stay of the auction; the court denied the stay on January 11, 1995.

Trustees et. al and another individual filed appeals of the Falls Creek Sale with DNR in January, 1995. The DNR Commissioner denied both appeals. Trustees filed for an emergency stay; but their request was denied by the court February 7, 1995 and the sale was auctioned.

On June 5, 1995, the Court ruled in DNR's favor on a motion to recover expenses in the Trustees case. The Court ordered the appellants to pay the State $4,931 as the reasonable costs of preparation of the record filed to date.

Judge Souter denied two motions by Trustees on November 1, 1995. He denied a motion to add the FY 96-00 Five-Year Schedule to the case, stating that it is inappropriate to roll multiple appeals into one case, and that a court appeal of the FY 96-00 Schedule would require a separate case. He also denied a motion to submit an over-length brief and add 470 pages of new material to the record. He directed them to rewrite their brief and strike any references to their addendum. On March 21, 1997, Judge Souter ruled in DNR's favor on all counts. Appellants requested that the court reconsider whether they qualify as public interest litigants, which determines liability for court costs. The appeal period for Judge Souter's ruling will not close until the petition for reconsideration has been decided.

One person appealed DNR's coastal consistency finding on the Falls Creek sale to the Coastal Policy Council. The CPC reviewed the appeal and decided in DNR's favor on all counts.

On September 18, 1995, Trustees for Alaska appealed the final finding for the Crown timber sale to the Commissioner of Natural Resources. The Commissioner denied the appeal and DNR auctioned the sale.

Two individuals appealed DNR's forest management program to the Superior Court. They alleged that DNR was not harvesting enough timber to meet Constitutional direction to maximize use. The court ruled on all but one count in fall, 1994, and decided in DNR's favor on each count. Alaska Husky Wood, Inc. filed a similar case against the state in April, 1996. The state asked the court to consolidate this with the earlier case and the court agreed. On March 9, 1997 the court ruled in DNR's favor on all counts in this case. The court also awarded attorney's fees to the state. The appellants appealed the ruling, and the Supreme Court heard oral arguments on the case on November 19, 1997. A final ruling is expected within six months.

The Alaska Center for the Environment and the Anchorage Audubon Society appealed the Caribou Hills timber sale. On January 6, 1998, the Commissioner denied the appeals, and the sale was sold on January 8, 1998.

COPPER RIVER AREA

State land ownership and allowable cut. The State of Alaska owns 3.3 million acres of land in the Copper River Basin, of which approximately 30,000 acres is commercial timber. The estimated annual allowable cut on state land is approximately 200 acres per year. Vegetation mapping for state land in the Copper Basin is limited.

State forest land affected by bark beetles. In 1996, about 230,000 acres of land on all ownerships in the Copper Basin was infested by bark beetles. The infestation is still expanding in most areas. Most beetle activity is on federal or Native corporation land, however, state land is significantly impacted in some areas. Acreage figures for the amount of infested area on each ownership in 1996 are not yet available. Many areas are intensively infested with most of the white spruce killed by beetles. Many of the stands are pure white spruce and may convert to alder where the spruce are killed.

Proposed forest management. In FY 96, DNR received capital funds from the legislature for timber salvage, and we have expanded our timber sale program in the infested areas. DNR offered the first of the salvage sales in the Copper River in 1997, but received no bids for the timber. It is currently available over the counter. DNR also prepared about 6 MMBF in salvage sales for BLM on roughly 4,200 acres of federal land in the Copper Basin.

Timber sale planning and public involvement. DNR is currently identifying areas with potential for timber salvage and reforestation. We have also met with other landowners and interest groups to identify forest management issues that will be addressed through the Five-year Schedule of Timber Sales and Forest Land Use Plans for salvage sales. DNR began working with the public on these issues in 1994, but suspended the work temporarily due to lack of funding.

The first of the salvage sales are included in the FY 97-01 Five-year Schedule. Two sales totalling 3.8 MMBF were offered for sale in January, 1998, but received no bids. The sales are likely to be purchased over-the-counter if markets rebound.

HAINES AREA

State land ownership and allowable cut. DNR manages the 270,410-acre Haines State Forest. Within the Forest, 49,231 acres are commercial forest land available for timber harvest. The annual allowable cut on this land is 6.96 million board feet per year (an average of roughly 370 acres per year).

State forest land affected by bark beetles. The 1996 survey mapped about 16,000 acres of infestation, about 10,000 acres of which is state land in the Haines State Forest. It appears the total infested area is continuing to expand. About 51% of the commercial timber base -- 25,039 acres -- has been significantly infested by the spruce beetle. The beetles have killed from 50% to 99% of the spruce in these stands. A total of about 35,000 acres of state land has been infested since 1989 in the Haines area. The main forest type is a mix of Sitka spruce and hemlock. Future stands are likely to be dominantly hemlock in much of the infested area. The hemlock in this area is highly decadent, with 60% of the hemlock timber volume being pulp quality.

Proposed forest management. DNR sold approximately 22.7 MMBF of timber from the Haines State Forest from 1993-1995. In FY 96, DNR received capital funds from the legislature for timber salvage. With these funds we offered the 14.4 MMBF Thunder Creek salvage sale from 565 acres of infested land. Lynn Canal Conservation Society appealed this sale to the Commissioner of DNR. The Commissioner denied the appeal. The sale was offered, but not purchased due to low markets for pulp. We reconfigured the sale to include less timber (4.3

MMBF), and it was purchased in May, 1997. Several small salvage sales were also prepared and sold with this funding and we are continuing to offer small salvage sales. We expect to offer about 25 MMBF over the next five years.

Reforestation. All large sales require the purchaser to replant with Sitka spruce grown from a local seed source. On the small salvage sales, DNR provides the seedlings and contracts for planting.

Additional public involvement. DNR manages the state forest under the Haines State Forest Management Plan. The plan was adopted in 1986 after extensive public input.

OUTREACH TO PRIVATE LANDOWNERS

DNR also manages federal-funded programs in Forest Stewardship and Urban and Community Forestry. Four staff members in southcentral Alaska work in these programs. They assist communities and individuals with forest management plans, consult on forestry issues, and disseminate information on protecting private homes and trees from fire and insects.

The Forest Stewardship program provides landowner assistance through site visits, written plans, public workshops, and federal cost-share programs. Since starting, 156 stewardship plans have been prepared covering 13,600 acres of private land, and most of these address spruce beetle concerns. Spruce beetle abatement techniques used by individual landowners include sanitation harvesting, trap trees, pruning, and pesticide application. DNR Forest Stewardship staff have also conveyed grants to help five Alaska Native corporations in southcentral Alaska. The grants provide for multiple-use planning, and spruce beetle impacts have been a major consideration in preparing the plans.

CONDITIONS IN BRIEF

Annual aerial mapping is conducted to document where active forest damage is occurring, that is, where current defoliation or recently killed trees are located. These aerial surveys generally cover approximately 1/3 of the forested land in Alaska, however, surveying in the interior was hampered by smoke and inclement weather in 1997. Despite these limitations, insect and disease activity in Alaskan forests declined by one third to 1.7 million acres. Major declines in three of the four most active insects, spruce beetle, spruce budworm, and larch sawfly, accounted for this reduction.

INSECTS:

Active **spruce beetle** infestations declined by 50% from 1996 totals in both south-central and southeast Alaska to 563,741 acres. Many spruce stands are now 80-90% dead and have little or no susceptible host material remaining to support further spruce beetle activity. Visually, these stands appear to have few recently killed trees and the standing dead trees are grey in appearance. These stands are not mapped in the annual survey. It is estimated that over 2.3 million acres are in this condition as a result of spruce beetle activity over the last seven years. This factor accounts for the majority of active spruce beetle infestation reduction noted in 1997. Heavy mortality exists in most spruce stands in the lower Kenai Peninsula from Bradley Lake near Kachemak Bay northwest to Tustumena Lake and south to East End Road near Homer as well as the Copper River Valley. Although it may appear that the spruce beetle has run its course in many areas by removing susceptible host, areas remain where beetle populations could expand into.

The Homer area on the Kenai Peninsula experienced a tremendous beetle flight this year; more spruce trees will be showing red needles in 1998. The beetles have decimated most of the spruce stands in the main Copper River Valley; however, many side drainages remain under attack. Beetles have also been active in the Susitna River Valley for several years, although the loss of spruce will not be as devastating due to the hardwood forest component. Assuming that conditions favorable to beetle development continue, along with the presence of susceptible stands (i.e., stands composed of mature, even-aged, slow-growing spruce), it would be safe to predict that beetle activity is not yet over. However, it is not expected that beetle populations will reach the 1996 level of 1.13 million acres infested in the near future.

Total spruce beetle activity in southeast Alaska decreased from 35,700 acres in 1996 to 19,050 acres in 1997. The beetle outbreak in Glacier Bay National Park on the ridge east of Gustavus decreased as did the infestation at the mouth of the Stikine River. The beetle infestations in Haines and along the Taku River continued at 1996 levels.

The **spruce budworm**, which defoliated more than 230,000 acres of white spruce in 1996, declined by 84% in 1997 to 38,416 acres. Nearly all of the budworm activity has been confined to the Yukon and Tanana Rivers in interior Alaska. The major portion of this infestation has centered around Tanana; however, over the past two years the spruce budworm has migrated westward along the Yukon River to Ruby. Many trees in this area have severely diminished crowns having withstood budworm defoliation for several years. It is expected that this infestation will continue to decline toward endemic levels over the next few years.

Approximately 29,000 acres of hemlock and Sitka spruce were defoliated by the **Black-headed budworm** in Prince William Sound. While the Cordova area experienced some of the heaviest defoliation, most of the affected acres occurred in sheltered coves from Knight Island north to Valdez Arm and east to the Copper River. A warm, early spring and summer were advantageous for the budworm. If this warm, dry weather continues in 1998, budworm populations should increase in the Sound. The budworm populations are decreasing in southeast Alaska-- only 1,200 acres were affected. These populations often rise and fall over a period of a few years and result in some tree topkill and minor mortality.

In south-central Alaska, nearly 272,000 acres of birch showed signs of stress. This condition was caused by a combination of drought and insects. Large populations of **birch leafminer** were prevalent in the Anchorage bowl and **birch aphids** were reported throughout the Mat-Su Valley. The combination of drought and insects caused most birch leaves to prematurely turn brown.

Willow defoliation by the **willow leaf blotchminer** declined 93% in 1997 to only 3,501 acres. This outbreak, which was scattered throughout the interior, the Copper River Valley and the Anchorage area, peaked at 150,000 acres in 1992. Since then, the outbreak has been in decline and appears to be returning to endemic levels.

Two other insects of note are the larch sawfly and hemlock sawfly. This marks the fifth consecutive year of defoliation by the **larch sawfly**, but it appears that this infestation is waning, as populations fell by 56% in 1997. Some mortality of larch, attributed to five years of heavy defoliation, was noted near Fairbanks. In southeast Alaska, **Hemlock sawfly** defoliation levels decreased slightly from 8,250 acres in 1996 to 6,638 acres in 1997.

DISEASES:

The most important diseases and declines of Alaskan forests during 1997 were wood decay of live trees, root disease of white spruce, hemlock dwarf mistletoe, and yellow-cedar decline. Except for yellow-cedar decline, trees affected by these diseases are difficult to detect by aerial surveys. Nonetheless, all are chronic factors that significantly influence the commercial value of the timber resource and alter key ecological processes including forest structure, composition, and succession. Wildlife habitats are produced directly by wood decay fungi, hemlock dwarf mistletoe and spruce broom rust through the formation of tree cavities and witches' brooms.

In southeast Alaska, approximately one-third of the gross volume of forests is defective due to **heart and butt rot fungi**. **Hemlock dwarf mistletoe** continues to cause growth loss, top-kill, and mortality in old-growth forests; its impact in managed stands depends on the abundance of large infected trees left after harvesting. Some 477,000 acres of **yellow-cedar decline** have been mapped across an extensive portion of southeast Alaska. Snags of yellow-cedar accumulate on affected sites and forest composition is substantially altered as yellow-cedar trees die giving way to other tree species. Salvage opportunities for this valuable resource are now being recognized.

In south-central and interior Alaska, **root disease** continues to cause growth loss and mortality in white spruce stands. Impacts are greatest in young-growth managed stands where seedlings grow in close proximity to infected stumps. Volume losses of spruce due to **heart, butt, and sap rot fungi** are substantial; sap rot decay quickly develops and degrades spruce trees killed by spruce bark beetles. A high incidence of stem decay occurs in living hardwoods.

Foliar diseases of conifers had negligible ecological significance and were generally at moderate levels throughout Alaska in 1997, except for an outbreak of spruce needle cast in young-growth forests on Afognak Island. Canker and foliar fungi caused large, but unmeasured, damage to hardwood species in south-central and interior Alaska.

Other:

In localized areas of southeast Alaska, **porcupines** continued to cause tree defect and mortality to several conifer species and **brown bears** caused a high incidence of wounding on the lower boles of yellow-cedar.

'able 1. 1997 forest insect and disease activity (in acres) as detected aerially in Alaska by land ownership and agent[1]

Damage Agent	*State & Private*	*National Forest*	*Other Federal*	*Native Corp.*	*1997 Total*	*1996 Total*	*% Change*
Spruce beetle	263,187	14,773	142,462	143,319	563,741	1,130,756	-50
Engravers/spruce beetle	2,428	8	3,608	2,902	8,946	13,941	-36
Spruce budworm	21,326	--	8,637	8,453	38,416	235,936	-84
Black-headed budworm	3,725	17,657	578	8,882	30,842	1,227	+2,414
Conifer Defoliation	6,234	--	97	17,870	24,201	5,467	+343
Hemlock sawfly	447	5,961	--	230	6,638	8,251	-20
Spruce needle aphid	39	439	--	43	521	474	+10
Large aspen tortrix	3,913	--	582	588	5,083	6,447	-21
Birch defoliation	270,195	201	857	662	271,915	3,178	+8,456
Cottonwood defoliation	1,672	134	105	1,125	3,036	6,518	-53
Willow defoliation	2,202	--	220	1,079	3,501	50,112	-93
Larch sawfly	107,658	--	130,317	29,886	267,861	606,927	-56
Spruce needle rust	10	--	34	10,732	10,776	3,424	+215
Yellow-cedar decline[2]	6,971	454,656	----	15,913	477,540	474,864	+56
Porcupine damage	161	1,002	--	--	1,163	633	+84
Blowdown/windthrow	27	721	665	812	2,225	618	+260
Water damage	1,287	479	216	67	2,049	5,635	-64
Winter damage	1,755	898	295	--	2,948	--	+100
Landslide damage	111	123	156	59	449	498	-10
Total acres by ownership	**693,348**	**497,052**	**288,829**	**242,622**	**1,721,851**	**2,549,439**	**-32**

[1] Table entries do not include many of the most destructive diseases (e.g., wood decays and dwarf mistletoe) because these losses are not detectable in aerial surveys.

[2] Value of yellow-cedar decline is not restricted to the acreage with a high concentration of dying trees for this year, it represents stands that generally have long-dead trees, recently-dead trees, dying trees, and some healthy trees. See discussion of yellow-cedar decline for a detailed listing of affected acreage by island and Ranger District.

THE ROLE OF DISTURBANCE IN ECOSYSTEM MANAGEMENT

One premise of ecosystem management is that native species are adapted to the natural disturbances common to an area. Disturbance events are responsible for the way the current landscape appears and functions today, and will determine the structure and composition of future landscapes. In Alaska, glaciation, earthquakes, wind storms, fire, flooding, avalanches and landslides greatly affect ecological processes. These types of disturbances remove existing vegetation and often expose mineral soil for new plants to become established.

Disturbance events such as insect and disease outbreaks also result in shifting landscape patterns. These disturbances usually affect only a few species directly, while indirectly affecting the remaining species through reduced competition or changes in forest structure. Changes resulting from these types of disturbances often occur over varying time periods, but can be very dramatic and cover large areas. Spruce beetles have radically affected the landscape in a single decade, heartrots and other internal diseases operate for decades, whereas yellow-cedar decline has been occurring for nearly 100 years.

To a certain extent, we can predict what type of disturbance is likely to occur in a particular area: fires are frequent in interior Alaska and wind storm events are important in southeast. Spruce beetles are an important disturbance agent in south-central Alaska. Disturbance agents and patterns are generally tied to geography, climate, and vegetation. When we understand the complexities of these relationships, we are able to predict and respond to natural disturbances and mimic the desirable effects with management activities. Ecological classification is one tool available to help us understand disturbance patterns.

Many useful systems of classification have been developed for Alaska's ecosystems and vegetation. Refining and standardizing these classifications across all ownership's will promote effective ecosystem management. ECOMAP (1993) is one system of ecological classification that the Forest Service has adopted and continues to develop. Within this hierarchical system, ecosystems are delineated at multiple scales using different sets of environmental factors. The levels established at this time include Domains, Divisions, Provinces and Sections. Domains represent subcontinental climatic zones. Divisions and Provinces represent climatic subzones as reflected by dominant lifeforms (meadows vs. forests) and broad vegetation types, respectively. Sections are distinguished mainly by geomorphic and topographic features. The Section level is the first level of the hierarchy where analysis of insect and disease activity becomes applicable.

In this edition of the Forest Insect and Disease Conditions in Alaska, we introduce and make reference to the Ecosystem Sections of Alaska (Map 1). This map was developed in the Alaska Region (Nowacki and Brock 1995). Section descriptions are included in Appendix C with a list of damaging agents reported during the 1997 aerial survey. Only Sections that were covered in this year's survey are described. As the ecological hierarchy classification and mapping are developed to finer scales, they become more valuable as management tools to predict the impacts of various disturbances on forest resources.

Map 1. Ecosystem Sections of Alaska

Polar Domain, Subarctic Division,
131 - Yukon Intermontaine Taiga Province
131A - Yukon Bottomlands Section
131B - Kuskokwim Colluvial Plain Section
M131A - Upper Kobuk-Koyukuk Section
M131B - Nulato Hills Section
M131C - Kuskokwim Mountains Section
M131D - Nushagak-Lime Hills Section
135 - Alaska Range Taiga Province
135A - Copper River Basin Section
M135A - Northern Chugach Range Section
M135B - Wrangell Mountain Section
M135C - Alaska Range Section
139 - Upper Yukon Taiga Province
M139A - Ray Mountain Section
M139B - Ogilvie Mountain Section
M139C - Dawson Range Section

Humid Temperate Domain, Warm Continental Division
213 - Alaska Mixed Forest Province
213A - Bristol Bay Lowlands Section
213B - Cook Inlet Lowlands Section
M213A - Northern Aleutian Range Section
M213B - Kenai Mountains Section

Humid Temperate Domain, Marine Division
244 - Pacific Coastal Icefields Province
M244A - Chugach Range Section
M244B - St. Elias Range Section
M244C - Boundary Range Section
245 - Pacific Gulf Coast Forest Province
245A - Gulf of Alaska Forelands Section
M245A - Gulf of Alaska Fjordlands Section
M245B - Alexander Archipelago Section

STATUS OF INSECTS

INSECTS AS AGENTS OF DISTURBANCE

Alaska's insect populations are one of the most significant components of its forest ecosystems. Arctic/boreal insects are characterized by having few species and large population numbers. These insects are opportunistic in their behavior. They respond quickly to changes in climate and the availability of food and breeding material. The spruce beetle, for example, responds quickly to large scale blowdown, fire scorched trees, or spruce injured by flooding. Large numbers of beetles can be produced in such breeding material, leading to potential outbreaks.

Spruce beetles are one of the most important disturbance agents in mature spruce stands in Alaska. A variety of changes occur to forest resources when many trees are killed. Ultimately, these changes are biological or ecological in nature. There are also socio-economic consequences that can be viewed as either positive or negative, depending on the forest resource in question. Some of the impacts associated with spruce beetle infestations include, but are not limited to:

1 **Loss of merchantable value of killed trees**. The value of spruce as saw timber is reduced within three years of attack in south-central Alaska as weather checking and increased sap-rots occur. The value of a beetle killed trees as house logs, chips, or firewood continues for many years if the beetle-killed tree remains standing.

2 **Long term stand conversion**: The best regeneration of spruce and birch occurs on a seed bed of bare mineral soil with some organic material. Site disturbances such as fire, windthrow, flooding, or ground scarification provide excellent sites for germination and establishment of tree species if there is an adequate seed source. However, on some sites in south-central Alaska, grass and other competing vegetation quickly invade the sites where spruce beetles have "opened up" the canopy. This delays re-establishment of tree species.

3 **Impacts to wildlife habitat**: Wildlife populations, which depend on live, mature spruce stands for habitat requirements may decline. We expect to see decreases in red squirrel, spruce grouse, Townsend Warblers, and possibly Marbled Murrelet populations. On the other hand, wildlife species (moose, small mammals and their predators, etc.) that benefit from early successional vegetation such as willow and aspen may increase as stand composition changes.

4 **Impacts to scenic quality**: Scenic beauty is an important forest resource. It has been demonstrated that there is a significant decline in public perception of scenic quality where spruce beetle impacted stands adjoin corridors such as National Scenic Byways. Maintaining or enhancing scenic quality necessitates minimizing impacts from spruce beetle infestations. Surveys have also shown that the public is evenly divided as to whether spruce beetle outbreaks damage scenic quality in back-country areas.

5 **Fire hazard**: There is concern that fire hazard in spruce beetle impacted stands will increase over time. After a spruce beetle outbreak, grass or other fine vegetation ground cover increases; fire spreads rapidly through these vegetation types. As the dead trees break or blow down (5-10 years after an outbreak), large woody debris begins to accumulate on the forest floor. This wood is the heaviest component of the fuels complex. Heavy fuels do not readily ignite, but once ignited they burn at higher temperatures for a longer period. The combination of fine, flashy fuels and abundant large woody debris results in a dangerous fuels situation. Observations from

recent fires on the Kenai Peninsula have shown an increase in crown fires. This fire behavior is caused by fire traveling up the dead spruce trees and spotting into the crowns of adjacent beetle killed trees. In some areas, there may be an increase in the lower level winds because of a "reduction" of the wind-break characteristic of a green forest, thus augmenting fire crowning behavior.

6 **Impact to fisheries**: If salmon spawning streams are bordered by large diameter spruce and these trees are subsequently killed by spruce beetles, there is a concern as to the future availability of large woody debris in the streams. Large woody debris in spawning streams is a necessary component for spawning habitat integrity.

7 **Impact to watersheds**: Intense bark beetle outbreaks can kill large amounts of forest vegetation. The "removal" of significant portions of the forest will impact to some degree the dynamics of stream flow, timing of peak flow, etc. There have been no hydrologic studies in Alaska quantifying or qualifying impacts associated with spruce beetle outbreaks. Impact studies, however, have been done elsewhere. In Idaho watersheds impacted by the Mountain Pine Beetle, there was a 15% increase in annual water yield, a 2-3 week advance in snow-melt, and a 10-15% increase in low flows.

There are a variety of techniques that can be used to prevent, mitigate, or reduce impacts associated with spruce beetle infestations. However, before pest management options can be developed, the resource objective(s) for a particular stand, watershed, landscape, etc. must be determined. The forest manager must evaluate the resource values and economics of management actions for each stand in light of management objectives. The beetle population level must also be considered because population levels will determine the priority of management actions and the type of strategy to be invoked. The key to forest ecosystem management is to manage vegetation patterns in order to maintain species diversity, both plant and animal, while providing for a multitude of resources such as recreation, fisheries, wildlife, and the production of wood fiber. Properly applied silvicultural practices as well as fire management in south-central and interior Alaska, can maintain the forest diversity needed to provide the range of products and amenities available in the natural forest for now and in the future.

Terry T. Brady, certified forester*
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By Telefax: House Resources Committee
Attn: Kathleen Moore
1-907-465-32655

March 12, 1998

TESTIMONY RE HOUSE BILL 284
An Act relating to infestations and diseases of timber

My Name is Terry T. Brady. I am a certified forester. I have a Master of Science degree from the College of Forest Resources, Univ. of Washington. I have been actively involved in Alaskan natural resource issues since the late 1950's, in all parts of the state. I have also been an international forestry and forest products consultant, with clients in Canada, Scandinavia and the Far East.

Three key Alaska forest related laws must be considered when contemplating proposed House Bill 284, and its strengthening of Alaska's Forest Resources and Practices Act., AS 41.17 et seq. These are:

AS 41.15.010. Intent

It is the intent of AS 41.15.010 - 41.15.170 to provide protection.

commensurate with the value of the resources at risk, for the natural resources
and watersheds on land that is owned privately, by the state, or by a municipality.

AS 41.15.020. Regulations

The commissioner shall, by regulation, make provision for the protection of
forested land in the state from fire and other destructive agents.

AS 41.17.010. Declaration of intent

The legislature declares that

(1) the forest resources of Alaska are among the most valuable natural
resources of the state, and furnish timber and wood products, fish and wildlife,
tourism, outdoor recreation, water, soil, air, minerals, and general health and
welfare;

(2) economic enterprises and other activities and pursuits derived from
forest resources warrant the continuing recognition and support of the state;

(3) the state has a fundamental obligation to ensure that management of
forest resources guarantees perpetual supplies of renewable
resources, provides nonrenewable resources in a manner consistent
with that obligation, and serves the needs of all Alaska for the many
products, benefits, and services obtained from them;

If the intent and legislative direction of these laws are being followed, then there is no need to implement HB 284.

However, on review, these laws are not being followed. The State is not protecting state, municipal and private land from fire and other destructive agents (AS 41.15.)

The state is not meeting its fundamental obligation to ensure management of forest resources to provide for the needs of forest consumers, whether industrial or not.

The evidence is in the millions of acres of dead, dying and threatened forests, impacted in great part by the largest infestation of bark beetles ever recorded.

Thus, the mandates of HB 284 are needed, provided the Legislature is willing to back its own laws. I advocate that HB 284 be passed.

Sincerely,

The frozen chosen:
ARCTIC CARE '97

Going for the gold in 2001 PAGE 4

LOCAL NEWS Vying for a seat on the phone board PAGE 24

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24 pages plus inserts Successor to Chugiak-Eagle River Alaska Star March 6, 1997

Beetle outbreak largest in history

Eagle River Valley tree kills double, Eklutna area tree kills quadruple

By KRISTEN SEINE
Alaska Star News Editor

According to a report soon to be released by the U.S. Forest Service, spruce bark beetle damage to Anchorage, Eagle River and Eklutna area trees has reached unprecedented proportions. That has caused the risk for wildfire to skyrocket as well, making Eagle River one of the state's top hazardous areas.

In the last year, the Forest Service has mapped 21,350 acres of infested or killed trees — up from just over 8,000 the year before, a 260 percent increase, said Integrated Pest Management Technician Michael Fastabend of Alaska Cooperative Extension.

Eagle River Valley saw a similar increase, he said, up from 2,300 acres a year ago to 5,800 this year — roughly 250 percent.

Some of the worst numbers in the state, however, are found in the Eklutna Lake and valley area. Damage there has more than quadrupled in the last year, from 2,000 acres to 8,900, Fastabend said.

The destruction will reshape our state's forests, Fastabend said, and Anchorage is sitting "almost dead center" of this disturbance.

The ramifications

That will have several effects on local land and homeowners, Fastabend said. First off, property values of affected areas may go down substan-

(Please see BEETLES, Page 2)

(Continued from Page 1

The dry winter season of 1995 is said to have been a major contributing factor in the Miller's Reach Fire, which destroyed thousands of acres in the Big Lake area last summer.

Fastabend said that from talking with homeowners and water quality experts, it appears that local water well levels are dropping. "There has been no recharge of the water table," he said.

And warm weather has caused many trees to go into metabolic production. "You've probably noticed the buds on many of the trees," Fastabend said.

"By the time the spruce kick in, they're going to be sitting on bone-dry ground."

These conditions are stressful for the trees and great for the beetles, which thrive on weakened ...s. "What usually happens with ...sect populations such as these," Fastabend said, "is they hit a J-curve; they hit a certain point and their population starts to double.

"What's happened to our population here is that they've turned this corner, and there are no geological conditions that are turning them back."

The solutions

While most people aren't worrying about tree infestations or wildfires in March, Fastabend said right now is the time to take action.

It is getting close to the time when beetles attack trees for new breeding ground, Fastabend said. "The beetles are going to fly here within the next twelve weeks, probably by the beginning of June."

It may be even sooner than that, however. Last year the bugs flew on May 12 — the earliest date since records have been kept.

There is much landowners can do this time of year to prevent both future beetle outbreaks and the hazard of fire. "Right now is the ideal time for clearing (dead and weakened trees)," Fastabend said, "because you can knock them down easily and just slide them away.

"It's easy to get around in the woods," he added. "Plus, with the leaves gone, you can really take a look at what the vegetation is."

And as soon as the ground thaws, Fastabend recommends watering spruce trees — "especially the ones around your house. They will not only be less attractive to beetles, but there will also be less risk of a fire."

Fastabend gives several classes through the Alaska Cooperative Extension on defensible space and beetle control. The extension also provides free literature on beetle control and does free visits to determine infestation (for more information, call 279-5582).

A new direction

While some areas have such a high percentage of already-dead trees, it may seem too late, people like Fastabend are not giving up. And "more and more people are paying attention," he said.

Last fall, the joint House/Senate Natural Resources subcommittee held hearings on the spruce bark beetle problem, and Fastabend was there to testify. "Many legislators — Gail Phillips in particular — have expressed interest in doing something about it," he said.

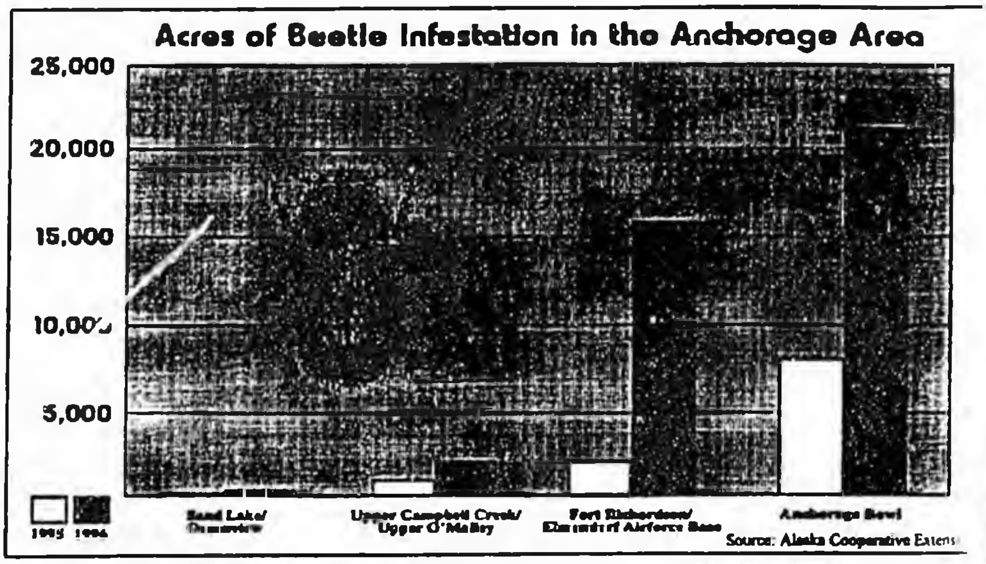
And it may be one of the worst-hit areas in the state that will be leading other areas in the fight to stop the beetle. The city of Homer has received a $40,000 grant to develop a comprehensive plan, even though "there is 90-95 percent mortality in all the trees in Kachemak Bay and the beetles are going into the city," Fastabend said.

Members of the Homer City Council, along with master gardeners and other forestry groups, have come together and committed to stop the spread of the beetl... "They're spraying the trees with the municipality and also look... at spraying 3 1/2 acres along ... Pratt Museum nature trail as we..." Fastabend said.

The city's planners are do...menting what they've done ... their results, with the hope tha... master plan will be developed th... can be followed in other comm...nities.

Even here in Anchorage, s... communities have banded toge... but on a smaller scale, Fastabe... said. Homeowners in Valley Vi... near the prestigious O'Malley H... side area, have come together a... contracted out for spraying inse... cide on some of the weaker tre...

Fastabend hopes that is a p... more communities will take in ... future. "It starts with the reco... tion that if we don't do anythi... there won't be anything left."



(Continued from Page

their name away."

Assemblyman George Wuerch ...d he felt the land-use permit contingent upon an archeological study. Wuerch said he questioned whether the problem was an ar... However, if the company did in fact come across a body while developing the site, Granger said NBA

The village, Stephan said, ... doing all that it could to fight ... project, but that it was having

Anc. Daily News 3/26/98

Fire threat heightens in Homer

Spruce bark beetle, dry weather to blame

By JON LITTLE
Daily News Peninsula Bureau

SOLDOTNA — Homer's East End Road may become a wildfire-response model this summer under plans being generated by the Kenai Peninsula Borough's spruce bark beetle task force.

The rural road may see wider shoulders, cleared "sites of refuge" and repairs along rutted side roads so heavy emergency trucks can get through.

Also, people living on the southern Kenai Peninsula probably will be deluged with all the pamphlets and meetings they can handle as various agencies try to get the word out on how to avoid losing lives and homes to wildfire.

People living on the southern Kenai Peninsula probably will be deluged with all the pamphlets and meetings they can handle.

The beetle task force plans to issue its complete list of ideas later this week, but fast action around Homer was high on the group's agenda Wednesday at the end of a two-day discussion.

East End Road, from eight to 20 miles outside Homer, is a narrow country road crowded on both sides by old stands of tightly packed spruce, now dying from the ongoing infestation of bark beetles. People have built homes among the trees.

While fire risk from dead spruce is a complex issue, task force members are operating under the assumption that dead trees will ignite easier than moist living trees. On a dry day, they say, dead forests will ignite with little more than a dropped match. Add wind to the mixture, and the result could be the kind of fast-moving wildfire that ravaged Big Lake in June 1996.

The fear is, such a wildfire could bear

Please see Page B-3, **FIRE THREAT**

FIRE THREAT: Homer facing dangerous season

Continued from Page B-1

down on East End Road and trap people on the wrong side of the dead-end road.

One idea kicked around by the panel was to accelerate parts of the state's road construction plans for East End Road. The rutted old pavement is due for repairs in a couple of years, but Borough Mayor Mike Navarre said perhaps the state can get a jump on clearing the right of way of trees. Paving still could be completed later.

Another idea was to carve small clearings along the road that might serve as refuges — places where someone could hunker down a few hours if fire blocks the road.

While East End Road is considered a critical fire risk, it is not the only place where people have carved out homes on the edge of the Peninsula's vast wildlands. Task force members suggest governments come up with a list of all the Peninsula's high-risk areas.

The entire region south of Tustumena Lake, the location for most of the Peninsula's beetle infestation, is seen as a hot zone, they said.

Beyond immediate fire risk, the panel is considering recommendations for future studies of the Peninsula's vegetation patterns and the effect of roads on fire risk to help agencies make decisions as they react to the spread of beetles.

The task force was funded by a $500,000 grant from the U.S. Forest Service. It has until June 30 to file a report.

Fire season, meanwhile, begins Wednesday along the south-facing Homer benchlands as snow melts and before moist spring grasses have emerged.

A series of public meetings has been scheduled to discuss the beetle problem and the panel's conclusions. They are set for April 14, from 1 to 5 p.m. and 7 to 9 p.m. at the Borough Building in Soldotna; April 15, from 9 a.m. to 3 p.m. at the Borough Building and then 7 to 9 p.m. the same day at the Bidarka Inn in Homer; and April 16, from 10 a.m. to 3 p.m. again in the Borough Building, followed by a 7-to-9 p.m. meeting at the Moose Pass school.

ning on renters

Spruce Bark Beetle as a "Keynote" species.

MAN AS A "keynote" species

Dr. Ed. Packee of UAF states that the spruce bark beetle is a "key note species" capable of "changing the forest". However, man is the most powerful keynote species there is. Clearcutting has no rival in terms of ecological disturbance. Deadwood is more valuble in a forest than in a government office. Deadwood in a forest decomposes, and adds nutrients to the soil. H.B. 284, logging the forest to save it, is an oxymoron.

Sincerely,

Erik Holland

(Article by Toos OMZIGT FDNM 8.24.97)

HODGIN'S DISEASE—CLEARCUT OUR FOREST TO SAVE IT!

Sometimes people get full of themselves. Kenai area Representative Hodgins, has suddenly decided he can manage a forest better than the Creator. This hubris could be called Hodgin's disease., and thanks to this gentleman's inordinate pride a war has been declared on our wild Interior forest. Citing "forest health", Representative Hodgins has sponsored the "MUST LOG AT ANY COST BILL'" Legislation already exists that allows the state to log beetle kill, but HB 284 stipulates that the commissioner of natural resources MUST log any timber infested or diseased, or even trees that just could become infested! ~~become infested~~! Since the beetles, like the bears [illegible] and moose are forest wildlife, that means ANY tree could be logged.

THE MUST LOG AT ANY COST BILL: Does not recognize regional differences in the severity of beetle infestation. According to specialist Toos OMZIGT of the University of Alaska, the spruce bark beetle is not a huge problem in Interior Alaska. This phantom problem is really just yet another attempt to throw open even wider the doors to large-scale logging in Interior Alaska. If HB 284 becomes law, up to 200 acres of perfectly healthy trees could be found "susceptable to infestation or disease" and logged at a financial loss to the state without public notice and waiving all land use laws.

BUSTS THE BUDGET TO DESTROY THE FOREST. At a time of shrinking budgets,, and crashing oil prices , we need to to support our university and maintain our roads—not clearcut or forest in order to "save it". The attached fiscal note ~~totals~~ is 615,000. The bill goes too far and costs too much.

THE CURE IS WORSE THAN THE DISEASE. A standing forest, even with some dead trees, helps control erosion, provides habitat to wildlife, and presents scenic values which help support the visitor industry. Although it may be desirable to clear some areas near homes, to address debatable fire danger, forest fires (and beetles)are a natural part of the the boreal forest. In addition, large scale logging to "control" the beetle will do nothing for Alaska's wildlife. In DNR's own words: "We have not been able to find a wildlife manager who believes that the spruce bark beetle will be detrimental to wildlife in the long term.. Likewise , we have not been able to find a fisheries biologist that believes the epidemic will have a long term impact on fish habitat or water quality. Also, the wildlife managers we know are reluctant to say that logging, even if done well, will have fewer impacts than letting the epidemic run its course.(then State Forester Tom Boutin, DNR testimony before joint House/Senate Resourses Committees, September 27, 1996)

I think its clear that nature does a better job of conserving wildlife habitat than logging companies!

TAKES A CHAINSAW TO LOCAL PUBLIC PROCESS. A federally funded task force is presently meeting in the Kenai to work on solutions to the beetle problem. Different regions of this subcontinent sized state have different problems. It is much wiser to allow the Kenai locals to work out their own solution than it is for the legislature to throw money we don't have as an emotional response to a problem that might not exist!

Sincerely
Erik Holland
Fairbanks.

P.O. Box 2994
Homer, AK 99603
March 24, 1998

Representative Bill Hudson
Alaska State Legislature
State Capitol
Juneau, AK 99801-1182

Dear Representative Hudson:

H.B. 284 should not be passed. The spruce bark beetle infestation, bad as it is, should not panic the state into unsound forestry practices that may result in enormous hidden costs later.

The bill's language seems to imply that the state may try to force private land owners into logging their timber if beetles are present. Some landowners do not see the beetle infestation as an emergency, but rather as a natural process exacerbated by drought and poor development practices in clearing slash. Private landowners should not be forced to log their property as seems to be implied in the language of this bill.

The way this bill is written, virtually all of the forest on the Kenai Peninsula would have to declared infested or in danger of being infested and therefore should all be logged as fast as possible. Forests do die naturally and subsequently regenerate. Undisturbed forest is important habitat for sensitive populations such as the Kenai Peninsula brown bear. There is no emergency to log remote forests and destroy important wildlife habitat.

Proceeding with salvage sales regardless of cost to the State is poor economics. We are trying to hold the line on the State budget, yet this bill proposes offering timber sales that are likely to cost the sState thousands of dollars. In the long run, if emergency sales occur without benefit of plans of operation and the safeguards of the Forest Practices Act, the State's economy could suffer through decline or loss of fisheries damaged by erosion and silty runoff from logged areas, loss of revenues from tourism, and additional costs to the State in rehabilitating the salvage logged areas. Not only is there no real short-term gain to the State, but the likelihood of environmental damage is quite high based on the losses heavily logged areas in the Lower 48 have accrued.

I urge the House Resources Committee not to pass this bill out of committee. Let the Bark Beetle Task Force make their recommendations and look at what the experts will be saying at the symposium in July on managing Boreal forests. A carefully planned approach based on sound science will protect our forests better than the proposed salvage logging without rules.

Sincerely,

Nina Faust

Nina Faust

cc Rep. Gail Phillips, Senator John Torgerson

Testimony of Bruce H. Baker on HB 284

"An Act relating to infestations and diseases of timber"

Alaska House Resources Committee

Juneau

March 23, 1998

I'm Bruce Baker and live in Juneau. I was employed by the U.S. Forest Service for 12 years as a forester and forest insect specialist. I've worked on forest insect populations throughout Alaska, including spruce beetles on the Kenai Peninsula. I also served 11 years as a deputy division director in the Alaska Department of Fish and Game. My wife and I own a small woodlot.

HB 284 is bad public policy. It's narrow-minded, caters to special interests, lacks either an economic or biological basis, and bars the public and public agencies from the DNR decision process. Here are eight reasons why.

✓ **First**, the bill uses native forest insects and diseases as excuses to fast-track timber sales. I cannot think of a single native Alaskan forest insect or disease, the buildup and spread of which is likely to be affected over a significant area by salvage logging dead standing trees. Forest insect populations and diseases build up when forest conditions become favorable for them to do so. This bill confuses symptoms with underlying cause. It confuses the salvage utilization of wood fiber with basic forest biology.

✓**Second**, the bill makes it a requirement that DNR enter a salvage agreement with a private owner or public manager. Native forest insects and diseases are natural disturbance events, and even when some of them reach levels alarming to humans, they play important roles in natural forest habitat renewal. Wildlife managers, commercial tourism businesses, non-commercial recreationists, and private forest owners may define forest health and the need for salvage very differently than DNR and the timber industry do.

✓ **Third**, this bill requires that if infested or diseased trees on state or municipal land are thought to pose "an environmental catastrophe," timber is to be "salvaged as rapidly as possible." A "catastrophe" is in the eye of the beholder, and by ignoring effects on wildlife, the bill ignores the state's Constitutional mandate that all renewable resources be managed on the sustained yield principle. The bill ignores the question of whether the alleged benefits of timber salvage and logging roads would justify their adverse impacts on wildlife or recreational opportunities. For example, it has been demonstrated that increased roading can be damaging to brown bears because of increased poaching and the killing of bears in the name of protection of life and property.

✓ **Fourth**, the bill amends existing law (AS 41.17.082) by allowing DNR to put up salvage sales less than 200 acres without preparing a plan of operations that is subject to agency and public review under the state's Forest Practices Act.

✓ **Fifth**, the bill implies that salvage of dead trees can be expected to "eliminate" an insect or disease condition. There is no evidence that a native forest insect or disease can be "eliminated" from Alaska, and it is misleading to the public to suggest otherwise.

✓ **Sixth**, the bill fails to acknowledge alternative means of preventing or reducing fuel accumulation that results from years of fire suppression in fire-prone forests. An obvious option would be the use of prescribed burning in which site access is by helicopter rather than roads.

✓ **Seventh**, the economics of HB 284 are seriously flawed because (a) it requires state salvage sales regardless of whether they turn a profit, and (b) it fails to acknowledge the economic values of resources that may be negatively impacted by the effects of logging and increased roading.

✓**Eighth**, by forcing big government down the throats of private forest owners, the bill is an invasion of private property rights. A private forest owner's only recourse will be to show in court how salvage of their dead timber will not benefit adjacent landowners.

Thank you.

ALASKA STATE CHAMBER OF COMMERCE

Resolution 98-7

Restoring the Viability of Alaska's Forest Products Industry and Declaring an Environmental Emergency in the Spruce Bark Beetle Infestation

WHEREAS, the purpose of timber sale programs on federal lands is to maintain a year-round employment base "on an environmentally responsible and permanent economic basis", as set forth by Congressional action; and

WHEREAS, Alaska's Forest Products Industry historically has provided over 4,000 direct and 4,000 indirect jobs across the state which has been reduced to 2,600 jobs; and

WHEREAS, sales on U.S. Forest Service lands also generate millions of dollars annually in stumpage allocations for support of schools and roads in the harvest areas; and

WHEREAS, the rebuilding of the timber industry would provide many additional benefits to communities, such as new road systems for recreational access and access for fish enhancement work; and

WHEREAS, capital expenditures for expansion and conversion into a more economically stable "value added" forest products industry require more than ten years to capitalize; and

WHEREAS, the U.S. Forest Service confirms there is an ample long-term supply of high-quality accessible timber on federal lands within Alaska to sustain a viable forest products industry; and

WHEREAS, there are also millions of acres of State lands with marketable timber, the harvest of which would improve the economic base statewide, and

WHEREAS, the industry has lost two pulp mills and the largest sawmill, resulting in the loss of hundreds of direct jobs in Southeast Alaska alone; and

WHEREAS, many committed sales on federal lands have also been withdrawn for wildlife and other environmental issues even though all federally mandated studies have proven the sales to be "environmentally responsible;" and

WHEREAS, sales from State lands have not received sufficient administrative or legislative support to stabilize the existing industry and/or rebuild the economic and employment base to other parts of the state;

WHEREAS, more than 3,000,000 acres of spruce forest ecosystems in South Central and Interior Alaskan Forests have been devastated in the largest infestation of spruce bark beetle ever recorded in North America by entomologists tracking spruce beetle infestations; and

WHEREAS, the massive infestations in Alaska's white spruce forests destroy or greatly reduce the sustainable values of forests, wildlife, fisheries, tourism and other resources; and

WHEREAS, the beetle infestations have greatly accelerated and actively destroyed valuable habitat on both public and private lands which are essential for many forest dependent species; and

WHEREAS, the spruce bark beetle infestations have spread into populated areas, greatly diminishing property values and increasing the risk of forest fires, which are a threat to life and property; and

WHEREAS, the timber infested by the spruce bark beetle being extremely dry, is highly prone to wildfires, creating a danger to communities, property, wildlife, watershed, fish habitat, recreation and healthy forest areas; and

WHEREAS, the cost of fighting these natural disasters is economically debilitating, while reducing the occurrence of these natural disasters is achievable; and

WHEREAS, a number of Alaska native regional and village corporations have acted to deal with this infestation and these areas may serve as examples for treatment elsewhere; and

WHEREAS, the State of Alaska is bound by its constitution under Article 8, to manage its renewable resources for sustained yield and for multiple use purposes;

THEREFORE, BE IT RESOLVED that the Alaska State Chamber of Commerce supports the efforts of the Alaska forest products industry not only to rebuild to its historic economic and employment levels but also its efforts to expand the industry into other areas of the state, thus providing new jobs and business opportunities; and

BE IT FURTHER RESOLVED that the Alaska State Chamber of Commerce supports the forest products industry's position that an "Allowable Sales Quantity" should be established and met on all public lands within Alaska and further supports the industry's position that the Administration and Legislature should rebuild and encourage growth in its forest products sales program on public lands consistent with the sustained yield principle embodied in the State of Alaska Constitution.

BE IT FURTHER RESOLVED that the Alaska State Chamber of Commerce supports the declaration of an environmental emergency, recommended by Alaska's legislative leaders, urging appropriate action by the State, in partnership with local governments, the private sector, federal forest managers and others, to deal with this epidemic and initiate action to restore key forest ecosystems devastated by the beetle.

ADOPTED

December 5, 1997

BY Pamela La Bolle
Pamela La Bolle
President

BY David W. Marquez
David Marquez
Chairman, Board of Directors

JUNEAU RESOURCE ALLIANCE STATEMENT ON HB 284
"An Act relating to infestations and diseases of timber"

The Juneau Resource Alliance was organized in the late 1980's to promote the protection and sound management of Alaska's natural resources and to support the environmentally sound use and development of those resources for the benefit of the people of Juneau, Southeast Alaska and other regions of our great state.

Insect and disease activities are a natural part of all forests. Although spruce bark beetles are endemic or natural to Alaska's spruce forests, the infestations by the spruce beetle have reached unprecedented and epidemic levels in many parts of Southcentral Alaska over the past five years with over three million acres of spruce forests devastated by these insect infestations during that period of time. In addition to the loss of valuable habitat for various birds, wildlife and fish, the massive amount of dead trees increase the potential threat of forest fires which can be a real threat to communities, property and the lives of people living within or adjacent to these forests. These insect infestations have even extended into parts of Southeast Alaska.

The Juneau Resource Alliance supports HB 284, "An Act relating to infestations and diseases of timber". This proposed legislation will assure the identification and location of infestations in the early stages of development. Government agencies, private landowners, communities and individuals can then develop effective measures to control or manage these infestations before they reach epidemic levels.

HB 284 provisions for salvaging dead timber and reforesting areas will help retard the spread of infestations and set the stage for restoration of spruce forest ecosystems essential to many species of wildlife and will help assure the protection of Alaska's fisheries dependent upon the water quality of those streams. This proposed legislation will not only benefit the resources of the forests, but the communities and people dependent on them as well. The Resource Alliance strongly supports this bill.

Thank you.

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Forest Health: A Growing Problem In Alaska's Forests

About 400,000 acres of the Tongass National Forest have been logged in the 40-plus years since timber harvesting began in earnest. Unless you knew what you were looking for, you would have a hard time locating the earliest harvest sites. Forests that were laid bare in 1953 are today covered by dense stands of spruce trees, some more than 60 feet tall. It is a tribute to the resiliency of nature and the productivity of southeast Alaska's forests.

What loggers have harvested here since 1953 pales when compared to what nature has harvested by fire, wind, flooding, glacial activity, earthquakes, insects and disease. A 1994 U.S. Forest Service/Alaska Department of Natural Resources report recites a litany of insects and diseases currently eating their way through 1.7 million acres of public and privately owned forest land across the state.

Chief among the insects is the spruce beetle, a quarter-inch-long killer that bores through the bark of spruce trees, eventually girdling them. Since they were first noticed in the summer of 1989, spruce beetles have chewed their way through more than 700,000 acres of mostly virgin spruce.

What – if anything – should be done about spruce beetles and a dozen other insects that are killing millions of Alaska's trees is a matter of increasing public interest? Some believe infected timber should be harvested while it can still be used, and to prevent the further spread of disease. Others regard these infestations as natural occurrences that should be allowed to run their course. A 1991 state Division of Forestry survey of residents in Anchorage and on the Kenai Peninsula found strong support for salvage logging, burning and replanting along highways and near homes and campgrounds, but there was less support for fighting insects and diseases in more remote regions.

Massive insect and disease infestations are not new to Alaska's forests. In fact, large scale ecological disturbances have been shaping and reshaping Alaska's forests for eons. There is evidence much of the southern Kenai Peninsula was a grassland when Captain James Cook explored the region in the late 1700s. Today, the area is covered by a forest of spruce and birch 100 to 150 years old. Pioneer diaries describe great forest fires in the Alaska interior, much like those witnessed by settlers westbound on the Oregon Trail. Gold miners and fur traders working the Kenai in 1893 reported seeing fires burn all summer. Most of the trees now growing in the Kenai National Wildlife Refuge apparently came in after this fire.

One of Alaska's most respected insect and disease experts is Roger Burnside, Insect & Disease Forester with the Alaska Department of Natural Resources. In a 1994 research paper titled, "Alaska Forest Health and the Spruce Beetle, With Emphasis on Southcentral Alaska, Kenai Peninsula Region" Mr. Burnside described "massive spruce beetle activity" in Alaska's southcentral and interior forests.

"(It) is a significant problem for resource managers and individual landowners," he wrote. "As of 1993, over 720,000 acres of new and ongoing spruce beetle activity have been mapped through Alaska by cooperative federal and state forestry surveys."

The sheer size of the outbreak, and the remoteness of most Alaska forests makes large-scale treatment difficult, if not impossible. "Quick responses and quick fixes are equally problematic since, in many cases, we are dealing with entire watersheds," Mr. Burnside wrote. "And in Alaska, these areas can amount to hundreds of thousands of acre blocks (scattered across) some 130 million acres of forested land area. Here there is no luxury of economy of scale (and there are no) contiguous boundaries."

The 1994 Forest Service/DNR report describes spruce beetles as "one of the most important mortality agents of mature spruce stands in Alaska," Mr. Burnside agrees, noting that "fire and the spruce beetle have probably combined as the primary disturbance factors necessary for establishment of the spruce forest ecosystem we see today."

Even so, the USFS/DNR report concedes the impacts of these disturbances are not always desirable. Spruce is highly valued for its lumber, but beetle kill renders the wood unusable within three years. Perhaps worse, spruce forests killed by beetles rarely reproduce spruce because – unlike wildfires and logging equipment – beetles do not disturb the nutrient rich forest floor, an essential step in natural regeneration of spruce.

Among the additional impacts cited in the report:

Wildlife: "Those wildlife species that are dependent on large diameter spruce stands are negatively impacted. Those species that benefit from early successional stage vegetation will benefit from spruce beetle infestations as (timber) stand composition changes."

Scenic quality: "Recent studies have demonstrated that there is a significant decline in scenic quality of spruce beetle impacted stands and that scenic beauty is an important forest resource.

Fire hazard: "There is concern the fire hazard (associated with) spruce beetle impacted stands will increase over time as dead trees fall and dry grass accumulates, thus increasing fuel loading."

Fisheries: "If salmon spawning streams are bordered by large diameter spruce and if these trees are subsequently killed by spruce beetles, there is a concern as to the long term availability of large woody debris in the streams. A continual supply of large woody debris in spawning streams is a necessary component for spawning habitat integrity."

Momentarily, the report sounds a more hopeful note: "Properly applied silvicultural practices, as well as fire management in southcentral and interior Alaska, can maintain the forest diversity needed to provide the range of products and amenities available in the natural forest."

But the report does not describe which "silvicultural practices" are considered appropriate, and salvage logging – a common silvicultural practice where dead and dying timber is involved – is controversial, especially on public forest lands. As a result, there has been comparatively little salvage logging in beetle killed timber, even where access is not a problem.

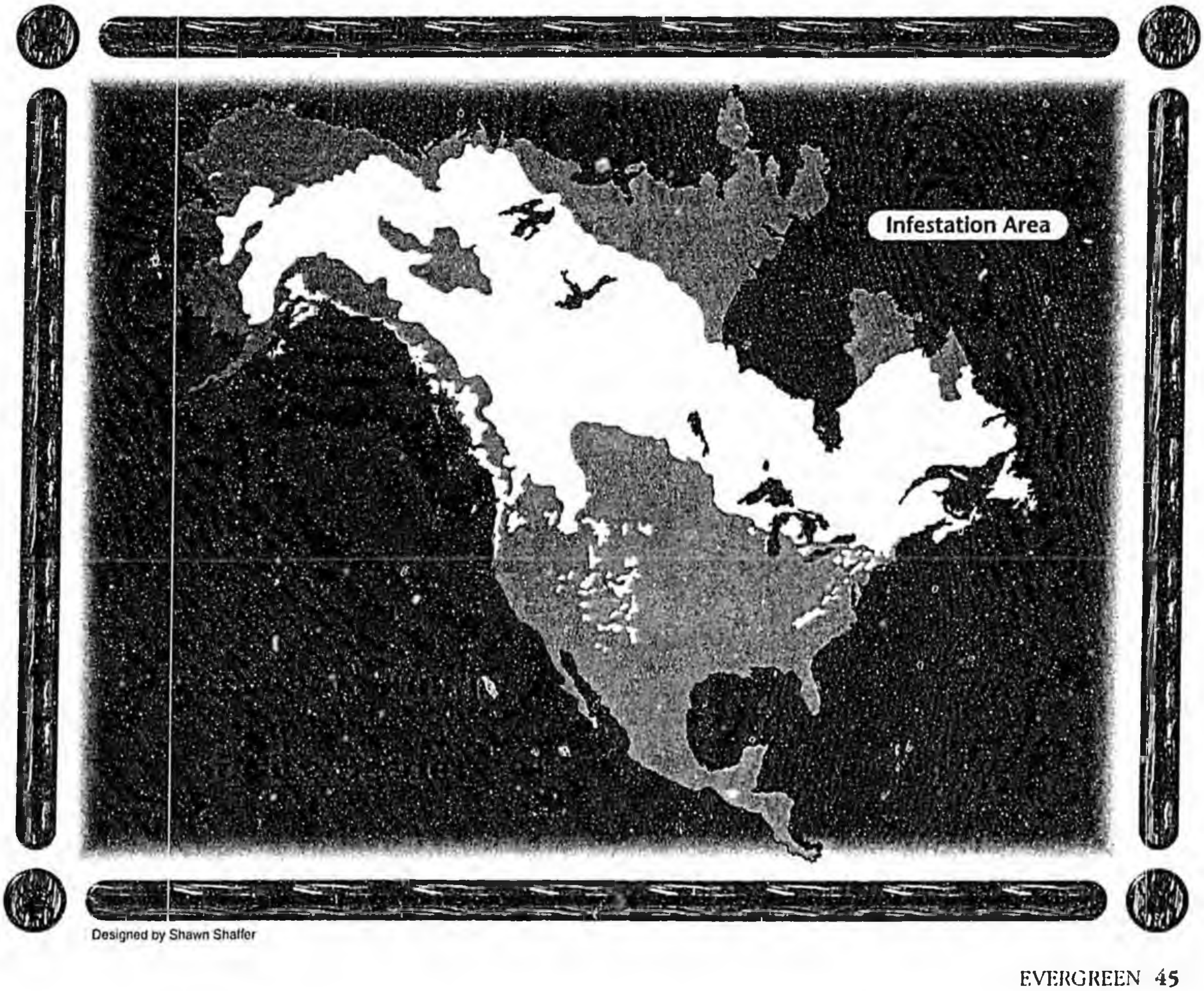
Mr. Burnside's report indicates the most serious problem confronting land managers is a lack of natural regeneration in areas where beetle kill has been particularly devastating.

"(In) previously beetle-infested and road-inaccessible areas of the (Kenai) Peninsula, little or no advanced regeneration is present over large areas to provide a seed crop for a new forest." he writes. "Repeated beetle infestations of the maturing growing stock have eliminated the seed-bearing trees. Those most familiar with the spruce beetle epidemic estimate that over 50% of the Peninsula's forested area lacks the potential for adequate natural spruce regeneration without some form of intervention."

Even more alarming is Mr. Burnside's prediction.

"Throughout Alaska hundreds of thousands of forested acres have simultaneously become mature and more vulnerable to increases in forest insect populations, especially the spruce beetle. The scale and uniformity of the current spruce beetle activity in many areas of southcentral and interior Alaska, in addition to the inaccessibility of much of the area, now portends significant potential for major landscape-level disturbance from ongoing spruce beetle infestations and potentially destructive wildfire."

Although spruce beetle epidemics are not new on the Kenai Peninsula, this epidemic covers 3,000 square miles, an area twice the size of a 1966 epidemic, then the largest on record. The new infestation is also moving



Designed by Shawn Shaffer