

State of Alaska
Department of Natural Resources
Division of Forestry
Coastal Region
Kenai / Kodiak Area

**Forest Land Use Plan /Preliminary Decision for the
Electric 2 Timber Sale
SC-3242 K
September 2011**



Electric 2 Timber Sale
 SC-3242 K
 Preliminary Decision—Forest Land Use Plan

I. INTRODUCTION..... 4

 A. Purpose..... 4

 B. Objectives..... 4

 C. Five Year Schedule:..... 4

 D. Location:..... 5

 E. Title, Classification and Other Active or Pending Interests:..... 5

 F. Planning Framework..... 5

II. LEGAL AUTHORITY..... 6

III. ADMINISTRATIVE RECORD..... 6

IV. DESCRIPTION OF SALE AREA..... 6

 A. Physical characteristics of the sale area..... 6

 Topography and Soils..... 6

 Waterbodies..... 7

 Timber Stand Conditions..... 7

 Wildfire Potential and Fuels Mitigation..... 8

 B. Wildlife Habitat..... 8

 Bears..... 9

 Moose..... 10

 Other Fur Bearers..... 10

 Birds..... 11

 Fish Habitat..... 11

 C. Human activity and social considerations..... 12

 Hunting..... 12

 Subsistence..... 12

 Recreation..... 12

 Cultural Resources..... 12

 Scenic..... 12

 Land Use..... 13

 D. Sustained yield and allowable cut..... 13

 E. Silviculture and Timber Harvest..... 13

 F. Transportation..... 14

 G. Erosion..... 14

 H. Mining..... 14

 I. Materials..... 14

V. MARKET CONDITIONS AND ECONOMICS..... 14

VI. ALTERNATIVE ACTIONS..... 15

VIII. PRELIMINARY FINDING AND DECISION..... 16

Abbreviations..... 17

Electric 2 Timber Sale
SC-3242 K
Preliminary Decision—Forest Land Use Plan

References Cited 18

Links to Planning Documents: 20

Timber Sale Maps 21

I. INTRODUCTION

A. Purpose

The purpose of this Forest Land Use Plan (FLUP) is to provide sufficient information to reviewers to insure that the best interest of the state will be served by the Department of Natural Resources, Division of Forestry (DOF), Kenai-Kodiak Area, offering for sale approximately 52 acres in one cutting unit. The sale contains an estimated 360 thousand board feet (MBF) or 700 cords of spruce to be sold by sealed competitive bid. This sale will salvage spruce that are dead or infested by spruce beetles, *Dendroctonus rufipennis* (Kirby); accelerate reforestation, increase habitat diversity, and decrease potential of catastrophic fire by reducing fuel loading from dead trees.

The timber is to be harvested by one silvicultural system called sanitation-salvage harvest by removal of beetle killed and infested spruce with reserves of green trees. Overstory removal will involve the removal of merchantable dead spruce trees over eight inches diameter at breast height (DBH). Snags for cavity nesters will be retained. Ninety-five percent of the mature spruce trees in the sale area have already been killed or are infested with spruce beetles. Green reserve or leave trees will be left. These reserves consist of green spruce trees regardless of diameter as well as all birch. The few cottonwood and aspen in the harvest area will be cut to promote coppice growth for wildlife browse and cover.

Almost all of the mature spruce trees observed in the sale area have already been killed by spruce beetles. Green reserve or leave trees will be left. These reserves consist of green spruce trees regardless of diameter as well as all birch.

The public is invited to comment on any aspect of this proposed offering of timber within the Electric 2 Timber Sale with regards to the AS 38.05.035 decision. Comments should be mailed to Division of Forestry, 42499 Sterling Highway, Soldotna, Alaska 99669. Comments must be received at the Division of Forestry no later October 7, 2011 in order to be considered in the final decision of whether the timber sale will be sold in whole or in part. To be eligible to appeal the final decision a person must have provided written comment by October 7, 2011.

B. Objectives

The primary objectives of this timber sale are to:

1. The primary objectives of this timber sale are to reduce the wildfire risk and potential destruction of adjacent private property, salvage timber affected by bark beetles.
2. To accelerate reforestation: harvesting timber is a means of preparing the area for new trees to establish. This proposal helps meet the Division's statutory responsibility to provide "...sound forest practices necessary to ensure the continuous growing and harvesting of commercial forest species on ...state land."
3. To follow DNR's constitutional mandate to encourage the development of the state's renewable resources, making these resources available for maximum use consistent with the public interest. Firewood is the primary product of this sale, and therefore parallels the public's increasing firewood demand.

C. Five Year Schedule:

Electric 2 Timber Sale
SC-3242 K
Preliminary Decision—Forest Land Use Plan

The Electric 2 Timber Sale is currently listed in the last edition of the Five Year Timber Sale Schedule 2011 - 2015.

D. Location:

The legal description of this proposed action is as follows: Sections 17 and 20, Township 3 South, Range 13 West in the Seward Meridian. Ninilchik is the nearest community, and is located about 9 miles north of the sale. Cook Inlet Region, Inc. (CIRI) and the University of Alaska are the larger adjacent landowners. This sale can be located on the United States Geological Survey 1:63360 Quadrangle maps titled Seldovia D-5.

E. Title, Classification and Other Active or Pending Interests:

The sale area was acquired by the State of Alaska as General Grant lands under the Statehood Entitlement Act of July 7, 1958. This land has been selected by the Kenai Peninsula Borough as part of their municipal entitlement but has not been approved. There is an oil and gas lease (ADL 387099) in Section 17 and a powerline easement (ADL 34494) in Section 19.

This sale is located in an area covered by the Kenai Area Plan (adopted in January 2000) and is designated for General Use which allows timber harvests. This proposed sale complies with the guidelines and specific policies contained in the area plan.

F. Planning Framework

The decision to offer the Electric 2 Timber Sale was based on a long series of planning decisions, made with public and agency input every step of the way. This document, the Forest Land Use Plan (FLUP) for the timber sale, is one of the final steps in this long planning process. The planning for where timber harvest is appropriate, and where it is not appropriate, is done at a much broader scale than the FLUP. The framework for how management decisions are made for timber sales on the Kenai Peninsula is as follows:

1. Area plans, management plans, and land use plans (in this case, the *Kenai Area Plan*) determine where timber harvesting is allowed.
2. The Forest Resources and Practices Act and Regulations, and the Alaska Forest Management Statutes & Regulations determine how timber will be managed within areas where harvesting is allowed by the area plan.
3. The Five-Year Schedule of Timber Sales proposes when timber sales will be offered, and approximately where and how big each sale will be.
4. Next, a Forest Land Use Plan is written for each individual sale, which contains more detailed decisions about each sale.

Both the area plan and the management plan processes were the means to openly review resource information and public concerns prior to making long-range decisions about public land management. The planning processes determined how the complete range of uses would be accommodated in the proposed sale area, including opportunities for forestry, as well as protecting fish and wildlife habitat, opportunities for recreation, and the whole range of other uses. The decision to allow timber harvest in the area is based on the fact that the Kenai Area Plan's designation for this particular area allows for timber harvest.

Electric 2 Timber Sale
SC-3242 K
Preliminary Decision—Forest Land Use Plan

Next, the Division of Forestry prepares a Five-Year Schedule of Timber Sales (FYSTS) every other year. The FYSTS gives the public, timber industry, and other agencies an overview of the division's plans for timber sales. They summarize information on proposed timber harvest areas, timber sale access, and reforestation plans. Five-Year Schedules are subject to public and agency review. The review helps identify issues that must be addressed in detailed timber sale planning. After review and revision, DNR uses the schedules to decide how and where to proceed with timber sale planning.

The Electric 2 Timber Sale was included in the DOF's Mat-Su Area and Kenai-Kodiak Area Five Year Schedule of Timber Sales, 2011 - 2015. The notice was posted in all Kenai/Kodiak post offices and on the State of Alaska Public Notice and the DOF web sites. The notice was also sent to agencies, Kenai/Kodiak community councils, tribal councils, Native corporations, planning commissions, Legislative offices, conservation groups, small mill operators, timber industry representatives, and private citizens. These public comments were used to identify issues that would be addressed in the Forest Land Use Plans.

Finally, the Forest Land Use Plan (FLUP) is prepared. The FLUP presents detailed information on the location, access, harvest methods, duration, and proposed reforestation for each sale. The public is asked to comment at this stage, as well. By getting the best available data, combined with a series of public processes that helps us gather information from the public and other agencies, we make well-informed decisions about uses of resources on state land.

II. LEGAL AUTHORITY

The department is taking this action under the authority of AS 38.05.035(e) (Best Interest Finding); AS 38.05.110-120; 11 AAC 71 (timber sale statutes and regulations); AS 41.17.010-.950 and 11 AAC 95 (Forest Resources and Practices statutes and regulations).

III. ADMINISTRATIVE RECORD

The division will maintain an administrative record regarding the decision of whether or not to offer timber within the Electric 2 Timber Sale. This record will be maintained at the Kenai-Kodiak Area Office and filed as SC-3242 K.

IV. DESCRIPTION OF SALE AREA

A. Physical characteristics of the sale area

Topography and Soils

The Electric 2 timber sale is situated within a geographical area that is characterized by level to gently rolling glacial outwash terrain. The elevation ranges from 220 - 295 feet above sea level and has a relatively flat aspect. The sale is located in an area that the spruce beetle has killed the surrounding timber.

The Natural Resource Conservation Service Soil Survey indicates the predominate soil type in the sale area to be the Coho Series. The Coho Series is a deep, moderate to well drained silt loam occurring on nearly flat to strongly sloping terrain. The soil's susceptibility to erosion is rated as slight to moderate but long slopes may present a danger to erosion.

Due to predominate rolling terrain with slopes less than 20 percent grade, and the fact that roads will be utilized only in the winter, there appears to be almost no chance of slope failure.

Waterbodies

There are no anadromous or resident fish water bodies within the sale area. An unnamed stream located approximately 100 – 200 feet from the east side of the harvest unit flows towards the south into muskegs. There will be a 50-foot wide fringe of timber to be retained between the harvest unit and the stream as well as abundant non-merchantable vegetation to provide wildlife cover. This will also provide sufficient protection of water quality.

Timber Stand Conditions

Forest stands in the area are predominately upland stands of approximately 90% spruce and 10% birch with scattered cottonwood and aspen. Prior to the needles falling off of the spruce, the stand would be considered a closed canopy white spruce/white birch type. On the Kenai Peninsula, there are natural hybrids between white spruce and Sitka spruce (*Picea glauca X sitchensis*). This hybrid is called Lutz spruce (*Picea X lutzii* Little). Researchers believe that this occurs at varying degrees with some trees showing strong white spruce characteristics, while others will show strong Sitka spruce characteristics. Muskeg, riparian willow, upland willow, and upland alder types are also found. Essentially all spruce 9 inches DBH and greater are dead from spruce beetles. The complete loss of needles on many spruce suggest they were attacked at least two to three years earlier. Many larger spruce have lost significant amounts of bark and wood decay is advancing as evident by occasional wind-snap and soft borings. Very few spruce in the 9 to 12 inch DBH class are green. There will be considerable changes to the living forest stand structure, including: reduction in average age of surviving trees, lower average DBH, lower average tree height, and decline in stand density. Residuals initially consist of suppressed and intermediate spruce resulting in decreased canopy cover (Schmid and Frye 1977). Also, stand species composition may be altered. There are a number of successional pathways that may occur. Natural spruce regeneration occurs when there is an adequate supply of viable seed and an appropriate seedbed (INFEST #9). Often what has occurred in unmanaged stands is a significant influx of grass and a lack of an appropriate seedbed for tree regeneration. In addition, spruce beetles have killed mature spruce trees and an inadequate viable seed source is present for rapid reforestation. Birch regeneration is also decreased due to the severe competition of grass and inadequate seedbed availability.

Light to moderate levels of bluejoint reedgrass (*Calamagrostis canadensis*) are already present throughout the area. Hence, competition with regeneration is expected to be high if reforestation is delayed. Bluejoint reedgrass quickly establishes itself in stands killed by spruce beetle. Because this grass lowers the soil temperature and is such an aggressive competitor, it inhibits the regeneration of both tree seedlings and browse species (Lieffers, et al 1993). One study indicates that even after 11 years, no natural tree or browse regeneration had occurred (Holsten, et al 1995). Species diversity has declined in these stands. Within two to four years following mortality, beetle killed trees begin to wind-snap and fall to the ground. The time-span between mortality and having the tree break-off and fall to the ground appears to be a function of the level of decay in the base of the tree at the time of mortality. Recent research has shown that 50 percent of the beetle killed trees break off and fall to the ground within 10 years (Holsten, et al 1995). These downed trees fall across each other or jackstraw and limit access and mobility of both human and wildlife use of the area (Thomas 1979).

Wildfire Potential and Fuels Mitigation

The spruce beetle infestation during the 1990's resulted in the most significant ecological impact of any natural agent of change in Alaska (USDA 1996). The changes occurring in forests on the Kenai Peninsula are significant. The almost total loss of mature seed bearing trees over large landscapes will have very long term and profound affects on the Kenai Peninsula.

Dead spruce trees undergo changes in physical characteristics over time. The moisture content of the dead tree declines significantly. As needles and fine branches fall off, the forest floor is less shaded and more conducive to grass propagation. The boles of dead spruce trees are subject to natural decay processes such as "sap rot". The wood fiber structure changes so that tree boles loose elasticity and are not as flexible during windy conditions. A study of vegetative survey plots on the Kenai Peninsula (Holsten et. al. 1995) indicates that tree stem breakage begins to accelerate between 5-10 years after bark beetles attack forest stands.

As time progresses, standing trees begin to break off and fall into one another becoming jack-strawed. This enables surface fires to spread into the canopy. Surface fuels comprised of grass and downed trees enable wildfires to spread quickly and with greater intensity. Fires in this fuel type burn 20 times faster and 6 times more intensely than the fuel type associated with healthy white spruce stands, particularly in the spring and early fall (See 1997). Fires in downed spruce trees in grass fuels exhibit a high resistance to control by firefighters. This downed timber impedes access into a fire area by firefighters and will severely limit the use of tactical ground forces such as engines, dozers and hand crews (See 1998). Even when suppressing fires during moderate environmental conditions, placing crews in this type of fuel poses a significant personal safety risk should winds begin to rapidly increase, change direction, or if sudden slope changes are encountered.

Large-scale spruce mortality significantly influenced wildlife habitat by changing the structure and function of the forest (INFEST #11). The loss of the mature spruce and the potential loss of the younger spruce component will result in the loss of hiding and thermal cover (DF&G 1994). The remaining live forest component will be composed primarily of young spruce seedling/saplings and scattered birch. Grass, in locations where residual tree density is minimal, will become the predominant ground cover and will inhibit the development of suckering and sprouting plants which reduces the availability of browse (Holsten, et. al. 1995). Therefore, as the stand structure changes, the population dynamics between wildlife species within the proposed sale area will vary.

B. Wildlife Habitat

The effects of the harvest activity will vary depending on species. Wildlife species that prefer mature and over-mature spruce stands will either be displaced or decline in numbers. Species preferring the grass-forb successional stage will likely increase in abundance (DF&G 1994).

The primary measures for minimizing impacts to wildlife habitat are the previously-mentioned fringes of timber that will be retained to provide wildlife cover. Only temporary ice roads will be used to access the sale area. After timber harvest activities cease in the spring, the access routes will be blocked with logs or large material to obstruct off road vehicle traffic. This will reduce wildlife impacts associated with roads.

Approximately three to four standing trees per acre will be retained within the harvest unit as nesting habitat.

Harvest operations are not expected to exceed three years and will occur typically from November to mid March, so disturbance from harvest operations will be relatively brief. Grass and alder will reseed rapidly on

disturbed sites and help in effectively closing the road access. These actions are intended to closely align with the recommendations of the Kenai Peninsula Brown Bear Conservation Strategy (DF&G 2000).

Bears

For black bear, the proposed timber sale includes areas with potential late summer and early fall berry crops. It is doubtful that winter denning sites exist in the sale area for either brown or black bears. This is due to its proximity to residential development. No denning sites were found during field reviews for either species.

Increased vulnerability of local black bear populations to hunting is a function of road location and road density which, in turn, is related to the timber harvesting systems used and the level of logging activity (DF&G 1994).

To date, there has been no census for brown bears taken on the Kenai; there was estimated to be 250 to 300 bears in the late 1990's (DF&G, 1997). There appears to be a healthy viable population (DF&G, 2008). Since the 1950's the brown bear population on the Peninsula has increased to an estimated population of 300 in 1997 (DF&G 1997). This apparent population climb occurred despite a human population increase on the Kenai Peninsula from 9,053 in 1960 to 53,409 in 2008 (US Census Bureau, 2009).

The highest densities of brown bears are in the forested lowlands and sub-alpine areas west of the Kenai Mountains. No denning sites were identified within the proposed timber sale during field reconnaissance. Additionally, the proposed sale does not occur within the elevation range commonly chosen for den sites by brown bears (Jacobs 1989). Again, due to the proximity of the timber sale to human development, the area is not expected to be utilized frequently by brown bears.

At the onset of the spruce beetle infestation, the degrading stands were not expected to have significant impacts on bear populations (USFS 1990 and DF&G 1994). However, increased access associated with resource development is of concern to wildlife managers (Selinger, 2005). Logging roads may cause behavioral changes with the bear population. Although evidence suggests that road avoidance behavior and habitat loss leads to changes in wildlife productivity and survivorship, there is little data currently available to support this hypothesis (Frederick 1991). Again, this proposed sale will be accessed by roads that are only drivable during the winter months, when bear activity is expected to be minimal.

Several researchers suggest that grizzly bears habituate to open roads by shifting to a more nocturnal activity pattern. Apparently, darkness may serve as cover, allowing bears to use roads and adjacent habitats and cross open areas where they are vulnerable to human harassment and hunting mortality. To use areas within 100 meters (approximately 328 feet) of roads within their home range, bears have often done so under the cover of darkness by being nocturnal in their travel and feeding patterns (Frederick 1991). This travel period may be shorter in Alaska due to the state's latitude. However, numerous studies, including at least one in Alaska (Olson, et al 1998) have shown that brown bears will use highly disturbed areas by being nocturnal, while bears in undisturbed areas tend to be more crepuscular (active during twilight)(Frederick 1991). It has also been noted that sows with cubs and yearling juveniles more frequently used habitats near roads than other bears. These areas may have been relatively secure because potentially aggressive adult males avoided them (McLellan and Shackleton 1988). Several researchers reported that adult bears in open sites usually retreated to cover when a vehicle approached within 300 meters (984 feet). However, researchers McLellan and Shackleton found that bears fled even further when approached by people on foot; in 5 of 9 cases when bears in remote areas were approached by humans, bears fled for distances greater than 1 km (0.6 miles), or out of the

immediate drainage (Frederick 1991). This illustrates that bears find vehicular traffic less threatening than people on foot. This may be attributable to habituation.

This timber sale may impact the home range of resident bears. However, research suggests that home ranges for brown bears can cover tens to hundreds of square miles and because of this variability, the concept of home range size is not very useful (DF&G 2000).

The availability of security cover is considered important in how brown bears are influenced by human activities. Brown bears are at least twice as likely to be displaced from open areas where they can see or be seen by humans (Suring 1998). The harvested portion of the timber sale will provide little cover for bears until the regeneration reaches an adequate height.

Moose

Within the boreal forest, moose are generally more closely associated with forest cover in summer than in winter. This may reflect a preference for forage that is higher quality as a result of delayed plant development or different plant characteristics. Cows may prefer to calve and bed their newborns on forested knolls or other vegetated high points from which predators are more easily detected. These features may also present varied escape routes that require minimal energy expenditure by calves (Collins 1995).

As the dead spruce fall to the ground, escape routes will diminish and it is likely that energy expenditure by newborn moose for escape will be increased. The increase over time in the amount of deadfall that will occur without intervention will also decrease sight distance that may result in additional predation of young moose. The increasing amount of deadfall and debris on the forest floor could limit access to preferred foraging areas and limit mobility during critical times of the year for moose (DF&G 1994). DF&G (2003) notes that increasing deadfall over time will make moose travel through these areas more difficult. Slash depths of 1 to 2.3 feet reduced forage production and hindered access for many wildlife species (Bartels 1985).

While biologists recognize the importance of overstory disturbance in the boreal forest in terms of enhanced production of moose browse, recommendations for the size and shape of the forest openings vary greatly from 5 acres to a square mile or more. While birch is not the dominant species of the existing stand, this sale operation is intended to result in mature left standing as seed sources. Ground disturbance from logging activity will result in favorable conditions for subsequent birch regeneration.

Cover is more important in summer conditions; moose have an efficient way of keeping warm in severe weather but are less efficient in moderating the effects of high summer temperatures that can cause them to overheat (INFEST #6). The buffers along the muskeg will provide some cover, but the harvested areas will not provide shading and calving areas.

Other Fur Bearers

Timber harvest activities are expected to impact the habitat for ermines, mink, and river otters by reducing cover or abundance of available prey. By retaining timber in riparian areas—as will be required in this proposed sale—the above-mentioned impacts will be offset.

Lynx occur throughout the general area. Lynx will use early successional habitats resulting from timber cutting, but require proximity to mature mixed forests (DF&G 1994).

Snowshoe hares are apparently increasing numbers in proximity to the sale area. This species is subject to population rises, followed by abrupt declines. As to when this when the population will decline is unknown,

but will probably be associated with other factors than the impacts of timber harvest. During peak population cycles, hares browsing can cause significant reduction in young tree development.

Birds

Spruce grouse are also affected by the loss of spruce trees to the spruce beetle primarily through the loss of winter feeding habitat (DF&G 1994). Gradual loss of escape and thermal cover habitat will also occur as the spruce trees lose their needles and eventually fall over (DF&G 1994). The decreased winter food supplies (loss of spruce needles and buds) may displace grouse into areas of lower quality habitat that could increase nutritional stress, and lead to increased mortality (DF&G 1994). Predators associated with grouse, such as owls and goshawks, can be expected to show a response to the increased vulnerability of individual birds displaced by the infestation (USFS 1994). In large-scale infestation areas increased amounts of deadfall, grass, and other debris will impede grouse reproductive displays and reduce summer feeding habitat (DF&G 1994). The end result of no treatment of these dying stands will be a decline in local spruce grouse populations (USFS 1994).

Harvest operations will have similar effects. The loss of canopy will result in increased mortality from predation because of more visible nests and loss of protection from inclement weather (DF&G 1994). Leave areas will help to offset this loss to the extent that they are useful. Scarification, where feasible and quick reforestation efforts will help to create more suitable habitat conditions in a shorter period of time than if left in an unmanaged condition.

The spruce bark beetle infestation has increased the number of snags and downed woody material, likely benefiting cavity-nesting birds such as woodpeckers, some owls, brown creepers, nuthatches, and chickadees (DF&G 1994). Most snags are beetle-killed spruce. However, mature hardwood stands that contain some hardwood snags offer the most cavities. This is due to the morphological differences between spruce and hardwoods. Living spruce seldom has soft heartwood preferred by cavity nesters. Spruce that die usually falls to the ground within 10 years, which is the time it takes for the heartwood to soften. The larger diameter birch, aspen, and cottonwood trees are more important than spruce for cavity nesters, however, there is very few birch within the timber sale and no aspen or cottonwood trees. Spruce snags of 3-4 per acre will be retained for wildlife use. After the beetle outbreak subsides, woodpeckers will still benefit from the large numbers of secondary insects (*cerambycids*, ants, other *scolytids*) present, but this food abundance should only last 2 to 3 years (Schmid and Frye, 1977). The feeding value of these insects for woodpeckers will decrease because they are generally fewer in number and less accessible (they feed in deeper recesses in the wood). After these insects decline, the bird population is also expected to decline because of a lack of food. As the needles and bark fall off dead trees over time, these populations will also decline because of the reduction in available food and cover (DF&G, 1994).

The potential effects from a timber harvest on cavity-nesting and other non-game birds will be the shortage of suitable nesting trees, which could result in lower numbers of birds. The conversion of sites to early successional stages could result in a shift in bird species composition to favor birds that prefer grass, shrub/forb, and sapling habitats (DF&G 1994).

Fish Habitat

As mentioned earlier, there are no anadromous or fish bearing waters within the sale area. However, Stariski Creek, located approximately 1,000 feet to the east does support anadromous fish.

As mentioned before, there is an unnamed stream that flows east of the harvest unit that flows in a southerly direction into a muskeg complex. This stream does not flow into Stariski Creek or other anadromous streams.

C. Human activity and social considerations

Hunting

Based on field observations, the area is hunted primarily by local residents; hunting pressure is not expected to increase in the area as a result of timber harvest. The Alaska Department of Fish and Game is responsible for setting hunting regulations, including restricting hunting areas.

Subsistence

The subject area has not been designated as a subsistence zone. Under current state law, subsistence harvest opportunities within the timber sale have been incorporated in general hunting and fishing regulations (DF&G 10/23/94). There are the following possible subsistence uses in the area: trapping, hunting and gathering of berries. The effects of the spruce beetle infestation and the proposed timber harvest on wildlife species of interest to both trapping and hunting are detailed above in the two wildlife sections. Most of the *Vaccinium* species prefer open forest conditions, which would tend to indicate that the berry crops might do well as the stands open up. However, Holsten, et al. (1995) indicated that on untreated beetle killed sites, lowbush cranberry decreased in number and on burned sites it doubled. It is anticipated that the berry crop will not be significantly affected by the proposed treatment.

Recreation

Based on field observations, there appears to be intermittent recreation presumably by local residents. Generalized use of ATV's was evident in the area. The area may be used for moose hunting in the fall, but there was no evidence of any established camps or recreational use sites. This area is not known to have unique tourism values. At this time, there are no commercial recreation operations that use this area.

Cultural Resources

Currently, there no reports of cultural or historical sites in the Alaska Heritage Resources Survey within the sale area (DNR/ Parks, AHRS, 2011). The Alaska Heritage Resources Survey (**AHRS**) is an inventory of all reported historic, prehistoric, and paleontological sites within the State of Alaska. The AHRS will be examined for updated information regarding the sale area prior to advertising this timber sale.

Under the Alaska Historic Preservation Act (41.35.200), all burials on state land are protected. If burials or human remains are found, all land-altering activities that would disturb the burial or remains shall cease and measures will be taken to protect it in place. The Office of History and Archaeology and a law enforcement officer will be notified immediately to ensure that proper procedures for dealing with human remains are followed.

Scenic

This sale will be visible from the Sterling Highway, aircraft, snowmachiners, and ATV users. Residents and visitors to Alaska consistently rated forest vistas damaged by spruce beetles lower in scenic beauty, and the more tree mortality present the lower the perceived scenic beauty. Both residents and visitors cite loss of scenic values as an important effect of beetle damage. Visitors consistently report sightseeing as a dominant activity, and indicate views seen as a major factor affecting the quality of their visit to Alaska. Respondents of a USFS study consistently preferred preventative thinning treatments to a no-treatment scenario. For forested areas already severely impacted by spruce beetle, respondents preferred the visual conditions produced by rehabilitation strategies that resulted in more rapid regeneration of forest cover. From a list of proposed actions including a no action alternative, respondents continued to prefer actions which would include cutting and removing dead trees, even if selling them would only recover part of the costs (Daniel et. al. 1991). Cutting and

removing the dead trees was also chosen over the possibility of burning a site for forest regeneration. Similar results were obtained in other studies within the U.S. (Orland, 1997 and Orland et. al. 1993).

Prompt reforestation, timber retention areas near wetlands, and the retention of all live spruce and birch, will lessen what visual impact may be caused by harvest operations.

Land Use

No agricultural use or grazing is known to occur. Traditional use areas may exist but the sale will not adversely impact these uses. However, opportunities for hunting and berry picking will likely be improved. Snowmobiles and ATV users enjoy travel within the sale area.

D. Sustained yield and allowable cut

This proposal complies with sustained yield/allowable cut principles outlined in the Kenai-Kodiak Area's Five Year Schedule of Timber Sales for CY-11 through CY-15.

E. Silviculture and Timber Harvest

The silvicultural prescription selected for spruce in this sale is salvage harvest, while keeping green reserves. All merchantable dead or infested spruce larger than eight inches in DBH will be removed. Live spruce greater than 9 inches diameter at breast height will be allowed for harvest. After harvest, the resulting stand will consist of multi-age spruce, due to the age diversity of the seedlings and pole-sized trees left in the stand. Healthy spruce and all birch will be retained for seed production and wildlife cover.

Birch is present in this stands; however it averages less than 20% of the total stem density. Birch is a prolific seeder, but viability of seed is potentially low due to age and vigor of the birch. Birch trees are not expected to grow to maturity in large numbers in the sale area, due to moose browse. The birch is not expected to contribute significantly to regeneration of the harvest area. Birch trees will be allowed for harvest at the discretion of the state.

Logging will not be authorized during spring break-up, which usually occurs during a period from mid-March to May 1. The length of time to complete the harvest operations will be two years. The contract will require that care be taken to minimize damage to residuals.

Delimbed tops will be re-scattered and allowed to decompose or will be burned. Some piles will be retained for their wildlife values. Large amounts of nutrients such as phosphorous, nitrogen, and to a lesser extent for other mineral elements, are stored in the foliage, twigs, and branches; smaller amounts are in the main trunk of the tree (Bartels 1985). This material (limbs, twigs, and needles) is an important source of nutrients for the next stand of trees; typically over 95% of the nitrogen is contained within this material (Perry, et. al. 1989). Disposal of green or infested spruce material larger than five inches in diameter shall be in accordance with the standards set in 11 AAC 95.195(b) of the Forest Practices Regulations. Stump heights will be kept as low as feasible, typically less than one foot.

The sale area will be harvested in the winter. Logging will not be authorized during spring break-up, which usually occurs during a period from mid-April to June 1. The length of time to complete the harvest operations will be two years. Directional falling may be required to protect 70 percent of the seedlings, saplings and pole-sized residuals. The contract will require that care be taken to minimize damage to residuals.

The State will conduct regeneration surveys within 2 years following harvest to determine if artificial regeneration will be necessary. Planting may be necessary on sites lacking sufficient regeneration to meet stocking standards. Planted spruce seedlings will be grown from locally collected seed. This proposal may be adjusted post-harvest depending on the success in protecting residual seedlings and saplings.

Regeneration surveys will monitor trends of survival and species composition and also help to determine if any further reforestation effort is required to meet the reforestation requirements of the Forest Resources and Practices Act (11 AAC 95.375).

F. Transportation

Access into the sale area via public easement is north from the end of Electric Lane via Resch Avenue, which extends east from the Sterling Highway near Mile 147.3. Otherwise, access through private ownerships will require an agreement with the adjacent landowners to access the harvest area. Approximately 15,600 feet of temporary spur road will need to be constructed. The temporary roads on state land will be put to bed upon completion of use in accordance with the Forest Resources and Practices Regulations on road closure (11 AAC 95.320). If necessary, log hauling on ice roads will begin when underlying ground is frozen sufficiently to support equipment. This requires a minimum of 8 inches of snow and 6 inches of frost (Mihalow 1992). Trails and roads will need signs at intersections for both travelers on the Sterling Highway and log truck drivers to warn them of intersecting traffic flows.

The timber sale purchasers will be required to close roads on state lands at the conclusion of their sale. The temporary roads on state land that are put to bed upon completion of use will be closed in accordance with the Forest Resources and Practices Regulations on road closure (11 AAC 95.320). Additionally, wood debris will be spread over a portion of the road bed to minimize future impacts of all terrain vehicles.

G. Erosion

This proposed firewood sale is on relatively flat terrain; the overall slope is less than ten percent grade. Therefore, no slope failures or soil movement is expected.

H. Mining

There is no known mining activity in this area and therefore no effect.

I. Materials

This proposed harvest will not preclude future development of a material site. Needed borrow material for the timber sale road(s) will be minimal and acquired from within the right of way. No pits will be developed.

V. MARKET CONDITIONS AND ECONOMICS

The local market includes domestic sawlogs, house logs and firewood. Most of the timber from this sale area will probably be sold and utilized as firewood. The cost of heating oil on the Kenai Peninsula rose sharply in 2008. The demand for firewood has increased noticeably over the previous two years. Consequently, firewood sold for \$150 to \$200 per cord in 2011. Firewood prices are presently competitive with sawlogs as an end product for all but the green wood. Firewood will likely be in greater public demand than either sawlogs or house logs in the near future. The DOF anticipates this sale to be marketable based on past sale activity.

VI. ALTERNATIVE ACTIONS

After a review of the material and information discussed above, the following alternatives have been considered:

1. **Offer a timber sale as outline in this Forest Land Use Plan.** This alternative meets the objectives of the Five-Year Schedule of Timber Sales and one of DNR's mandates to make the state's renewable resources available for public use. It also meets the silvicultural objective of improving forest vigor, provides for a value-added end product and creates additional local jobs due to the combination of road building, logging, and trucking.

2. **Offer this timber sale at another time.** We believe that postponing the harvest of timber within the block is not in the public interest. As the dead trees continue to decay, their merchantability will decline; therefore it is important to provide opportunities to utilize a resource that currently is in high public demand—firewood.

Additionally, the increasing fuel loading as a result of the dead trees is not in the public's interest. Trees that would otherwise be salvaged would become sources for ignition and fuel loading for a potential catastrophic wildland fire. This timber sale is located in the wildland-urban interface and is a high priority for removal of potentially hazardous fuels. Additionally, postponing the sales to a later date could result in sufficient loss of market value that the sale would become uneconomical.

3. **Modify the Sale by making the harvest units smaller.** This sale is intended to be large enough to be economically viable for mechanical logging methods. Increasing the size of the harvest unit will eliminate the surrounding no-harvest buffers which are intended to provide visual cover for wildlife. Decreasing the size of the sale area will reduce the supply of firewood and leave more timber to further deteriorate on the site and exacerbate the wildfire fuel loading. This sale is large enough to cover the costs of constructing access roads and cover the mobilization costs to operate in the Anchor Point area under historic conditions. This sale is appropriately balanced to maintain other resource values as well as provide economic benefits to the Kenai Peninsula.

4. **Do not offer this timber sale.** This alternative would result in not meeting any of the objectives outlined for this management action. Utilization of the forest resource would not be achieved. There would be no significant contribution to the state and local economies. This alternative would delay the management objectives planned for the area, would deny making a source of raw materials available to the local wood products industry, and would delay the harvest of dead trees, mature trees, disease infected trees, and trees at risk to insect infestation. Decay in infected and infested mature spruce and birch trees results in loss of economic value.

VII. PRELIMINARY FINDING AND DECISION

The purpose of this decision is to determine if the Department of Natural Resources, Division of Forestry, will make available timber located in Sections 17 and 20, Township 3 South, Range 13 West in the Seward Meridian. After due consideration of all pertinent information and alternatives, the DNR has reached the following **Preliminary Decision: To offer the sale as proposed in Alternative 1**. In addition, the DNR finds that this preliminary decision satisfies the objectives as stated in this document and it is in the best interest of the state to proceed with this action.

If you have any questions, please contact Hans Rinke of the Kenai/Kodiak Area Office at (907) 260-4210 or e-mail hans.rinke@alaska.gov

Signature on File

September 12, 2011

Hans Rinke
Area Forester

Date

Electric 2 Timber Sale
SC-3242 K
Preliminary Decision—Forest Land Use Plan

Abbreviations

ADFG: Alaska Department of Fish and Game
BMPs: Best Management Practices
DBH: diameter at breast height
DEC: Department of Environmental Conservation
DLP: Defense of Life and Property
DNR: Department of Natural Resources
DOF: Division of Forestry
FF: Final Finding (Forest Land Use Plan)
FLUP: Forest Land Use Plan
FRPA: Alaska Forest Resources and Practices Act
FYSTS: Five Year Schedule of Timber Sales
KAP: Kenai Area Plan
ORV: off-road vehicle
PD: Preliminary Decision (Forest Land Use Plan)
SHPO: State Historic Preservation Office

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Preliminary Decision—Forest Land Use Plan

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Preliminary Decision—Forest Land Use Plan

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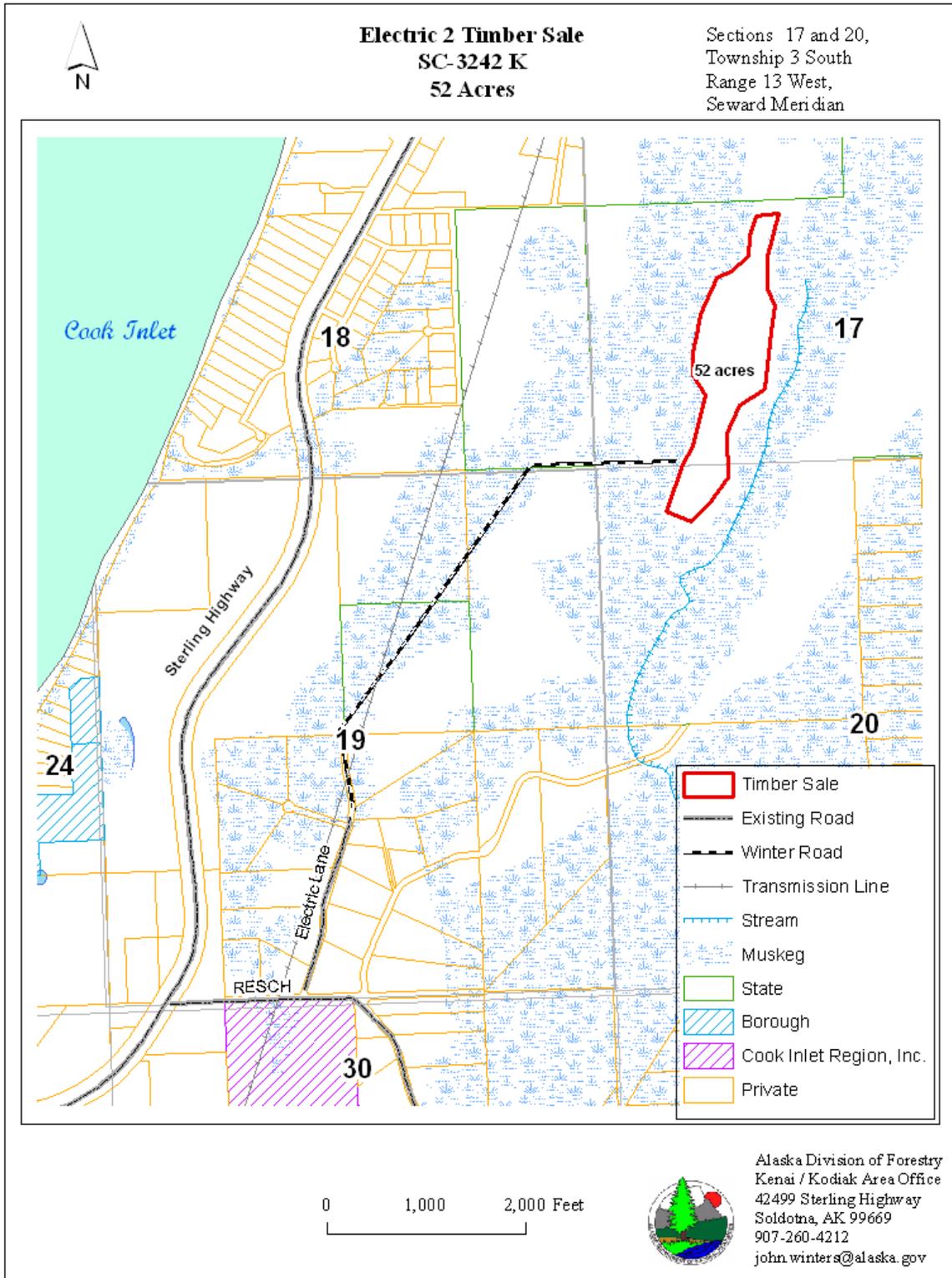
Links to Planning Documents:

Kenai Area Plan: http://dnr.alaska.gov/mlw/planning/areaplans/kenai/pdfs/master_KAP.pdf

Timber Sale Maps



Electric 2 Timber Sale
 SC-3242 K
 Preliminary Decision—Forest Land Use Plan



Electric 2 Timber Sale
SC-3242 K
Preliminary Decision—Forest Land Use Plan