The Homer Demonstration Forest

Management Plan

Prepared by:

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I. Introduction

The Homer Demonstration Forest (HDF) encompasses 360 acres within the Diamond Creek watershed and lies adjacent to the northwest border of the City of Homer. It was established in 1986, when the Alaska Division of Lands transferred this state-owned parcel to the Alaska Division of Forestry (DOF) through an Interagency Land Management Assignment (ILMA) (see Appendix A). The ILMA states that the land be used for, "…developing, operating and maintaining a demonstration forest for educational purposes." Management authority was granted to the DOF "…in conjunction with the U. of A. Cooperative Extension, Homer High School, and the Homer Soil and Water Conservation District assisted by the USDA Soil Conservation Service" (now the USDA Natural Resources Conservation Service).

The Demonstration Forest is managed to provide multiple benefits to forest users. The original Homer Demonstration Forest Plan, developed in 1992 by a steering committee chaired by the USDA Soil Conservation Service, provided a first step in forest management. This 2006 Management Plan represents the next step in achieving HDF goals and objectives.

Guided by lessons so far learned and the ever-evolving relationship of the Homer community to the HDF, the Homer Soil and Water Conservation District (HSWCD or Homer District) prepared this plan under the direction of the HDF Steering Committee. (Committee members are listed in Section VIII.) Funding was provided by the DOF's Community Forestry Program.

The HDF Steering Committee consists of representatives from management entities, user groups, and community organizations responsible for and interested in the HDF. The committee is dynamic and broad-based and seeks to ensure that the HDF will be managed in ways that best serve the needs of forest users while sustaining healthy forest resources.

Goals, Objectives, and Tasks
This plan encourages a wide range of activities in the HDF, particularly those promoting forest-related research, education and recreation. The plan reexamines original HDF goals and objectives in light of both modern management tools (such as GIS mapping) and the current conditions of HDF resources. It then outlines a variety of tasks that can be undertaken to accomplish specific goals and objectives. Goals, objectives, and tasks are outlined in Section V.

Maps
Equally important, this plan provides a variety of maps that illustrate much of what we know about the HDF. These maps give forest users and decision-makers a meaningful context for evaluating which tasks to undertake and where projects and activities can best be located. Maps are provided in Section VIII.

Community support will ultimately determine which of the tasks proposed here are undertaken. As noted in the 1992 Plan:

> Future directions are still wide open: the forest can become anything from a relatively undeveloped setting for basic forest research and education to a forestry center providing classrooms, display areas, workshops, ongoing demonstrations, and other activities and facilities promoting understanding and wise use of forests. Choosing directions

and fulfilling the forest's potentials will take time.

This plan is intended to help both the HDF Steering Committee and others interested in the HDF to choose future directions that fulfill the forest's potential as a community resource.

II. History of the HDF

Establishment[1]

The idea for an educational demonstration forest in the Homer area took root in January 1971 when the Homer Soil and Water Conservation District (then the Homer Soil Conservation Subdistrict) contacted foresters with the Alaska Department of Natural Resources (DNR) and the USDA Natural Resources Conservation Service (NRCS) (then the Soil Conservation Service) for assistance in "…the reservation of a block of state forested land for permanent timber management demonstration." It was the District's goal to educate the community about forest resources and proper forest management practices on the Lower Kenai Peninsula.

By October of that year, an ad hoc group of Homer SWCD Supervisors, local school leaders, and staff from the NRCS and the Alaska Division of Forestry (DOF)[2] were meeting regularly to pursue establishment of a demonstration forest. This group eventually became the HDF Steering Committee. Early in the process, the Alaska State Forester suggested the Steering Committee consider a 530-acre site along Diamond Creek northwest of Homer. The site was enthusiastically approved by the ad hoc group. NRCS agreed to provide a soil survey of the area, and it was recommended that DOF conduct a timber resource inventory. Planning, however, could not begin in earnest until the selected parcel received formal designation as a demonstration forest. That process, as it turned out, took far longer than expected.

Over the next 12 years, the Homer District undertook a number of actions to improve the site and promote public awareness of the potential demonstration forest. These included: sponsoring tours of the area, distributing a public questionnaire for feedback on forest goals, encouraging Homer Community Schools to use the forest for educational day camps, assisting the NRCS to develop a snow survey course in the forest (data from which has been gathered since 1973), and improving access to the area along a section line from Rogers Loop Road. As part of this process, the SWCD in 1975 signed a Memorandum of Understanding with the Alaska State Forester and the U.S. Forest Service (USFS) for assistance in "…developing the State Demonstration Forest into an outdoor classroom."

Despite these activities, the area had still not been officially designated when, in 1978, the Kenai Peninsula Borough selected as part of its municipal entitlement 20 acres in the proposed forest to use as a sanitary landfill. (This is now the Homer Landfill, just north of Rogers Loop.) The following year, and despite HSWCD efforts, the Borough selected the rest of the 530 acres. The state, however, had at about that time

[1] The 1992 HDF plan provides a somewhat more complete history of HDF establishment.

[2] After statehood, the Alaska Legislature created a Division of Lands within DNR and charged it with managing all state lands and waters. Over time, separate divisions were split off to manage specific resources. The Division of Forestry, for example, was actually created in 1982.

published a report entitled *Public Interest Land Report, Kenai Lowlands*. This report identified the remaining parcel of land as a demonstration forest. In 1982, the state finished reviewing the situation and transferred to the Kenai Peninsula Borough roughly 170 of the original 530 acres (including the 20-acre landfill site). The state retained ownership of the remaining 360 acres, which had been classified as "Resource Management."

With borough selections resolved, the HSWCD renewed its efforts to have the remaining acreage designated for forestry. In response, the DOF sent a request to the Division of Lands that the remaining 360-acre parcel of state-owned land be reclassified from "Resource Management" to "Forestry."

By 1984, the Division of Lands had not reclassified the area as requested. As a result, the ad hoc HDF committee sought to obtain an Interagency Land Management Assignment (ILMA) to formally transfer the remaining acreage to the Division of Forestry for use as a demonstration forest. Finally, in August 1986, the Division of Lands signed an ILMA (Appendix A) that transferred the 360 acres along Diamond Creek to the DOF "…in order to make use of the land for…a demonstration forest…" An attachment to the ILMA specified that the DOF work "…in conjunction with the U. of A. Cooperative Extension Service, Homer High School, and the Homer Soil and Water Conservation District, assisted by the USDA Soil Conservation Service."

With formal designation in hand, the NRCS and DOF began collecting inventory data needed for forest planning, while the Homer District solicited additional public input on directions for forest management. In the fall of 1988, the ad hoc committee (now the HDF Steering Committee) began work on what became the 1992 HDF plan. Once the plan was adopted, several parties signed a Memorandum of Understanding (Appendix B) establishing a framework for cooperative management of the HDF. In this document, the Homer Soil and Water Conservation District, DOF, NRCS, USFS, and the Alaska Department of Fish and Game (ADF&G) agreed to promote "forestry education and other compatible uses" of the area, with each accepting specific responsibilities. Although DOF was identified as the primary management authority, as required by the ILMA, all parties agreed that decisions relating to the HDF be made by mutual consent.

The 1986 ILMA remains in effect until May 2011, at which time it will be reviewed for possible renewal or revision. If the ILMA is not renewed or revised, the Department of Natural Resources will have the option of reclassifying HDF lands. The managing entities mentioned above are responsible for preparing for future ILMA review. Before the 2011 deadline, they will develop a preferred alternative to present to DNR for approval.

Management

As noted earlier, the HDF was established in 1986 "…in order to make use of the land for developing, operating and maintaining a demonstration forest for educational purposes." In February 1992, the original Homer Demonstration Forest Plan was adopted, creating a framework for use and management of HDF lands. Four primary objectives were outlined in the framework plan: research, education, recreation, and the protection of environmental quality.

In the years since the 1992 plan's adoption, specific efforts to realize HDF objectives

have met with varying degrees of success. Some endeavors have thrived—expansion of recreational trails, for example—while others have required reevaluation in light of funding constraints, evolving community needs, and unanticipated natural events. Two natural events in particular have been significant: an epidemic outbreak of the spruce bark beetle in the 1980s and 1990s and flooding in the fall of 2002. Other processes—less dramatic but no less signficant—such as changes in weather patterns, plant succession, and increasing development of surrounding lands (see Map 3, Development Patterns), have also affected the HDF and its management.

Despite inevitable changes in forest conditions and community needs, basic directions in HDF management have remained remarkably consistent since the forest was envisioned almost 40 years ago. Research, education, recreation, and stewardship remain paramount.

A variety of specific projects have so far been implemented in support of these directions. Examples include spruce regeneration studies, experimental reforestation efforts, development of an arboretum, collection of long-term climate data (e.g., snow surveys and soil monitoring), installation of a moose exclosure, chainsaw-safety training classes, expansion and improvement of trails, and development of interpretive displays. In addition, the forest is regularly used as an outdoor classroom by a variety of groups. In other words, decisions about what goes on within the HDF continue to build directly on original visions for which the HDF was founded.

Beetles and Flood

The previous section mentioned two natural events that have had significant impacts on the HDF: an epidemic outbreak of the spruce bark beetle and two 100-year floods in 2002. These are discussed below. In addition, discussions under Flora (Section III. Site Description) provide additional information on how these events have affected the HDF.

The spruce bark beetle[3]

In the late 1980s and early 1990s, the spruce bark beetle (*Dendroctonus rufipennis*) reached epidemic levels on the Kenai Peninsula. The outbreak was generally blamed on two occurrences. First, extensive clearing for new utility lines, combined with several large natural windthrows, left large volumes of downed timber available for beetle infestation. Secondly, several years of unusually warm, dry summers shortened the beetle's maturation cycle while at the same time stressing local spruce. As a result, beetle numbers increased rapidly at a time when spruce trees were particularly vulnerable to their attacks.

The intensity, duration, and extent of the beetle outbreak was unprecedented. It left foresters, researchers, and resource managers with many unanswered questions about how best to manage peninsula forests, particularly how to protect them from future infestations and how to harvest and regenerate stands killed by beetles.

Like other areas of the Lower Peninsula, the HDF exhibited widespread die off of white

[3] Information about the spruce bark beetle infestation on the Kenai Peninsula, including maps showing affected areas, can be found on the Borough's spruce bark beetle mitigation website: www.borough.kenai.ak.us/sprucebeetle.

(Lutz) spruce (*Picea x lutzii*) due to beetle attacks. In response, the Homer District undertook a number of projects to deal with the epidemic's aftermath within the HDF. Projects included experimental tree planting, documenting forest stand changes, and monitoring HDF timber stand mortality and regeneration (discussed under Flora in Section III).

During and after die-off of beetle-killed spruce in the HDF, the Homer District oversaw the planting of several thousand tree seedlings in the forest. Plots were laid out in a variety of ways and locations in order to permit the measurement and comparison of success rates associated with different planting methods. For example, plantings were clustered in areas of both open and closed tree canopies; seedlings were planted on undisturbed soil and on bare mineral soil, and natural regeneration was monitored on nurse logs and stumps. A number of plots are being monitored periodically to assess growth and success rates.

Survey and monitoring of natural timber stands has also been a focus of the Homer District. The intent has been to determine natural forest regeneration since the beetle epidemic, as well as to measure volumes of sawtimber—trees greater than 11 inches in diameter at breast height (DBH). By comparing natural regeneration to experimental plantings, the District hopes to help land owners gain useful information on how best to manage forest stands similar to those in the HDF.

2002 Floods

Record-setting precipitation and unusually warm temperatures produced widespread flooding in Southcentral Alaska in the fall of 2002. The unusual weather patterns persisted in the region for more than two months. On the Kenai Peninsula, heaviest rainfalls and most severe flooding occurred October 22-24 and November 23, resulting in two 100-year floods within a 1-month period. Flooding was most severe on the western part of the peninsula, especially between Ninilchik and Homer. Many buildings, bridges, and sections of road were damaged.

The "100-year flood" is the standard used by most federal and state agencies during zoning, floodplain management, bridge design, and emergency planning. The term "100-year flood" is a statistical designation meaning a flood volume having a 1-in-100 chance of occurring in any given year. The 100-year flood is determined based on the frequency and magnitude of past floods, and this estimate changes as more data are collected. For example, streamflow data collected at Fritz Creek, near Homer, since 1963 indicate that the 100-year flood is now larger than it was when calculated using data through 1999. This highlights the importance of continued streamflow monitoring.

The 2002 flood discharge in Diamond Creek, which flows through the HDF, was estimated by the U.S. Geological Survey to have peaked at 357 cubic feet per second (cfs), setting a new stream record (Curran, et al., 2003). In 2002, eight streams on the lower Kenai Peninsula exceeded previous record peak flows, and many others reached near-record discharges.

Diamond Creek flooding destroyed portions of the HDF trail system, washing away several bridges. In addition, floods destroyed all beaver dams in the forest, precipitating the disappearance of beavers from the area. Flooding is also thought to have dramatically altered Dolly Varden

(*Salvelinus malma Walbaum*) spawning habitat (see Fauna, below).

III. Site Description

Location

The HDF is located on the northwest border of Homer City limits. The southwest corner of the HDF is about 0.8 miles from Kachemak Bay to the south and 1.8 miles from Bluff Point, overlooking Cook Inlet, to the west. The forest is situated within an area commonly known as Baycrest Hill, and encompasses a significant portion of the roughly 5.4-square mile Diamond Creek watershed (see Maps 1 and 13).

The HDF encompasses areas of Sections 11, 13 and 14, Township 6 South, Range 14 West, Seward Meridian. Its legal description is:

> S1/2 SW1/4, W1/2 SE1/4 of Section 11, NW1/4 NW1/4 of Section 13, and N1/2 N1/2 of Section 14, Township 6 South, Range 14 West, Seward Meridian.

The Kenai Peninsula Borough considers each portion of each section a separate parcel, and thus recognizes the HDF as composed of three parcels: parcel 17303231, consisting of 160 acres; 17316027, consisting of 80 acres; and 17316021, consisting of 120 acres. These three parcels total 360 acres, more or less.

Access

(See Map 1, Established Access.)

The HDF is accessible only via non-motorized trails. This allows researchers, educators, and students to experience a forest managed with a focus on sustainable use and minimal degradation of environmental quality, in keeping with the forest's "stewardship" goal. At the same time, forest users enjoy an area ideally suited for non-motorized outdoor exploration and recreation. (ATVs, snowmachines, and other vehicles are used only for maintenance and support functions.)

The easiest and most heavily used access into the HDF is provided by the Homestead Trail. This trail enters the HDF at both its southwest corner and on its northern boundary. The southern trailhead is located off the Sterling Highway, on Rogers Loop Road at the top of Baycrest Hill. The northern trailhead is found on Rucksack Drive, off of Diamond Ridge Road. Both trailheads have small parking areas and signs that are maintained by the Kachemak Heritage Land Trust, the managing entity for the Homestead Trail.

In recent years, several subdivisions bordering the HDF have developed hiking, skiing, and equestrian trails that provide neighborhood routes leading into the forest. This trend is encouraged and is likely to continue as long as trail users respect the private property crossed by these trails.

Climate

Commonly described as having a maritime climate, the Homer area is buffered to the north and east by the Kenai Mountains and to the west by the Alaska Range, across Cook Inlet. These mountain ranges shield the area from storms originating in the Gulf of Alaska, as well as cold air coming from the Arctic and Interior. As a result, the Homer area has generally mild and moist weather. In addition, the relative warmth and high precipitation of Homer when compared to Kenai and Soldotna is due to

its greater exposure to the waters of the relatively warm Gulf of Alaska. Summers in Homer are typically cool, with average highs around 60˚F; temperatures over 80˚F occur occasionally. Winters are moderately cold, with extreme lows down to -20˚F, but average lows are closer to 20˚F.

The table below shows average monthly temperature, precipitation, and snowfall at the Homer Airport weather station. This station is currently located about 63 ft above sea level. The HDF, which is roughly 640 to 850 ft higher in elevation, is generally cooler and receives significantly more of its precipitation as snowfall.

Temperature and precipitation as measured at the Homer Airport, Sept. 1932 to Dec. 2005.

	Ave. max. temp.	Ave. min. temp.	Ave. total precip	Ave. total snow fall	Ave. snow depth
Jan	29.2	16.7	2.28	9.6	4
Feb	32.4	19.0	1.77	11.3	5
Mar	35.8	21.5	1.57	9.2	5
Apr	43.2	28.9	1.20	2.9	2
May	50.7	35.7	1.00	0.3	0
Jun	57.2	42.1	0.98	0.0	0
Jul	61.0	46.2	1.56	0.0	0
Aug	60.6	46.0	2.48	0.0	0
Sep	54.9	40.1	3.06	0.0	0
Oct	44.4	31.3	3.18	2.1	0
Nov	35.2	23.0	2.73	7.4	1
Dec	30.0	18.1	2.82	12.1	4
Annual	44.6	30.7	24.64	54.9	2

Temperature is recorded in degrees Fahrenheit. Precipitation, snow fall, and snow depth are recorded in inches.

Elevation and Slope

1. (See Map 2, Aspect; Map 7, Contour Elevations; Map 9, Slope; Map 10, 2004 Soils Map; and Map 11, 1987 Soils Map.)

The highest elevations in the HDF occur at its northern and eastern borders. These areas range from 850 to 915 ft above mean sea level. The lowest point, within the channel of Diamond Creek near the forest's southwest boundary, is approximately 700 ft above sea level.

Generally, the HDF is characterized by gently-to-moderately sloping hillsides rising north, south, and east from Diamond Creek. Diamond Creek itself flows east to west for the entire 1 1/4-mile width of the forest (see Hydrologic Features, below).

Hillsides in the HDF generally range in slope from 0 to 15 percent, although steeper sections occur. Side slopes of ravines, including those mapped as riparian corridors and relict glacial drainageways (see Wetlands), generally have steeper slopes, often exceeding 20 percent.

Geology

Most surface geology in the region reflects glacial processes. Gracz et al. (2005) summarized how glacial processes affected the Kenai Lowlands

> Glaciers did not come as one large ice-age event, then recede. Many glaciation events occurred within larger glacial periods. The events can be classified into glacial periods, glaciations, and glacial advances. The broadest are the periods. The most recent glacial period is named the Wisconsin. On the Kenai Lowlands, within the Wisconsin period there were at least three major glaciations. Within the last of those, the Naptowne, there were at least four major glacial advances, the first of which is named the Moosehorn advance. On the Kenai Lowlands, each successive glacial period, glaciation, and glacial advance was less extensive than the previous one. The first glacial periods covered all of the Kenai. Only during the last period (or two) did glaciers fail to cover the entire lowlands and

start to leave behind glacial till of differing ages.

Each glaciation event left behind evidence in the form of moraines and associated deposits known collectively as glacial till. The Naptowne glaciation left behind much of the till we see on the lowlands today and created glaciation landforms that dominate the Kenai Lowlands below 300 meters elevation.

The Naptowne has been divided into at least four glacial advances. The Moosehorn advance was the earliest and left behind large and distinctive landforms. The Killey, Skilak, and Tanya advances followed.

When ice retreated from the Homer area approximately 17,000 years before present, glacial activity left behind numerous sedimentary deposits and surface features, including kettle ponds and relict glacial drainageways.

Ed Berg, Refuge Ecologist for the Kenai Wildlife Refuge, has provided additional information on geological processes shaping the HDF. Diamond Creek was originally an ice marginal drainage stream, flowing north along a glacier edge and emptying into the Anchor River. After the Moosehorn glacier retreated, Diamond Creek cut westward through a moraine to empty directly into Cook Inlet.

Glacial till overlays poorly lithified Tertiary bedrock sediments known as the Beluga Formation of the Kenai Group. Tertiary outcrops are exposed in the bluffs along Cook Inlet from Homer to Anchor Point.

Soils

(See Map 10, 2004 Soils Map, and Map 11, 1987 Soils Map.)

In 1987 (with additional fieldwork in 1991), NRCS Soil Scientist Doug Van Patten mapped the HDF using soil series described in the *Homer-Ninilchik Soil Survey*. This soil mapping was done on a photo base having a scale of 1:15,840 (i.e., 4 inches on the photo equals 1 mile on the ground). The following soil series were mapped in the HDF at that time:

Beluga silt loam, moderately sloping;
Doroshin peat, nearly level;
Doroshin peat, gently sloping;
Doroshin peat, moderately sloping;
Kachemak silt loam, moderately sloping;
Kachemak silt loam, strongly sloping;
Kachemak silt loam, gently sloping, moderately well drained;
Kachemak silt loam, moderately sloping, moderately well drained;
Kachemak silt loam, steep, moderately well drained;
Moose River silt loam;
Mutnala silt loam, moderately sloping;
Slikok mucky silt loam, nearly level;
Slikok mucky silt loam, gently sloping;
Spenard silt loam, gently sloping;
Spenard silt loam, moderately sloping;
Starichkof peat, nearly level;
Starichkof peat, gently sloping.

In the summer of 2004, the NRCS released the Western Kenai Peninsula Area soil survey (available on the Web at: http://websoilsurvey.nrcs.usda.gov). This soil survey replaced the earlier Homer-Ninilchik survey, which was encompassed within the later survey boundaries. The Western Peninsula survey, mapped at a scale of 1:25,000, delineated the following soil series within the HDF:

Coal Creek silt loam, 8 to 15 percent slopes;
Doroshin mucky peat, 4 to 8 percent slopes;
Kachemak silt loam, 4 to 8 percent slopes;
Kachemak silt loam, 8 to 15 percent slopes;
Kachemak silt loam, forested, 4 to 8 percent slopes;
Kachemak silt loam, forested, 8 to 15 percent slopes;
Mutnala silt loam, 45 to 60 percent slopes;
Spenard peat, 4 to 8 percent slopes;
Spenard peat, 8 to 15 percent slopes;
Starichkof and Doroshin soils, 0 to 4 percent slopes;
Starichkof peat, 0 to 4 percent slopes.

Minor differences between the two surveys are due to differences in their mapping scales and changes in mapping conventions. Because the 1987 survey was mapped at a larger, more detailed, scale, its soil delineations are considered more accurate.

Both the Homer-Ninilchik survey and the Western Kenai survey identify Spenard peat (or silt loam) and Kachemak silt loam as the dominant soil types within the HDF. Together, these series encompass almost 274 acres, or nearly 67 percent, of the forest. Descriptions of soil properties, as well as interpretations of their limitations, and suitabilities, are available at the website referenced above and from NRCS offices.

Soils and Planning

In order to fine-tune planning decisions within the HDF, relevant soil data will be confirmed and interpreted as needed for specific projects. For general planning purposes, the primary soil types are divided into the following three categories:

Well-drained:
- Kachemak silt loams,
- Mutnala silt loams.

Poorly-drained
- Coal Creek silt loam.

Very poorly-drained
- Doroshin mucky peat,
- Spenard peats,
- Starichkof peat.

To assist planners in deciding which areas within the HDF are best suited for specific land uses, soil and vegetation data collected for the 1992 HDF framework plan were combined to produce five general land suitability categories:

1. Lands best suited for forestry research and demonstrations;
2. Lands best suited for wildlife observation and enhancement;
3. Lands best suited for recreation;
4. Lands best suited for research, demonstrations, and school projects;
5. Lands best suited for day-use activities.

Appendix C. shows the delineation of these areas within the HDF. Of course, many land uses are mutually compatible. The delineations shown in Appendix A. are not, therefore, intended to restrict a particular area to a single land use when other uses are compatible. The delineations simply offer a preliminary outline for initial planning purposes. As specific projects are proposed, all land uses and suitabilities are considered when selecting locations for each project.

Hydrologic Features

(See Map 13, Diamond Creek Watershed and Wetlands.)

Diamond Creek

The HDF is bisected by Diamond Creek, which runs east to west across the 1 1/4-mile width of the forest. The total length of Diamond Creek is approximately 5 miles from its headwaters to its outlet in Cook Inlet. Diamond Creek drains a watershed approximately 5.35 square miles in size.

As noted under Fauna, below, Diamond Creek was known to support Dolly Varden (*Salvelinus malma Walbaum*) prior to the floods of 2002. Scouring of the streambed during these floods is thought to have decimated the HDF population. Flooding also destroyed beaver dams, and no beavers have been observed in the HDF since 2002.

Wetlands

The Environmental Protection Agency defines wetlands as "lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface." Wetlands vary widely because of regional and local differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors. Wetlands are largely controlled by their position on the landscape (geomorphology) and the amount of water that moves through them (hydrology).

In 2004, wetlands in the Kenai Lowlands were mapped by the Kenai Watershed Forum (Gracz, et al., 2005). This wetland project consisted of three parts: an ecosystem level classification, a plant community classification, and a map delineating different kinds of wetlands.

Ten wetland ecosystems were identified based on landforms and generalized hydrology, and 71 plant communities were identified using vascular plant presence and abundance. Plant communities and processes are distinct within each ecosystem, although overlap occurs between ecosystems.

Four of the ten wetland ecosystems can be found in the HDF: discharge slopes, riparian corridors, kettles, and relict glacial drainageways. The following descriptions of these ecosystems have been summarized from the KWF website: http://www.kenaiwetlands.net

Discharge slopes represent the most common wetland ecosystem type in the HDF. These wetlands occur over mineral soils where wetlands transition to uplands and at slope breaks on terraces. They commonly occupy foot- and toe-slope landscape positions at the edge of peatlands or stream valleys. At these locations, upslope groundwater is discharged or water tables are perched near the surface on dense, poorly sorted glacial till.

Many discharge slopes are dominated by Lutz spruce (*Picea x lutzii*), and spruce dominated discharge slopes constitute the single most common and extensive wetland type in the Kenai Lowlands project area. South of Clam Gulch, Lutz-dominated discharge slopes (mapped as "SL") occupy virtually all toeslope transitions from upland to wetland on late-Wisconsin surfaces (see Geology, above). Most commonly, these forested discharge slopes gradually transition into lakebed or drainageway wetlands or occur at terrace toeslopes on heavy late-Wisconsin till.

The most common understory dominants in forested discharge slope wetlands are rusty

menziesia (*Menziesia ferruginea*), thinleaf alder (*Alnus incanna* ssp *tenuifolia*), Barclay's willow (*Salix barclayi*), and bluejoint grass (*Calamagrostis canadensis*). The presence of field horsetail (*Equisetum arvense*) in the understory along with any of the above plants is good evidence of a shallow water table, within a foot or so of the surface.

Soils associated with discharge slopes in the HDF consist primarily of Spenard and Doroshin series.

Riparian corridors consist of stream channels exhibiting a bed-and-bank morphology and their associated valley bottoms. These are the second most common wetlands in the HDF, where they are fed by groundwater, surface runoff, rainfall, and snowmelt. (Elsewhere in the Kenai Lowlands, riparian corridors are often fed by glacial meltwater).

The most significant riparian corridor in the HDF is Diamond Creek. Like many other peninsula streams, Diamond Creek is "underfit," meaning that it flows through a valley carved long ago by large volumes of glacial meltwater.

According to the stream classification system used for mapping Kenai wetlands, within the HDF, Diamond Creek exhibits "E" stream reach characteristics (more specifically, "El"). Such stream reaches are slightly entrenched, stable, pool-dominated channels within larger relict channels (hence "underfit") supporting broad stream fringe wetlands.

Relatively narrow, somewhat entrenched reaches, like the HDF portion of Diamond Creek, may often overflow their banks. During rainstorms or periods of rapid snowmelt, obstructions like debris or beaver dams[4] can easily back up flows in such channels.

"E" type stream reaches are typically bordered by broad wetland margins, beginning with bluejoint streamside meadows immediately adjacent to the channel. Streamside meadows are generally bordered by spruce forests, with these often occurring on adjacent foot- and toeslopes. Such forests have field horsetail and either bluejoint grass or willow in their understory.

Along many "E" reaches, including Diamond Creek in the HDF, willow/ bluejoint communities are common between the streamside meadows and the bordering spruce forests. Bluejoint streamside communities also occupy low berms indicating the bank-full stream margin.

Streambeds within HDF riparian corridors consist of organic or fine grained mineral material. HDF soils commonly found within riparian corridors include Coal Creek, Moose River, Slikok, Spenard, and Doroshin series.

Kettle wetlands are typically present on "kettle and kame" landscapes, which are created at the margins of retreating glaciers under zones of stagnant melting ice. Here, streams flowing on top of glaciers transport material that is deposited in surface depressions on the ice. When the ice melts, the stream-deposited material is left behind as small hills and short ridges of moderately stratified sands and gravels, and these form

[4] After the floods of October and November of 2002, the character of some HDF streams changed. Beaver dams were breached, and reaches that had been dammed became free-flowing. In addition, streambeds were scoured, creating more riffles and exposing cobbles and gravels. As yet, no new dam building activity has been observed.

upland "kames." Kames are deposited on a flat (wetland) surface of fine materials—predominantly silts—that were formerly trapped in the glacial ice, but are now left behind, perching a water table. "Kettles" are peatlands that form on these flat silts between the upland kames. The perched water table, generally less than a foot below the surface, combined with local climate creates conditions conducive to peat formation.

Kettle and kame landscapes form a distinctive pattern easily recognizable on aerial photos. On the Kenai Lowlands, at least five such landscapes have been identified. The smallest of these wraps around the west end of Diamond Ridge and includes the hills and peatlands near the Homer Landfill, extending into the western portion of the Demonstration Forest. This area probably lies behind the early Wisconsin maximum (Knik) of the same glacier that created the Old Sterling Highway kettle-and-kame country.

Kettle wetlands are often located adjacent to riparian corridors, discharge slopes, or relict glacial drainageways. The two kettles mapped in the HDF are adjacent to both discharge slopes and riparian corridors.

Kettles are typically dominated by shrubs or bluejoint grass (*Calamagrostis canadensis*). Plants found in the HDF keetles include sedges (*Carex* spp), dwarf shrubs such as sweetgale (*Myrica gale*) and dwarf birch (*Betula nana*), Labrador tea (*Ledum palustre* ssp. *decumbens*), and crowberry (*Empetrum nigrum*). At their highest positions, a peatland Lutz spruce woodland or forest, with a Barclay's willow (*Salix barclayi*) understory occurs.

Strarichkof, and to a lesser extent Doroshin, peats represent the dominant soils in the HDF kettles.

Relict Glacial Drainageway wetlands segregate into five major types. Those in the HDF consist of either Type 3: stream fringe drainageways, which are adjacent to modern streams, or Type 4: spring fens, which are areas of relatively strong groundwater discharge.

In both stream fringe and spring fen relict drainageways, plant communities segregate poorly and are frequently found mixed together. Abundant species include water and creeping sedge (*Carex aquatilis* and *C. chordorrhiza*), marsh fivefinger (*Comarum palustre*), and marsh horsetail (*Equisetum palustre*). Shrubs are often robust, and either sweetgale (*Myrica gale*) or thinleaf alder (*Alnus incana* ssp. *tenuifolia*) can be abundant. Frequently a spruce forest with bluejoint grass openings occurs, often with thinleaf alder (*Alnus incana* ssp. *tenuifolia)* mixed with a hummocky sweetgale-dwarf birch-water horsetail plant community in the understory; water sedge is also common.

The two relict glacial drainageways mapped in the HDF are found on Starichkof and Doroshin soils.

Flora

(See Map 12, Vegetative Cover.)

The HDF generally consists of forest and wetlands. Of its 360 acres, just over 258 are forested. Forested areas consist predominantly of Lutz spruce, (*Picea x lutzii*) which in this area incline towards Sitka/coastal genotypes as evidenced by regeneration rates, branching patterns, diameters, heights, and associated understory species.

The following tree, shrub, and groundcover species have been identified in the HDF.

Trees
Lutz spruce, *Picea x lutzii,*
black spruce, *Picea mariana*
cottonwood, *Populus spp.*
paper birch, *Betula papyrifera*

Shrubs
alder, *Alnus spp.*
american twin-flower, *Linnaea borealis*
bog blueberry, *Vaccinium uliginosum*
cloudberry, *Rubus chamaemorus*
crowberry, *Empetrum nigrum*
five-leaf bramble, *Rubus pedatus*
lowbush cranberry, *Vaccinium vitis-idaea*
northern black currant, *Ribes hudsonianum*
rusty menziesia, *Menziesia ferruginea*
Steven's spirea, *Spiraea beauverdiana*
willow, *Salix spp.*

Forbs, ferns, clubmosses and grasses
bluejoint grass, *Calamagrostis Canadensis*
bramble berry, *Rubu pedatus*
devil's club, *Oplopanax horridus*
elderberry, *Sambucus racemosa*
fireweed, *Epilobium angustifolium*
geranium, *Geranium spp.*
horsetail, *Equisetum*
Labrador tea, *Ledum palustre*
oak fern, *Gymnocarpium dryopteris*
one-sided wintergreen, *Pyrola secunda*
pink wintergreen, *Pyrola asarifolia*
shield fern, *Dryopteris dilatata*
Sitka burnet, *Sanguisorba stipulata*
tall Jacob's-ladder, *Polemonium acutiflorum*
watermelon berry, *Stretopus amplexifolius*

Forest Regeneration[5]

The condition of HDF forests is of obvious importance to HDF managers. As a result, monitoring the effects of the spruce bark beetle epidemic of the 1980s and early 1990s has been a high priority. Although the beetle outbreak killed most of the old growth Lutz spruce in the HDF, basic site conditions in the forest (soils, slope, climate, etc.) result in moderate-to-high potential for forestland productivity (see Map 5, Forest Productivity).

In February 2003, the HSWCD published *Homer Demonstration Forest Field Reconnaissance Project* (DePasquale, 2003). This reconnaissance survey was designed to measure regeneration of HDF forest stands post-spruce bark beetle, as well as timber volumes (see Map 6, Forest Regeneration Survey).

Timber volumes were measured in terms of pulpwood and sawtimber. Sawtimber was divided into two classes: small (11-15 inches DBH[6]) and large (DBH greater than 15 inches), and sawtimber volumes were expressed in terms of boardfeet per acre and total boardfeet per stand. Pulpwood volumes were expressed in terms of cords per acre and total cords per stand.

The forest reconnaissance found that in general, forest stands in the HDF showed a high variance in age classes (i.e., trees of many different ages were present). In some cases, however, forest stands were dominated by two age classes as a result of recent disturbances such as fire, windthrow, or agricultural clearing.

Two features of HDF forests were striking. First, even some very large trees (DBH greater than 11 inches) had survived the beetle outbreak. Survival of large spruce is relatively uncommon over much of the peninsula, and according to the survey,

[5] Regeneration is the process by which a forest is reseeded and renewed. Advanced regeneration refers to regeneration that is established before the existing forest stand is removed.

[6] DBH stands for "diameter at breast height," which is measured 4.5 feet up the tree trunk.

"…suggests the possibility that factors mitigating beetle mortality may be present."

Secondly, regeneration is very high in the HDF. Regeneration is measured in live young trees (or "stems") per acre; the greater the number of stems, the higher the stocking rate. The survey notes that "…compared to other stands on the southern Kenai Peninsula, the HDF is extremely well stocked; 198 percent of minimum stocking standards are met throughout the stand." This abundant regeneration "…presents itself in multiple age classes and is usually arranged on nurse log/stump situations." This means that young trees of many ages were noted, but most of these were found growing on dead stumps and downed logs. (This indicates the important role that downed dead trees play in the renewal of beetle-killed forests.)

In stands dominated by two age classes, regeneration was found widely and densely distributed under the mature canopy (local spruce are very shade tolerant). As has occurred elsewhere following stand-replacing outbreaks of spruce bark beetle, regeneration is expected to rapidly occupy the new space available to it.

The principal concern related to HDF regeneration is the potential increase of bluejoint grass (*Calamagrostis canadensis*) in the forest understory. As needles drop from dead trees and dead trees fall over, the closed forest canopy begins to open up. Within the HDF, spruce stands that once provided extensive shade now allow abundant sun to reach the forest floor. This may allow bluejoint grass to become dominant in the understory.

Potential landscape-scale increase of bluegjoint grass concerns foresters, as well as fire management professionals. Bluejoint grass not only suppresses forest regeneration by shading out seedlings, it is a highly combustible fuel that becomes especially dangerous when combined with dead or downed beetle-killed trees. Fires in stands of abundant grass and beetle-killed spruce exhibit extreme behavior, especially in spring prior to green-up, and can be difficult for initial fire attack forces to control.

Fire danger

As explained above, dangerous fires may occur within the HDF (see Map 14, Wildfire Hazard). Since the HDF is generally categorized as having a high potential for wildfire (see Map 13), it would be prudent to monitor and document bluejoint encroachment in areas of forest regeneration. Likewise, it is essential both to plan effective responses to wildfire in the HDF and to minimize potential fire threat.

Fauna[7]

The HDF is known to provide habitat for many kinds of mammals (including moose, brown and black bear, lynx, fox, coyote) and birds (including nesting bald eagles). Nonetheless, no comprehensive inventory has yet been made of bird, mammal, fish or other animal populations within the HDF.

Fish

Diamond Creek was known formerly to support Dolly Varden (*Salvelinus malma Walbaum*). Though never abundant, small Dolly Varden were recorded in ponds and stream pools during annual creek surveys prior to the floods of 2002. It is not known whether the population was anadromous or

[7] The ADF&G Wildlife Notebook Series provides descriptions of over 100 species of wildlife occurring in Alaska. It can be found online at: www.adfg.state.ak.us/pubs/notebook/notehome.php

of the freshwater resident variety, although migration obstacles in Diamond Creek downstream from the Sterling Highway suggest it was the resident variety. (Both forms exist on the Kenai Peninsula, with lake, river, and dwarf populations found among freshwater residents.)

Dolly Varden spawn in streams, usually from mid-August to November. Following the floods of October and November 2002, observers noted that the Diamond Creek streambed had been scoured to reveal a sandy gravel bottom, and it is generally thought that the Dolly Varden population was decimated. Little is known about the habits of nonmigratory Alaskan Dolly Varden, and recovery of this population is uncertain. Surveys continue monitoring for any signs of these fish within the HDF.

Mammals
Mammals that have been observed in the HDF or may potentially utilize the area include the following species:

Ungulates
moose, *Alces alces*

Carnivores
coyote, *Canis latrans*
red fox, *Vulpes vulpes*
gray wolf, *Canis lupus*
black bear, *Ursus americanus*
brown bear, *Ursus arctos*
marten, *Martes americana*[8]
ermine, *Mustela erminea*
least weasel, *Mustela nivalis*
mink, *Mustela vison*
lynx, *Felis lynx*

Bats
little brown bat, *Myotis lucifugus*

Lagomorphs
snowshoe hare, *Lepus americanus*

Rodents
red squirrel, *Tamiasciurus hudsonicus*
northern flying squirrel, *Glaucomys sabrinus*[9]
beaver, *Castor canadensis*[10]
hoary marmot, *Marmota caligata*
northern red-backed vole, *Clethrionomys rutilus*
meadow vole, *Microtus pennsylvanicus*
singing vole, *Microtus miurus*
muskrat, *Ondatra zibethicus*
northern bog lemming, *Synaptomys borealis*
meadow jumping mouse, *Zapus hudsonius*
porcupine, *Erethizon dorsatum*

Shrews
masked shrew, *Sorex cinereus*
dusky shrew, *Sorex monticolus*
northern water shrew, *Sorex palustris*
pygmy shrew, *Sorex minutus*

Birds
Birds that have been documented in the HDF or could possibly use the area include:

Ducks
mallard, *Anas platyrhynchos*
green-winged teal, *Anas crecca*

Hawks, Eagles, Harriers
northern goshawk, *Accipiter gentilis*
sharp-shinned hawk, *Accipiter striatus*

[8] Though the habitat may support this species, the HSWCD Board of Directors does not know it to exist in the area.

[9] Though the habitat may support this species, the HSWCD Board of Directors does not know it to exist in the area.

[10] Diamond Creek was documented to support a healthy population of beavers before the 2002 floods. Data on HDF beaver populations had been collected annually since the mid-1990s. The 2002 floods washed out all beaver dams, and surveys from 2003 through 2005 reported no sign of beaver in the area.

red-tailed hawk, *Buteo jamaicensis*
bald eagle, *Haliaeetus leucocephalus*
northern harrier, *Circus cyaneus*
gyrfalcon, *Falco rusticolus*
merlin, *Falco columbarius*

Grouse
spruce grouse, *Dendragapus canadensis*

Cranes
sandhill crane, *Grus canadensis*

Sandpipers
solitary sandpiper, *Tringa solitaria*
lesser yellowlegs, *Tringa flavipes*
common snipe, *Gallinago gallinago*
spotted sandpiper, *Actitis macularia*
least sandpiper, *Calidris minutilla*

Owls
great horned owl, *Bubo virginianus*
northern hawk owl, *Surnia ulula*
great gray owl, *Strix nebulosa*
short-eared owl, *Asio flammeus*
boreal owl, *Aegolius funereus*

Kingfishers
belted kingfisher, *Ceryle alcyon*

Woodpeckers
northern flicker, *Colaptes auratus*
hairy woodpecker, *Picoides villosus*
downy woodpecker, *Picoides pubescens*
three-toed woodpecker, *Picoides tridactylus*

Flycatchers
alder flycatcher, *Empidonax alnorum*
olive-sided flycatcher, *Contopus borealis*

Swallows
violet-green swallow, *Tachycineta thalassina*
tree swallow, *Tachycineta bicolor*

Corvids
gray jay, *Perisoreus canadensis*
Steller's jay, *Cyanocitta stelleri*
black-billed magpie, *Pica hudsonia*
common raven, *Corvus corax*
northwestern crow, *Corvus caurinus*

Chickadees
black-capped chickadee, *Poecile atricapilla*
boreal chickadee, *Poecile hudsonica*

Nuthatches
red-breasted nuthatch, *Sitta canadensis*

Dippers
dipper, *Cinclus mexicanus*

Creepers
brown creeper, *Certhia americana*

Wrens
winter wren, *Troglodytes troglodytes*

Thrushes
American robin, *Turdus migratorius*
varied thrush, *Ixoreus naevius*
hermit thrush, *Catharus guttatus*
Swainson's thrush, *Catharus ustulatus*
gray-cheeked thrush, *Catharus minimus*

Kinglets
golden-crowned kinglet, *Regulus satrapa*
ruby-crowned kinglet, *Regulus calendula*

Waxwings
bohemian waxwing, *Bombycilla garrulus*

Shrikes
northern shrike, *Lanius excubitor*

Warblers
orange-crowned warbler, *Vermivora celata*
yellow warbler, *Dendroica petechia*
yellow-rumped warbler, *Dendroica coronata*
Townsend's warbler, *Dendroica townsendi*
blackpoll warbler, *Dendroica striata*

northern waterthrush, *Seiurus noveboracensis*
Wilson's warbler, *Wilsonia pusilla*

Finches
pine grosbeak, *Pinicola enuleator*
common redpoll, *Carduelis flammea*
pine siskin, *Carduelis pinus*
white-winged crossbill, *Loxia leucoptera*

Sparrows
savannah sparrow, *Passerculus sandwichensis*
dark-eyed junco, *Junco hyemalis*
white-crowned sparrow, *Zonotrichia leucophrys*
golden-crowned sparrow, *Zonotrichia atricapilla*
fox sparrow, *Passerella iliaca*
song sparrow, *Melospiza melodia*

Cultural Resources

(See Map 4, Features and Project Locations and Map 8, Ski Trails.)

The HDF is highly valued by local citizens and visitors alike as a recreational destination and important open space. A wide range of activities are enjoyed in the forest, among them: hiking, skiing, berry picking, mushroom hunting, wildlife viewing, snowshoeing, picnicking, photography, nature study, running, geo-caching, orienteering, and just getting away in a beautiful natural setting.

Hiking Trails
Several hiking trails within the HDF have been developed to varying degrees. Some are accessible year-round, while others are intended for seasonal use.

The self-guided Nature Trail and the Homestead Trail have been developed to the highest level using various trail hardening techniques such as typar, wood-chips, and numerous boardwalk designs, which protect wet areas and lessen impacts on sensitive terrain. Demonstrations of different hardening techniques enable HDF visitors to see firsthand how various methods function and to compare their effectiveness.

Ski Trails
Of all the cultural features in the HDF, the Baycrest ski trails are the best known and most heavily used. This trail system stretches from Rogers Loop Road, on the south, to Diamond Ridge Road, on the north. Ski trails within the HDF connect with numerous trails on surrounding private lands to create approximately 15 miles of trails. The Kachemak Nordic Ski Club, a volunteer organization, has maintained and groomed ski trails in this area since before official designation of the HDF.

Arboretum
The HDF arboretum is 1/4 acre in size and was developed as an outdoor nursery and laboratory. Here trees and shrubs are grown for observation and study. To minimize damage from wildlife, the arboretum has been fenced using timber milled from local beetle killed spruce.

The arboretum has the capacity to support up to 100 plantings and currently displays both native and non-native species. Several planting techniques have been used to demonstrate ways landowners might plant trees on their own property.

Snow Survey Site
In cooperation with the Homer SWCD, the NRCS established a snow survey site in the HDF in 1973; the two entities have monitored and maintained the snow course since. Snow depth and snow water equivalent are measured several times each winter. These data are compiled annually in Basin Outlook Reports, available from the

NRCS office. Information on the NRCS snow survey program is available the Web at: http://www.ak.nrcs.usda.gov/snow/.

Soil Monitoring Sites
Two soil monitoring sites have been established in the HDF by the NRCS. These sites are equipped with sensors and data-loggers to collect continuous data on soil temperature and moisture. These data are available from the NRCS.

Observation Areas
A few viewing platforms and benches have been constructed in the HDF. Observation sites have been situated to take advantage of proximity to established trails, scenic areas, and potential for wildlife sightings.

Moose Exclosure
In 1992, Gino del Frate of the Alaska Department of Fish and Game developed a moose exclosure in the HDF. The exclosure is located in a willow-dominated riparian wetland bordering Diamond Creek. The exclosure is located on the self-guided Nature Trail and lies just north of the Homestead Trail, not far from the Rogers Loop trailhead.

Installing the exclosure involved mowing all shrubs (predominantly willow) within an area roughly 1/4-acre in size, after which a stout, 8-ft tall wire exclosure was erected to exlude moose from browsing part of the mowed area. The difference in shrub regrowth inside and outside the exclosure permits assessment of relative moose browsing pressure on area shrubs.

Other Developments
Other developments within the HDF include bridges for stream crossings, outhouses, geo-caching sites, informational signs (and associated brochures), trail signs, and bird nesting boxes.

IV. HDF Funding

With the exception of the NRCS—which has provided long-term funding for data gathering (including snow surveys and soil mapping and monitoring), no managing entity has provided ongoing and consistent funding for projects, maintenance, or improvements within the HDF. Since its establishment, the forest has operated as a largely volunteer effort, supported by intermittent grants.

This is not to say that responsible entities, in particular the state Division of Forestry and the Homer Soil and Water Conservation District, have not made significant efforts to plan and manage HDF projects and activities. This plan—funded by the DOF and prepared by the District—cites numerous examples of such contributions, while itself representing such an effort. But without steady, predictable funding, efforts to conduct research in the HDF, and to improve and expand its educational offerings and public use amenities, will inevitably be sporadic.

Similarly, the thousands of volunteer hours local citizens have donated to imrove HDF trails represent a tremendous contribution. Developing the well-known “Baycrest ski trails,” for example, has been a decades-long “labor of love” for the Kachemak Nordic ski club. HDF ski trails now host hundreds of skiers each winter—from informal recreationists to students in school athletic programs to competitors in organized events like the annual “Sea-to-Ski” race and “Homer Marathon.”

Nonetheless, efforts to improve HDF facilities and expand its uses have been constrained by inconsistent and unpredictable funding. With more reliable financial support, the HDF could become an

exceptional and unique educational resource for the Homer area and a true "destination" asset. In the section that follows, a number of tasks are identified that could help generate much needed financial support for HDF projects and activities.

In its long-range strategic plans, the Homer SWCD has identified as top priorities both improving HDF facilities and increasing use of the forest for research, education, and recreation. These plans reflect the importance that the District places on those priorities. It is hoped that the information provided in this plan, along with the directions outlined in the following section, will help in achieving HDF goals.

V. Goals, Objectives, and Tasks

This section outlines the broad goals and more specific objectives for which the HDF will be managed under this plan. Suggested tasks for meeting each objective are also outlined. As proposed tasks are accomplished—as well as others that may be identified in the future—the HDF will become an increasingly useful, significant, and valuable asset for the Homer community.

This plan outlines six goals and twenty objectives. These consist of one "Stewardship" goal with four related objectives, three "Education and Nature Observation" goals with nine objectives, one "Research" goal with four objectives, and one "Recreation" goal with three objectives. In contrast, the 1992 HDF Plan identified one dominant goal—restated from the 1986 ILMA—namely, "*…to make use of the land for developing, operating and maintaining a demonstration forest for educational purposes*." Three educational objectives and one recreational objective were identified, namely, to manage the HDF so as to provide areas:

(1) …where various ways to manage and use forests are tested, studied, and demonstrated to schools, organizations, and the public;
(2) …where schools, organizations, and the public can learn about forest ecology;
(3) …where schools, organizations, and the public can observe and learn about wildlife; and
(4) …for recreational activities that are compatible with the educational objectives of the forest.

In addition, the 1992 plan added a second, "environmental quality," goal, which specified: "The HDF will be managed so that (a) the quality of its soils, waters, plants, animals, and air is maintained for future generations and (b) the potential productivity of its resources is not diminished by their use.

The goals, objectives, and tasks outlined below build on, refine, and significantly expand the direction and guidance provided by the 1992 plan.

Stewardship

Goal:

Maintain the quality of HDF soils, waters, plants, animals, and air for future generations.

Stewardship Objective 1:

Monitor the HDF to ensure that environmental quality is maintained and, where appropriate, eliminate or reduce threats to forest resources.

Tasks:

- Develop a monitoring schedule that includes: (a) testing of arboretum soils, (b) measurement of Diamond Creek water quality, (c) assessment of bluejoint grass impacts on forest regeneration, (d) identification of invasive weeds or exotic species, and (e) collection of photographs along photo point route(s).
- Work with appropriate agencies and organizations to prepare for the possibility of wildfire in the HDF and to minimize this threat.

Stewardship Objective 2:

Develop and institute a fund raising/membership program to provide fresh ideas and reliable funding for HDF improvements and maintenance.

- Coordinate a subcommittee of the HDF Steering Committee to identify activities, services, and/or concepts (such as a Bio-Blitz competition) that will draw attention to the HDF and establish a membership base for its support.
- Offer activities, services, and/or concepts to the community.
- Institute an annual "Call for Ideas" to the general public to solicit guidance for future HDF activities and projects.
- Investigate alternative fund raising ideas and sources with this subcommittee (example: planting "Memorial Trees" for a fee).
- Establish a "Friends of the Homer Demonstration Forest" organization to promote and coordinate community support for the HDF.

Stewardship Objective 3:

Ensure that the HDF is protected and designated for forest education, research, and recreation for future generations.

Tasks:

- Investigate renewing and extending the ILMA with DOF, or securing the land by other means through DNR.
- Organize a subcommittee of the Steering Committee to investigate establishment of additional permanent access easements.
- Establish permanent trail easements within and into the HDF.

Stewardship Objective 4:
Expand HDF boundaries to increase (a) capacity and opportunity for projects and activities, (b) landscape diversity, and (c) stewardship of the Diamond Creek watershed.

- Investigate the possibility of incorporating the parcel due west of the HDF. This land is currently owned by the University of Alaska.
- Investigate all possible expansions that could potentially fulfill this objective.

Education and Nature Observation

(for schools, organizations, and the general public)

Goals:

A. Provide areas where various forest uses and management practices may be tested, studied, and demonstrated.

B. Provide educational facilities and opportunities for learning about forest and wetland ecology.

C. Provide areas for viewing and learning about local wildlife.

Education and Nature Observation Objective 1:
Define, identify, and designate optimal areas within the HDF for education about and observation of forest and wetland dynamics, management practices, and wildlife behavior.

Tasks:

- Coordinate a subcommittee of the Steering Committee to prioritize forestry-related educational programs and projects, as well as management practices worthy of demonstration.
- Link educational programs and projects to appropriate institutions and/or organizations.
- Implement forest management projects and practices with assistance from appropriate management agencies (i.e. DOF, NRCS, USFS, etc.).
- Design and implement forestry-related research activities that integrate well with local educational programs and can be conducted by area schools (e.g., HSWCD's Natural Resources Technology class, classes taught by Homer Community Schools, KPB District schools, and private and home schools).

Education and Nature Observation Objective 2:
Provide opportunities for local landowners to learn about different forest uses and management practices.

Tasks:

- Gather information about uses and practices that might interest local landowners.
- Offer educational tours to familiarize interested landowners with these uses and practices.
- Develop educational materials and signage detailing notable uses and practices.
- Develop and distribute an annual HDF newsletter.

Education and Nature Observation Objective 3:
Establish an educational shelter/warming hut.

Tasks:

- Identify an appropriate location for the structure.
- Investigate designs and costs for the structure.
- Acquire adequate funding and solicit donations and/or volunteers for construction.
- Develop and implement a monitoring and maintenance schedule.

Education and Nature Observation Objective 4:
Initiate regular monitoring of forest regeneration.

Tasks:

- Identify permanent monitoring plots.
- Select parameters and methods by which plots will be monitored.
- Develop a monitoring program with local school groups.

Education and Nature Observation Objective 5:
Broaden the means by which information about the HDF is disseminated to current and potential user groups and the general public.

Tasks:

- Establish a website for sharing resource data and other useful HDF information.
- Post on this website reference maps identifying current and past projects.
- Increase the amount and diversity of signage at trailheads, project locations, the arboretum, etc.

Education and Nature Observation Objective 6:
Encourage educators to use the HDF for forest-related educational activities and programs.

Tasks:

- Develop and provide to educators an information packet outlining educational opportunities available in the HDF.

- Develop and provide worksheets and learning materials specific to resources present in the HDF.
- Identify qualified HDF docents or guides, provide educators with a list of educational topics these individuals can cover during field trips.

Education and Nature Observation Objective 7:
Tailor HDF educational opportunities to meet Alaska State Science Standards as defined in the *Alaska Content and Performance Standards* adopted by the Alaska State Board of Education and Early Development (Department of Education).

Tasks:

- Develop and provide to educators an information packet outlining educational opportunities available in the HDF.
- Develop and provide worksheets and learning materials specific to resources present in the HDF.
- Identify qualified HDF docents or guides, provide educators with a list of educational topics these individuals can cover during field trips.

Education and Nature Observation Objective 8:
Offer educational opportunities to the general public.

Tasks:

- Organize and provide educational events on significant dates (e.g. Arbor Day, Fire Awareness Week, Trails Day, etc.).
- Coordinate wildlife viewing opportunities during appropriate events (e.g. Shorebird Festival, spring beaver surveys, etc.).

Education and Nature Observation Objective 9:
Promote use of the HDF by university level educators and researchers.

- Develop and provide to educators an information packet outlining educational opportunities available in the HDF.
- Develop and provide worksheets and learning materials specific to resources present in the HDF.
- Encourage university students to conduct thesis research in the HDF and to post research results and reports on an HDF website.
- Develop an updatable online clearinghouse and database providing access to all data gathered from HDF research projects.

Research

Goal:

Promote the HDF as a location where scientists, investigators, and students can conduct research related to silviculture, forest ecology, wetlands, and wildlife.

Research Objective 1:

Increase awareness among local educators, colleges, and agencies of possibilities for conducting research in the HDF.

Tasks:

- Create and distribute a general information packet.
- Provide detailed information about the area to local researchers.
- Develop and distribute an annual HDF newsletter.

Research Objective 2:

Make information about previous and current projects available to prospective researchers.

Tasks:

- Develop a comprehensive and updatable list of research that has occurred in the area.
- Develop an updatable online clearinghouse and database providing access to all data gathered from HDF research projects.

Research Objective 3:

Ensure dependable access to research sites and minimal interference of long-term research projects.

Tasks:

- Investigate renewing and extending the ILMA with DOF, or securing the land by other means through DNR.
- Organize a subcommittee of the Steering Committee to investigate the establishment of additional permanent access easements.
- Establish permanent trail easements within and into the HDF.

Research Objective 4:

Develop a prioritized catalogue of pre-approved projects ready to "pull off the shelf" and submit whenever grant funding becomes available.

Task:

- Organize a subcommittee of the Steering Committee to develop plans for appropriate silvicultural projects, including timelines, cost estimates, and designs. (This subcommittee should include forest management professionals from state, federal, and borough agencies, as well as local timber producers and users, and should gain approval of proposed projects from the HDF Steering Committee.)

Recreation

Goal:

Encourage and provide facilities for recreational activities that are compatible with HDF stewardship, education, and research goals.

Recreation Objective 1:
Upgrade and improve existing trails to minimize erosion and/or impacts to wetlands.

Tasks:

- Re-route summer trails and/or traffic away from steep, wet, or highly erodible sites or other sensitive areas.
- Improve boardwalk trails across wetlands or other sensitive areas.
- Provide trail drainage that directs water away from sensitive areas.

Recreation Objective 2:
Develop a prioritized catalogue of pre-approved recreational projects, including timelines, cost estimates and designs, ready to "pull off the shelf" and submit for grant funding.

Tasks:

- Organize a subcommittee of the Steering Committee to develop plans for proposed projects, including timelines, cost estimates, and designs; have proposed projects approved by the Steering Committee.
- Prioritize proposed projects.
- Actively identify and apply to funding sources to implement high priority projects.

Recreation Objective 3:
Link HDF trails to neighboring trails, easements, and rights of way.

Tasks:

- Organize a subcommittee of the Steering Committee to investigate possible trail linkages to surrounding areas (e.g., university lands, neighborhoods, and subdivisions).
- In cooperation with representatives of surrounding areas, map and plan linkages.
- Establish interim and permanent trail linkages across private lands to access the HDF.

VI. Project Review

The HDF was created to allow for a variety of educational and recreational uses, and the goals and objectives outlined above are designed to promote and expand such uses.

As more activities and projects occur within the HDF, planning, documenting, and monitoring them will become increasingly essential for efficient and cooperative use of the forest. The review process described below is designed to minimize conflicts among uses and reduce redundancy. This process enables the Steering Committee to refine and tailor projects to better meet HDF goals and objectives while ensuring that all uses reflect good stewardship of forest resources.

During review, a project or activity proposed within the HDF is categorized as either "generally allowed"—meaning that it is in line with goals specified in Section V and presents minimal impacts to forest resources—or as "requiring full review"—meaning that it may significantly impact the HDF. Regardless of category or scale, however, it is important to track all projects and activities affecting the HDF so that the forest can be better managed. As a result, uses within the HDF should be documented as described below.

All Uses

Maintaining an accurate record of how and when the HDF is used provides managers with information essential for planning and approving future projects, minimizing potential conflicts and impacts, and monitoring the quality of HDF resources. To compile this information, most forest users will be asked to fill out a User Registration Form (Appendix D).

Individuals and small groups using the forest for informal recreation, education, and nature observation are not required to fill out a User Registration Form. These users may, however, register if they wish to ensure that their use is documented. Documenting even informal individual usage of the HDF is important: the higher the demonstrated usage, the higher the chance for success when grants are submitted for HDF projects.

Generally Allowed Uses

As is clear, the HDF was specifically established to encourage projects and activities related to forestry education, research, recreation, and stewardship. Uses such as small-scale tree planting, school-sponsored research, outdoor classes, and trail construction are generally allowed. However, to avoid potential conflicts among existing and future uses, HDF managers need to review even small-scale projects and activities in advance. Thus those proposing such uses, in addition to filling out a User Registration Form, will need to provide more detailed information before they can start. At a minimum, individuals and organizations proposing "generally allowed uses" should provide information on:

- goals or reasons for the project or activity,
- proposed location(s) for the use,
- anticipated number of participants,
- anticipated schedule (when will the action start and end, how long will it last),
- detailed description of the project or activity, and
- anticipated accomplishments and outcomes.

This information must be reviewed by at least one member of the HDF Steering

Committee (see Section VII, below) and may require further approval from a managing entity (the DOF, Homer SWCD, NRCS, ADF&G, or USFS). Review and approval, although usually quicker, may take up to 30 days from the time sufficient information is submitted. Review time should be factored in when scheduling generally allowed uses.

Uses Requiring Full Review

To ensure that uses with potentially significant impacts do not damage forest resources or conflict with other projects or activities, such uses must be conducted in accordance with an Implementation Plan approved by the Steering Committee. Agencies, groups, and individuals interested in undertaking such uses will need to follow the steps listed below in developing their plan:

1. Develop a conceptual outline of the proposed project or activity. This written outline should briefly describe the who, what, where, when, how, and why of the proposed action.

2. The conceptual outline will be reviewed by the HDF Steering Committee or appropriate subcommittee. If the proposed action is found to be consistent with the goals and objectives of the HDF, a more detailed Implementation Plan will be requested. The Steering Committee and HDF managing entities will be available to assist in developing Implementation Plans, but given agency time constraints, such assistance should be requested as far in advance as possible.

Implementation Plans should include the following information:

- A complete list of all individuals involved with the action, as well as contact information for those responsible for the action and those charged with long-term maintenance and/or follow-up, if needed.

- A detailed description of how the action will be carried out. Discuss expected costs and funding sources. Include a site plan and design drawings if appropriate.

- A list of objectives that will be met by the action and the benefits it will produce. Include a discussion of any possible community benefits.

- A site description identifying and describing the current condition of natural and cultural resources (soils, flora, fauna, wetland features, etc.) at the proposed site.

- A list of expected positive and negative impacts of the action on HDF resources, including short-term, long-term, and if possible cumulative impacts. If environmental quality will be significantly impacted (please consult with an HDF managing entity to determine this prior to submittal of the plan), indicate what kinds of mitigation measures are proposed.

- An outline of the proposed schedule for conducting the

action and for its ongoing maintenance, if needed.

3. The Implementation Plan will be reviewed by the Steering Committee to determine if it is consistent with the goals, objectives, land uses, and other activities of the HDF. If approved, the action will be advertised through local media, and public comment will be solicited for at least 30 days.

4. After the public comment period ends, the Steering Committee will consider all comments. If suggestions are found to be appropriate, they will be incorporated into the plan.

5. Once all parties agree on the plan, implementation may begin.

Within one year of completing the project or activity, the sponsor will be required to submit a report describing what occurred during the action and what effects it had. If the action continues beyond one year, an annual status report should be submitted so land managers can monitor accomplishments and effects.

VII. Public Involvement

HDF Steering Committee
The volunteer HDF Steering Committee is made up of representatives from the Alaska Division of Forestry; the Homer Soil and Water Conservation District; other local, state, and federal agencies; as well as local schools; recreation groups; community organizations; and other interested groups and individuals. The following members were involved in developing this plan:

- Ed Berg – Kenai National Wildlife Refuge
- Dave Brann – Kachemak Nordic Ski Club and neighboring landowner
- Laurie Daniel – Kachemak Bay Conservation Society
- Jim DePasquale – Kachemak Heritage Land Trust
- Rick Foster – Kachemak Bay Research Reserve
- Mike Gracz – Kenai Watershed Forum
- Steve Gibson – Homer Soil and Water Conservation District and Small Potato Lumber
- Mary Jo Hartman – Kenai Peninsula College
- Hansel Klausner – Homer Soil and Water Conservation District staff
- Devony Lehner – Homer Soil and Water Conservation District and neighboring landowner
- Vicki Lowe – Homer High School
- Sue Mauger – Cook Inletkeeper
- Mitch Michaud – Natural Resources Conservation Service
- Wesley Phelps – Kenai Peninsula Borough
- Doug Van Patten – nearby landowner and former NRCS Soil Scientist
- Ashley Reed – Alaska Division of Forestry

The Steering Committee meets quarterly, with additional meetings as necessary (contact the Homer Soil and Water Conservation District office for meeting schedules). The committee reviews projects, activities, improvements, and other actions within the HDF to determine their consistency with HDF goals and objectives. Committee members also work with project planners to develop implementation plans for proposed uses requiring full review, as described above. Lastly, beginning in 2007, the Steering Committee will develop annual Plans of Work and Outreach Plans to implement goals, objectives, and tasks outlined in this plan.

Steering Committee members assisted immensely with development of this plan and are commended for their involvement.

Internal Review of This Plan

Interest in reviewing this draft plan was high among Steering Committee members. Plan developers held several meetings and discussions with DOF and Homer SWCD staff, as well as with the Homer SWCD Board of Supervisors, to answer questions and address points of interest. Many of these meetings included discussions on the possible fate of the HDF upon expiration of the ILMA in 2011. The Steering Committee determined that the long-term fate of the HDF should be addressed in the future, and no decisions were made concerning current actions to take in response to eventual ILMA expiration. Nonetheless, committee consensus was that regardless of who ultimately manages the HDF, the 360-acre area should remain a community forest in perpetuity, and it was regularly suggested that the forest's legal status be kept in mind management actions are implemented.

With regard to the content of the plan itself, committee members provided general editorial feedback and useful suggestions related to document structure. Initial comments were included in the draft document sent to the Steering Committee as a whole, which met to identify any additional revisions prior to initiating public review. Again, a few editorial changes were suggested, but the document as a whole was considered sufficiently complete for public review.

Public Review of This Plan

A draft of this management plan was made available for public review from June 20 to August 18, 2006. Copies of the plan were made available at the Homer Soil and Water Conservation District office, the Homer Public Library, and via the Homer SWCD website. Following the 60-day review period, comments were considered and, where appropriate, incorporated into the final document. The majority of public comments were made verbally to SWCD staff. All public comments were quite positive and offered no dramatic changes to the draft document. Several comments focused on the future legal status of the HDF (i.e., after ILMA expiration in 2011) and not on plan contents in particular.

Both internal and public review comments made it clear to those involved that the HDF is highly valued by those who manage it and by the community it serves. Any future changes in HDF management approach (i.e., changes to the HDF goals and objectives outlined in this plan or changes to how HDF uses are currently overseen and implemented) should be made cautiously and with extensive public involvement.

It is obvious that the HDF is gradually becoming the community resource its founders envisioned over 30 years ago, and that the Homer community is becoming increasingly vested in the forest's long-term future and well being.

Update and Distribution of This Plan

During their annual strategic planning, the HSWCD Board of Directors will review this plan to incorporate specific objectives and tasks from Section V. into their annual work plan. At this time they will also consider any suggested changes or updates to the plan, and direct their recommendations to DOF for approval. Updated versions of the plan will be posted on the web at:
http://www.homerswcd.org/
www.dnr.state.ak.us/forestry/

VIII. HDF Maps

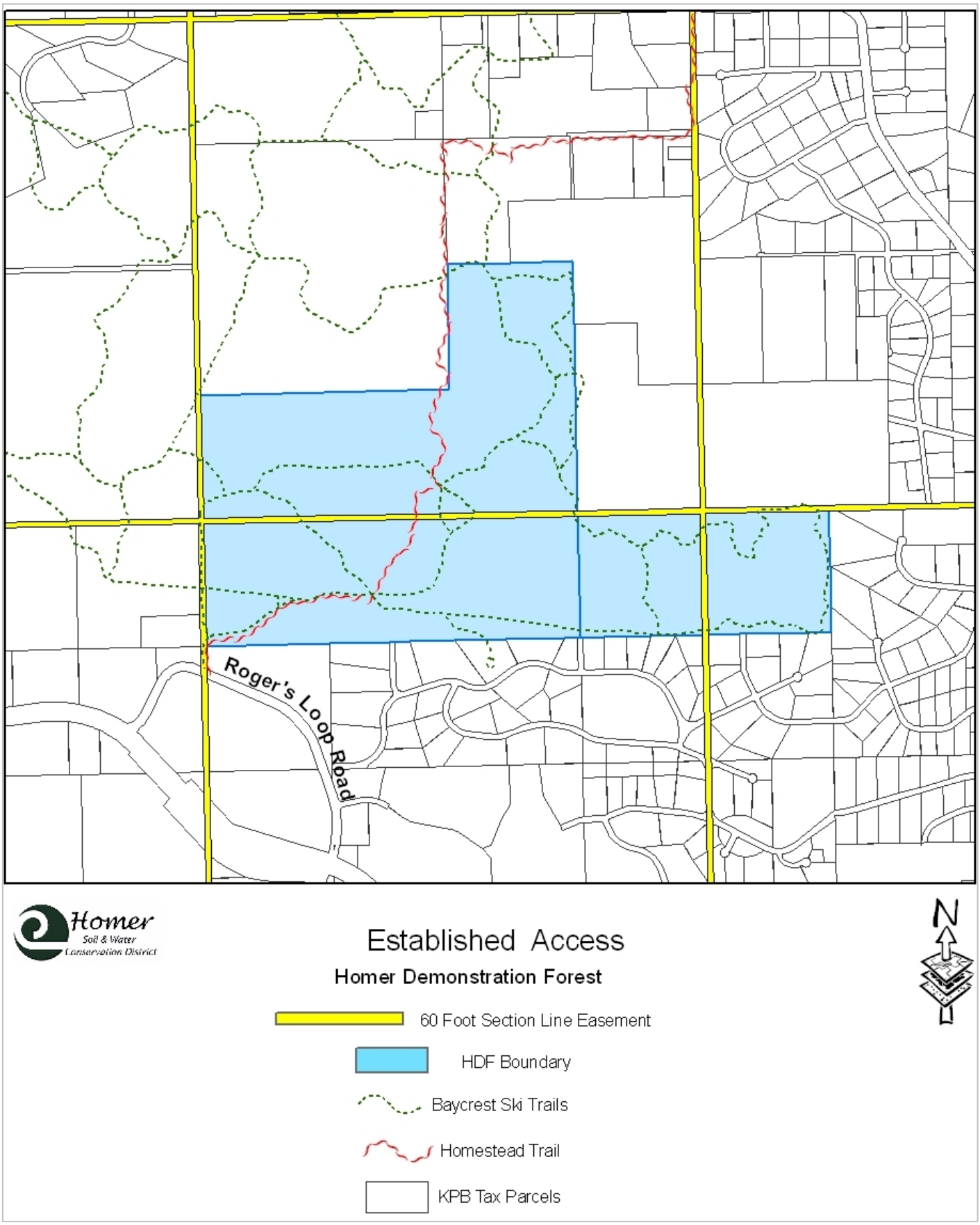
Maps have been cited throughout the preceding discussions. This section contains all maps referenced earlier.

These maps were developed by Jim DePasquale, assisted by HSWCD staff, specifically for this plan. They present a wide variety of information about the HDF. By studying and comparing the following maps, and by exploring the HDF with maps in hand, forest managers and users can greatly expand their knowledge, understanding, and appreciation of this diverse and fascinating area. The hope is that this will lead to increasingly informed, creative, and thoughtful decisions about forest use and management.

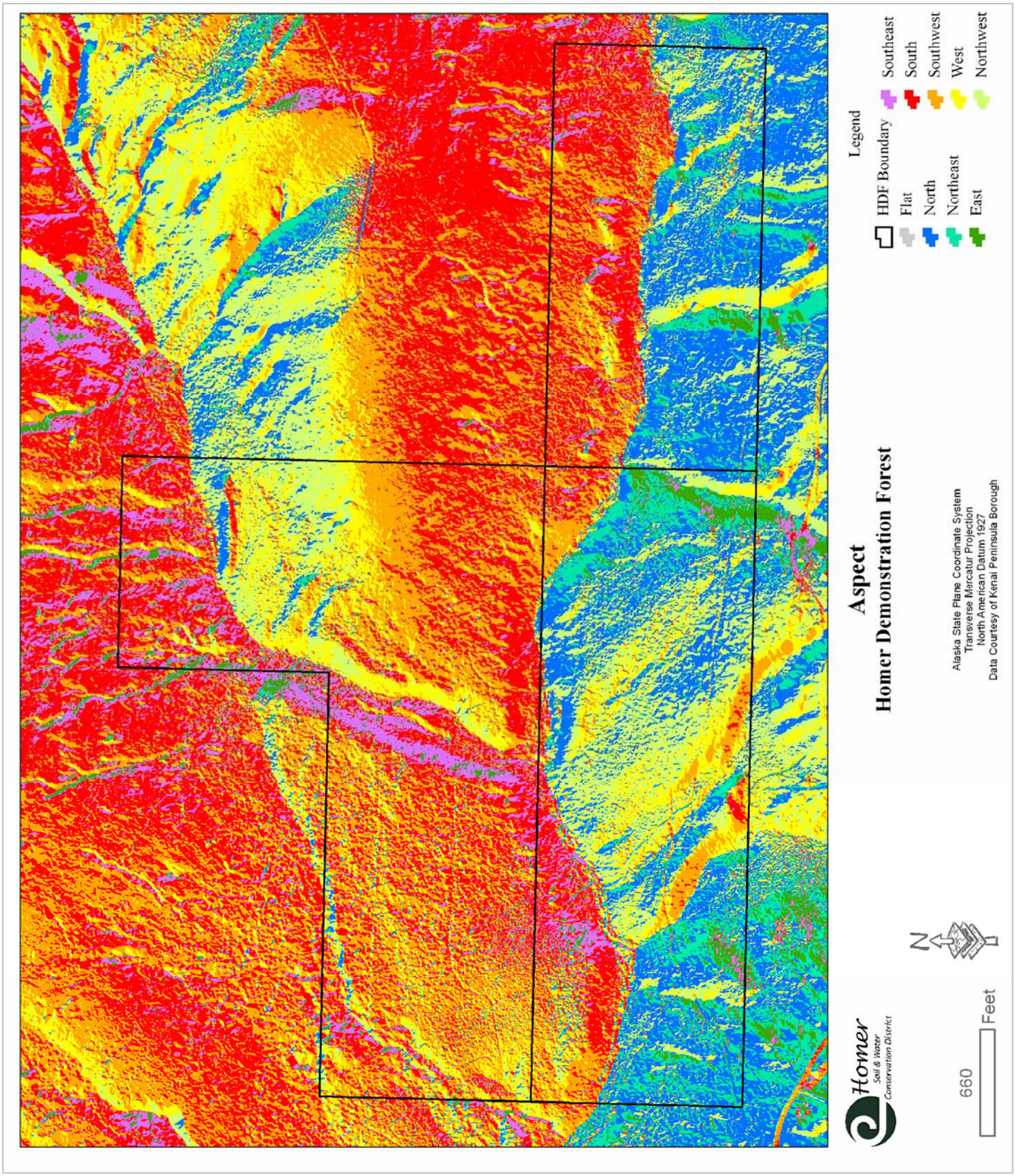
The following maps are provided in this section:

Map 1.	Established Access
Map 2.	Aspect
Map 3.	Development Patterns
Map 4.	Features and Project Locations
Map 5.	Forest Productivity
Map 6.	Forest Regeneration Survey
Map 7.	Contour Elevations
Map 8.	Ski Trails
Map 9.	Slope
Map 10.	2004 Soils Map
Map 11.	1987 Soils Map
Map 12.	Vegetative Cover
Map 13.	Diamond Creek Watershed and Wetlands
Map 14.	Wildfire Hazard

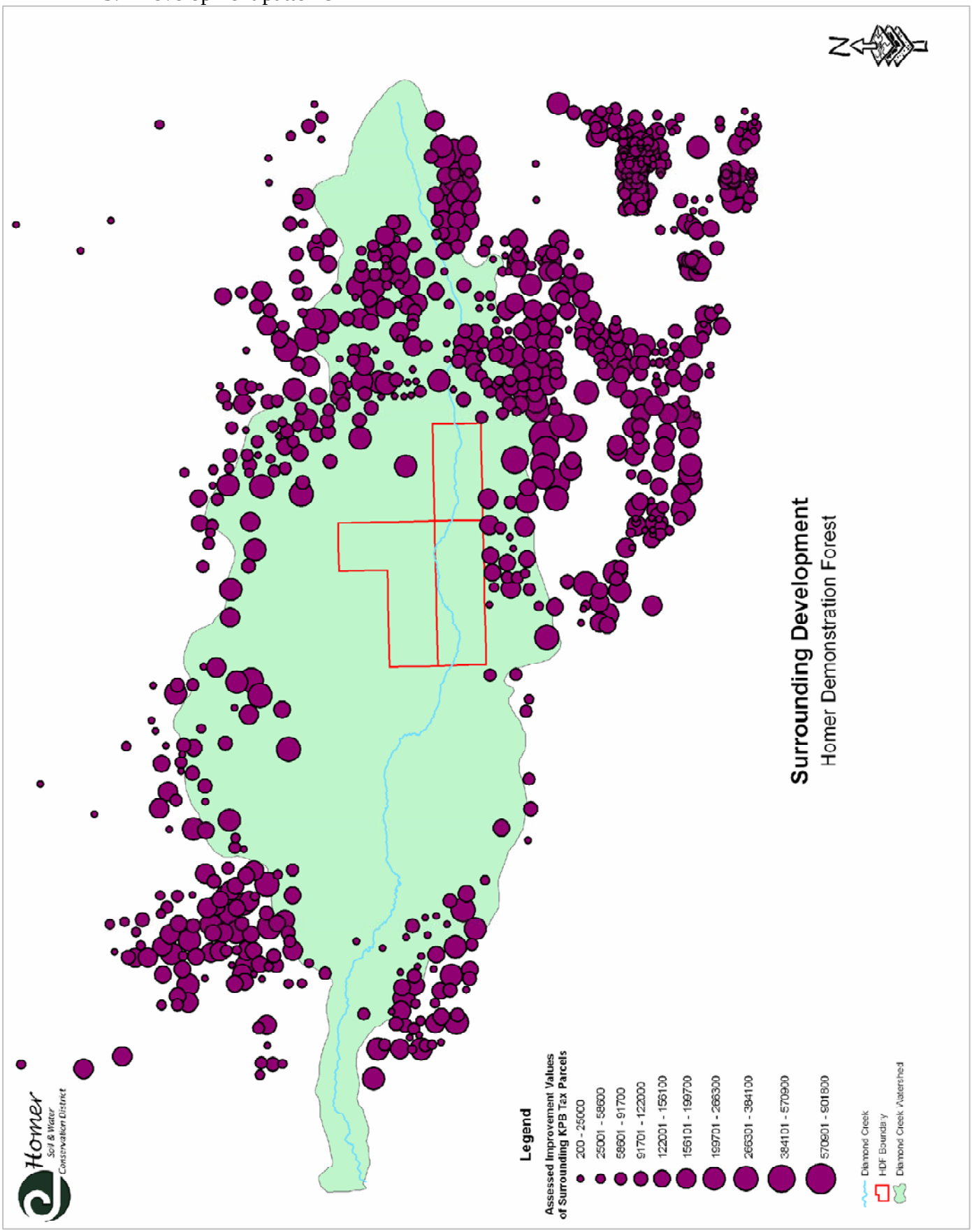
1. Established Access



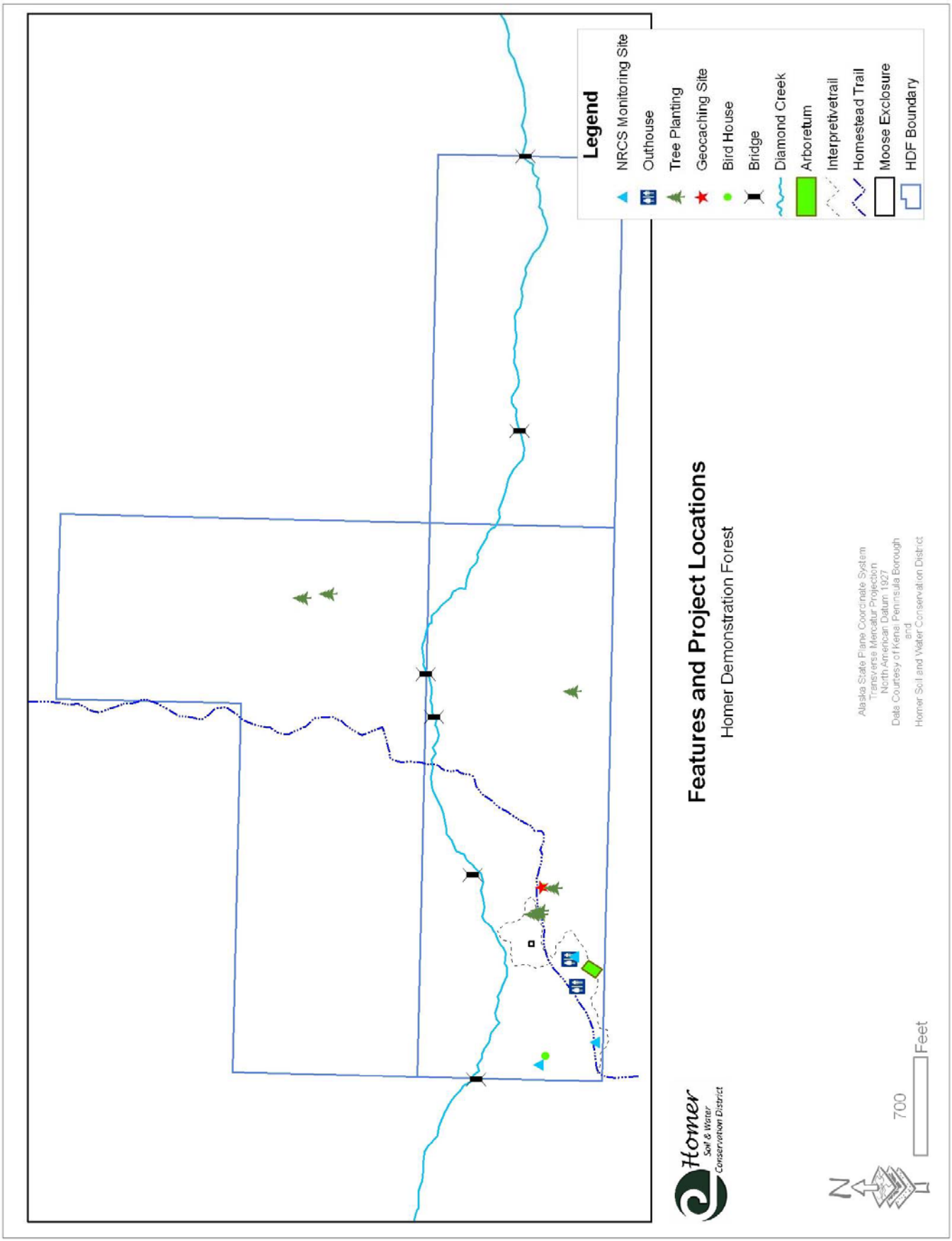
2. Aspect


Aspect
Homer Demonstration Forest
Legend
HDF Boundary
Flat
North
Northeast
East
Southeast
South
Southwest
West
Northwest
Alaska State Plane Coordinate System
Transverse Mercator Projection
North American Datum 1927
Data Courtesy of Kenai Peninsula Borough
Homer
Soil & Water
Conservation District
N
660
Feet

3. Development patterns

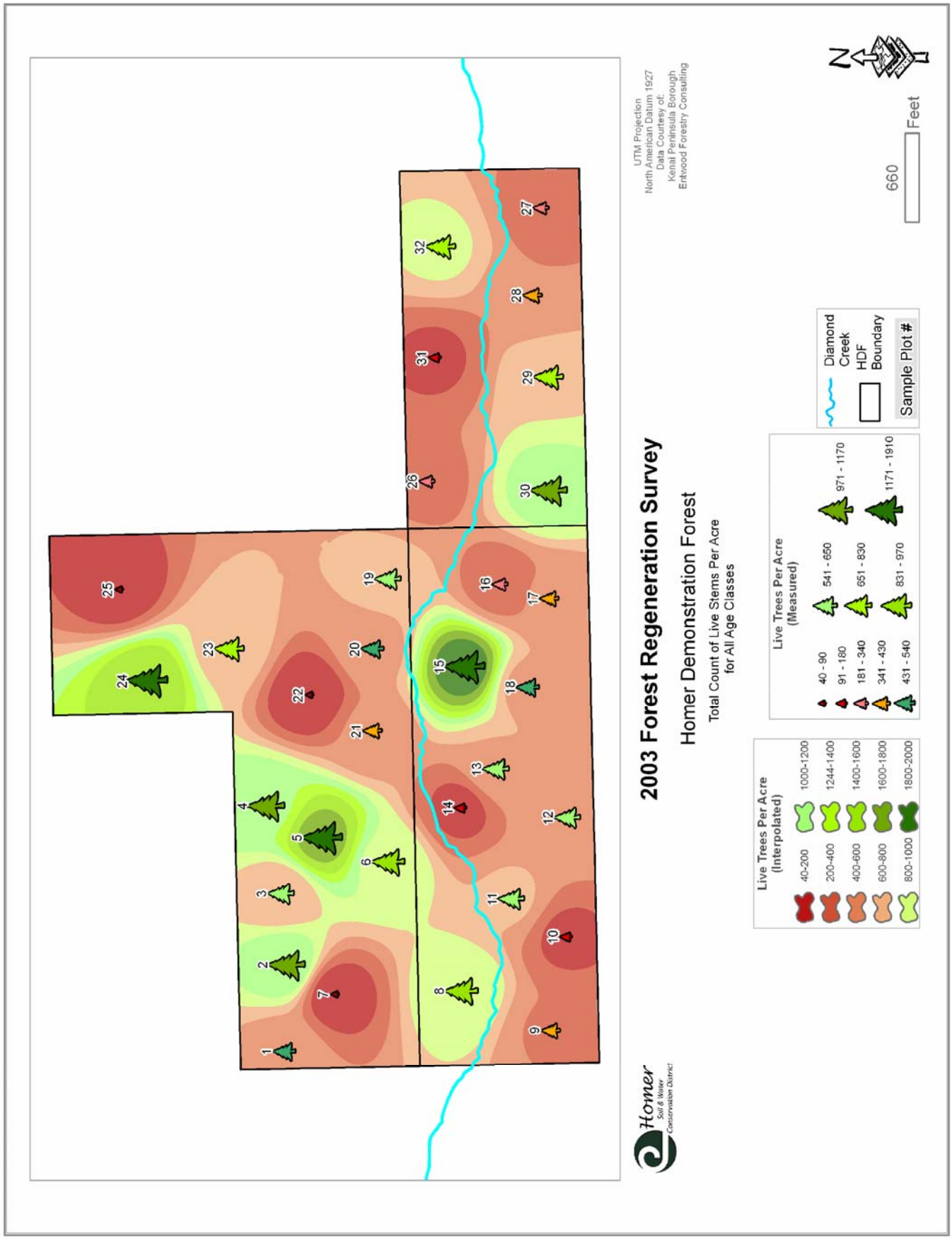


4. Features and Project Locations

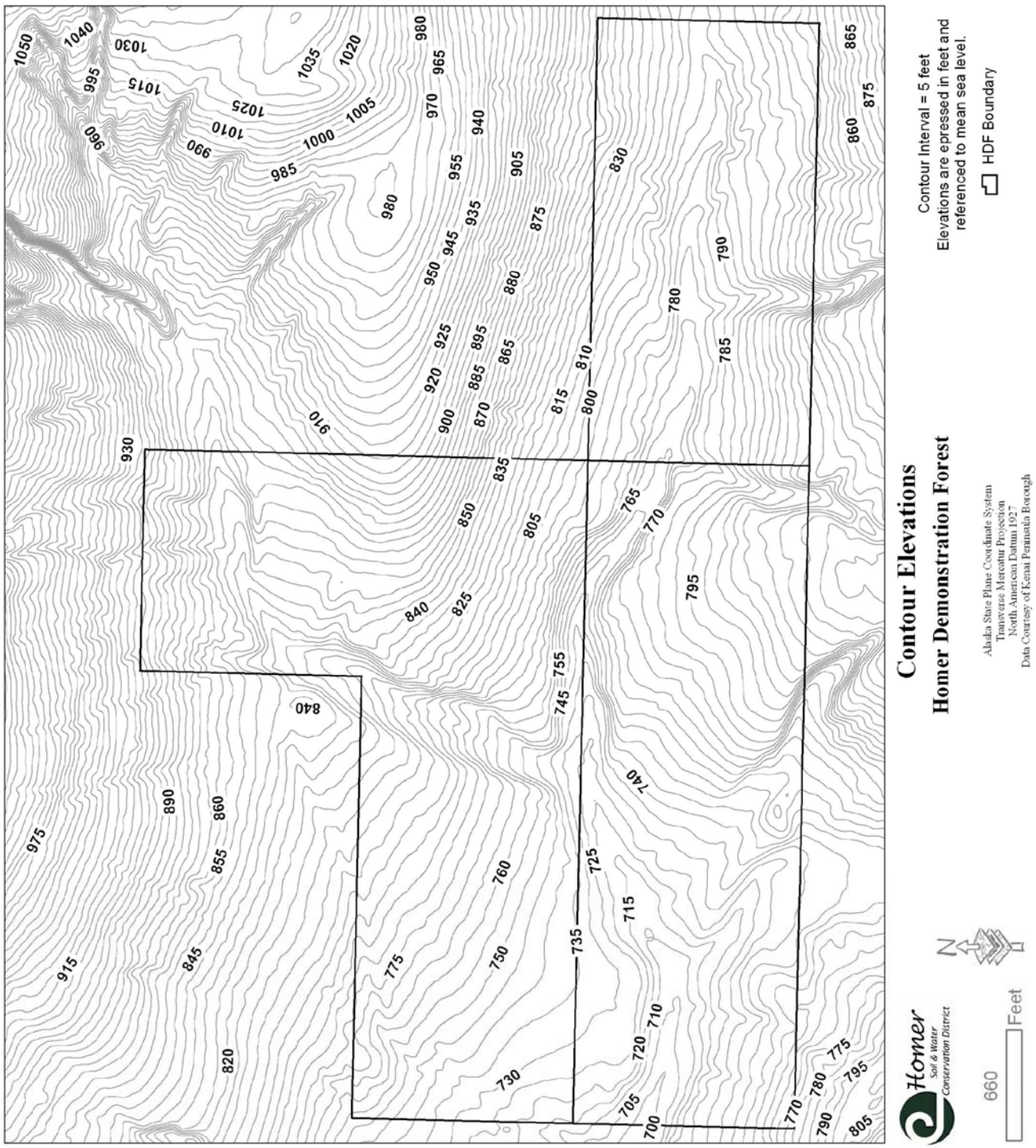


5. Forest Productivity

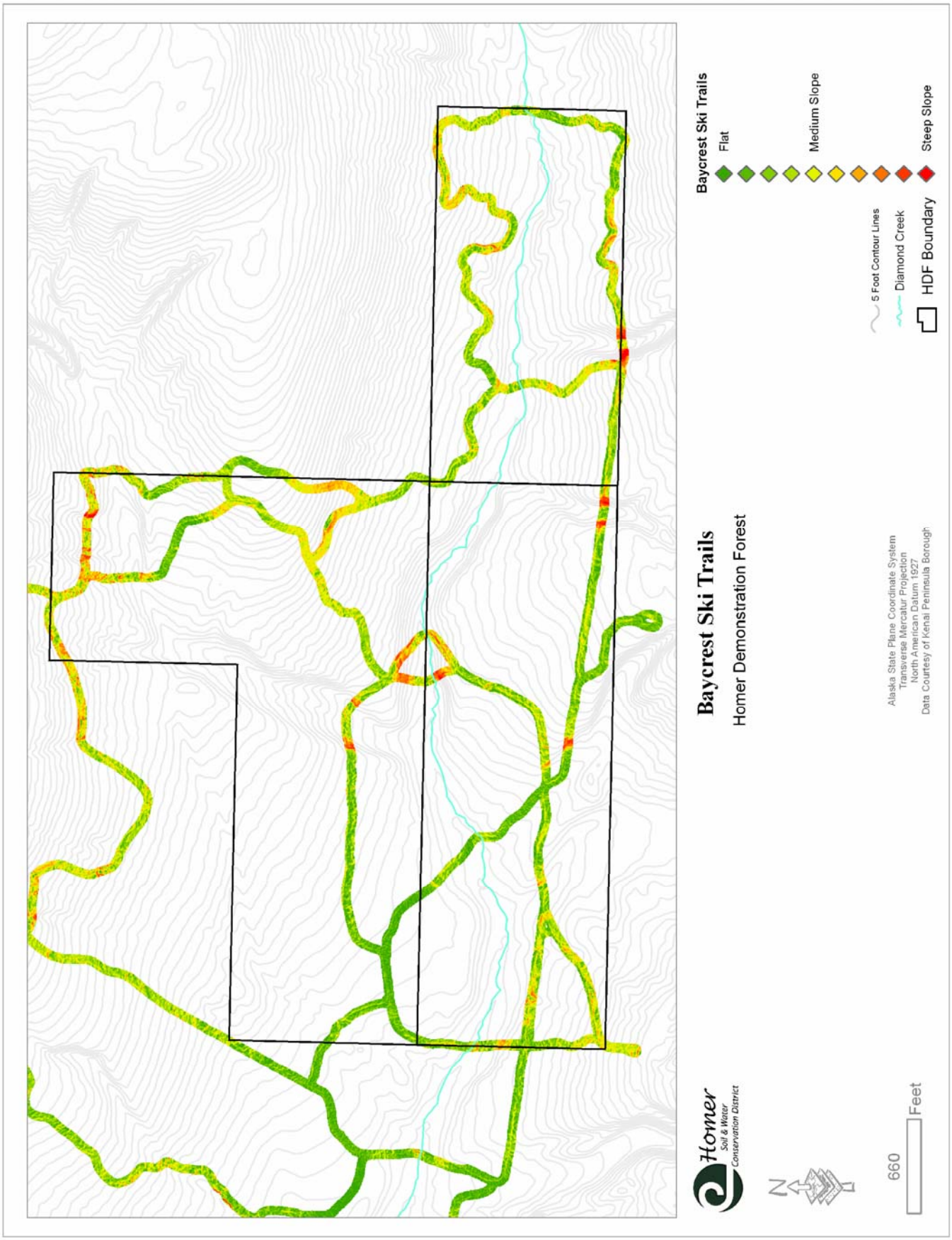
6. Forest Regeneration Survey



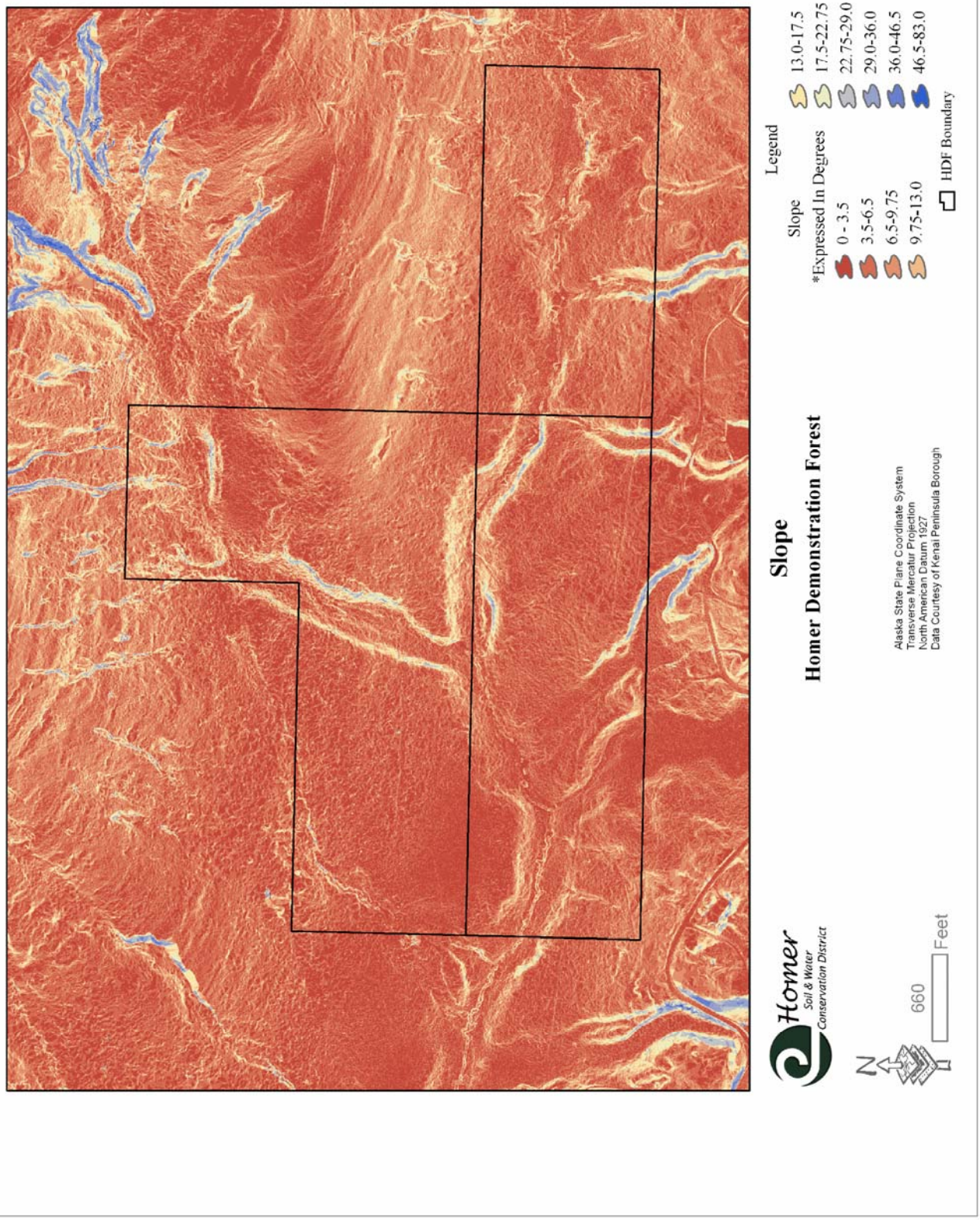
7. Contour Elevations



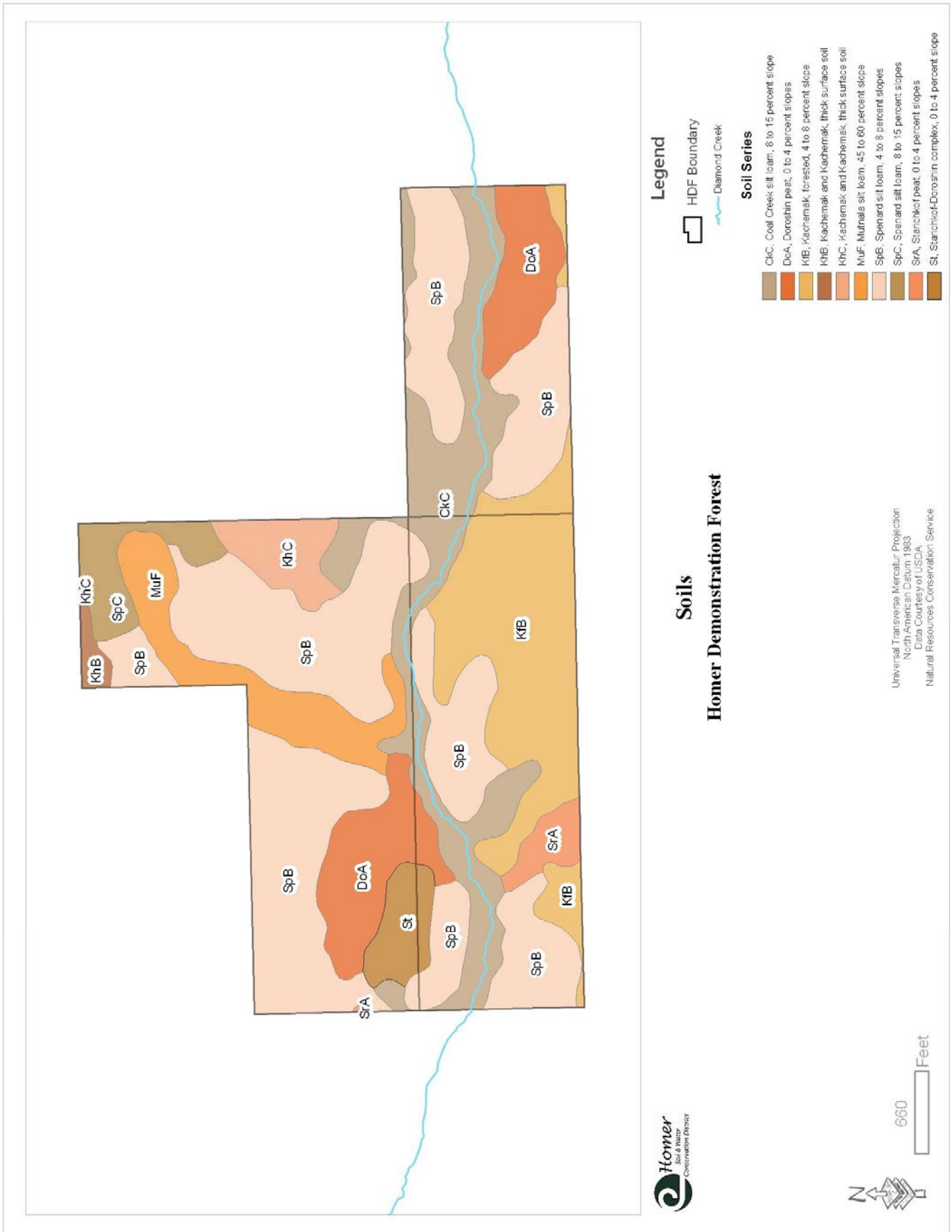
8. Ski Trails


Baycrest Ski Trails
Flat
Medium Slope
Steep Slope
5 Foot Contour Lines
Diamond Creek
HDF Boundary
Baycrest Ski Trails
Homer Demonstration Forest
Alaska State Plane Coordinate System
Transverse Mercator Projection
North American Datum 1927
Data Courtesy of Kenai Peninsula Borough
Homer
Soil & Water
Conservation District
N
660
Feet

9. Slope


Slope
Homer Demonstration Forest
Legend
Slope
*Expressed In Degrees
0 - 3.5
3.5-6.5
6.5-9.75
9.75-13.0
13.0-17.5
17.5-22.75
22.75-29.0
29.0-36.0
36.0-46.5
46.5-83.0
HDF Boundary
Alaska State Plane Coordinate System
Transverse Mercatur Projection
North American Datum 1927
Data Courtesy of Kenai Peninsula Borough
Homer
Soil & Water
Conservation District
N
660
Feet

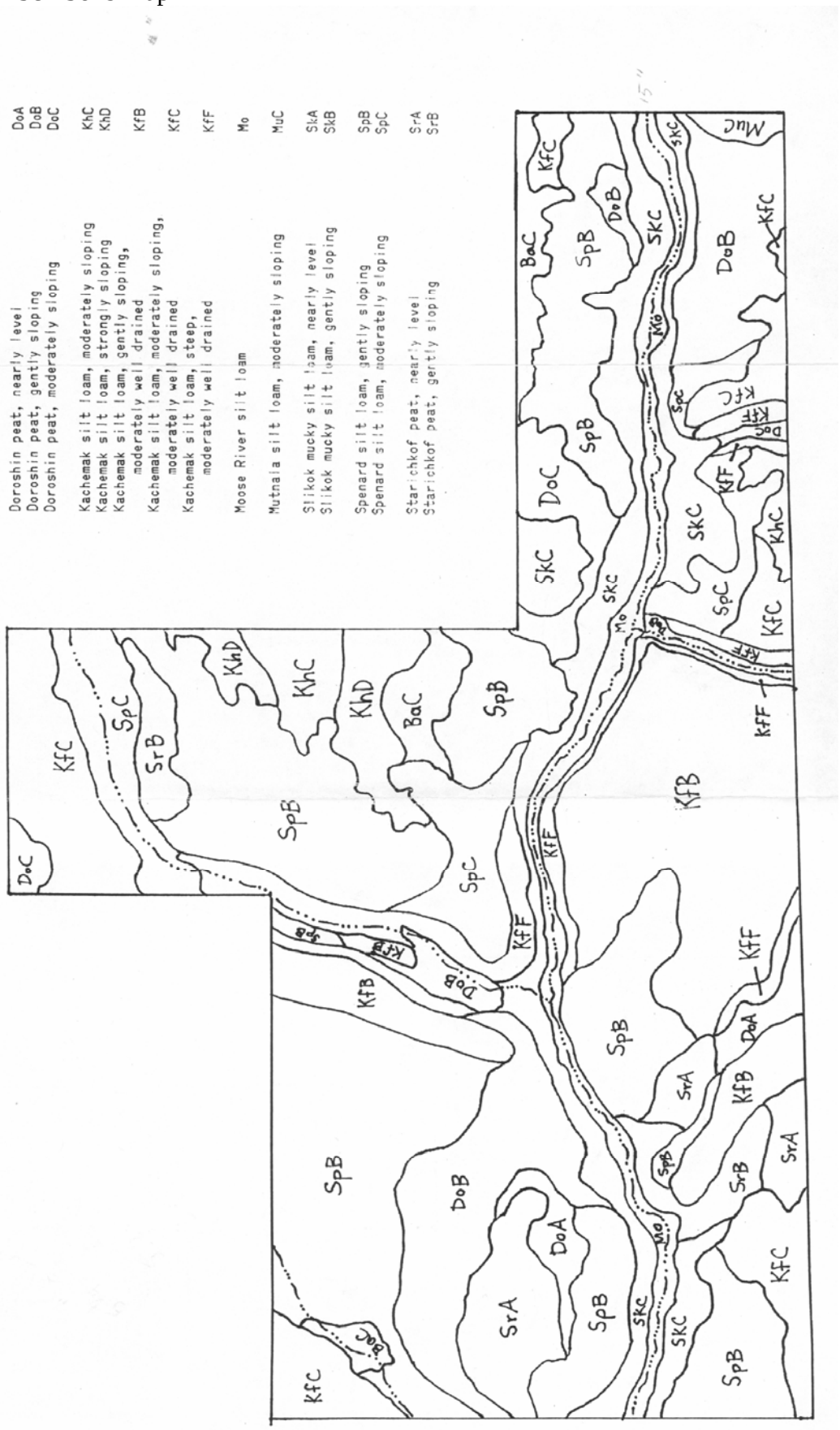
10. 2004 Soils Map



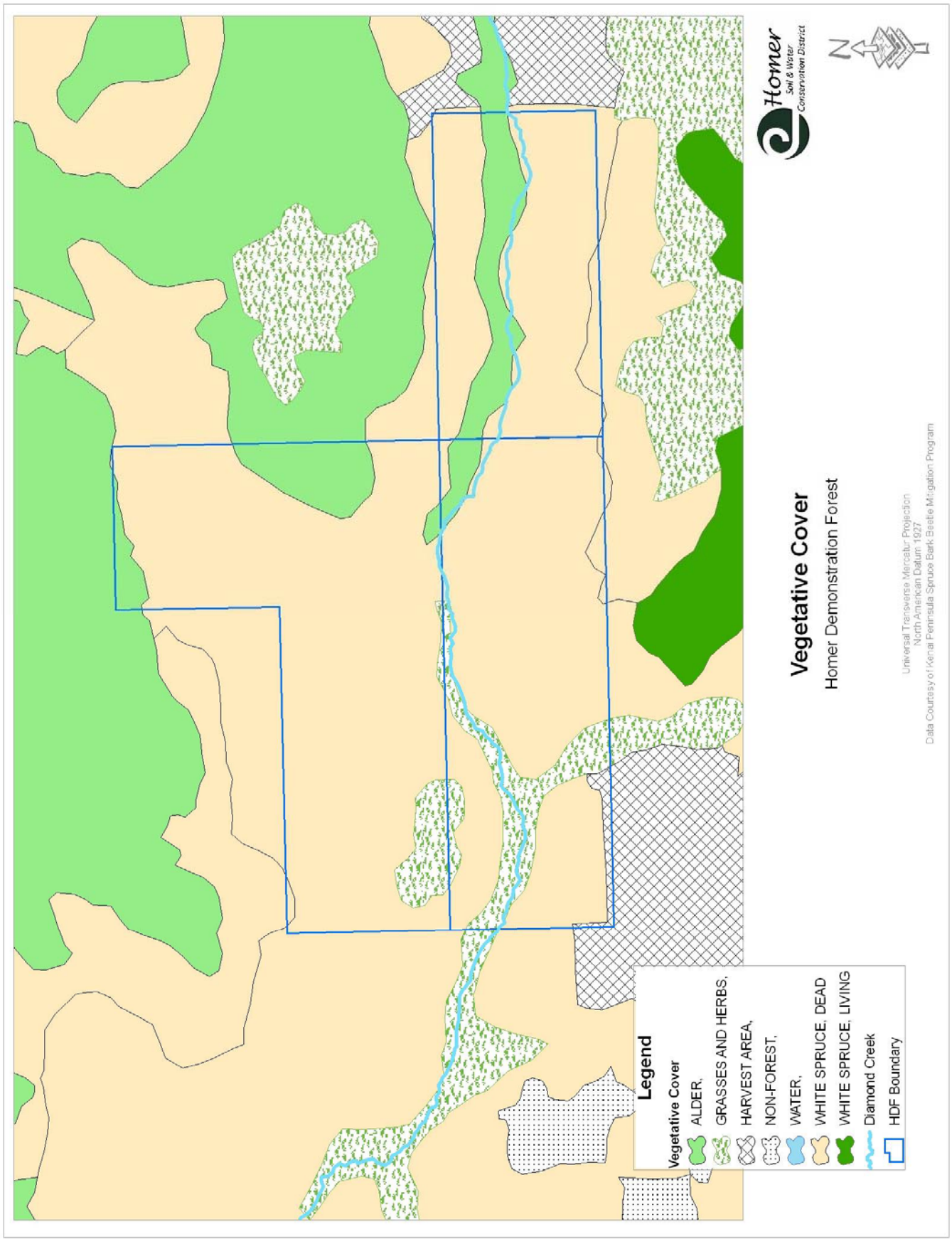
11. 1987 Soils Map

Figure 4 – Soil map units in the Homer Demonstration Forest
(Soil series are described in Appendix A.)

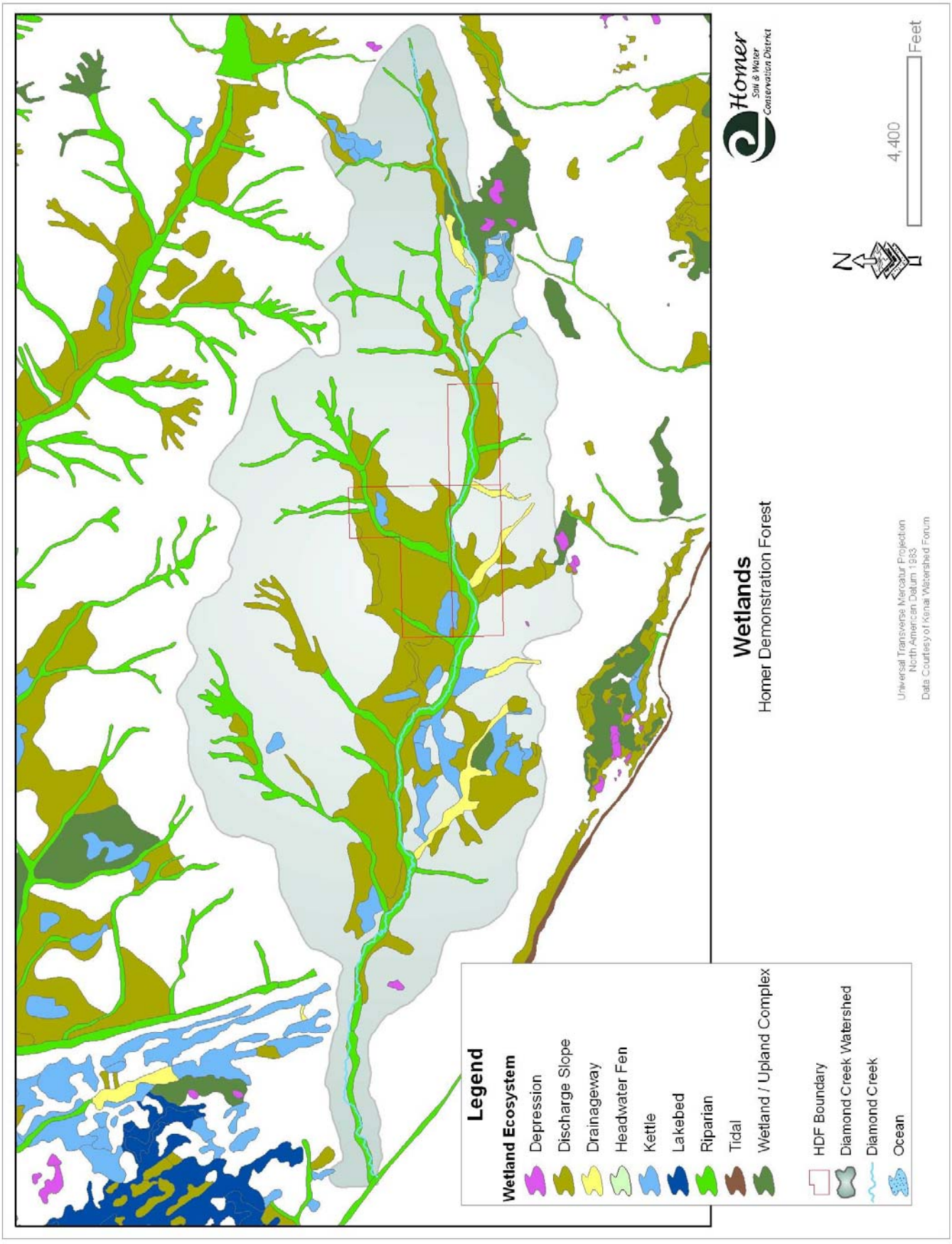
Soil series (and phase)	Soil map unit symbol
Beluga silt loam, moderately sloping	BaC
Doroshin peat, nearly level	DoA
Doroshin peat, gently sloping	DoB
Doroshin peat, moderately sloping	DoC
Kachemak silt loam, moderately sloping	KhC
Kachemak silt loam, strongly sloping	KhD
Kachemak silt loam, gently sloping, moderately well drained	KfB
Kachemak silt loam, moderately sloping, moderately well drained	KfC
Kachemak silt loam, steep, moderately well drained	KfF
Moose River silt loam	Mo
Mutnala silt loam, moderately sloping	MuC
Slikok mucky silt loam, nearly level	SkA
Slikok mucky silt loam, gently sloping	SkB
Spenard silt loam, gently sloping	SpB
Spenard silt loam, moderately sloping	SpC
Starichkof peat, nearly level	SrA
Starichkof peat, gently sloping	SrB



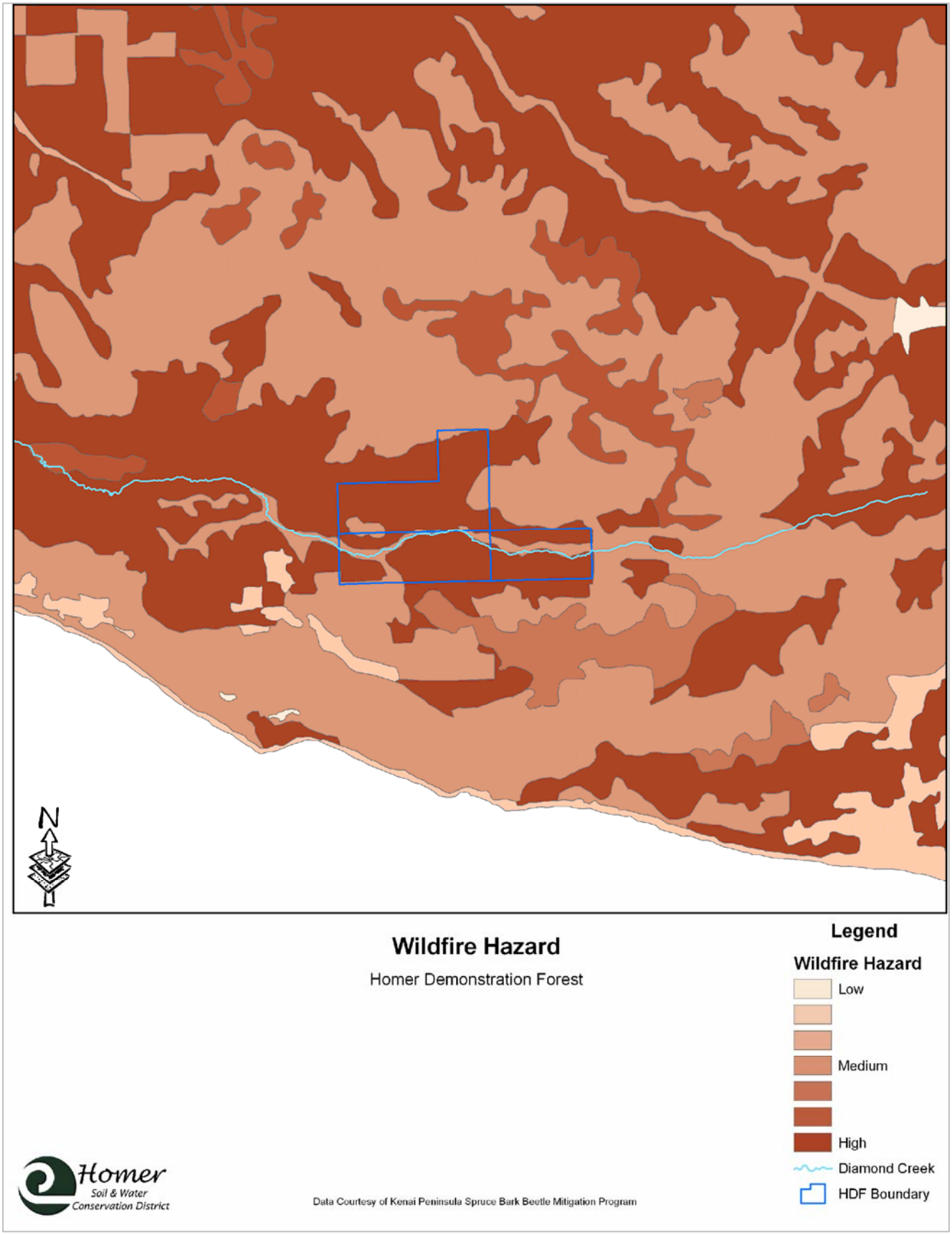
12. Vegetative Cover



13. Diamond Creek Watershed and Wetlands



14. Wildfire Hazard



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DePasquale, J. 2003, *Homer Demonstration Forest Field Reconnaissance Project*. Homer Soil and Water Conservation District, 4014 Lake Street, Suite 201, Homer, Alaska 99603. (http://www.homerswcd.org)

Gracz, M., Noyes, K., North, P., and Tande, G. 2005, *Wetland Mapping and Classification of the Kenai Lowland, Alaska,* Kenai Watershed Forum, P.O. Box 2937 Soldotna, Alaska 99669. (http://www.kenaiwetlands.net)

Hinton, Robert B.. 1971, *Soil Survey of Homer-Ninilchik Area, Alaska.* USDA, Soil Conservation Service, U.S. Government Printing Office, Washington, D.C., 20402.

Homer Soil and Water Conservation District, ADNR, SCS, USFS ASCS, CES, KPB, AD&G, and Homer Community Schools. 1992, *Homer Demonstration Forest Plan,* Alaska Department of Natural Resources, Anchorage, AK.

X. Appendices

Appendix A.

STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF LAND AND WATER MANAGEMENT
Pouch 7-005
Anchorage, Alaska 99510

INTERAGENCY LAND MANAGEMENT ASSIGNMENT

ADL NO. 218963

The Division of Land and Water Management, Department of Natural Resources of the State of Alaska assigns to the STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES, DIVISION OF FORESTRY
or its successors in function, hereinafter called Assignee, jurisdiction and management of the following described lands to wit:

Legal Description:

Township 6 South, Range 14 West, Seward Meridian, Alaska within:

Section 11: S½SW¼, W½SE¼
Section 13: NW¼NW¼, and
Section 14: N½N½

containing approximately 360 acres, more or less.

Said jurisdiction and management is being limited to the surface and so much of the subsurface as may be required in order to make use of the land for ** within the jursdiction of the Assignee. The right to construct, maintain, or improve and remove buildings, roads, airports, and works of other description, and to use or remove sand, gravel, timber or other materials on or near the surface is expressly granted by this assignment. The assignment, grant or any other creation of third party interest for any use other than that specified is not permitted unless such uses are specified on Attachment A attached to the assignment or are specifically authorized by the Director of the Division of Land and Water Management. The Division of Land and Water Management reserves jurisdiction

** developing, operating and maintaining a demonstration forest for educational purposes.

10-120
Rev. 1/83

and management of all other minerals including oil and gas in the above described land, provided, however, that the Division of Land and Water Management will not permit surface entry for the purposes of mineral or oil and gas exploration and development without the consent of the Assignee. Lands that are in excess of the Assignee's needs shall be returned to the management jurisdiction of the Division of Land and Water Management.

Dated at Anchorage, State of Alaska, this 14th day of August, 1986.

Commissioner
Department of Natural Resources

Director
Division of Land and Water Management

STATE OF ALASKA)
) ss.
Third Judicial District)

THIS IS TO CERTIFY that on this 14th day of August, 1986, before me personally appeared Tom J. Hawkins of the Division of Land and Water Management of the Department of Natural Resources of the State of Alaska, who executed the foregoing Interagency Land Management Assignment and acknowledged voluntarily signing the same.

Notary Public in and for the State of Alaska
My Commission Expires: November 19, 1989

ATTACHMENT "A"
ADL 218963
Division of Forestry

1. The term of this assignment will expire at midnight May 31, 2011, unless extended by the Director, Division of Land and Water Management or his delegate.

2. Only the forestry interests in the subject property are assigned. All development and management of the subject property will be for educational forestry purposes as prescribed in Attachment B, attached hereto and made a part hereof this assignment. Any changes to the development plan will be authorized in writing by the Director of the Division of Land and Water Management, or his delegate.

3. The assignee may not create third party interests in the form of leases, permits and agreements within the term of this assignment, without the written concurrence of the Division of Land and Water Management except for forest stand manipulation contracts necessary and in accordance with the development plan.

4. This assignment is subject to all platted easements, rights-of-way and reservations of record; further, the Division of Forestry is encouraged to involve the City of Homer in the planning process so that their interest in a ski trail may be encorporated in the development plans. Additional easements may be dedicated or granted by the Division of Land and Water Management with the written concurrence of the assignee.

5. This assignment is subject to cancellation in whole or part within sixty days upon written notice to the assignee for non-use, abandonment or use in noncomformance with the intended development as stated on Attachment B.

6. If clearing timber on the site is required, clearing will be conducted only in accordance with the development plan (Attachment B). Notification to the Division of Land and Water, shall be made before any timber is cleared.

7. Pursuant to 11 AAC 71.015, the assignee shall not sell, transfer, or donate material including gravel, sand, rock, or peat to a third party except as necessary to construct and maintain the facility when materials are used within the confines of this assignment.

8. As a condition of this assignment, the assignee shall submit upon request an annual statement to the Director of the Division of Land and Water Management not later than December 31st of each year that this assignment is in force. The annual statement shall provide relevant information regarding the efficient continued use of the involved lands, account for the amount and value of resources used and capital investments in the lands, and shall include an estimate of savings resulting from use of public and charitable use assignment for resulting from the management of the lands and resources. Failure to submit the annual statement shall be construed as non-use/abandonment and may cause immediate cancellation of the assignment.

9. The subject property shall remain open for public use except during periods of closure when either the forestry resources or the public health may be endangered.

Acting Director, Division of Forestry — Date 8-12-86

T G Hawkins

KWK:ahm/0237a

218963

MEMORANDUM State of Alaska

DEPARTMENT OF NATURAL RESOURCES DIVISION OF FORESTRY KENAI AREA OFFICE

TO: MEG HAYES
District Manager, DLWM

DATE: May 14, 1984

FILE NO: 4105.3/4143

TELEPHONE NO: 338-1618

FROM: JIM PETERSON
Area Forester

SUBJECT: ILMA Request for Homer Forest Demonstration

The Division of Forestry is requesting an ILMA for the proposed Homer Demonstration Forest. The area involved is the S½ SW¼, W½ SE¼ of Section 11, NW¼ NW¼ of Section 13 and the N½ N½ of Section 14, T6S, R14W, S.M. comprising approximately 360 acres. This area is currently classified Resource Management, however, forestry classification was requested back on November 8, 1983. Along with the classification request was a land planning report which can be used as a reference regarding this area. To date, reclassification has not been completed.

This area was specifically identified in the Public Interest Land Report Kenai Lowlands, published in June 1979, as a demonstration forest area. Over the past several years, the area has been retained in State ownership for this intended purpose.

The Division of Forestry, in conjunction with the U of A Cooperative Extension Service, Homer High School, and the Homer Soil and Water Conservation District assisted by the U.S.D.A. Soil Conservation Service are intending to develop the demonstration forest as an outdoor environmental education classroom. Major emphasis will be on various silvicultural prescriptions. A management and development plan will be prepared through a cooperative effort over the next several months.

We recognize that under normal procedures a management plan is suppose to accompany an ILMA request, but because there are various agencies involved, the steering committee requested that the Division of Forestry apply for the ILMA now, prior to expenditure of valuable time and money. Because of the intensity of the proposed management practices, physical developments and the possible expenditure of both State and Federal funds, the assignment of management authority to the Division of Forestry is essential to continuation of this project.

Your prompt attention and favorable review of our request would be appreciated. If we can provide any additional information which would help to speed your review or provide clarification of our request, please do not hesitate to contact us.

Thank you for your assistance.

cc: Pat Marquis, Homer Soil and Water Conservation District
Warren Larsen, Cooperative Extension Service
Monte Sowers, U.S.D.A. Soil Conservation Service
Doug Van Patten, U.S.D.A. Soil Conservation Service
Dave Brann, Homer High School
Joe Wehrman, District Forester, ADF

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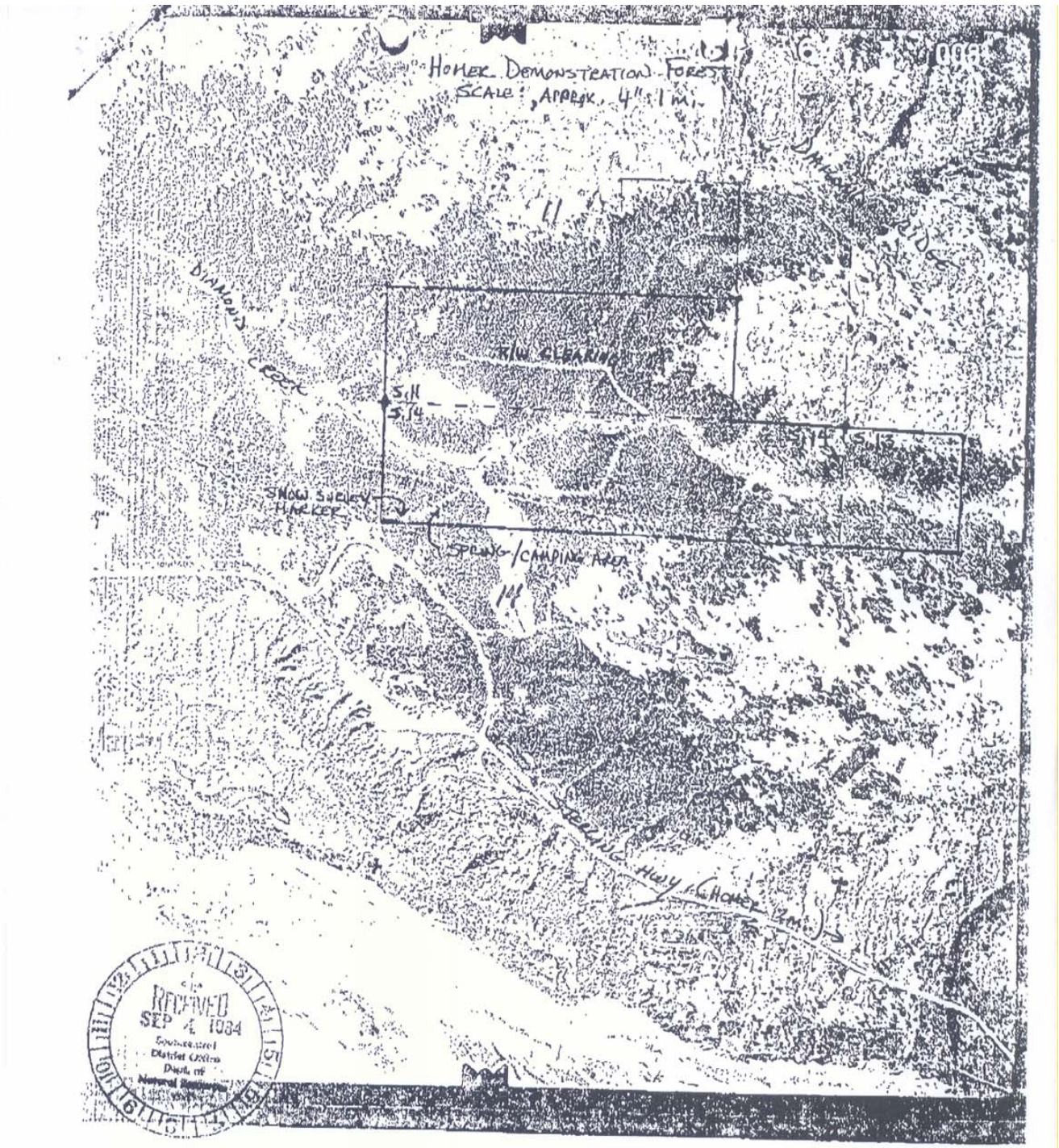
MAY 21 1984
Southcentral District Office
Dept. of Natural Resources

02-001A (Rev. 10/79)

ATTACHMENT B p. 1 of 2.



ATTACHMENT B p. 2 of 2.


ATTACHMENT C

Appendix B

Memorandum of Understanding
among the

Homer Soil and Water Conservation District

Department of Natural Resources,
Division of Forestry

U.S. Soil Conservation Service

U.S. Forest Service,
State and Private Forestry

Department of Fish and Game,
Division of Wildlife Conservation

regarding the

Homer Demonstration Forest

Statement of Purpose

This agreement pertains solely to lands described by the following:

Section 11: S 1/2 SW 1/4, W 1/2 SE 1/4;
Section 13: NW 1/4 NW 1/4, and
Section 14: N 1/2 N 1/2
Township 6 South, Range 14 West, Seward Meridian, Alaska.

The purpose of this memorandum is to establish responsibilities for the cooperative management of these lands, which shall be called the Homer Demonstration Forest, among interested agencies. The management of the forest resources of the Homer Demonstration Forest is under the authority of the State of Alaska, Division of Forestry (DOF) pursuant to the Interagency Land Management Assignment (ILMA) between DOF and the State of Alaska, Division of Lands for ADL 218963. Under the present Memorandum, the primary management authority of the forest resources of the Homer Demonstration Forest, as required by the ILMA, will remain with DOF.

The intent of the Homer Demonstration Forest is to provide forestry education and other compatible uses such as recreation. The Homer Demonstration Forest shall be managed to provide demonstration and research related to environment education and natural resource management. Activities will include timber harvesting, forest regeneration, wildlife habitat

1

enhancement, soil conservation practices, and recreational facilities development. Facilities for observing and interpreting demonstration projects, including signed trails, observation platforms, and information kiosks, may be constructed.

Educational projects and outings involving forestry or related natural resources will be encouraged. Recreational activities and developments will be allowed if such activities or developments do not interfere with forestry education and demonstrations. Supervised educational camping will be allowed, but public overnight camping or development of public campgrounds will not be allowed.

Implementation plans outlining specific projects related to education, recreation, and research will be developed by appropriate technical committees in the Homer Demonstration Forest Plan.

Responsibilities

All signatories

1. Contribute to the development and periodic review of plans for the Homer Demonstration Forest.

2. Participate in periodic measurement of sample plots for timber and vegetation research and management.

The Department of Natural Resources, Division of Forestry

1. Assures that the usage of the Homer Demonstration Forest is in accordance with the Interagency Land Management Assignment.

2. Manages timber harvest and forest regeneration operations including harvest unit design and layout, forest road design, timber sale contract development, and sale administration.

3. Provides periodic tours and training sessions in the Homer Demonstration Forest as requested.

4. Provides fire protection for the Homer Demonstration Forest.

5. Provides technical assistance in preparation of implementation plans for specific uses of the Homer Demonstration Forest.

U.S. Soil Conservation Service

1. Solicits comments and suggestions from the public and other resource agencies, and prepares and distributes the forest plan.

2. Provides maps, soil interpretation, and on-site guidance to analyze present condition, trends, and potential of soil and related resources.

3. Provides periodic tours and training sessions in the Homer Demonstration Forest on soil conservation practices as requested.

4. Provides technical assistance in preparation of implementation plans for specific uses of the Homer Demonstration Forest.

Homer Soil and Water Conservation District

1. Assists in soliciting comments and suggestions from the public and resource agencies during development of the Homer Demonstration Forest plans, including implementation plans.

2. Provides the chairman of the Homer Demonstration Forest steering committee and approves steering committee members.

U.S Forest Service

Provides assistance and specialists when requested in the fields of forest management, insect and disease management, and forest products utilization.

Department of Fish and Game, Division of Wildlife Conservation

Provides technical assistance related to wildlife education, research, and enhancement in the Homer Demonstration Forest.

It is Mutually agreed that:

1. Nothing in this agreement shall obligate any party in the expenditure of funds, or for future payments of money, in excess of appropriations authorized by law.

2. Each party agrees that it will be responsible for its own acts and the results thereof and each party shall not be responsible for the acts of the other party; and each party agrees it will assume

to itself risk and liability resulting in any manner under this agreement.

3. No member of Congress, or the Commissioner, shall be admitted to share any or part of the agreement or to any benefit that may arise therefrom.

4. Each party will comply with all applicable laws, regulations, and executive orders relative to Equal Employment Opportunity.

5. Nothing herein is intended to conflict with federal, state, local laws or regulations. If there are conflicts, this agreement will be amended at the first opportunity to bring it into conformance with conflicting laws or regulations.

6. Policy and position announcements relating specifically to this cooperative program may be made only be mutual consent of the agencies.

7. All signatory agencies/organizations shall meet jointly on at least an annual basis to discuss matters relating to this agreement.

8. Upon termination of this agreement any equipment purchased for studies initiated in furtherance of this agreement will be returned to the agency of initial purchase.

9. The effective date of this agreement shall be from the date of final signature.

10. The termination of this agreement shall be subject to annual review. However, any signatory agency/organization may terminate its participation in the agreement by providing all parties notice in writing 30 days in advance of the date on which its termination becomes effective.

11. A free exchange of research and assessment data among agencies is encouraged and is necessary to insure the success of these cooperative studies.

12. Any material published or data acquired as a result of this cooperative program may be reproduced, with credit given to the agencies, or organizations responsible for the development of the material.

General Considerations

This agreement shall supersede and nullify the Memorandum of Understanding between the Homer Soil and Water Conservation Sub-District, State of Alaska of Lands Forestry Section, and the U.S. Forest Service signed in 1975.

Homer Soil and Water Conservation District

Shirley Schollenberg — 2-25-93
Chairperson — Date

Department of Natural Resources, Division of Forestry

[signature] — 12-4-92
Director Acting — Date

U.S Department of Agriculture, U.S. Soil Conservation Service

[signature] — 1/13/93
State Conservationist — Date

U.S. Department of Agriculture, U.S. Forest Service, State and Private Forestry

[signature] — 12/5/92
Director — Date

Department of Fish and Game

by [signature] — 11/27/92
Commissioner — Date

Department of Fish and Game, Division of Wildlife Conservation

[signature] — 11/20/92
Director — Date

file

HOMER DEMONSTRATION FOREST
MEMORANDUM OF UNDERSTANDING

AMENDMENT A
SPECIAL PROVISIONS REQUIRED BY USDA SOIL CONSERVATION SERVICE

The signatories agree to comply with the following special provisions which are hereby attached to this Memorandum of Understanding.

(1) **Nondiscrimination Statement** - This program will be conducted in compliance with the nondiscrimination provisions as contained in Title VI and VII of the Civil Rights Act of 1964 as amended, the Civil Rights Restoration Act of 1987 (Pub. Law 100-259) and other nondiscrimination statutes; namely, Section 504 of the Rehabilitation Act of 1973, Title IX of the Education Amendments of 1972, the Age Discrimination Act of 1975, and in accordance with the regulations of the Secretary of Agriculture (7 CFR-15, Subparts A & B) which provide that no person in the United States shall, on the grounds of race, color, national origin, age, sex, religion, marital status, or handicap/disability be excluded from participation in, be denied the benefits of, or be otherwise excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal financial and/or technical assistance from the Department of Agriculture or any agency thereof.

(2) **Drug-Free Workplace** - By signing this agreement, the sponsors are providing the certification set out below. If it is later determined that the sponsors knowingly rendered a false certification, or otherwise violates the requirements of the Drug-Free Workplace Act, the SCS, in addition to any other remedies available to the Federal Government, may take action authorized under the Drug-Free Workplace Act.

Controlled substance means a controlled substance in Schedules I through V of the Controlled Substances Act (21 U.S.C. 812) and as further defined by regulation (21 CFR 1308.11 through 1308.15);

Conviction means a finding of (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes;

Criminal drug statute means a Federal or non-Federal criminal statute involving the manufacturing, distribution, dispensing, use, or possession of any controlled substance;

Employee means the employee of a grantee directly engaged in the performance of work under a grant, including: (1) All direct charge employees; (2) All indirect charge employees unless their impact of involvement is insignificant to the performance of the grant; and, (3) Temporary personnel and consultants who are directly engaged in the performance of work under the grant and who are on the grantee's payroll. This definition does not include workers not on the payroll of the grantee (e.g., volunteers, even if used to meet matching requirements; consultants or independent contractors not on the grantee's payroll; or employees of subrecipients or subcontractors in covered workplaces).

Certification:

A. The sponsors certify that it will or will not continue to provide a drug-free workplace by:

1. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition.

2. Establishing an on-going drug-free awareness program to inform employees about--

   (a) The danger of drug abuse in the workplace;

   (b) The grantee's policy of maintaining a drug-free workplace;

   (c) Any available drug counseling, rehabilitation, and employee assistance programs; and,

   (d) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

3. Making it a requirement that each employee be engaged in the performance of the grant and be given a copy of the statement required by paragraph 1.

4. Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will--

   (a) Abide by the terms of the statement, and,

   (b) Notifying the employee in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five (5) calendar days after such conviction.

5. Notifying the SCS in writing, within ten (10) calendar days after receiving notice under paragraph 4(b), from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant.

6. Taking one of the following actions, within 30 calendar days of receiving notice under paragraph 4(b), with respect to any employee who is so convicted--

   (a) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended, or,

   (b) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

7. Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs 1-6.

8. Agencies shall keep the original of all disclosure reports in the official files of the agency.

B. The sponsors may provide a list of the site(s) for the performance of work done in connection with a specific project or other agreement.

(3) **Certification regarding Lobbying (7 CFR 3018 (Applicable if this agreement exceeds $100,000)** - The sponsors certify to the best of their knowledge or belief, that:

A. No Federal appropriated funds have been paid or will be paid, by or on behalf of the sponsors, to any person for influencing or attempting to influence an officer or employee of an agency, Member of Congress, an officer or employer of Congress, or a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

B. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.

C. The sponsors shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

(4) **Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions. (7 CFR 3017)**

A. The sponsors certify to the best of their knowledge and belief that it and its principles:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by a Federal department or agency;

(2) Have not within a three (3) year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any offenses enumerated in paragraph (4)A(2) of this certification; and,

(4) Have not within a three (3) year period preceding this application/proposal has one or more public transactions (Federal, State or local) terminated for cause or default.

B. Where the primary sponsors are unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this agreement.

C. No member of, or delegate to, Congress, or resident commissioner after his election or appointment, and either before or after he has qualified, and no officer, agent, or employee of the government shall be admitted to any share or part of this agreement, or any benefit to arise therefrom. The provision herein with respect to the interest or members of, or delegates to, Congress, and resident commissioners shall not be construed to extend to any incorporated company where such agreement is made for the general benefit of such incorporated company.

Homer Soil and Water Conservation District

Shirley Schollenberg 2-25-93
Chairperson Date

Department of Natural Resources, Division of Forestry

[signature] 3-15-93
Director Date

U.S. Department of Agriculture, U.S. Soil Conservation Service

[signature] 4/13/93
State Conservationist Date

U.S. Department of Agriculture, U.S. Forest Service, State and Private Forestry

[signature]
Director Date

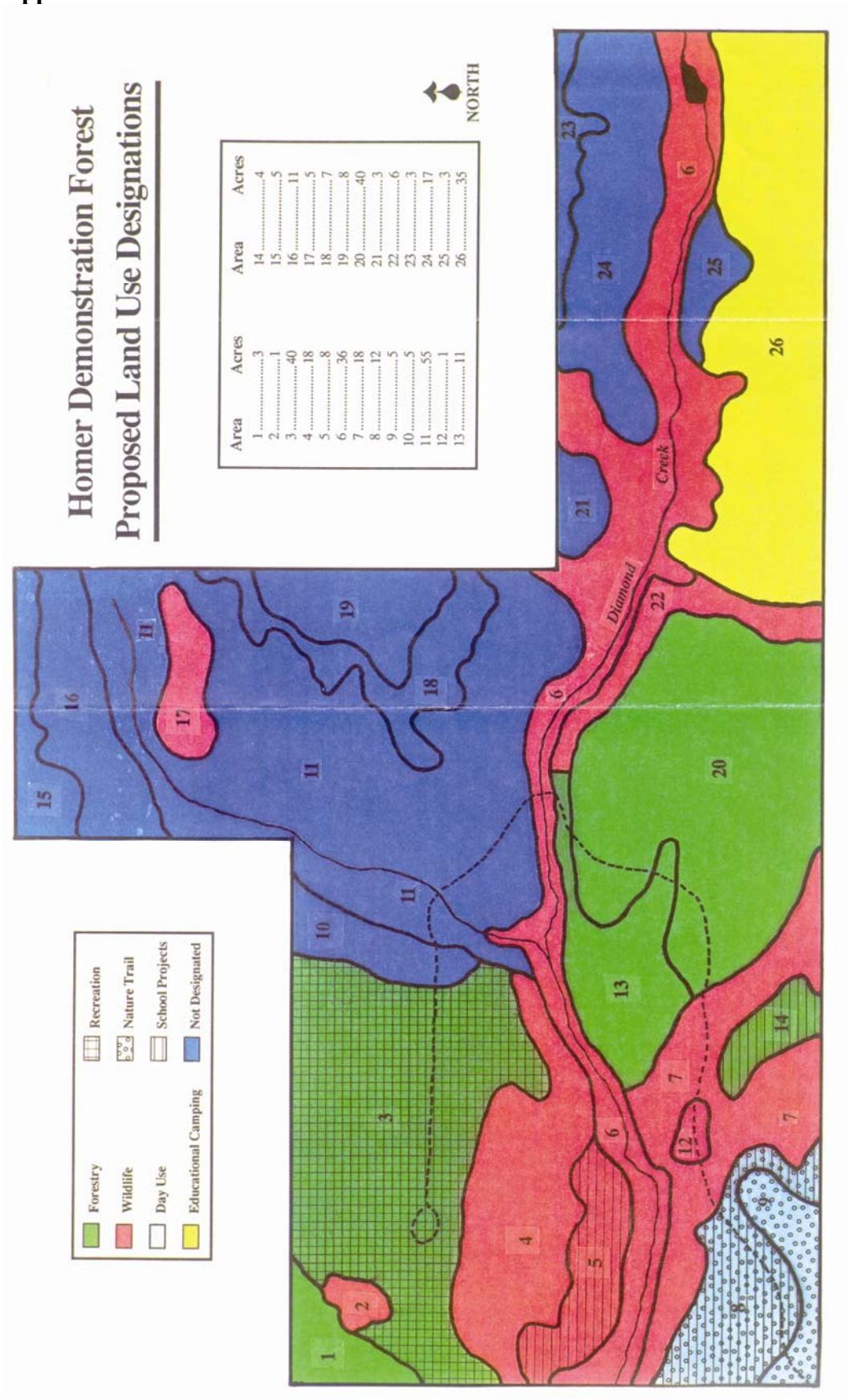
Department of Fish and Game

[signature] 5/31/93
DG Commissioner Date

Department of Fish and Game, Division of Wildlife Conservation

D. A. Kellyhouse 5/10/93
Director Date

Appendix C


Homer Demonstration Forest
Proposed Land Use Designations
Area Acres
1 3
2 1
3 40
4 18
5 8
6 36
7 18
8 12
9 5
10 5
11 55
12 1
13 11
Area Acres
14 4
15 5
16 11
17 5
18 7
19 8
20 40
21 3
22 6
23 3
24 17
25 3
26 35
NORTH
Forestry
Wildlife
Day Use
Educational Camping
Recreation
Nature Trail
School Projects
Not Designated
Diamond Creek

Appendix D

Homer Demonstration Forest
User Registration Form

Hello Project Organizers:

The Homer Soil and Water Conservation District welcomes and encourages you to enjoy the Homer Demonstration Forest. We ask that you please respect the facilities and natural features offered in this unique forest, and that you leave the area as (or better than) you found it.

In order for the HSWCD to monitor and document your use of the HDF we would appreciate the following information.

Name(s) and contact information of the organization(s) involved:

Project description and location:

Project duration:

Number in your party:

Other (wildlife sightings, trail and facility conditions, etc.):

Comments or suggestions:

Homer Soil and Water Conservation District
4014 Lake Street suite 201, Homer, Alaska 99603
907-235-8177 ext 5

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