LOOK! THE CHUGACHMIUT WERE HERE.

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IDENTIFYING AND INTERPRETING CULTURALLY MODIFIED TREES IN PRINCE WILLIAM SOUND, ALASKA

Susan,
I finalized Ron Kent's CMT document. This packet contained all materials you gave me from the files + a final draft with figures inserted & a 2HD disk containing the final file (it will not fit on a 3½" drive.
I have included this document in my curriculum package.
Bob Shaw

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Ron Kent
For
Chugachmiut
Anchorage, Alaska

1999

The Chugachmiut are a distinct group of Alaskan Native people who lived throughout Prince William Sound and adjacent areas of the Gulf of Alaska at the time of first European contact. Culturally and linguistically the Chugachmiut are related to present day Alaskan Natives living on the lower Kenai Peninsula, and Kodiak Island and adjacent areas of the Alaskan Peninsula. Many Chugachmiut also trace their ancestry to the Aleut sea otter hunters brought to Prince William Sound by Russian fur traders. Traditionally, the Chugachmiut were dependent on the resources of the forest for their survival. Trees provided them with essential raw materials for manufacturing and food resources. Visiting an old growth stand of Sitka spruce, western hemlock, and yellow cedar along the forested shorelines of Prince William Sound and the Kenai Peninsula, offers an opportunity to discover unique trees with scars on their surfaces. These scars were made by the Chugachmiut during the past few hundred years as they gathered the resources of the forest. Studying these scars provides clues as to what specific forest resource gathering activity they represent.[1]

As a group, trees bearing evidence of various types of cutting, notching, sawing, burning, peeling, bark stripping, or that are otherwise scared by human activity, are referred to as Culturally Modified Trees (CMTs). Even the stumps left from modern logging are considered CMTs. This booklet focuses on CMTs left by the Chugachmiut while conducting traditional activities. Archeologists record and study Native CMTs as artifacts because they represent a component of the archeological record critical to understanding aspects of Native land use generally absent from the written record.

With the exception of archaeologists and other interested researchers who conduct fieldwork in the forested areas of northwestern North America, most people do not have the knowledge required to identify these old scared trees or appreciate their unique value. The information in this booklet provides you with the background information and basic knowledge required find your own scared trees in the forest. For students and the general public alike, learning about Chugachmiut CMTs will broaden your perspective on one of the usually overlooked values of many old growth stands.

Equipped with some basic knowledge on how to identify CMTs, each trip to the forest can be your own personal expedition of archaeological discovery, especially after you find your first CMT. Finding your first scared tree will provide you with a bridge of understanding, across which you can journey back into the past few hundred years to the time when a Chugachmiut stood right where you are standing and removed the resources of that specific tree. Knowledge of CMTs is also transportable. Once you learn how to identify CMTs, it will become easier to find them in other areas. Similar CMTs are distributed to the south through southeast Alaska, British Columbia, Washington, and Oregon. In addition, looking for CMTs provides an avenue for developing an interest in

[1] Much of the information presented in this booklet is based on archaeological field work conducted while working on Alaska Native Claims Settlement Act (ANCSA) 14(h)(1) historic and cemetery site applications from Chugach Alaska Corporation, an Alaskan Native Regional Corporation. The author supervised surveys of these applications by the Bureau of Indian Affairs, ANCSA Office, between 1986 and 1990, in which over 2,000 CMTs were recorded.

field archaeology without collecting artifacts, such as stone tools. Collecting artifacts on public land is against the law and depletes nonrenewable archaeological resources.

It has only been within the past 15 to 20 years or so that archaeologists have began to understand both the research potential of CMTs and their value as interpretive sites. The value of CMTs as interpretive sites stems from their ability to provide a physical link to the past, which can be used as a backdrop in providing various types of information on Native groups. This can be done without exposing more sensitive archaeological resources, such as buried remains, to possible vandalism. For Native groups, the presence of CMTs provides a physical link to their traditional past and a visible example of their traditional use of specific areas. Federal Government recognition of the value of CMTs was established in 1987 when the Advisory Council on Historic Preservation designated CMTs as a class of cultural resources eligible for inclusion to the National Register of Historic Places. At the present time the only protected CMTs in the region are located on ANCSA 14(h)(1) historic site parcels conveyed to the Chugach Alaska Regional Native Corporation. Tongass National Forest has had a draft CMT management plan in place since 1989, but Chugach National Forest in Prince William Sound does not have a plan at this time.

The study of CMTs in many regions, including the Chugachmiut, is hindered by the scarcity of ethnographic and historic information pertaining to traditional Native use of forest resources. Generally, the greater the amount of early information that has been recorded pertaining to traditional Native use of forest products, the easier it is to identify the specific activity each CMT likely represents. In any given area, identifying what each CMT was used for becomes increasingly difficult in proportion to the amount of pertinent information available. In the Chugach region the arrival early in the historic period of Russian fur traders and their subsequent establishment in 1793 of a fort in Prince William Sound at Nuchek on Hinchinbrook Island had a devastating effect on traditional culture. When they arrived in the Sound, the Russians fur traders continued a policy they had developed with the Native peoples of the Aluetians and Kodiak Island, of forcing all Native men to use their kayaks to hunt sea otters for them. The Chugachmiut of Prince William Sound were forced to abandon many aspects of their traditional life styles, move to Nuchek and to join the Aleuts as forced workers for the fur traders.

It was not until 1933, some 140 years later, that the first and only serious attempt at recording Chugachmiut traditional culture was conducted. By this time the Chugachmiut had lost many of their traditional practices. The scarcity of information on traditional Chugachmiut culture means that the research potential of the archaeological resources remaining in Prince William Sound, including CMTs, is higher than in areas where more is known of traditional culture. The less ethnographic information available, the more difficult it is to say with any certainty, not only what each type of CMT represents, but what is the total potential mix of land use related information that can be gleaned through further research. Conducting research on CMTs is more time sensitive than other types of archaeological resources because they are rapidly disappearing as the trees die or are cut.

The only ethnographic field work in Prince William Sound was conducted in 1933 by the Ethnographer, Dr. Kaj Birket-Smith and the Archaeologist, Dr. Frederica de Laguna, as part of an expedition from the Danish Museum. The information they recorded was specifically related to the old traditional ways of life. They specifically sought to record first hand information directly from knowledgeable Native Elders related to reconstructing traditional culture before European contact. They were less interested in what was happening in 1933.

Dr. Birket-Smith said that worked wood had attained a "high standard" in the Chugach region. Only a few carved wooden objects have been preserved and those are held mainly in museum collections. Photographs of the museum collections show the high quality of carved artifacts from the Chugachmiut area. The importance of wood in manufacturing and building is attested to by the large numbers of stone tools used for wood working that have been found at various locations around the Sound. The Chugachmiut used forest products for shelter, tools, utensils, clothing, weapons, transportation, as a food source, and many other things.

Dr. Birkett-Smith was told that both hemlock and spruce were felled by stone axes for use in kayak frame construction. The hemlock was used for the frame because it did not crack or break as easily as spruce. Spruce was used for the stem, stern and crosspieces of kayaks. The felled trees also produced planks to make boxes and blocks of wood which could be hollowed-out to make boxes and probably bowls, spoons and other utensils. If, as reported by Dr. Birket-Smith, the usual method for obtaining lumber for various products was to first fell a tree, then this practice may at least partially explain why, apparently, no standing trees have been found in our region from which lumber has been removed.

Tree bark was used as roofing material to cover temporary summer lean-tos and smokehouses. The traditional smokehouses were not simple sheds strictly for smoking fish, such as those found today, but large multi-family dwellings. These large houses were built at either summer or winter village sites and had sides of planks and roofs covered with spruce or yellow cedar bark. Bark was stripped in the springtime when men would use long flat wooden sticks about six feet long to pry and peel off whole boat loads of spruce and hemlock bark. Women would then use a clam-shell scraper to strip off the inner bark or cambium layer for food. After the cambium layer was removed, it was then dried, smoked and soaked in seal oil. The resulting food was preserved until needed for future use by placing it in seal bladders. This food was used as a seasoning or sweetener in many dishes. The cambium layer of spruce, yellow cedar and hemlock were all evidently used as food, but the dish made from hemlock cambium may have been the favorite.

Dr. De Laguna hypothesized that in the vicinity of old Chenega Village and some other earlier settlements, there were no hemlock growing in 1933 because the neighboring trees were killed in the process of bark stripping to obtain the inner cambium layer, which was prized for its sweet taste. However, this observation was not confirmed and,

consequently, it is uncertain if the distribution of hemlock in those areas could have also been influenced by natural factors. It is also unclear if the process of bark stripping to obtain roofing and cambium was still being practiced in 1933 or whether she was referring to the lingering results of earlier bark stripping.

As previously noted, after removing the inner cambium layer, the long strips of outer bark would be used to provide a waterproof roofing material for shelters. The strips were probably placed to forma rood by alternating each curved strip, one up and then one down, to provide a shingled surface similar to that found on modern tile roofs. The type of scar left on the tree after the bark was stripped for roofing pieces may be one of the easiest to identify. When you find a CMT in the forest that has a long triangular scar with its bottom portion wider than the top and with the top pointed or straight across like the bottom, it probably represents the procurement of the outer bark for roofing material and the inner cambium layer for food. All of the variously shaped long scars may represent bark peeling for food and other non-roofing material related products.

The exact procedure for obtaining a long uniform piece of bark was not recorded in Prince William Sound. However, using Dr. Birket-Smith's general description and based on personal observations, it seems likely that it was accomplished by first making a rough horizontal cut along the bottom and then inserting a flat wooden stick into the cut. Prying and peeling would then continue up the tree and finally stopping the stripping by simply breaking the piece off. Sometimes this process was carried out for only a short distance up the tree. In other instances the process was extended as high as could be reached with the long prying sticks, as much as ten to twelve feet above ground. This method produced the triangular form of scar that is the most commonly found in Prince William Sound (Figure 1). In only a few instances were scars recorded which were tall and rectangular in form, apparently the result of cutting both the lower and the upper ends of the strip (Figure 2).

Another use of bark was reported by Chugachmiut Fred Allen who told Dr. Birket-Smith that the inner bark of the yellow cedar was sometimes twisted into rope. Before the arrival of the Russians with tobacco, snuff was made from hemlock and yellow cedar-bark ashes. Afterward, when tobacco was available, it was combined with the older Native-made snuff. Stone oil lamps used for lighting had wicks made of cedar bark. Also, some types of baskets for storage, water containers and stone-boiling cooking were infrequently made from folded yellow cedar bark. Spruce bark was also used in the process of curing animal skins.

To understand what individual CMTs were likely used for, it is necessary to know how the present visible scar relates to both its age and what the missing section of tree was likely used for. The approximate age of the scars can be seen in the apparent amount of new growth that has occurred since the tree was bark stripped. The thicker the new growth area, the earlier the probable date of bark stripping. In all cases, the scar will have started to heal itself by partially growing over from the sides. The healing edge of the scar curls over the scarred surface during a long process that will, unless the tree dies, continue until

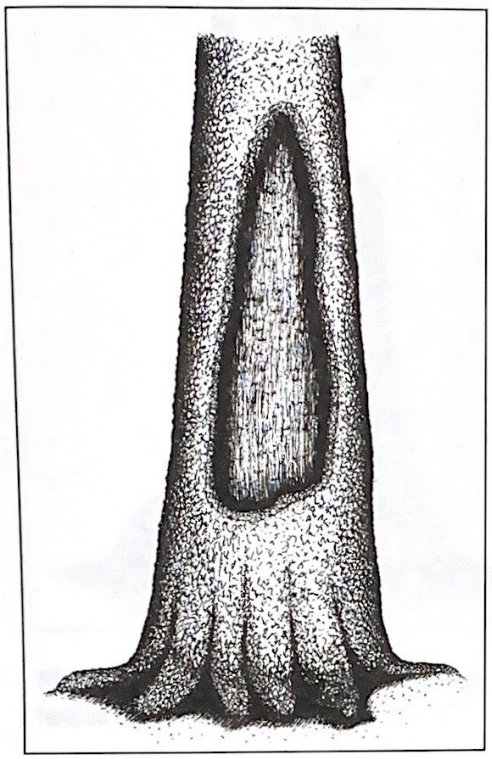

Figure 1. Triangular scar – bottom cut.

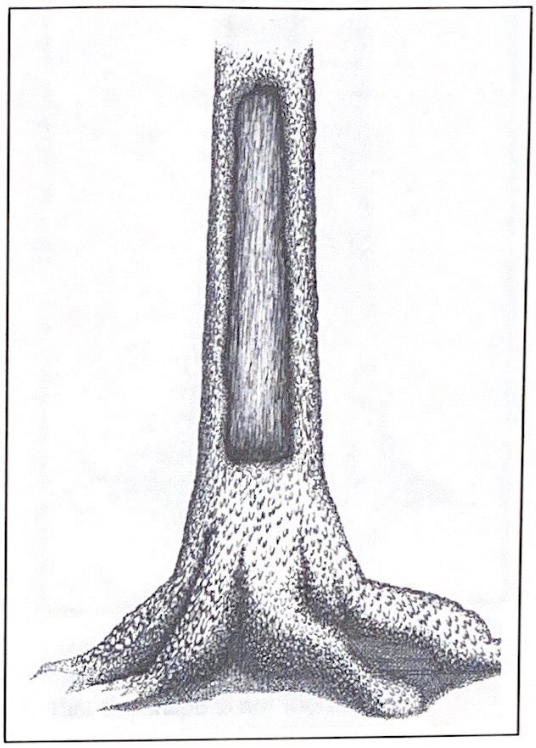

Figure 2. Top and bottom of scar cut.

the scar is completely covered over with new growth. Examining a cross section of the tree in the area of the healing edge or lobe and counting the number of rings that have grown since the scar was made provides an exact date of the bark peeling. The study of tree ring growth is called dendrochronology. Figure 3 depicts a CMT that has been logged by sawing across the scar. The upper part of the drawing depicts what the surface of the cut would look like as viewed from above. The inner dashed lines represent the growth rings that predate the scaring and the outer solid lines represent growth rings that have formed since the scaring. Counting the outer rings can give an exact date for when the scar was made.

On some trees, the scars have grown over so completely it is not possible to tell the original shape of the scar, only its approximate length (Figure 4). Eventually, this growing over of the scar proceeds to the point where no evidence of the original scar is left on the surface of the tree. In Southeast Alaska, examination by archaeologists of the cross-section of trees which were cut down during logging has shown these old scars preserved in the interior of many old trees.

There is much variability in the shape of scars. It is not known if this variability is related to the many diverse forest products recorded for the area, or if the natural healing process is responsible. A few trees have two, occasionally three, scars. In some cases trees were

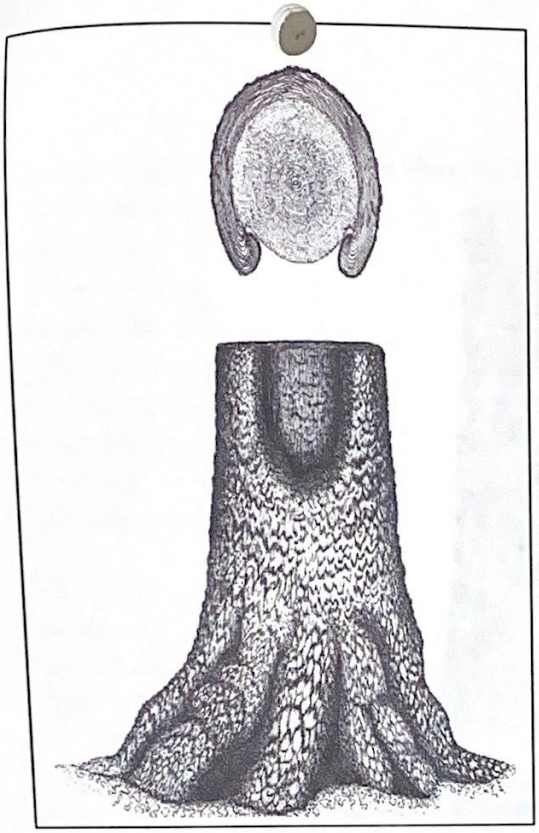

Figure 3. Cross-section showing partly healed scar along edges.

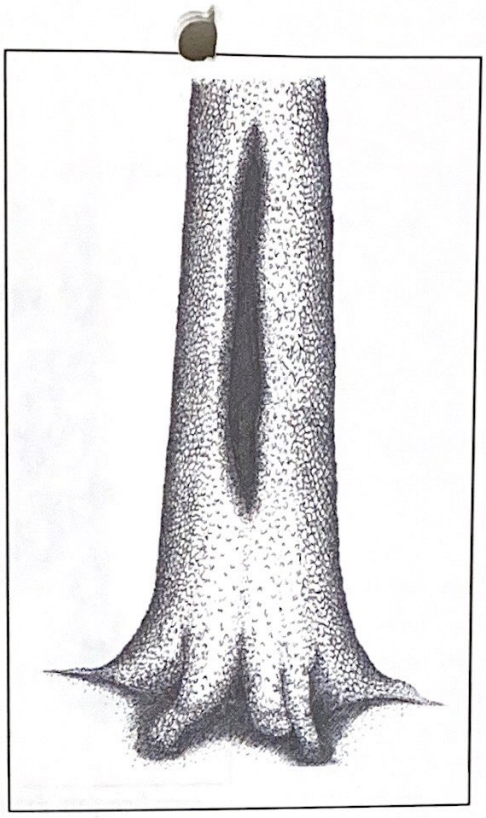

Figure 4. Old scar that is so healed over that the shape is not identifiable.

damaged by the bark removal process and eventually died. Some of the oldest CMTs and those damaged by bark stripping have had their upper parts blown off during storms. In a few instances, metal axe marks have been recorded which show oblique or perpendicular cut marks on the surface of the scar. Because the axe marks appeared to be more recent than the original bark stripping, they may represent some type of trail or trapping line markings, or where there was a lot of wood removed, they may represent tinder removal for starting fires.

The second most common general form of scar after the triangular is the short rectangular form. This shape of scar is much shorter than the triangular form and the great thickness of the lobes makes them appears to be cut deeply into the tree (Figure 5). This type of scar seems to always be found at probable travel camps. Axe cuts are present on a higher portion of these scars than on triangular scars, suggesting they were reused into this century, perhaps to acquire tender and pitch.

The last type of scar recorded also appears to be associated with travel camps, but only with the very late historic camps. This type of scar is characterized by the presence of a concentration of axe cuts in a small area at about chest height. These ax cuts do not appear to be a notch used to support a trap component. The scar is characterized by an irregular edge and is usually higher than it is wide. In some cases, the scar has partially grown over, indicating it is probably at least 50 years old. Other scars appear to have been kept open by repeated periodic chopping in the scarred area. These scars can be seen as obvious axe-cut notches dripping with pitch, or as irregular areas with many axe cuts.

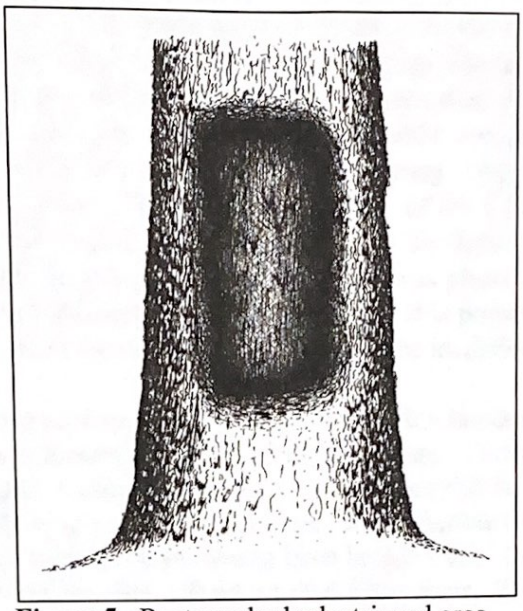

Figure 5. Rectangular bark stripped area.

These scars may represent early to mid-twentieth century Chugachmiut procurement of fire tender and possibly kayak-patching pitch associated with travel camps.

Identifying CMTs in the forest requires being able to tell the difference between natural and Native made scars. Examples of natural scaring include marks left by scratching bears, disease and one tree falling against or rubbing against another, damaging the bark. The important thing to remember about understanding the difference between a Chugachmiut and a natural scar is that the latter are usually isolated finds and the former most often occur in clusters. These CMT clusters can contain several hundred scared trees of many different types. Also, natural scars will often exhibit a jagged edge and uneven surface, where as the cultural scars will be more uniform. If disease forms a scar on a tree there will usually be a larger area that is obviously diseased and possibly also adjacent infected trees. If a bear scratches a tree forming an old appearing scar, there may be evidence in the same area of more obvious recent scaring, especially along a well worn trail near a salmon feeding stream.

How long CMTs will be preserved in the region is dependent on both natural and cultural factors. Natural factors affecting the preservation of CMTs are varied. Some of the CMTs are weakened by the scars and are susceptible to being blown down by the wind. In some cases, Native use appears to have damaged trees and contributed to their eventually dying. Many CMTs were killed indirectly by the great Alaskan earthquake of 1964 because they were located in areas where the ground surface sunk below the level of the salt water. The increased salinity of the ground water killed them and they are slowly rotting in place. Eventually, they will fall down. Once lying on the ground the decaying process will speed up.

The dominant cultural factor affecting the preservation of CMTs is commercial logging. Fieldwork in the region has shown that the earliest logging was highly selective and by-passed many hemlock and spruce CMTs, apparently because they were of less commercial value. During this period yellow cedars were probably considered of the highest commercial value even when they contained cultural scaring. Apparently, no old cedar CMTs have been found in Prince William Sound. Many of the CMT stands recorded in the region show evidence of early selective logging in the form of old sawn stumps. Observations indicate that, in some cases, a springboard was placed to provide height for the logger to stand and cut above the bark-stripped scar. It is possible that some of these old stumps were cedar CMTs that were too weathered to be identified as such.

The scars we can see today are probably no older than a few hundred years and they will be visible for only a limited number of years into the future. Assuming the CMTs stay healthy and are not logged, eventually, fewer and fewer scars will be visible, and after that there will be a potentially long period when no scars will be visible on the surface, but will lie hidden within the tree from the scars having been healed over. In time these trees will die and fall to the ground where they will rot into the forest floor. Then Native CMTs will only be known from pictures, reports and sample trees we collect within the next few years.

Reading this booklet will give you the knowledge to find your first CMT. Once you find your first one, it will become easier and easier to find more. The first thing to do is look around near where you live for a stand of old growth spruce or hemlock. If the old growth stand is along the shoreline of the Sound, or a river, lake, or old trail, chances are you will start finding CMTs. Then, you can experience the sense of excitement that comes from finding a living artifact from the past. You might even call out, **"Look! The Chugachmiut were here!"**