Moore Homestead Interpretive Kitchen Garden Project
Final Report

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Summary

The Moore Homestead is significant in and of itself as the site of Skagway, Alaska's first building and homestead, and as home of Captain William Moore, Ben Moore, and Ben's wife and children. Yet the Moore property also has the potential to help relate a story greater than just the Moore family alone. It can help tell the story of Skagway itself, of the Klondike gold rush, and of Southeastern Alaska's early settlers as they began to tame the land both for production and for ornamentation. The Moore's themselves made many improvements to their own property and even landscaped the front yard with trees and boardwalks (Figure A.18). However, despite hopes to the contrary, at best there is only inconclusive evidence suggesting that the Moore Family ever raised fruits and vegetables on their land within a kitchen garden.

Upon contract approval, work commenced in late July for the Moore House interpretive kitchen garden research and design project. Research assistant Alison Blake traveled to Skagway where she gathered and reviewed primary documents relating to the physical appearance of the Moore homestead landscape from 1887-1910, as well as to agricultural and gardening practices in the region at that time. Primary documents reviewed included, but were not limited to, historic photographs, newspaper advertisements and articles, and publications by the U.S. Department of Agriculture's Experiment Stations in Alaska. These documents were collected over four days from the NPS Klondike Gold Rush Archive and Library in Skagway, the Yukon Archives in Whitehorse, Canada, and The Alaska State Library Historical Collections in Juneau, Alaska. Archeological studies, cultural landscape reports, and other relevant materials were also requested at this time from the KLGO and have since been received and reviewed by the research team.

Research Assistant Kari Stiles reviewed documents supplied by NPS and reviewed documents recovered in the teams searches to better understand the degree of lead contamination on the Moore House site and to review mitigation methods applicable to this level and type of contamination.

Work with this project has been directed along three veins. First and foremost, the team has attempted to determine if a kitchen garden ever was part of the physical landscape at the Moore Homestead during the stated 1897-1910 period of significance and what the appearance and contents of such a garden might have been. At this point, there has been no conclusive evidence found to suggest that the Moore's had a kitchen garden anywhere on the property nor more specifically where it has been proposed by the NPS. As such, the kitchen garden proposed in this report is purely interpretive, with its form and content based upon images and written records collected from the period of significance.

Secondary explorations have looked at other farming and gardening in and around Skagway and the Yukon at the time in order to shed light onto typical plant material grown, scales and methods of production, as well as appearance and layout of farms and residential gardens. Although no additional information has been uncovered regarding any kitchen garden at the Moore Homestead, this vein of study has knitted together a rich context out of which the interpretive kitchen garden plan has been developed.

Lastly, research has been gathered and reviewed on lead contamination to determine what, if any, risks are posed by the lead from off-site operations and on-site, such as paint from the house site and identified in a in a previous study, and what options are recommended to eliminate/reduce and potential dangers. The findings are discussed along with recommendations.

The following report discusses the team's findings in the above stated issues, makes recommendations, and proposes a course of action for the project based upon these findings.

I. Moore House & Kitchen Garden Archives Research

Summary of Findings

After reviewing historic photos and documents, recent archeological studies and cultural reports, no hard evidence was uncovered pointing towards the Moore family ever having made any attempt at cultivating their land in Skagway at the Moore House site. Although the Kirmse family certainly planted vegetables and maintained a variety of flower beds over many years from 1910 to 1970, only a scattering of speculative and inconclusive data suggests the Moore's may have done the same.

Early reports on the Moore House were completed by the National Park Service in the 1980's and 90's; none of these refer to a Moore kitchen garden within the yard enclosure. It is known that Captain William Moore and his son, J. Bernard (Ben) Moore, began work on their claim in Skagway in 1887. They constructed the William Moore cabin, and cleared land, but Ben Moore did not make considerable efforts to cultivate or develop the land until he moved his family to Skagway in February, 1896. They continued to improve the existing cabin and built a house immediately to the south with several additions and changes made between 1897 and the fall of 1901. The original cabin was moved 50 feet west to its current location in 1900 (Cooper, 13-20).

With approximately seven acres already fenced in around the homestead, an additional fenced enclosure was created by the fall of 1897. This space, known during the Victorian Era as a kitchen yard or kitchen garden, contained two consecutive privies and two outbuildings. The name "kitchen yard" or "kitchen garden" does not necessarily imply that any actual gardening was taking place. The Moore's kept geese and/or chickens within the yard, and may have also used it for small livestock. Maintaining a garden within that same space doesn't make obvious sense and available photographs do not reveal any plantings within the yard. The Moore family did, however, eventually landscape the yard in front of the house. This yard had been maintained with tall grasses, clover, weeds, and potentially some grains including alfalfa and barley. In 1904, the Moore's planted both deciduous and evergreen trees within braces along the boardwalk and enclosure fence. The tall grass was taken back to low cut turf (1995 CLR).

On September 21, 1897 J. Bernard Moore, son of Captain William Moore described improvements to the property in an affidavit to justify their homestead claim, which was being overrun with settlers. The affidavit read:

> *Log cabin built in 1888 with addition, consisting of a three-story frame building used as a dwelling; a story and a half bunk-house;* ***a garden of five acres fenced in and used for raising vegetables****; a log stable, a large frame stable; a one and a half story frame residence used by [Moore's] father; a large two-story frame boarding house used by claimant's saw-mill employees; two small log cabins used for like purposes…* (Emphasis added)

Unfortunately, although this testimony appears promising, it cannot be accepted entirely at its word since it is known that three-story frame building referred to was, in actuality, only one-and-a-half stories high (Cooper, 14). Ben Moore did fence in approximately seven acres of land at the onset of the gold rush to keep the property from being overrun with stampeders, but no other written documents or photographs from the time corroborate that he ever grew any crops on the land.

The belief that the Moore's maintained a kitchen garden appears to stem from a single report. The 2001 Moore Homestead Cultural Landscape Inventory by the National Park Service alludes several times to a kitchen garden within the kitchen yard enclosure to the east of the Moore house. At one point, it is definitively stated that "Archeological and pollen analyses conducted in and around the privy by the Moore Homestead confirm the presence of a kitchen garden" (2001 CLI, 28). Unless this statement actually refers to the post-1910 gardening efforts of the Kirmse family, this team of researchers is at a loss to find any backing for such a claim

within the archeological reports of Blee (1988) and Cooper (2001). Authors of the report have been contacted to confirm report references and their response is awaited. After conferring with the Cultural Landscape Inventory authors, it is our belief that this statement actually refers to the post-1910 gardening efforts of the Kirmse Family, who did indeed have a number of garden beds throughout the property at various times between 1907 and 1970. Correspondence with the CLI authors suggested that the evidence consisted in part with the "location of interior fencelines and soil stains" that predated the Cooper report. An additional review of all known archeological reports did not support any such findings. Katherine Blee's 1988 report did include an archeological investigation east of the Moore Cabin with the following findings which confirm that excavated flowerbeds dated to the Kirmse era.

Operation 15: East Side of the Cabin

Two features of interest were uncovered during the excavations. The first was a line of river cobbles placed approximately 1.5 feet from the cabin wall; they appeared to frame a planting bed (Figure 79). A single course of bricks lay slightly below and outside the cobble line and may represent an earlier, larger flower bed. A 2 inch by 2 inch wooden strip lay half-way between the cobble outline and the cabin wall. Wire nails had been placed approximately 0.5 feet apart, corresponding to a line of nails on the side of the cabin about 3 feet above the ground surface.

A photograph taken sometime before 1960 shows string tied between the cabin wall and the ground, providing support for a vine-like plant, probably sweet peas. Georgette Kirmse confirmed that she had grown flowers beside the cabin but claimed she never had much success with them in that location (Georgette Kirmse 1985)

...The use of the ground to the east of the cabin as a flower bed appears to have been relatively recent, although predating the 1960's when Jack Kirmse replaced the roof… A ca.1900 photograph of Bernard Moore and his new pet moose (The Daily Alaskan, March 23, 1900:1) shows fire wood piled up along the east side of the cabin.

There were no excavations conducted to the east of the house as part of this investigation.

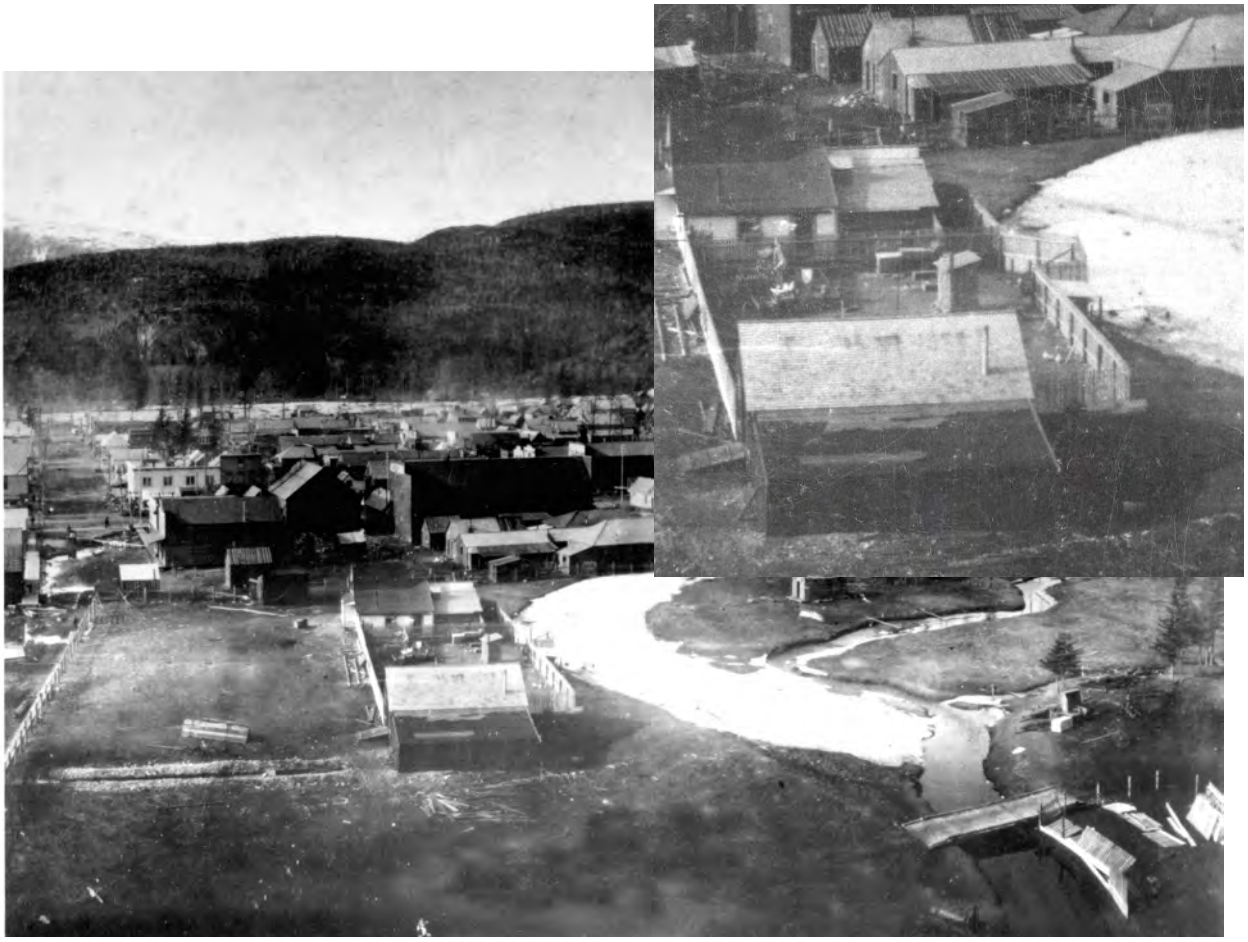

Figure 1.1 Skagway, June 1898 Klondike Gold Rush National Historic Park Research Library Credit: Barr Collection in the Archives, University of Alaska Fairbanks

Figure 1.2: Skagway, June 1898 Klondike Gold Rush National Historic Park Research Library SO.10/4 Credit: Barr Collection in the Archives, University of Alaska Fairbanks

Correspondence (Appendix E) also mentions photographs depicting interior fencelines within the kitchen yard (Figures 1 & 2). Indeed, there appears to be a fenced area at the southeast area of the kitchen yard, but none of the photographs clearly show what the area enclosed. On the one hand it could have been used as an animal pen for the chickens, geese, or the pet moose of the Moore Family and on the other hand it could have contained a vegetable garden. Far from being conclusive evidence, these images mean that the possibility of a vegetable garden should not be entirely rejected. What these images do suggest is that the kitchen garden, if it did exist, would not have been immediately off of the porch, but shifted towards the fence dividing the kitchen yard from the front yard. The original proposed location for the interpretive kitchen garden.

With regards to these photographs and the Moore Homestead Cultural Landscape Inventory of 2001 and the subsequent landscape rehabilitation proposal, the research team notes one further incongruity. The interpretive kitchen garden is proposed for the southwest corner of the kitchen yard. The CLI states that archeological investigations have confirmed the presence of a garden. However, Figures 15 from *A Century at the Moore House* and 11 from *Archeological Investigations volume 2*, does not show that ANY archeological work has been done in the area of the supposed garden (Cooper, 42; Blee, 26). Furthermore, this placement would place the interior fence lines within the upper portion of the vegetable beds themselves. The research team is therefore struggling to see how the determination was made that any garden existed in this exact area. Using the photographs of interior fences as a guide, the team recommends shifting the interpretive kitchen garden several feet south towards the front yard.

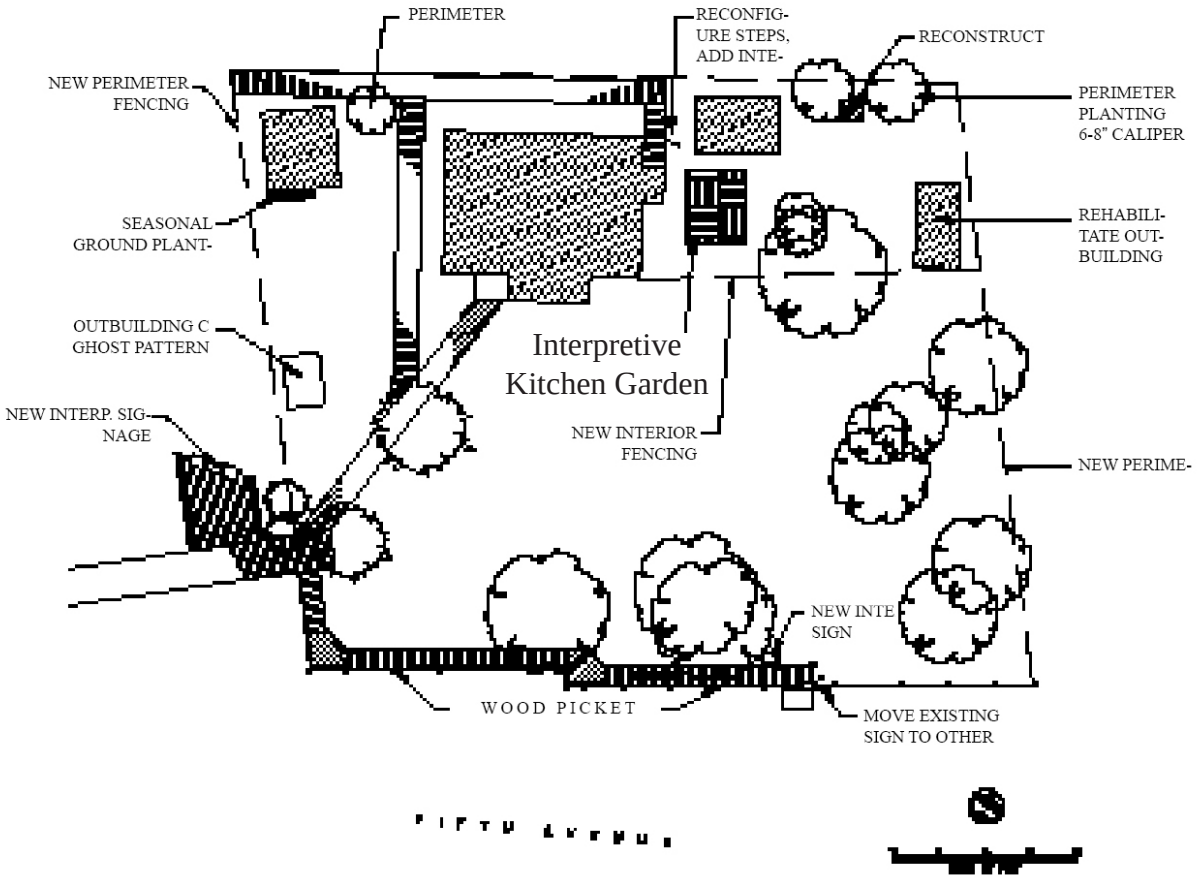

Figure 1.3: Moore House Plan showing location of proposed kitchen garden

Both pollen and macrobotanical analyses have been conducted at the Moore homestead in conjunction with other archeological investigations. These studies are helpful in that they identified a number of plant families that were present in the area during the period of significance. However, both studies focused on the privy areas and, although they are good indicators of what the Moore's were eating, they do not prove that plants were grown on site. Consumed fruits and vegetables may have been grown on site, grown locally and purchased by the Moore's, collected from the wild, or even imported. Logic suggests that some food and agricultural products, including figs and coconut, would have been imported to Skagway as they cannot be grown in the region. Most of the berry genera represented are found locally and thus were probably wild or domestically grown. See Appendix E for a complete listing of plants types associated with the Moore Homestead through pollen and macrobotanical analyses.

The pollen analysis did note a shift from tree pollen to weed pollen around the time when the Moore's were clearing land in Skagway, suggesting that the land was not cultivated, or at least not heavily so at that time. An interesting note, however, is that *Holodiscus* (Oceanspray) pollen does appear in the upper levels of the first Moore privy, but not in the second Moore privy. Not a native plant to Skagway, the analysts suggest that the Moore's may have grown the Oceanspray for its medicinal and functional uses for a couple years, but stopped doing so prior to 1900. It is unclear whether this plant would have been grown within the kitchen yard, or somewhere nearby.

Appendix A includes images taken of Skagway and the Moore House during the gold rush era. It is worth noting that none of the images clearly display any sort of garden within the kitchen yard enclosure, although several do depict interior fence lines of undetermined purpose. Ben Moore also kept a diary during

his time in Skagway, and does not mention any gardening efforts (according to statement by Dave Curl, NPS Interp. At Moore House). Given the data at hand, it is the research team's initial conclusion that a vegetable or flowering garden was not a feature of the Moore Homestead any time from 1887 to 1910.

Figure 1.4
Moore Cabin
n.d.
Image 16:
Background Info
CD
provided by Samson
Ferriera

Agriculture in the Skagway Region:

Although the Moore's themselves may not have participated, the gold-rush years of Skagway also saw a good deal of agricultural production and experimentation. Early gardening efforts in the Skagway region appear to have been related to food production, but grew to incorporate ornamental gardening after a very short time. As early as 1902, Skagway resident and curio shop owner Herman Kirmse began hosting an annual contest for the best garden in the town. Local gardens grew and multiplied over the following two decades, such that Skagway became known as the "Garden city of the north." Frank Norris' book, *Garden City of Alaska: An Illustrated History of Gardening in Skagway, Alaska* provides an excellent detailed chronology of gardening and agriculture in Skagway since its founding. From the 1988 Blee report, Norris himself concluded that "'Captain' Moore introduced many improvements to his homestead and cleared 4.8 acres of land, but his visits to the area were too intermittent to permit garden cultivation." (Norris, 13). One garden, however (Figure 1.5) depicts a 1898 Skagway garden within a yard enclosure of similar scale to what the Moore's would have been capable of doing. This vegetable garden clearly contains several types of plants, including potatoes and possibly beans or peas. The beds are raised and edged with wooden boards. Overall, this woman's garden space appears quite small, maybe only ten by twenty feet in size. Although this is the only known photograph of a homestead kitchen garden from Skagway during the gold rush years, one can assume that many such modest vegetable gardens were planted and tended by pioneering families.

Moore-era farms included the Clark Farm in Skagway and the Pullen Farm nearby in Dyea. At the same time, agricultural experiment stations were being set up throughout Alaska by the United States Department of Agriculture. The headquarter station at Sitka was both the closest to Skagway, and the most comparable in climate. Records from the Sitka station give accurate accounts of plant varieties being tested (if not always commonly used) in the region at the turn of the century. Some of these varieties are still commercially available today and are recommended within the planting plan.A complete list of plant varieties grown at the Sitka Experiment Station and reported on in 1903 may be found in Appendix D, while a sampling of agriculture and garden related images may be found in Appendix C.

Farms and gardens around Skagway and in the Yukon focused primarily on root-crops. Potatoes, turnips, beets, carrots were all regularly grown, with abundant crops of potatoes being photographed and described numerous times, as happened in the Skagway News in October, 1898 where a clipping reads that a potato patch near 14th and Main yielded "an average of 653 bushels to the acre, notwithstanding that the [McIntyre] family had removed the larger potatoes from the fills during the summer" (Norris, 14). A 19 January 1898 article from the *Dyea Trail* states that Sam Herron with the Healy & Wilson's Dyea Trading post had grown cabbage, lettuce, cauliflower, beets, peas, carrots, potatoes and parsnips, flowers and hay (Norris, 14). Many photos dating during the 1890's and first decade of the 1900's taken around Skagway and up to the Yukon depict a variety of crops, specifically potatoes, cabbage, and rhubarb, the latter for which Skagway became particularly famous. Leafy vegetables such as lettuce, though grown, were probably less common due to the inability to store them for any period of time.

Ornamental horticulture grew in popularity just after the turn of the century, so much so that most vacant lots were taken up with flower production and gardens. The 1901 visit from agricultural experiment station agent, C.C. Georgeson led him to note that,

There was scarcely a dooryard in which could not be found a fine collection of the hardy annual flowers. Pansies and sweet peas seem to be the favorites, but poppies, nasturtiums, mignonette, marigolds, larkspur and a dozen other annuals were also much in evidence… I have seen no finer pansies and sweet peas anywhere than could be found in some of these Skagway dooryards."(Norris, 25).

It is known that the Kirmse family, grew sweet peas up wires strung to the east face of the Moore Cabin. Photographic evidences shows that this was common practice as far back as the Moore era where sweet peas are visible both in Skagway gardens and the greater region. (Figures 1.6, 1.7, C.7, C.8)

Recommended Action:

Archeological investigations could be conducted to within the southwest corner of the kitchen yard to potentially determine if, and where a Moore-era garden existed. Such an investigation might also determine the dimensions of a garden plot and if it was outlined by a material such as wood or river stones.

Figure 1.5
A garden in Skagway, Alaska - 1898. [Woman posing next to her vegetable garden with log cabins in the background.]
Date: Aug. 1898
Fonds/Collection: H.C. Barley fonds
Photographer: H.C. Barley
Yukon Archives PHO 5036

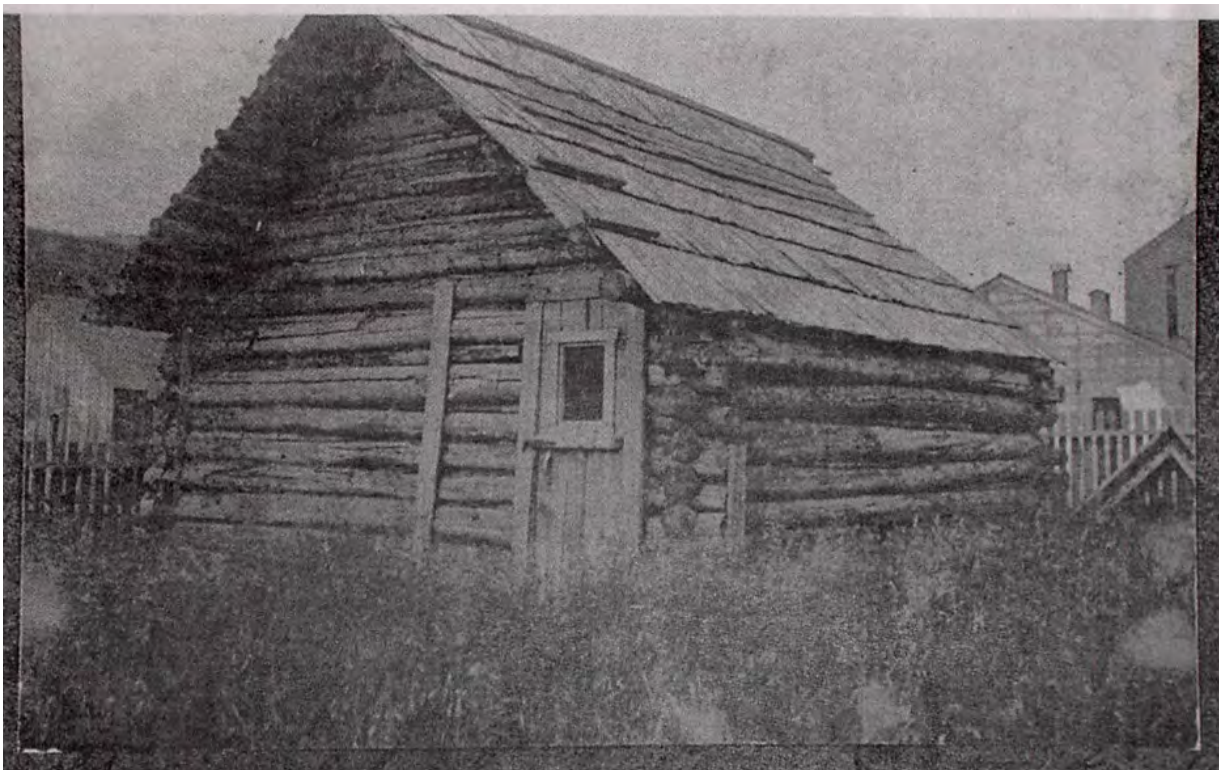

Figure 1.6
Moore Cabin
(33) Moore
Collection in
the Archives,
University
of Alaska
Fairbanks.
Klondike Gold
Rush
National
Historic Park
Research
Library
MR.1/20

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Archives Consulted:

Yukon Archives, Whitehorse, Canada
Alaska State Library Historical Collections, Juneau, Alaska
Klondike Gold Rush National Historic Park (KLGO) Archives and Library, Skagway, Alaska
Museum of History and Industry (MOHAI) Archives, Seattle, Washington
University of Washington Libraries, Special Collections, Seattle, Washington

Figure 1.7
Three men, two of which are Mounties, standing by a fence overlooking a vegetable garden. Log cabin constitutes background. Possibly in Dawson, or along the creeks. Possibly a NWMP post. n.d.
MLB collection
8x10 print
Yukon Archives, PHO 3241

II. LEAD CONTAMINATION AT THE MOORE HOUSE

Summary

To assess the potential health risks of developing a Vegetable Garden on the site of the Moore House at Klondike Gold Rush National Historic Park, we reviewed previous reports documenting lead contamination on the site, recent case studies at similar sites across the United States, and the currently recommended treatment and remediation procedures put forth by the U.S. Environmental Protection Agency (EPA). These materials included the 1990 Bureau of Mines report on lead contamination in the Klondike Gold Rush National Historic Park (3), recent reports of progress at the Smuggler Mountain site in Aspen, Colorado (1), and various web-based information resources found at the EPA (2) and at Ohio State University Extension (5). Additionally, recent scientific research on lead remediation and development of lead-contaminated sites for human use was reviewed and evaluated for its potential application to the Moore House Kitchen Garden site. Our research suggests the following:

Lead Contaminations Levels: Although soil samples have not been collected from within the Kitchen Yard in the vicinity of the proposed Vegetable Garden, contamination levels near the site do not preclude development of a Garden that would produce vegetables for human consumption. All but one sample fell below the EPA recommended treatment level of 500ppm and the single site that tested above 1000ppm is not close enough to influence lead levels in the proposed Kitchen Garden area.

Lead Migration: Because the lead is present as Galena and Cerrusite, two relatively insoluble lead contaminants, any lead contamination near the site is unlikely to migrate from the more highly contaminated area to the North of the Kitchen Yard to the proposed site for the Vegetable Garden.

Bioavailability: Bioavailability of lead present as Galena or Cerrusite is low. Therefore, it will only be taken up by vegetation at very low rates. Further, the bioavailability of any lead percent can be further reduced with application of organic materials and careful regulation of soil pH to maintain basic conditions (above pH 7.0).

Background

Lead Contamination. In 1990 the U.S. Bureau of Mines published a report summarizing results from a 1989 study looking at the degree of lead contamination on Klondike Gold Rush National Historic Park properties (1). Samples were taken from all areas of the property with 9 locations within 300 feet of the proposed Vegetable Garden site on the Moore House Property (Figure 3.1, Table 3.1). Although lead concentration is as high as

SAMPLE #	LOT #	CONCENTRATION AT DEPTH (ppm) 0-3”	3-9”	9-18”	DISTANCE FROM PROPOSED KITCHEN GARDEN
001	11 & 12	266	154	30	100’ WSW
002	11 & 12	102	13	15	80’ SSW
003	11 & 12	1113	439	15	50’ N
004	2 & 3	274	109	132	100’ NNW
005	2 & 3	366	264	260	125’ N
006	2 & 3	200	69	48	180’ N
007	9	202	332	33	150’ WNW
008	9	46	415	118	175’ W
020	7	238	58	83	250’ WNW

Table 2.1. Soil Lead Concentrations within 250ft of proposed Moore House Kitchen Garden. Shaded boxes represent soil samples of highest concern due to proximity to proposed garden site. (see Figure 2.1 for specific sample locations)

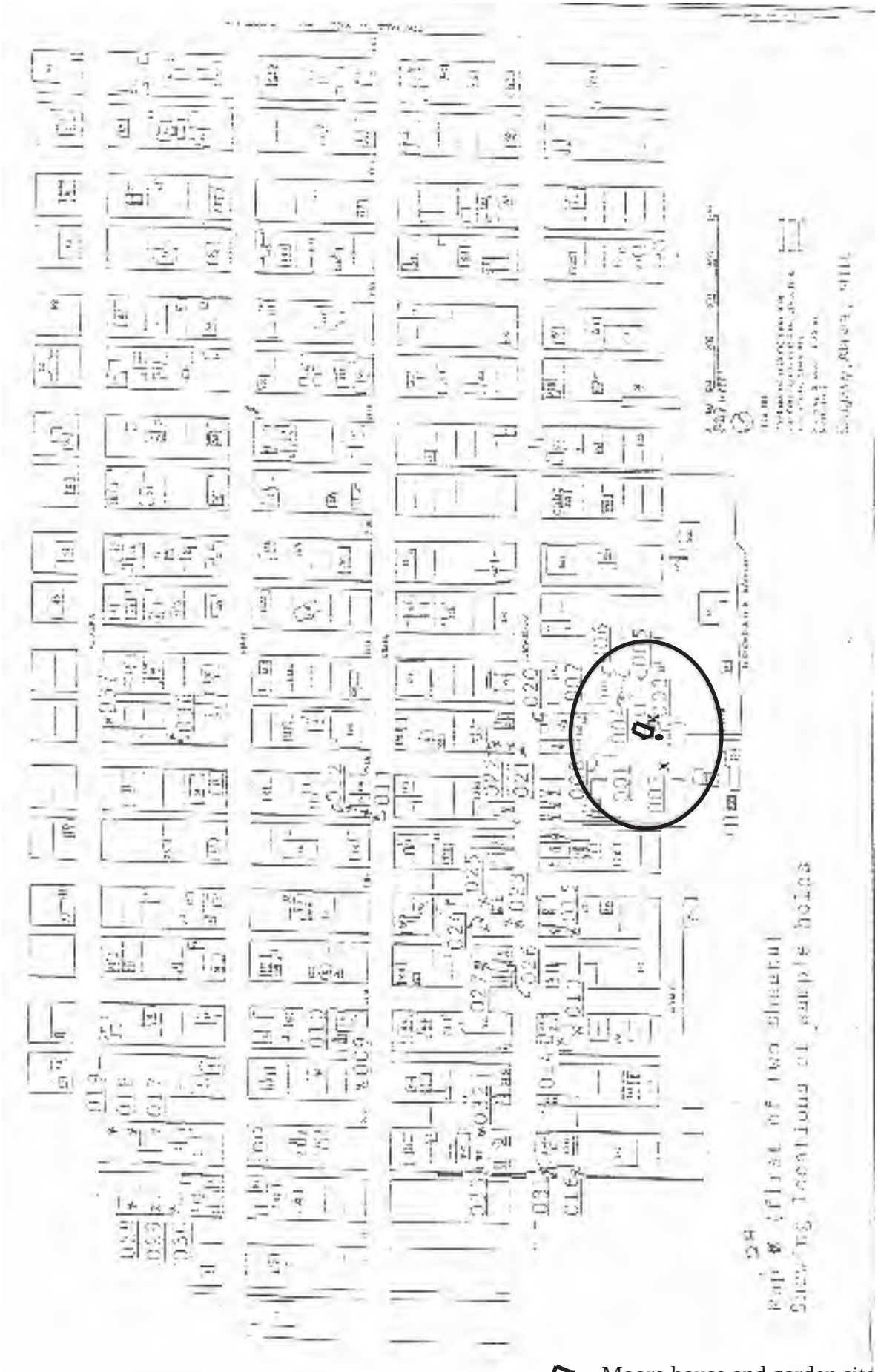

Figure 2.1. Soil Sample Locations. US Bureau of Mines, 1989

11,000ppm (ug/kg) on other sites within the Skagway city limits, only one soil sample within the vicinity of the Moore House property fell above the EPA-recommended treatment level of 500ppm (2). Sample 003 at a depth of 0-3" revealed lead concentrations of 1113ppm. All other samples, including sample 003 at depths greater than 3", fell well below 500ppm.

Previous Recommended Treatment and Remediation. In the 1990 U.S. Bureau of Mines report, the authors based their recommendations for treatment of the Moore House Property on work carried out at a site with similar types and levels of lead contamination and human use, Smuggler Mountain in Aspen, Colorado. At the time of the report, the recommended course of action for remediation of sites with lead concentrations >1000ppm was to remove the top 2 feet of soil and replace it with clean soil. For sites with contamination levels between 500 and 1000ppm, the contaminated soil was to be covered with a geotextile fabric and topped with 12" of clean soil. For sites with lead levels below 500ppm, no treatment was necessary. Based on a conservative assumption that contamination in the Kitchen Yard is as high as that in the nearest soil sample (1113ppm. See Table 2.1, Figure 2.1) these EPA-recommended treatments for the Smuggler Mountain site suggest that soil on the proposed Vegetable Garden site should be removed and replaced with clean soil.

Updated Remediation Reports and Research. A review of progress at the Smuggler Mountain site since 1990 and recent research on treatment and remediation of lead-contaminated soils suggests that for large scale projects, removal of the contaminated soil may not be the best course of action. Disturbance of large volumes of lead-contaminated soils can release lead into the air, increasing the bioavailability to humans. At the Smuggler Mountain site, although the EPA originally recommended removal and replacement for soils with contamination levels >1000ppm, a Technical Advisory Committee determined that removal was unnecessary and recommended instead that contaminated soils be covered with 12" of clean (<999ppm lead) soil in areas to be planted with vegetables. Subsequent 5-year reports and analysis of blood lead levels in local residents suggests that this treatment was adequate at the Smuggler Mountain site (1).

A review of research published since the 1990 Bureau of Mines report suggests two additional approaches to addressing the lead contamination on the Moore House site. The addition of high concentrations of organic matter has been demonstrated to significantly reduce the bioavailability and uptake of lead into vegetative, storage and fruiting organs of plants grown for consumption (4, 6). Similarly, the bioavailability of lead to plants grown on soils with low levels of lead contamination can be further reduced by maintaining soil pH at or above pH 7.0 with the addition of materials containing lime, or other alkaline compounds, to the soil (4, 6).

Recommended Actions

1. Additional Soil Testing: Collect soil samples from within boundaries of proposed kitchen garden
   Alternate Approach: Assume highest levels of lead contamination (1113ppm)
2. Remediation: Remove 12" from top of contaminated soils and add 18" of clean organic soils
   2b. Amend heavily with organic materials
   2c. Grow cover crop through winter months to add Nitrogen and organic materials to garden soils.

1) Collection of Additional Soil Samples within Moore House Kitchen Yard. Soil samples from within the Moore House Kitchen Yard were not included in the 1990 soil analysis. Data collected from sites within 100 feet of the Kitchen Yard suggest that lead levels in the top 9" of soil in the Kitchen Yard fall between 100 and 1113ppm. Given the lack of sufficient data from the Kitchen Yard, and the likelihood of moderate contamination from lead-based paint used on the Moore House, we recommend the collection and analysis of no less than two soil samples from within the proposed Vegetable Garden plot and two samples from the surrounding Kitchen Yard in the area adjacent to the Moore House prior to development of the site. Soil samples should be analyzed at the Soil and Plant Analysis Laboratory, Agricultural & Forestry Experiment Station, 533 E. Fireweed, Palmer, AK. 99645 (907-746-9450) or similar soil testing facility.

The steep gradient of lead concentration across the site (1113ppm at sample site 003 to the North and 15ppm at sample site 002 to the South) and the relatively low levels of lead (<500ppm) throughout the Moore House property suggest that the Vegetable Garden site and the entire Kitchen Yard fall below the EPA-recommended treatment level of 500ppm (Figure F.1 and Table F.1). Based on an analysis of previous work on the Moore property and adjacent properties, we believe that the high lead concentrations to the North of the Kitchen Yard likely resulted from the dumping of waste from other activities such as jewelry-making on adjacent properties (9, 10). Because lead on the site exists primarily as Galena and Cerrusite, two relatively insoluble and immobile compounds, it is unlikely that significant concentrations of lead have migrated or will migrate in the future from the highly contaminated site to the North into the kitchen garden area.

Another possible explanation for the higher levels of lead contamination at sample site 003 is that the increased concentrations to the North of the Moore House are the result of lead-based paint chips falling from the Moore House. Given that sample site 003 was the only site within close proximity (approximately 10 feet) of the Moore House, it was the only sample site likely to detect contamination from lead-based paint applied to the Moore House. Because the proximal edge of the proposed Vegetable Garden plot also falls within 10 feet of the Moore House, it is possible that there is some lead-based paint contamination within the plot. Additional soil samples in this area are needed to determine the exact levels of contamination. Given the possibility of lead paint contamination in the proposed Vegetable Garden plot, if additional soil samples are not taken, we recommend the below outlined approach: Assume the Vegetable Garden site has similar contamination levels as sample site 003 (see 1b below), and remove all contaminated soils from the plot and the surrounding area (see 2 below).

1b) *Alternate Approach:* Assume Highest Levels of Contamination. If it is not possible to collect additional soil samples prior to site development, we recommend that all remediation and development on the site proceed with the assumption that lead levels or no lower than the highest level of lead contamination found within the vicinity of the Moore House (1113ppm at sample site 003 at a depth of 3"; 439ppm at 3"-9" depths, Figure F.1 and Table F.1).

2) **Recommended Remediation Approach:** Remove of 12" of contaminated soil and replace with 18" of clean organic soil. Although lead contamination at the Moore House Property is relatively low (only one sample exceeded the EPA recommended treatment level of 500ppm) and future lead migration to the site is unlikely due to the form in which lead is found (Galena and Cerrusite), we recommend an aggressive approach to treatment of the lead contamination on the site. We recommend this approach not only because the exact levels of contamination of the soil on the site are not known but also for the following reasons: 1) The site is open to the public and will likely experience high visitation rates by families and children, the portion of the population most highly susceptible to the toxic effects of lead, and 2) vegetables are to be grown for consumption on the site.

We recommend that all contaminated soils be removed from the proposed Vegetable Garden plot and replaced with clean soils. Given the very small volume of soils to be moved in this project (less than 200ft^3), removal of contaminated soil is unlikely to release significant amounts of lead contaminants in to the air. Further, we recommend that a barrier to lead migration onto the site be created through the construction of a buffer zone consisting of a 12" deep, 4' wide path composed of alkaline soils with a high organic content. The highly organic, alkaline soils will bind lead that migrates toward the site, reducing its bioavailability and preventing future contamination of the Vegetable Garden site.

To construct the Garden Plot and buffer zone, we suggest 12" of contaminated soils be removed from the Kitchen Yard plot (12' x 16') as well as from a 4' area surrounding the entire plot. Within the garden bed, the excavated area should be filled with 18" clean soil with 50% organic matter. The border path should be replaced with clean fill containing 25% organic matter and lime to increase the pH slightly above 7.0 (exact application

rates will depend on the source of lime used). Recent research suggests that highly organic and basic soils significantly decrease the bioavailability of lead and other metals (4, 6, 7, 8). Additionally, to further decrease the bioavailability of any lead in the clean soils due to wind-born lead contamination, we recommend that 30% of the soil in the garden bed be replaced on an annual basis with organic matter. Finally, a further reduction of lead bioavailability can be achieved by growing an overwintering, N-fixing cover crop, such as Fava Beans, that can be tilled into the soil to add organic matter and biomass to the garden soil in the spring.

REFERENCES

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(2) United States Environmental Protection Agency. Residential Lead Hazard Standards – TSCA Section 403 http://www.epa.gov/lead/leadhaz.htm

(3) Lead Contamination on National Park Service Properties in the Klondike Gold Rush Historical Park. U.S. Bureau of Mines, Denver Research Center, Geotechnology Division (1990).

(4) Piersynski, G., Kulakow, P., Erickson, L., and L. Jackson (2002). Plant System Technologies for Environmental Management of Metals in Soils: Educational Materials. Journal of Natural Resources and Life Sciences Education 31:31-37

(5) Ohio State University Extension Service . Lead Contamination in the Garden. http://ohioline.osu.edu/hyg-fact/1000/1149.html

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(8) Kabata-Pendias, A. and H. Pendias (1992). Trace Elements in Soils and Plants. 2nd ed. CRC Press, Boca Raton, Fl.

(9) Blee, Catherine H. Archeological Investigations in Skagway, Alaska. Volume 2: The Moore Cabin and House. Klondike Gold Rush National Historical Park, Alaska. Denver, CO: National Park Service, 1988

(10) Cooper, Doreen C. Archeological Investigations in Skagway, Alaska, Volume 8: A Century at the Moore / Kirmse House. Klondike Gold Rush National Historical Park, Alaska. Skagway, AK: National Park Service, 2001

Schematic Design

Excavation and Earthwork
To construct a planting bed with a planting depth of 18", we recommend that 12" of contaminated soil be excavated from the 12' by 16' garden plot, as well as from a 4' wide path bordering the entire plot. The final dimensions of the excavated plot should be 16' x 20'. The 4' wide border path will be filled with clean soil with 25% organic matter (The 25% organic matter will function to bind any lead that migrates toward the garden site). The garden bed should be filled with clean soil containing 50% by volume compost or 30% by volume manure. Annually, the garden bed soil should be amended by replacing 30% of the soil with fresh organic content.

Garden Bed Construction (see Kitchen Garden Section)
The frame for the garden bed will consist of 2, 2" x 10" rough-cut cedar base boards stacked one on top of the other. 2" x 4" rough-cut cedar boards cut to 18" will be nailed or screwed with galvanized or stainless steel fasteners to the base boards, 4'o.c., to stabilize the base boards and attach the landscape cloth to the garden bed frame. (2) 2" x 4" cross-ties should be attached to the corners at a 45 degree angle to reinforce the corners. Geotextile Fabric should be installed to line the bottom of the garden bed and continue up the inside of the frame to a height of 12". ½" x 2" cedar lathe should be nailed or screwed along the top of the landscape cloth to hold the top flush against the frame.

Planting Bed. We recommend that one of two possible planting alternatives is used. The vegetables can be planted directly in the full 18" of clean soil. Alternatively, to increase the soil temperature of the planting beds, the clean soil can be mounded to produce rows 6" in height and 18"-24" in width (11). Plants should be planted in two rows along the tops of the mounds.

Maintenance Plan

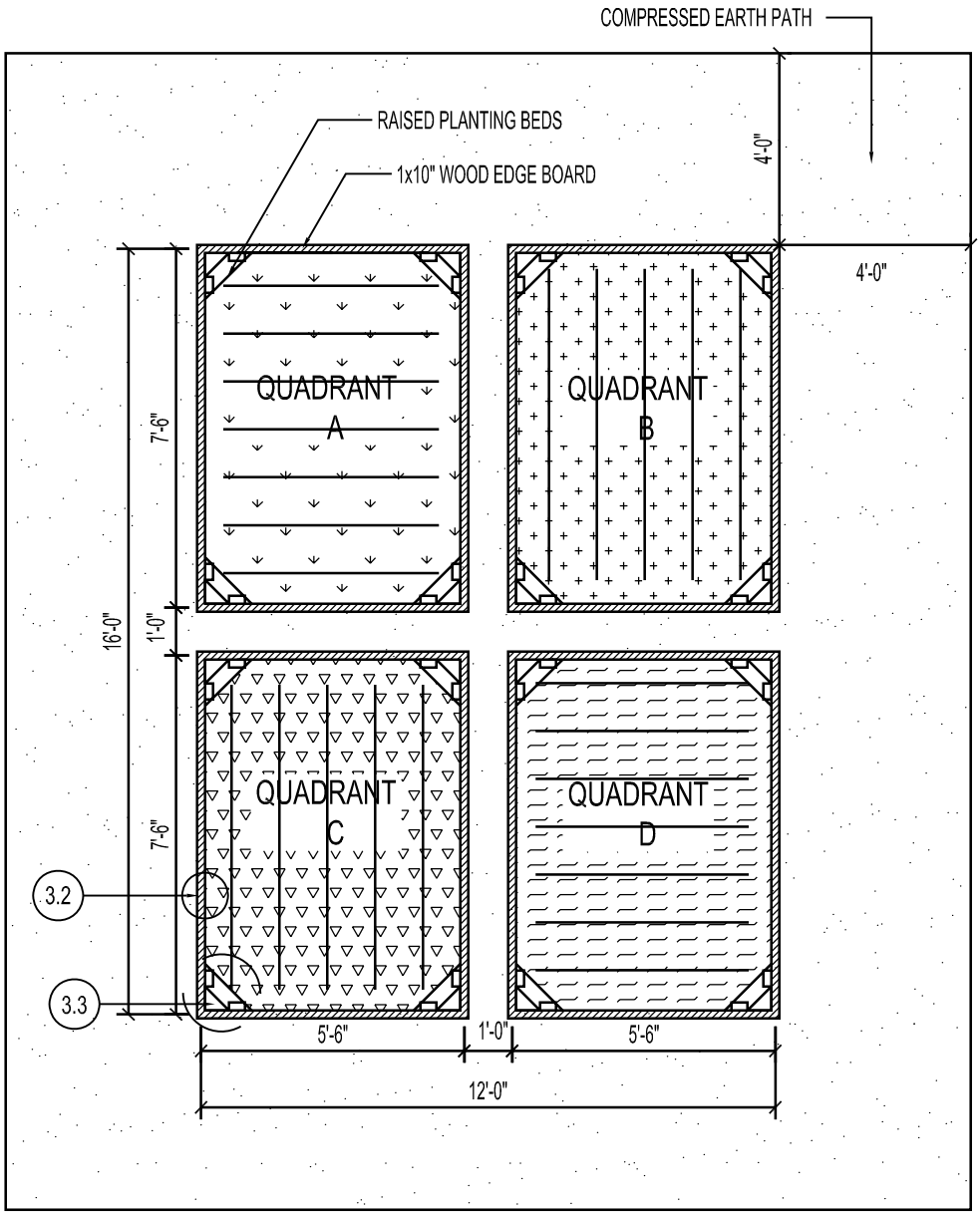
Soil Maintenance: Organic content
In order to ensure low levels of lead bioavailability, the organic content of the garden soil should be maintained at a high level. This can be attained by annually replacing 30% of the garden soil with fresh organic matter. In addition, we recommend the annual cultivation of a N-fixing, over-wintering cover crop, such as Fava Bean (see Plant List). The cover crop should be harvested and turned into the garden soil at the same time as the fresh organic soil is added to the garden bed each spring. Similarly, to maintain the function of the buffer zone surrounding the Vegetable Garden plot, the acidity of the path soil should be tested annually and lime added as necessary to maintain a pH above 8.0.

Soil Maintenance: pH Adjustment
Within the Vegetable Garden plot, soil acidity should be maintained at pH 6.0-6.5. Soils should be tested at installation and lime or organic matter added as necessary to achieve a pH of 6.0 – 6.5. If soils are too acidic, commercially available marine shell lime can be added at a rate of 1lb per square foot (41.25 lbs per quadrant, 165 lbs total). If soils are too basic, organic matter in the form of compost or manure can be added as needed to drop the pH.

Soil Maintenance: Fertilization
In the first year of planting the clean fill should be amended with organic matter (50% of compost, 30% if manure) to provide macro- and micronutrients as well as improve the structure of the mineral soil. In addition, a complete fertilizer containing a Nitrogen-Phosphorus-Potassium (N-P-K) ratio of 8-32-16 should be added

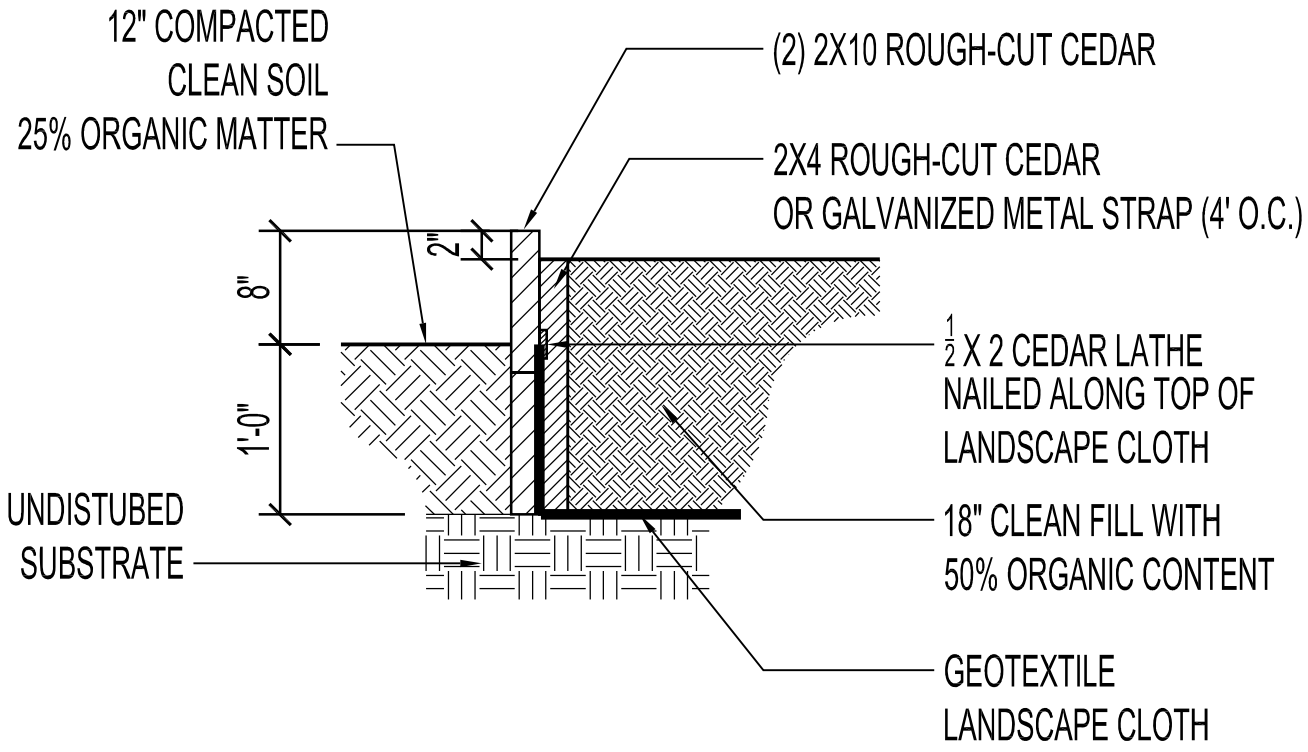
at the recommended application rate. A second application at the time of fruiting and seed set may be required depending on the form of fertilizer used.

In the second and succeeding years, amendment with organic matter should be reduced to 30% if compost is added or 20% if manure is added. Fertilization with commercial fertilizers containing a N-P-K ratio of 8-32-16 should continue as recommended by the manufacturer.



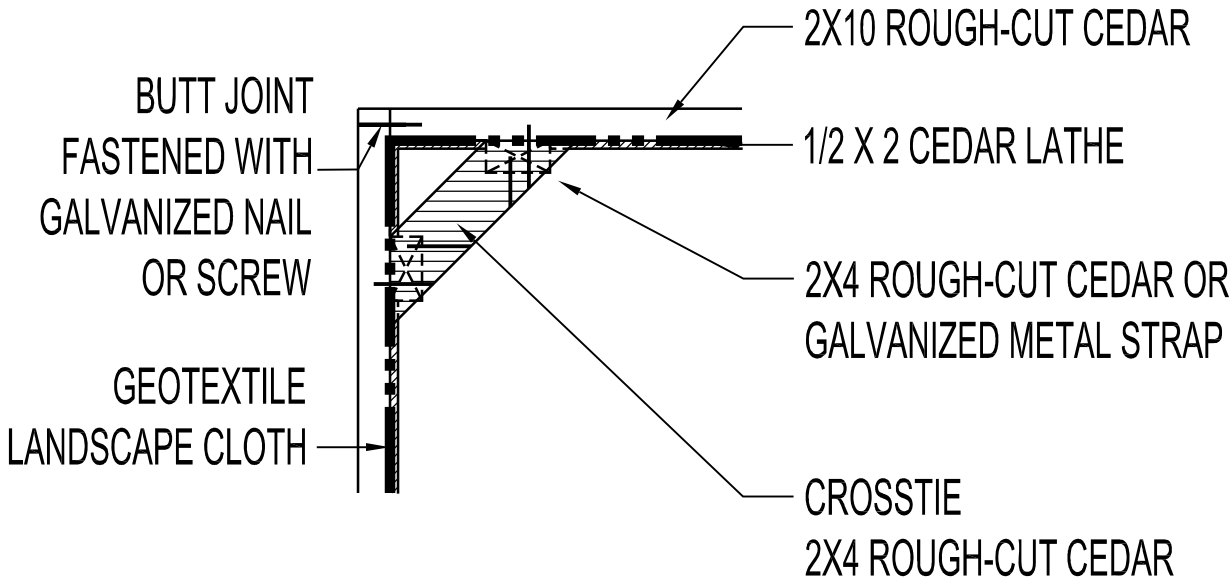
3.1. KITCHEN GARDEN PLANTING PLAN

scale 1/4" = 1'-0"



3.2 KITCHEN GARDEN BORDER CONSTRUCTION

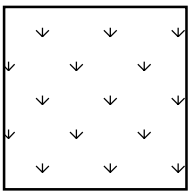
scale 1" = 1'-0"



3.3 KITCHEN GARDEN CORNER BRACING

scale 1" = 1'-0"

3.4. PLANT OPTIONS

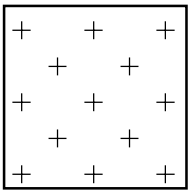


QUADRANT A:

Potato ‘Russet Burbank’

Cover Crop: ‘Broad Windsor’ Beans

Alternate Planting: Rhubarb

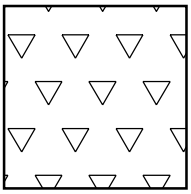


QUADRANT B:

Cabbage ‘Early Winningstadt’
‘Early Jersey Wakefield’
‘Danish Ball Head’
‘Late Drumhead’

Cover Crop: ‘Broad Windsor’ Beans

Alternate Planting:
Cauliflower ‘Extra Early Snowball’

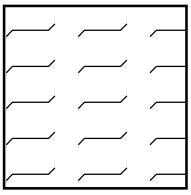


QUADRANT C:

Beets ‘Extra Early Egyptian’

Cover Crop: ‘Broad Windsor’ Beans

Alternate Planting:
Kale ‘Dwarf Green Curled Scotch’



QUADRANT D:

Carrot ‘Chantenay Half Long’

Cover Crop: ‘Broad Windsor’ Beans

Alternate Planting:
Celery ‘Giant Pascal’,
‘Golden Self-Blanching’

(11) Recommended Variety List for Southeastern Alaska. Cooperative Extension Service, University of Alaska Fairbanks.

SEED SOURCES

Currently available heirloom plants grown in SE Alaska during the period of Significance:

Seed Source	***Website***
Seedsavers	www.seedsavers.org
Garden Guides	www.gardenguides.com
Southern Exposure Seed Exchange	www.southernexposure.com
Thomas Jefferson Center for Historic Plants	www.monticello.org/chp/
Dominion Seed House	www.dominion-seed-house.com
Heirloom Seeds	www.heirloomseeds.com
Teton Seed Company (TSMA)	www.buypotatoseed.com
Parkland Seed Potato	www.parklandseedpotatoes.com
Vida Verde	www.vidaverde.co.uk
New England Seed Company	www.neseed.com
Yankee Gardener	www.yankeegardener.com

Table 3.1 Seed Sources

Vegetable	*Source*	*Price*
Beans		
'Broad Windsor'	Southern Exposure Seed Exchange	$2.80/57g
	Victory Seed Company	$2.85/2oz.
	Garden Guides	$1.59/20g
Beets		
'Extra Early Egyptian' (same as 'Crosby's Egyptian?)	Heirloom Seeds	$1.15/¼oz
Cabbage		
'Early Winningstadt' ('Early Winnigstadt')	Seedsavers	$13.75/oz.
'Early Jersey Wakefield'	Seedsavers	$13.75/oz.
	Thomas Jefferson Center for Historic Plants	$2.35
'Danish Ball Head'	Dominion Seed House	$1.89/pkt
'Late Drumhead'		
Cauliflower		
'Extra Early Snowball' Same as 'Early Snowball'?	Yankee Gardener	$1.49/pkt
Carrot		
'Chantenay Half Long' ('Chantenay'; 'Rouge Demi-Longue de Chantenay')	Bountiful Gardens	$1.25/800
Celery		
'Giant Pascal'	Yankee Gardener	$1.69/pkt
'Golden Self Blanching'	Bountiful Gardens	$1.00/280
Kale		
'Dwarf Green Curled Scotch'	Ontario Seed Company	find US source
	Halifax Seed Company Inc.	
Lettuce		
'Big Boston'	New England Seed Company	$3.95/oz.
Peas		
'Earliest of All' ('Alaska')		
'Dwarf Telephone'	The Real Seed Catalogue: Vida Verds Seeds	£1.50/250
Potato		
'Yakima' (Russet Burbank)	Parkland Seed Potatoes	consult for price
Rhubarb		
unknown	consult Jewell Gardens for variety and price	

Table 3.2 Cultivars and Sources

Heirloom Plant Options & Planting recommendations:

Beans, Fava: Recommended for cover crop in all quadrants
('Broad Windsor')
Unlike true beans, this is a cool-season plant. In cold-winter areas, plant as early in spring as soil can be worked… Matures 120-150 days, depending on temperature. Space rows 1 ½ - 2 ½ ft. apart. Plant seeds 1 in. deep, 4-5 in. apart; thin to 8-10 in. apart. Watch for and control aphids.
Most people can safely eat fava beans, though a very few (principally of Mediterranean ancestry) have an enzyme disorder that can cause severe reactions to the beans and even the pollen.
(Western Garden Book, 179)

Beets: Recommended for one quadrant
('Early Egyptian')
To have fresh beets all summer, plant seeds in short rows at monthly intervals, starting as soon as soil can be worked in the spring…Cover seeds with ¼ inch of compost, sand or vermiculite to prevent caking. Sow seeds 1 inch apart; thin to 2 in. while plants are small; the thinnings- tops and roots- are edible. To keep roots tender, water often in dry weather. Feed plants at 3-4 weed intervals for speedy growth. Begin harvesting when beets are 1 in. wide; complete harvesting before beets exceed 3 in. – larger ones are woody.
(Western Garden Book, 181)

Cabbage: Recommended for one quadrant
('Early Winningstadt,' 'Early Jersey Wakefield,' 'Danish Ballhead,' 'Late Drumhead')
Early varieties mature in 7-8 weeks from transplanting into garden… To avoid overproduction, set out a few plants every week or two or plant both early and late kinds… In cold-winter areas, set out late varieties in midsummer for late fall and early winter crops… To avoid pest buildup, plant in different site each year. Sow seeds ½ in. deep about 6 weeks before planting-out time. Transplant to rich, moist soil, spacing plants 2-2½ ft. apart. Give frequent, light applications of nitrogen fertilizer. Mulch helps keep soil moist and cool. Control aphids and green cabbage worm. Light frost doesn't hurt cabbage, but harvest and store before heavy freezes occur.
(Western Garden Book, 194)

Cauliflower: Preferred alternate for one quadrant
('Snowball')
Related to broccoli and cabbage; has similar cultural requirements but is more difficult to grow… Grow cauliflower like broccoli. Start with small plants. Space them 18-20 in. apart in rows 3 ft. apart. Be sure to keep plants actively growing; any check during transplanting or later growth is likely to cause premature setting of undersized heads. When heads first appear, tie up the large leaves around them to keep them white. Harvest heads as soon as they reach full size.
(Western Garden Book, 212)

Carrot: Recommended for one quadrant
('Chantenay Half Long')
Sow thickly in rows at least 1ft apart. Soil should be fine enough for root development and loose enough so crusting can't check sprouting of seeds. If crust should form, keep soil soft by sprinkling. Too much nitrogen or a lot of manure will make excessive top growth and cause forking of roots. Maintain even soil moisture: alternating dry and wet conditions cause split roots. To grow successive plantings, sow seed when previous planting is up and growing; in cold-weather climates, make last sowing 70 days before anticipated killing frost. When tops are 1-2 in. high, thin plants to 1½ in. apart; thin again if roots begin to crowd. After first thinning, apply narrow band of commercial fertilizer 2 in. out from the row. Begin harvest when carrots reach finger size.
(Western Garden Book, 208)

Celery: Preferred alternate for one quadrant
('Giant Pascal', 'Golden Self-Blanching')
Plant seeds in flats in early spring…Seedlings are slow to reach planting size; save time, purchase seedlings. Plant seedlings 6 in. apart in rows 2 ft. apart. Enrich planting soil with fertilizer. Every 2-3 weeks apply liquid fertilizer with irrigation water. Work some soil up around plants as they grow to keep them upright and whiten stalks. Or blanch by setting bottomless milk carton, tar paper cylinder, or similar device over plants to exclude light from stalks (leaves must have sunlight). Or use unblanched (green). Bait to control snails and slugs; use fungicide to control blight.
(Western Garden Book, 215)

Kale: Secondary alternate for one quadrant
('Dwarf Green Curled Scotch')
Vegetable crops that live 1-2 years… Grow just like late cabbage. Harvest leaves for cooking by removing them from the outside of clusters; or harvest entire plant.
(Western Garden Book, 343)

Lettuce: Secondary alternate for one quadrant
('Big Boston')
Lettuce needs loose, well-drained soil. Feed lightly and frequently. Sow in open ground at 10-day intervals starting after frost as soon as soil is workable. Barely cover seeds; space rows 8-12 in. apart. Thin head lettuce or romaine to 1 ft. apart, carefully moving seedlings to extend the plantings…Where summers are very short, sow indoors, then move seedlings outdoors after last frost. Control snails, slugs and earwigs with bait on the ground- not on the plants. Harvest when heads or leaves are of good size; lettuce doesn't stand long before going to seed, becoming quite bitter in the process.
(Western Garden Book, 351)

Peas: **Preferred alternate cover crop**
('Alaska')
Peas need nonacid soil that is water retentive but fast draining, They are hardy and should be planted just as early in spring as ground can be worked…Sow 2 in. deep in light soil, shallower (½ - 1 in.) in heavy soil or in winter, Moisten ground thoroughly before planting; do not water again until seedlings have broken through surface. Leave 2 ft. between rows and thin seedlings to stand 2 in. apart. Successive plantings several days apart will lengthen bearing season, but don't plant so late that summer heat will overtake ripening peas; most are ready to bear in 60-70 days. Plants need little fertilizer, but if soil is very light give them one application of complete fertilizer. If weather turns warm and dry, supply water in furrows; overhead water encourages mildew. Provide support for peas as soon as tendrils form. When peas begin to mature, pick all pods that are ready; if seeds ripen, plants will stop producing. Vines are brittle; steady them with one hand while picking with the other. Above all, shell and cook (or freeze) peas right after picking.
(Western Garden Book, 402)

Potatoes: Recommended for one quadrant
('Russet Burbank')
Two lbs. of seed potatoes can give you 50 lbs. of potatoes for eating. The many diseases and pests that beleaguer commercial growers are not likely to plague home gardeners. Potatoes need sandy, fast draining soil; tubers become deformed in heavy, poorly drained soil. For early crops, plant in spring as soon as soil can be worked… Buy certified (inspected, disease-free) seed potatoes from seed or feed store. Cut potatoes into chunky pieces with at least two eyes. These should be about 1 ½ in. square. Place chunks 4 in. deep and 1 ½ ft. apart. Do not plant if soil is very wet. After top growth appears, give plants an occasional soaking.

Dig early (or new) potatoes when tops begin to flower; dig mature potatoes when tops die down. Dig

potatoes carefully to avoid bruises and cuts. Well-matured potatoes free of defects keep best in storage. Store in cool (40°F), dark place... Another method of planting is to prepare soil so surface is loose, plant potato eyes ½ - 1 in. deep, water well, and cover with 1- 1½-ft. layer of straw, hay, or dead leaves; surround with fence of chicken wire to keep loose material from blowing away. Potatoes will form on surface of soil or just beneath, therefore requiring little digging. You can probe with your fingers and harvest potatoes as needed.
(Western Garden Book, 435)

Rhubarb: Preferred alternate for one quadrant
(Cultivars unknown) Jewell Gardens in Skagway may be a possible source
Plant in late winter or early spring. Divisions should contain at least one bud. Soil should be deep, rich and well drained. Place tops of divisions at soil line. Space divisions 3-4 ft. apart. Permit plants to grow 2 full seasons before harvesting. During next spring you can pull off leafstalks (to cook) for 4 or 5 weeks; older, huskier plants will take up to 8 weeks of pulling. Harvest stalks by grasping near base and pulling sideways and outward; cutting with knife will leave stub that will decay. Never remove all leaves from a single plant. Stop harvesting when slender leafstalks appear. After harvest, feed and water freely. Cut out any blossom stalks that appear.
(Western Garden Book, 459)

Sunset Western Garden Book, 40th Anniversary Edition, Sunset Publishing Company, Menlo Park, CA 1995

BUDGET ESTIMATE

Material	**Quantity**	**Unit Cost**	**Cost**
Rough Cut 2”x10” Cedar Planking	250 LF	$4.00/LF	$1000.00
Rough Cut 2” x 4” Cedar	100 LF	$1.60/LF	$160.00
Rough Cut 1/2” x 4” Cedar Lathe	125 LF	$1.20/LF	$150.00
Fasteners	--	--	allow $20.00
Geotextile Landscape Cloth	1 roll (6’ x 50’)	$32.75/roll	$32.75
Seeds (Refer to Sources)	--	--	--
Fertilizer	--	--	To be priced and purchased locally
Soil - Removal	6CYD	$15.00/CYD (est.)	$90.00
Soil - Fill	9CYD (4-6soil, 3-5 compost)	$25.00/CYD (est.)	$225.00
		Total Cost:	**$1667.75 + seeds & fertilizer**

APPENDIX A:
Moore House Images

Figure A.1
Skagway, June 1898
Klondike Gold Rush
National Historic Park
Research Library
SO.10/4
Credit: Barr Collection in the
Archives, University of Alaska
Fairbanks

Figure A.2
Skagway in Spring
(creek flooding)
Yukon Archives
PHO 920
Credit: Kodiak
Historical Society
Collection

Figure A.3
Skagway, 1903-1908
Alaska Historical Library
Klondike Gold Rush National Historic Park Research Library
SO59-1,107

Figure A.4,
Skagway
April 1898
Suzzalo Library, Special Collections, University of Washington, Seattle, WA
(KLGO Photograph SO-16/257)

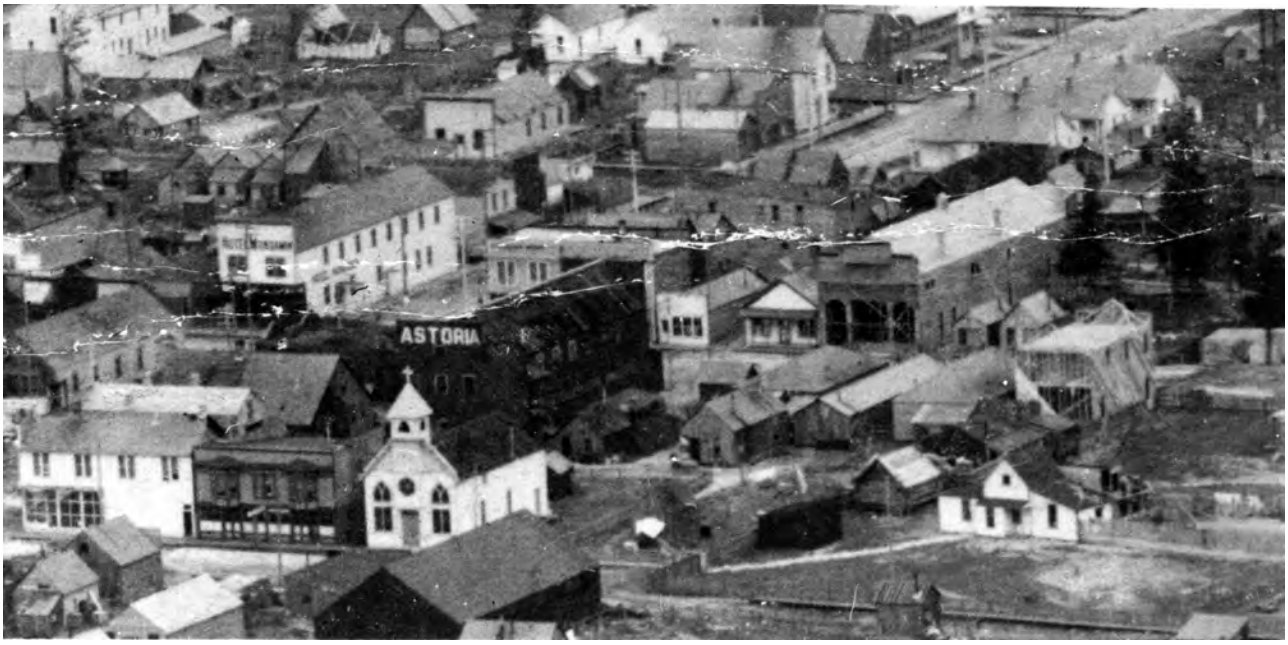


Figure A.5 Skagway Summer of 1900 Trail of '98 Museum and Archives, Skagway, AK (KLGO Photograph SO-98/2007)

Figure A.6 Overview of Skagway/ Moore property looking west, June 14, 1899 taken by E.A. Hegg (KLGO Photograph SO-89/1648)

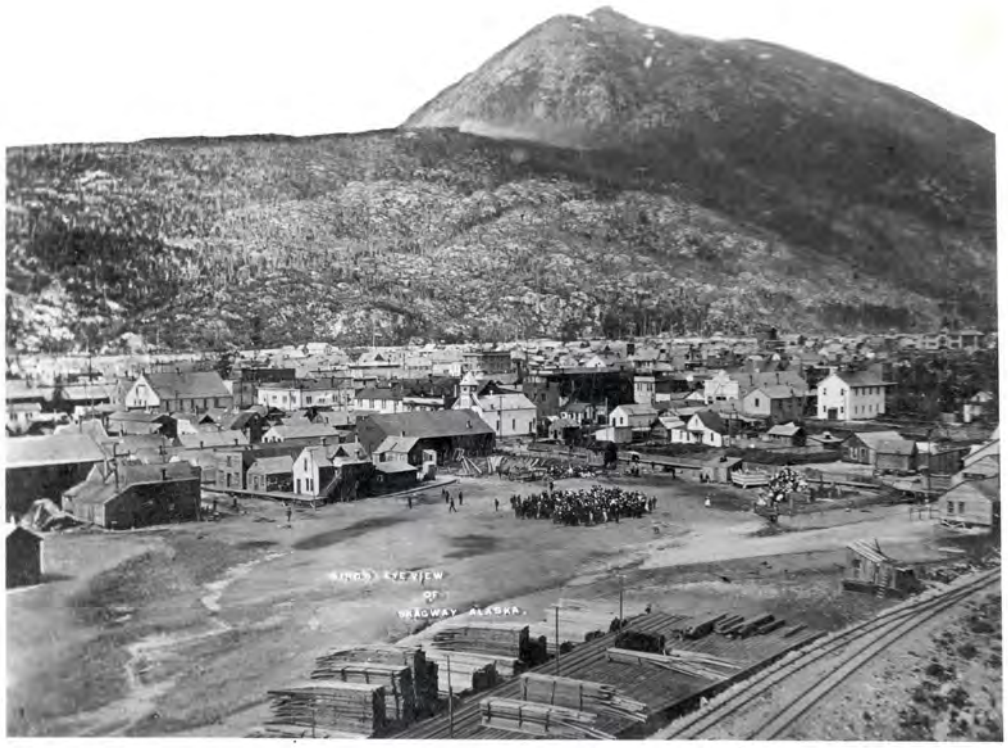


Figure A.7
Eyeview of Skagway
Alaska
n.d. (post 1903?)
Klondike Gold Rush
National Historic Park
Research Library
Collections: Credit Seattle
Historical Society
SO.6/743

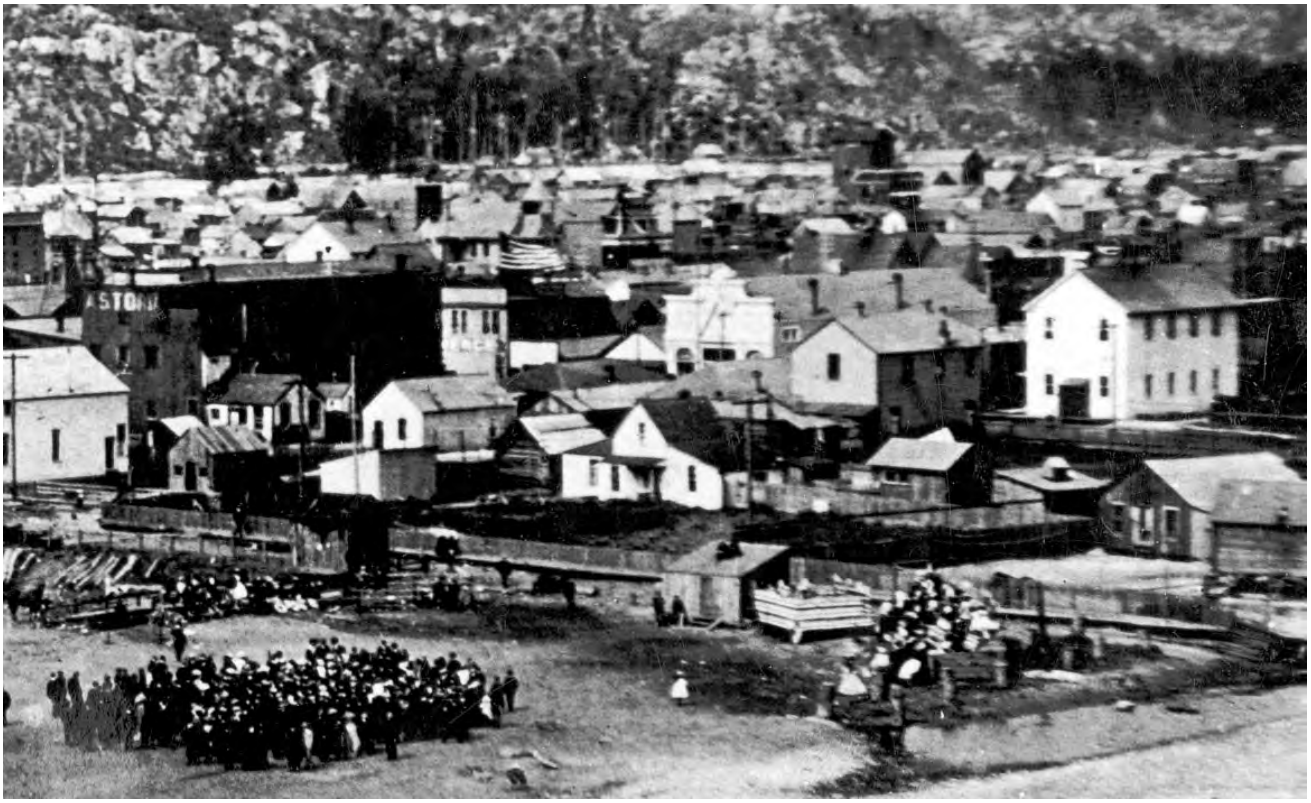


Figure
A.8
Detail of
A.7

Figure A.9 Moore House, post 1898? Klondike Gold Rush National Historic Park Research Library SO.29/138 Credit: Alaska Historical Library

Figure A.10 Moore Property looking west. ca. 1909-1915. Sincic Collection, Alaska HIstorical Library, Juneau, AK (KLGO Photos SO-45 & 4th-45)

Figure A.11 "Skagway-Looking West" Credit: Collection from Mary Montgomery Brackett Album, 1897-1899 Klondike Gold Rush National Historic Park Research Library SO.133/5128

Figure A.12 Skagway, June 1898 Klondike Gold Rush National Historic Park Research Library Credit: Barr Collection in the Archives, University of Alaska Fairbanks

Figure A.13
1897
Moore House with cabin at rear. Probably July or August 1897. May be Ben and Ben Moore, Jr. in Pic. Note lumber stock. May be sign of building wing onto Moore House. Credit: J.B. Moore Collection 76-35-17 in the Archives, University of Alaska, Fairbanks.
Klondike Gold Rush National Historic Park
Research LibraryMR.15/1664

Figure A.14
1901 Moore front yard (KLGO Photo MR4) source: CD provided by Samson Ferriera

Figure A.15
Moore House
A moose in harness. [View of a small girl sitting a sulky harnessed to a young moose. Two men are watching nearby. Skagway residences are in the background.]
Date: [Apr. 1900]
Fonds/Collection: H.C. Barley fonds
Photographer: H.C. Barley
Yukon Archives, PHO 5074

Figure A.16
Moore House
Caption: [View of a small girl sitting in a sulky harnessed to a young moose. Two men are encouraging the moose to walk. Skagway residences are in the background.]
Date: [Apr. 1900]
Fonds/Collection: H.C. Barley fonds
Photographer: H.C. Barley
Yukon Archives, PHO 5075

Figure A.17
Moore House, 1901
source: CD provided by Samson Ferriera

Figure A.18
1901 photo of Moore House
J.B., Moore Collection, Archives, University of Alaska, Fairbanks, Alaska (KLGO Photograph MR-5/24)

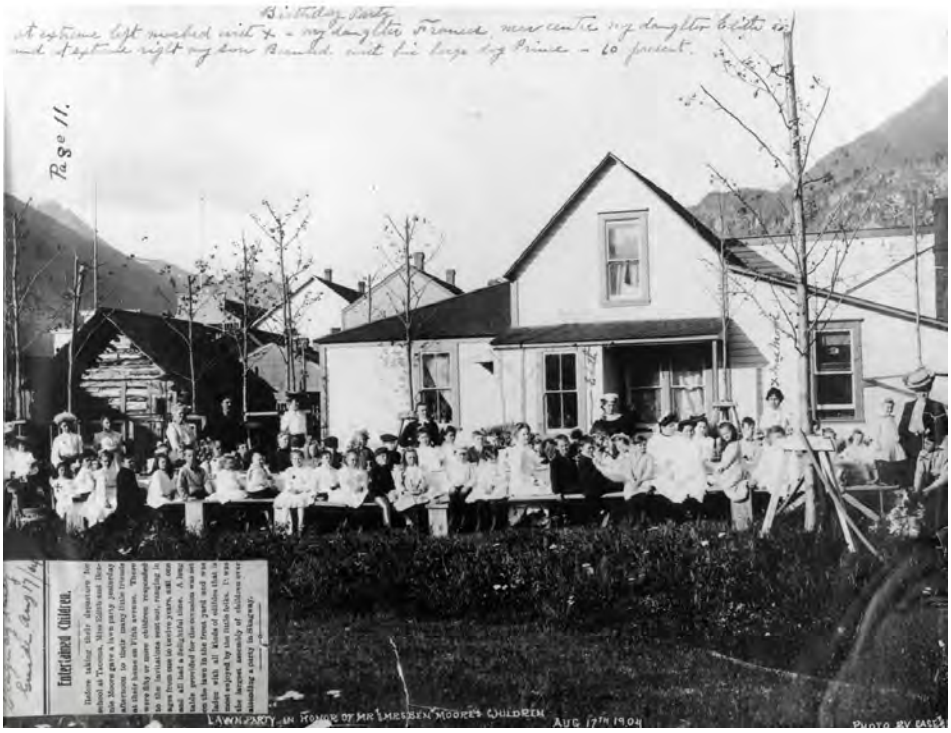


Figure A.19
August 17, 1904
Lawn Party in honor of Mr. & Mrs. Ben Moore's children. August 17, 1904
Case, photographer
Skagway Daily article: *Before taking their departure for school at Tacoma, Miss Edith and Bennie Moore gave a lawn party yesterday afternoon to their many little friends at their home of Fifth avenue. There were fifty or more children responded to the invitations sent out, ranging in ages from one to twelve years, and one and all had a delightful time. A long table provided for the occasion was set on the lawn in the front yard with all kinds of edibles that is most enjoyed by the little folks. It was the largest assembly of children ever attending a party in Skagway.*
Please Credit: J.B. Moore Collection. 76-35-23 in the Archives, University of Alaska Fairbanks.
Klondike Gold Rush National Historic Park Research Library; MR.16/1665

Figure A.20
First House in Skagway-Moore Homestead
Credit: Anchorage Historical and Fine Arts Museum
Note: Cabin raised up. Trees planted to back and right.
Klondike Gold Rush National Historic Park Research Library
MR11/776

Figure A.21
Moore Cabin
Please Credit:
(33) Moore
Collection in
the Archives,
University
of Alaska
Fairbanks.
Klondike Gold
Rush
National
Historic Park
Research
Library
MR.1/20

Figure A.22
Moore Cabin c.
1979
Robert L.
Spude,
photographer
Klondike Gold
Rush
National
Historic Park
Research
Library
MR.3/1909

APPENDIX B
Moore House Findings: August 2005

RELEVANT STATEMENTS

Evidence in Support of the existence of a kitchen garden:

From 2001 Moore Homestead Cultural Landscapes Inventory:
p.5
"Archeologists identified several privy locations, a garden space, and an area for small livestock (probably chickens) within the enclosure, which served as a late nineteenth century Victorian "kitchen yard"

p.27
"Beginning in 1897-98… they built a picket fence to enclose an interior space, known in the later nineteenth century as a "kitchen garden". Archeological excavations indicated that a privy existed within this enclosure, as well as a garden and an area for small livestock, probably chickens."

p.28
"Archeological and pollen analyses conducted in and around the privy by the Moore Homestead confirm the presence of a kitchen garden"

"Truck gardens just outside Skagway and Homestead agricultural fields in Dyea may have introduced grapes, currants, elderberries, wheat and other cereal grains. Clover and alfalfa also may have been cultivated at the Moore Homestead"

p.41
"By Fall, 1897… Moore replaced the barbed wire fencing around the domestic site with a wood rail fence… The Moore's added to the house and attached it to the cabin by fall, 1898, enclosed a garden area from the eastern side of the house to the barn with a picket fence, and built a privy at the back of the enclosure."

p.44
"Between August, 1898 and June, 1899, Moore added an exit door on the east side of the house, providing access from the kitchen to the garden."
"in Spring, 1900… and removed the privy (#1) located in the enclosed kitchen garden"

From <u>A Century at the Moore/Kirmse House</u>:
"Testimony states that before September 1897, Moore had made the following improvements on the property (NARS, Price v. Moore 1979 [1899]:4-5): *Log cabin built in 1888 with addition, consisting of a three-story frame building used as a dwelling; a story and a half bunk-house; a garden of five acres fenced in and used for raising vegetables; a log stable, a large frame stable; a one and a half story frame residence used by [Moore's] father; a large two-story frame boarding house used by claimant's saw-mill employees; two small log cabins used for like purposes.…*
Since we know that the frame house added onto the front of the Moore cabin was only one and a half stories tall, not three, some license was obviously taken in this testimony"

Potentially Useful Information, but Inconclusive as Evidence:

From <u>A Century at the Moore/Kirmse Homestead</u>

P 43: Soil Chemistry Sampling
"The average pH was 6.0, with a range from 5.4 to 6.6. This is acidic soil, typical of a spodosol (Strahler and Strahler 1979:215), but well within a normal growing range for plants."

"Nitrate nitrogen was tested, but values were very low. Peaks were found in front of the house and in the northeast corner of the property. It is probable that the high values in front of the house related to the flower bed there. There were higher nitrate values in the northeast area, an area currently overgrown with various weedy shrubs. Since horses are sometimes staked in this area to graze during the summer, it is possibly that has an impact on the soil. Nitrate nitrogen may not be a reliable indicator for finding archeological resources since the dump found north of Shed 1 did not register high values." (pH distribution on page 44- figure 16)

p.60
"Unit 90N58E was a 5' x 5' unit placed directly south of the front porch of the house…Stratum 1 was mixed with sod, roots, and iris bulbs from a recent flower garden that ran the 17' length of the front porch." (From Kirmse family era)

"The most interesting feature (but not assigned a feature number) was a single row of large cobbles in the gray-black stringer, about half a foot below ground surface (figure 28). They were deliberately placed and extended from the southeast corner until interrupted by stratum 12. It is very probable that this feature can be traced back to the cobble tree borders seen in figure 9 taken in 1904. This was at the height of the Moore family's remodeling and landscaping efforts to their homestead. It provides a visual confirmation of some of the Moore family's landscaping."

p. 127
"Most of the animal bones were purchased from a meat market, rather than people raising their own food."

"We know that the Moore family raised geese, and the Kirmse family raised chickens (G. Kirmse, pers. Comm.. 1995). Eggshell was found in only three locations on the site- both Kirmse dumps, the Moore dump, and beneath the floor of Shed 1."

"Other visible food remains were seeds and shells from fruits and nuts. More than 50% of the visible seeds were found in the Moore privy deposits… Peach seeds were found in <u>every</u> other deposit and have been found in every Skagway excavation, emphasizing their popularity in Skagway."

p.152
"Most of the gardening artifacts consisted of numerous flowerpot fragments found scattered across the site. Most were a low-fired, unglazed orange/red paste, and invariably were highly fragmented. The only places these flowerpots did not appear were in the deposits connected with the Moore family. Herman Kirmse was an avid booster of Skagway's first garden club and sponsored yearly contests. It is assumed that the tradition continued after his death in 1912. Some of the Kirmse family's gardening activities are visible in photographs of the site, where **sweet peas were staked to the exterior walls** of the cabin, and a small fence in front of the porch enclosed a small flower garden (Blee 1988:237) During Blee's excavations, a round depression in the front yard turned out to be part of an earlier flower garden of the Kirmse family. Jack Kirmse raised vegetables in a garden every year (G. Kirmse, pers. Comm., 1995)."

p.158
"The base of the 1887-1900 privy had abundant <u>tree</u> pollen, but little that would be classified as "weeds" and

"may reflect construction of this privy before other ground-disturbing activities on this site" (appendix 7, p. 238)

"*Holodiscus*-type pollen was also found in the Moore privy. *Holodiscus*, also known as Ironwood, Ocean Spray, or Creambush, does not grow naturally in Alaska. It is a native of the northwest coast and can be imported and grown in gardens. It was used by northwest coast Native Americans for various special tools that required a hard wood…The brown fruiting clusters could be infused into a tea used to treat diarrhea, and the plant was used to treat measles and chickenpox (Biggs 1999:46; C. Rector 1998. pers. Comm..). Since Minnie Moore was a Tlingit, and Bernard Moore lived among Tlingit and other Canadian and Alaska Native Americans for a good part of his life, they were probably raising the plant for its special uses. It does not appear in any of the other samples, so the practice of growing the plant was discontinued, perhaps by 1900 when the privy was closed."

p.159
"Cereal grain pollen or phytoliths were found in most samples from the dump and the privy. The only type identifiable from the base of the Moore privy was a barley (*Hordeum*)-type. Alfalfa pollen appears only at the base of the Moore privy. Normally, barley and cereal grains would be connected to human food consumption. However, dung fungal spores (*Sporomiella*) from grazing animals were found in the early Moore dump and privy. In the Moore dump, grazing animals could account for the presence of cereal grains through their manure.

"Inside their fence, from 1897 until 1904, the Moore family does not seem to be especially concerned about the physical appearance of their yard. Several family photographs taken in the front yard show high weeds surrounding the house (figure 8), and overview photographs do not show any special landscaping elements. In soil directly above the base of the Moore privy, there is pollen from the arrival of weeds after Moore initially cleared his property. Grass pollen is replaced by an increase in alder and *braccicaceae* (wild mustard family) pollen."

p.182-83
"When the absolute seed counts are calculated into counts per liter (Table 5, appendix 9), the rubus (raspberry) seeds dominate the samples from the Moore dump, partly because the plant produces a high quantity of very small seeds. Raspberry bushes are native to the Skagway area, and their dominance in the Moore's dump and privy might also relate to alterations in the landscape after they left Skagway. There are also fairly high amounts of fig seeds, a plant that is not native to Skagway and would have been imported, most likely as a dried fruit."

pA 7-2 – A 7-7
Pollen types found:
Weedy:
Low-spine *Asteraceae*
Brassicaceae (Mustard Family)
Erysimum (Worm-seed mustard, Treacle mustard, Spreading mustard)
Liguliflorae (Dandelion, Chicory, and so on)
Polygonum (Knotweed, Smartweed)
Rumex (Dock, Sorrel)
Trifolium (Clover)
Valerianaceae (Valerian Family) and Dipsacaceae (Teasel Family)

Foods and Medicines
Apiaceae (Celery Family)
Artemisia (Wormwood, Mugwort, Absinthe)

Citrus (Bergamot, Citron, Grapefruit, Lemon, Lime, Orange, Pummelo
Eugenia (Clove)
Fragaria (Strawberry)
Lamiaceae (Mint Family)
Cerealia (Wheat and Other Cereal Grains)
Vitis (Grape)
Ribes (Currant)
Sambucus (Elderberry)
Other:
Medicago Sativa (Alfalfa)
Pueraria (Kudzu)

p.A7-12
"The pollen record indicates that local vegetation included a variety of spruce, pine, Douglas fir, western hemlock, alder, birch, juniper, oak, and elm, as trees and/or large shrubs. Local vegetation appears to have included varying amounts of grasses. Grasses were most abundant in the area along the streamside (Sample 2). Various members of the rose family also were present, probably in the local vegetation. *Holodiscus* (ocean spray), for instance appears to have been a moderately abundant plant near the end of the Moore family and beginning of the Kirmse family use of the privy. Another member of the rose family was more common early during the Moore family use of the privy… Foods consumed included a member of the celery family (Apiaceae), citrus, cloves, strawberries, blueberries or cranberries, mint, cereal grains, coconut, and currant. Several of these foods might be products of local plants, such as strawberries, blueberries, or cranberries, and currant. Others, such as citrus, cloves, cereal grains, and coconut, represent a trade network necessary to import goods. The member of the celery family may have been consumed as a condiment, or possibly represents a weedy plant. Mint might have been grown in a local garden or imported.

Appendix 9: Macrobotanical Analysis of Soil Samples
p.2
"A variety of seeds was recovered from the Moore House samples. The following identifiable seeds were recovered from the flotation samples: *Amelanchier* sp. (serviceberry), *Arctostaphylos ura-ursi* (bearberry), *Carex* (sedge), *Chenopodium* sp. (goosefoot), *Citrullus* sp. (melon), *Cucumis* sp. (melon, cucumber), *Cyperaceae* sp. (sedge family), *Ficus* sp. (fig), *Fragaria* sp. (strawberry), *Lycopersicon esculentum* (tomato), *Polygonum* sp. (knotweed), *Prunus* sp. (plum, cherry, apricot), *Rubus* sp. (blackberry, raspberry), *Rumex* sp. (dock), *Sambucus* sp. (elder), *Silene* sp. (catchfly), *Vaccinium* sp. (blueberry), *Verbena* sp. (vervain), *Viburnum* sp. (*V. edule* cf., high bush cranberry), and *Vitus* sp. (grape). In addition to the above taxa, the following specimens were recovered during excavations: *Cocos nucifera* (coconut), *Citrullus vulgaris* (watermelon), *Malus* sp. (apple), *Pinus* (*P. contorta* cf.), *Prunus persica* (peach), and *Prunus armeniaca* (apricot)."

"Feature 26 yielded a number of seeds representing food items including tomato (*Lycopersicon esculentum*), which cannot be cultivated in the Skagway region without the use of a hothouse. Seed totals are dominated by *Rubus* sp., whose fruit ripens in the summer or early fall and produces between 300 to 1,000 seeds/gram (Young and Young 1992:307). *Polygonum* sp. (knotweed), *Rumex* sp. (dock), *Silene* sp. (catchfly), and *Verbena* sp. (vervain) are all weedy plants that thrive in disturbed places. Many species of these plants prefer moist habitats and would have been found along the nearby stream… Most of the berries recovered from the Moore House samples represent genera that are found locally (e.g. *Fragaria* sp., *Rubus* sp., *Vaccinium* sp.), making it difficult to determine their source. Whether the berries recovered here were harvested from the wild, cultivated, or imported is difficult to assess and is better determined through an analysis of the historical records."

"Overall, the results from this and previous analyses suggest that diet changed little, at least in the items

preserved in the archaeological record, during the time period (1897-1920) and varied little between residencies… Vegetables and grains were surely consumed as pollen and phytolith analyses indicate (Cummings and Puseman 1993); however, the whole seeds of these items are rarely eaten.

From Cultural Landscape Report for the Capt. William Moore Cabin, J. Bernard Moore House, Peniel Mission and Pullen House Sites, September 1995
p.20
"Though vegetation looks sparse in several building lots, imported and domesticated plants that could withstand the short growing season thrived under the cool, moist climate and long summer daylight of southeast Alaska. The transient population of the gold rush era had too little time to nurture and maintain gardens however, a trading post at nearby Dyea was successful in growing a variety of vegetables, flowers, and hay for stampeders heading to the goldfields. Skagway boasted successful potato crops as early as 1898 (Norris 1988b).

Summary of evidence and logical arguments pointing towards no garden:

-There is no mention of plantings in Ben's diaries
-No garden is visible in any known photos dating from 1896 to 1907
-Geese and chickens (and small livestock?) were known to be kept in the yard enclosure, potentially limiting use of space as a garden.
-Pollen analysis documents shift from tree to weed pollen (not to cultivated garden plants) at time of Moore inhabitation and construction.
-Proposed area for kitchen garden would not be ideal as it was presumably located north of a 5-foot wooden fence.
-Neither Ben, nor Minnie came from an agricultural (farming) background
-The Moore's were generally in a position (increasingly so) to be able to afford to purchase their food, and would not have needed to produce their own.

Summary of evidence and logical arguments suggesting there might have been a garden:

-Photographic evidence of interior fence lines around the southwest corner of the kitchen yard.
-Many gardens, both productive and ornamental were known to have been kept by Skagway residents beginning around 1901.
-A kitchen garden would have provided fresh food for the Moore family and would probably not have been as expensive as purchasing canned good and local produce.
-Macrobotanical evidence obtained from the privy deposits shows that the Moore family was consuming fresh foods and does not rule out the possibility that this food was grown on site (but it does not prove that it was either)
-The Moore Family did make many other changes to the property, including landscaping the front yard.

APPENDIX C:
Regional Agriculture & Gardening Images

Figure C.1
A garden in Skagway, Alaska - 1898. [Woman posing next to her vegetable garden with log cabins in the background.]
Date: August 1898
Fonds/Collection: H.C. Barley fonds
Photographer: H.C. Barley

Yukon Archives PHO 5036

Figure C.2
A man with a yardstick standing in 6' high rhubarb patch. [Possibly in Skagway]
n.d.
M.L.B. Collection
8x10 print

Yukon Archives, PHO 3239

Figure C.3
A Skagway dooryard
[Exterior view of frame house with numerous plants in the glassed-in porch and a flourishing flower garden in front.]
Date: [n.d.]
Fonds/Collection: H.C. Barley fonds
Photographer: Callarman
Yukon Archives, PHO 5049

Figure C.4
Shaw's garden, Skagway
[View of E.J. Shaw's flower garden around his house in Skagway. Numerous other residences surround it.]
Date: [n.d.]
Fonds/Collection: H.C. Barley fonds
Photographer: Callarman
Yukon Archives PHO 5058

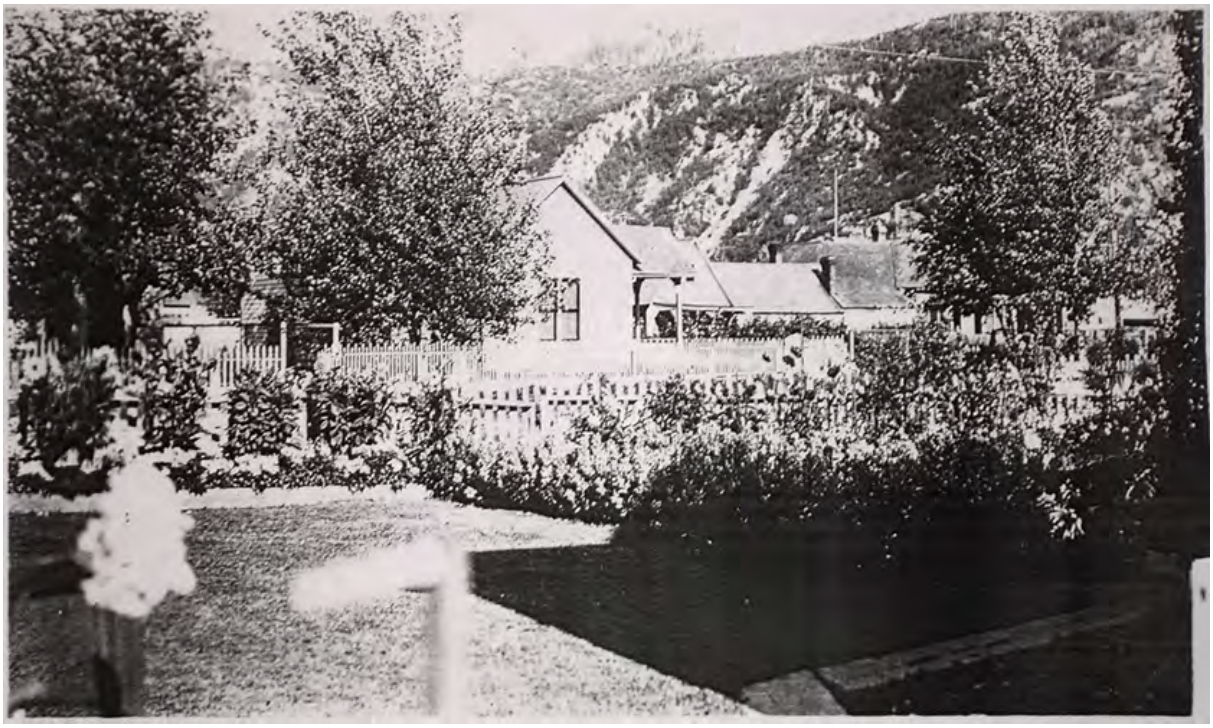


Figure C.5
View of W.E. Blanchard's flower garden with neighboring houses in background c 1920, Dennett Collection
3x5 print
Skagway Blanchard's Garden
1920
E. Telfer, photographer
Yukon Archives
PHO 3153

Figure C.6
Women picking flowers from W.E. Blanchard's garden. Neighboring houses in Background
c1920
3x5 print
Skagway, Blanchard's Garden
E. Telfer, photographer
Yukon Archives, PHO 3154

Figure C.7
Caption: 8ft. Sweet peas in E.J. Shaw's garden, Skagway. [Nattily dressed man with bow tie and bowler hat standing in front of the eight foot high sweet peas in Mr. E.J. Shaw's garden.]
Date: [n.d.]
Fonds/Collection: H.C. Barley fonds
Photographer: Callarman
Yukon Archives
PHO 5059

Figure C.8
Skagway Residence
[Two men sitting on the lawn in front of the row of sweet peas in the E.J. Shaw's garden.]
Date: [n.d.]
Fonds/Collection: H.C. Barley fonds
Photographer: H.C. Barley
Yukon Archives
PHO 5057

Figure C.9
Moore's Park 1904
Source: CD provided by Samson Ferriera

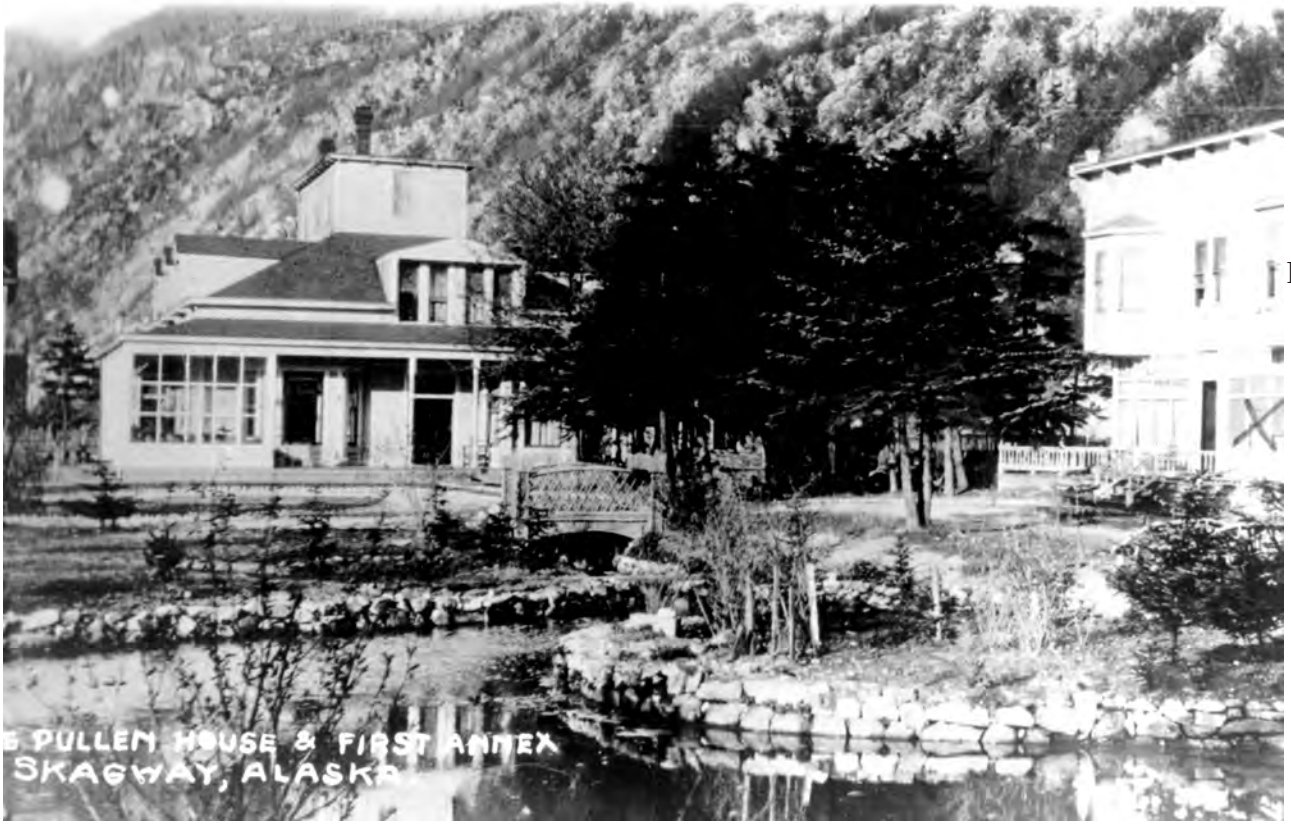


Figure C.10
Pullen House, 1910's source: CD provided by Samson Ferriera

Figure C.11
A Skagway residence. [Exterior view of a frame home of a rather composite structure (it appears as though three cabins have been joined together). It also features a rounded porch and small cupola on top.]
Date: [1902]
Fonds/Collection: H.C. Barley fonds
Photographer: H.C. Barley
Yukon Archives
PHO 5054

Figure C.12
Skagway Residence
Caption: [Exterior view of a small frame cabin with a tiny porch.]
Date: [ca. 1901]
Fonds/Collection: H.C. Barley fonds
Photographer: H.C. Barley
Yukon Archives, PHO 5052

Figure C.13
Skagway Residence
[Exterior view of a frame home with a rounded porch and small cupola on top. It appears as though three cabins have been joined together.]
Date: [1902]
Fonds/Collection: H.C. Barley fonds
Photographer: H.C. Barley
Yukon Archives
PHO 5053

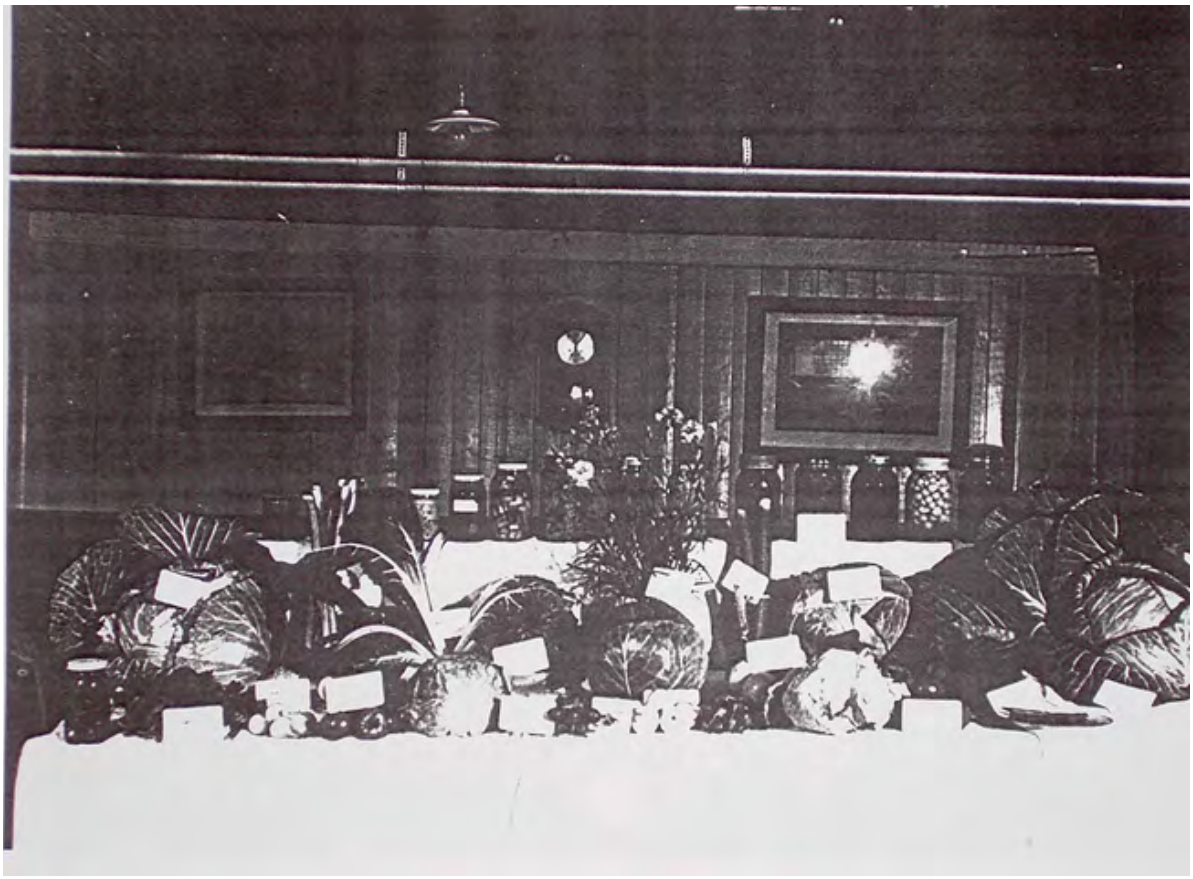


Figure C.14
Dawson- St. Paul's Hostel
A display of produce grown by the children at St. Paul's [Anglican] Hostel in Dawson, c.1930's.
William A. Geddes Collection; Temporary No. 16; 20x25cm. print
Yukon Archives
PHO9676

Figure C.15
Fields, Yukon
Credit: George Butler Collection
Yukon Archives
PHO 87/11 #35

Figure C.16
September 24, 1898
Note: "Men working in Trackler's Vegetable Garden, the produce (turnips) to be sold in Dawson.
NM Photo #J6204
Yukon Archives PHO 646

Figure C.17
Dawson- Agriculture
Two men [Charley & Jim Gilford], standing in their rather extensive potatoe patch. Their house & other buildings in background. No date.
MLB COllection
PHO 3270
8x10 print
Yukon Archives
PHO 3270

Figure C.18
Three men, two of which are Mounties, standing by a fence overlooking a vegetable garden. Log cabin constitutes background. Possibly in Dawson, or along the creeks.
Possibly a NWMP post.
n.d.
MLB collection
8x10 print
Yukon Archives,
PHO 3241

Figure C.19
Two men working in a field of large cabbages & what appears to be potatoes.
n.d.
MLB Collection
8x10 Print
Dawson- Agriculture
Yukon Archives,
PHO 3271

Figure C.20
A Klondike Garden. [Field near the river cultivated with rows of cabbage, greenhouse in the background.]
Date: [Jul. 1903]
Fonds/Collection: H.C. Barley fonds
Photographer: H.C. Barley
Yukon Archives
PHO4705

Figure C.21
Woman in pinafore and straw hat standing in vegetable patch in the Dawson area.1909
Chisholm Collection; 8x10 print
Yukon Archives
PHO 5610

Figure C.22
Women in Potato Patch
Credit: Atlin Historical Society Collection
Yukon Archives
PHO 82/208 #4

Figure C.23
1903
Two suited, derby-hatted gentlemen working in a large cabbage patch Dawson, Agriculture
Yukon Archives
PHO 2027

Figure C.24
1900
Street Vendor w/ a wheelbarrow full of vegetables grown in the Klondike. Dawson, Agruculture
Yukon Archives
PHO 2026

Figure C.25
Alaska Vegetables
Museum of History and Industry (MOHAI)
Negative Number
92.7.21.56

Figure C.26
Strawberries in Skagway
Museum of History and Industry (MOHAI)
Negative Number
92.7.21.59

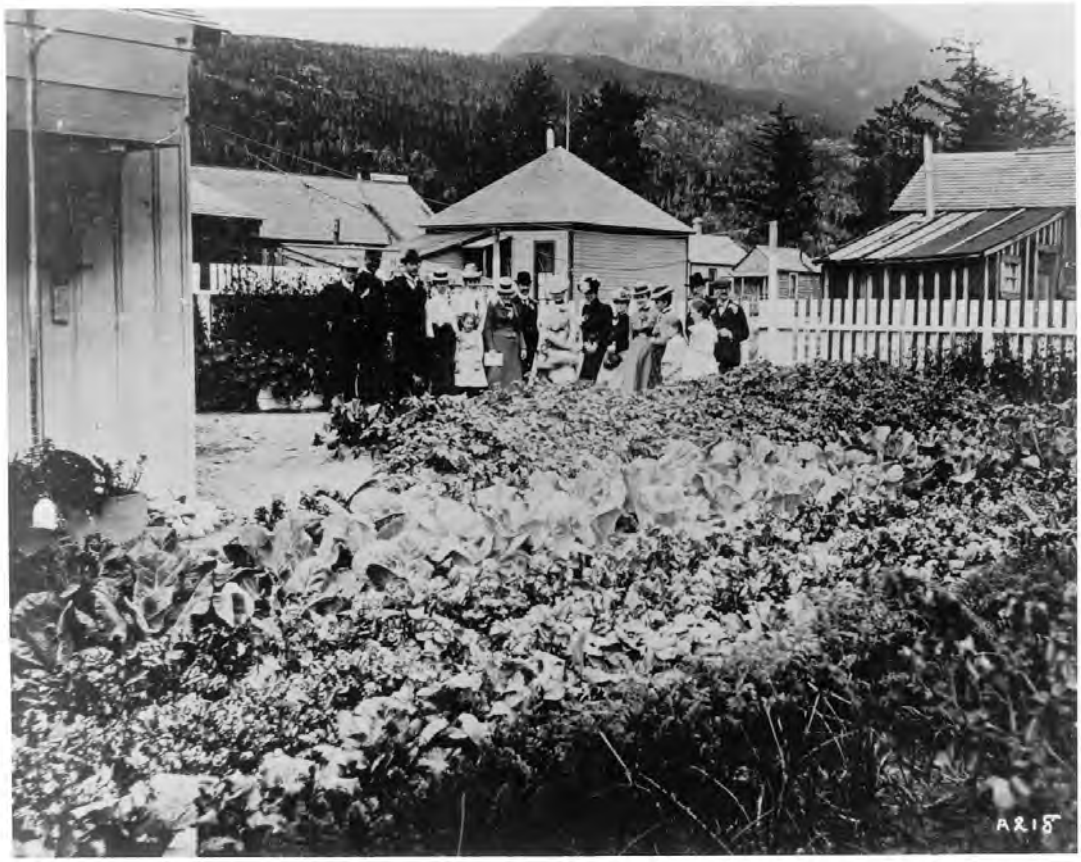


Figure C.27
Group in Garden,
Skagway
Museum of History and
Industry (MOHAI)
Negative Number
92.7.21.76

Figure C.28
Group in Garden,
Skagway
Museum of History and
Industry (MOHAI)
Negative Number
92.7.21.77

APPENDIX D:
Sitka Experiment Station Test Plants
1903 Cultivars and Results

From Annual Report of the Office of Experiment Stations for the Year Ended June 30, 1903. Washington; Government Printing Office, 1904

Beans
'Broad Windsor': "It is the one variety of bean which is hardy enough to grow successfully in Alaska"
Improved Golden Wax Bush: Poor crop
'Thorburn Dwarf Lima': Failed

Beets
'Extra Early Egyptian': "Not large, but of good quality"
'Golden Tankard': "All of these beets were small"
'Mammoth Food': "All of these beets were small"
'Eckendorfer': "All of these beets were small"

Cabbage
'Early Winningstadt': "Fine, solid heads"
'Early Jersey Wakefield': "Very fine cabbage"
'Early Summer': "Headed nicely"
'Extra Early Express': "Headed nicely, a desirable early variety"
'Late Drumhead': "Headed nicely"
'Danish Ball Head': "Large solid heads of fine quality"
'Moscow': "This variety has nothing to commend it"

Cauliflower
'Extra Early Snowball': "Very fine heads; quality excellent. Several heads 9 inches in diameter."

Carrot
'Chantenay Half Long': "Very fine, of marketable size at this date and still growing." (Sept. 1st)
'Long White': "the ground proved to be too wet for normal development"
'Half Long Danvers': "the ground proved to be too wet for normal development"
'Champion': "the ground proved to be too wet for normal development"
'Half Long Scarlet Horn': "the ground proved to be too wet for normal development"

Celery
'Giant Pascal': "That set in hotbed doing well, ready to blanch."
'Improved White Plume': "Doing well"
'Golden Self Blanching': "Excellent; that which was left standing on spent hotbed is better than that which was reset"

Kale
'Dwarf Green Curled Scotch'(Seeded in open ground): "Exceedingly fine"
'Dwarf Green Curled Scotch'(Seeded in hotbed): "Exceedingly fine"
"Scotch Kale is one of the vegetables which should be found in every Alaskan garden. It never fails."

Kohl-rabi

‘Trondhjemsk’: “The few plants raised grew into tender bulbs…It is also good cattle food”

Lettuce
‘Big Boston’: Open ground seeded did “splendidly,” better than hotbed planted.
“All varieties of lettuce do well in Alaska”
“The variety known on the Pacific coast as the **San Francisco Marke**t (not grown at the station this year) is on the whole, perhaps, the best so far tested”

Parsley
‘Extra Curled’ “It is one of the vegetables suited to Alaska and should be found in every garden, and it should be used much more freely than is generally the case”

Peas
‘Hosford Market Garden’: “Most prolific variety, excellent flavor.”
‘McLean Little Gem’: “Excellent quality.”
‘Earliest of All’ or **‘Alaska’**: “Very fine, quite prolific.”

‘Dwarf Telephone’: “Very vigorous grower, but not a prolific bearer, peas of good quality.”
‘Swedish No. 6428’: “Plants vary much in growth, not vigorous…some pods”

Potatoes
‘Yakima’ (“Probably the **Burbank** somewhat modified by long culture in that locality”) “was manured with seaweed at the rate of 20 tons to the acre” “The yield of potatoes was at the rate of nearly 300 bushels to the acre”

Rhubarb
“The plants have made a satisfactory growth for the season”

Ruta-baga
‘Large White’: “Roots are of a normal size”

Sage
“Good plants, fine growth”

Tomato
‘J.J. Bogardus’ Monster’: “Seeded in hotbed…While the plants lived, grew, and blossomed, they produced no fruit”

Turnips
‘Purple Top Strap Leaf’: “All made a normal growth and all suffered from the attack of root maggots”

Apples
‘Duchess of Oldenburg’
‘Red Astrachan’
‘Red June’
‘Raspberry’
‘Yellow Transparent’
‘Maiden Blush’
‘Early Harvest’
‘Sylvan Sweet’

‘Eureka’
‘Tetofsky’
‘Bryer Sweet’
‘Lowell’
‘Standard Hibernal’
‘Hyslop’
‘Whitney Crab’
‘Martha Crab’
‘Transcendent Crab’

Cherries
‘English Morello’
‘Ostheimer’
‘Early Richmond’
‘Dyehouse’

Plums
‘Forest Garden’
‘Hawkeye’
‘Red June’
‘De Soto’

Blackberries
“The blackberry is not likely to do well in Alaska”
‘Snyder’: “They are alive, but that is about all that can be said of them at present”
‘Turner’: “They are alive, but that is about all that can be said of them at present”
‘Taylor’: “They are alive, but that is about all that can be said of them at present”
‘Fuller’s Colorado’: “They are alive, but that is about all that can be said of them at present”

Raspberries
“We have 600 bushes of a variety common in the gardens about town; it is probably the **Cuthbert**”
‘Miller’
‘Loudon’

Currants
‘Fay Prolific’
‘White Grape’
‘Victorian’
‘Ruby Castle’
‘Manitoba Amber’

Gooseberries:
“We have a few of which the names are uncertain and more will be procured”

Ornamentals:
Siberian Honeysuckle
Siberian Wild Olive
Sand Cherry
Rosa rugosa
Pyrus baccata

Lilac
June Berry

Strawberries
'Excelsior'
'Lady Thompson'
'Sunders'
'Haverland'
'Enhance'
'Bismarck'
'New York'
'Brandywine'
'Bubach'

Cranberries
"most of these are alive, but it is a question if they will survive the winter"
"The native Alaskan cranberries, *Vaccinium vitis-idaea* and *Oxycoccus oxycoccus* are abundant in this neighborhood and yield berries of most excellent quality…The *Oxycoccus* is a very shy bearer and in the wild state is not of much value on that account."

Barley
'Lapland': "fine"
'Success': "Well-filled heads…cut September 21"
'Sisolsk': "Grain in dough, straw soft, somewhat lodged…Harvested September 19"
'Manshury': "August 15, badly lodged, short heads, well filled. September 10, ripe"
"**Finnish** barley and **Black Hulless** barley were also seeded but were failures."

Oats
'Sixty Day': "This is one of the earliest oats we have tested. It can be depended on to mature, but it has a weak straw and lodges badly. The grain is also small and light."
'Burt Extra Early': "This follows Sixty Day in earliness and it has a better straw and somewhat heavier grain. It, too, can be depended on to ripen."
'Swedish Select': "While not an early variety it has nevertheless done well at this station for two seasons. It stands up well under the strain of severe storms, and it has an unusually large, plump grain."
'Improved Ligowa': "This well-known variety requires too long time to mature to make it a sure crop every year. It has a fairly good straw and large, plump grain. It is a good variety for hay or silage."
'Nameless Beauty': "One of the rankest growers we have tested and excellent for hay and silage, but too late to mature on the coast before the fall storms set in."

Wheat
'**Romanow Spring**': "This variety is the best spring wheat we have tested"

Rye
'**Giant French Winter**': "Of several varieties this was the only one that did not winterkill. They were killed by too much water rather than severe cold. The heads are small but the grain is of fair quality."

Flax
'Riga' (for fiber): "The ground was too wet for the best results, and not sufficiently subdued. The quality was injured by lodging of the straw. Good fiber flax can be grown on the coast wherever suitable soil can be found.

Buckwheat

'Russian Variety': "Early maturing varieties of buckwheat may be depended on to mature in the coast region."

Forage Plants

Flat Pea *Latyrus sylvestris*:

Grasses

Perennial Rye Grass (*Lolium perenne*): "The yield is too light for hay, but it will furnish early and late pasture."

Orchard Grass (*Dactylis glomerata*): "A leafy pasture grass and one which will also yield considerable hay."

Timothy (*Phleum pretense*): "While it has done well, this popular grass does not promis to be as valuable for this region as tall meadow-oat grass of orchard grass."

Red Top (*Agrostis vulgarirs*): "One of the earlier promises to mature seed."

Tall Meadow Fescue (*Festuca elatioir*): "A fairly promising grass."

Kentucky Blue Grass (*Poa pratensis*): "The chief merit of blue grass is that it is ready to cut for hay early in the season before the unsettled weather begins."

Tall Meadow-Oat Grass (*Avena elatoir*): "In point of yield ahead of any here tested."

Meadow Foxtail (*Alopecurus pratensis*): "Will have value as an early hay grass."

APPENDIX E
Correspondence

Date: Tue, 30 Aug 2005 11:21:15 -0600
From: Michele_Curran@nps.gov
To: Alison C Blake <ablake22@u.washington.edu>
Subject: Re: Moore Homestead Question

Alison,
I have transferred to Santa Fe and no longer have access to my records and files on the Moore Homestead. Check the Bibliography in the back of the CLI--that includes all of the documents consulted. I remember that one of the archeological reports, "Archeological Investigations in Skagway, Alaska, Volume 8: Excavations at the Moore/Kirmse House" by Doreen Cooper provided the most information on the garden. The park also has some historic photographs, obliques taken from the surrounding mountains that show the garden and should be helpful in identifying the garden location.
I have sent your questions on to Toni Horton, who was the Historical
Landscape Architect in Alaska several years ago--and who spent a great deal of time in Skagway.
Good luck,
Michele

Michele Curran, Landscape Historian
NPS-IMR CLI Coordinator
2968 Rodeo Park Drive West
Santa Fe, NM 87505
505-988-6895 (voice)
505-988-6876 (fax)

----- Forwarded by Theresa Thibault/KLGO/NPS on 09/07/2005 04:01 PM -----
"Tonia Horton" <thorton2005@hotm ail.com>
To: mailto:Theresa_Thibault@nps.gov
Subject: Re: Fw: Moore Homestead Question
09/06/2005 11:30 AM AST
Hi -- I better answer this right now, or I'll forget in the moving chaos. The hurricane disaster has further complicated move logistics because of scarcity of trucks (everyone trying to get supplies down, relatives out, etc)....

Besides Doreen's report, there was another archeological study early on
That noted the location of a kitchen garden. I don't remember which NPS study it was in, and maybe she referenced it. I think it may have been the HSR for several older buildings, including the Moore House. Or something related to the restoration of the house. In any case, I know that this reference exists -- so maybe Karl could help. I think you actually located this report once, because I remember you telling me -- it had to do with location of interior fencelines and soil stains? It was much earlier than Doreen's initial work.

The reasoning behind the kitchen garden:

1) archeological speculation on its existence (from the early report to Doreen's privy) along with aerial photographic evidence of a series of interior fences for both domesticated poultry and other uses

2) more importantly, the utilization of Frank Norris's research on the Level of gardening activity in and around Skagway during the period of significance. This work focused on both ornamental and domestic food use, and

showed an intense effort in domestic environments for both decorative and practical gardening. I cannot vouch for my memory of the photograph, but wasn't there an additional interior gardening space fenced from the chicken dots shown in that oblique aerial? Remember, it's been 2 years since I've seen it!

3) finally, the goal of the landscape rehabilitation: it is not an exact replication/restoration/reconstruction in the sense that the ground disturbance has pretty much obliterated any subtle traces of the gardening I talk about in #2. It's not about exactitude, but about the ability to use what information we have to "interpret" the landscape, triangulating between what we know specifically about the site, and about its context within the emerging urban environment of Skagway during that period of significance (which goes to 1914?). There is a LOT of structural evidence, but little in the way of landscape == except to look at the evolution of it as a domesticated place, which is what the Moore signage does. The reinforcement of that concept is where you will need the interpretive spaces, such as the kitchen garden.

In that respect, we know that the Moores were concerned about their social status, as evidenced by the Victorian pattern book style of landscape gardening at the house and at the Annex (details) -- with neighbors like the Pullen House to reinforce that. Photos of the children's birthday party show what looks to be strips of mown "meadow" like ground vegetation (poppies?), and the tree-lined boardwalk with stone tree wells as decoration are also great clues to their sense of domestication -- related to social status. Extending this to the practicalities of life is a great interpretive window: there was a significant amount of interior fencing to the right of the house, used for all kinds of protection I suspect.
Translating Frank's information, the archeological data (where it exists), and some contextual knowledge of Victorian homes on the frontier – which always had kitchen gardens for obvious reasons -- would help the park humanize and activate the landscape through interpreting the kitchen garden's role. Nothing fancy, mind you: root crops, berries, and the like. Maybe cold-frames, etc. as well. The goal of the kitchen garden was to tie together some very important ideas about the Moore homestead landscape and relate it to things the visitors would see in Skagway (provided the city decides to talk about its Garden City of alaska heritage in some tangible way), as well as to things they might have seen at other frontier/emerging urban homesites throughout other NPS units.

So, that's what I can offer on the genesis of the kitchen garden idea for the landscape rehabilitation plan. It is an important element, has historical roots both at the site and in the general environmental context, as well as a pervasive stylistic thread throughout American frontier and emerging urban domestic landscapes. The exactitude will never be there; the potential for honest and faithful interpretation within the context of Skagway most certainly is. And, so, given the types of plants we know were grown in Skagway and Dyea for home food sources, I think you can take the gamble -- most every kitchen garden interpreted in the lower 48 certainly does, with the exception of Monticello and Mt. Vernon, who have pretty meticulous archeological records and historic plant source materials.

Let me know if this needs further clarification --

Call me when you get a chance!~

th

From: Theresa_Thibault@nps.gov
To: "Tonia Horton" <thorton2005@hotmail.com>
Subject: Re: Fw: Moore Homestead Question
Date: Wed, 31 Aug 2005 13:31:24 -0800
Hi Toni! I'm swamped right now - but sure would like to talk to you about everything!! Maybe this weekend??

I've just gone to the first mid-level training :-)
As far as the Moore House - Alison is referring to Doreen's report (which you cite in the landscape report), but quite frankly I'm not sure that Doreen feels there was evidence for a kitchen garden, since she's the one who raised the question as to why we thought there was one there in the first place. We can't find any photos that one existed. Alison and Karl are trying to track down more Moore photos to see if we can get a better idea about the garden, and where it would have been placed.
The question is really whether you found photo evidence of the garden...or barring that, what led you to believe there was one? From my reading of the reports in Doreen's book (the paly and macrobotanical samples) there is evidence of a variety of foods (from the dump), but the actual evidence for the kitchen garden isn't there. When Andy did his excavations last year, he thought he found the right spot (where it is proposed to go) and found what we thought might be evidence of a disturbed (dug into) area, but this could be a misinterpretation of what was going on, based on our bias that there should have been a kitchen garden there. So - if you recall that there were photos, we'll keep looking to see if we can find one. Otherwise, we'll probably have to re-group and figure out if we should have one there. One of the questions that has come up, if there was one where we intend to put one, is how they kept the chickens out of it, since it appears that the chickens had free run of the yard?? (at least up to the interior fencing??)
Anyhow - if you can explain how you got to the kitchen garden, that will help. :-)
Meanwhile - chaos reigns at the park - as usual. I'll catch you up when we talk.
Theresa

"Tonia Horton"<thorton2005@hotm ail.com>
To: theresa_thibault@nps.gov
Subject: Fw: Moore Homestead Question
08/31/2005 11:44 AM AST
Hi -- I got this from Michele. I can answer her questions--at least most of them--but I can't remember the archeological report that first discovered evidence of kitchen garden. It is referenced in Doreen's report with the pollen analysis. You found this earlier report as well: Shepherd? S something?
Lots of activity here. Bought a house in Nashville (gulp gulp--you can't believe the prices; worse than AK), and attendant chaos of having possessions in three locations and trying to get everything headed toward TN. I'm about a month out from starting work, and no wardrobe yet! I'm cautiously optimistic about the job--part of me still wants to be in the NPS, much easier than corporate world...
how are you?
xo,
toni

From: Michele_Curran@nps.gov
To: thorton2005@hotmail.com
Subject: Fw: Moore Homestead Question
Date: Tue, 30 Aug 2005 11:13:19 -0600
Can you help her out?
Michele Curran, Landscape Historian
NPS-IMR CLI Coordinator
2968 Rodeo Park Drive West
Santa Fe, NM 87505
505-988-6895 (voice)
505-988-6876 (fax)
----- Forwarded by Michele Curran/SANTAFE/NPS on 08/30/2005 11:10 AM
Alison C Blake ablake22@u.washington.edu>
To: Michele_Curran@nps.gov\
Subject: Moore Homestead Question

08/26/2005 02:10 PM MST

Dear Michele,

Karl Gurcke at the NPS Klondike Gold Rush office in Skagway, Alaska gave me your name in regards to the 2001 Moore Homestead Cultural Landscape Inventory that you worked on. I'm a graduate student in landscape architecture at the University of Washington, and have recently been contracted, along with my professor, Daniel Winterbottom, and colleague, Kari Stiles, to research and propose a design for an interpretive kitchen garden at the Moore House in Skagway. The 2001 Cultural Landscape Inventory (at least the copy that I was given, which also doesn't include graphics) doesn't have any footnotes, but in several places (pages 5, 27, 28, 41 and 44) reference is made to a garden space within the yard enclosure to the east of the house. Specifically, on page 28, the document states that "archeological and pollen analyses conducted in and around the privy by the Moore Homestead confirm the presence of a kitchen garden." I'm hoping you can help me by telling me which archeological report(s) were being referenced, and, if possible, how the conclusion was drawn that the Moore's had a kitchen garden within the enclosure.

Since my report has no graphics, I'm also trying to find out how the
location of the kitchen garden was found. It is proposed for the southwest corner of the enclosure, just off of the porch. Do you know if that location was determined by the same archeological report, a different one, or if it is simply a recommended location for the interpretive garden (but not necessarily in an historically accurate place)?

If you have any other information regarding the kitchen garden and what was found out about it, I would greatly appreciate it. I would like my own research to be thorough, and have a feeling that I might be missing a Key document or two (do you remember ever seeing any photos of the garden space? Another report refers to one, but I haven't been able to track it down yet).

Yours was the only email address Karl had to give me, so if you could forward this to any of your colleagues who worked on the report and might be of help, I would greatly appreciate it.

Thank you in advance for your time and effort.

Cheers,

Alison Blake
2nd Year, MLA
University of Washington
Dept. of Landscape Architecture
ablake22@u.washington.edu

note: references to cardinal directions are based upon magnetic north as depicted in *A Century at the Moore/Kirmse House* p.xii & p42.

APPENDIX F
Prints

The following prints are made available for refernce purposes; these are all duplicates to those shown in Appendices A and C, which should be refered to for additional caption and source information. Images shown within appendices A and C that are not reproduced are either available for reference as original prints at the Klondike Gold Rush National Historic Park (KLGO), or were unavailable for reproduction.