"Throw All Experiments to the Winds"

A view of the Fairbanks station in 1917, looking essentially as it did in 1915.
—Agricultural Experiment Station Photo Collection, UAF Rasmuson Library Archives, Accession #68-4-751

Practical Farming and the Fairbanks Agricultural Experiment Station, 1907–1915

A Senior Thesis

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Abstract

The objective of this thesis was to compile a succinct but comprehensive history of the establishment and progress of the Fairbanks Experiment Station from 1905 to 1915, and determine the station's influence on agriculture in the Tanana Valley. An extensive survey of the University of Alaska Fairbanks' archive records, experiment station documents at the National Archives of the Alaska Region in Anchorage, annual reports of the experiment station, Fairbanks newspapers, and the Congressional Record was completed and the literature evaluated. It was concluded that agriculture in Alaska was seen as a secondary industry to mining and fishing and was generally dismissed by Congress. Some Alaskans, however, took up the call for agriculture when mining slowed down and established an agricultural college, which renewed people's hopes for agriculture and saved the Fairbanks station from fading into history.

Introduction

Agriculture in Alaska has developed slowly and still plays a small role in Alaska's economy, even though the federal government established the first experiment station to investigate the possibility of Alaska agriculture nearly a century ago in 1898. Land for the Fairbanks station was surveyed in 1905 and the station was officially opened in 1907, with the mission of determining whether "farming could be made to pay in the Tanana Valley."[1] This thesis will present a history of the first ten years of this experiment station and will investigate its effect on the perceptions of agriculture in the Tanana Valley.

The objective of this thesis is to compile much scattered information into a concise, easily referenced account of the history of the Fairbanks Experiment Station in its early years. This collection of material is important, not only for the sake of historical preservation, but also because it provides a record on which to evaluate present and future endeavors of agricultural research in Alaska.

Review of Previous Investigations

The Special Agent In Charge wrote annual progress reports for the federal experiment stations in Alaska and there are references to the status of agriculture in the territorial governors' reports to Congress. There is also a published thesis by James Shortridge of the University of Kansas dealing with the history of agriculture in Alaska in general. Kay Hitchcock wrote a brief history focusing on later developments of the station, but no thorough history of the early years of the Fairbanks Experiment Station has been undertaken.

Methods

An extensive survey of the University of Alaska Fairbanks' archive records included: Manuscript 13, Box 4, Folder 1, Alaska Historical Documents-Agriculture; Manuscript 56, Box 6, Folder 60, Robert and Jessie Bloom-University of Alaska and Folder 61, Wheat Project; Manuscript 165, Box 1, Folder 2, Kay Hitchcock-Fairbanks Station and Folder 31, Tanana Valley Agriculture; Manuscript 145, Boxes 1-4, G.W. Gasser; and the vertical file Agriculture-Alaska.

Experiment station reports from 1901-1915 were studied, as were articles from the *Fairbanks Daily News* from selected years of 1905 and 1912 and the *Valdez Alaska Prospector* from 1902. Miscellaneous original documents and letters in Record Group 164, Records of Agricultural Experiment Stations-Alaska-Fairbanks Station were reviewed at the Alaska Regional U.S. National Archives in Anchorage. This literature was then evaluated to determine the station's effect on the perceptions of agriculture in the Tanana Valley of both Fairbanksans and the federal government.

Preface

The goal of the Fairbanks station was to test practical farming and, it was hoped, prove that it could exist in the Tanana Valley, despite the disbelief of most people. This thesis begins with a description of early efforts at investigations of an agricultural Alaska, then describes a history of the progress of the experiment station at Fairbanks, and finally discusses concluding themes of the story of an agricultural experiment station in the Tanana Valley.

Results

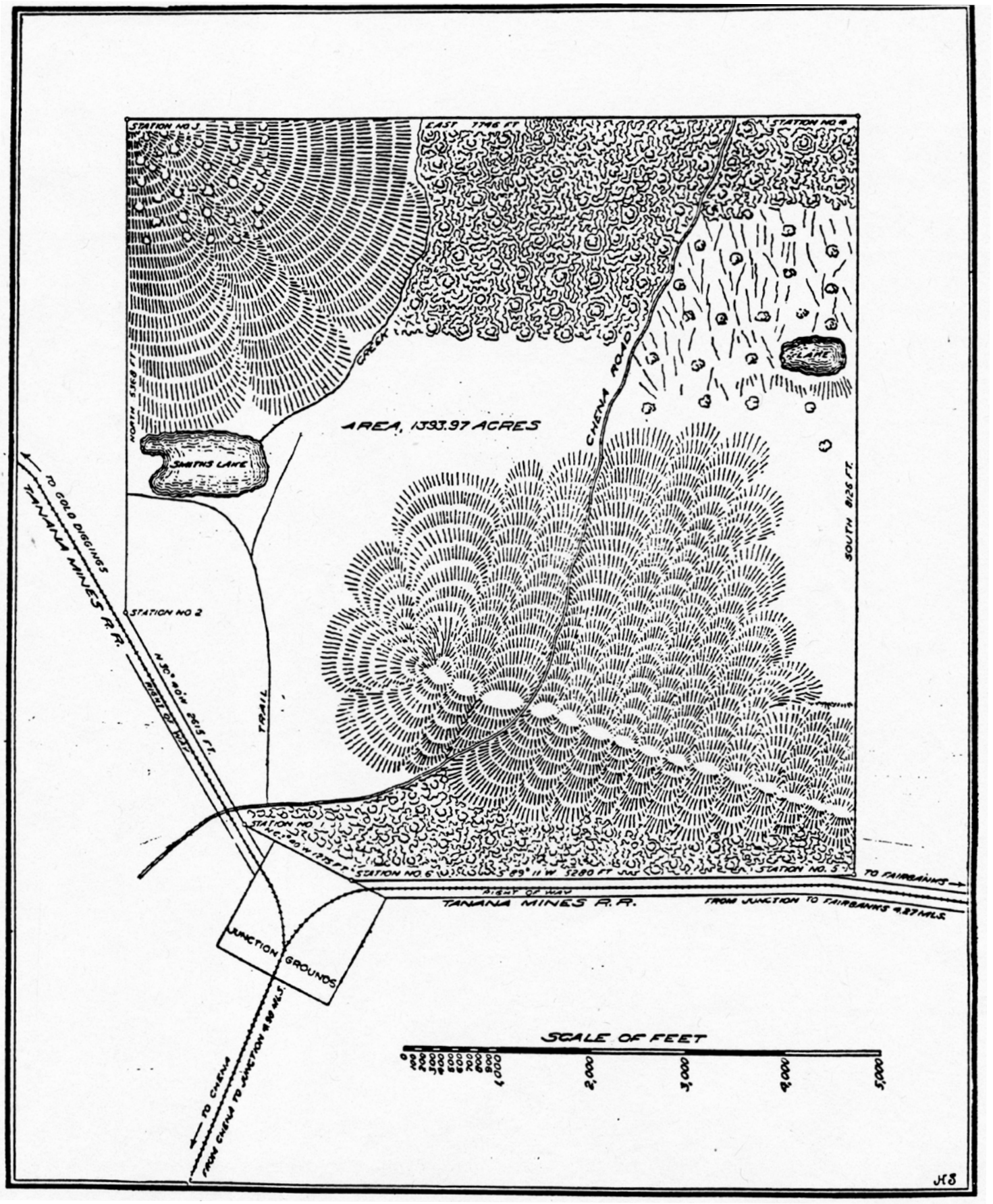
Contents

Chapter 1: American Investigations into Agriculture in Alaska, 1897–1905

Alaska was considered a strange, desolate wasteland, or so many people believed when the United States purchased the territory from Russia in 1867. Judging by the chronic food shortages of the Russians and the harsh climate, few thought any form of agriculture could succeed there. One skeptic queried in 1875, "can a country be permanently and prosperously settled that will not in its whole extent allow the successful growth and ripening of a single crop of corn, wheat, or potatoes, and where the most needful of any domestic animals cannot be kept by poor people?" Some people thought that a limited amount of agriculture was possible, but certainly "no sustained or widespread agriculture was envisioned by anyone prior to the mid 1880s." With the influx of fishermen and especially gold miners to the Klondike Gold Rush of 1887, however, the attitude towards the agricultural possibilities in Alaska became more optimistic.[2] In 1897 Congress authorized the Secretary of Agriculture to spend $5,000 investigating the agricultural resources of Alaska. Thus, in the summer of 1897 the botanist of the Office of Experiment Stations, Dr. Walter H. Evans, toured the coastline from Prince of Wales Island in the southeast corner of Alaska to Unalaska on the Aleutian island chain "to investigate the agricultural and horticultural possibilities of that country."[3] The soil's high content of organic matter, which surpassed that of any cultivated land in the rest of the country, led the analyzer to state that "if these soils are...well drained, they should be capable of producing enormous crops." Dr. Evans concluded that, although he was skeptical of Alaska's capacity to produce enormous crops, he believed enough produce could be grown to make the territory self-sufficient.

During that same summer of 1897, the Secretary of the Interior commissioned Dr. Sheldon Jackson, the Superintendent of Schools in Alaska, to assess the agricultural potential of the Yukon River Valley in conjunction with his annual inspection of the reindeer stations and schools, and also commissioned Benton Killin of Oregon to make observations of the status of and potential for agriculture along the coastline of Alaska.[4]

Presented with promising reports, Congress appropriated $10,000 for the fiscal year of July 1, 1898–June 30, 1899, to continue investigations into Alaska's agricultural potential, authorizing the establishment of stations at Sitka, Kodiak, and Kenai. The Secretary of the Interior decided to transfer Professor Charles Christian Georgeson from his post in the Division of Agrostology in the Department of Agriculture to the position of Special Agent in Charge of Alaska investigations. A native of Denmark experienced in agricultural research, Georgeson was fully acquainted with agriculture in northern climates. His instructions for that first year of investigation included the following: begin controlled experiments at the headquarters in Sitka, testing varieties of cereal grains, vegetables, fruits, and methods of cultivation suitable to the area; experiment with silos for curing and storing hay and produce for winter use; contact residents in various areas and provide seed to those who were willing to experiment with plant varieties under his direction, and to report the results to him; and tour the coastline in search of potential sites for experiment stations and continue investigations into the Interior, if time and means allowed.[5]



Map of proposed United States reservation for experiment station purposes between Fairbanks and Chena, Alaska.

—U.S. Department of Agriculture, *Report on Agricultural Investigations in Alaska, 1905*, C.C. Georgeson, Bulletin no. 169 (Washington, D.C.: GPO, 1906), 16.

Dr. Charles Christian Georgeson.

—Agricultural Experiment Station Photo Collection, UAF Rasmuson Library Archives, Accession #68-4-1163

The results from the first year were promising. Despite late planting, the vegetables in Sitka did extremely well on previously worked ground and all the cereal grains matured. As expected, crops did poorly on newly farmed ground, which required liming to reduce the acidity of the soil. Georgeson received many replies to his requests for agricultural information. Most respondents discussed their success with garden vegetables and flowers and their somewhat limited luck with grains. Of livestock, dairy cattle seemed the most plentiful and were said to be doing quite well on the native grasses of the coastal region.

In one very brief reference to the Interior, Georgeson stated that it offered greater possibilities than the coastal region and would surely grow the more hardy cereal grains, such as barley, oats, and buckwheat, along with the vegetables reported by his correspondents. He noted the difficulty in reaching this country, however, and realized investigations into agriculture there would be delayed until roads and railroads reached it.

Based on the successes of the investigations of 1898, Congress increased Alaska's experiment station allotment to $12,000 to "establish and maintain agricultural experiment stations." With the official establishment of federal experiment stations, Alaska had finally received congressional recognition as an agriculturally viable member of the United States.[6] Georgeson expanded and staffed these first agricultural stations in Alaska and opened Interior stations at Rampart on the Yukon River in 1900, and at Copper Center on the Copper River in 1901. The locations of these stations can be seen in Appendix A. The station at Rampart was intended to explore the tentative possibilities of agriculture in the far northern areas of the Alaska Interior, but the Copper Center station held great hopes of an agricultural mecca in the Copper River Valley in 1901. Georgeson proclaimed that perhaps it was "the most favorable locality for agriculture in all Alaska."[7] The luxurious grasslands and plans for a railroad through the town of Copper Center to serve the copper mines made this spot seem the perfect place to develop Alaska's agriculture. When the railroad brought more affordable transportation and the homesteaders rushed in, it was reasoned, Alaska's agricultural development would begin and the territory would be on its way to self-sufficiency. Reality did not cooperate with these plans, however. The unfavorable early frosts and lack of rain discouraged agricultural hopes, while the passing of the railroad over forty miles away from Copper Center frustrated dreams of a thriving railroad town.[8]

Chapter 2: The Fairbanks Station

As it was becoming clear that the Copper Center station was not the agricultural success hoped for, Fairbanks presented an opportunity to redeem Alaska's poor agricultural reputation. The Fairbanks citizenry had felt the need for more organized investigation of their agricultural situation and had petitioned Secretary of Agriculture James Wilson to establish an experiment station somewhere in the Tanana Valley. Eager for the opportunity to test agriculture in another area of Alaska, Georgeson and Fred E. Rader, the assistant at Rampart, arrived in Fairbanks on July 28, 1905. They spent three days searching in all directions from the town of 3,000 people. Most homesteads near the town had been taken up; a review of homestead information is provided in Appendix B. Georgeson considered locating the station farther up the Tanana River in the Delta district. Fairbanksans quickly quelled this notion, however, as "members of the Chamber of Commerce and others used their influence" to direct him to areas between Fairbanks and the nearby town of Chena.[9] Georgeson finally decided on 1,393.97 acres along the Fairbanks-Chena railway that connected the towns to the gold diggings in the hills. The tract contained two low ridges about a mile apart running west to east with an unnamed five-acre pond and the twenty-five acre Smith Lake lying between them. He cited the presence of the railroad on the south side of the tract as a way to avoid the troubles of transporting supplies that plagued the Copper Center station, and noted that the large population, which included an estimated 10–12,000 miners in the surrounding

Fairbanks station in 1917. From right to left: Mr. J.W. Neal, his wife, and their daughter in front of the station cabin.
—Agricultural Experiment Station Collection, UAF Rasmuson Library Archives, Accession #68-4-1212

hills, would justify the need for improved plant varieties and methods of agricultural production.[10] Georgeson's next task was to find a proven and capable superintendent, for Georgeson planned that this station would demonstrate "the possibilities of farming in Alaska."[11] An ambitious goal for one station, but who should attempt it? He had several prospects from those graduating from his old employer, Kansas State University, but Georgeson already knew who he wanted.

J.W. Neal had worked at the Copper Center Experiment Station from its establishment in 1901 until 1905. He had practically created the farm from nothing, locating and surveying the station lands, planting available ground, and clearing the easier sections. Neal built the house and tool and equipment sheds largely by himself over the winters, in addition to packing in the coming year's worth of supplies over one hundred miles of rough terrain from Valdez. The spring and summer were busied with breaking new ground and planting an enormous variety of different grain crops. Georgeson was pleased with this show of dedication, and described Neal as "competant and experienced."[12] Neal struggled to make Copper Center Experiment Station a success. He enjoyed the work, although the usually small success rate of the grains disappointed him, but after three years of isolation both he and his wife had had enough. He completed the work for the 1905 season and returned to his home in California.

In 1907, Neal received an offer from Georgeson to become the first superintendent of the new Fairbanks station. Neal was skeptical and refused, but Georgeson promised that in terms of both agricultural potential and population, there was "not the slightest resemblence between conditions at Copper Center and at Fairbanks...and Mrs. Neal will not be lonely."[13] Given these assurances, Neal accepted and agreed to start work on the station on April 1, 1908.[14]

Just as there had been dreams of a fertile valley of farms in the Copper River Valley in 1901, agricultural hopes rose for Fairbanks in 1905. The town seemed to have everything that Copper Center had hoped to have but never did. The populous mining center had a railroad, a distinct transportation advantage for an experiment station in the Alaska Interior. The town also provided a large local market for agricultural products and the chance for economic success in farming, a factor that was lacking in most of the locations of the other Alaska stations, which had been located on the basis of soils and climate and were in areas of low farming activity. The new station at Fairbanks was surrounded by people, most of whom were already practicing agriculture and had themselves requested the work of an

experiment station. Here, in the midst of an active farming community, Georgeson saw the chance to finally prove to the rest of the world what agriculture could become in Alaska.

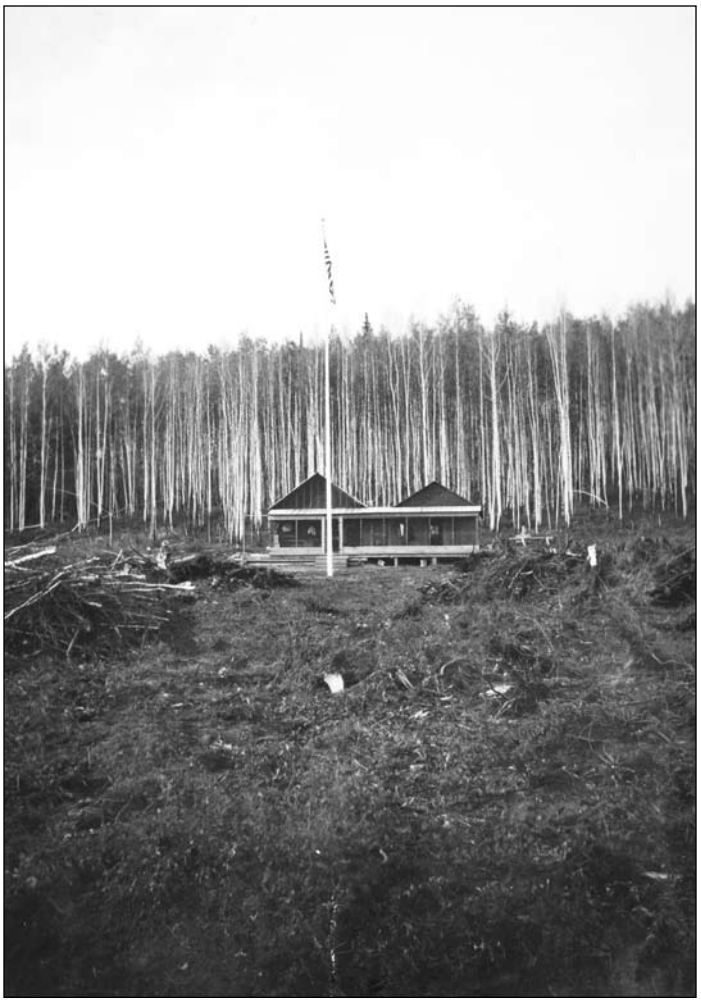
The land selected in Fairbanks for the station was reserved by executive order on March 22, 1906, and Georgeson immediately scheduled a trip to the new station in July. Once there he whirled in a flurry of activity, clearing the birch from ten acres and preparing the ground for spring work, arranging to store equipment in the Carpenter's Storage Building, procuring four horses from the U.S. Geological Survey stables and wintering them with the Orr Stage Line in exchange for their feed, and purchasing and moving a frame building onto the station.

In his report for that year, Georgeson clearly laid out his goals for his new endeavor. The station was to practice mixed farming with experimentation in both livestock and grains, with the mission to "become self-supporting and thereby serve as an object lesson of the possibilities of farming in Alaska." The station's scheduled experiments were to give special attention to crops with local markets, such as potatoes. Georgeson hoped to bring some milking Galloways from Kodiak to perhaps start a dairy, and he planned eventually to introduce chicken raising on a large scale. Grain experiments would include wheat, barley, oats, and rye for Alaskan consumption, and grasses and forage were to be tested on the low areas around Smith Lake and the unnamed pond. Georgeson clearly wanted the station to prove Alaska's value as an agricultural province.

Before heading back to Sitka, Georgeson contracted with J.F. Karshner and Frank Manley of Hot Springs, Tanana, to grow one-half of an acre of Romanow spring wheat for seed to supply the station the next year, and it matured perfectly. He also discovered that a variety of Velvet Chaff wheat had grown up in the back lot of Dr. Hall in Fairbanks, apparently having been scattered by a passing wagon, and a sample was taken to Rampart for experimentation.[15]

Leaving his wife and daughter at their home in Norwalk, California, until he could build a proper house, J.W. Neal arrived at his new post on a cold day in the middle of March 1908 and set about securing supplies and equipment. The station received four more horses from the U.S. Geological Survey, which were put to work with the stage line to pay for their feed. The new superintendent attempted taking up his quarters in the tiny shack Georgeson had moved onto the station, but found the cold too much to endure. W.W. Estes offered sleeping space at his nearby roadhouse, which Neal gratefully accepted.

The station then went into official operation. Neal fenced the ten acres that Georgeson had previously cleared and built a temporary barn, 32 x 30 ft with 16 ft to the eaves. The lower story was log, while the upper was of frame construction. Georgeson gave instructions, however, that the majority of Neal's energy was to be devoted to clearing land, with the future plan of cultivating 400–500 acres so that farming could be conducted on a large scale. He again proclaimed his mission: "It is deemed important to demonstrate whether farming can be made to pay in that region." To establish this, the proceeds from selling the station crops were to go back into the farm's budget after being deposited with U.S. Treasury.



An early view of the station.

—Agricultural Experiment Station Photo Collection, UAF Rasmuson Library Archives, Accession #68-4-1243

The season of 1908 began late and wet, most crops being planted May 25 and 26. Neal prepared sixty acres for cultivation, mostly on the lightly timbered, easily cleared northern slope, along with some low ground near the railroad and a quarter of an acre on the south slope by the buildings, seeded to barley.[16] (For complete summaries of the weather and crop results for 1908–1915, see Appendix D.) With his reintroduction to the hardships of pioneer life, Neal began to question his acceptance of the station management in a letter to his employer. Georgeson responded, "I hope you will not continue to feel as depressed as you did when you wrote that letter. If conditions are adverse we shall simply have to do the best we can. Bear in mind that you are at the worst possible stage of the work."[17]

To inspect the progress and perhaps to buoy his superintendent's spirits, Georgeson made a trip to the Fairbanks station in August of 1908 to find that Neal had begun carving a recognizable farm out of the wooded wilderness of the station lands. A screened porch connected a new log cabin to the original shack and the upper floor of the barn was in. Neal

View of the station in 1908.

—Agricultural Experiment Station Photo Collection, UAF Rasmuson Library Archives, Accession #68-4-1217

had added one room to the smaller house in July and two more were in progress, as well as a 7 ft deep, 13 x 26 ft cellar. He had also drilled a 40-foot well that supplied the house with water, noting that he had found frost only within the upper two feet of soil.[18] Neal constructed a 16 x 24 ft blacksmith-tool shop and a propagating house 12 x 20 ft, although panes of glass were hard to come by in Fairbanks. Neal was kept busy over that winter with caulking the barn with burlap and moss. He then lined this caulked wall with lumber and tamped clay soil between the lumber and the logs to retain heat. This helped considerably with retaining heat, but Neal commented that the barn was not big enough and planned to extend it 30 ft.[19] The station was also well equipped. With the closing of the Copper Center station in 1908, Neal had made a trip and salvaged many of its implements, including two grain drills, a disk and smooth harrow, one plow, a blacksmith outfit, carpenter and hand tools, a fanning mill, and a wagon loaded with miscellany.[20] Georgeson had also ordered a new potato digger, which had arrived and was working well.[21]

In August 1910, Neal was sent on an official expedition to estimate the amount of land available for agriculture and grazing in the Tanana Valley, as requested by the chief of the Division of Alaska Mineral Resources, U.S. Geological Survey, in an attempt to make a pre-estimate of the cost of an official survey. Georgeson makes it very clear in his report for 1910 that he considered it a job for surveyors, not experiment station workers who already had full time positions and limited budgets. In a letter to Neal, he writes, "I would not have undertaken this [project] at all, for I think it nonsense." Neal took a steamboat to Fort Gibbon and worked his way back up the river on steamboats, stopping at landings to inspect the country of the lower Tanana Valley within a few miles of the river. Before Neal began his reconnaissance of the upper Tanana Valley, Georgeson recalled him to Fairbanks, citing the need for his presence during harvest on the station.[22]

The year 1911 saw much activity on the Fairbanks station. Neal fenced many of the lots, installed a new board fence around the barn, and painted the cottage and greenhouse with green stain and the barn and outbuildings a Venetian red. He also dug a 61 x 15 ft, 8 ft-high potato cellar, complete with heating stove, into the hillside behind the former blacksmith shop and extended the shop roof over the cellar. The former shop was converted into a sorting room with a flatcar on a track extending

to back of cellar for easy handling of the potatoes. In addition, Neal had added a 16 x 60 ft lean-to shed to the barn and a new, smaller building was underway to replace the blacksmith-tool shop.[23]

Chapter 3: "To Test the Practicability of Real Farming"

Georgeson defined the mission of the Fairbanks station in 1909 when he declared that it would "test the practicability of real farming in the Tanana Valley."[24] With many other competing goals to choose from, he never lost sight of the main mission of practical farming. Staple grain crops that could be sold on the market or used for livestock feed and potatoes were to be the focus of the station, with experimental crops a side issue. In his annual reports he tirelessly repeated the overriding objective of the station. In 1911, Georgeson stated that the plan for this station was to "ascertain if farming can be made profitable in the interior of AK when considered as a business by itself," and in 1913 he describes the station as a model to demonstrate what crops could be successfully grown and how to grow them for best results.[25, 26]

With the completion of essential construction projects in 1911, Georgeson was relieved to see that Neal could begin to concentrate wholly on clearing land and pursue practical farming. Yet with the unpredictable and often unfavorable weather of the Tanana Valley, the station consistently failed to produce adequate supplies of feed for the livestock, presenting a rather embarrassing situation for a practical farm. Georgeson ordered a self-binder, a reaper with a built-in mechanism for binding grain or hay into sheaves, in an attempt to solve this problem. He also strongly reminded Neal that clearing hay land was the priority, and regarded it "a poor example to set farmers if we cannot raise feed enough for our own work stock."[27] Georgeson was ultimately forced to reduce the number of horses to one team and rent more from the stage company during the spring work. He also decided to discontinue the small-plat grain trials in an effort to devote more time to the station's mission of practical farming. "Throw all experiments to the winds," he wrote Neal in 1911. "If we are ever to farm successfully in Alaska we must raise feed for our own stock...we have reached the point where we have got to show some practical results."[28] In addition to the feed problem, Georgeson was hoping to remedy the cash crop situation of the Tanana Valley. Plant potatoes, he suggested; "grow something that will demonstrate that a farmer can make a living in that country."[29]

The grand plan was to continue clearing until there were "at least 200 acres, or preferably twice that, under culture to demonstrate farming on a reasonably large scale." Georgeson suggested concentrating on clearing the south slope of the southerly ridge, not only because the main buildings were located there, but because the railroad was nearby.[30] Georgeson believed that displaying the station's progress was important to dispelling the notion that Alaska had no agricultural potential. He directed Neal to slash the timber between the buildings and railroad primarily to "open a view of the farm from passing trains" and only secondarily mentioned the grazing benefits of the cleared land.[31]

The 200-500 acre farm Georgeson envisioned was an expensive proposition; where the timber was heavy it took $75-150 per acre to remove the stumps.[32] Georgeson had to admit in his report for 1910 that progress was slow. Land was cleared that year in four separate areas because meager expense accounts only allowed the clearing of lightly wooded areas, predominantly on the less productive, north facing slope. With occasional hired help land was cleared little by little, mostly along the south slope of the southerly ridge where the soil was better. Superintendent Neal had cleared a total of ninety-three acres by 1914. Georgeson's dream of 200 cultivated acres was still just a dream; by 1915, only eighty acres had been put into production.[33]

Consistently unpredictable and extreme weather presented the main problem in the development of a successful station in Fairbanks. Neal reported that a late spring but favorable summer in 1908 produced satisfactory results,[34] but the weather grew worse from there. The season of 1909 opened well, but a dry summer and frequent light rains in the fall did not help the grain crop.[35] In 1910, a dry, cold July also produced less than favorable results,[36] as did the late, wet spring of 1911.[37] An early spring in 1912 promised well, but a rainy fall threatened to ruin the harvest. A chance late frost, delayed by three weeks, saved the crops.[38] A drought during the 1913 summer, combined with a cold wave and snow in August, conspired to ruin the grain crop that season, but Neal did manage to retrieve some Romanow and Red Fife spring wheat to use as seed for the next year.[39] The 1914 season was cool and wet, causing crops to mature very late, if at all.[40] The station's luck seemed to be changing in 1915, when an untimely spring allowed planting two to three weeks early, but the summer remained dry and it rained during harvest, halving the usual grain yield.[41]

Crops also suffered under the onslaught of swarms of voracious rabbits beginning in 1913; whole fields looked as if they had been mowed. Several farmers, along with the station, lost the greater part of their crops. Neal ordered 150 rods of rabbit-wire fencing in an effort to mitigate the damage caused by the hordes of rabbits and contacted the Oregon Agricultural College Experiment Station and found that they too, were battling the "rabbit menace."[42] Despite these disasters, Georgeson contended that "Alaska should not be long dependent on the outside for seed grain."[43]

Potatoes were a main staple in Fairbanks, and being one of the hardier vegetables, were grown by all local farmers. In his report for 1912, Georgeson advised against indiscriminately planting potatoes in both good and meager soils, warning that

Glass propagation house, constructed in 1912.

—Agricultural Experiment Station Photo Collection, UAF Rasmuson Library Archives, Accession #68-4-1829

the lesser quality products would create a poor reputation for Alaska-grown potatoes.[44] With intense competition and rivalry among local producers, however, no one seemed to heed this advice and proceeded to supply poor quality potatoes. Local merchants stopped buying potatoes from local farmers but continued to purchase the experiment station's potatoes, which were grown on suitable soils. Immediately farmers and market gardeners protested that the station should not be allowed to compete in the local market. Partly to avoid conflict and partly to use the ground for other crops, Superintendent Neal only planted three acres of potatoes in 1913.[45]

In 1914, Georgeson began livestock investigations at the station and shipped six Duroc-Jersey purebred hogs from Sunnyside, Washington, both to breed for sale to local farmers and to consume station potatoes. This would allow for expansion of the current limited experimentation with varieties in determining the best potato/grain crop rotation plan to maintain fertility.[46] The program did not get off to a good start, however, with the puzzling death of a hog the first year of the program, and the situation only seemed to worsen. In 1915, some of the animals appeared to be suffering from rheumatism. They became lame and grew more helpless until they were eventually paralyzed. Given the lack of demand for these hogs and the failure of local hog farmers in general, Neal questioned the wisdom of the program. Georgeson, however, asserted that the experiment was to determine whether purebreds could be maintained with their standard of excellence and to learn the best methods of handling the animals, and so would be continued.[47]

Georgeson also still harbored plans to develop a hardy beef animal for the Interior. Some hybrids of a domestic bull crossed with a female yak had been found fertile, and confirmation from the director of the experiment station in Irkutsk, Siberia, suggesting that the two species cross-bred easily and were self-maintaining in the harsh climate. This convinced Georgeson to make a strong request for the necessary funding for an investigation.[48] Eventually he would experiment with yaks, although the results would not be as successful as he had hoped.

Chapter 4: The Station's Progress

By 1914 Neal had essentially completed the Fairbanks station, which consisted of a livestock barn with attached implement shed, a glass propagation house, a hay barn, a potato cellar, a new 25 x 40 ft hog house, a blacksmith shop, and two rather dilapidated cabins joined together.[49] A new well had also been drilled, due to the tenuous water situation at the station. Besides freezing in the winter, the small existing well barely supplied the household needs, and the superintendent had been hauling water to supply the livestock from a creek nearly a mile away. Neal had tried drilling a well in the barn with the idea of keeping it from freezing in the winter, but found no water. In 1914, he finally sunk a second well 80 ft deep and produced water rising to 30 ft in the 4-inch pipe, and built a 6 x 7 ft winter house over it.

By 1915 the Fairbanks station had found several grain varieties "satisfactory" for the Interior and began a program of distributing two to three pounds of surplus grain free to settlers.[50]

In 1914, Georgeson was excited to inform his superintendents that they were to contribute grains, native grasses, berry plants, and any other crop of agricultural value to an exhibit at the San Francisco Fair.[51] No doubt the head of Alaska investigations saw the exhibit as an excellent opportunity to show what Alaska could produce.

The station also began receiving more attention from visitors, who seemed amazed at the very existence of a farm in the "wilds" of Alaska. Important guests included the Alaska delegate to Congress, James Wickersham; the president of the Tanana Valley Railroad, Falcon Joslin; and Territorial Governor Clark. Agriculture in general seemed to be receiving more attention as the Tanana Valley Agricultural Fair became a scheduled social event. In 1915, the fair board invited the Fairbanks station to present an exhibit, which Neal gladly accepted, although he did not compete with local farmers for prizes.[52]

Discussion and Conclusions

Agriculture in Alaska was not seen as a justifiable pursuit on the basis of its own merit, but was usually mentioned in the context of supporting other industries. In 1894, a report from the Committee on Agriculture stated that "with a secured food supply a wonderful impetus would be given every industry, and thousands...would find profitable occupation in the mines, fisheries, and forests of Alaska."[53] This theme of agriculture as a secondary, supporting industry was evidenced as the Copper Center station was established, when the *Valdez Alaska Prospector* asked their readers to "think of it, one third of a million people occupied...to sustain an army of prospectors and miners who are engaged in the neighboring mountains...."[54] No one considered that large-scale agriculture could ever exist for its own sake in "Seward's Icebox." Even the smaller-scale, subsistence agriculture that people hoped would support other Alaska industries was doubted. When the Fairbanks station did not meet the expectations of Congress, the entire concept of successful agriculture in the Tanana Valley, if not in the entire territory, seems to have been dismissed: "They [the station's experimenters] do not raise enough to pay the expenses of it," one representative declared in 1915, "and never will." The government began looking for ways to "get rid of" the station, "an expensive proposition" that had not produced satisfactory results and was a venture Congressmen doubted would succeed.[55] For this reason, the land grant for an agricultural college in Alaska was selected on four specific sections surrounding the experiment station. With a college established in the immediate vicinity of the station, the government could easily present the college with a "gift" when Congress wished to rid themselves of the station.

With the government's disappointment in Alaska agriculture, it is interesting to evaluate the criteria for success that were applied to agriculture in the territory. Having had little familiarity with colonizing extreme northern climates, Americans had only their experiences in the fertile soil of the Midwest and the expansive range lands of the western United States with which to approach agriculture in Alaska. The practical results Alaska was expected to produce were based on the narrowly-defined concepts of the agricultural and ranching successes of these areas. Alaska's unique location, climate, soil composition, and environmental factors were not considered. Success was raising hogs and cattle, not moose. Agricultural accomplishment consisted of swathing a field of alfalfa, not fireweed. This perception of successful agriculture holds true today. When people say that agriculture has not succeeded in Alaska, they are saying that Alaska is a failure because it doesn't look like the Midwest. This is certainly a rather unreasonable comparison.

It was expected that the Fairbanks Agricultural Experiment Station was to research the practical aspects of the area's agricultural potential; as Georgeson defined it, "to see whether farming could be made to pay in the Tanana Valley." During the years of the station's formulation, controversy convulsed the agricultural college communities in the Lower 48 over whether experiment stations should devote themselves to the practical problems of farming or to basic research.[56] Although this debate polarized opinions in the contiguous states, Alaska's declared bias towards the practical aspects of agriculture was never questioned. In fact, Alaska, unlike every other state in the union, was expected to produce practical results, or be considered an agricultural failure. A parallel expectation can be found in the establishment of the U.S. Geological Survey in Alaska, which was to investigate mineral resources, rather than simply conduct surveys as in the rest of the country. The agency was mandated to publish reports in nontechnical language, specifically for prospectors.[57]

But the practical results were not conclusive or quick enough for Congress, who had already discredited the idea of agriculture in Alaska. However, even as the possibility of Alaska agriculture was being abandoned by the federal government, the call for agriculture was taken up by the people of Fairbanks. With the decline of its gold rush days, the Fairbanks area population fell from 10,541 people in 1910 to 2,182 by 1920.[58] With the drastic reduction in the community and the failure of its main industry, people turned to the establishment of a college and agricultural progress at the experiment station with new expectations of economic production. The town needed a new economic basis, and agriculture looked as if it were the answer. This hope in the future of agriculture was displayed by the battle for a reservation for an agricultural college. The establishment of an agricultural college proclaimed the significance of the research of the Fairbanks station, as well as justified the belief that Alaska did hold great agricultural potential. A new era in agriculture was ushered in when the college reservation was granted; it was a step closer towards realizing people's expectations of the future farmlands of the Tanana Valley. The scope and role of agriculture had changed from being a sub-economy within the context of a mining community, to becoming the economic hope of an entire region.

In many ways, Fairbanks was the continuation of the hopes for Copper Center. Mining created a thriving town, the railroad kept it alive, agriculture was looked on hopefully, and even the tools and superintendent from the Copper Center station were transferred to Fairbanks. The establishment of a college in 1917 guaranteed that both the town of Fairbanks and the experiment station would not fade into history as Copper Center had.

Endnotes

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3. U.S. Department of Agriculture, *Yearbook of the Department of Agriculture for 1897*, Walter H. Evans (Washington, D.C.: Government Printing Office, 1897), 553-576.

4. U.S. Dept. of Ag., *A Report to Congress on Agriculture in Alaska*, Sheldon Jackson, Bulletin no. 48 (Washington, D.C.: GPO, 1898), 35-36.

5. U.S. Dept. of Ag., *A Second Report to Congress on Agriculture in Alaska, 1898*, C.C. Georgeson, Bulletin no. 62 (Washington, D.C.: GPO, 1899), 10-14, 44.

6. U.S. Dept. of Ag., *Third Report on the Investigations of the Agricultural Capabilities of Alaska, 1899*, C.C. Georgeson, Bulletin no. 82 (Washington, D.C.: GPO, 1900) 5-7.

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8. Terrence M. Cole, *History of the Copper Center Region* (University of Alaska Fairbanks, 1993), 49.

9. "Looking for Farm Along Line of New Railroad for Experimental Station," *Fairbanks Evening News*, 1 August 1905.

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18. U.S. Dept. of Ag., *Annual Report of Alaska Agricultural Experiment Stations for 1909*, C.C. Georgeson (Washington, D.C.: GPO, 1910), 51.

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28. C.C. Georgeson, Special Agent in Charge, to J.W. Neal, Superintendent, Fairbanks Station, Feb. 6, 1911, p. 1-2; NC-132, Entry 86, Box 1, Correspondence with the Alaska Headquarters, 1907-1917 and 1920-1932; Records of Alaska, Agricultural Experiment Stations, Records of the Fairbanks Substation; Office of Experiment Stations, Record Group 164; National Archives-Alaska Region, Anchorage.

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31. U.S. Dept. of Ag., *Annual Report of Alaska Agricultural Experiment Stations for 1910*, C.C. Georgeson (Washington, D.C.: GPO, 1911), 54.

32. U.S. Dept. of Ag., *Report of the Alaska Agricultural Experiment Stations for 1914*, C.C. Georgeson (Washington, D.C.: GPO, 1915), 29.

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35. U.S. Dept. of Ag., *Annual Report of Alaska Agricultural Experiment Stations for 1909*, C.C. Georgeson (Washington, D.C.: GPO, 1910), 51.

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44. U.S. Dept. of Ag., *Annual Report of Alaska Agricultural Experiment Stations for 1912*, C.C. Georgeson (Washington, D.C.: GPO, 1913), 49.

45. U.S. Dept. of Ag., *Annual Report of Alaska Agricultural Experiment Stations for 1913*, C.C. Georgeson (Washington, D.C.: GPO, 1914), 14.

46. Ibid., 16.

47. U.S. Dept. of Ag., *Report of the Alaska Agricultural Experiment Stations, 1915*, C.C. Georgeson (Washington, D.C.: GPO, 1916), 16-17, 54.

48. Ibid., 17.

49. U.S. Dept. of Ag., *Report of the Alaska Agricultural Experiment Stations for 1914*, C.C. Georgeson (Washington, D.C.: GPO, 1915), 28-34.

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53. U.S. House of Representatives, House Committee on Agriculture, Establishment of Agricultural Experiment Stations in Alaska, Report no. 880, 53rd Congress, 2d session, May 1894, 5.

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55. *Congressional Record*, Vol. 52, 63rd Congress, 3rd session, February-March 4, 1915, 4544.

56. U.S. Dept. of Ag., State Agricultural Experiment Stations: A History of Research Policy and Procedure, 1962, H.C. Knoblauch et al., Misc. Pub. no. 904 (Washington, D.C.: GPO, 1962), 86.

57. Morgan B. Sherwood, *Exploration of Alaska: 1865-1900* (Fairbanks: University of Alaska Press, 1992), 171-172.

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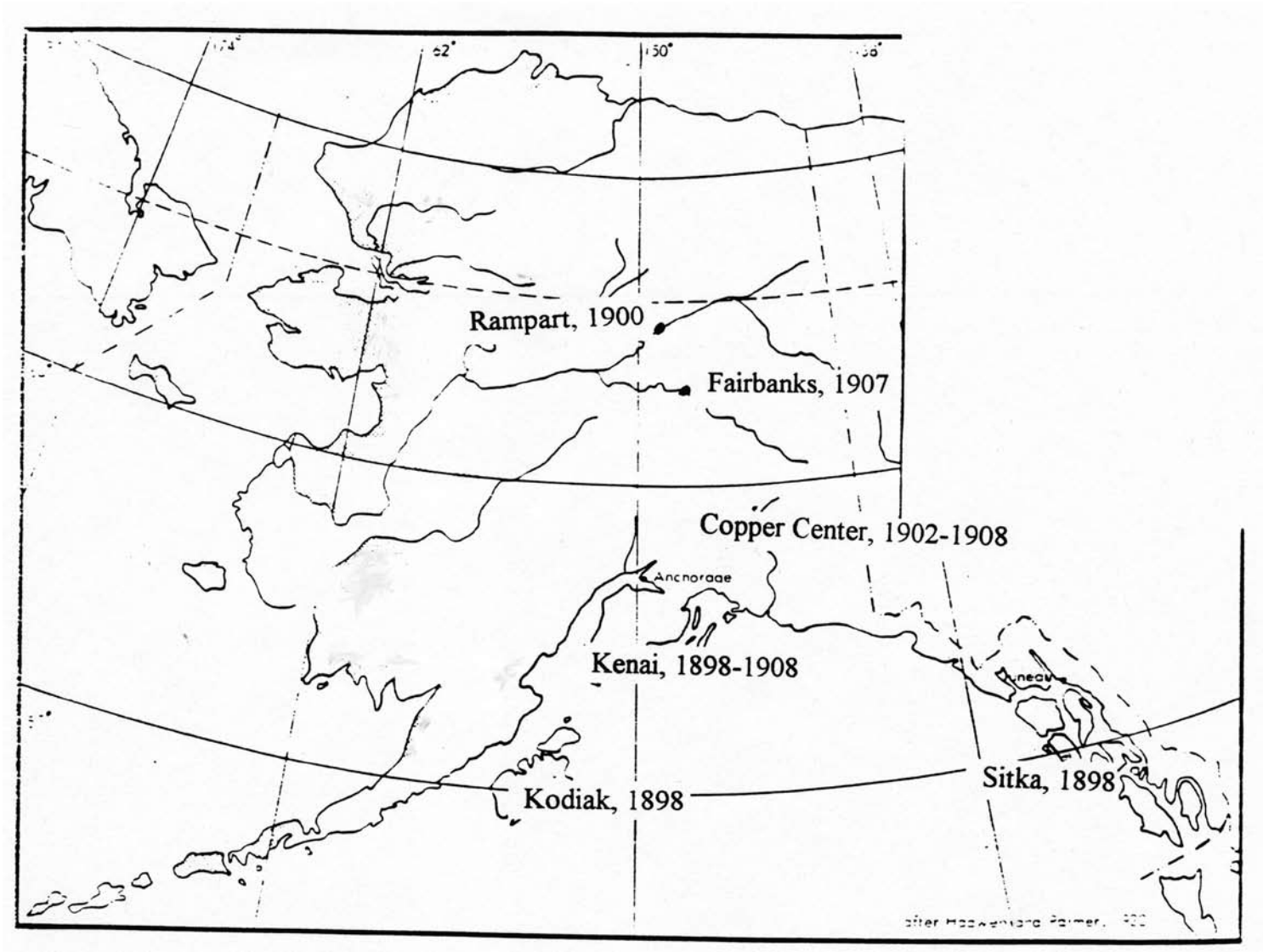
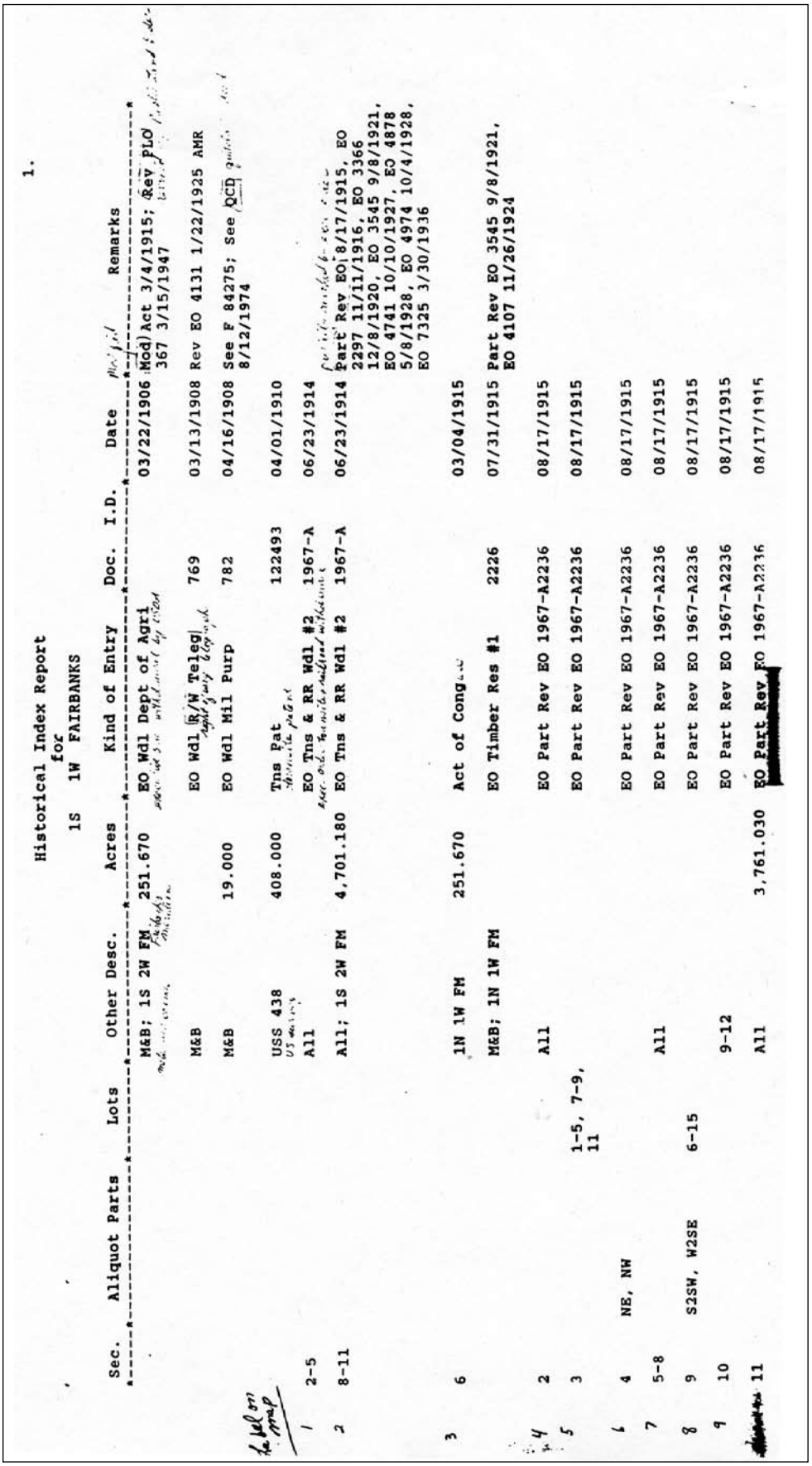
Appendix A: Locations of Alaska Agricultural Experiment Stations 1898-1915



Appendix B: Homestead Plats of Fairbanks and Vicinity, available records up to 1915

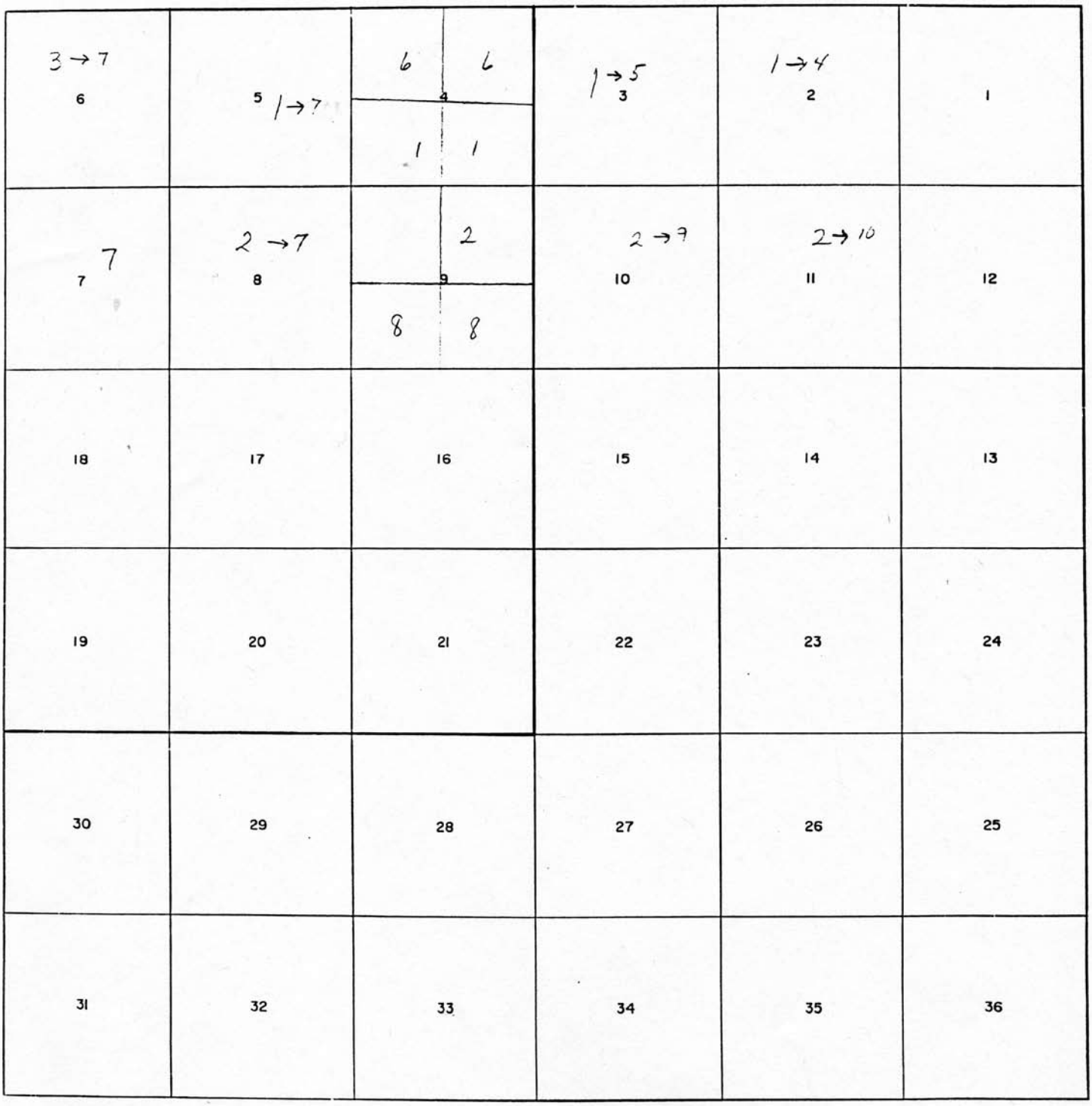


Historical Index Report
for
1S 1W FAIRBANKS

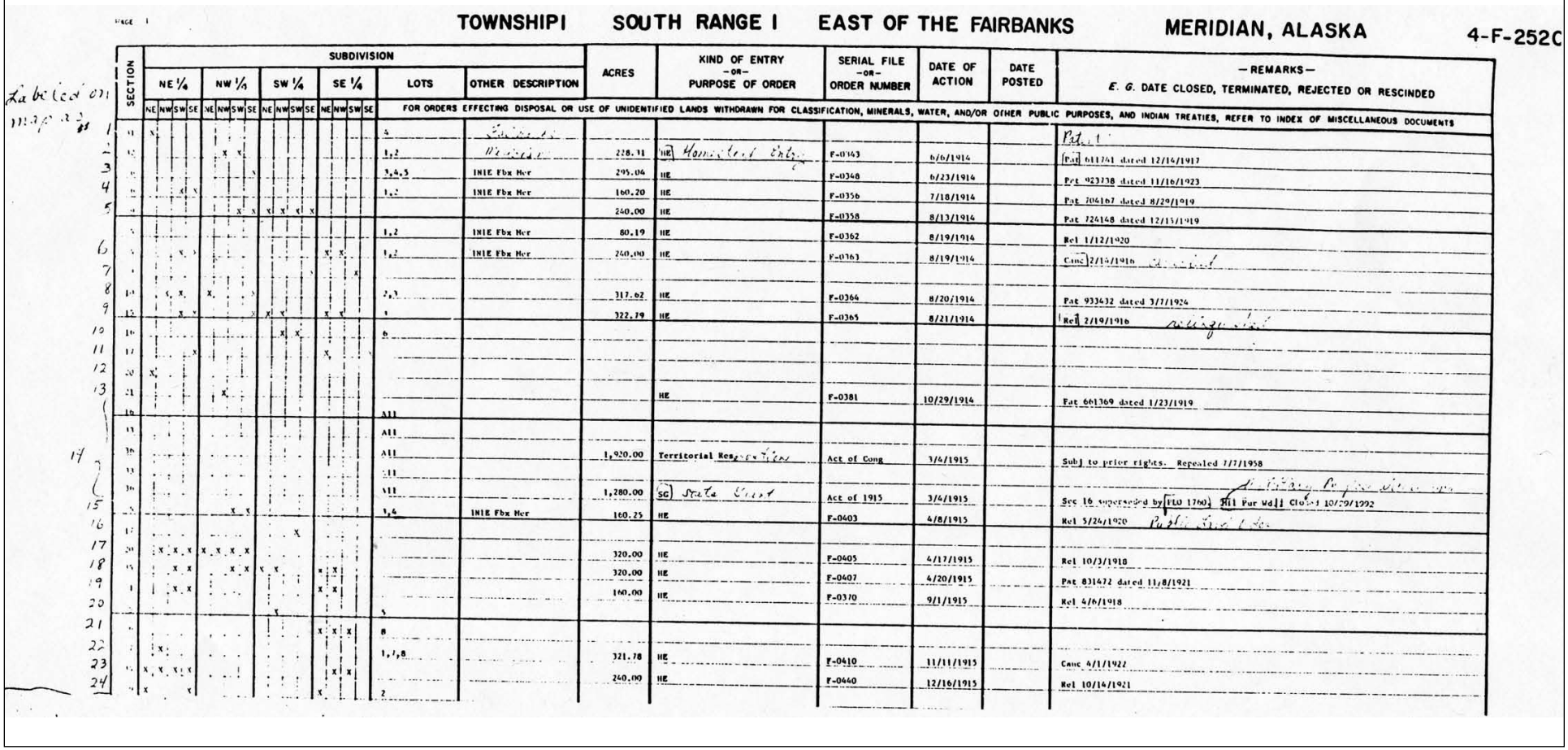
1.

Sec.	Aliquot Parts	Lots	Other Desc.	Acres	Kind of Entry	Doc.	I.D.	Date	Remarks
			M&B; 1S 2W FM	251.670	EO Wdl Dept of Agri			03/22/1906	Mod Act 3/4/1915; Rev PLO 367 3/15/1947
1	2-5		M&B		EO Wdl R/W Teleg	769		03/13/1908	Rev EO 4131 1/22/1925 AMR
2	8-11		All	19.000	EO Wdl Mil Purp	782		04/16/1908	See F 84275; See OCD 8/12/1974
			USS 438	408.000	Tns Pat		122493	04/01/1910	
			All		EO Tns & RR Wdl #2		1967-A	06/23/1914	
			All; 1S 2W FM	4,701.180	EO Tns & RR Wdl #2		1967-A	06/23/1914	Part Rev EO 8/17/1915, EO 2297 11/11/1916, EO 3366 12/8/1920, EO 3545 9/8/1921, EO 4741 10/10/1927, EO 4878 5/8/1928, EO 4974 10/4/1928, EO 7325 3/30/1936
3	6		1N 1W FM	251.670	Act of Cong			03/04/1915	
			M&B; 1N 1W FM		EO Timber Res #1		2226	07/31/1915	Part Rev EO 3545 9/8/1921, EO 4107 11/26/1924
4	2		All		EO Part Rev EO 1967-A		2236	08/17/1915	
5	3		1-5, 7-9, 11		EO Part Rev EO 1967-A		2236	08/17/1915	
6	4	NE, NW			EO Part Rev EO 1967-A		2236	08/17/1915	
7	5-8		All		EO Part Rev EO 1967-A		2236	08/17/1915	
8	9	S2SW, W2SE	6-15		EO Part Rev EO 1967-A		2236	08/17/1915	
9	10		9-12		EO Part Rev EO 1967-A		2236	08/17/1915	
[redacted]	11		All	3,761.030	EO Part Rev EO 1967-A		2236	08/17/1915	

Information taken from Bureau of Land Management Status Plats, Townships IN, 1W; IN, 1E; IS, 1W; and 1S, 1E of the Fairbanks Meridian.



Township 1 South, 1 West of the Fairbanks Meridian



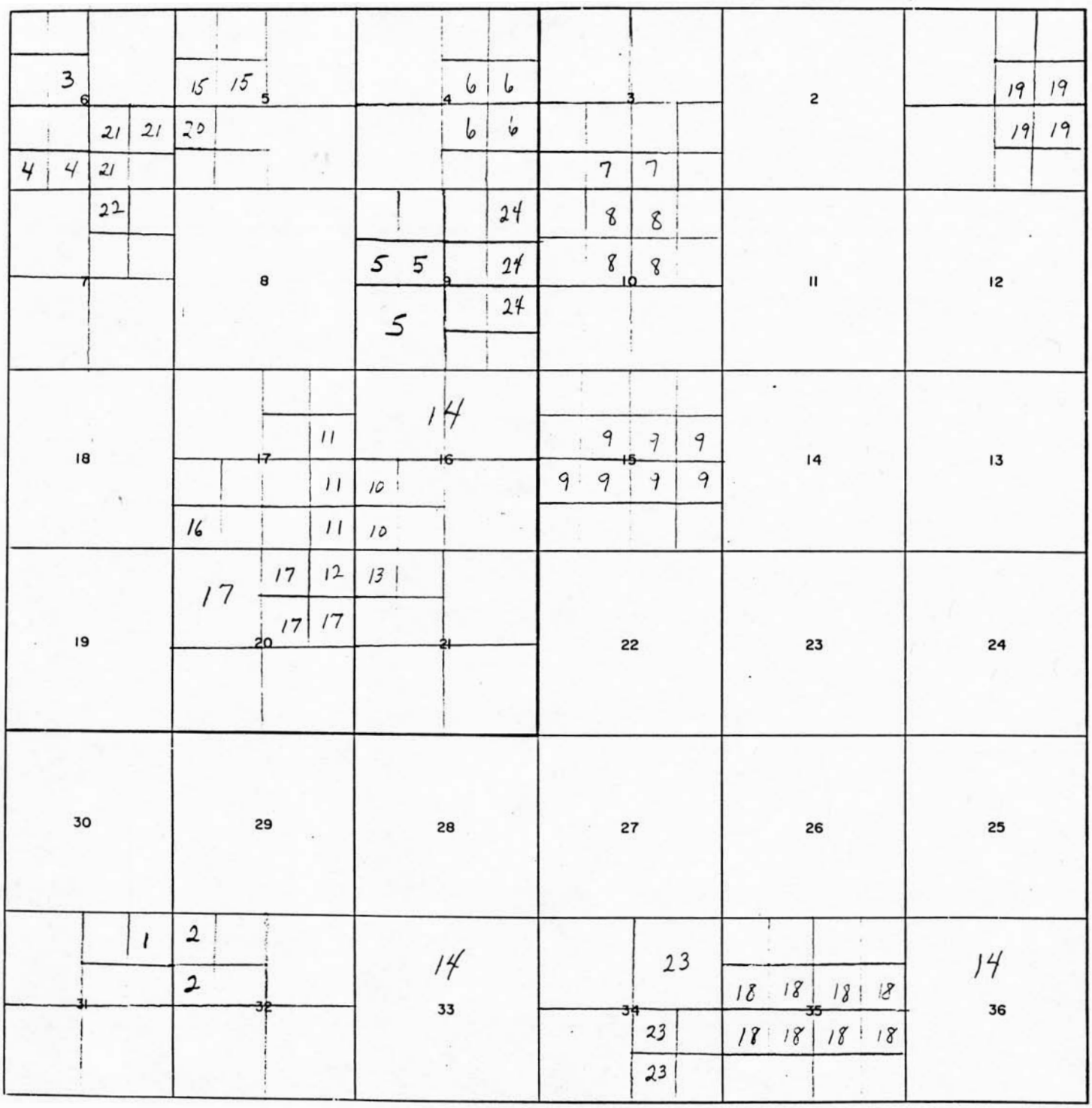
PAGE 1

TOWNSHIP 1 SOUTH RANGE 1 EAST OF THE FAIRBANKS MERIDIAN, ALASKA

4-F-2520

Labeled on map 3-2-88

SECTION	SUBDIVISION NE¼	NW¼	SW¼	SE¼	LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY –OR– PURPOSE OF ORDER	SERIAL FILE –OR– ORDER NUMBER	DATE OF ACTION	DATE POSTED	–REMARKS– E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS											
1					4							Pat 1
2					1,2		228.31	HE Homestead Entry	F-0343	6/6/1914		Pat 611741 dated 12/14/1917
3					3,4,5	INIE Fbx Mer	295.06	HE	F-0348	6/23/1914		Pat 923738 dated 11/16/1923
4					1,2	INIE Fbx Mer	160.20	HE	F-0356	7/18/1914		Pat 704167 dated 8/29/1919
5							240.00	HE	F-0358	8/13/1914		Pat 724148 dated 12/15/1919
6					1,2	INIE Fbx Mer	80.19	HE	F-0362	8/19/1914		Rel 1/12/1920
7					1,2	INIE Fbx Mer	240.00	HE	F-0363	8/19/1914		Canc 2/14/1916
8												
9					2,3		317.62	HE	F-0364	8/20/1914		Pat 933432 dated 3/7/1924
10					1		322.79	HE	F-0365	8/21/1914		Rel 2/19/1916
11					6							
12												
13												
14								HE	F-0381	10/29/1914		Pat 661369 dated 1/23/1919
15					All							
16					All							
17					All		1,920.00	Territorial Reservation	Act of Cong	3/4/1915		Subj to prior rights. Repealed 7/7/1958
18					All							
19					All		1,280.00	SG State Grant	Act of 1915	3/4/1915		Sec 16 superseded by PLO 1760; Mil Res Wdl Closed 10/29/1992
20					3,4	INIE Fbx Mer	160.25	HE	F-0403	4/8/1915		Rel 5/24/1920
21												
22							320.00	HE	F-0405	4/17/1915		Rel 10/3/1918
23							320.00	HE	F-0407	4/20/1915		Pat 831472 dated 11/8/1921
24							160.00	HE	F-0370	9/1/1915		Rel 4/6/1918
25												
26												
27					1,2,8		321.78	HE	F-0410	11/11/1915		Canc 4/1/1922
28					2		240.00	HE	F-0440	12/16/1915		Rel 10/14/1921



Township 1 South, 1 East of the Fairbanks Meridian

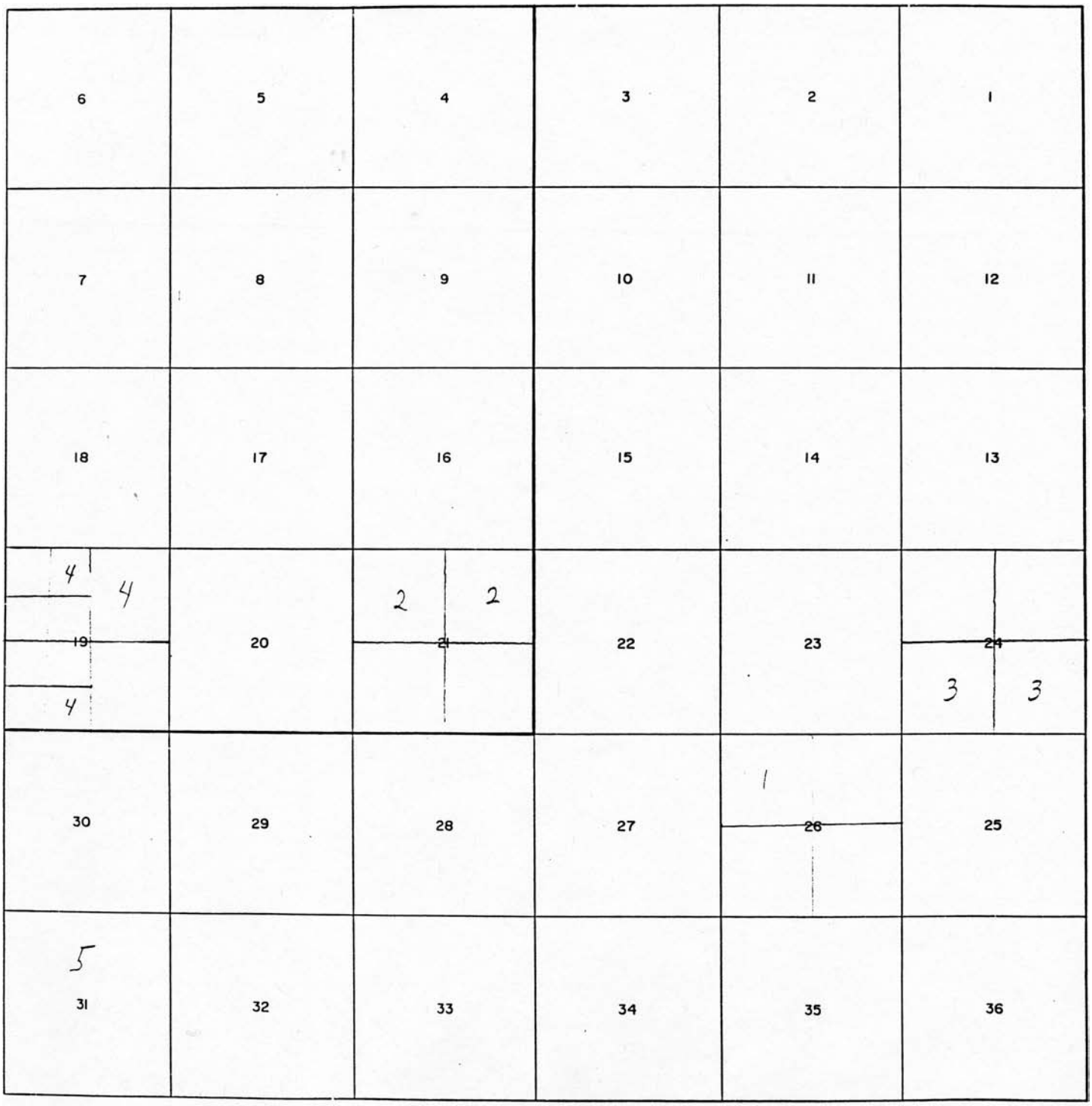
Historical Index Report
for
1N 1W FAIRBANKS

Labeled on map	Sec.	Aliquot Parts	Lots	Other Desc.	Acres	Kind of Entry	Doc. I.D.	Date	Remarks
				(M&B) See Rmks	1,300.000	EO Wdl Dept Agri		03/22/1906	Other Tps; 1S 1W, 1S 2W, 1N 2W FM; Mod 3/4/1915; Rev PLO 367 5/15/1947
1	26	NW			160.000	HE	F 0378	10/15/1914	Canc 12/4/1917
2	21	NE, NW			320.000	HE	F 0368	11/24/1914	Closed 1/13/1920
3	24	SW, SE			320.000	HE	F 0379	12/31/1914	Rel 6/8/1916
4	19	NE, NENW, SESW			317.350	HE	F 0390	12/31/1914	Rel 6/8/1916
5	31			M&B; See Rmks	1,300.000	Territorial Reservation		03/04/1915	Other Tps; 1S 1W, 1S 2W, 1N 2W Fm; Act of Congress
				MS 808	39.850	ME Pat	483948	07/26/1915	See F 0305
				M&B; See Rmks		EO Timber Res #1	2226	07/31/1915	Other Tps; 1N 2W, 1S 1-4W, 2S 4W, 1,2S 5W, 2,3,12-17S 6W, 2-7,10-17S 7W, 3-14,17,18S 8W, 6-11,18S 9W FM; Rev EO 4107 11/26/1924
				MS 822	71.040	ME Pat	490552	09/20/1915	See F 0322

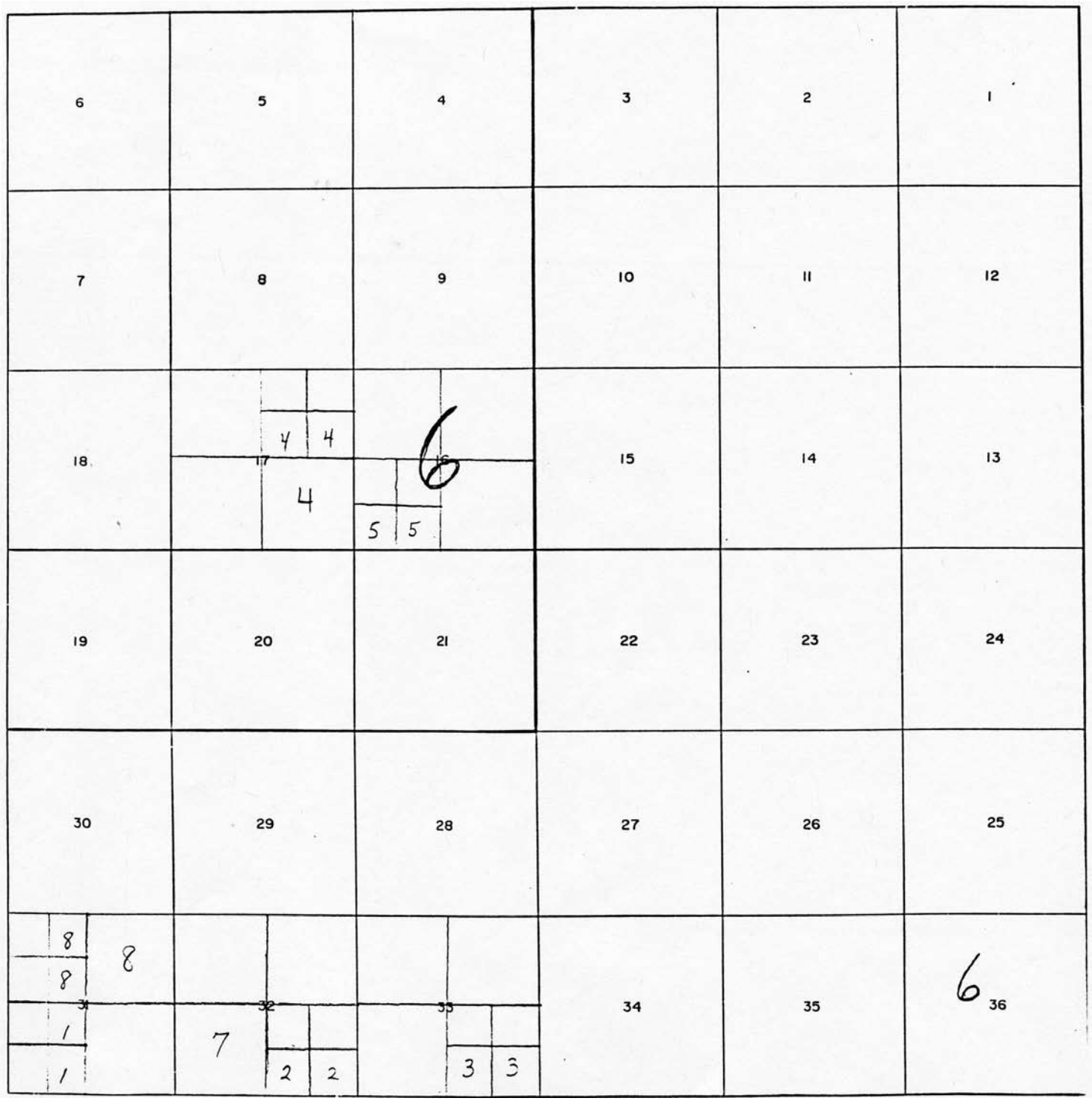
PAGE 1

TOWNSHIP 1 NORTH RANGE 1 EAST OF THE FAIRBANKS MERIDIAN, ALASKA

SECTION	SUBDIVISION NE¼	NW¼	SW¼	SE¼	LOTS	OTHER DESCRIPTION	ACRES	KIND OF ENTRY —OR— PURPOSE OF ORDER	SERIAL FILE —OR— ORDER NUMBER	DATE OF ACTION	DATE POSTED	—REMARKS— E. G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE NW SW SE	NE NW SW SE	NE NW SW SE	NE NW SW SE	FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION, MINERALS, WATER, AND/OR OTHER PUBLIC PURPOSES, AND INDIAN TREATIES, REFER TO INDEX OF MISCELLANEOUS DOCUMENTS							
31			x	x	3,4	1S 1E Fbx Mer	295.04	ME Homestead Entry	F-0348	6/23/1914		See Pat 923738 dated 11/16/1923
32						1S 1E Fbx Mer	80.00	HE	F-0362	8/19/1914		Rel 1/12/1920
33						1S 1E Fbx Mer	80.00	HE	F-0363	8/19/1914		Canc 2/14/1916
17		x	x									
16							320.00	HE	F-0375	10/13/1914		Rel 12/28/1916
16						All						
36						All		Territorial Res	Act of Cong	3/4/1915		Upon approval of survey, subject to prior rights. Repealed 7/7/1958
						MS 803 2N 1E Fbx Mer	26.77	ME Pat	464302	3/22/1915		See F 0XO
32			x	x		1S 1E Fbx Mer	160.00	HE	F-0403	4/8/1915		Rel 5/24/1920
31	x	x	x	x	1,2		319.13	HE	F-0400	9/17/1915		Rel 5/1/1923



Township 1 North, 1 West of the Fairbanks Meridian



Township 1 North, 1 East of the Fairbanks Meridian

Appendix C: Photographs of the Fairbanks Experiment Station, various years

Taken from annual reports of the Fairbanks station and the University of Alaska Archives, Experiment Station Collection. Two photographs in the original thesis were unavailable for reprint:

1. Building Site and Character of Timber, Fairbanks Station. Figure 1 in U.S. Department of Agriculture, *Annual Report of Alaska Agricultureal Experiment Stations for 1908*, C.C. Georgeson (Washington, D.C.: GPO, 1909), 44.

2. Photograph of the Tanana Valley Railroad Fairbanks station junction. The caption on the photo reads: "Junction of Tanana Valley R.R. Fairbanks Station. The main line joins the Fairbanks-Chena line beyond the little platform to the left. The horses belong to the station." Agricultural Experiment Station Photo Collection, UAF Rasmuson Library Archives, Accession number unknown.

Appendix D: Annual Crops Reports of the Fairbanks Experiment Station, 1908–1915

Taken from the annual reports of the Fairbanks Experiment Station, 1908–1915. Specific references can be found at the end of each report.

Fairbanks Agricultural Experiment Station Yearly Crop Results - 1908

Weather for the 1908 season: Late Spring, favorable summer, satisfactory results. Aug. 31 heavy frost and a killing frost on Sept. 8.

VEGETABLES	
POTATOES	Stand exceptionally good
CABBAGE	Unsuccessful
TURNIPS	
Purple Tops	Very small roots, fair sized on ash spots, evidence of root maggot
Petrowski	Very small roots, fair sized on ash spots
GRAIN CROPS	
BARLEY	
Barley No. 386	Good bottom growth, heads set no grain
Chevalier barley No. 10584	Did not germinate
Manshury Barley (MN No. 6)	6-40" in height, all seedlings matured to harvest by Aug. 15
Barley No. 279	All seedlings matured to harvest by Aug. 15, ranked first in ripening
Hanna Barley No. 5793	8-24" in height, Harvested Aug. 25
Manshury Barley from	ND Ready to harvest Aug. 25, small percent ripe enough for seed
Hull-less Barley No. 12709	Straw golden by Aug. 15, mature by Aug. 25
Princess Bailey No. 10583	Did not germinate
Hull-less Barley No. 19851	18-36" in height, harvestable by Aug. 15, ranked third in ripening
Beardless Barley No. 19852	Small percent germinated
OATS	
Probsteier No. 20461	15-46" in height, grain in the dough by Aug. 31
No. 19851	8-12" in height, straw ripening by Aug. 15

Swedish White No. 18245	12-36" in height, near mature Aug. 31 (frost death)
Black Oats No. 20463	Grain in the milk by Aug. 15, none matured
Hvitling No. 20458	Grain in the milk by Aug. 15, no seed matured
Belyak No. 10624	Grain in the milk by Aug. 15, no seed matured
North Finnish	36-60" in height, all of first seeding and portion of second matured
No. 20459	24-40 in height, all of 1st seeding and portion of second matured
Black No. 20464	8-34" in height, no seed matured
Golden No. 20460	8-44" in height, first seeding matured fair seed
White Probsteier No. 20462	8-34" in height, no seeds matured
Sixty Day	15-36" in height, seed matured by Aug. 25
WHEAT	
Red Fife	6-20" in height, very fine and wiry, no seed matured
Durum	Grain in the milk by Aug. 15, and straw turning
Black Winter Emmer No. 19235	Growth slow, hardly made sufficient start to live through winter
RYE	
No. 280	36-46" in height, harvested Sept. 3, seed fairly well matured
Swedish Winter No. 19556	Excellent bottom growth

Source: *Annual Report of Alaska Agricultural Experiment Stations for 1908*, C.C. Georgeson (Washington, D.C.: 1909), 43-45.

Fairbanks Agricultural Experiment Station Yearly Crop Results - 1909

Weather for 1909 Season: Season opened favorably, then dry until late summer, followed by frequent light rains, killing frost Sept. 16.

VEGETABLES	No direct experiments for garden crops, harvest good in general
POTATOES	YIELD IN LBS/FT OF PLANTED ROW, TUBER SIZE
Garfield	.71, medium to small
Norway No. 2	.71, medium to small
Early Ohio	.78, medium to large
Burbank	.66, medium
Early Harvest	.66, medium to small
Russian Stock	.57, very small
Lincoln	.69, medium
White Mammoth	.75, large
Extra Early Triumph	.68, medium to small
Snowflake Jr.	.75, medium to large
Bovee	.53, medium to small
Extra Early	1, medium
Hamilton	1, medium
Norway No. 1	.81, medium

Vornehm	.6, medium to small
Vigorosa	.94, medium to large
Ohio Jr.	.62, medium
Freeman	1.1, medium to large
Early Michigan	.75, medium to small
Commercial Var., fifth-year native	.78, medium to large
Early Market	medium
Red River White Ohio	.6, medium
White Beauty	.71, medium
Burpee Early	.58, medium to small
Carman No. 3	.77, medium
Extra Early Pioneer	.97, large
Irish Cobbler, from Sitka 1907 crop	.85, medium to small
Norway No. 3	.57, medium to very small
Irish Cobbler, from Eagle 1907 crop	.85, medium to large
Extra Early Ohio	1.4, medium to large
Banner	1, large
Eureka	.8, medium to large
WINTER GRAIN CROPS	
WHEAT	
Winter Wheat	24-36" in height, ripe by Sept. 1, 3" heads
Romanow Wheat	30-40" in height, nearly all ripe by Sept. 1, good-sized heads
RYE	
Winter, SPI No. 19556	60" in height, grain hardened and thoroughly matured by Aug. 19
Winter, SPI No. 11268	All winterkilled
BARLEY	
Tennessee GI No. 386	20-30" in height, very poor stand wintered, mature by Aug. 1
EMMER	30-40" in height 50 percent winter die-off, no seed production
SPRING GRAIN CROPS	
OATS	
American Banner	24-36" in height, grain well matured by Sept. 1
North Finnish	30-36" in height, grain well matured by Sept. 1
SPI No. 20464	30" in height, grain matured, some smut present
SPI No. 20460	30" in height, well matured by Sept. 1
SPI No. 10624	30-36" in height, mature Sept. 10
SPI No. 20458	30" in height, mature Sept. 5
Sixty-Day	24-30" in height, mature Aug. 25
SPI No. 20463	30-32" in height, Sept. 1 grain matured
SPI No. 20462	30-36" in height, Sept. 10 grain mature, considerable smut present

SPI No. 18245	30-36" in height, half of crop matured
SPI No. 20459	24-30" in height, most of the cro matured, some smut
SPI No. 20461	24-36" in height, most of crop mature by Sept. 10
BARLEY	
No. 279	24-30" in height, mature enough to harvest for seed
Hanna, SPI No. 5793	24-36" in height, Sept. 1 grain mature
Manshury	36" in height, Sept. I grain well mature
Naked	18-30" in height, Sept. 10 crop mature
Beardless	18-24" in height, much of the crop did not mature
Hull-Less SPI No. 12709	20-30" in height, Sept. 10 all well mature
WHEAT	
Wild Goose	40-42" in height, nearly mature when frost damaged on Sept. 16
Durum	30-36" in height, nearly mature when frost damaged on Sept. 16
Red Fife	30-36" in height, nearly mature when frost damaged on Sept. 16
Selected Red Fife	30-36" in height, nearly mature when frost damaged on Sept. 16
Romanow Spring	24-36" in height, few heads mature, frost damaged on Sept. 16
Buck Wheat	18-30" in height, few grains mature, frost of Aug. 25 killed crop
RYE	
G. I. 280	36-40" in height, Aug. 25 ripe enough to harvest for seed
Spring	18-30" in height, matured Sept. 1

PEDIGREE GRAINS FROM COPPER CENTER STATION

WHEAT	All failed to germinate
OATS	
Volunteer B	Few heads nearly mature Sept. 16 when frost damaged
Volunteer Black A	Ripened by Sept. 1
Finnish Black D	Few heads mature by Sept. 1
SPI No. 15857	Few heads mature by Sept. 1
White Finnish Black B	Ripe by Sept. 1
SPI No. 10624	None matured
Minnesota Wild A	One head ripened
BARLEY	
Semi Beardless B	Few heads nearly mature Sept. 16 when frost damaged
Yakutsk B	Few heads nearly mature Sept. 16 when frost damaged
L Sport of Giant Head B	Grain nearly mature Sept. 10
Hull-less Black B	Few heads mature Sept. 15
Hybrid Pamir & Champion A	Barely matured Sept. 15, escaped heavy frost
Chittyna B	Almost mature when damaged by frost on Sept. 16
Russian No. 20786	Mature Sept. 5
Swedish Select A	Sept. 10, ripened fair grain

SPI No. 12709	Barely mature by Sept. 15
Yakutsh A	Barely mature by Sept. 15
Hybrid No. 3A (Pamir Champion)	None matured
Pamir B	Barely matured Sept. 15, escaped heavy frost
Hybrid No. 1A (Pamir Champion Lucille A)	None matured
Hybrid No. 2A (Pamir Champion Georgeson A)	Few barely matured by Sept. 15
No. 12709 B	One head matured by Sept. 16, frost damage on Sept. 16
Russian	30" in height, mature Sept. 5
GRASSES	
Alsike Clover	6-8" in height, covers ground thickly
Orchard Grass	12-16" in height, covers ground thickly
Timothy	20" in height
Meadow Fescue	Fair growth and an excellent stand
Grimm Alfalfa	6-10 in height
Sand Lucern	6-10" in height
Medicago falcata	6-10" in height
Montana Alfalfa	6-10" in height
Vicia cracca	None came up
Alopecurus pratensis	6 in height and a good stand
Agropyron tenerum	8" in height and a fair stand
Poa, Native A	Little growth, poor stand
Black Top Grass (1908 test)	None came up
Agropyron pseudo-repens	6" in height, poor stand

Source: *Annual Report of Alaska Agricultural Experiment Stations for 1909*, C.C. Georgeson (Washington, D.C.: 1910), 51-57.

Fairbanks Agricultural Experiment Station Yearly Crop Results - 1910

Weather for 1910 Season: Snow gone May 1, favorable May and June, dry and cold until Aug, first frost on July 31, freeze up Sept. 5.

VEGETABLES

POTATOES	Yield in bushels/bushels planted notes
Eureka	14.3 14% under marketable size
Gold Coin	12.3 very fine quality, 15% under market size
Red Early Ohio	10 10% below market size

GRAIN CROPS

OATS	
North Finnish Black	50-60" in height ripe Sept. 5 one of the best for the country
637	50-60" in height, matured a little earlier than North Finnish

Sixty Day	30-36" in height, excellent stand, good hay
BARLEY	
Hannah No. 279	4" in height, very good stand
Manshury	48-50" in height, very heavy growth, ripe Aug. 22
No. 19852	40" in height, ripe Aug. 28, heavy straw
Hannah No. 203-5793	40-44" in height, ripe Sept. 5
No. 19852	40-48" in height, poor stand due to poor seed
Selected Red Fife	48" in height, second in advancement when damaged, did not ripen
Romanow	48" in height, slightly farthest advanced, did not ripen
Wild Goose	50" in height, did not ripen, objectionably long, heavy heads
Japanese Buck Wheat	30-36" in height, earliest grains had ripened by Aug. 20 frost
RYE	
Spring	54" in height, ripe Sept. 10
WINTER GRAIN CROPS	
WHEAT	
Karkov No. 12001	36" in height, ripe July 1
RYE	
Winter No. 19556	60-70" in height, ripe Aug. 10, recommended
Fall	50-60" in height, ripe Aug. 10, recommended
Fall from Manitoba	50-60" in height, ripe Aug. 10, recommended
Winter No. 11268	Did not come up, old seed
Emmer	
Black Winter No. 9235	All winterkilled
BARLEY	
Tennessee Winter	30-36" in height, 90% winterkill ripe Aug. 10
GRASSES	
Timothy	Too little growth to be of any profit
Alsike Clover	8" in growth, blossomed and matured some seed
Alpecurus pratensis	Little growth, few stems
Agropyron tenerum	Little growth, few stems
Agropyron pseudo-repens	Little growth, few stems
Festuca elatior	Little growth, few stems
Poa pratensis	Died
Dactylis glomerata No. 20470	Died out
Alfalfa SPI No. 23454	Died out
Sand Lucern SPI No. 21269	Died out
Alfalfa SPI 24452	Alive, little growth
Grimm Alfalfa	Alive, little growth

Source: *Annual Report of Alaska Agricultural Experiment Stations for 1910*, C.C. Georgeson (Washington, D.C.: 1911), 54-58.

Fairbanks Agricultural Experiment Station Yearly Crop Results - 1911

Weather for the 1911 season: Late spring, cold and wet until June, warm, dry and sunny into August, late August cold, frost Aug. 31.

POTATOES	Yield/acre in lbs.
Early Harvest	11,761
Lincoln	7,695
Garfield	13,358
Early Ohio	14,810
White Mammoth	12,051
Extra Early Triumph	15,826
Snowflake	10,164
Bovee	13,794
Extra Early	14,955
Freeman	11,616
Hamilton	11,035
Vornehm	10,164
Ohio Jr.	13,213
Early Market	10,456
Red River White Ohio	8,712
White Beauty	12,051
Burpee Early	13,358
Carman No. 3	13,358
Extra Early Pioneer	14,955
Irish Cobbler	18,876
Extra Early Ohio	10,164
Banner	10,164
Eureka	18,004
Butkees Own	18,004
Virginia	7,260
Early Michigan	10,456
Gold Coin	17,424
VEGETABLES	
Tomatoes	Fair crop of green tomatoes, most vines bore 10-12 pounds
Cabbage	8-12 lb. heads
Cauliflower	Fine as can be grown in any country
Turnips	Did very well
Rutabagas	Did very well
Carrots	Did very well
Rhubarb	Did very well

Horseradish	Did very well
Misc. hardy vegetables	Did very well
GRAINS	
BARLEY	
Hannah No. 5793	Matured good seed
Manchuria	Matured good seed
Beardless No. 19852	Matured good seed
Hull-less No. 19851	Matured good seed
OATS	
Banner	Matured good seed, 1.5 tons of fodder
Sixty Day	Matured good seed
South Dakota No. 637	Matured good seed
Finnish Black	Matured good seed, ripe Aug. 11, earliest ever
WHEAT	
Red Fife	Well advanced, would have seeded if cut and covered before frost
Romanow	Matured perfectly by Aug. 10, thin stand due to winterkill
Kharkov	Well advanced, would have seeded if cut and covered before frost
RYES	
Spring	Filled well, not fully ripe by Aug. 31 frost
Fall, two varieties	Matured perfectly by Aug. 10, thin stand due to winter kill
HAY	.83 tons per acre, many acres cropped annually for 3 years
GRASSES	No grasses cultures except for Timothy
Timothy	6-10" of growth, much of it headed
Volunteer Red Clover	Large plants, blooming in July

Source: *Annual Report of Alaska Agricultural Experiment Stations for 1911*, C.C. Georgeson (Washington, D.C.: 1912), 45-53.

Fairbanks Agricultural Experiment Station Yearly Crop Results - 1912

Weather for the 1912 season: Spring opened three weeks early, seeding May 1, early summer warm and dry, late summer too cool, light frost June 8, then on Aug. 12, severe frost Sept. 25

GRAINS	
WHEAT	
Red Fife	48" in height, ripe Sept. 10, 55 bushels! acre
Romanow	54" in height, ripe Sept. 10, 60 bushels! acre
Wild Goose	60" in height, ripe Sept. 12 or 13, 60 bushels/ acre
OATS	
Sixty Day	36" in height, ripe Aug. 10, 90 bushels! acre
Finnish	48-66" in height, ripe Aug. 15, 90 bushels! acre
Banner	42" in height, ripe Aug. 15, 100 bushels! acre

BARLEY	
Beardless No. 19852	48" in height, ripe Aug. 10, 50 bushels/acre
Hull-less No. 19851	42" in height, ripe Aug. 10, 60 pounds/acre
BUCKWHEAT	54-60" in height, 25% of grn ripened, some seed hand stripped
GRASSES	30" in height, wintered well, stems too thin
LEGUMES	
Alfalfa	24" growth, very thick, could have made light second crop
Red Clover	24" growth, red with blossoms from Aug. till cut in Sept.
Alsike Clover	24" growth, very thick
White Clover	8" growth
POTATOES	Yield in bushels/ acre
Butkee	
Irish Cobbler	423
Gold Coin	375
Eureka	345
Vornehm	314
Garfield	308
Burpee Early	302
Early Ohio	302
Freeman	302
Extra Early Pioneer	278
Snowflake	272
White Mammoth	254
Extra Early Ohio	242
Early Market	242
Bovee	206
White Beauty	194

Source: *Annual Report of Alaska Agricultural Experiment Stations for 1912*, C.C. Georgeson (Washington, D.C.: 1913), 46-53.

Fairbanks Agricultural Experiment Station Yearly Crop Results - 1913

Weather for the 1913 season: Dry and cold through May, very dry and hot through June, July hazy, wet until Aug. 27-30, 4" of snow.

SPRING GRAIN CROPS	
WHEAT	
Romanow Spring	Excellent crop, almost ripe when snow hit, 90% germination
Red Fife Spring	Excellent crop, almost ripe when snow hit, 78% germination
OATS	
60 Day	Ripe Aug. 25, new ground, thin and weedy stand
Banner	Nearly ripe when frost and snow came

Finnish Black	Would have been large yield, but dry soil and rabbit problem	
BARLEY		
Hull-less No. 19852	Good stand, poor resistance to drought	
Gray Maryle	30" in height, ripe Aug. 15, low drought resistance	
Hybrid No. 4A1	48-50" in height, almost ripe by snow, June 5 planting	
Beardless No. 19852	Thin stand, new ground and lots of fireweed	
WINTER GRAIN CROPS		
WHEAT		
Khaticov	24-30" in height, well filled heads, 66% survival	
RYE		
Winter No. 19556	68-70" in height ripe Aug. 4, long well filled heads 75% survival	
fall	68-70" in height, ripe Aug. 4, long, well filled heads, 75% survival	
NOTE: Rabbits ate a large quantity of grains.		
LEGUMES		
Alfalfa		
Common Alfalfa	Late germination uneven stand	
Obb Alfalfa	Transfer from Sitka planted Aug. 1, doubtful they will survive	
Omsk Alfalfa	Transfer from Sitka planted Aug. 1, doubtful they will survive	
Irkutsk Alfalfa	Transfer from Sitka planted Aug. 1, doubtful they will survive	
Clover		
Red	Survived winter, good stand, cut twice	
POTATOES	Rate/Acre in bushels	
	Seed sprouted	Seed Unsprouted
Burpee Early	175	140
Vornehm	140	128
Garfield	140	105
Vigerna	151	140
White Mammoth	163	128
Early Michigan	198	186
Early Market	140	163
Gold Coin	245	175
Early Ohio	175	163
Eureka	221	128
Eidlewile	198	163
Ohio Junior	175	140
White Beauty	128	70
Extra Early pioneer	175	
Irish Cobbler	210	93
Extra Early Ohio	198	163

Source: *Annual Report of Alaska Agricultural Experiment Stations for 1913*, C.C. Georgeson (Washington, D.C.: 1914), 24-37.

Fairbanks Agricultural Experiment Station Yearly Crop Results - 1914

Weather for the 1914 season: Late seeding, dry summer, two short heavy rains, cool and cloudy until Sept. 14 frost, soil froze dry.

GRAINS	
BARLEY	
Hull-less No. 19851	36" in height, 1800 lbs/acre thrashed
Gray Mayle	34" in height, ripe Aug. 15
Beardless No. 19852	48" in height, 1 acre yielded 1275 lbs of thrashed grain
Beardless No. 616	40" in height, poor yielding barley
Hybrid No. 4A-1 (Chittyna X Oderbrucker)	48-50" in height early & good yielder, both in straw and grain
OATS	
Banner	42" in height, did not mature, cut for hay
Sixty Day	Thrashed at 49 bushels per acre
Finnish Black	60-70" in height, N. Slope yield 31 bu/acre, S. Slope 93 bu/acre
Apples Rust Proof No. 339	38" in height, ripe Sept. 1
Canadian No. 444	45" in height, ready to cut Aug. 24, higher yield than sixty day
Burt No. 293	45" in height, ripe Aug. 30
Beliak	42" in height, ripe Sept. 1
SPRING RYE	
Gosselberg	50" in height, light crop with small heads and kernels, ripe Sept. 13
SPRING WHEAT	
H.G.	Sept. 5 harvest, light yield, quick maturing
Romanow	Sept. 5 harvest, specimens from barn show full and plump kernels
Ulka (Russian)	Almost ripe enough to cut when freeze came
Negro Durum (No.1138)	Almost ripe enough to cut when freeze came
Texas Red	Almost ripe enough to cut when freeze came
Early Baart	Almost ripe enough to cut when freeze came
BUCKWHEAT	crop ripened and harvested first week of Sept.
WINTER RYE	
No. 19556	Excellent fall growth, little winterkill, 1520 lbs/acre thrashed
WINTER WHEAT	
Kansas var.	Good fall growth, high winterkill, uneven ripening
LEGUMES	Old seedings died
New seedings, var. unknown	Little growth
Siberian var.	Very little growth
Red Clover	2" growth, no seed ripened
POTATOES	
Irish Cobbler	Heaviest yielder, many rough and knotty tubers
Extra Early Pioneer	Excellent quality, promises to become leading variety

Gold Coin	Did as well as Irish Cobbler, rough and knotty tubers
Burpee Early	Red skinned, good yield, cook better than white skinned
Eureka	Red skinned, good yield, cook better than white skinned
Ohio Jr.	Red skinned, good yield, cook better than white skinned
Extra Early Ohio	Red skinned, good yield, cook better than white skinned
Early Market	Historically good performer, no specific information given
TURNIPS	
Petrowski	Yielded 492 bushels per acre

Source: *Annual Report of Alaska Agricultural Experiment Stations for 1914*, C.C. Georgeson (Washington, D.C.: 1915), 42-50.

Fairbanks Agricultural Experiment Station Yearly Crop Results - 1915

Weather for the 1914 season: Ground frozen dry in 1914, severe spring freeze-thaw cycles, rains late in coming, Sept. 7 frost. Weather for the 1915 season: Best all-round season during history of station, 109 frost-free days.

GRAIN CROPS	
SPRING WHEAT	
Russian No. 36	24-30" in height, fair size and well filled heads
Russian H.G.	Yield of 42 bu/acre, seems well suited for conditions at station
Romanow	40-44" in height, harvestable Aug. 10, 43 bu/acre
Marquis	48" in height, good straw, grain is of good milling quality
BUCKWHEAT	rapid growth, good yield
BARLEY	
Hull-less No. 19851	Ripe July 28, shorter than normal with small heads, 1825 lbs/acre
Beardless No. 19852	18-21" in height, S. Slope yield 30 bu/acre, N. Slope 20 bu/acre
Hybrid No. 4A1 (Chittyna X Oderbrucker)	Vigorous growth, heavy straw and grain yield, some bearded
OATS	
Canadian	40" in height, ripe Aug. 10, heavy yield of grain
Sixty Day	Ripe July 30, Short growth with small heads, 40 bu/acre
Finnish Black	Regular and poor growth on S. Slopes, fair growth on flat land
RYE	
Gosselberg Spring	Slow and irregular maturity
WINTER GRAINS	
WHEAT	
Pullman Hybrid No. 128	Good fall growth, winterkilled
Wisconsin Pedigree No. 2	Good fall growth, winterkilled
Pullman Red Russian	Good fall growth, winterkilled
Wisconsin Pedigree No. 22	Good fall growth, winterkilled
Bluestem	Good fall growth, winterkilled

Pullman Hybrid No. 143	Good fall growth, winterkilled
Pullman Winter Fife	Good fall growth, winterkilled
Pullman Fortyfold	Good fall growth, winterkilled
Kharkov	Wintered fair stand, killed by spring freeze-thaw cycles
Wisconsin Pedigree No. 2	Wintered fair stand, killed by spring freeze-thaw cycles
Pullman Turkey Red	Wintered fair stand, killed by spring freeze-thaw cycles
Beloglina	Wintered fair stand, killed by spring freeze-thaw cycles
RYES	
No. 19556	Ripened small amount of inferior seed
Fall	Ripened smaller amount of inferior seed
Wisconsin Pedigree No. 2	Badly killed by freeze-thaw, reseeded with spring grain
Wisconsin Pedigree No. 3	Badly killed by freeze-thaw, reseeded with spring grain
ALFALFA	1914 seedlings were killed, except Siberian varieties
North Swedish	18-20" growth, spreading or bushy tops, no seed matured
Hansen's Cherno alfalfa	24" of spreading growth, no seed ripened 00
Hansen's Cossack alfalfa	Spreading growth of 18 to 24, some seed set but none matured.
Hansen's Semipalatinsk alfalfa	Spreading growth, set considerable quantity of seed, none ripened
New seedings	Very thin early stand
Grimm alfalfa No. 162	Heavy top growth, well filled seed pods but did not ripen
Pioneer Strain alfalfa	Heavy top growth, well filled seed pods but did not ripen
Disco alfalfa No. 28	Heavy top growth, well filled seed pods but did not ripen
Grimm's Coin Holder alfalfa	Heavy top growth, well filled seed pods but did not ripen
Orenburg common alfalfa	Very fair growth, few blossoms, no seed pods
Glenheim White Blossom	Very fair growth, few blossoms (no white), no seed pods
Hardy Grimm alfalfa	Very fair growth, no blossoms observed
CLOVER	
Red	Grew very rapidly, seed nearly matured, not cured for seed
TURNIPS	
Petrowski	150 bushels planted yielded 260 lbs of seed
Petrowski (seed)	250 bushels of select turnips
POTATOES	Yield lbs/foot planted
Gold Coin	0.87
Extra Early Ohio	0.45
Eureka	0.75
Ohio Junior	0.56
Irish Cobbler	0.73
Burpee's Early	0.66
Michigan Early	0.56
Alaska Beauty	0.5

Eidlewile	0.64
Noroton Beauty	0.63
Vornehm	0.49
Beauty of Hebron	0.74
Vigerna	1.43
Early Market	0.58
Extra Early Pioneer	0.64

Source: *Annual Report of Alaska Agricultural Experiment Stations for 1915*, C.C. Georgeson (Washington, D.C.: 1916), 42-54.

About the Agricultural and Forestry Experiment Station

The federal Hatch Act of 1887 authorized establishment of agricultural experiment stations in the U.S. and its territories to provide sicence-based research information to farmers. There are agricultural experiment stations in each of the 50 states, Puerto Rico, and Guam. All are part of the land-grant college system. The Morrill Act established the land-grant colleges in 1862. While the experiment stations perform agricultural research, the land-grant colleges provide education in the science and economics of agriculture.

The first experiment station in Alaska was established in Sitka in 1898. Subsequent stations were opened at Kodiak, Kenai, Rampart, Copper Center, Fairbanks, and Matanuska. The latter two remain. None were originally part of the Alaska land-grant college system. The Alaska Agricultural College and School of Mines was established by the Morrill Act in 1922. It became the University of Alaska in 1935. The Fairbanks and Matanuska stations now form the Agricultural and Forestry Experiment Station of the University of Alaska Fairbanks, which also includes the Palmer Research Center.

Early experiment station researchers developed adapted cultivars of grains, grasses, potatoes, and berries, and introduced many vegetable cultivars appropriate to Alaska. Animal and poultry management was also important. This work continues, as does research in soils and revegetation, forest ecology and management, and rural and economic development. Change has been constant as the Agricultural and Forestry Experiment Station continues to bring state-of-the-art research information to its clientele.

Agricultural and Forestry Experiment Station

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