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Log Driving on the West Branch of the Penobscot River:

An addendum to Alfred Hempstead's Book

*The Penobscot Boom and The Development of the West Branch of The Penobscot River for Log
Driving*

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Log Driving on the West Branch of the Penobscot River: An addendum to Alfred Hempstead's Book, *The Penobscot Boom and The Development of the West Branch of The Penobscot River for Log Driving*

Alfred Hempstead's late 1920's research on logging on the West Branch of the Penobscot and its tributaries resulted in his publication of *The Penobscot Boom and The Development of the West Branch of The Penobscot River for Log Driving* in 1930. No other publication containing such a collection of information preceded his work and none have been printed since.

Hempstead's research, which is frequently cited, focused on determining when logging began on the river and each of its main tributaries, how loggers worked in cooperation with each other, and what they needed for infrastructure for the drives. In some situations Hempstead made calculated guesses about when something took place, in others he shared what he could find, and in several he simply acknowledged he could not find the information for which he was looking. Hempstead did not have resources such as the index to Maine Legislative Acts and Resolves, computer word searches for newspaper archives and other printed matter, online census type data, the indexed collections at the Maine State Archives, and logging families' personal papers that have been collected by historical societies and libraries around the State of Maine. These sources lead to answers of some of Hempstead's questions, more information about some of the tributaries he mentions, and clarification of particular events.

When did logging and river driving on the West Branch and its different tributaries first begin? Hempstead cited 1828 for when loggers cut near the site of East Millinocket a short distance from the mouth of the West Branch at Medway.¹ Three years earlier two different surveyors, Joseph Norris and James Irish, each working independently on boundary lines for

Township 3 Indian (T3IND) and Township 4 Indian (T4IND), found a pile of logs cut the previous winter (1824) not far up Nollesemic Stream.² Irish spent the night at the Freeze camp on Nollesemic Pond (Shad Pond).³ Perhaps the Freeze logging camp was that of Isaac, Jeremiah M. and William Freeze, who were from Argyle, Maine and among those cutting in 1828. Whether or not the Freezes' cut the pile of logs found by the surveyors is speculative.

Another early nearby logger on the river cited by Hempstead was Tom Fowler and his family who were on the south side of the river at the head of Nollesemic Pond in 1833.⁴ The date was actually early spring 1829.⁵ In 1837 or 1838 the family moved up Millinocket Stream to the ancient carry that went to the foot of Quakish Lake. Loggers were using this route to bypass a few miles of rugged rapids on the West Branch and the Fowlers took advantage of it by developing a portage service.

Loggers slowly worked their way up along the edges of the West Branch. The Kelsey 1832 survey of Township 2 Range 9, which includes the West Branch between the foot of Debsconeag Deadwater and the head of Pockwockamous Deadwater, indicated that loggers had not yet cut the fine timber at the southwest edge of the township.⁶ Some were cutting on the shores of South Twin, North Twin and Pemadumcook Lakes by 1835. J.W. Bailey's party ate lunch in 1836 at a Pemadumcook Lake logging camp of the previous season.⁷ By 1835 Robert Gibson's loggers had reached Nesowadnehunk Stream and logged in this river section for at least a couple years. In 1836 Isaac Small, hired by the landowners of T3IND and the northern half of T4IND, assessed the timber in each square mile of the townships and found no logging away from the waterway between the outlet of Quakish Lake and the head of North Twin Lake.⁸

Robert Gibson cleared land and built a farm that was of interest to Hempstead, but he lamented not being able to find information about it.⁹ The 80 acre farm was on the large flat

interval on the north side of the river about half way between Abol and Nesowadnehunk Streams. In August 1836 J.W. Bailey found oxen grazing on the wild grasses on an island below Abol Falls. Nearby he ran into Gibson's men going to cut wild meadow hay for crews that would be cutting up on the Nesowadnehunk. Blake traveling in the same year by foot to Katahdin stopped at the farm and spent the night with the two men.¹⁰ The log camp was still standing, but vacated when Thoreau came to climb Katahdin in 1846.¹¹ When the Yorks built their camp on the same interval in 1945 the nature of the land still suggested it was once a field. The farm had a root cellar, the only remaining artifact the Yorks have ever found.¹²

For early loggers such farms were vital in providing winter foodstuffs for men and animals. In these early years the supply line from the south, the Nahmakanta Tote Road from Brownville to South Twin Lake, was just developing. When Gibson's men came in to log they brought everything they needed for the logging season. In preparation for a season a few of his men went in to cut and store wild hay and to grow crops that they stored in root cellars. Gibson abandoned the farm when he finished logging in the area. Some farms opened and closed with different lumbermen using them, but whether or not that happened with this farm is unknown.

While crews were working their way up river to Ripogenous Lake others began to come to it from the west and start cutting around Ripogenous, Caribou and Chesuncook Lakes.¹³ In the winter of 1830 Nicholas (Nick) G. Norcross, a 25-year-old lumberman from Bangor, was one of earliest, if not the first, to cut upriver from Ripogenous Gorge, but his route to the lake is unknown.¹⁴ He may have been the first developer of the Ripogenous Lake farm that Blake found (1836). At the time it had a large log cabin and two men were raising hay and supplies for the next season's loggers. A year later Hodges found the same farm, but loggers still did not have a developed tote road or carry from Ripogenous Lake to the foot of Ripogenous Gorge.¹⁵ He

discovered an abandoned logging camp at about the carry's midpoint and that a fire had burned the area. In fall 1841 two men were still tending the farm. By 1856 when Henry Bowditch and his party found the farm loggers had abandoned its 100 cleared acres with five or six barns and a substantial house.¹⁶ The abandonment reflected the by now well-developed tote road system which allowed for regular delivery of supplies throughout the cutting and yarding seasons, and for the drives. The two key roads serving this area were the Chamberlain Lake and the Caribou Lake Tote Roads from Brownville. Three of the four buildings were still standing in 1870, but near collapse. Fanny Hardy Eckstorm, who came by the old farm in 1889, could never find anyone who knew either the person who built or those who used it.¹⁷

The number of logging crews grew and the lumbermen soon realized that the volume of cut logs was such that to successfully drive them all to Bangor on the available water they needed to begin cooperating. Hempstead cited the cooperative efforts as starting with the West Branch Boom Company of 1835 that gave way in 1846 to the Penobscot Log Driving Company that successfully took over the drives for the next 55 years. As Hempstead noted the West Branch Boom Company built the first Ambejeus Lake boom house in 1835.¹⁸ While he did not describe its location, his wording elsewhere reveals that Great Northern Paper Company (GNP) built the current boom house in 1907 and that "Davenport gives a detailed picture of the log boom house here in 1865."¹⁹ The wording suggests Hempstead may not have realized the 1865 location, which is what it was in 1835, was different from that of 1907. The first boom house was on the lake's west side near the outlet into the narrows to Deep Cove. When GNP rebuilt the North Twin Dam in 1903 and the enlarged impoundment flooded out the original boom house, the company built a new one on the island at the head of the lake on the west side.

With loggers driving an ever-increasing number of logs they needed more water. Hempstead acknowledged this and cited the dam charters sought from and provided by the Maine State Legislature beginning in 1834. Using deductive reasoning to determine when loggers actually built the first West Branch watershed dams at Chesuncook and Elbow Lakes, he determined crews constructed the Chesuncook Dam about 1840 and the North Twin Dam at the foot of Elbow Lake before 1846, and that W.J. Johnston may have built the Chesuncook Dam.²⁰ Nicholas G. Norcross, a prominent lumberman and dam advocate, noted in a speech to the Bangor Chamber of Commerce in November 1841 that the Chesuncook Dam was completed in the Fall of 1840.²¹ William Jasper Johnston built the dam's north wing in 1868.²²

The North Twin Dam construction began August 20, 1841 when a construction crew of 50 men under the direction of Benjamin P. Gilman left Bangor, Maine for the outlet of Elbow Pond where they spent the fall building the dam.²³ Benjamin had started his logging in the Sebec area before 1830 and by 1850 operated a sawmill in Orono where he had an accompanying boarding house for his sawyers and raftsmen. A small group of the men transported the needed food supplies and equipment to the site by bateau via the Penobscot and West Branch Rivers. Benjamin and the balance of the men, three days supplies, and oxen walked north from Brownville on the Nahmakanta Tote Road, stayed at Philbrook's Shanty, and reached the southwest corner of South Twin Lake. Here they found only a leaky bateau, which a few men used to ferry some of the supplies. The rest of the men followed the shoreline cutting out trees where necessary for the oxen. They reached the dam site on August 23, cleared land for a camp, and put up some temporary shelter. After the arrival of their bateaus and equipment they built a 100-foot long camp for sleeping, one for cooking, and another to store supplies. Soon after the work began two men went 30 miles north to Chesuncook Dam to close its gates so as to

minimize the water flow at the dam site. However, someone coming downriver opened the gates in early October and the two men went back to close the gates again. Work on the dam went well with low water and little rain. About November 4 Benjamin reduced the crew to 20 men who completed the dam within the next two weeks.

Associated with charters for the dams at the outlets of Chesuncook and Elbow Lake was a dam at Nahmakanta Lake. Hempstead cited the charters for a Nahmakanta dam, but did not try to deduce when lumbermen actually built it.²⁴ Logging along Nahmakanta Stream began sometime after 1827 and likely about 1836 when a crew under the direction of Colonel Webster was heading to the stream to clear it so as to enhance the flow of logs.²⁵ Eben Webster and his son, Eben junior, were both successful lumbermen at the time. Eben junior's two sons, J. Frederick and Eben C., continued the family lumbering interests by forming the Webster Paper Company in the late 1880's in the Bangor area. In 1899 Eben built the Necknoegan ground mill in Old Town and the family sold it to E.B. Draper Company in 1920.

The Maine State Legislature issued a Nahmakanta Dam Company Charter in 1837 with the provision that dams at Nahmakanta and at the First, Second and Third Chain Lakes be completed by January 1, 1838.²⁶ The "Chain Lakes" may have referred to either the Upper Chain Lakes (Ripogenous, Caribou and Chesuncook Lakes) or the Lower Chain Lakes (North Twin, Pemadumcook and Ambejejus). The investors did not build on any of the possible "Chain Lakes." Whether or not they built the Nahmakanta dam is unknown, but it seems unlikely. The legislature authorized no toll increases for a Nahmakanta Dam between 1838 and 1867, even though cutting took place in the watershed during that time period. By 1841 Bradley's survey indicated loggers had cut the pine from within at least a mile of Nahmakanta Lake and were working their way up the Rainbow and Pollywog watersheds.²⁷ It is possible a logger may have

built a small temporary dam. The next Nahmakanta Dam charter, issued in 1867, contained the words “build and maintain” and provided for dams in the Rainbow and Pollywog watersheds; rights not granted previously.²⁸ Noted dam builder William Jasper Johnston visited the dam in 1869 when it was operating and he repaired it in 1880. The legislature amended the charter in 1874 for an increase in toll, the charge per log going through the dam.²⁹ At some point, perhaps c.1870, the company also built a dam at the foot of each of Nahmakanta Stream’s two deadwaters.

As part of his research within the Nahmakanta watershed, in summer 1927 Hempstead walked from Pollywog Pond Dam down through Pollywog Gorge to the head of Nahmakanta Lake noting GNP rebuilt the dam in 1922, the difficult waterway, steep sidewalls, six sluices, and the death of a river driver.³⁰ Loggers were cutting between Nahmakanta Lake and the gorge by 1842. Sometime after 1869 the Nahmakanta Dam Company (NDC) probably built the first Pollywog Pond Dam. The first dams on Gulliver Brook, which flows into Pollywog Pond, were in place before 1881.³¹ In 1883 Cornelius Murphy had a crew of 30 men and 12 horses cutting and hauling onto Pollywog.³² The John Morrison mentioned by Hempstead cut on Pollywog Stream in 1891-1892.³³ Sclar’s reports of 1904-05 and 1908-09 indicated loggers rolled logs into the gorge from its cliffs and high banks.³⁴ In support of the drive, loggers built four small roll dams in the gorge prior to 1900 and rebuilt them about 1914. Three were above Crescent Pond’s outlet brook and one was immediately below it.³⁵ With the advent of pulp length (four feet) wood about 1914 six sluices carried wood into the gorge at unknown locations. During the drive men stationed within sight of each other along the rim of the gorge, used various signaling strategies when jams formed. With the flag system a red flag meant “stop the logs;” a black flag, “stop the water;” a single white flag, “let the water flow;” a second white flag, “let the logs

come.” The available phone technology for communicating with the dam from key points along the top of the gorge was not in place until after 1913.³⁶

More than a dozen men lost their lives tending the drives in the gorge. A member of a drive crew carved the names of five men in the north wall of the gorge at Owls Head, which is at the second falls downstream from the falls at the dam. Near the confluence of Bean and Pollywog Streams loggers nailed the driving boots of J.P. Brown, Brownie, to a tree.³⁷ He died in the gorge in either 1912 or 1913. Near the confluence of Pollywog and Bean Brooks are the graves of two river drivers who were killed in an accident about 1922. Their drive crew marked the graves with two oblong stones standing upright like grave stones on the right side of the original west side tote road to Rainbow Lake.³⁸ According to Lewey Ketchum loggers buried two other drivers in the same area sometime before 1904.³⁹ Another grave, one of a teamster, is some place nearby. He died when a snubbing rope broke on a difficult pitch. Instead of jumping he quickly unhitched the horses from the sled. The horses survived.

Death also came through sickness. In 1913 a number of men in one of the Pollywog camps died of pneumonia. Another folk story account indicated that a few men buried in the area were accidentally poisoned by tea water boiled with a spotted salamander. Loggers did die from typhoid fever. In another unknown year the alleged death of everyone in a camp remained a mystery. The loggers had gone in for the winter. When they did not come out in the spring others went in to find them. The men and their animals had all died; the animals from starvation and the men from illness. This may not be a true tale given that cutting in the area began in 1842 and by that time the tote roads were well enough established that teamsters would have toted to the camp throughout the winter.

The tale also indicated they buried these 14 men in a flat area on the hillside overlooking Pollywog Pond at the corner where the old tote road turned to Nahmakanta Lake.⁴⁰ Bill Boyington visited unmarked graves at such a site, denoted by humps in the ground, when his family ran Nahmakanta Lake Camps in 1945. About 1970 Paul Nevel visited the site when he operated Nahmakanta Lake Camps. Perhaps the truth of the tale was in an account recorded by Fanny Hardy Eckstorm from a conversation with Lewey Ketchum who told her that loggers buried eight men close together on a knoll above the pond and near the tote road from Nahmakanta.⁴¹ The deaths were perhaps prior to 1904. Most of the men, including an African American, drowned at what at the time was known as “Nigger Pitch.” In 1891 Cornelius Murphy told Eckstorm about yearly deaths in Pollywog Gorge and mentioned four graves between the Female Pond and Pollywog Stream.

Immediately upstream from Pollywog Pond the Nahmakanta Dam Company’s (NDC) built dams, as noted by Hempstead, at Wadleigh and First Musquash Ponds.⁴² Loggers may also have come into the area c.1840 on the Caribou Lake Tote Road from Brownville via the shanties at Norton and Philbrook Farms, Jo-Mary Pond, Yoke Pond , and probably Wadleigh Pond before reaching the road’s terminus at the Morris Farm near Caribou Lake.⁴³ The Wadleigh stop was perhaps what became known as the Wadleigh Farm at the northeast corner of the pond.⁴⁴ Sometime between the late 1860’s and the early 1880’s the NDC probably built the dams at the foot of both ponds. It rebuilt the Wadleigh Dam in 1913 in preparation for the pulp wood drive from Farrar Brook. A 1922 report indicated the dams were in need of repair.⁴⁵ By 1927 drivers no longer needed either dam; pulp wood had sufficient water without them.

The upper most dams on the Pollywog watershed were at the outlets of Sing Sing and Penobscot Ponds. Crews built these dams after 1867 and likely before 1887. The 1922 report

stated that if loggers cleared the streams from these ponds long logs could be driven down them. Con Murphy logged the area between Second Musquash and Penobscot Pond in 1887-88.⁴⁶ A 1924 report assessed the driving from Penobscot Pond on Penobscot Stream to be good for pulp wood.⁴⁷ The last drive from Penobscot Pond was in 1938 and the company purposely blew the gates on the Pollywog Dam in the late 1940's.⁴⁸

Hempstead included a letter that mentioned one of GNP's first pulp wood operations (1914) on a tributary of Pollywog Stream, Farrar Brook that flows from the extensive Farrar Brook Deadwater and Little Female and Female Ponds into the northwest corner of Wadleigh Pond.⁴⁹ When the NDC built the three dams on Farrar Brook is unknown, but it would have been after 1867 and before 1887 assuming the work was similar to their three dams on Gulliver Brook that flows into Pollywog Pond. The first rock crib dam was on the brook as it leaves Female Pond. The second was a roll dam upstream of the pond. The third dam was at the foot of the Farrar Brook Deadwater. With its estimated 15-foot head it flooded much of the watershed above it. The Cornelius Murphy crews that cut on Female Pond and along Farrar Brook did the earliest documented logging in 1885-86 and 1887-1888. In 1906 Percy Johnston rebuilt these three dams.⁵⁰ NDC rebuilt the dams on Farrar Brook and on Female Stream in 1913 in support of GNP's 1914 cutting operations.⁵¹ The last drive on the drainage was probably before the 1921 fire which swept through a great deal of the watershed. By 1933 the Farrar Brook Tote Road, which connected the area to the Chamberlain Lake Tote Road at Farrar Farm was impassable beyond Female Pond.⁵² An assessment of the dams in 1943 indicated they needed to be rebuilt in order to drive the waterway.⁵³ GNP probably did not rebuilt them in that during WWII they logged as close to the mill as possible given the availability of men and other resources.

Not far up Pollywog Stream from Nahmakanta Lake is the mouth of Bean Brook. Hempstead cited information indicating NDC built the dams in 1925.⁵⁴ Bradley's 1842 survey noted that in 1841 the first loggers moved east from the Caribou Lake area culling pine and reached Bean Pond. These loggers hauled pine north to Kelley Pond and drove them down Caribou Brook to Caribou Lake, not Bean Brook to Nahmakanta. Others culled the pines around the confluence of Bean Brook and Pollywog Stream in 1841 and drove the cut through Nahmakanta Lake. Within a few years loggers had cut the pine along the complete length of the waterway.

Cornelius Murphy's crew cut on Bean Brook (west branch) in 1882 and probably had supporting dams. In his 1889 guidebook Hubbard described coming through Kelly Pond to Bean Pond, down through the bog to the dam and then portaging on the tote road to where Bean Brook (east branch) comes in from the north.⁵⁵ The east branch had three rock crib dams that may have been built between 1888 and 1897 based on Hubbard's maps.⁵⁶ When loggers last used them is unknown, but given activity on Bean Brook (west branch) it was perhaps in the early 1930's. The first dam upstream on the east branch was at the foot of the lower deadwater. The second was at the foot of the largest of the Bean Ponds. A third dam, perhaps not of cribs was at the easily and still blocked granite funnel outlet of the upper most of the Bean Ponds. The dams' state of deterioration in 2011 suggests loggers rebuilt them in the late 1920's.⁵⁷

From 1841 to the late 1920's loggers worked continuously in the Bean watershed. On the west branch they kept the dams functional for over a 50 year period, picked the waterway clean of large rocks, cleared it of obstructions, and straightened and widened its small gorges. A March 1922 report indicated it was possible to drive the west branch with a couple dams.⁵⁸ NDC built a dam c.1923, but the location of the dam is unknown as is whether or not it was a rebuilding of

one that already existed. In 1925 crews rebuilt the dam at the foot of Bean Pond and the one at the foot of the deadwater. The 1929 survey of the area indicated the stream was drivable and the dams would have to be rebuilt, but the area was very tough for logging.⁵⁹ They probably rebuilt and logged c.1930, the last of the drives in the watershed.

The Nahmakanta Dam Company did extensive work on Rainbow Stream, which flows west from Rainbow Lake to the north end of Nahmakanta Lake, and Hempstead provided a glimpse of some of that work in the 1890's.⁶⁰ By 1842 the first loggers had reached up Rainbow Stream to about the Third Deadwater.⁶¹ They culled the top quality pine within about a mile either side of it and hauled some of the logs to the stream and others up to two miles to Nahmakanta Lake. The loggers continued to work their way up the stream and into Rainbow Lake in the ensuing years.

The first dam on Rainbow Stream probably appeared at the mouth of Rainbow Lake soon after the NDC received its charter in 1867. Over the course of the next 85 years loggers built and rebuilt dams along the stream, made sluices in the stream, created side dams, constructed side walls, and cleared rocks. Eastman's 1900 cruiser's map shows the locations of four dams.⁶² A 1913 report for the Penobscot Development Company contains an assessment of the dams on Rainbow Stream.⁶³ It recommended a second dam at the foot of the Second Deadwater with an eight-foot head and the dam at the foot of the Third Deadwater be replaced with a dam of seven to eight foot head. Below this point the report advised another three dams. One was just above the Stratton Brook confluence where the stream makes a big turn to the south. This roll dam would prevent logs from getting hung up on the ledges in the area. Below the Stratton Stream junction was to be a dam whose purpose was to hold back water in order to cover large rocks and insure a smooth flow. Below this dam at a sharp turn the report suggested a 180-foot sluice be

built in the stream to cut the acuteness of the turn. The third dam was a proposed two-gate dam that would flow out some of the roughness in the stream behind it. The report also noted that crews would have to rebuild all 6,100 feet of abutments in order to avoid logjams. Given what appears on GNP maps after 1915, the loggers implemented the recommendations. A 1923 GNP map shows a dam at the head of Rainbow Lake, one at the foot of the Third Deadwater, one just below the confluence of Stratton Brook and above the flume, and one below the stream coming in from the east above Gould Pond.⁶⁴ The need for the sequence of dams likely diminished after 1924 when a large forest fire burned a good deal of the area.

When loggers culled the pines within a mile of Rainbow Stream in 1841 they also cut on Stratton Brook a major tributary flowing from the east.⁶⁵ They moved further into the watershed and at some point after 1867 when NDC built two dams, one at the foot of the deadwater and one at Stratton Pond. With a shift to short wood a 1922 cruiser's assessment indicated dams were not necessary. However, as noted by Hempstead loggers rebuilt the 200-foot long dam at the foot of the deadwater again in 1924 with six feet of head.⁶⁶ The building likely preceded the June 1924 fire that completely engulfed this watershed.

The Nahmakanta watershed and the West Branch at Debsconeag Deadwater provided loggers with access to the Debsconeag Lakes Chain. Hempstead noted the large operations GNP within the Debsconeag chain, but absent records was only able to obtain information from the operations boss for 1912-1914. Charles Gilbert, brother of Fred Gilbert, GNP woodlands boss from 1903 to January 1929, indicated that crews built the dams and sluices at Second and Third Lakes c.1912. However, given the history of logging activity in the chain this was likely a rebuilding of the dams. No dam charters were ever voted by the Maine State Legislature specifically for the Debsconeag Lake Chain. The last charter issued by the legislature for dams

in this West Branch region was to the West Branch Dam and Improvement Company in 1871; it provided for dams on any West Branch tributary, not already covered by a previous charter.⁶⁷

By 1845 loggers had cut the first quality pine in the area near the foot of Third Debsconeag Lake and between Nahmakanta Lake and Sixth and Eighth Debsconeag Lakes and westerly to Rainbow Stream. Oxen hauled the logs to either Nahmakanta Lake or Rainbow Stream; whichever was the shortest distance. No dams supported the cut. A 1913 cruiser's map indicated that logging took place north of Third Lake and up to and at least surrounding Fifth and Sixth Lake well before 1900.⁶⁸ The report designated heavily cut areas where spruce and fir reproduction were excellent suggesting loggers cut the area previously, perhaps in the 1870's. Documented cutting occurred on the east side of the watershed from Fifth to Eighth Lakes c.1882.⁶⁹ Loggers cut again in the Fourth to Seventh Lake area in the 1890's. In 1899 they cut area around both Stink Pond and the no name pond that drains to Fifth Lake.⁷⁰ A 1908 scalar's report indicated that loggers cut near one or more of the Debsconeag Lakes at Fifth Lake or higher.⁷¹ A camp of three buildings including a blacksmith shop was at the midpoint of the stream between Fifth Lake and Stink Pond and another near the junction of the drainage from Seventh Lake and the no name ponds.⁷² They cut at Stink Pond again in 1908 and in pockets between Fifth and Eighth Lakes in 1910-1911.

Cutting continued into the 1920's. The 1922 Penobscot Development Company report recommended that loggers haul the cut from Fourth and Fifth Debsconeag Lakes area to Nahmakanta, but a March 1922 report indicated that logs were going into Fifth Lake and spilling into Fourth Lake.⁷³ Teamsters may have hauled some logs as recommended. In 1923 GNP made an investment of \$20,000 in an unknown project in the Debsconeag.⁷⁴ The investment was not in camps or roads, but was most likely in its rock crib dams or sluices or both. An April

1924 report reiterated the hauling recommendation of the 1922 report, but there was no information on what action the loggers took.⁷⁵

Given that loggers were using dams at Fourth and Fifth Lake to drive short wood, it seems likely that once the spruce cutting started in the area in the latter half of the 1860's that long logs would have required the water of dams at Fifth, Fourth, Third, and Second Lake prior to c.1910. A visual inspection of Sixth, Seventh and Eighth Lakes' outlets and the connecting waterways yield no signs of dams. Loggers likely hauled to Fifth Lake. Lumbermen probably built the earliest dams at Third and Second Lakes at the same time in order to get logs from the upper end of the chain into the West Branch. When GNP rebuilt the Second Lake dam in 1912 its crew added the sluice. The first Third Lake dam was not at the outlet, but a short distance downstream at the foot of the pond-in-the-river that is at best a couple feet lower than the lake. A dam here would have created a smooth channel, though not deep, to the lake. Loggers built the c.1912 dam further downstream and it flooded out the old dam. While the c.1912 dam was nearly 27 feet high it only controlled a maximum two feet ten inches of lake level due to the elevation difference between it and Third Lake. However, the storage capacity was 107 million cubic feet of water and that capacity, combined with a water saving sluice, was of great value to GNP in 1912, but of no value to anyone before 1903. Prior to 1903, once a drive was over loggers left dam gates open. There was no down river mill for which to store water for use later in the year. Beginning in 1903 the Maine State Legislature enacted a law that required water flow, but also allowed for water storage throughout the year.⁷⁶

Logging above Third Lake stopped after the fire of 1924, the Rainbow fire. *The Northern* reported in August 1924 that not much standing timber of value was lost in the fire as most of it had already been cut.⁷⁷ The fire burned east from Rainbow Stream, engulfed the Debsconeag

headwaters and moved down over the cliffs above Fourth Lake to touch the east end of the lake and continued across the southern half of the peninsula on Third Lake and along the portage between Third and Fourth Lakes, and partway down the south side of Third Lake's west finger. It left a pocket of forest south of Sixth Lake and west of the dam at Fifth Lake.

Forest fires in the Jo-Mary Lake chain, Copper Brook and Pratt Brook watersheds in 1903, 1908 and 1911 influenced logging in specific areas, but in general loggers cut the area hard over many years. For these watersheds Hempstead presented tote road network and waterway infrastructure work between 1907 and the late 1920's.⁷⁸ Loggers entered the watershed in the 1830's by either coming in from the south via the Nahmakanta Tote Road from Brownville or from the north via the West Branch of the Penobscot and Pemadumcook Lake. No documentation has been found that specifically charters a dam on any of the three Jo-Mary Lakes. Hempstead consulted Hubbard's 1879 map that showed no dams any place in these watersheds. At Upper Jo-Mary a dam appears on Colby's 1882 Piscataquis County map, but when loggers built it remains undiscovered.⁷⁹ Logging around this lake probably preceded that date given the Nahmakanta Tote Road reached the lake by the mid-1830's. GNP rebuilt the dam in 1922. Middle Jo-Mary Lake likely required two dams. The main dam with a gate, about two feet of head and a sluice with a wide apron, was at its east outlet into Lower Jo-Mary Lake. To the west lumbermen probably built a small side dam where a north flowing channel of Cooper Brook, often called Pratt Brook, entered Lower Jo-Mary Lake from Middle Jo-Mary's Cooper Brook Deadwater. The date of the first dams is unknown, but it was after 1869 when Charles Hamlin, traveling to Katahdin, came north on the Nahmakanta Tote Road and took a logger's path from it to the east end of Turkey Tail Lake where he continued the journey by canoe.⁸⁰ The details of his notes suggest he might have mentioned dams if they existed. Fanny Hardy

Eckstorm and her father paddled into Middle Jo-Mary Lake in August 1889 and her detailed notes made no mention of a dam.⁸¹ The dam was either under construction or being rebuilt in 1895 when Bert Haynes built his first camp close to the dam site.⁸² GNP repaired the dam in September 1927. Lower Jo-Mary Stream may have been driven without a dam until sometime after 1889. Eckstorm made no mention of a dam at Lower Jo-Mary Lake in her 1889 notes. Pictures of the lake's outlet about 1900 show no dam, but in 1922 GNP had a dam designed and one appears in 1930s era pictures.⁸³

On the Cooper Brook watershed, which flows into Middle Jo-Mary, no loggers had cut before Norris surveyed the town line in 1827.⁸⁴ Loggers moved up Cooper Brook, perhaps c.1845. Cookies cut from spruce harvested in the Long Pond, Yoke Pond area in the mid 1970s by Prentiss and Carlisle forester Tom Nelson indicated some trees were 125 years old. Under these spruce trees were old pine stumps that can survive for 100 years or more. This suggested the pines could have been cut in the 1840s. In 1850 landowner William McCrillis paid to have the area explored and it appears he then did some logging.⁸⁵ Loggers cut in the upper end of the watershed between the 1840s and 1884 and likely relied on the Yoke Pond Shanty and the Caribou Tote Road. The shanty, which included a farm, was on the west side of Yoke Ponds in the area of what is now known as Yoke Pond Sporting Camps.⁸⁶

By 1871 the substantial cutting activity on Cooper Brook was enough to warrant Dudley F. Leavitt and George M. Weston to seek and be granted a charter for The Cooper Brook Dam Company with authority to build dams on Cooper Brook and its tributaries for purposes of floating logs.⁸⁷ Leavitt and Weston were timber speculators. Given the Well's Maine Water Power Report of 1869 some minimal temporary dam activity had taken place at undisclosed places on the brook.⁸⁸ Construction crews built the first five rock-crib dams between 1872 and

1883. An 1883 map of Crawford and Big Pleasant Ponds had an “old dam” label at Crawford and one part way up the brook to Yoke.⁸⁹ Soon after 1900 loggers built another dam about one and a half miles below Crawford Pond Dam. As Hempstead wrote Crawford dam’s east wing washed out in 1906 and the flow took out the west wing of the dam below it as well as the dams downstream at Church and Cooper Ponds.⁹⁰ According to a report by Charles Goodwin and R. Sutherland it nearly ruined the brook for driving.⁹¹ The report also indicated loggers would have to replace the entire brook’s infrastructure work, repair the dam at Big Pleasant and rebuild the Yoke Pond Dam. The dams, rebuilt in 1915-1916, did not include those at Church and Cooper Ponds. In 1920 the Sewall survey indicated the Big Pleasant Pond dam and the Crawford Pond dam with 16 foot of head, were in good condition, but the dams on Cooper Brook were worthless.⁹² In 1923 the Crawford Dam blew again, and was rebuilt. By 1932 the dams at Church and Cooper Ponds had both been rebuilt, each with two gates and five to six feet of head. While the natural flow of the stream could carry pulp wood, dams may have been needed to hold water in order to sustain the drives of large quantities of wood. A 1933 GNP report on key water storage dams listed those at Cooper, Crawford, Yoke and Big Pleasant Ponds.⁹³

Hempstead mentioned two tote roads that provided early access to the Yoke Pond area and the upper West Branch.⁹⁴ The road that went from Bangor to Brownville to Katahdin Iron Works and passed south of B-Pond was the Chamberlain Lake Tote Road that began serving loggers in the early 1830s. Once the railroad reached Greenville (1884) that portion of the tote road between Brownville and the Grant Farm was gradually abandoned as the major supply route to the upper West Branch area. The second road was the Yoke Pond Tote Road that linked the Kokadjo and Second Roach Pond area and Yoke Pond beginning in 1920. This new road was a

result of a negotiated agreement between GNP and Hollingsworth and Whitney Company, the major landowner and paper company in the abutting Kennebec watershed.⁹⁵

In the mid 1830s Yoke Pond was a shanty stop for teamsters on the Caribou Lake Tote Road that linked Bangor to Brownville to the Upper Chain Lakes. Up until 1920 the supply line to the Yoke Pond area was either via the Caribou Lake Tote Road or the Cooper Brook Tote Road (c.1840s), which ran from a store house on the south edge of Lower Jo-Mary Lake up along the north side of Cooper Brook to Yoke Pond. By the mid 1930's most GNP supplies for the Crawford, Yoke, Penobscot, Wadleigh, and Pollywog Ponds and Nahmakanta Lake arrived at the camps from Greenville via the Yoke Pond Tote Road.

On the Pratt Brook watershed, a tributary of Cooper Brook, crews built two dams under the Cooper Brook Dam Company Charter. Their last use was perhaps between 1903 and 1911 when three forest fires burned through the area. The dam at the foot of Mud Pond had no value in 1920.⁹⁶ The other dam was not far above the pond's inlet and only its remains were still evident in 1932. Loggers drove wood on Pratt Brook from Leavitt Pond sometime before 1880, but whether or not they used a dam is unknown. The pond has evidence of possible side dams on the northwest side. At its narrow rocky outlet a dam might have existed, as there is a very large U shaped heavy iron rod that could have been used to hold a three-foot diameter log in place. Further into the outlet is a natural granite dike with a series of good size boulders lined up and not looking quite natural; they might have been part of a temporary dam.

Pratt Brook also serves as the drainage for the outlet stream from Henderson Pond. The N. Woods 1883 survey made no note of a dam at Henderson or driving its outlet stream and questioned how previously cut logs to the north and northeast of the pond moved from the area.⁹⁷ A visual inspection of the pond's edge revealed no signs of a dam, and no boom logs, cut logs,

boom chains, eye pins, or drilled holes in rocks. Loggers likely hauled in multiple directions. The earliest route was northwest to Rabbit Pond and on to Leavitt, a feasible two-mile haul. In later years (c.1900) the tote road from Cooper Brook to the south end of the pond may have been used given logging camps were at both ends of the tote road. Loggers abandoned the Henderson Pond camp by the 1930s and that was the last time logs cut in the area went to market via a waterway.

Joining the logs driven from the Jo-Mary, Nahmakanta and Debsconeag watersheds were those of the Millinocket Stream watershed that entered the West Branch at Nollesemic Pond (Shad Pond), five and a half miles above Medway. Hempstead cited dam activity in this watershed from its headwaters at Basin Pond on the east side of Katahdin to Millinocket Lake to Shad Pond.⁹⁸ He acknowledged that in 1883 the Maine State Legislature extended the rights to the Penobscot Log Driving Company to build a dam at the lake's outlet. Additionally, 11 years earlier the Maine State Legislature issued a charter to the Millinocket Dam Company for building a dam at the outlet, clearing the stream to Nollesemic Pond, and charging a toll.⁹⁹ In 1877 F. S. Davenport, who journeyed into the area for a day on his Katahdin trip, described the dam as small with a narrow sluice and one gate.¹⁰⁰ The noted dam builder William Jasper Johnston rebuilt the dam in 1883-1884 when the Penobscot Log Driving Company assumed ownership. The dam flooded out about 500 acres of land around the lake and was 500 feet further upstream than its concrete replacement built in 1909-1910 for \$34,121 by Percy Johnston, William's son.¹⁰¹

In the fall of 1832 Joseph L. Kelsey and his associates surveyed Township 2 Range 9, which extends west from the west side of Millinocket Lake. Kelsey noted that the merchantable timber at the west end of the lake was uncut.¹⁰² An early tote road to the lake went from

Fowler's up along the east side of Millinocket Stream. The Isaac Stevens' Farm began operations on the south side of the lake about 1842 and likely supported loggers cutting for his Nicatou Mill. Stevens was still operating the farm in 1863, but sold in 1870 to William B. Hayford, a lumberman living in Nicatou.¹⁰³ Whether or not he continued the farm's operation is unknown, but he did sell stumpage rights in the area and might have leased the farm if there was an interested party.¹⁰⁴

On the lake's north side at the mouth of Sandy Stream the earliest booms filled may have been those of the Hersey and Reed operation of 1875 as mentioned by Hempstead.¹⁰⁵ They had three major dams. The dam at Togue Pond stored water needed to drive the lower portion of Sandy Stream. Lower Dam was on Sandy Stream a few miles above Millinocket Lake and just below the confluence with Togue Pond Stream. Their main driving dam was Upper Dam, built just below the stream's confluence with Roaring Brook. Apparently loggers did not return to the lower end of Sandy Stream until the James McNaulty cut in 1893-1894.¹⁰⁶ The reason for that absence may be related to an R.W. Sawyer 1918 assessment of the north half of Township 2 Range 8; he noted that in 1883 high wind blew over a great deal of virgin timber.¹⁰⁷

In 1901 John Ross moved the access route from along Sandy Stream to a new tote road that left the Nesowadnehunk Tote Road near Pockwockamous Ponds, crossed the narrows between Upper and Lower Togue Ponds, and continued on to the old Upper Dam where it followed the west side of Roaring Brook toward Basin Ponds.¹⁰⁸ In support of that operation the Maine State Legislature issued a 1901 charter to the Sandy Stream Dam and Improvement Company for erecting and maintaining dams, sluices, and side dams, and widening and deepening Sandy Stream to drive logs and lumber.¹⁰⁹ Ross built his Hersey Dam with three gates and a 14-foot head just downstream of the Upper Dam that was in ruins by 1881. Another

dam was at the head of the big “U” and the falls, Indian Pitch, where Ross had a camp. He may have built, as opposed to rebuilt, this dam and another one that was about three fourths of a mile above Millinocket Lake. Given that Ross had a logging camp on the south shore of Sandy Stream Pond, he probably built a dam at the pond. A pre1900 picture suggests someone, perhaps Hersey, previously dammed the pond.¹¹⁰ Ross worked the area through 1904-05.

F.B. Hussey cruised the upper Sandy Stream area Ross cut and the rest of Township 3 Range 9 in mid-1915. He recommended crews: rebuild Ross’ Hersey Dam and the dam three quarters of a mile above Millinocket Lake, remove boulders by blasting for the first six miles below the upper dam, replace the stream’s abutments, dredge some of the lower sections, and build a dam with a 10 foot head at Basin Ponds, an area not previously logged.¹¹¹

The next major logging operations on Sandy Stream were in the early 1920’s. The Sewall 1920 survey indicated that only Rush was cutting below the Township 2 Range 8 town line, that he had a camp about two miles up the stream, and that the roads above his operation had grown over.¹¹² GNP reopened the Ross road network and logged in Township 3 Range 9.¹¹³ Everything cut went onto the ice of Basin Pond, Roaring Brook, Avalanche Brook or Sandy Stream. The depot camp was a half-mile west of the junction of Roaring Brook and Sandy Stream, currently known as Avalanche Field. The depot supported five cutting camps in 1921-22 and six in 1922-23 with 363 men and about 100 horses including the 22 horses it took to keep the camps supplied.

The 1920’s operation required a number of dams. Crews dug a second outlet from Sandy Stream Pond’s southwest corner directly to Roaring Brook, which needed the water for the drive, and constructed dams at both outlets. The Basin Pond Dam transformed the three distinct ponds into one body of water. In 1923 GNP rebuilt Hersey Dam, renamed Sandy Stream Dam. GNP

probably rebuilt the dams and side dams further downstream as they were in poor condition. GNP either built or rebuilt the dam a little over a mile up Avalanche Brook. GNP returned to log along Roaring Brook and at Sandy Stream Pond in 1928-1929 and 1930-1931. The Sandy Stream Dam was still holding water and its gates and headworks remained in fine working condition into the mid 1930's, but by 1926 the lower dams had completely washed out. Loggers probably last drove the upper portion of Sandy Stream in 1931. Ten years of cutting and a 1934 forest fire that crossed the stream between Togue Pond Stream and Spectacle Stream left little merchantable timber.

Loggers cutting on Millinocket Lake's east side drove their logs into the lake on Big and Little Mud Brooks. Hempstead mentioned a dam built on the Big Mud Brook in 1926.¹¹⁴ The earliest documented logging took place in 1888-89 in the area between the two streams. William Henderson who did the assessment for the 1888 cut, indicated loggers, perhaps the Stevens and Priests, previously cut in the area.¹¹⁵ The crews built two logging camps on Little Mud Brook and another near the mouth of Big Mud Brook. The assessment did not call for the construction of dams. In 1907-08 and 1913-14 loggers cut the public lot whose northern boundary is about a mile below Mud Brook flowage. A dam at the foot of the flowage supported these loggers. When loggers first built this dam or the others on the stream is unknown. A 1920 J.W. Sewall survey assessed the remaining dams on Big Mud Brook as worthless, the old logging roads as overgrown, and the stream as drivable.¹¹⁶ Old undated maps showed two dams on the stream and one at the flowage.

The 1926 GNP assessment of the area above Mud Brook Flowage noted loggers previously cut the area for long logs and that the American Thread Company harvested the birch on the higher ridges.¹¹⁷ The birch cutting occurred after the railroad reached the area in 1894.

Mud Pond Flowage's New Dam was rebuilt in 1926. An August 4, 1926 fire burned 2,000 acres in the area consuming 7,000 cord of stacked wood and a camp. A year later loggers cut pulp and drove the stream again, perhaps for the last time. Fires in 1928 and 1934 ended much of the logging in the Mud Pond and Little Mud Brook drainages for a number of years.

Opposite the mouth of Millinocket Stream at Shad Pond was the foot of the north flowing Nollesemic watershed. Hempstead mentions the 1911 dam at the foot of Nollesemic Lake.¹¹⁸ The Freezes' may have been the first to cut on the stream in 1824. When loggers built the watershed's two dams is unknown, but they appear on a 1908 J.L. Chapman survey map.¹¹⁹ One was just upstream from Nollesemic Pond and the second was at the outlet and rebuilt in 1911 with one gate. GNP rebuilt the dam near Nollesemic Pond and at the foot of Nollesemic Deadwater c.1913.¹²⁰ A 1920 Sewall survey indicated that the dam at the lake outlet was in poor condition and needed a new gate, and the lower dam was in good condition.¹²¹ The repairs made in 1920, 1921, and 1922 enabled E.J. Smart and W.J. Curran, who had cutting operations bordering the stream, to drive it. Drivers repaired the dam again in the winter of 1924 in preparation for that spring's drive. About 1929 Enos Sawyer and fifty men cut 5,000 cords from a camp at the backside of the lake and drove the stream. The drive of 1932 used one motorboat, one headworks, 228 boom logs and 240 boom chains, and started from the lake.¹²²

The log drives and use of some of the dams Hempstead wrote about continued for another 41 years after he completed his book in 1930, but during this time the number of waterways driven slowly shrank as trucking became more prevalent.¹²³ The last drive on Nollesemic watershed was 1949 and on Millinocket Stream, the early 1950's. In the Jo-Mary area the last logs driven from cuts on Cooper Brook were between 1950-1955; Upper Jo-Mary Lake, 1948; Lower Jo-Mary Lake about 1946; and Middle Jo-Mary in the early 1950's. On the

Nahmakanta watersheds the last drive on Stratton Brook was in 1924; Farrar Brook, about 1930; Bean Brook, in mid to late 1930's; Penobscot Pond through the Pollywog watershed, in 1938; Rainbow Lake, in the late 1940's and no later than 1952; and the last boom towed from the mouth of Nahmakanta Stream was July 16, 1966 when GNP trucked these last logs to Maher landing. The last logs cut near and landed on one of the Lower Chain Lakes was in the early 1950's and the last wood dumped on the ice at Partridge Cove on South Twin from cuts some distance away was in 1957. On the West Branch proper the last drive to enter the river from Abol Stream was in 1935; Hurd Pond, 1936; Debsconeag Lake chain, by 1940; Passamagamet Lake, 1950; Nesowadnehunk Stream, 1961. The last drive from Ripogenous Dam to the GNP Millinocket Mill was in 1971 and the final drive from Nollesemic (Shad) Pond to the East Millinocket GNP mill was in 1976.

Notes

1. Alfred G. Hempstead, *The Penobscot Boom and The Development of the West Branch of The Penobscot River for Log Driving* (Orono, ME: University Press, 1931), p.35.
2. Joseph Norris, *T.A.R. 7 W.E.L.S., 1825* (handwritten field notes). Nearly all township survey field notes of the 1820's and early 1830's are found at the Maine State Archives.
3. James Irish, *Field Notes for Survey of 1825 for the boundary lines of T3 IND and T4 IND* (handwritten field notes).
4. Hempstead, *The Penobscot Boom*, p.37. Nollesemic Pond is currently known as Shad Pond.

5. I had conversations with Albert Fowler, descendant of Thomas Fowler, and the information is also in “The Fowlers of Thoreau’s Maine Woods,” *Thoreau Journal Quarterly* 4, Issue 3 (1972): pp. 23-25.
6. Joseph L. Kelsey, *Field Notes for Survey of September-October 1832 of T2R9* (handwritten field notes).
7. J.W. Bailey, “Account of An Excursion to Mount Katahdin, in Maine,” *American Journal of Science* xxxii, Series 1(July 1837): pp. 20-34.
8. Isaac Small, *Field Notes for Survey of Summer 1836 of T3 IND and Upper Section of T4 IND* (handwritten field notes).
9. Hempstead, *The Penobscot Boom*, p.60.
10. Joseph Blake, “An Excursion to Mount Katahdin.” *Maine Naturalist* vi, (June 1926): pp. 71-73.
11. Henry D. Thoreau, *The Illustrated Maine Woods*, Edited by Joseph J. Moldenhauer (Princeton, NJ: Princeton University Press, 1974), p. 72.
12. Tony York took me to the site to view the remaining stone work on May 5, 2012.
13. Hempstead, *The Penobscot Boom*, p.36-37. His picture label on page 136 states it was taken from the Ripogenous Farm. The farm was on the edge of the lake in the bay to the right of the end of the lake in the picture. This picture is taken from the lower of the two hilltops immediately south of Ripogenous Lake.
14. Personal untitled notes and clippings, box 2, Personal Papers of Fanny Hardy Eckstorm, Special Collections, Fogler Library, University of Maine.

15. Charles T. Jackson, *Second Annual Report of the Geology of the Public Lands Belonging to the State of Maine and Massachusetts* (Boston, MA: Dutton and Wentworth, State Printers, 1838), p.55.
16. Henry I. Bowditch, "A Trip to Katahdin in 1856 – Part I," *Appalachia* xxxii, Number 2 (December 1958): pp. 145-162.
- Henry I. Bowditch, "A Trip to Katahdin in 1856 – Part II," *Appalachia* xxxii, Number 3 (June 1959): pp. 331-348.
17. Personal journal, box 2, Personal Papers of Fanny Hardy Eckstorm, Special Collections Fogler Library, University of Maine.
18. Hempstead, *The Penobscot Boom*, p.45.
19. Hempstead, *The Penobscot Boom*, p.100.
20. Hempstead, *The Penobscot Boom*, p.43.
21. Untitled, *Bangor Daily Whig and Courier* (Bangor, ME), November 16, 1841, p.2.
22. William's typed list of the dams he either built or repaired, Personal papers of William Jasper Johnston, Special Collections, Fogler Library, University of Maine.
23. Unknown author, "Three Months in the Maine Woods," *Bangor Whig and Courier* (Bangor, ME.), a once a week multi-part story from October 15 through November 4, 1845.
24. Hempstead, *The Penobscot Boom*, p.45.
25. Jackson, *Second Annual Report of the Geology of the Public Lands Belonging to the State of Maine and Massachusetts*, p.20.
26. Nahmakanta Dam Company, *Acts and Resolves and Special Laws of the State of Maine passed by the Legislature of the State of Maine*, Chapter 239, February 9, 1837, p. 334.

27. Zebulon Bradley, *Field Notes for Survey of August 15, 1842 of T2R11* (handwritten field notes).
28. Nahmakanta Dam Company, *Acts and Resolves and Special Laws of the State of Maine passed by the Legislature of the State of Maine*, Chapter 331, February 21, 1867, p. 271.
29. Nahmakanta Dam Company, *Acts and Resolves and Special Laws of the State of Maine passed by the Legislature of the State of Maine*, Chapter 598, February 28, 1874, p. 548.
30. Hempstead, *The Penobscot Boom*, pp.100-102.
31. T. Rose, "Plan of No.2 R12, Copy of an old plan of I.G. Rawson's, 1884," James W. Sewall Company archives, Orono, Maine. The map's notations include "old dam" on a Gulliver Brook dam.
32. Untitled, *Bangor Whig and Courier* (Bangor, ME), January 25, 1883, p. 3. Maine newspapers like the *Bangor Commercial*, *Daily Kennebec Journal*, and *Bar Harbor Times* are sources for who cut where and when between 1850 and 1900.
33. Untitled, *The Bangor Commercial* (Bangor, ME), February 1892. The incomplete clipping is available at the Moosehead Historical Society.
34. *GNP scalar's reports by location from 1901-1913*, Great Northern Paper Company Records, Special Collections, Fogler Library, University of Maine.
35. Ira D. Eastman, "Township No. 2.R.11 (W.E.L.S) As Explored in Oct 1900." This map is in the Katahdin Forest Management archives. The largest collection of pre 1900 maps is at the Maine State Archives. The largest collections of post 1900 and GNP era maps are at Special Collections, Fogler Library and Katahdin Forest Management archives. While the James W.

Sewall Company did not commence operations until 1880 it has an extensive collection of maps from the 1820's to the present.

36. John M. Morrison, "The Driving Shoes of Pollywog Stream." *The Northern* vii, Number 2 (May 1928): pp. 5-6.

37. Morrison, "The Driving Shoes of Pollywog Stream."

38. *Guide to the Appalachian Trail in Maine: 1942*, The Appalachian Trail Conference (Washington, DC): p.6-13.

39. Personal journal, box 2, Fanny Hardy Eckstorm Personal Papers, Special Collections, Fogler Library, University of Maine.

40. I had a number of conversations with Paul Nevel and Bill Boyington between 2011 and 2015. Based on some written records and Paul Nevel's description of the location of the unmarked graves I located the probable site after to field searches.

41. Personal journal, box 2, Personal Papers of Fanny Hardy Eckstorm, Special Collections, Fogler Library, University of Maine,

42. Hempstead, *The Penobscot Boom*, p.100.

43. Benjamin C. Cole, *It All Happened Up In Maine* (Stonington, ME: Penobscot Bay Press, 1980). This is the only source I found that provides information about the Caribou Lake Tote Road.

44. The only sources that mention the Wadleigh Farm are the Cole book and the *Guide to the Appalachian Trail in Maine 1936* (p.62).

45. *Report Twp. No.1 R.11 W.E.L.S. Piscataquis County, Maine, April 1922* (Great Works, ME., Penobscot Development Company). Most of these types of reports cover a full township and in this region were frequently written by someone under the employ of the James W. Sewall Company. The largest single collection of the reports is at the Maine State Archives. Some of those of the Penobscot Development Company are in the Penobscot Chemical Fibre Company Records in Special Collections, Fogler Library, University of Maine. The James W. Sewall Company archive does not have copies.

46. *Cutting Records*, Prentiss & Carlisle Company, Incorporated Records, Special Collections, Fogler Library, University of Maine. Another source for Maine timber cutting records between c.1870 and 1900 are the personal family papers of the land owners.

47. *Report Twp. No.1 R.11 W.E.L.S. Piscataquis County, Maine, April 1924* (Great Works, ME., Penobscot Development Company).

48. I had conversations (2011- 2014) with Richard Fernald whose family has had a camp on Penobscot Pond since 1917.

49. Hempstead, *The Penobscot Boom*, p.104

50. A two-page hand written note titled "Bangor ME Apr 8, 1907" and a 1905-1906 cost sheet, Johnston Family Papers, Special Collections, Fogler Library, University of Maine.

51. Maps and drawings, designs for roll dams at Farrar Brook and Female Stream November 1913, Katahdin Forest Management Archives, Millinocket, Maine.

52. *Guide to the Appalachian Trail in Maine: 1936*, The Appalachian Trail Conference (901 Union Trust Building, Washington, DC): p.60.

53. *Field Explorations for Township T1R12, 1943* (Old Town, ME: Joseph W. Sewall Company).
54. Hempstead, *The Penobscot Boom*, p.100.
55. Lucius L. Hubbard, *Hubbard's Guide to Moosehead Lake and Northern Maine*, 1889.
56. Lucius L. Hubbard, "Map of Northern Maine Specially for Sports and Lumbermen," 1879, 1883, 1897, 1899, 1900, 1906.
57. I visited these sites in 2011 in order to assess them.
58. *Report Twp. No.2 R11 WELS Piscataquis County, Maine, March 1922* (Great Works, ME., Penobscot Development Company).
59. *Field Explorations for Township T2R12, 1929* (Old Town, ME: Joseph W. Sewall Company).
60. Hempstead, *The Penobscot Boom*, p.101.
61. Bradley, *Field Notes for Survey of August 15, 1842 of T2R11*.
62. Eastman, "Township No.2.R.11 (W.E.L.S.) As Explored in October 1900."
63. *Report Twp. No.1 R.11 W.E.L.S. Piscataquis County, Maine. April 1913* (Great Works, ME., Penobscot Development Company).
64. When loggers abandoned the roll dam above the mouth of Stratton Brook is unclear. The remains of the dam were still visible in 2013.
65. Bradley, *Field Notes for Survey of August 15, 1842 of T2R11*.
66. Hempstead, *The Penobscot Boom*, p.100.

67. West Branch Dam and Improvement Company, *Acts and Resolves and Special Laws of the State of Maine passed by the Legislature of the State of Maine*, Chapter 564, February 6, 1871, p. 555.

68. Kenneth McRuer Clark, *Growth Plan of TWP 2R11 W.E.L.S. June – July 1913* (Old Town, ME: Joseph W. Sewall Company).

69. Eastman, “Township No.2.R.11 (W.E.L.S.) As Explored in October 1900.”

70. Eastman, “Township No.2.R.11 (W.E.L.S.) As Explored in October 1900.”

71. GNP scalar’s reports

72. Clark, *Growth Plan of TWP 2R11 W.E.L.S. June – July 1913*.

73. “Township 1 R11 Tree Growth Plan Map,” 1922, Penobscot Development Company. *Report Twp. No.2 R11 WELS Piscataquis County, Maine, March 1922* (Great Works, ME., Penobscot Development Company).

74. Correspondence of 1923, box 5, Fred Alliston Gilbert Papers, Special Collections, Fogler Library, University of Maine.

75. *Report Twp. No.1 R.11 W.E.L.S. Piscataquis County, Maine, April 1924* (Great Works, ME., Penobscot Development Company).

76. West Branch Driving and Reservoir Dam Company, *Acts and Resolves and Special Laws of the State of Maine passed by the Legislature of the State of Maine*, Chapter 174, March 13, 1903, p. 277.

77. R.H. Robertson, “The Rainbow Fire,” *The Northern* iv, Number 5 (August 1924): p. 11.

Albert Hempstead was the editor of these monthly publications that were published from 1921 to 1928.

78. Hempstead, *The Penobscot Boom*, pp. 104-110.
79. "Piscataquis County Maine Map," (Houlton & Dover, Me., George Colby & Company, 1882).
80. Charles E. Hamlin, "Routes to Ktaadn," *Appalachia* (1881): pp.306-331.
81. Typed journal of 1889 trip, box 2, Fanny Hardy Eckstorm Personal Papers, Special Collections, Fogler Library, University of Maine.
82. The Haynes Family personal papers are privately held.
83. The Haynes Family personal papers are privately held.
84. Joseph Norris, *T.A.R. 8 & 9 W.E.L.S., 1827* (handwritten field notes).
85. *McCrillis & Griswold Timberlands Journal 1852-53*, William H. McCrillis Family Papers, Special Collections, Fogler Library, University of Maine.
86. Cole, *It All Happened Up In Maine*, p.11.
87. Cooper Brook Dam Company, *Acts and Resolves and Special Laws of the State of Maine passed by the Legislature of the State of Maine*, Chapter 659, February 18, 1871, p. 633.
88. Walter Wells, "The Water Power of Maine." 1869.
89. *Plan of Township A.R.11. W.E.L.S. Survey June and July 1883* (Old Town, ME: Joseph W. Sewall Company).
90. Hempstead, *The Penobscot Boom*, p. 107.
91. Goodwin & Sutherland letter on TAR11 to Henry Prentiss, June 1906, William H. McCrillis Family Papers, Special Collections, Fogler Library, University of Maine.

92. *Field Explorations for Township TAR11, 1920*, (Old Town, ME: Joseph W. Sewall Company).
93. John E. McLeod, *The Great Northern Paper Company*, Volumes 1-6, Unpublished manuscript, 1978, Chapter XV, p.154.
94. Hempstead, *The Penobscot Boom*, p. 105.
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121. *Field Explorations for Township Hopkins Academy, 1920* (Old Town, ME: Joseph W. Sewall Company).
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123. The dates of last drives come from a variety of sources. Generally the dates of the pre-1940 last drives are based on working dams, cutting records, forest study reports, and road development. The log book of the towboat the O.A. Harkness is privately held in the Fowler family files. Larry Yeo worked on the tow boats during the last years and provided considerable information. Other individuals either lived near a specific body of water or worked on the water during the years of the last drives.