the Northern ATLAS:

BEING A GEOGRAPHICAL OVERVIEW OF THE WOODLANDS AND WATERCOURSES THAT SHAPED THE

Great Northern

PAPER COMPANY

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THE NORTHERN ATLAS

BEING A GEOGRAPHICAL OVERVIEW OF THE WOODLANDS AND WATERWAYS THAT SHAPED THE GREAT NORTHERN PAPER COMPANY

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INTRODUCTION

Many large corporations, like human societies generally, have creation myths: tales passed down through generations, detailing how the enterprise came to be what and where it is. Great Northern Paper Company's, as recounted in numerous company documents, press releases, and office conversations across the corporation's 116-year lifespan, went like this:

In 1891, the area where the town of Millinocket now stands, on the West Branch of the Penobscot River, was wilderness—a frontier region well to the west of the village of Medway, the nearest established settlement, which stood at the fork where the Penobscot split into its East and West Branches. Only a handful of people lived in the area, on widely separated small farms. In that year, a civil engineer named Charles Mullen visited the area, leading an expedition on behalf of his employers, the Bangor and Aroostook Railroad. The B&A sent Mullen up the West Branch to find a route for a new branch line connecting points to the southwest with its network northeast of Stacyville.

When Mullen reached the confluence of the Penobscot West Branch and Millinocket Stream, he saw an ideal landscape, but not merely for a railroad line. Between Quakish Lake on the West Branch and the mouth of Millinocket Stream, the Penobscot drops more than 100 feet. To Mullen's engineer's eye, that waterpower-in-waiting and the vast timberlands lying untouched to the northwest combined to make Millinocket a perfect spot for a paper mill. Upon returning to Bangor, he set about recruiting men of finance and of industry to build it.

This atlas depicts some of the results of Mullen's vision. Through a combination of GNP's own diagrams, commercial and governmental maps, and geographic information gleaned from company documents and other sources, it attempts to give the reader a sense of the now-vanished company's place in the world—the spatial factors that combined to bring it about, that made it a success, and that ultimately, along with changing market forces, eventually proved its undoing.

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PLATE I: GNP GEOGRAPHICAL SCOPE, 1932

Great Northern's operations throughout most of the twentieth century included far more than the tasks strictly related to papermaking. In addition to its wood harvesting and transportation operations outside the mills, and the many processing tasks performed on said wood in the mills themselves, the company also employed engineers to design and implement its machinery and processes, chemists who constantly worked to improve its products, foresters to provide the latest scientific management of its woodlands, and many more professions outside of the papermaking trades.

This in-house approach even extended to the maps the company used, both to guide its operations and to promote itself to prospective customers, regulatory agencies, and the community. Plate I shows a typical example of the company cartographers' work, a 1932 map showing the geographic extent of the company's operations in northern-central Maine at that time. On this map, the Millinocket and East Millinocket mills and their environs are situated in the lower right corner, with the map slightly rotated from the traditional north-at-the-top orientation in order to fit the depicted slice of the state onto the sheet as squarely as possible. The rest of its area depicts a large portion of the north Maine woods, an area that was, and remains, largely unpopulated.

The lack of a title or legend leads me to suspect that this was intended as a base map to which specific aspects of GNP's operations could be added, such as company-owned roads, woodlands currently being worked, or areas being considered for future acquisition. Unfortunately, since the map has become divorced from any explanatory document that may have existed thanks to the disorganized nature of the archive, we may never know for certain.

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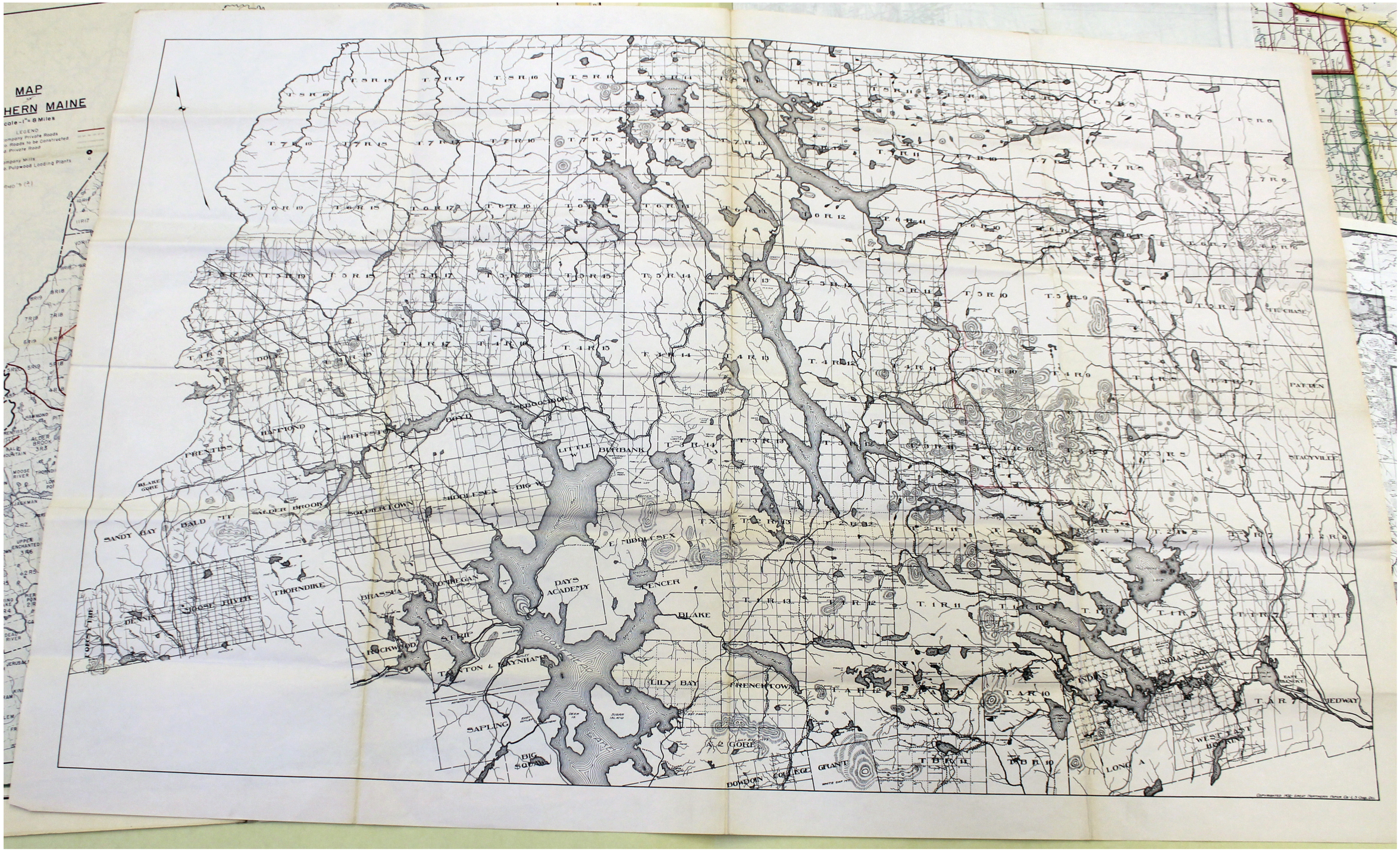
MAP
HERN MAINE
LEGEND
T 8 R 15
T 8 R 17
T 8 R 16
T 8 R 13
T 8 R 12
T 7 R 10
T 7 R 15
T 7 R 16
T 7 R 13
T 7 R 12
T 7 R 11
T 7 R 9
T 7 R 8
T 6 R 10
T 6 R 15
T 6 R 17
T 6 R 16
T 6 R 14
T 6 R 13
T 6 R 12
T 6 R 11
T 6 R 10
T 6 R 9
T 6 R 8
T 6 R 7
T 5 R 20
T 5 R 19
T 5 R 15
T 5 R 17
T 5 R 16
T 5 R 14
T 5 R 13
T 5 R 12
T 5 R 11
T 5 R 10
T 5 R 9
T 5 R 8
T 5 R 7
T 4 R 17
T 4 R 16
T 4 R 15
T 4 R 14
T 4 R 13
T 4 R 12
T 4 R 11
T 4 R 10
T 4 R 9
T 4 R 8
T 4 R 7
DOYLE
PRENTISS
HARMOND
JEFFERSON
BLOOMFIELD
LITTLE W
BURBANK
T 3 R 14
T 3 R 13
T 3 R 12
T 3 R 11
T 3 R 10
T 3 R 9
T 3 R 8
T 3 R 7
STACYVILLE
BLAKE GORE
ALDER BROOK
SOLDIERTOWN
MIDDLESEX
SANDY BAY
BALD MT
T 2 R 14
T 2 R 13
T 2 R 12
T 2 R 11
T 2 R 10
T 2 R 9
T 2 R 8
T 2 R 7
T 2 R 6
E MIDDLESEX
SPENCER
DAYS ACADEMY
THORNDIKE
BRASSUA
TOMHEGAN
MOOSE RIVER
DENNIS
FORSYTH
BLAKE
ROCKWOOD
S T RIP
TAUNTON & RAYNHAM
T 1 R 14
T 1 R 13
T 1 R 12
T 1 R 11
T 1 R 10
T 1 R 9
T 1 R 8
T 1 R 7
T 1 R 6
LILY BAY
FRENCHTOWN
T A R 12
T A R 11
T A R 10
T A R 9
T A R 8
T A R 7
INDIAN NO
WEST BOWDOIN
EAST BOWDOIN
EDWAY
SAPLING
BIG SOPER
A. J. GORE
BOWDOIN COLLEGE
GRANT
T B R 11
T B R 10
T B R 9
LONG A
THE CHASE
PATTEN

PLATE 2: THE WOODLANDS

Here we have two snapshots of GNP's woodland holdings, both of them promulgated by the company itself. On the left is an in-house company map from 1940; the map on the right is from a marketing brochure printed in 1968.

The 1940 map is particularly significant in that its coloring depicts the percentage of the land area shown which was entirely owned and logged by Great Northern Paper against that which was shared with other owners to varying degrees. For the most part, the colored areas correspond to the state township boundaries, with occasional unexplained exceptions. To the modern eye, the color choices can seem slightly incongruous—for instance, it seems more intuitive to make the areas of 100% GNP ownership green—and no explanation is offered for the choice to color-code partial ownership in the first place, as against simply breaking down the owned and unowned areas in a more granular fashion.

The map from 1968 is considerably smaller and less detailed, which speaks to its origins as one side of a two-page spread in a promotional booklet as opposed to a large-scale wall map, and yet in some ways, with its inclusion of road and rail networks and dams, it attempts to convey more information. Here GNP's woodland holdings are shown without qualification, as great blocks of territory under the company's unequivocal control. Township lines are omitted, though the woodlands' boundaries still visibly follow them in most places. Of particular note is the fact that while dams are included, they are unlabeled and wildly out of scale. The person or persons responsible for this map were plainly more concerned with making an impression than with providing strictly accurate spatial information.

In both cases, in fact, the primary purpose of these maps seems to be more about conveying a message than anything else, and particularly in the latter case, that message is not subtle: Look on GNP's works, ye Mighty, and despair.

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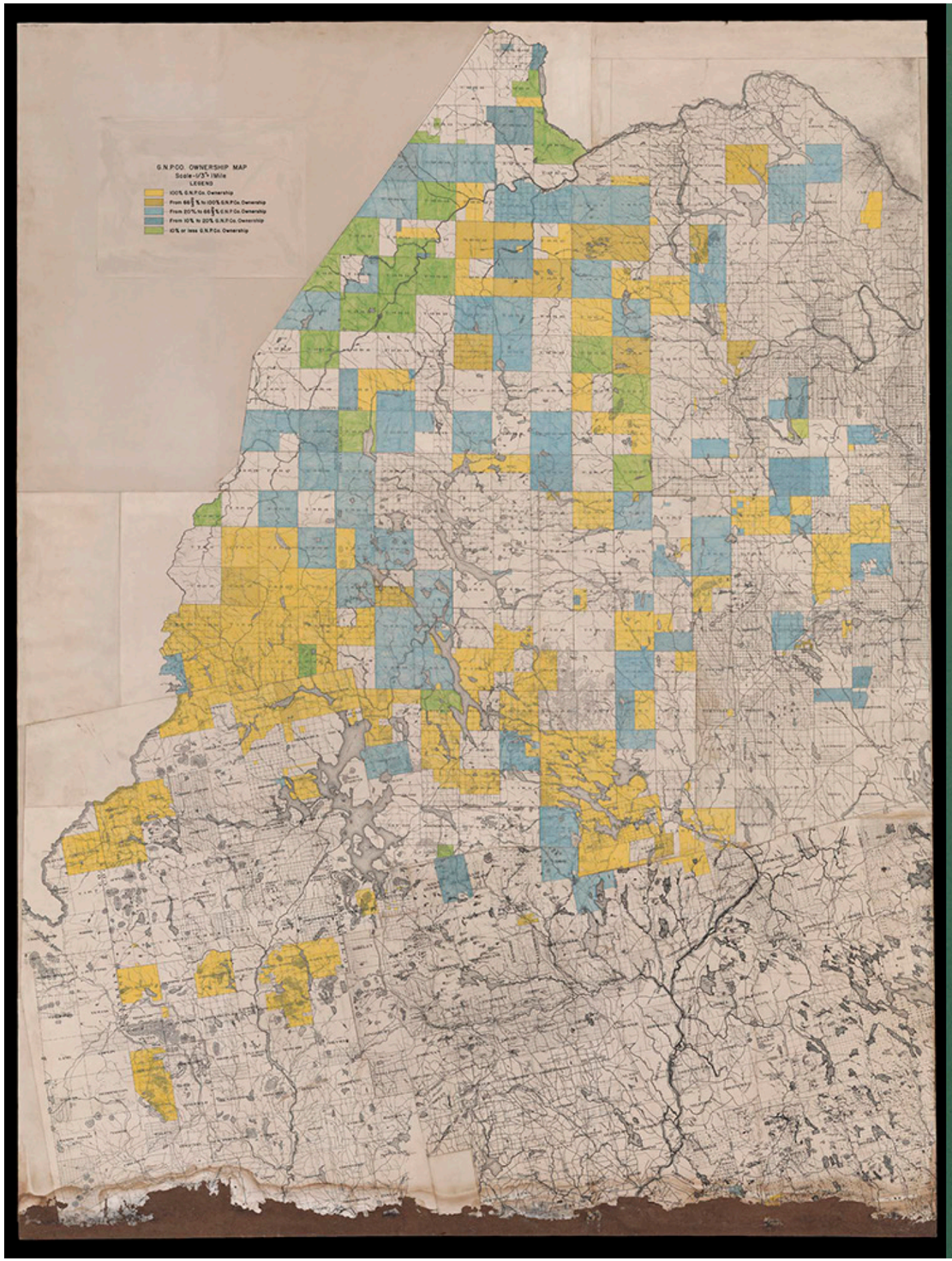
G.N.P.CO. OWNERSHIP MAP
Scale-1/2" = 1Mile
LEGEND
100% G.N.P.Co. Ownership
From 66 2/3 % to 100% G.N.P.Co. Ownership
From 20% to 66 2/3% G.N.P.Co. Ownership
From 10% to 20% G.N.P.Co. Ownership
10% or less G.N.P.Co. Ownership

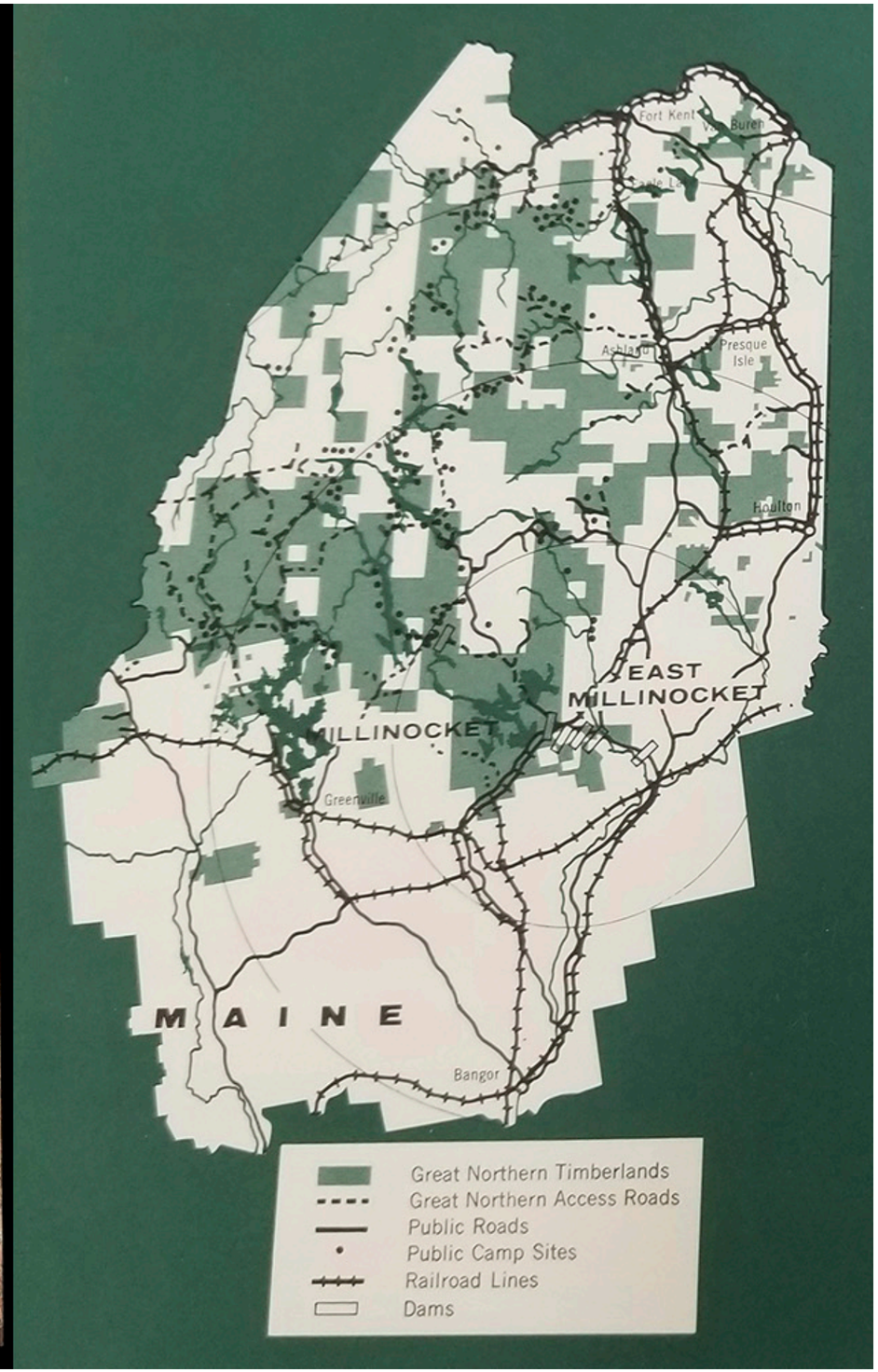
Fort Kent
Van Buren
Ashland
Presque Isle
Houlton
EAST MILLINOCKET
MILLINOCKET
Greenville
MAINE
Bangor
Great Northern Timberlands
Great Northern Access Roads
Public Roads
Public Camp Sites
Railroad Lines
Dams

PLATE 3: THE ROAD MAP

Opposite is another in-house map. Its exact vintage is unknown; apart from the uncertain handwritten notation "1940's(?)", it is undated. Possibly intended as a counterpart to the map showing the extent of GNP's woodlands, this one depicts another aspect of the company's geographical scope: its extensive network of privately built and owned roads.

Many of GNP's logging roads started out as simple rough tracks, scratched out of the woods by the company's logging crews as they cut trees and hauled them by horse (a process known as "twitching") to waterways. Before the practice was banned for environmental reasons in the early 1970s, log drives down the Penobscot to the mill at Millinocket were an annual GNP ritual. By 1940 this practice had been at least partially mechanized, with proper (if unpaved) roads supplanting the twitching tracks and machines doing the hauling rather than horses in the more built-up areas, but the river was still used to do the bulk of the heavy lifting. Notice, in particular, the way the roads in the far west of the state all converge on Seboomook Lake, where the logs would begin their long float to Millinocket by way of Chesuncook, Ripogenus, Pemadumcook, North Twin, and Quakish.

Elsewhere, signs of the turn toward road and rail haulage also emerge, hinting at the transitional nature of the period in which this map was drawn. For example, the company roads immediately to the west of Millinocket connect not to the Penobscot, but to existing public roads that lead to the mill, suggesting that they were mainly used for truck haulage. Of particular note also is the short but significant stub of GNP road in Smyrna township, which connects the woodlands in that area to the road that parallels the railroad in Oakfield. At the time, there was a major B&A depot at Oakfield which handled much of the railroad's eastern traffic, originating from not only the woods, but also the potato fields of Aroostook County. The station building still stands today as a museum, operated each summer by the Oakfield Historical Society.

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MAP
OF
NORTHERN MAINE
Scale-1" = 8 Miles
LEGEND
Great Northern Paper Company Private Roads
Great Northern Paper Co. Roads to be Constructed
St John Sulphite Co. Ltd. Private Road
Public Access Roads
Great Northern Paper Company Mills
Great Northern Paper Co. Pulpwood Loading Plants
1940's (2)
MADAWASKA
GRAND ISLE
VAN BUREN
ST. FRANCIS
ST. JOHN
WALLAGRASS
NEW CANADA
EAGLE LAKE
WINTERVILLE
CYR
CASTLE HILL
MAPLETON
CHAPMAN
WESTFIELD
MARS HILL
MASARDIS
OXBOW
MORO
MERRILL
AMNIRA
LUDLOW
HOULTON
HAMMOND
LITTLETON
MT. CHASE
HERSEY
DYER BROOK
OAKFIELD
PATTEN
CRYSTAL
ISLAND FALLS
LINNEUS
HODGDON
GARY
STACYVILLE
SHERMAN
FORT KENT
AMITY
ORIENT
GLENWOOD
MAYNESVILLE
BENEDICTA
SILVER RIDGE
N. YARMOUTH ACADEMY
REED
SANDY
WESTON
WASHINGTON
DANFORTH
BROWNTON
CODYVILLE
TOPSFIELD
WAITE
GRAND LAKE STREAM
INDIANTOWN
ARDOSTOOK
PISCATAQUIS
CR
GARFIELD
CHESUNCOOK
SEBOOMOOK
BOYD
HAMMOND
PITT
PRENTISS
SANDY MOUNTAIN
BALD MOUNTAIN
ALDER BROOK
SOLDIERTOWN
MIDDLESEX
DAYS ACAD.
SPENCER BAY
BLAKE
FRENCHTOWN
MOOSE RIVER
THORNDIKE
BRASSUA
BENNISTOWN
LONG POND
ROCKWOOD
TAUNTON & RAYNHAM
SANDWICH
FORSYTHE
ATTEAN
JACKMAN
LILY BAY
INDIAN No 3
INDIAN No 2
MOOSE MILLROCK
MEDWAY
ROLUNKUS
WASWAHOC
PENOBSCOT CO.
KINGMAN
ORIN
MATAWAMKEAG
WOODVILLE
HOPKINS
LONG
GORE A2
BERLIN POND
MISERY
LOWELL TOWN
HOLEB
APPLETON
FRANKLIN CO.
SOMERSET CO.
HOBBSTOWN
UPPER ENCHANTED
JOHNSON MOUNTAIN
10000 ACRE TRACT
INDIAN STREAM
GHASE STREAM
BIG SQUAW
LITTLE SQUAW
BOWDOIN COLLEGE GRANT EAST
BOWDOIN WEST
GREENVILLE
ELLIOTTSVILLE
KATAHDIN IRON WORKS
KIBBY
JIM POND
SPRING LAKE
FLAGSTAFF
EUSTIS
BIGELOW
DEAD RIVER
WYMAN
CARRYING PLACE
WEST FORKS
MOXIE GORE
SQUARETOWN
EAST MOXIE
SHIRLEY
THE FORKS
PIERCE POND
BOUNDARY
BALD MOUNTAIN
BLANCHARD
SPAULDING
MONSON
WILLIAMSBURG
BOWERBANK
WILLIMANTIC
BARNARD
MEDFORD
FOXCROFT
GUILFORD
SEBEC
BROWN LAKE
SEBOEIS
WNN
CHESTER
LAKEVILLE
LINCOLN
LEE
SPRINGFIELD
GARROLL
KOSSUTH
WEBSTER
PRENTISS
ENFIELD
BURLINGTON
LOWELL
HANCOCK CO.
PENOBSCOT CO.
GRAND FALLS
SUMMIT
GREENBUSH
GREENFIELD
MILFORD
OLD TOWN
ORONO
BRADLEY
AURORA
DEVENEAU
AMHERST
BEDDINGTON
CLIFTON
MARIAVILLE
NORTHFIELD
WESLEY
ORIENTED
MATTAMISCONTIS
LAGRANGE
DOVER
ATKINSON
ORNEVILLE
BRADFORD
CHARLESTON
GARLAND
ALTON
DEXTER
CORINTH
HUDSON
EXETER
CORINNA
KENDUSKEAG
BLEU
LEVANT
STETSON
NEWPORT
PALMYRA
HERMAN
ETNA
PLYMOUTH
GARMEL
BANGOR
ARGYLE
LEPROHON
PISCATAQUIS CO.
PENOBSCOT CO.
SANGERVILLE
KELLEYSTON
BARKMAN
WAYFIELD
KINGSBURY
MOSCOW
PLEASANT RIDGE
GARRISON
CARRABASSETT
HIGHLAND
JERUSALEM
CROCKER TOWN
CORPLIN
LANG
REDINGTON
DALLAS
MT. ABRAM
KINGFIELD
LEXINGTON
CONCORD
BINGHAM
BRIGHTON
MADRID
SALEM
NEWPORT
EMBDEN
SOLON
ATHENS
HARMONY
RIPLEY
CAMBRIDGE
ST. ALBANS
CORNVILLE
HARTLAND
FREEMAN
SANDY RIVER
PHILLIPS
STRONG
AVON
ANSON
MADISON
NEW VINEYARD
CANAAN
DURBANK
LOBSTER
LITTLE W.
BIG W.
MIDDLESEX
SEBOOMOOK
BOYD
SANDY MOUNTAIN
BALD MOUNTAIN
ALDER BROOK
SOLDIERTOWN
DAYS ACAD.
SPENCER BAY
BLAKE
FRENCHTOWN
MOOSE RIVER
THORNDIKE
BRASSUA
BENNISTOWN
LONG POND
ROCKWOOD
TAUNTON & RAYNHAM
SANDWICH
FORSYTHE
ATTEAN
JACKMAN
LILY BAY
INDIAN No 3
INDIAN No 2
MOOSE MILLROCK
MEDWAY
ROLUNKUS
WASWAHOC
PENOBSCOT CO.
KINGMAN
ORIN
MATAWAMKEAG
WOODVILLE
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KIBBY
JIM POND
SPRING LAKE
FLAGSTAFF
EUSTIS
BIGELOW
DEAD RIVER
WYMAN
CARRYING PLACE
WEST FORKS
MOXIE GORE
SQUARETOWN
EAST MOXIE
SHIRLEY
THE FORKS
PIERCE POND
BOUNDARY
BALD MOUNTAIN
BLANCHARD
SPAULDING
MONSON
WILLIMANTIC
BOWERBANK
BARNARD
MEDFORD
FOXCROFT
GUILFORD
SEBEC
BROWN LAKE
SEBOEIS
WNN
CHESTER
LAKEVILLE
LINCOLN
LEE
SPRINGFIELD
GARROLL
KOSSUTH
WEBSTER
PRENTISS
ENFIELD
BURLINGTON
LOWELL
HANCOCK CO.
PENOBSCOT CO.
GRAND FALLS
SUMMIT
GREENBUSH
GREENFIELD
MILFORD
OLD TOWN
ORONO
BRADLEY
AURORA
DEVENEAU
AMHERST
BEDDINGTON
CLIFTON
MARIAVILLE
NORTHFIELD
WESLEY
ORIENTED
MATTAMISCONTIS
LAGRANGE
DOVER
ATKINSON
ORNEVILLE
BRADFORD
CHARLESTON
GARLAND
ALTON
DEXTER
CORINTH
HUDSON
EXETER
CORINNA
KENDUSKEAG
BLEU
LEVANT
STETSON
NEWPORT
PALMYRA
HERMAN
ETNA
PLYMOUTH
GARMEL
BANGOR
ARGYLE
LEPROHON
PISCATAQUIS CO.
PENOBSCOT CO.
SANGERVILLE
KELLEYSTON
BARKMAN
WAYFIELD
KINGSBURY
MOSCOW
PLEASANT RIDGE
GARRISON
CARRABASSETT
HIGHLAND
JERUSALEM
CROCKER TOWN
CORPLIN
LANG
REDINGTON
DALLAS
MT. ABRAM
KINGFIELD
LEXINGTON
CONCORD
BINGHAM
BRIGHTON
MADRID
SALEM
NEWPORT
EMBDEN
SOLON
ATHENS
HARMONY
RIPLEY
CAMBRIDGE
ST. ALBANS
CORNVILLE
HARTLAND
FREEMAN
SANDY RIVER
PHILLIPS
STRONG
AVON
ANSON
MADISON
NEW VINEYARD
CANAAN

PLATE 4: WHAT WENT BEFORE

This plate is a composite of two maps from *Stuart's Atlas of the State of Maine*, published by J.H. Stuart and Co. of South Paris, Maine, in 1894. It depicts the parts of adjoining Penobscot and Piscataquis Counties encompassing the lower West Branch of the Penobscot River, where Great Northern Paper would later construct its hydropower network.

Although it contains no elevation data, this map can still give the viewer some notion of what Charles Mullen saw in the territory around the lower West Branch when he came to explore the area in 1891: the absence of settlement west of Medway, the waterways and lakes, and just a few hints of the hilly terrain. Comparison with subsequent plates will also highlight the changes in those waterways that the company was soon to make. Notice, for instance, that while Chesuncook, Pemadumcook, and Millinocket Lakes are present, as are the Twin Lakes (really extensions of Pemadumcook), Ripogenus and Quakish are not, nor are Ferguson and Dolby Ponds. The latter bodies of water would not exist until GNP created them. Likewise, the towns of Millinocket and East Millinocket aren't present, since they were built, along with the mills they were there to service, in 1899 and 1906 respectively.

Also of note is the B&A Railroad line running southwest-to-northeast through almost exactly the spot where Millinocket would soon stand—the line Mullen was sent to the area to survey, three years before this map's publication.

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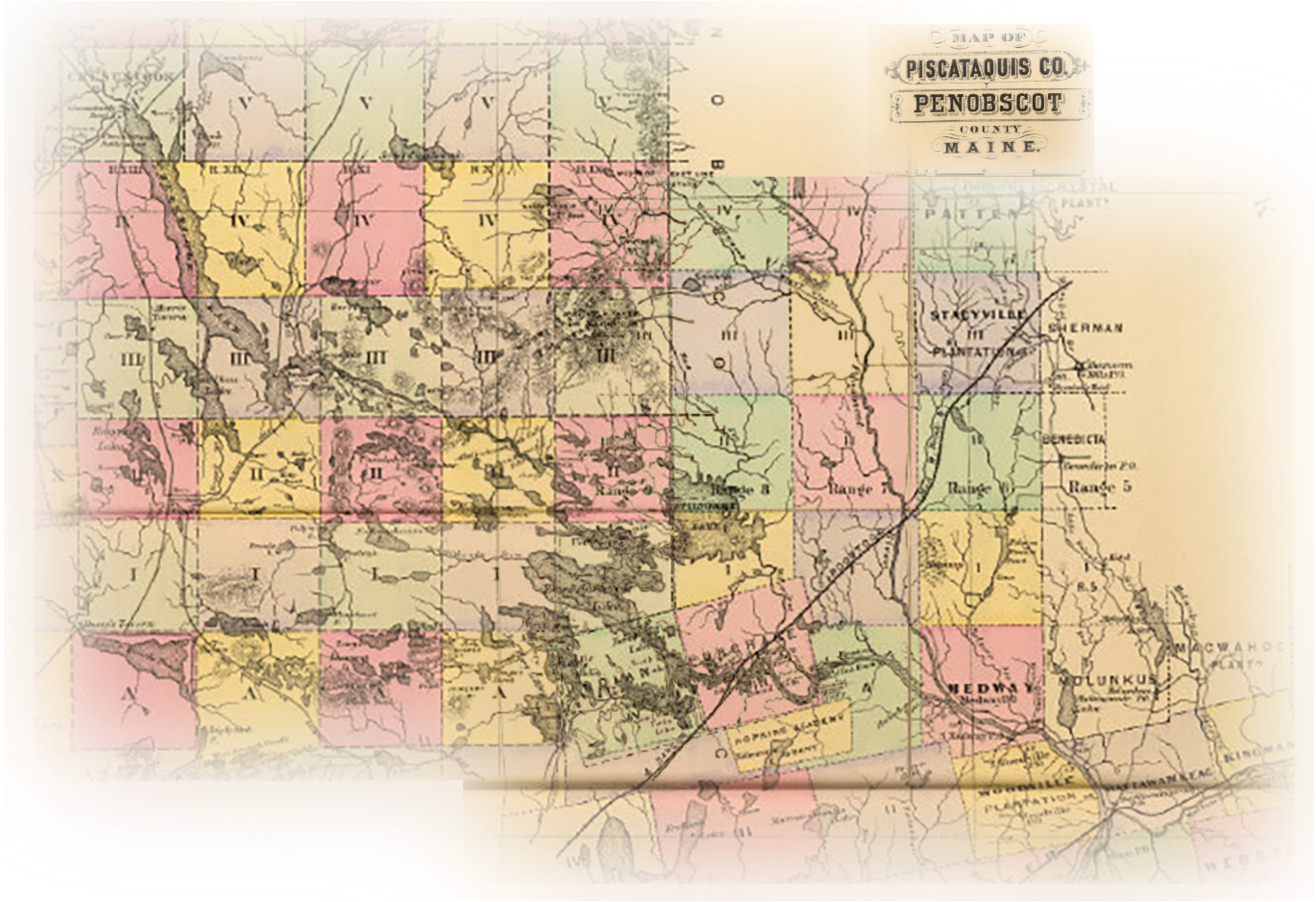
MAP OF
PISCATAQUIS CO.
PENOBSCOT
COUNTY
MAINE.
PATTEN
STACYVILLE
SHERMAN
BENEDICTA
Range 8
Range 7
Range 6
Range 5
MEDWAY
MOLUNKUS
WOODVILLE
HOPKINS ACADEMY

PLATE 5: THE HYDRO NETWORK

This plate shows the other side of the promotional brochure spread from Plate 2, which depicts (in an extremely loose fashion) Great Northern's power system as it stood in 1968. At that time, the company still produced all of its operating power internally, from its own hydroelectric system and a thermal-electric power plant at each mill. It did not buy power from the public grid for industrial operations—indeed, could not, because the mills' machinery was built to use alternating current at 40 cycles per second, not the standard 60.

As with its counterpart the woodlands map, this map has a few problems, mostly to do with its genesis as a marketing graphic rather than a work of serious cartography. Most notably, the icons depicting the Millinocket and East Millinocket mills are both wildly out of scale and not in the right places. Most vexingly, it is absolutely unclear to me what the curving line running diagonally from northwest to southeast is meant to represent. It roughly corresponds to the course of the Penobscot River, but not very accurately, and though its western half vaguely follows the course of the road connecting the Millinocket mill to Ripogenus Dam as far the junction between Millinocket and Pemadumcook Lakes, the rest of it corresponds to no actual road or rail line.

Nevertheless, there is useful information to be gleaned here. The positions of the generating stations are more accurate than those of the mills themselves, and the figures included in the inset box provide a concise overview of how the company capitalized on its geographic situation to power its operations. As the breakdown of the figures shows, GNP did not only use the Penobscot to generate electricity, although it did a lot of that in several places along the river: at Ripogenus, North Twin, Dolby, and Weldon Dams, as well as from a dam within the Millinocket mill site itself. It also employed a significant fraction of the river's power in old-fashioned hydro-mechanical operations, such as running the grinding wheels that reduced logs to pulp for papermaking, just as watermills had done for centuries before the electrical age.

Beyond all this, the map's very inaccuracy, its designer's preference for style over geographic detail, is revealing; like the woodlands map that accompanied it, this was a document that was meant to impress as much as, if not more than, to inform.

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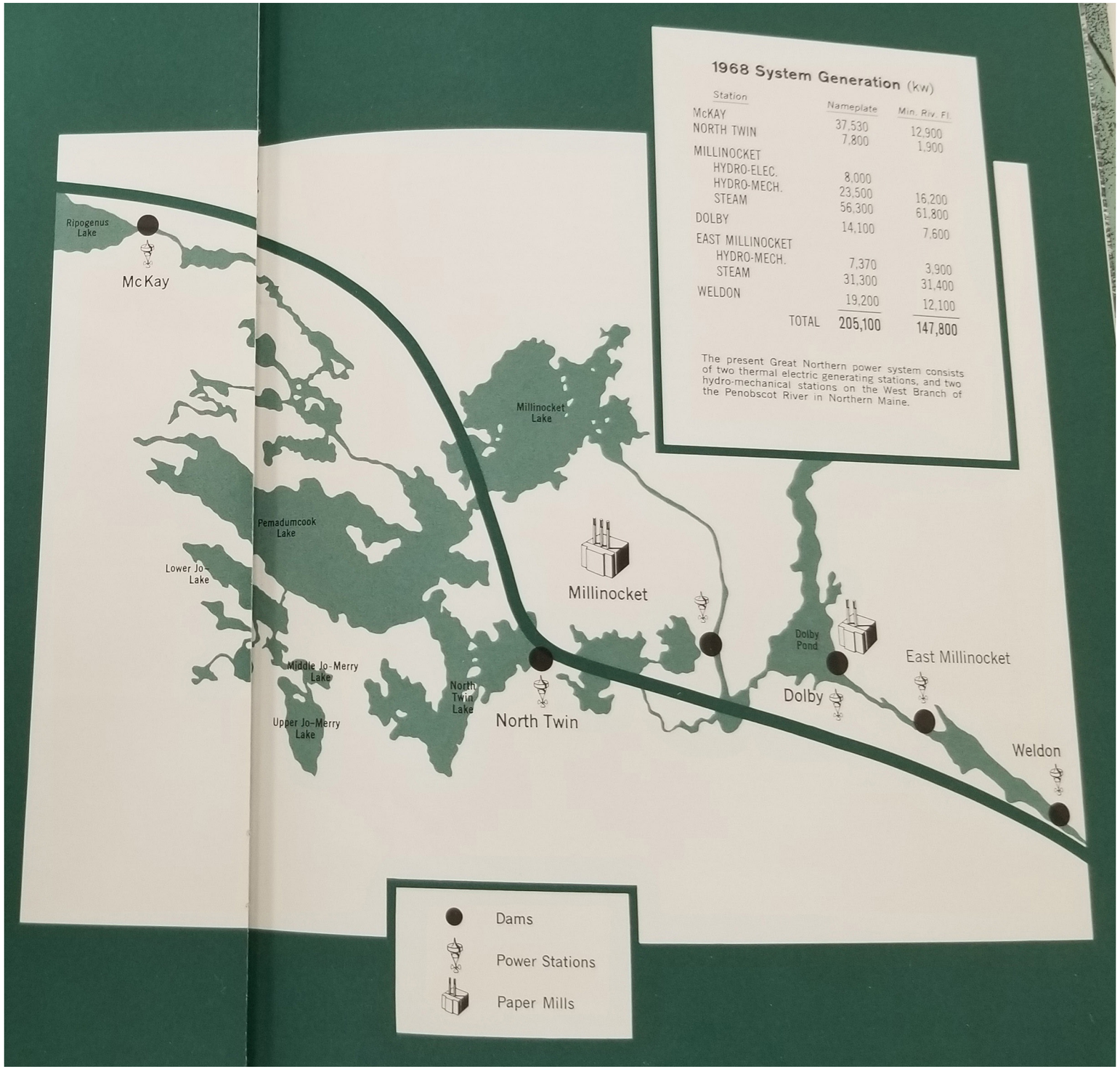
1968 System Generation (kw)
Station
Nameplate
Min. Riv. Fl.
McKAY
37,530
12,900
NORTH TWIN
7,800
1,900
MILLINOCKET
HYDRO-ELEC.
8,000
HYDRO-MECH.
23,500
16,200
STEAM
56,300
61,800
DOLBY
14,100
7,600
EAST MILLINOCKET
HYDRO-MECH.
7,370
3,900
STEAM
31,300
31,400
WELDON
19,200
12,100
TOTAL
205,100
147,800
The present Great Northern power system consists of two thermal electric generating stations, and two hydro-mechanical stations on the West Branch of the Penobscot River in Northern Maine.
Ripogenus Lake
McKay
Pemadumcook Lake
Lower Jo-Lake
Middle Jo-Merry Lake
Upper Jo-Merry Lake
North Twin Lake
North Twin
Millinocket Lake
Millinocket
Dolby Pond
Dolby
East Millinocket
Weldon
Dams
Power Stations
Paper Mills

PLATE 6: TOPOGRAPHIC COMPOSITE

This composite map was built from the six United States Geographic Survey quadrangles of the 15-minute series encompassing the GNP hydropower system, i.e., the same rough area covered by Plates 4 and 5. The addition of the USGS's scientific elevation data and adherence to strict scale gives a clearer picture of the distances involved in the company's power system, and introduces a new variable that would play a significant role in the company's decline later in the twentieth century.

The colored dots added to the USGS base map show just how far-flung the most important part of the network, Ripogenus Dam, really was from the rest of the system. While the other dams were largely clustered in close proximity to one or the other dam (with the arguable exception of Weldon/Mattaceunk, which is located a considerable way downstream from East Millinocket in Mattawamkeag), Ripogenus stands in isolated country far to the northwest, with its crest benchmarked at an elevation of 942.59 feet above mean sea level (AMSL)—400 feet above the mill at Millinocket. It is also the tallest dam in the system, with a National Inventory of Dams height-of-record of 83 feet. A dam's potential for power generation is a function of the height of the water it can impound—in engineering parlance, its "head"—making Ripogenus, with the most elevation and the deepest gorge to work with, the linchpin of GNP's hydropower system.

With that in mind, note the red dot some distance downstream from Ripogenus. This marks the location of the Big Ambejackmockamus Falls, a section of rapids at roughly 640 feet AMSL. In the 1980s, Great Northern proposed building another dam at Big Ambejackmockamus, in between Ripogenus and North Twin, to take advantage of the hundreds of feet of head that remained unexploited on the West Branch of the Penobscot.

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TOPOGRAPHIC MAP
OF THE
GREAT NORTHERN PAPER HYDROPOWER SYSTEM
ON THE
PENOBSCOT RIVER IN MAINE
SCALE 1:62,500

THIS MAP IS A COMPOSITE BASED ON USGS QUADRANGLES

HARRINGTON LAKE, ME N4545-W6900/15 (1954)
KATAHDIN, ME 900-N-I-W/2 (1927)
JO-MARY MOUNTAIN, ME N4530/W6900/15 (1952)
NORCROSS, ME N4530/W6845/15 (1951)
MILLINOCKET, ME N4530/W6830/15 (1951)
MATTAWAMKEAG, ME N4530/W6815/15 (1940)

LEGEND

- GNP DAM ON THE PENOBSCOT RIVER
- GNP DAM ON OTHER WATERWAY
- APPROXIMATE POSITION OF BIG A DAM (NOT BUILT)

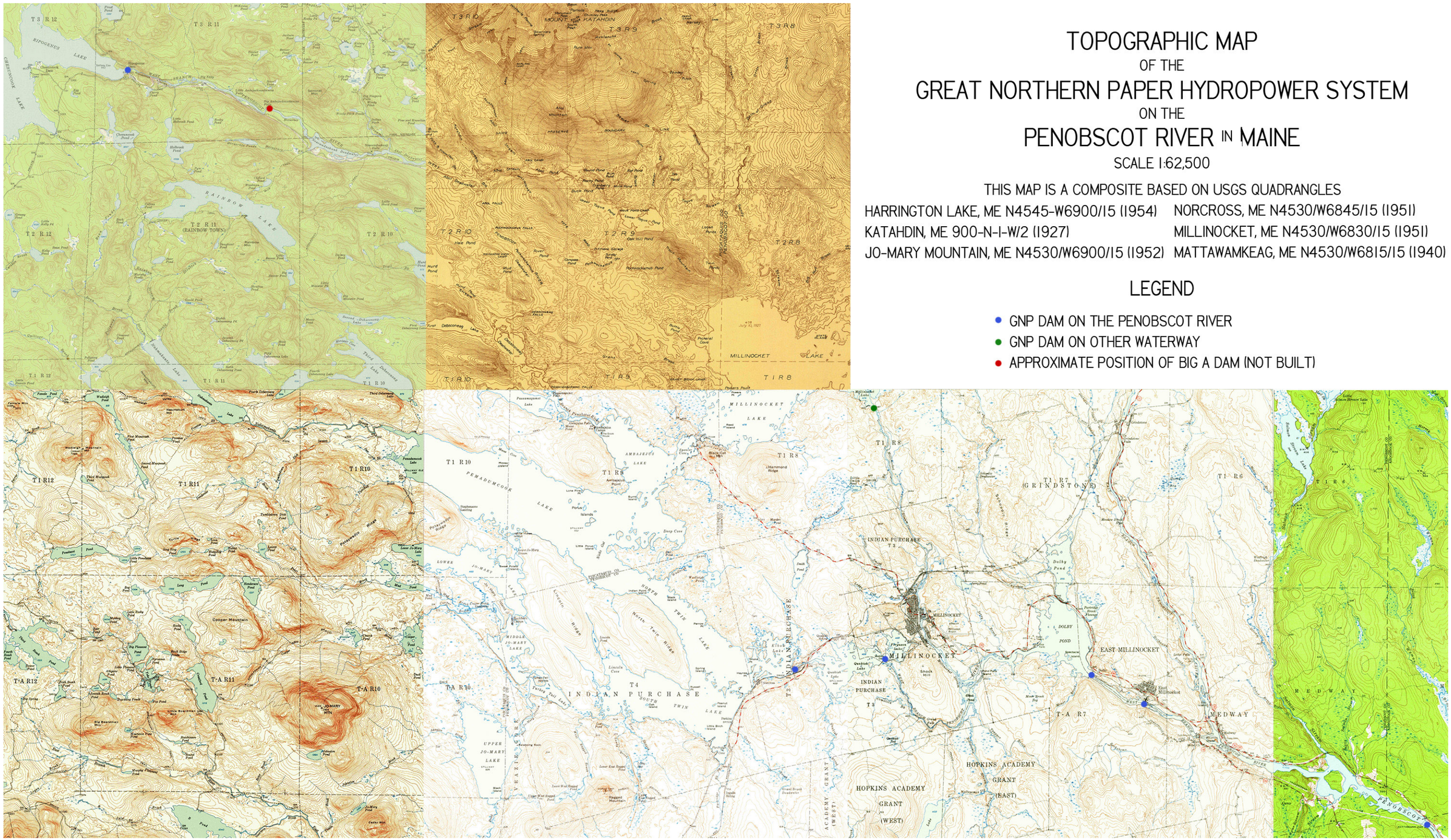

PLATE 7: VERTICAL VISUALIZATION

This diagram provides an alternate way of visualizing the vertical space of GNP's hydropower system on the Penobscot River. It renders the relative elevations and heights of the dam on the system in a way that makes the vertical separation between them along the run of the river immediately evident, and also suggests the importance of the proposed "Big A" dam at Big Ambejackmockamus Falls.

In the early 1950s, facing a significant power drought brought on by increased postwar demand for paper, GNP sought permission from a (now-long-defunct) federal agency called the Defense Electric Power Administration (DEPA) to convert the dam at Ripogenus, which had originally been built in 1916 to help control the annual log drives on the Penobscot, into a hydroelectric generating facility. In support of their application, company officials provided statistics to DEPA detailing the amount of electric power Ripogenus Dam could provide, and how many more tons of paper the company's mills could produce as a result. DEPA officials were evidently persuaded, as the powerhouse, McKay Station, was duly constructed and online by 1954.

Thirty years later, the company faced the same problem, and its managers sought to apply the same solution. From the chart opposite, we can get a sense for why they regarded Big A as a gap in the system to be filled. With the construction of a new dam and powerhouse there, they could meet the mills' increased power needs without relying on increased output from the system's thermal-electric generating plants, which burned increasingly expensive oil. Materials published as part of a marketing blitz dubbed "Big A All the Way" cast the project as the only way GNP could remain competitive in an increasingly tightened marketplace.

Times had changed, however, and where the argument had succeeded in the mid-1950s, it failed in the mid-1980s. Public opinion outside GNP's own corporate community had turned firmly against new hydroelectric construction, and the Big A proposal was far more controversial than its predecessors. Regulatory approval for the Big A Dam was not forthcoming, and the dam was never built.

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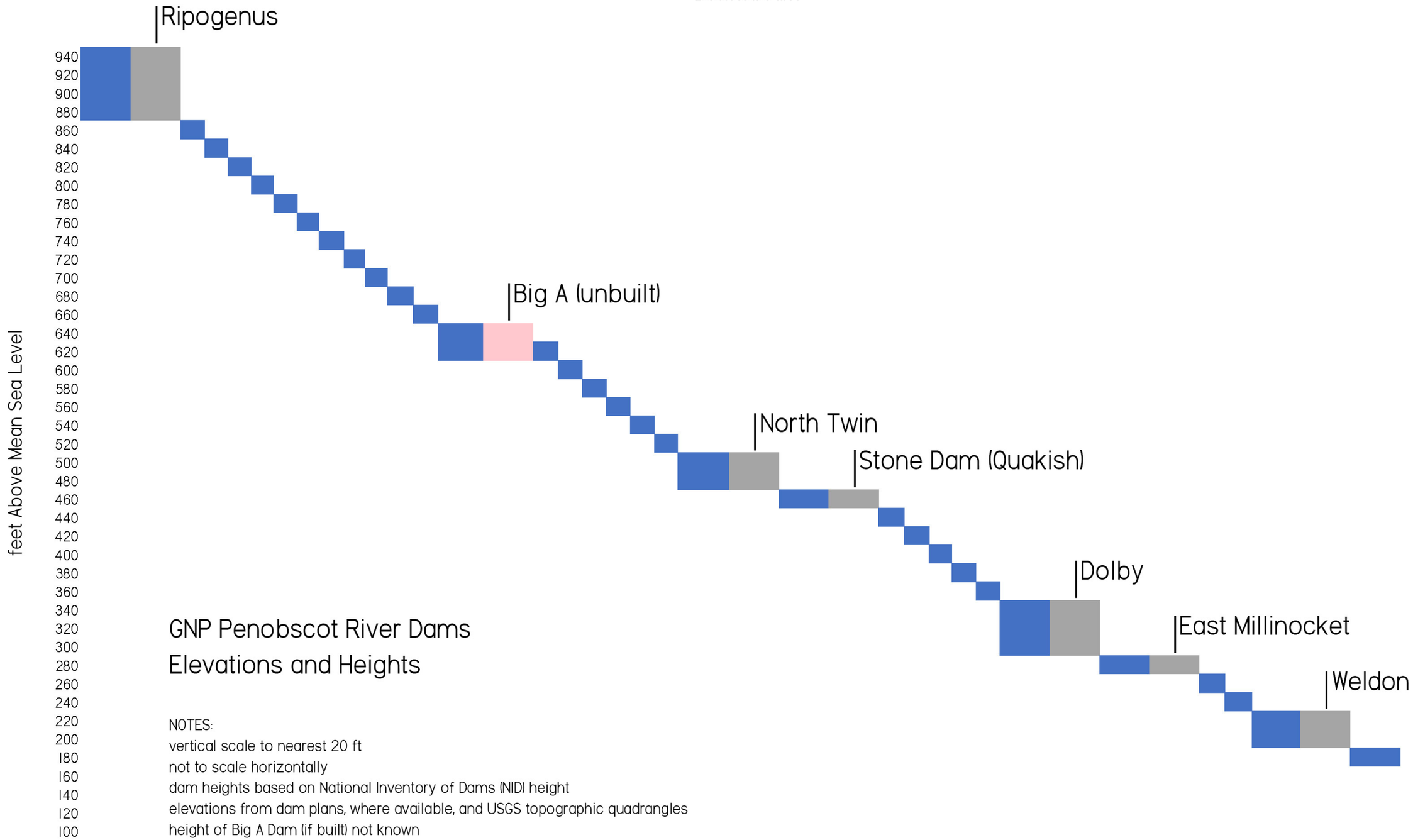

GNP Penobscot River Dams
Elevations and Heights

NOTES:
vertical scale to nearest 20 ft
not to scale horizontally
dam heights based on National Inventory of Dams (NID) height
elevations from dam plans, where available, and USGS topographic quadrangles
height of Big A Dam (if built) not known

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AFTERWORD

The rejection of the Big A Dam project may not have been the beginning of the end for Great Northern Paper; there are multiple candidates for that honor, depending upon whom one asks, and it can be difficult to separate correlation and causation in such matters. The fact remains, however, that without the dam and its contribution to the company's electric power supply, operating costs for the company's two mills on the Penobscot valley climbed steeply at a time when GNP could ill afford it. Within only a few years of the project's failure, Great Northern's parent company, Great Northern Nekoosa Corporation, was consumed by Georgia-Pacific Corporation in a hostile takeover. GNP was not the part of Nekoosa that G-P was interested in, so within a year of the takeover, it had been sold on to another outside owner, Bowater Inc., and the downward spiral had begun. A series of sales and two bankruptcies followed, and what remained of Great Northern Paper was entirely out of business by the end of 2014.

By that point, the hydroelectric network that had once been the pride and the backbone of the company had long since been sold, short-sightedly offloaded by one of the post-Bowater owners in an effort to raise operating cash. Curiously, this meant the dams' new owners had to address the same problem that had kept GNP from buying electricity on the public market for all those years, converting their generating equipment to produce salable 60-cycle power instead of the 40-cycle output the mills had used. They are still operated by their post-GNP owners today.

As for the woodlands, they were sold off in as piecemeal a fashion as they had once been acquired, and now belong to a wide variety of owners—including some acreage now enshrined as part of the Katahdin Woods and Waters National Monument.

Like the two stone legs in Shelley's "Ozymandias", the dams now stand as the only reminders of what was once the most powerful paper company on Earth. Apart from a few not-yet-demolished fragments of the two mills themselves, nothing beside remains. Round the decay of that colossal wreck, boundless and bare, the lone unlevel woods stretch far away.

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MAP CITATIONS

PLATE 1
Great Northern Paper Company. "untitled" [map]. Scale unspecified. 1932. Raymond H. Fogler Library Special Collections, *Great Northern Paper Company Records, 1889-1992*.
PLATE 2
Great Northern Paper Company. "G.N.P.Co. Ownership Map" [map]. Scale 1/3" = 1 mile. Circa 1940. *Osher Map Library Collection*. https://oshermaps.org/map/50016.0001
Great Northern Paper Company. "Great Northern's Maine timberlands and power development" [map]. Scale unspecified. 1968. Raymond H. Fogler Library Special Collections, *Great Northern Paper Company Records, 1889-1992*.
PLATE 3
Great Northern Paper Company. "Map of Northern Maine" [map]. Scale 1" = 8 miles. Circa 1940. Raymond H. Fogler Library Special Collections, *Great Northern Paper Company Records, 1889-1992*.
PLATE 4
J.H. Stuart and Co. "Map of Penobscot County, Maine" [map]. Scale 1:310,000. *Stuart's Atlas of the State of Maine* (1894). *David Rumsey Collection*. https://www.davidrumsey.com/rumsey/download.pl?image=/D0117/0966040.sid
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PLATE 5
Great Northern Paper Company. "Great Northern's Maine timberlands and power development" [map]. Scale unspecified. 1968. Raymond H. Fogler Library Special Collections, *Great Northern Paper Company Records, 1889-1992*.
PLATE 6
United States Geological Survey. "Harrington Lake quadrangle, Maine" [map]. 1:62,500. *15 Minute Series*. Reston, VA: United States Department of the Interior, 1954.
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AN EMPIRE OF WOOD AND WATER

From 1898 to 2014, the Great Northern Paper Company made paper on the banks of the Penobscot River in northern Maine. For much of that time, the company owned not only a vast expanse of woodlands to supply its raw materials, but also its own private electrical power grid, including an integrated system of hydroelectric dams on the Penobscot.

This atlas provides the reader with a sense of GNP's place in the world in its mid-twentieth-century heyday, with particular emphasis on the hydroelectric network that was its greatest strength... and its Achilles' heel.