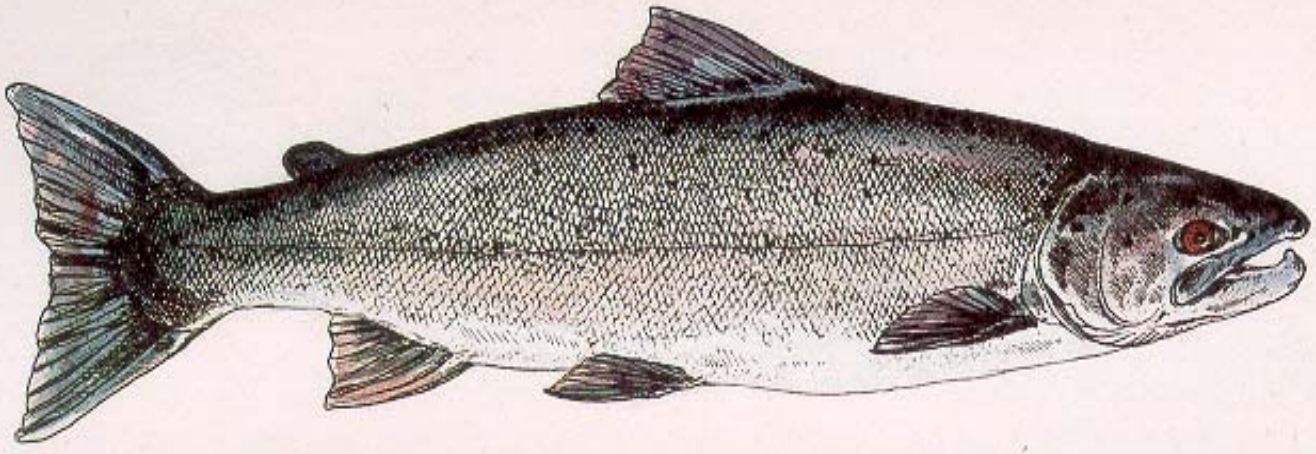
MAINE ATLANTIC SALMON HABITAT ATLAS



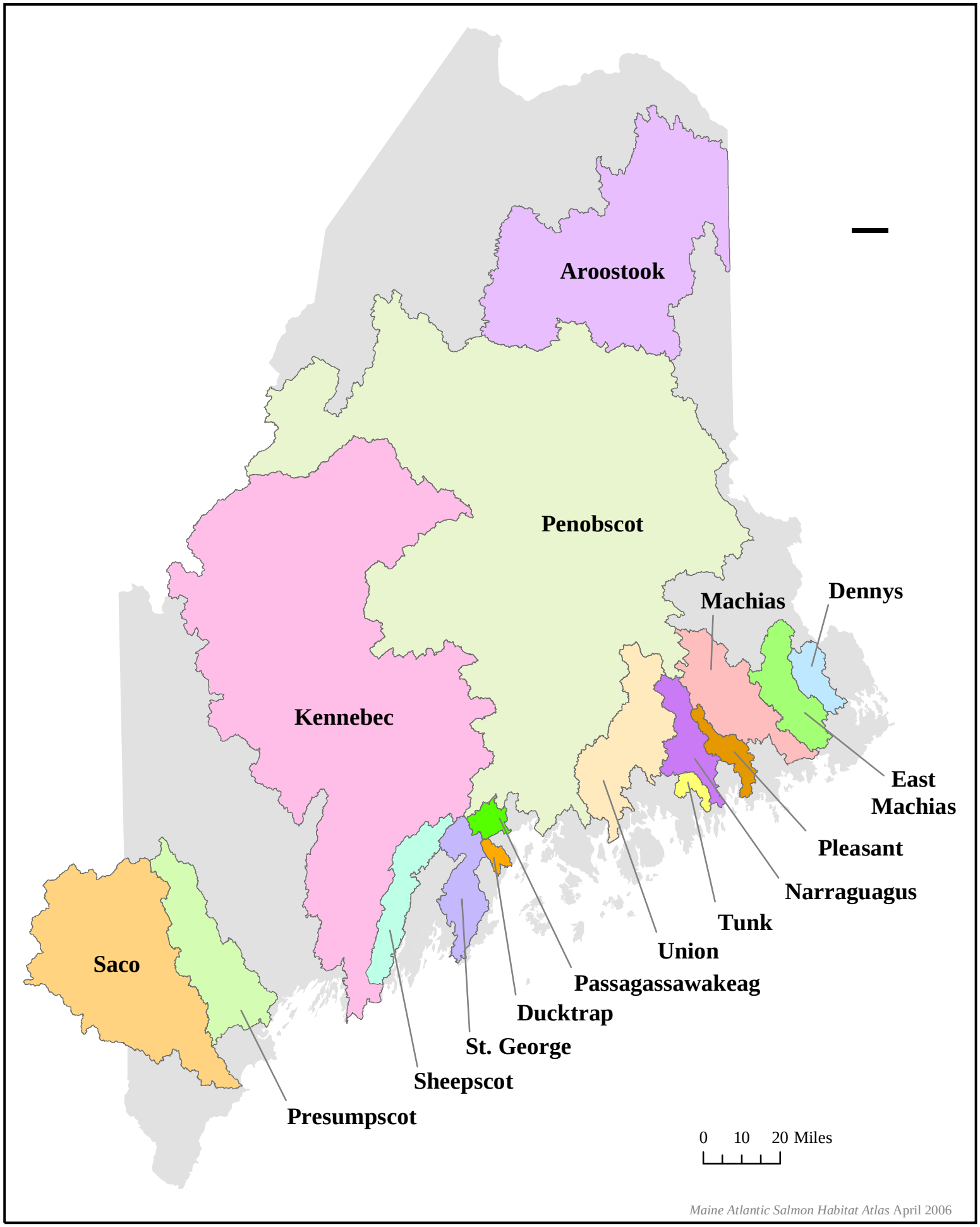
ALEX ABBOTT

APRIL 2006

GULF OF MAINE COASTAL PROGRAM
U.S. FISH AND WILDLIFE SERVICE

MAINE ATLANTIC SALMON COMMISSION

Maine Watersheds with Atlantic Salmon Habitat Surveys



Maine Atlantic Salmon Habitat Atlas April 2006

MAINE ATLANTIC SALMON HABITAT ATLAS

April 2006

Introduction

This third edition of the *Maine Atlantic Salmon Habitat Atlas* has been published in digital form to provide detailed maps of surveyed Atlantic salmon habitat in Maine. The habitat data which forms the core of the atlas was developed from field surveys conducted between 1994 and 2005 in the Aroostook, Dennys, Ducktrap, East Machias, Kennebec, Machias, Narraguagus, Passagassawakeag, Penobscot, Pleasant, Presumpscot, St. George, Sheepscot, Tunk and Union River watersheds by staff of the Maine Atlantic Salmon Commission and the U.S. Fish and Wildlife Service. These surveys were conducted to identify important Atlantic salmon spawning and rearing areas. The habitat data resulting from the surveys is meant to assist with a variety of research, management and planning activities including fry stocking, developing production estimates, habitat protection activities and data collection. While the atlas depicts spawning and rearing habitat and important point features, the digital data used to create these maps also includes information on habitat categories, composition, length, width and depth measurements, as well as canopy and other vegetation variables.

Each river surveyed appears alphabetically within the atlas, and has an index map showing the arrangement of individual map pages. Map pages are numbered from upstream to downstream, starting on the mainstem, and then proceeding alphabetically by tributary. Map pages are presented at a scale of 1:15,000 using modified USGS topographic map data as a basemap. Habitat units are represented as line segments depicting the length, but not width, of each habitat unit. All map pages contain symbols and labels indicating surveyed and unsurveyed subreaches into which each stream is divided by the Maine Atlantic Salmon Commission, and most also show points of interest with explanatory labels.

Data Sources

The data used to create this atlas came from a variety of sources. Habitat and associated data was developed by the Gulf of Maine Coastal Program of the U.S. Fish and Wildlife Service and the Maine Atlantic Salmon Commission. Many resources were supplied by the Gulf of Maine Coastal Program, including software, hardware, and data. Basemap data, including USGS digital topographic map data, and most watershed boundaries, were supplied by the Maine Office of Geographic Information Systems (MEGIS) and modified by the Gulf of Maine Coastal Program.

The digital habitat dataset (ASHAB3) used in the creation of this atlas is available for download from the MEGIS Data Catalog (internet address: http://apollo.ogis.state.me.us/catalog/). A detailed metadata document is also available there describing how the data was derived and how it is structured, including information about data attributes.

Explanatory Notes

Several features of the maps in this atlas require further description than is supplied in the legend.

Limited Spawning Habitat refers to those flatwater habitat units (deadwaters, glides and pools) in which spawning area is less than 30% of the unit area. Units containing more than 30% spawning areas are classified as **Spawning Habitat**. Note that most flatwater units contain no spawning habitat.

Subreaches identified in the atlas were defined by the biologists who completed each of the habitat surveys, and are used as fundamental units of organization. The **subreach codes** with which these reaches are labeled begin with a unique identifier for that stream (e.g., 1MAINST), and are followed by the distance in kilometers from the bottom to the top of the subreach as measured up from the mouth of the stream. The **buffer** polygons highlighting the subreaches are meant only as a cartographic tool for identifying them, and do not represent any particular biological or legal boundaries. Note that not all streams have assigned subreaches, but that all subreaches without habitat surveys are symbolized distinctly with a brown dashed buffer outline. In areas where only a part of a subreach has been surveyed, each part of that subreach is symbolized to indicate the approximate extent of the survey.

USGS topographic map images represent data that was originally mapped at a scale of 1:24,000. These images vary in source date from 1948 to 1995. **Contour lines** on the images exist with three different contour intervals depending upon standards in use at the time of the original survey of each quadrangle. The **map grid** measures surrounding each map page allow location of data as projected in NAD83 UTM (Universal Transverse Mercator) Zone 19 North Meters, which leads to a shift from the grid lines often evident on the USGS map images (originally projected in NAD27). When using the measures to find a location, use a straightedge aligned with the appropriate tics along the map borders.

Some long sections of streams between habitat areas have not been mapped. These are generally deadwater stretches that have no spawning or rearing habitat, nor any labeled points of interest.

Acknowledgements

Without the dedication and talent of past and present staff this information and atlas would not exist: Marty Anderson, Ernie Atkinson, Ed Baum, Ken Beland, Denise Buckley, Paul Christman, Tracy Copeland, Jason Czapiga, Norm Dube, Kevin Dunham, Melissa Evers, Gregg Horton, Dan Kircheis, Fred Kircheis, Greg Mackey, Jim MacMichael, John Magee, Jerry Marancik, Maggie Martin, Dan McCaw, Henry Nichols, Mariska Obedzinski, Dave Ouellette, Kipp Powell, Peter Ruksznis, Wayne Simmons, Mitch Simpson, Randy Spencer, Justin Stevens and Joan Trial. Thanks for title page map images go to the University of New Hampshire Library's Historic USGS Maps of New England & NY (internet address: http://docs.unh.edu/nhtopos/nhtopos.htm) Special thanks are due to Jed Wright for his initiation and support of this project, and the many creative ideas he has contributed.

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OR

Maine Atlantic Salmon Commission
650 State Street
Bangor, ME 04401
207-941-4449

LEGEND

Spawning Habitat

Limited Spawning Habitat

Rearing Habitat

Surveyed Subreaches
highlighted by alternating color 50-meter buffers

Unsurveyed Subreaches

5CROOKE0.00-1.70 **Subreach Label**

Points of Interest

Access

Landmark

Obstruction

Oxbow

Spring

Tributary

Powerline **Point of Interest Label**

Watershed Boundary

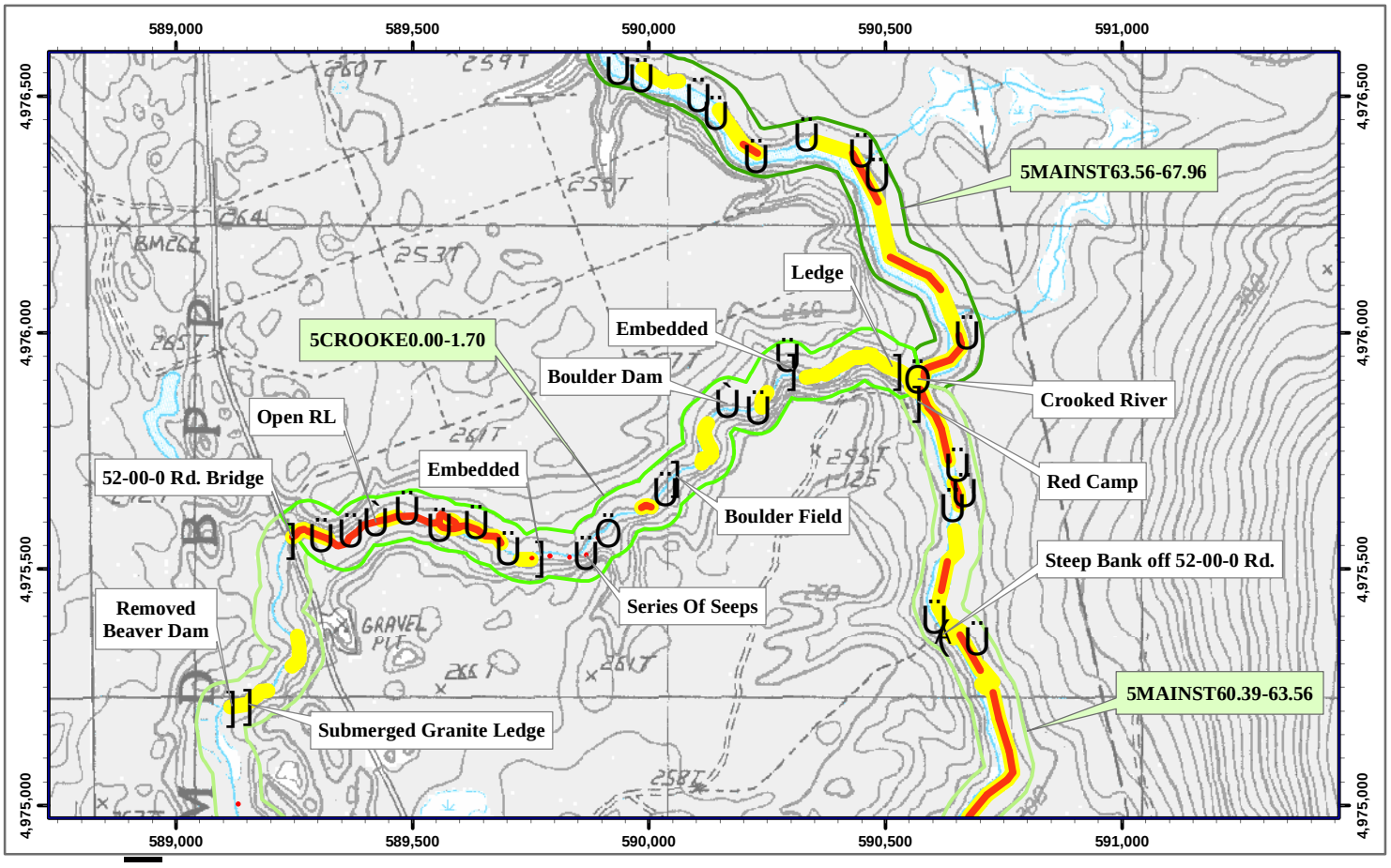
> **USGS Topographic Map Images** provide basemap data, and have been modified in color to minimize their visual impact. Water features remain blue, but have been lightened, while forest cover, contour lines, and all other features symbolized normally with black lines, such as roads, structures, and labels have been changed to grey.
>> Contour Interval = 10 Feet, 20 Feet, or 3 Meters, depending on quadrangle mapped.

> The grid measures surrounding the maps are in UTM Meters with labels every 500 m, and tics located every 50 m.

> RR and RL found often in Points of Interest labels refer to River Right and River Left (when facing downstream).

> For further description of Subreaches, USGS Topographic Map Images and other map features, please refer to the *Expanatory Notes* section of the atlas.

Sample Map Section



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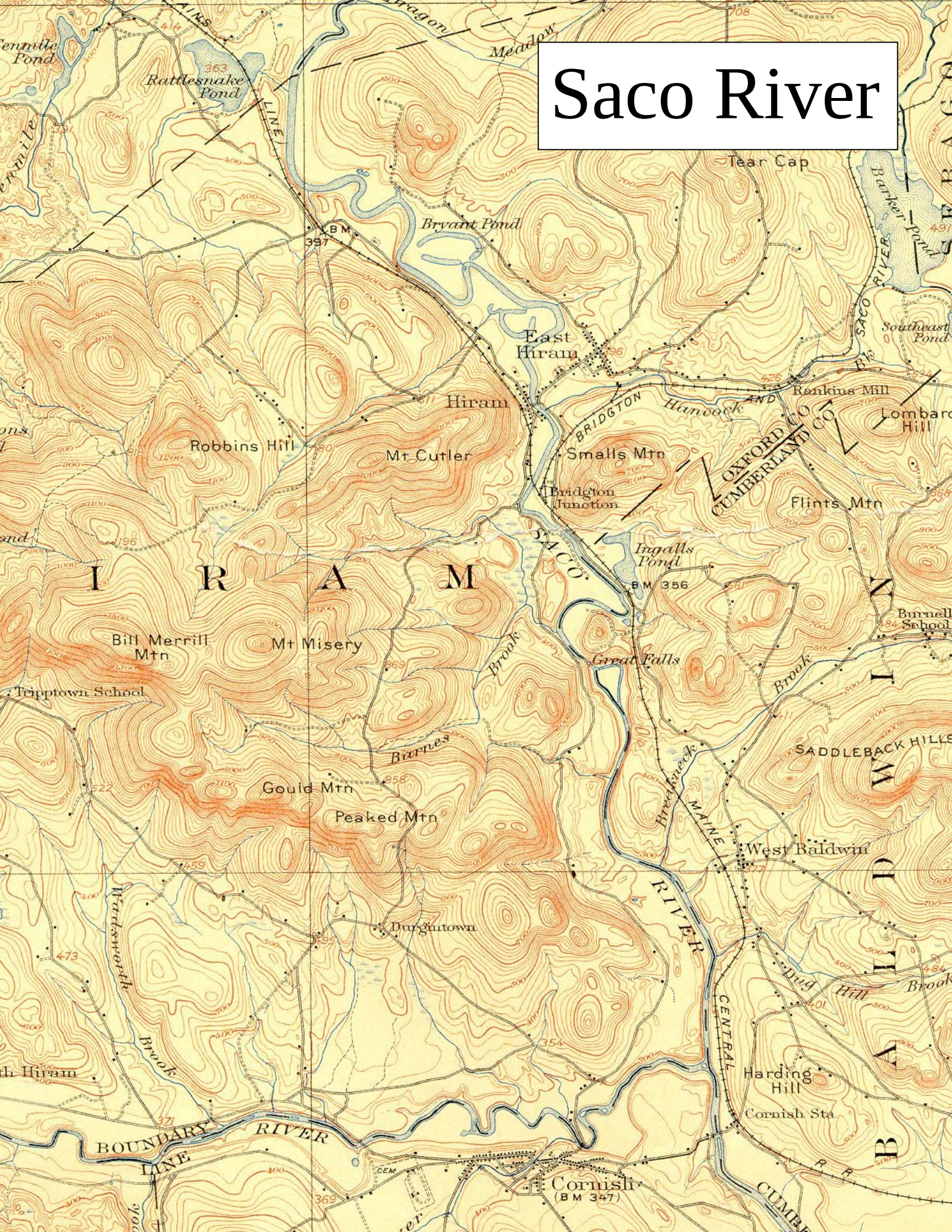
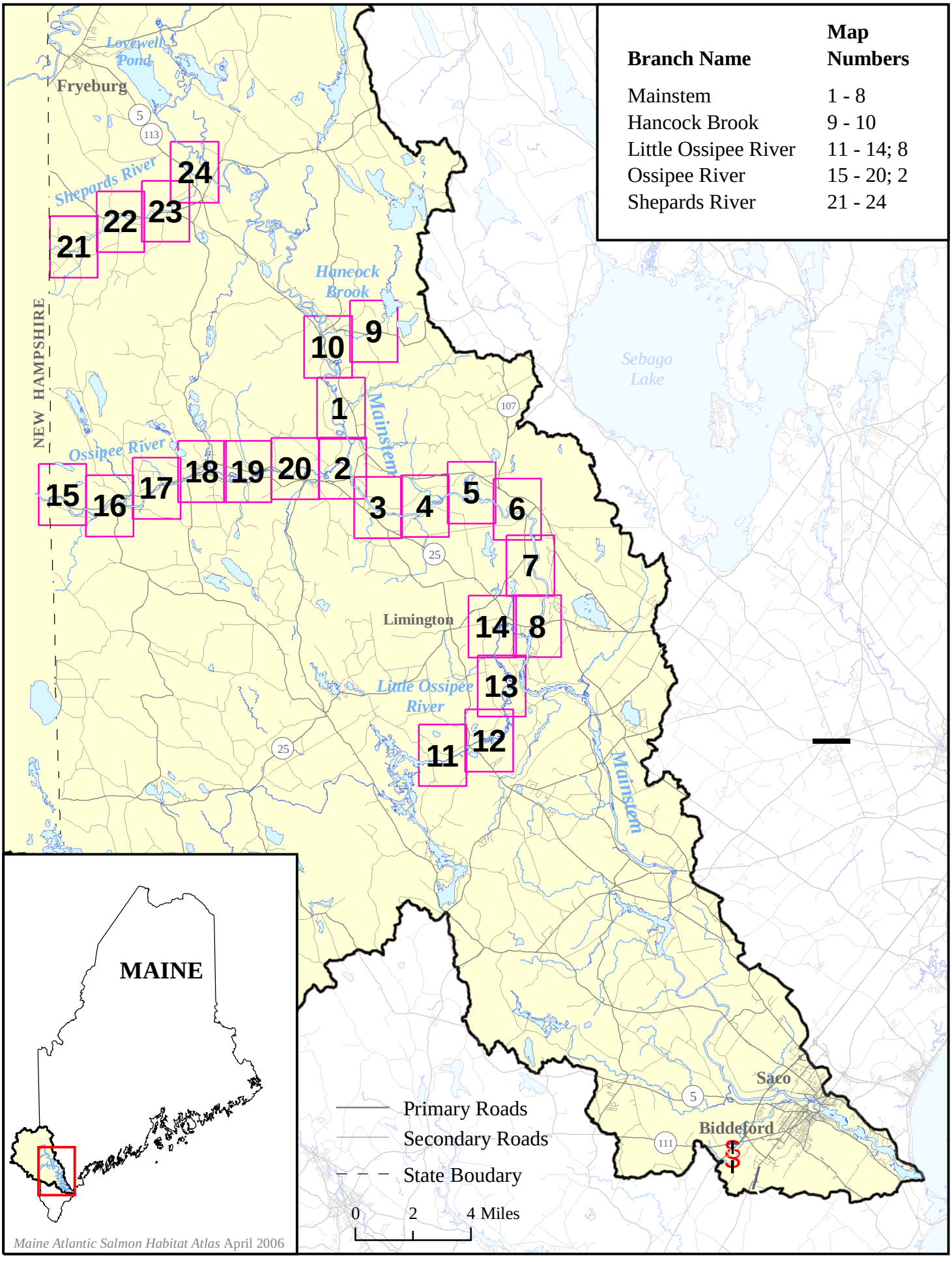
Saco River



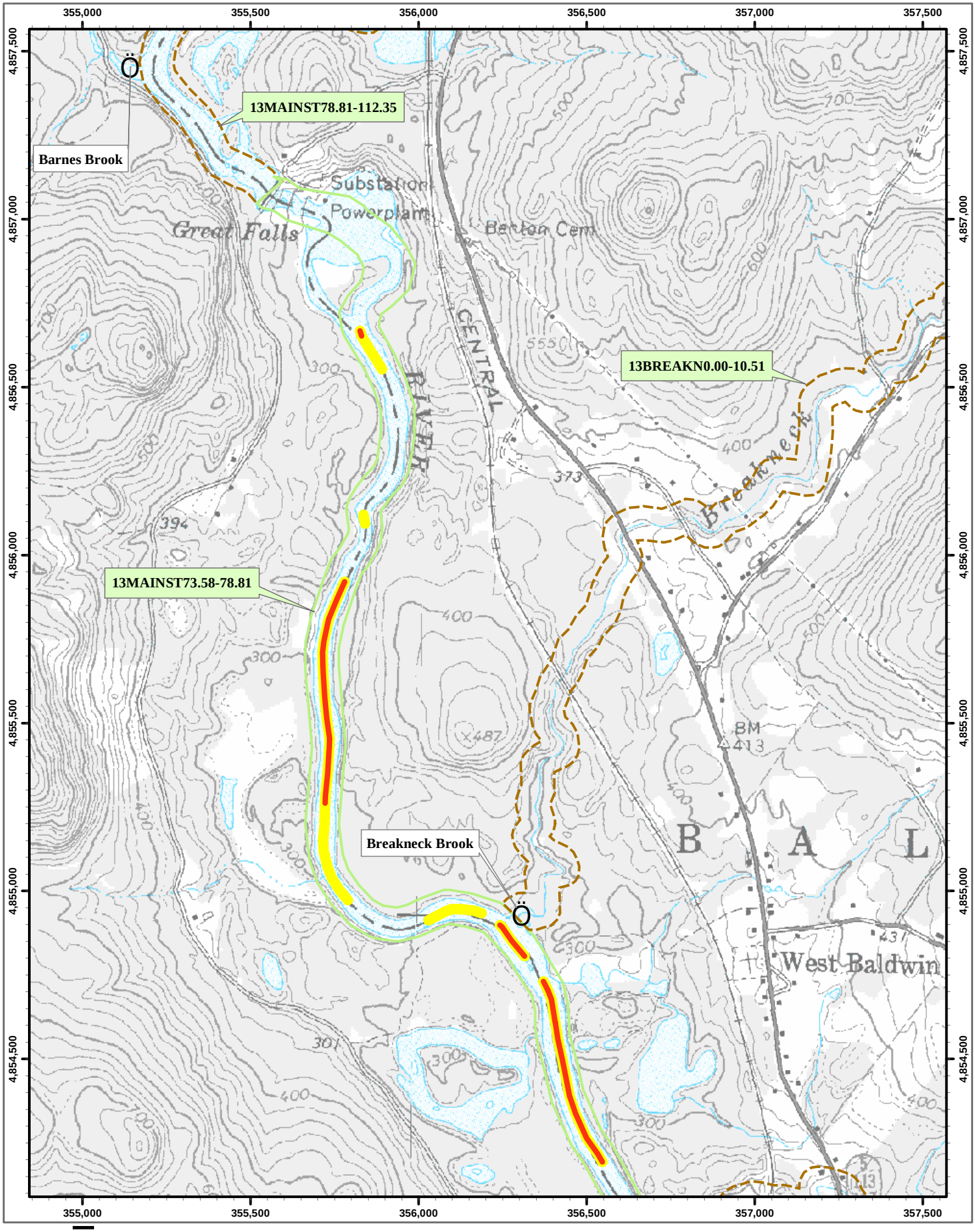
Rattlesnake Pond
Meadow
Tear Cap
Bryant Pond
BM 397
East Hiram
Hiram
Robbins Hill
Mt Cutler
Smalls Mtn
Bridgton Junction
Rankins Mill
Hancock
BRIDGTON AND
OXFORD CO
CUMBERLAND CO
Flints Mtn
Southeast Pond
Barker Pond
SACO RIVER
Ingalls Pond
BM 356
I R A M
Bill Merrill Mtn
Mt Misery
Tripptown School
Great Falls
Brook
Burnell School
SADDLEBACK HILLS
Barnes
Gould Mtn
Peaked Mtn
Breakneck
MAINE
West Baldwin
RIVER
Durgintown
Wadsworth Brook
Dug Hill Brook
CENTRAL
Harding Hill
Cornish Sta
BOUNDARY LINE
RIVER
Cornish
(BM 347)

Saco River

Index Map



Saco River Mainstem Map 1



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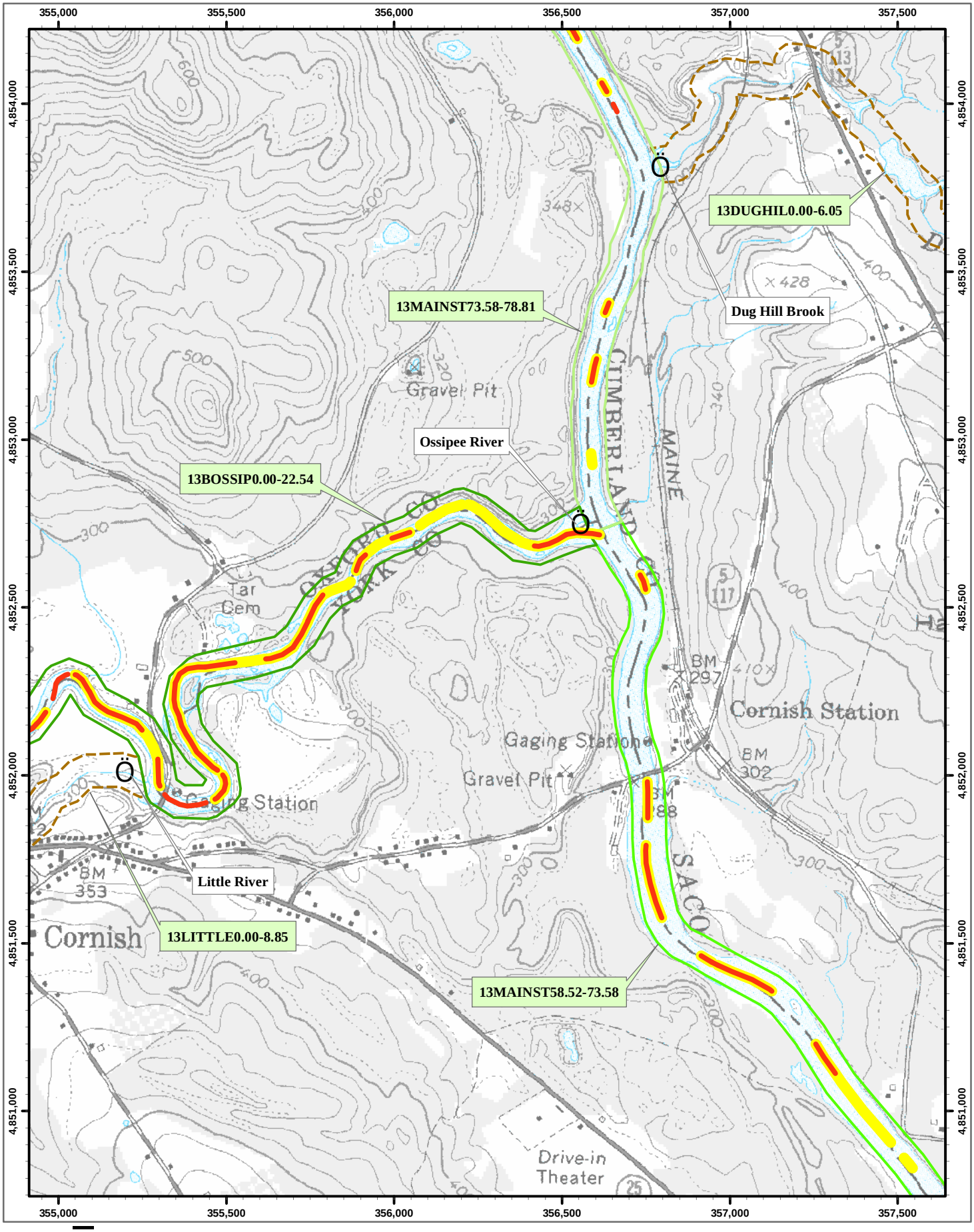
Saco River Mainstem Map 2



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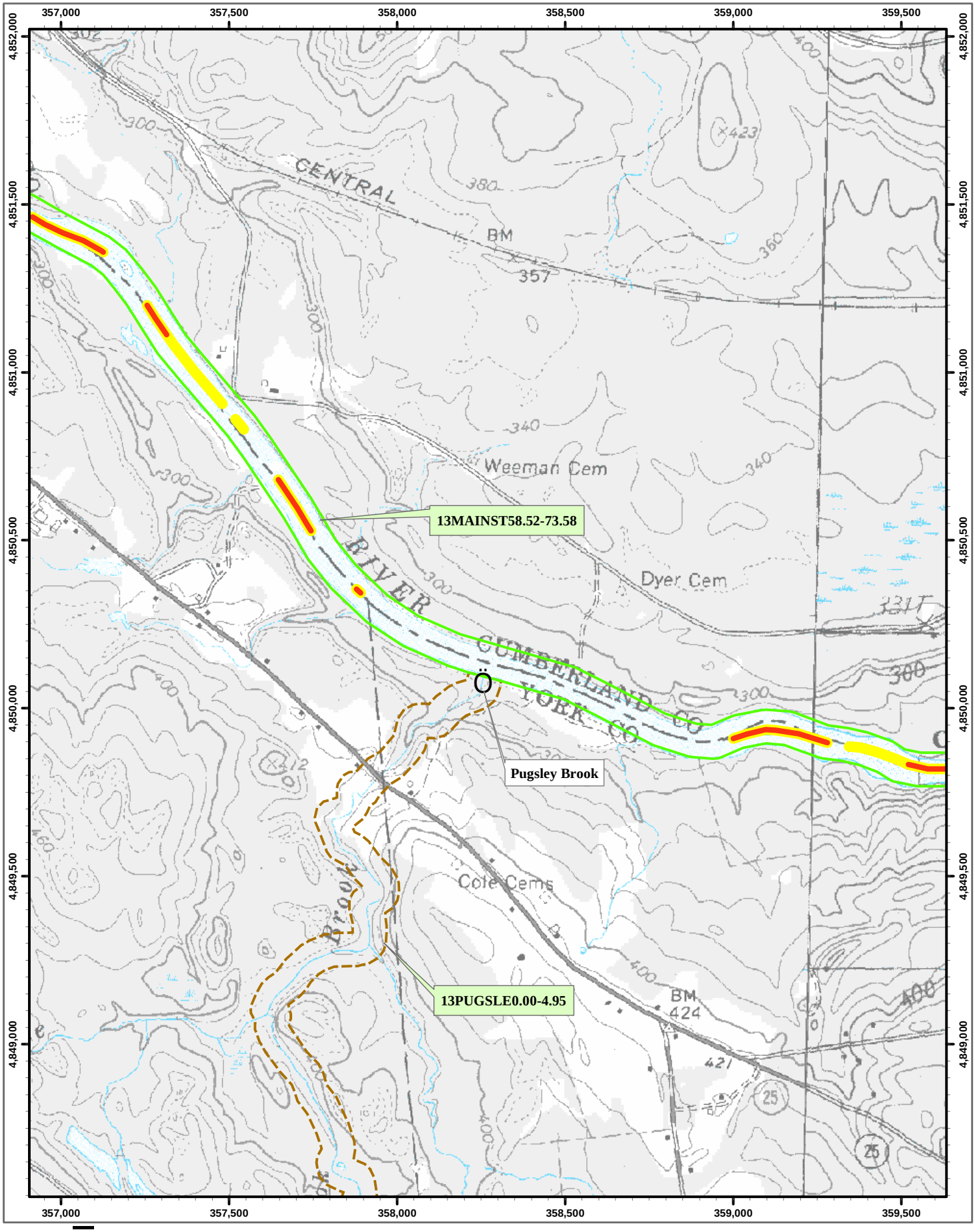
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Mainstem Map 3



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Feet
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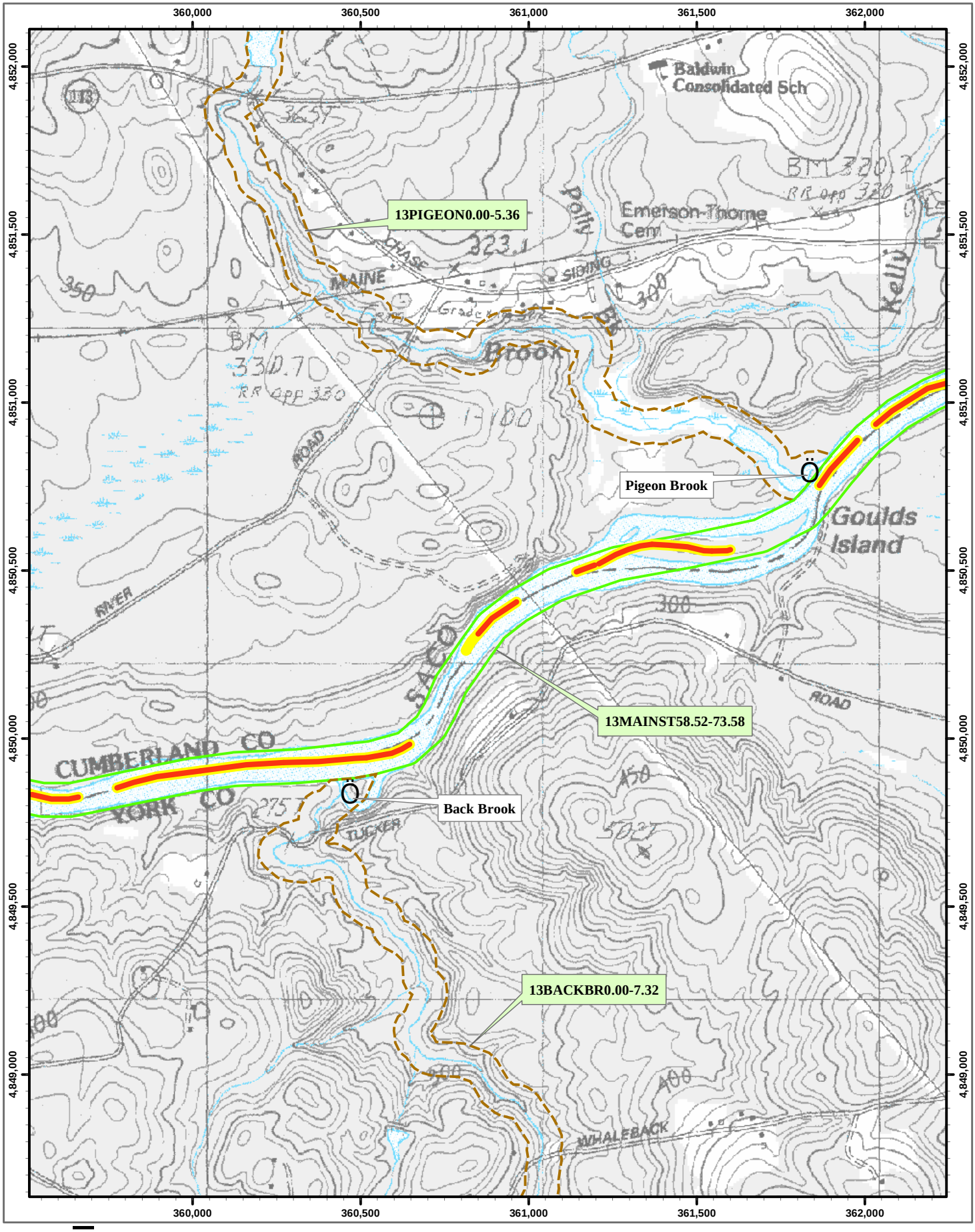
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Mainstem Map 4



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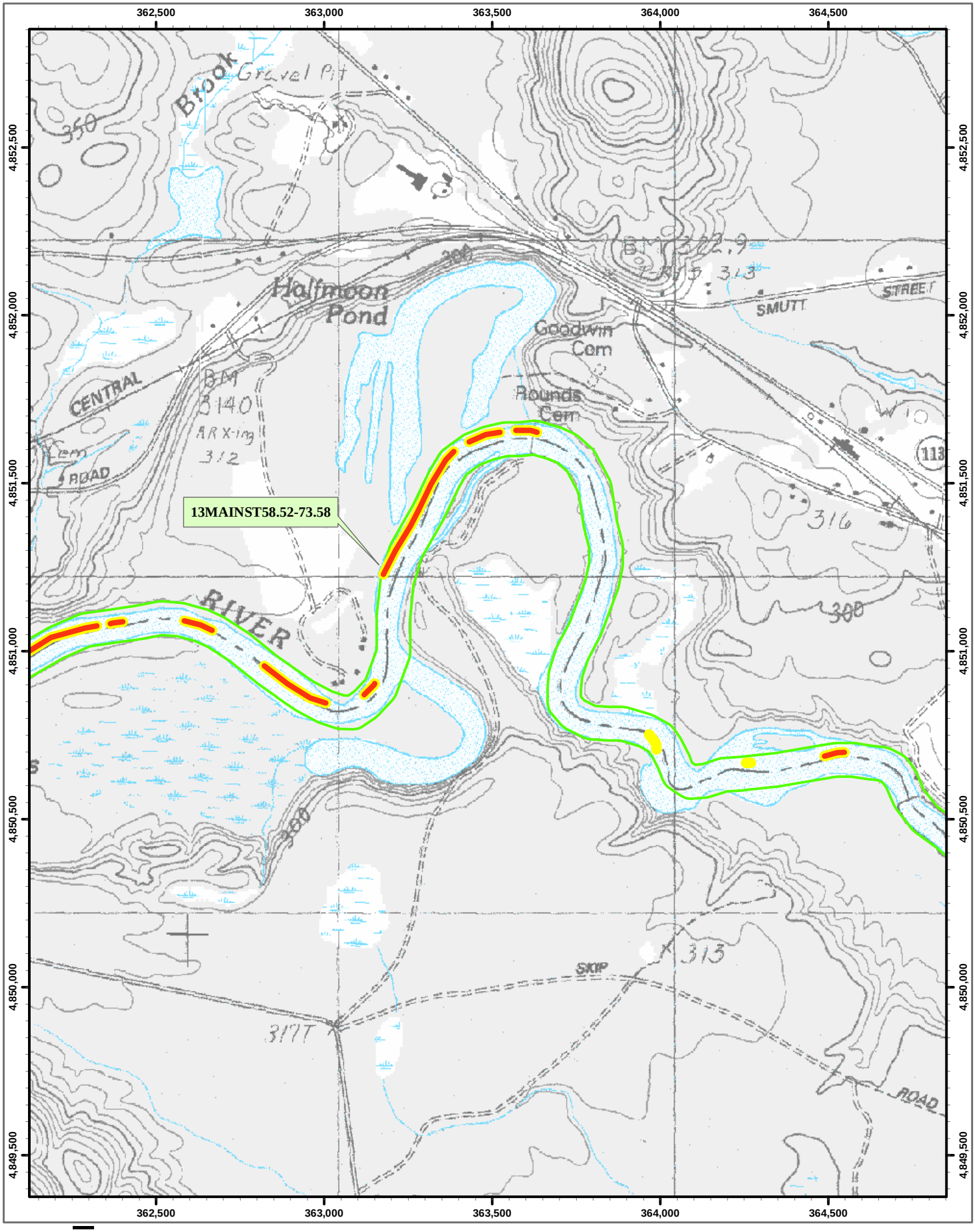
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Mainstem Map 5



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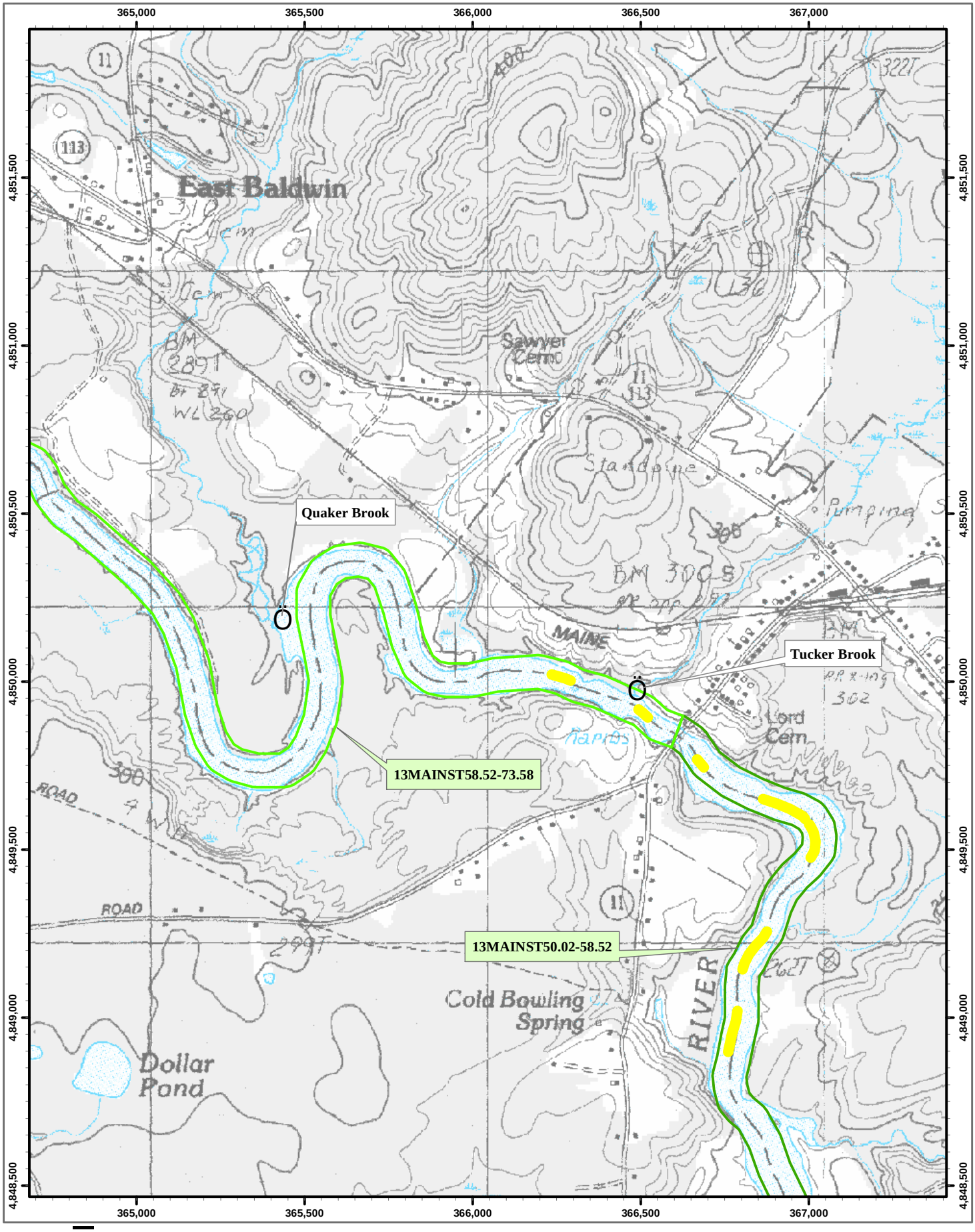
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Mainstem Map 6



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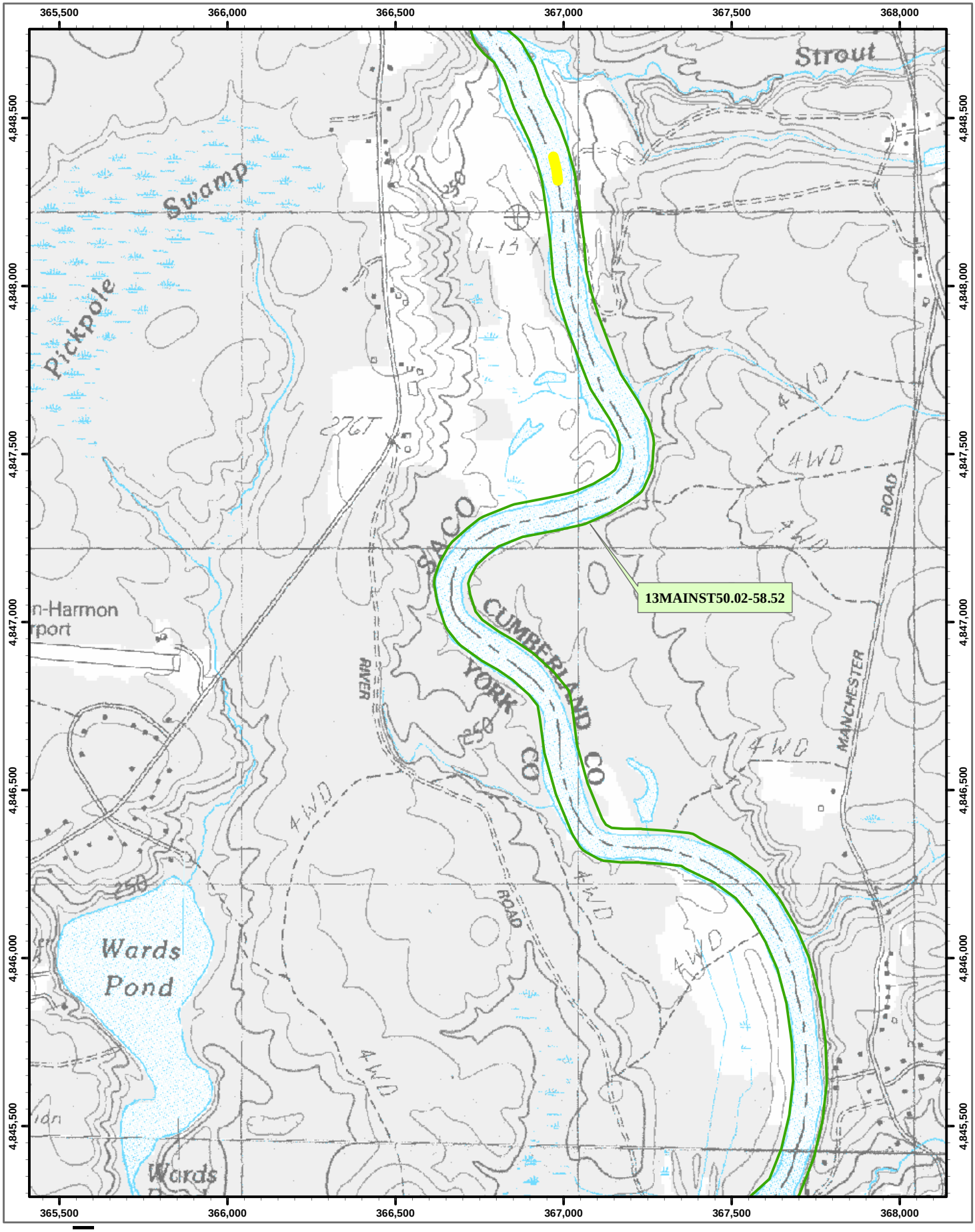
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Mainstem Map 7



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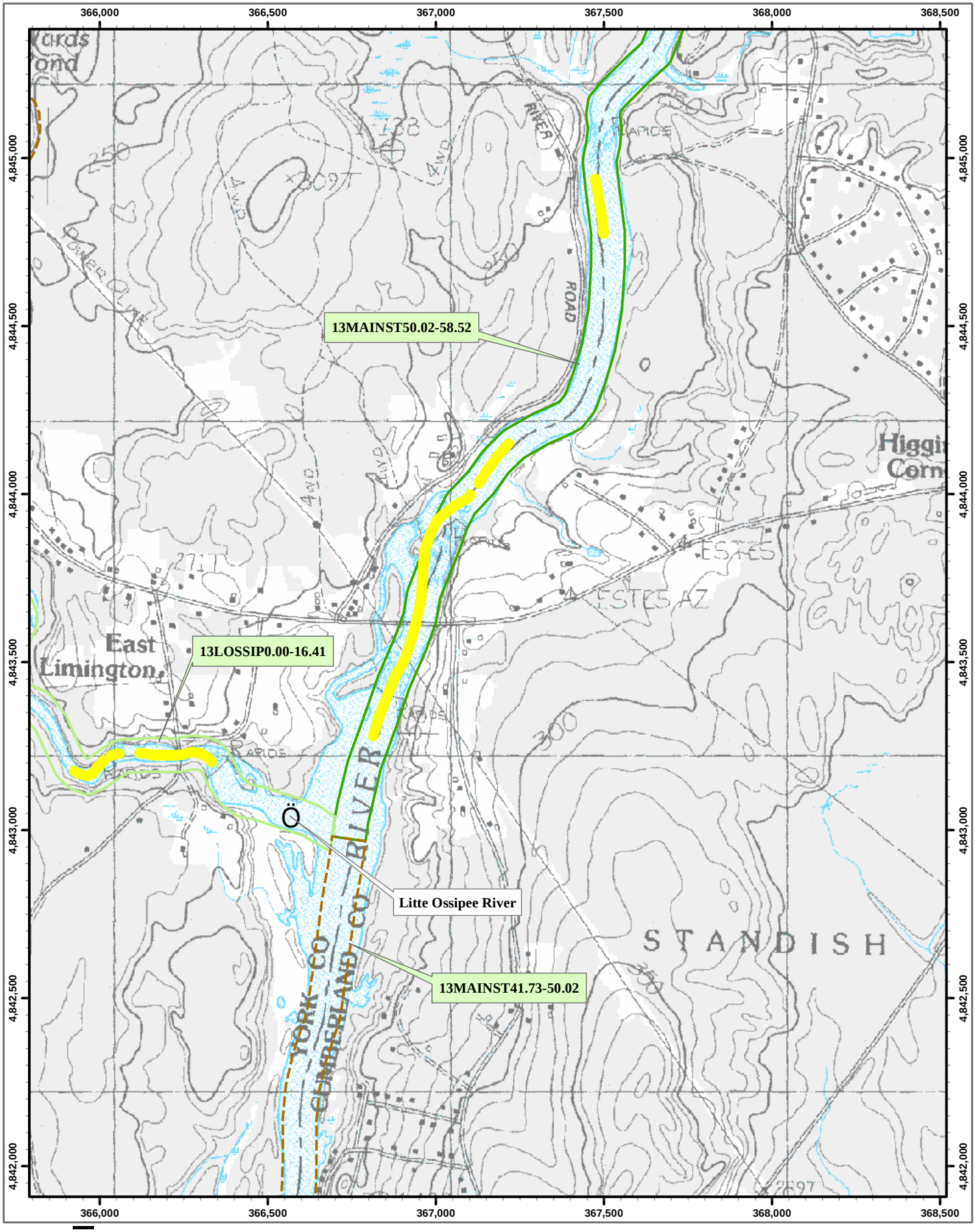
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Mainstem Map 8



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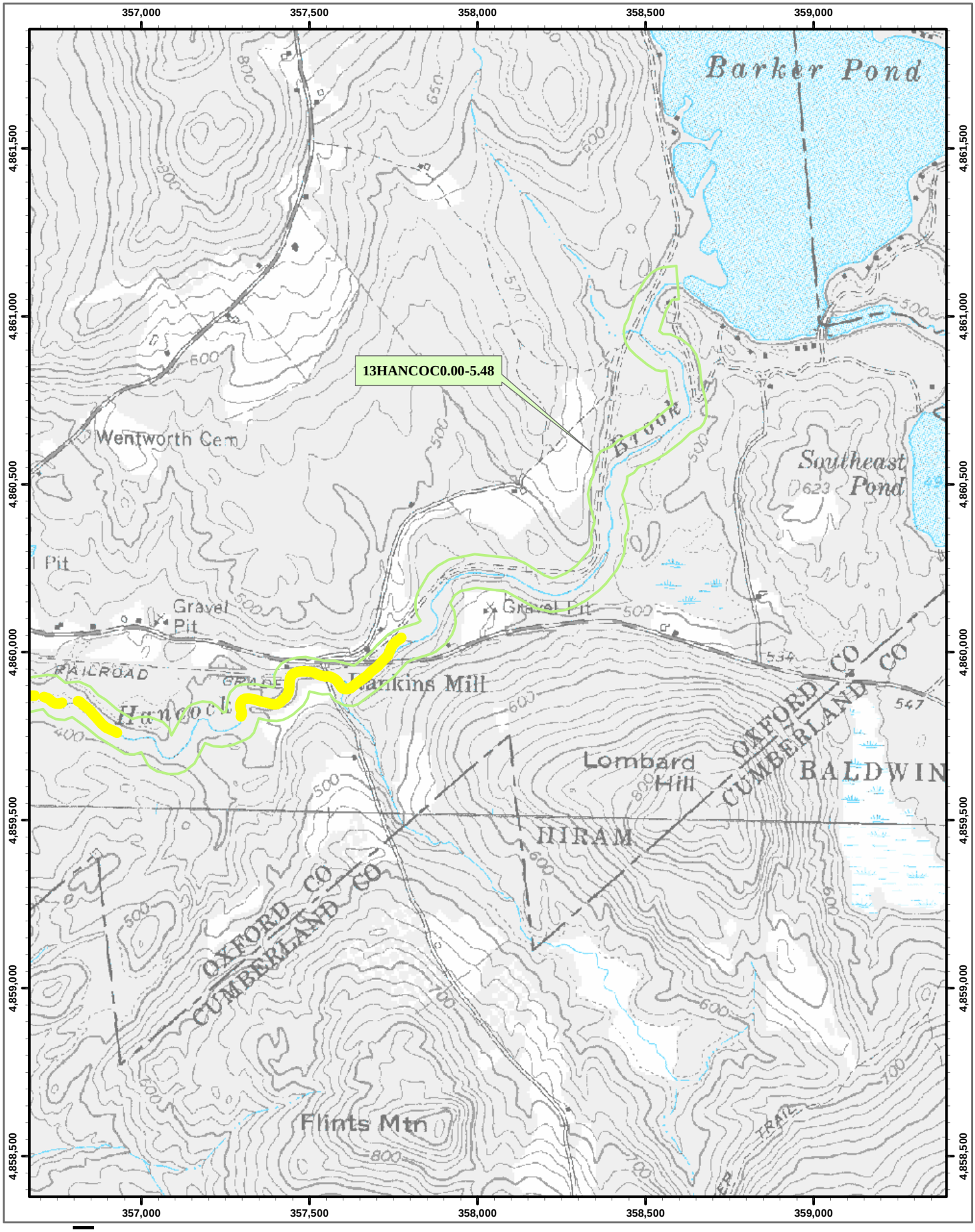
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Hancock Brook Map 9



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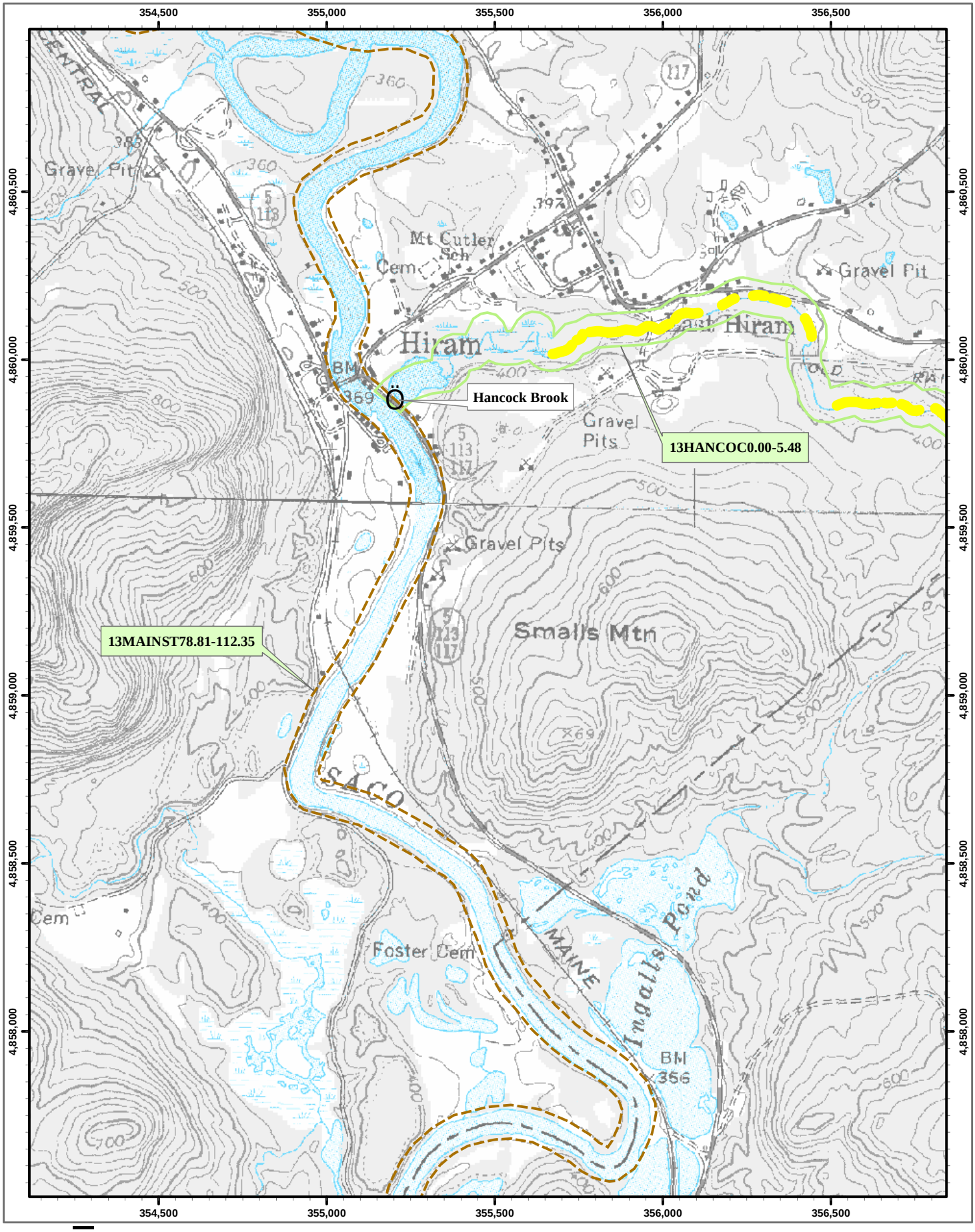
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Hancock Brook Map 10



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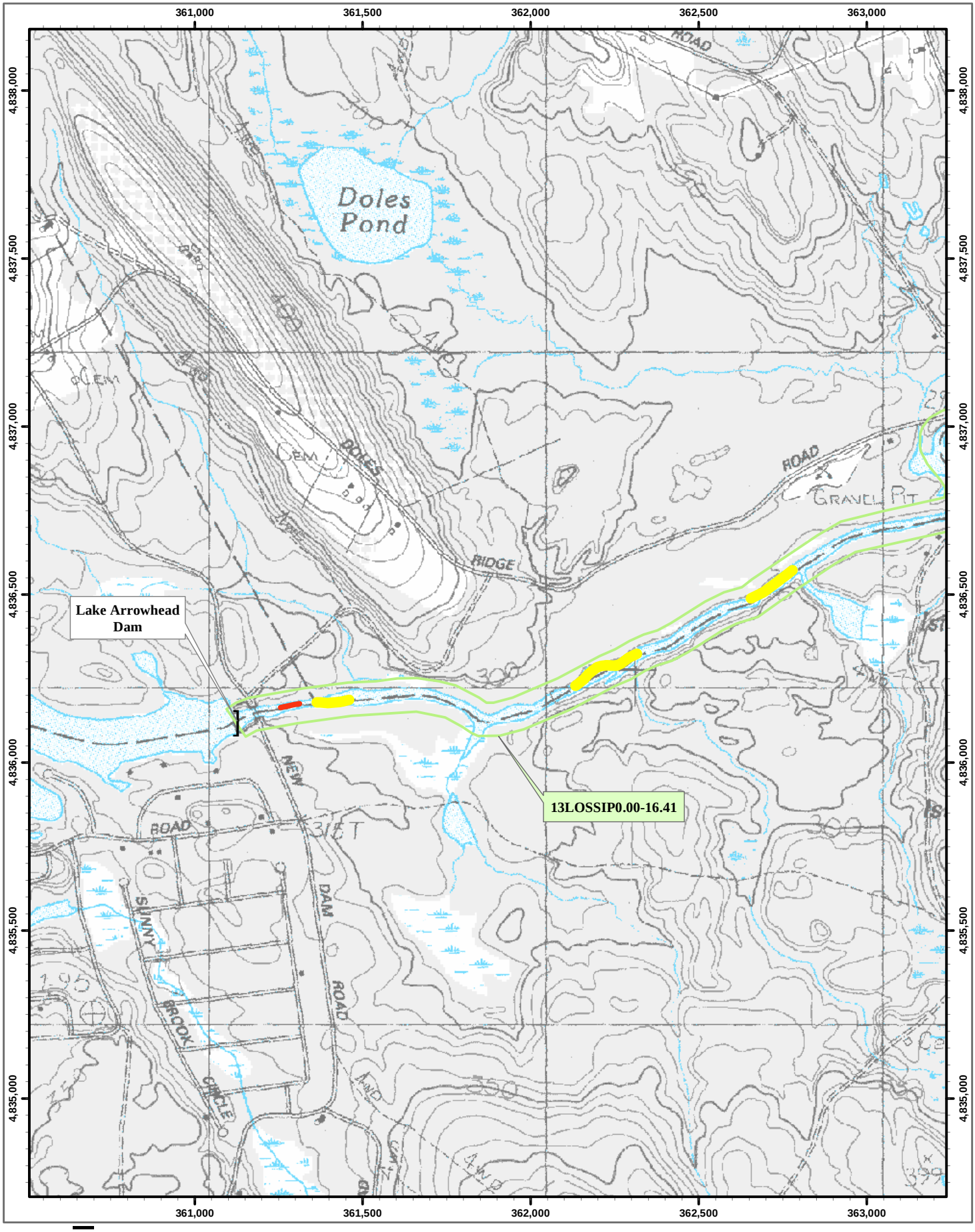
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River — Little Ossipee River — Map 11



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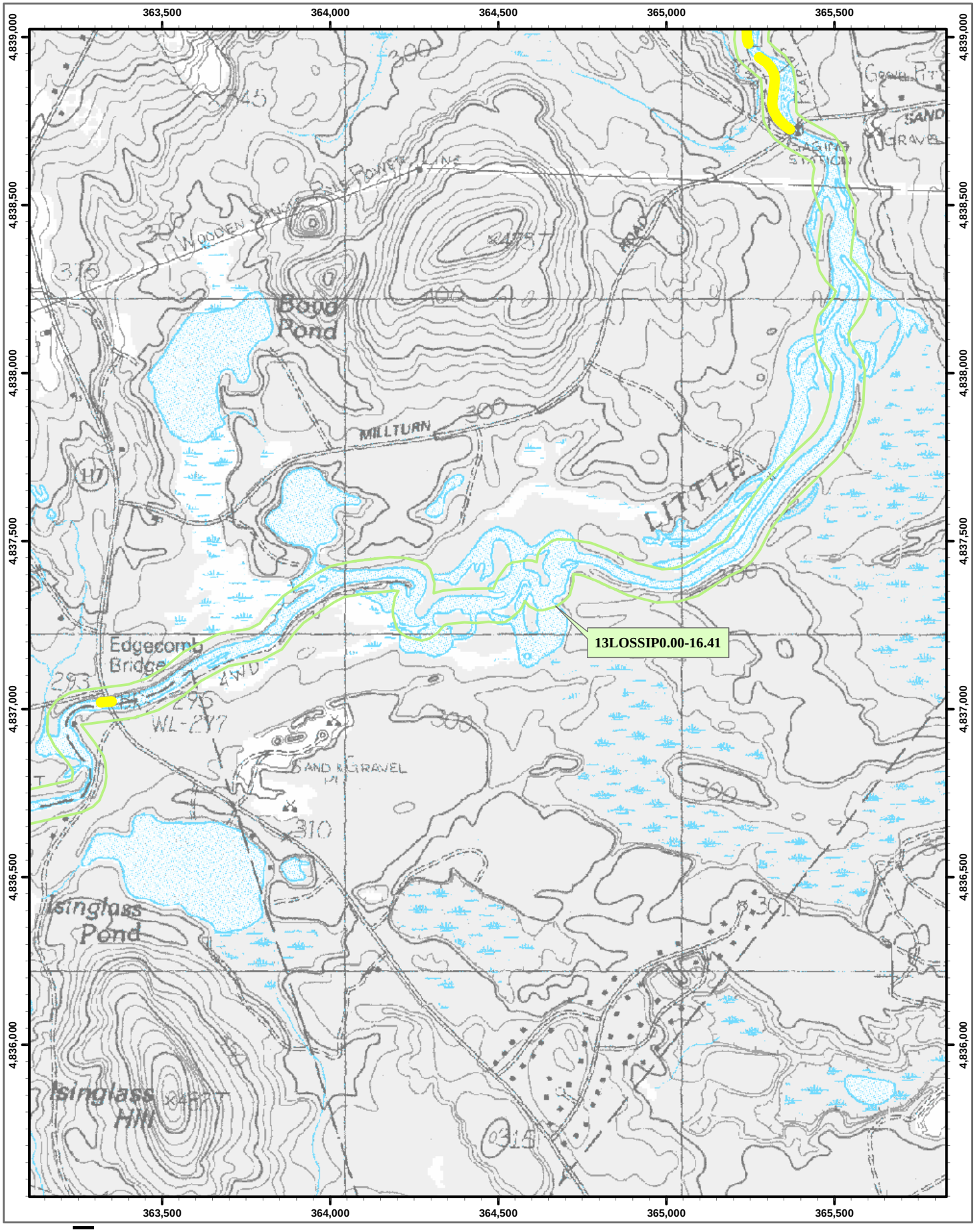
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Little Ossipee River Map 12



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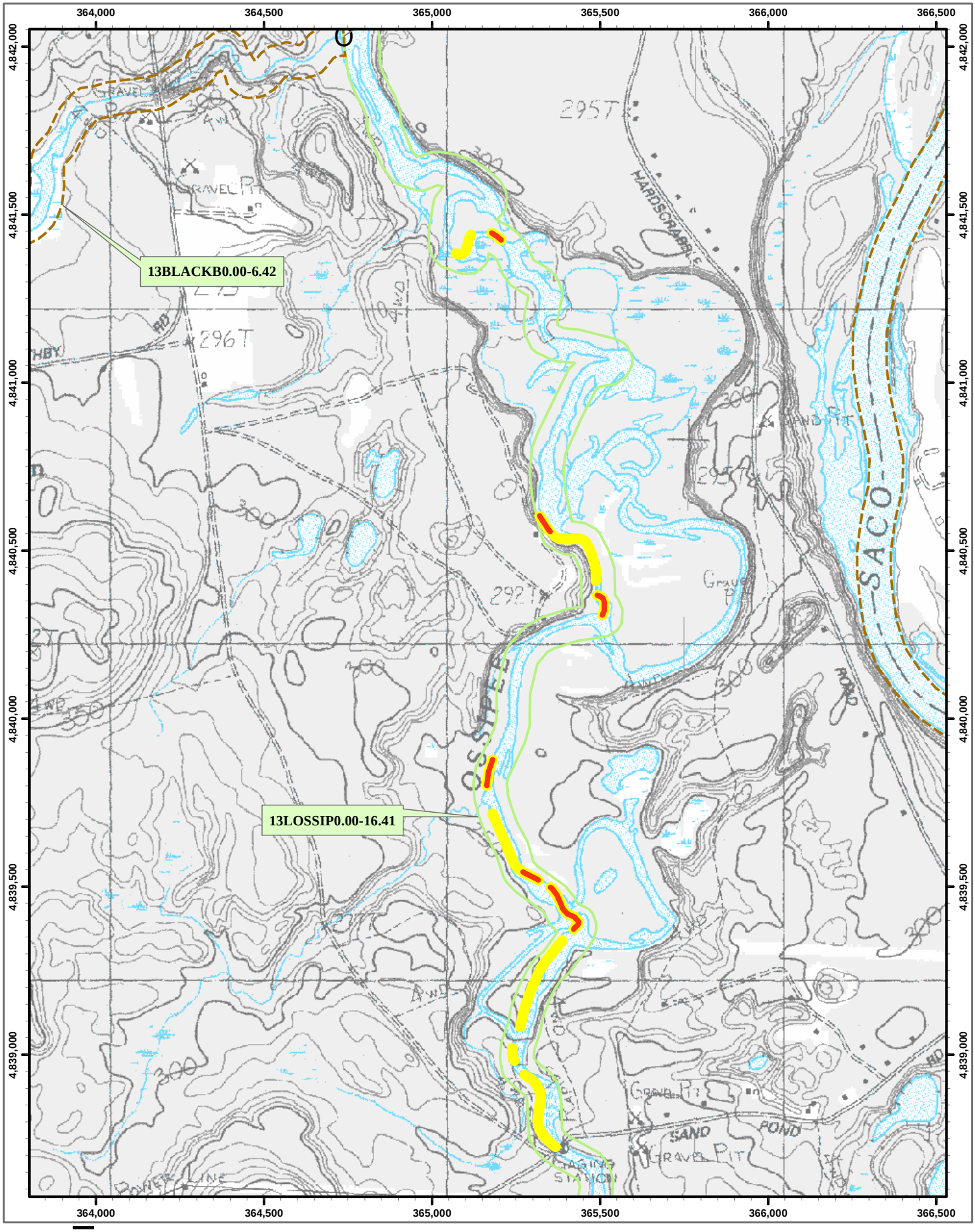
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River — Little Ossipee River — Map 13



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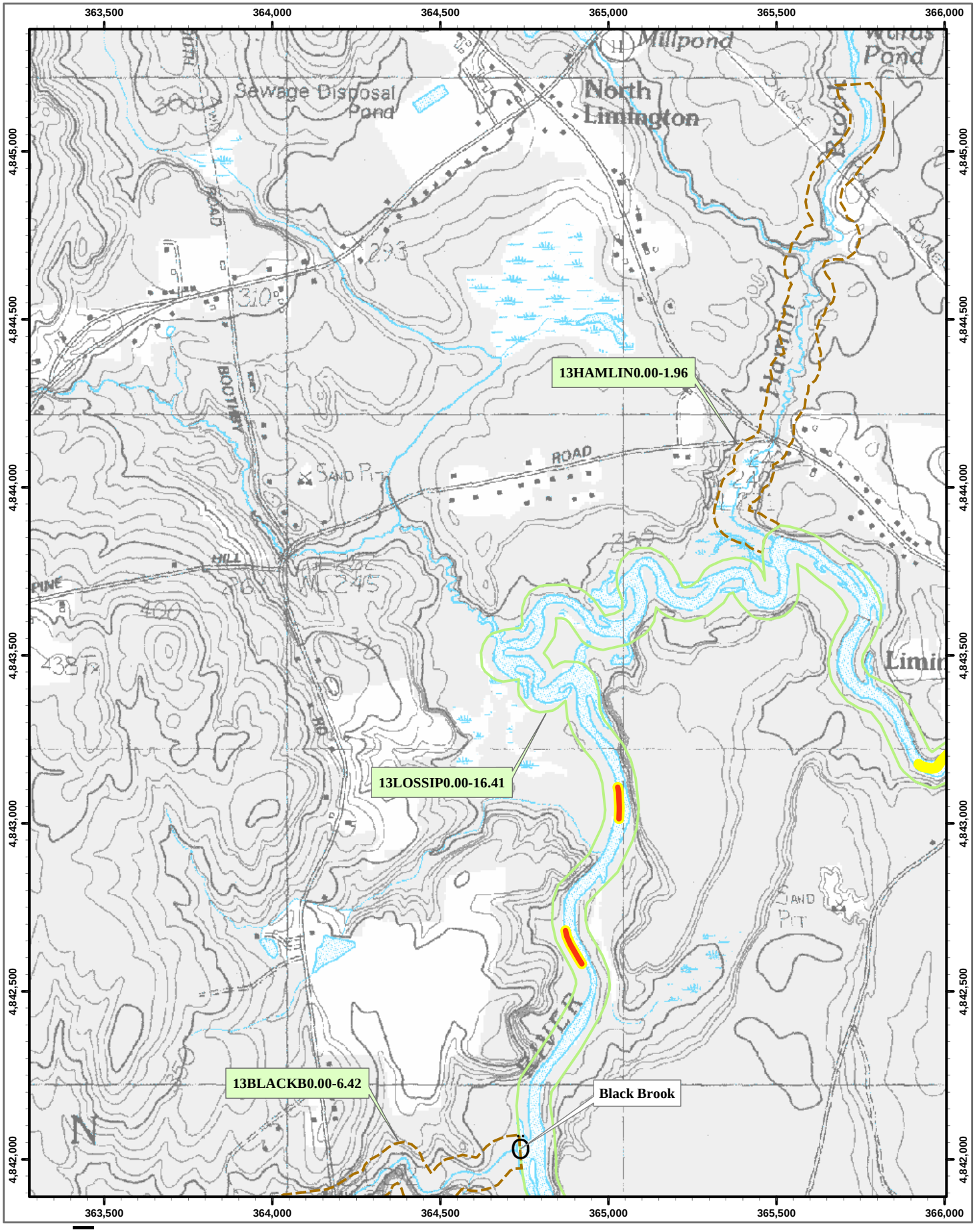
Saco River — Little Ossipee River — Map 14



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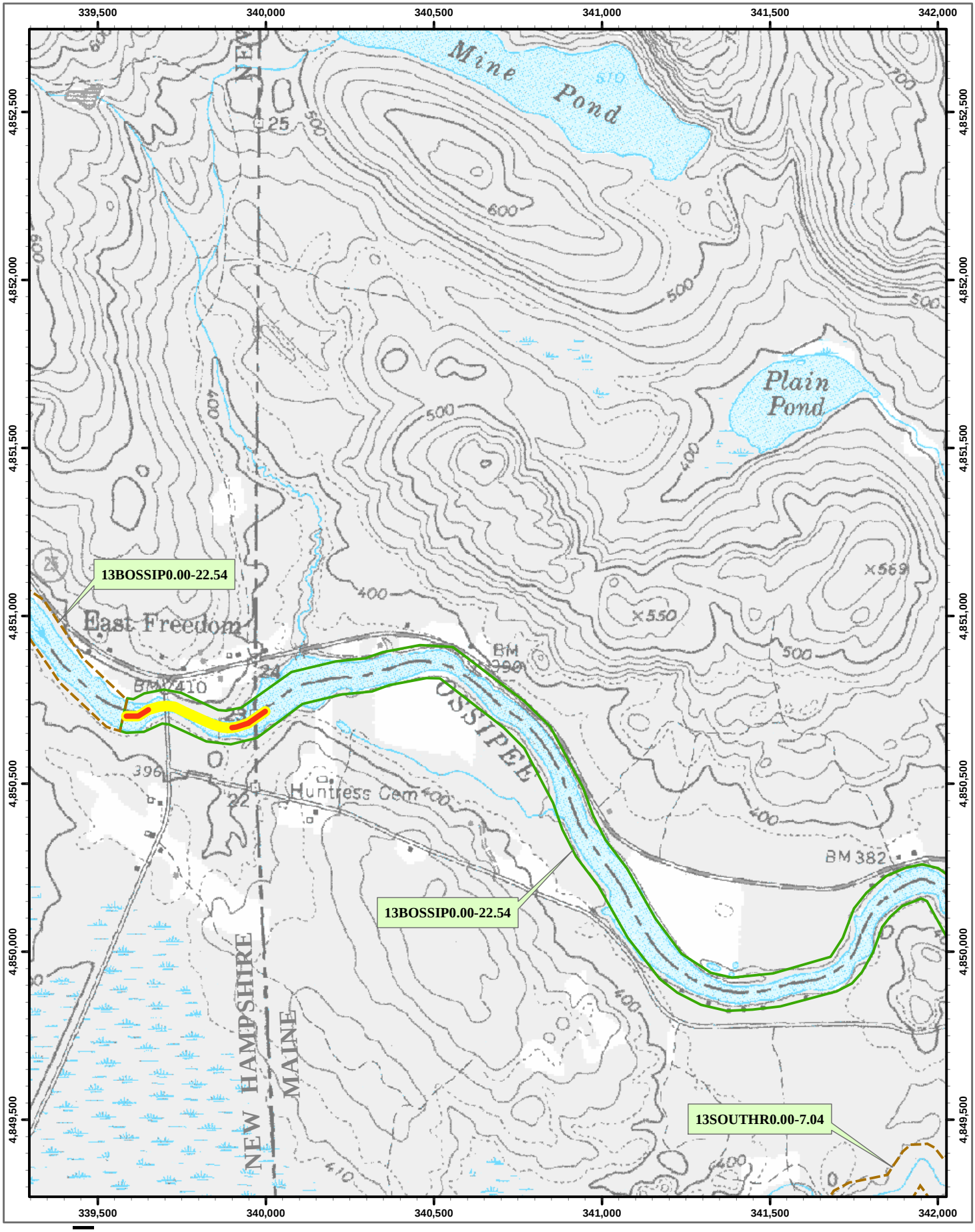
Saco River Ossipee River Map 15



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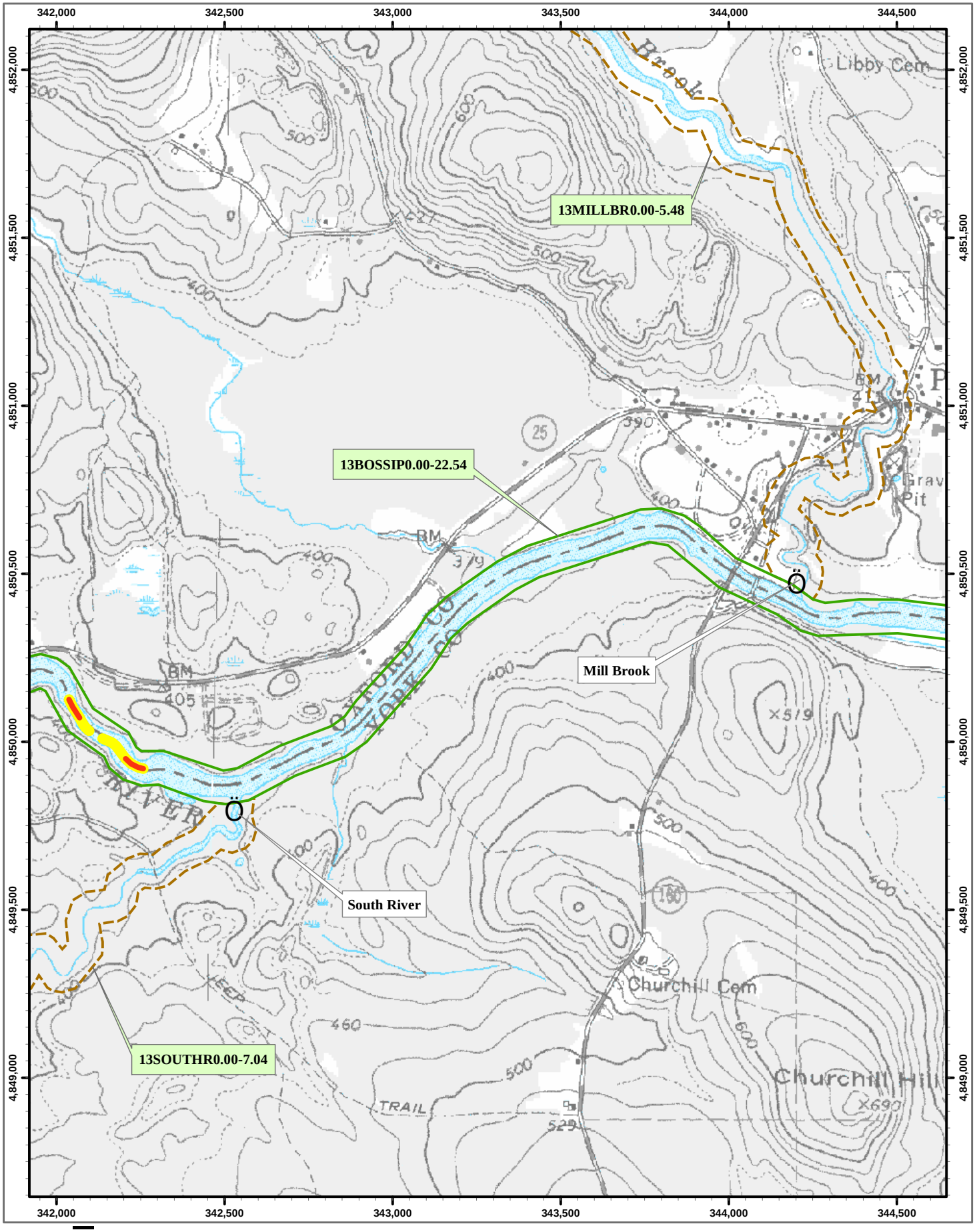
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Ossipee River Map 16



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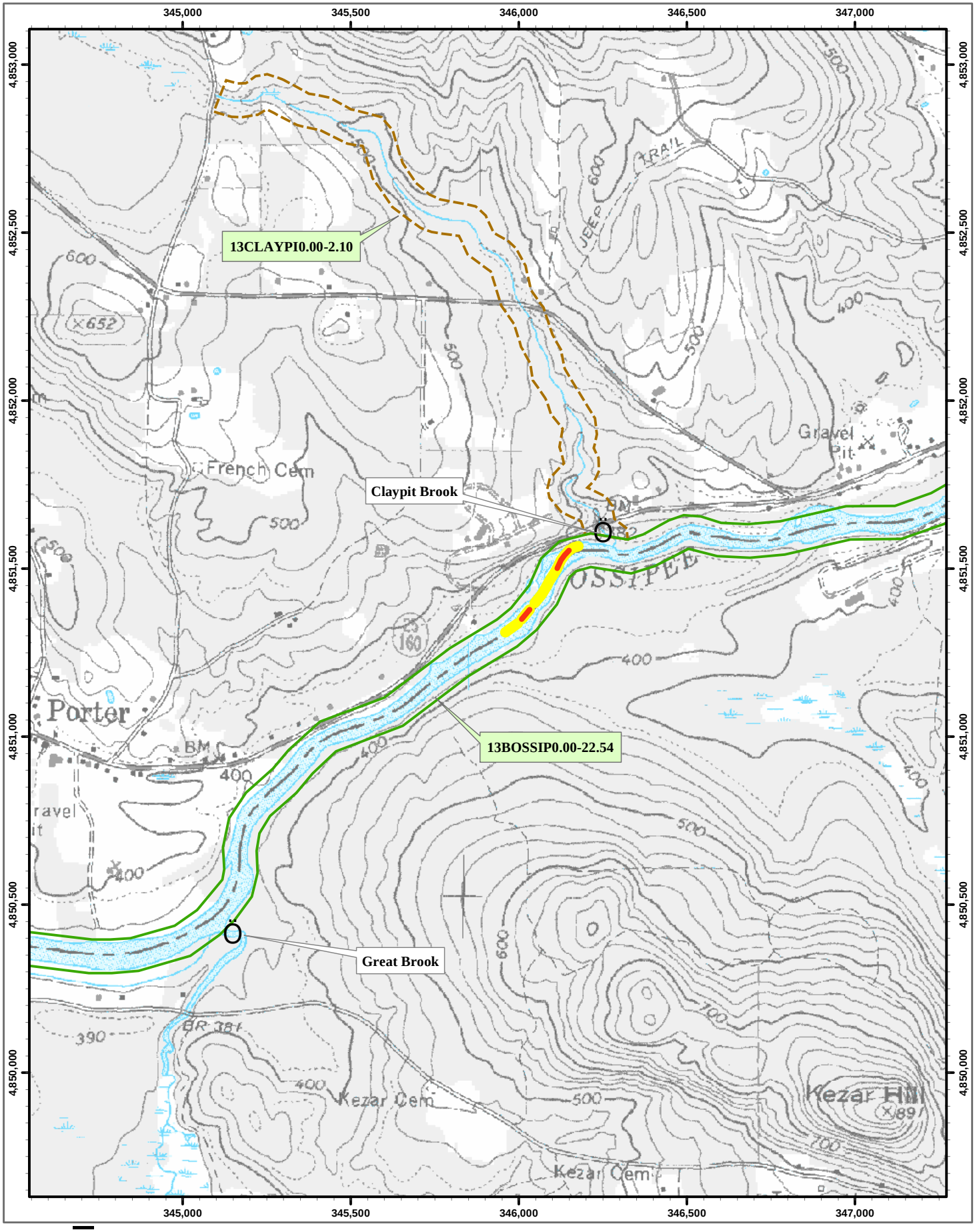
Saco River Ossipee River Map 17



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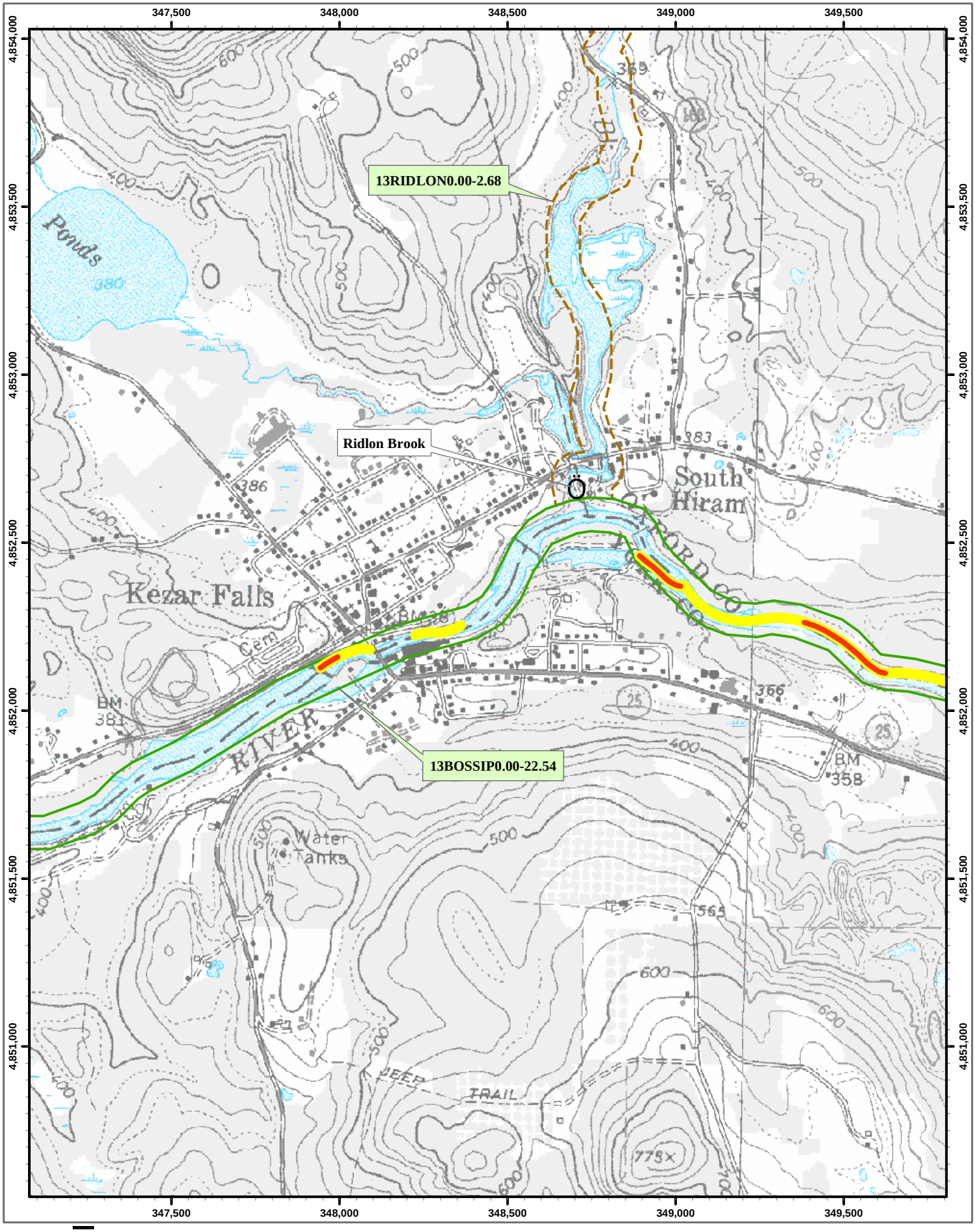
Saco River Ossipee River Map 18



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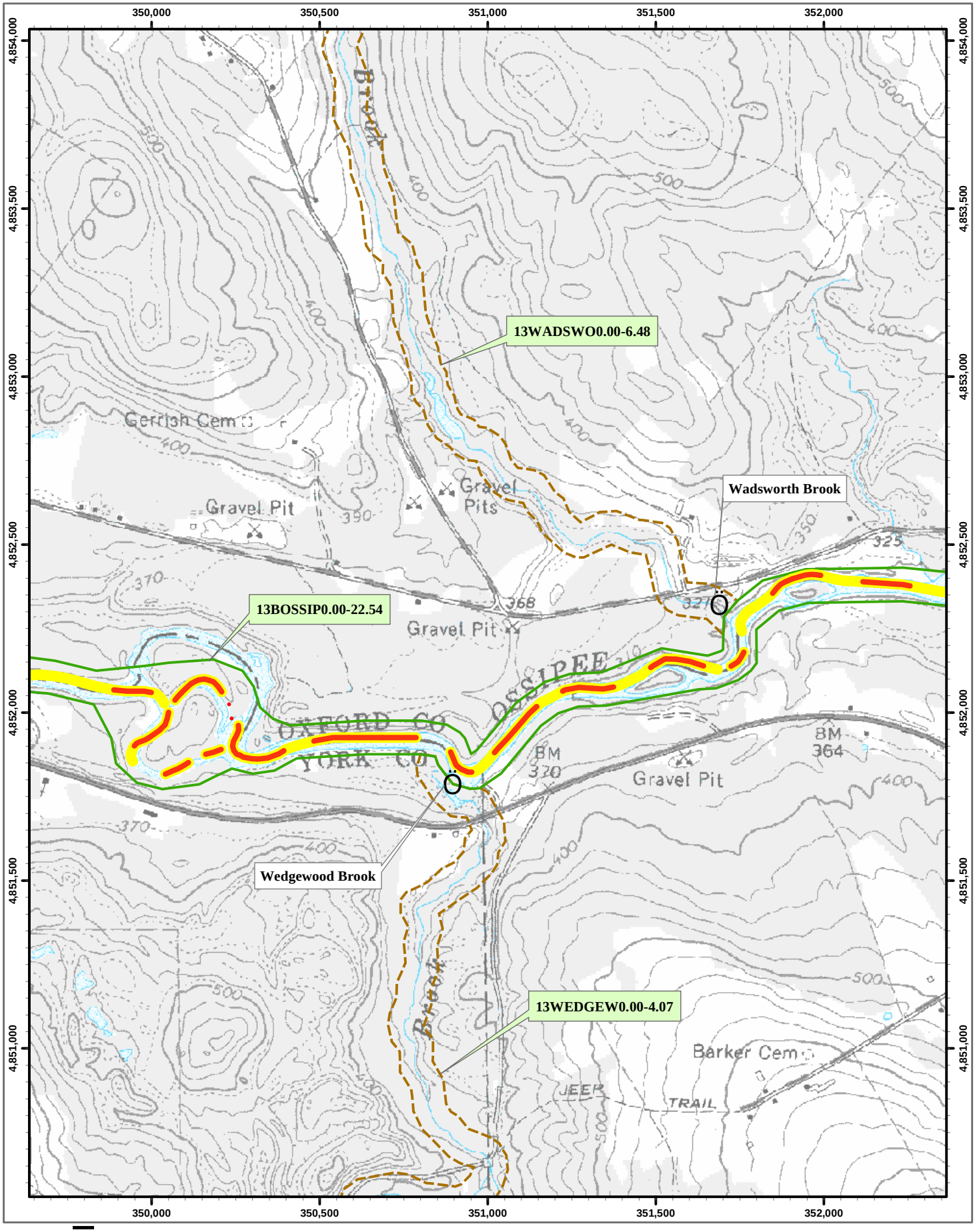
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Ossipee River Map 19



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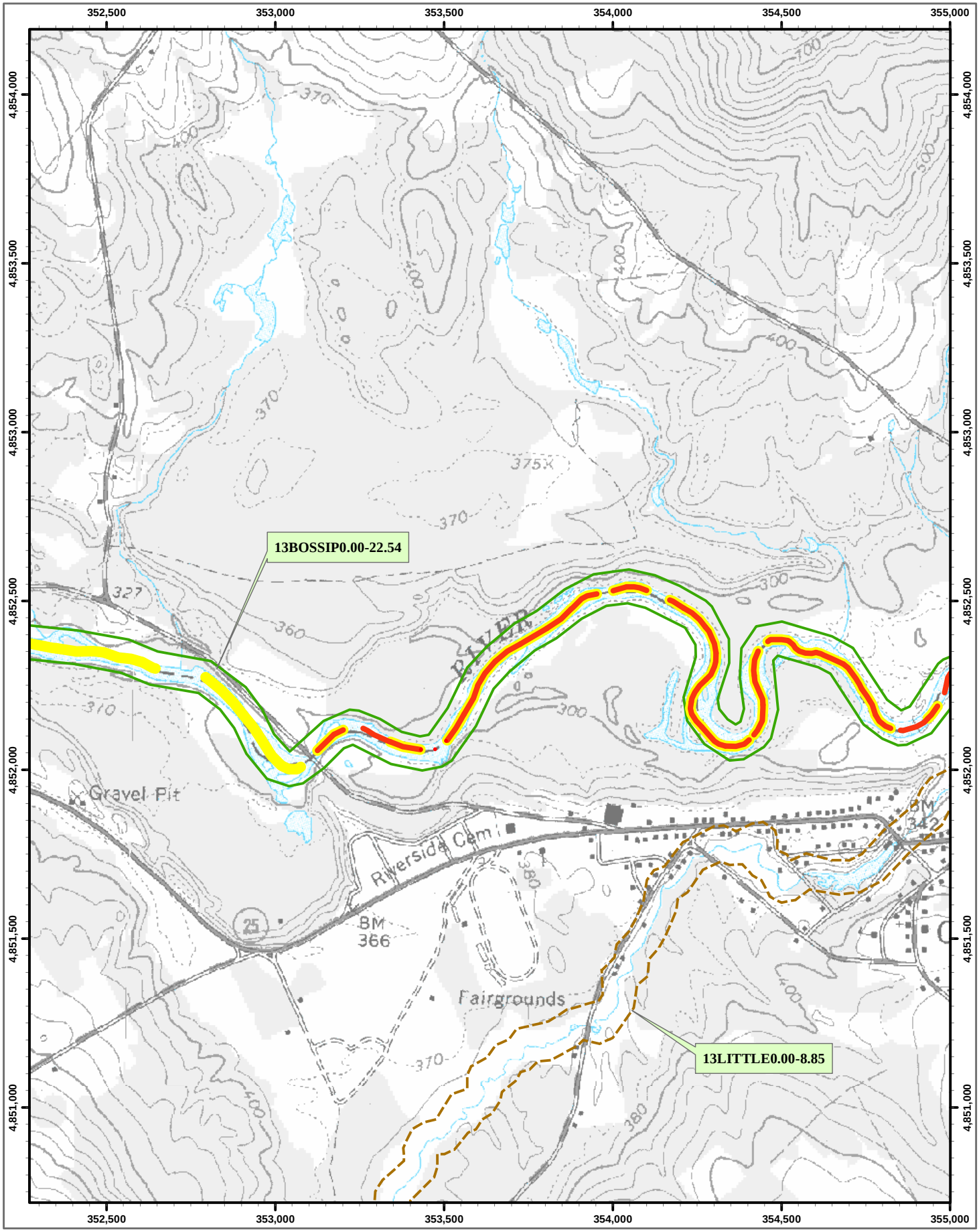
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Ossipee River Map 20



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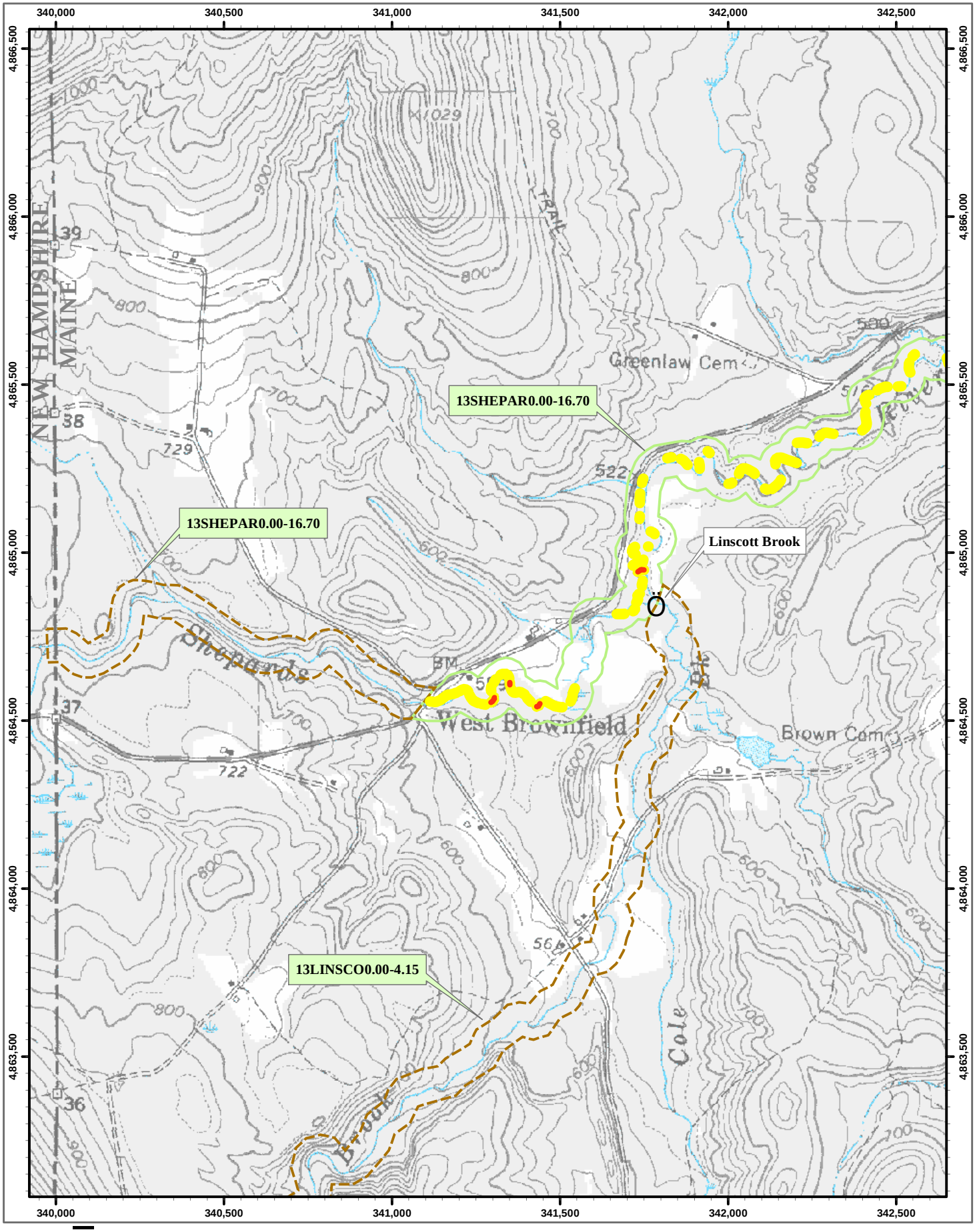
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Shepards River Map 21



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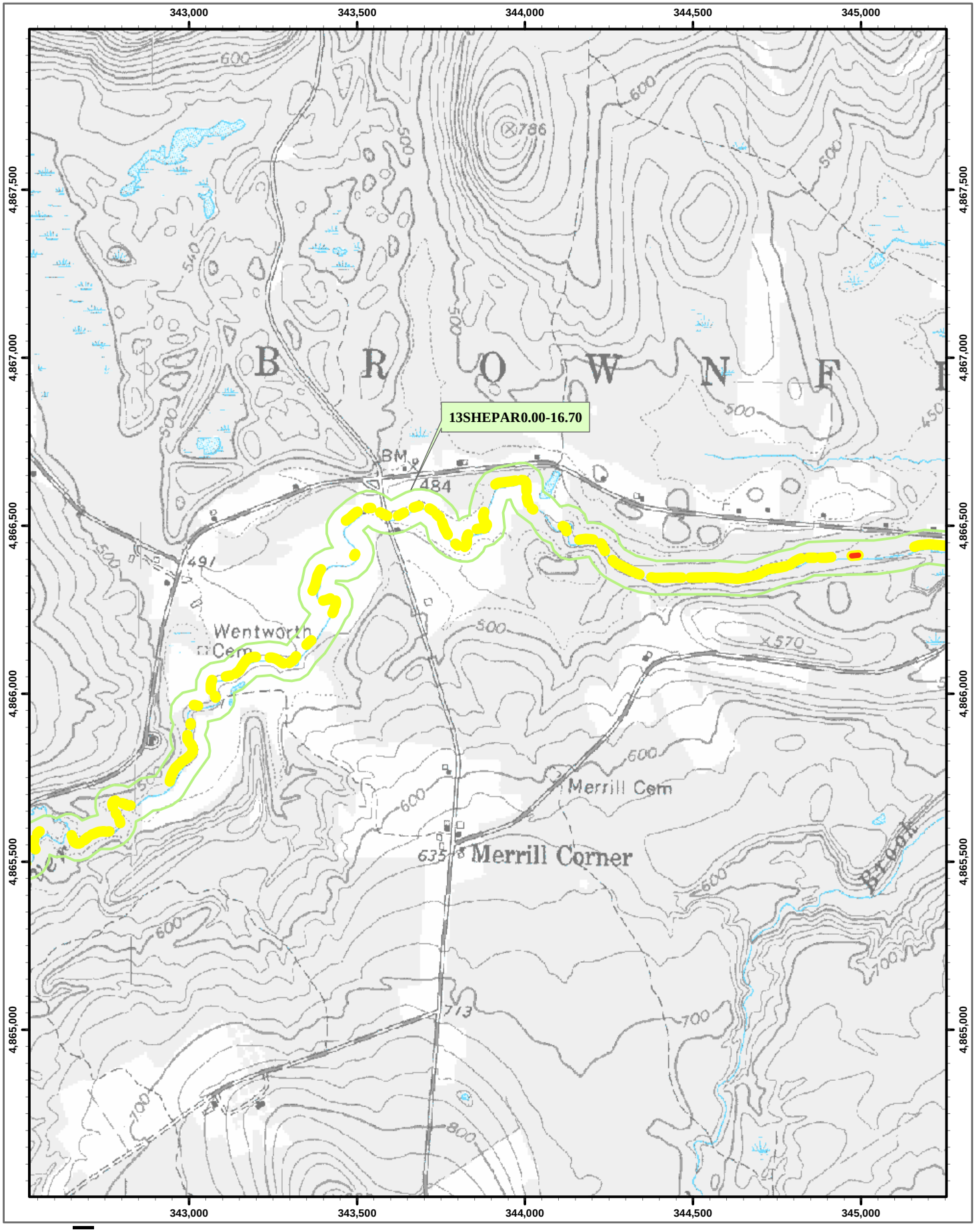
Saco River Shepards River Map 22



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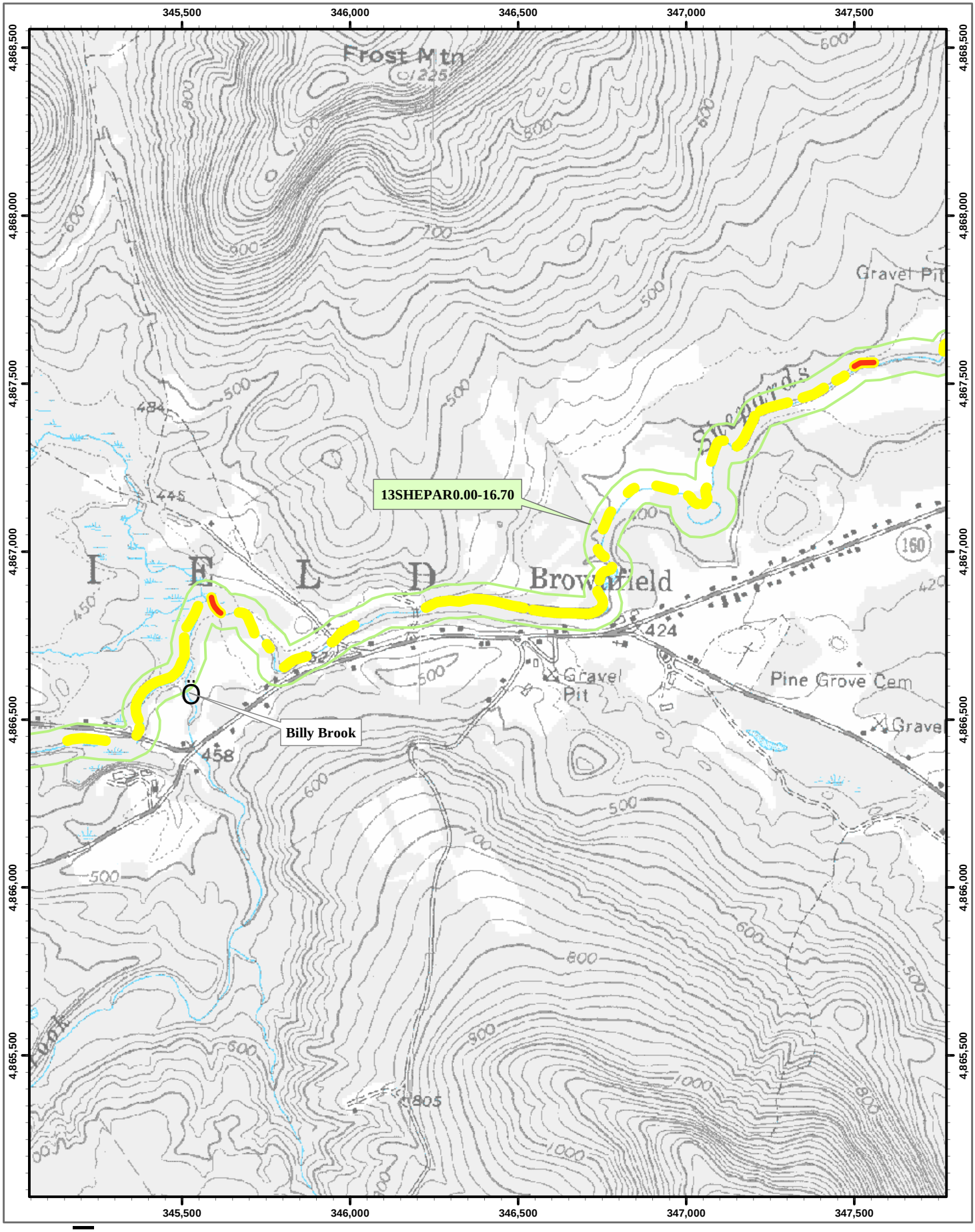
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River Shepards River Map 23



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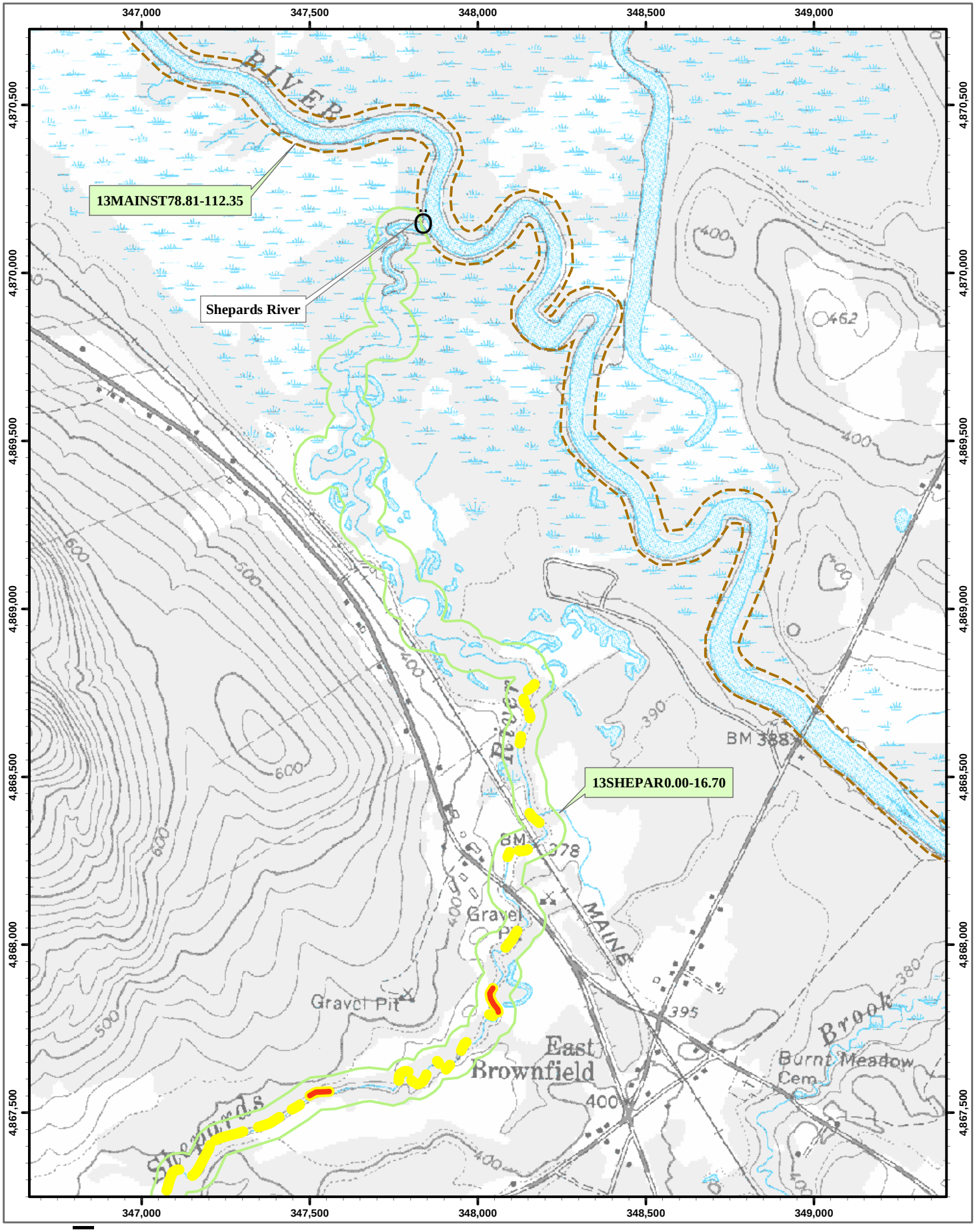
Maine Atlantic Salmon Habitat Atlas April 2006

Saco River — Shepards River — Map 24



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