Irving Maine Woodlands – Fin Presentation

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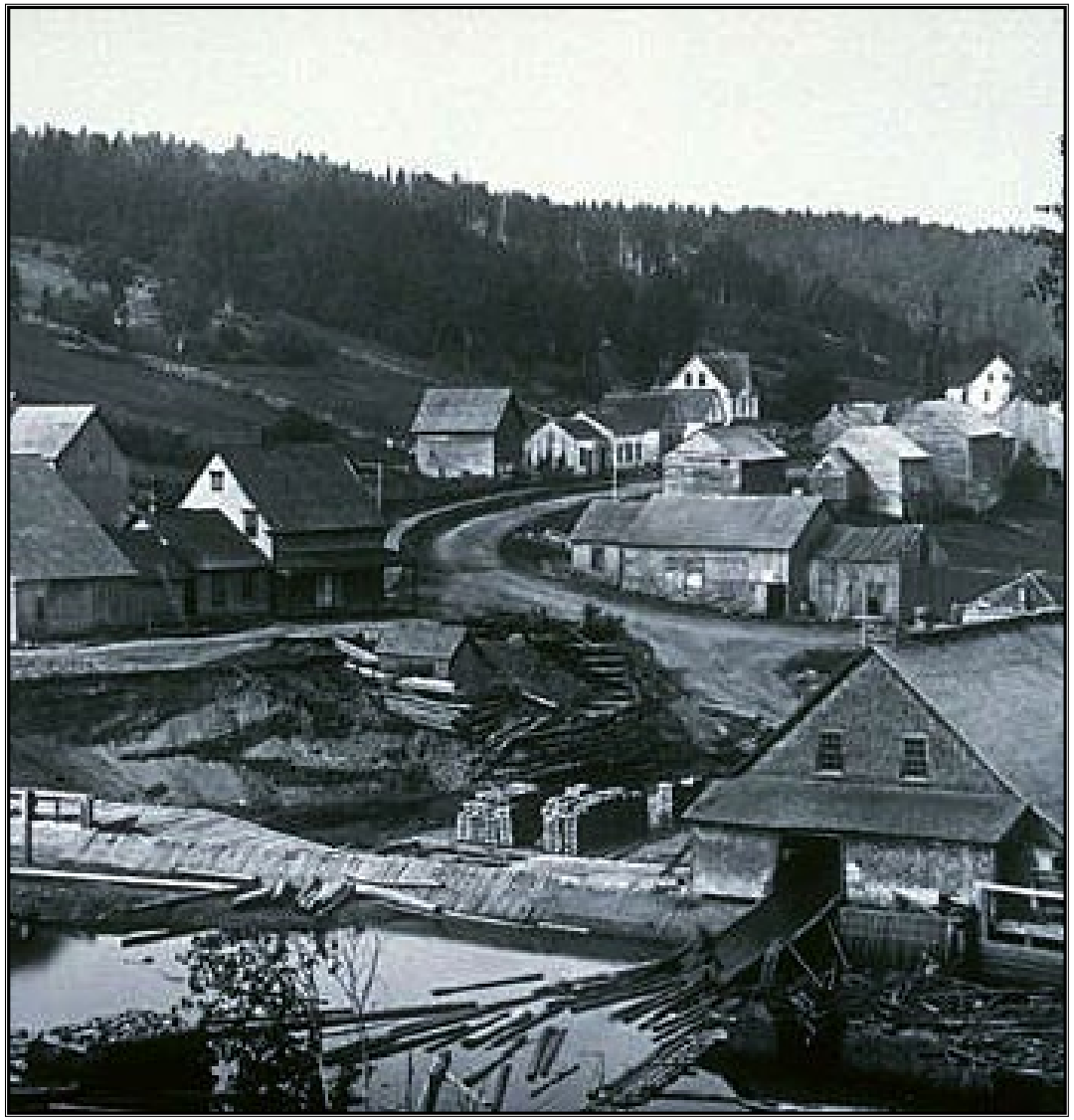

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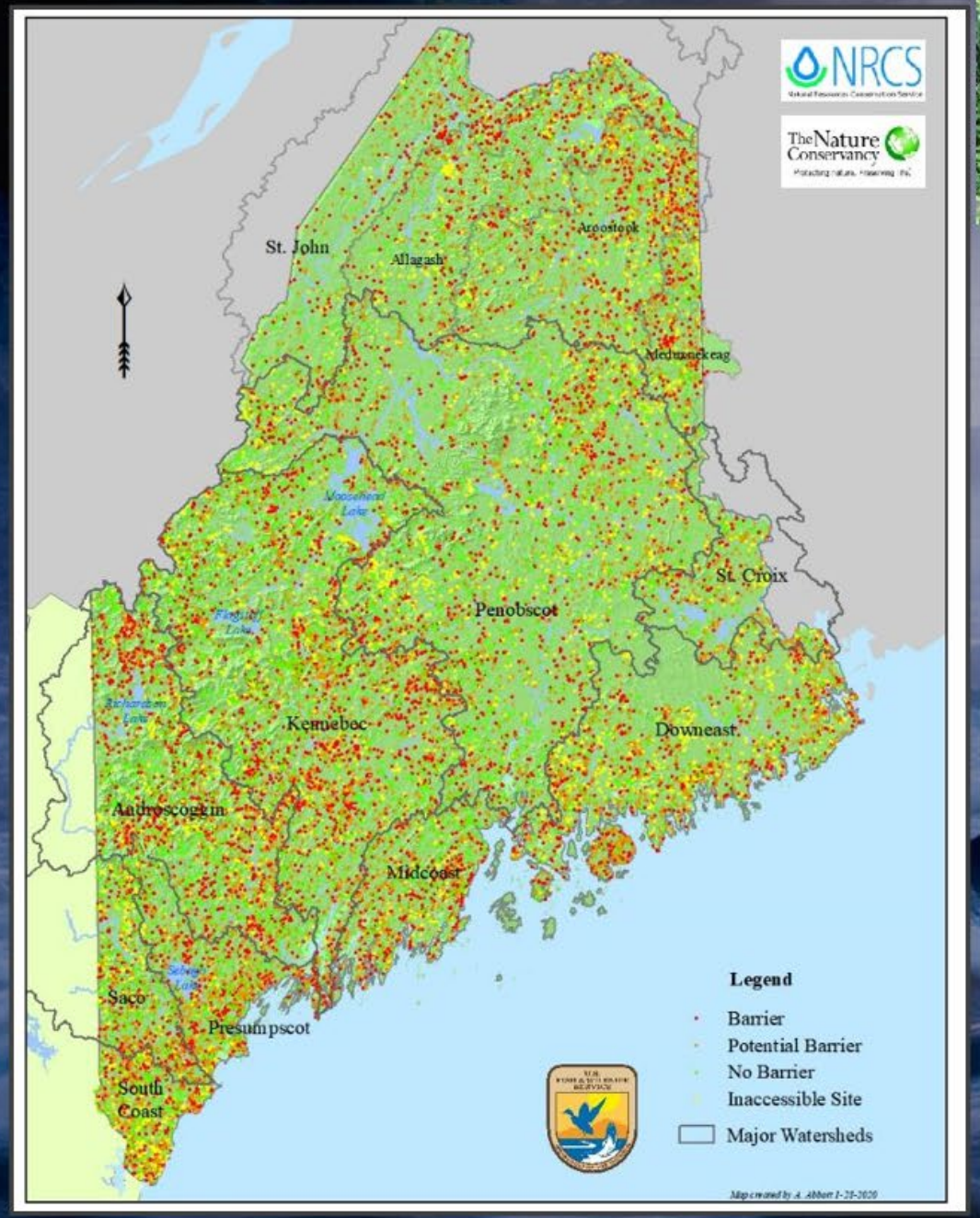


More than 27,000 data points

70,000 photographs

90% of Maine

30-50% are barriers to fish passage

- Classified as Barrier.
- Perched.
- On stream ranked “Very High” priority habitat.

Identify

Identify from: <Top-most layer>

barriersInIrving_Parcels_Jan2021
Unnamed

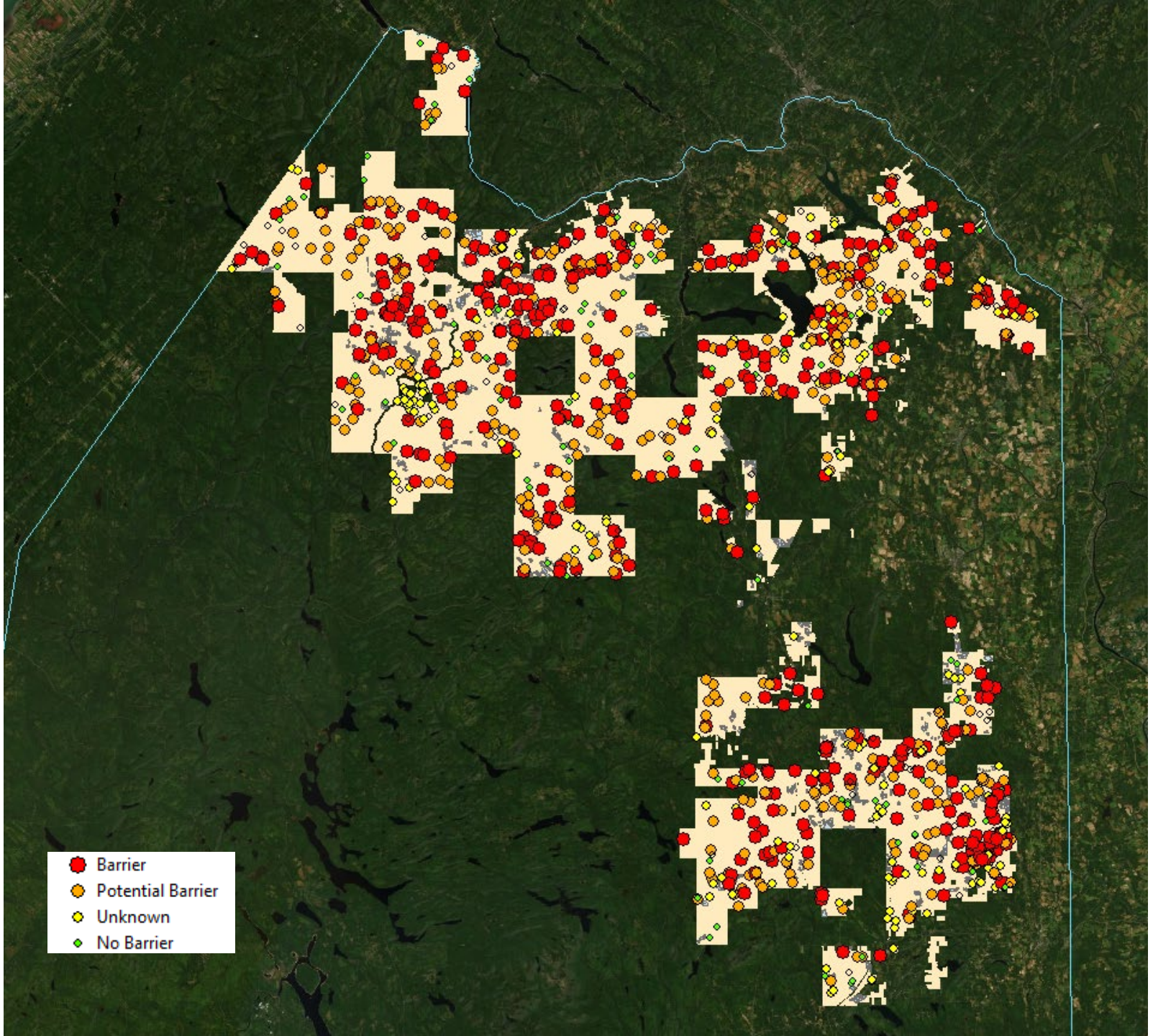
Location: 278,750.058 369,475.659 Meters

Attachments (4)

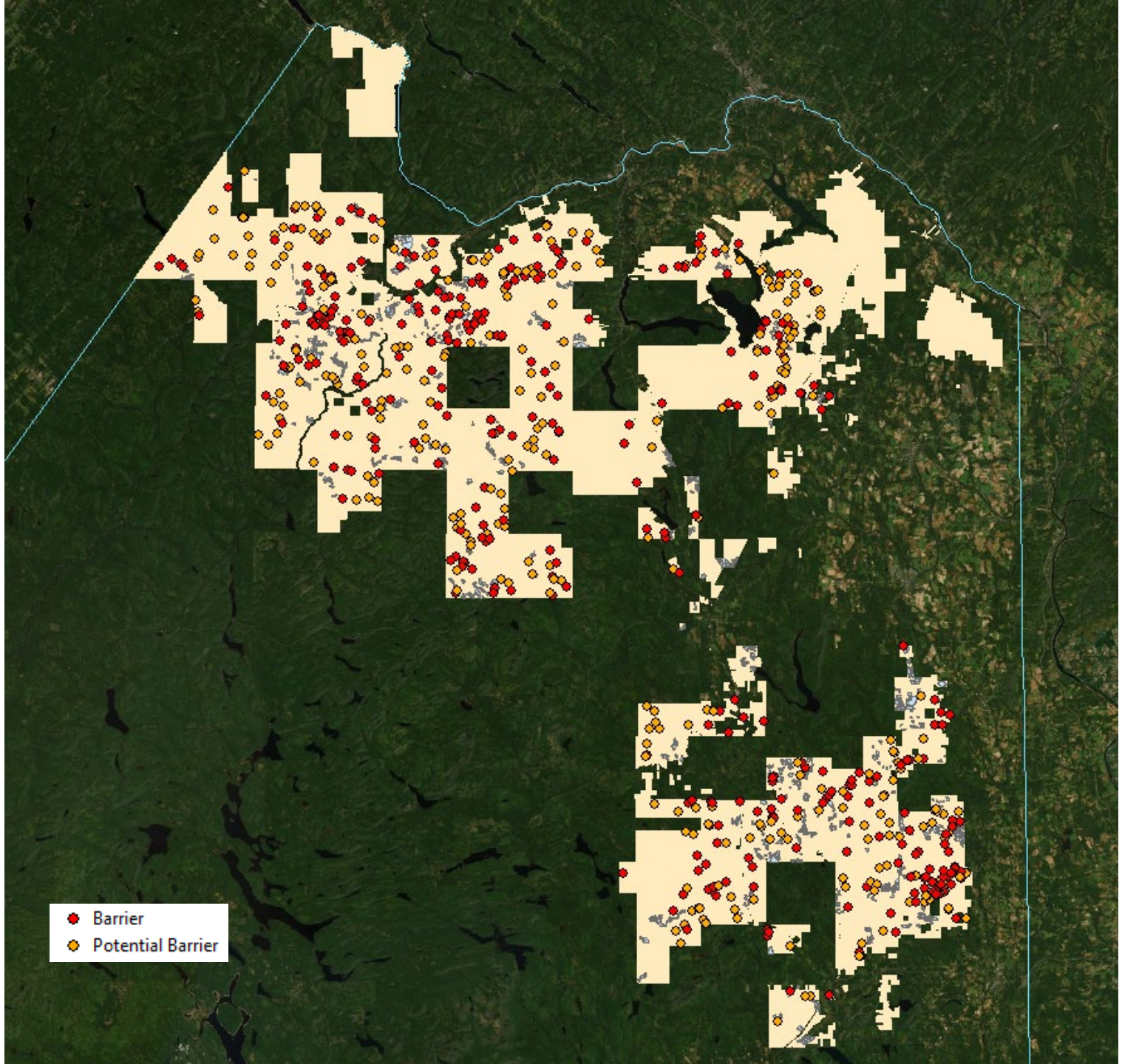
Field	Value
BeaverFencing	<null>
Blocked	<null>
Blocked_BKT_MI	<null>
EOR_Aquatic	No data
FillHeight	1
NumberOfCulverts	2
OBJECTID	433
OutletDrop	0.7
Priority	1
RoadClass	Private
RoadName	Unnamed
Shape	Point
SiteID	37062
SiteStatus	Surveyed
Stream	North Branch Rocky Brook
TailwaterScourPool	Large
Total_Span_FT	10.7
Town	T15 R8 WELS
TributaryTo	No data
USBlockedMiles	4.369
USTotalMiles	7.324

Identified 1 feature

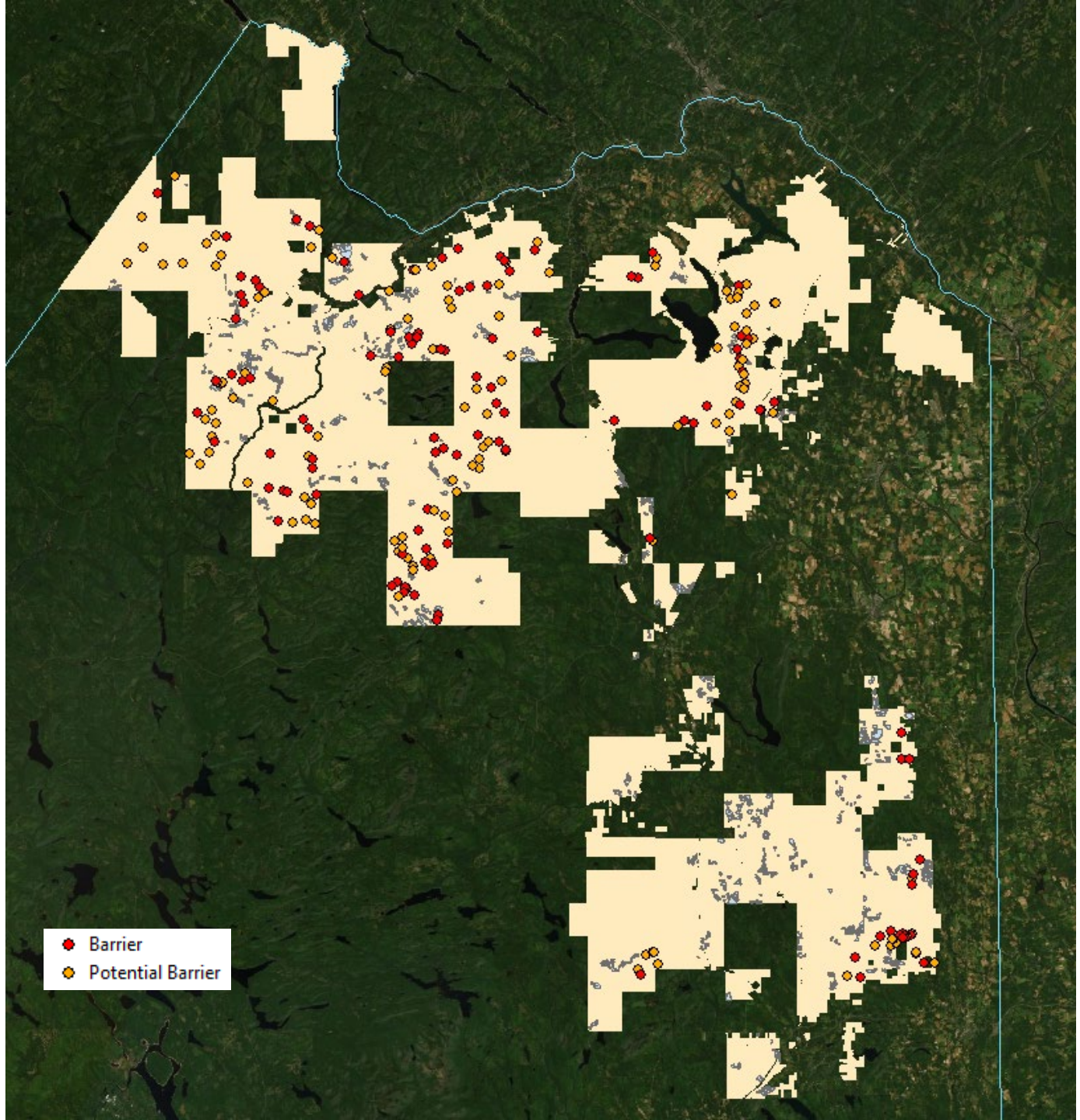
All 1,164 road-stream crossings on private roads within Irving Woodlands, Maine Holdings



644 of the crossings are either barriers or potential barriers and within 5 miles of 2021 harvest operations



241 barriers or potential barriers on slide 2 are on streams ranked “Very High” or “High” priority habitat for native fisheries by Maine Inland Fisheries & Wildlife Regional Fisheries Biologists



Irving Woodlands Inc. Road Stream Crossing Prioritization

The Nature Conservancy **February 2021**

Stream assessment identified 1,211 road stream crossings throughout J.D. Irvings holdings in Maine (map below)

- 1,164 of those occur on private Irving roads (others are state or municipal roads or railroads crossing Irving lands)
- 154 of those sites were either inaccessible, headwater sites, sites with no discernable stream channel, sites where the road or stream were not found in the vicinity of the mapped intersection, or were small cross drains – so no survey or fish passage calculations were done for these sites
- 951 crossings were field assessed measured and ranked
    - 55 are crossings where culverts were removed, and four of these are still identified as fish barriers
    - 8 Fords, five of which are barriers, three are not
    - 100 are Bridges 8 are barriers and another are 5 are potential barriers – one is unclassified.
    - 788 are either single or multiple culverts

- Overall, of the 951 crossings with field assessments
    - 160 crossings are not fish barriers, they are bridges, fords, the removed culverts listed above, or culverts that adequately pass stream flows and sediment, supporting stream processes
    - 762 crossings are problematic including
        - 405 that are definite barriers, because of severe constriction of the stream, a hydraulic jump at the outlet of a perched culvert, or a structure that is deformed or blocked.
        - 357 that are potential barriers, five bridges and the rest are culverted crossings that are constrictions in the stream channel evidenced by scour pools scoured in the stream banks and stream bed downstream or upstream of the crossing or both, and most have a lack of substrate through the crossing because of intense flows through the structure. 89 of these are multiple culvert crossings.

- 641 of the barrier or potential barrier crossings are within 5 miles of upcoming (2021) harvest operations, 439 are within 2 miles, and 260 are within 1 mile of upcoming operations. Not knowing the preferred access routes, the below analysis will focus on the 661 barrier or potential barriers which should be fine-tuned based on known access route and known opportunities within management units.

Priorities

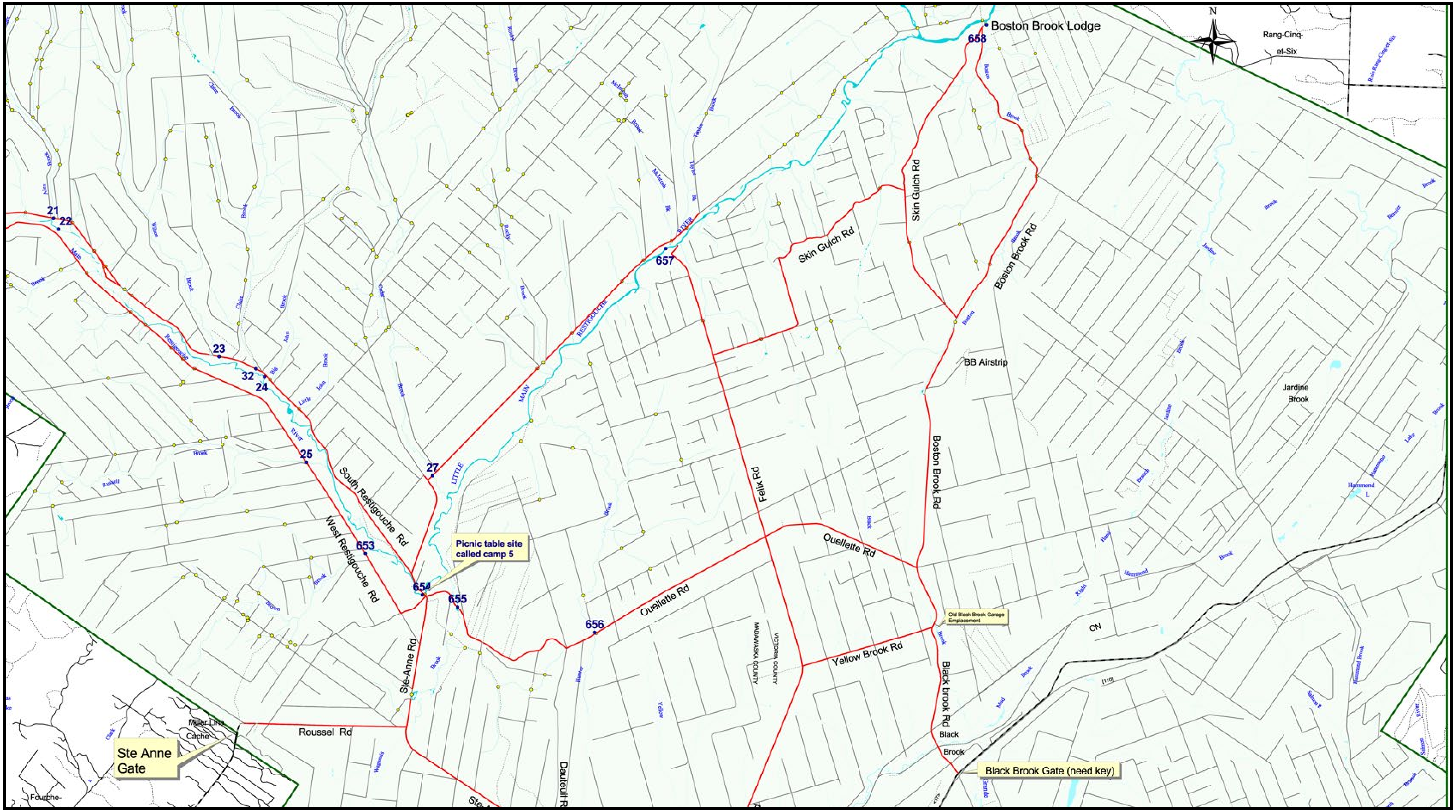
Highest Value Fisheries Habitat

- 240 of the 641 barriers identified above are on or adjacent (within 100 meters) of streams ranked High or Very High priority habitat for native fisheries by a team of Maine Inland Fisheries and Wildlife Regional Fisheries Biologists – primarily for coldwater Eastern brook trout habitat.
    - 94 of those 240 crossings if right sized and installed would provide access to at least ¼ mile of High or Very High ranked trout habitat upstream
    - 66 of those would provide habitat for at least a mile of upstream habitat upstream
    - 8 have at least 5 miles of habitat upstream and one of those >10 miles (SiteIDs: 34381, 34790, 34598, 34997, 7585, 37155, 37133, 34257)
    - 15 of these sites have a "synergy effect" – that is, if one of these sites plus one or two sites upstream were completed together, the total upstream mileage reconnection would be at least an additional mile, as compared to only the single road-stream crossing upgrade. (SiteIDs: 30515, 23924, 32969, 33864, 33937, 33938, 34191, 34232, 34435, 34562, 34908, 33813, 33831, 33848, 37135)
    - Two HUC-12 watersheds have been identified as locations where a grouping of 4 or less projects would remove all known barriers from the entire watershed. These watersheds are Ben Glazier Brook watershed (Site IDs: 33938, 33937, 34381, 33936) and Smith Brook watershed (Site IDs: 33401, 37888)

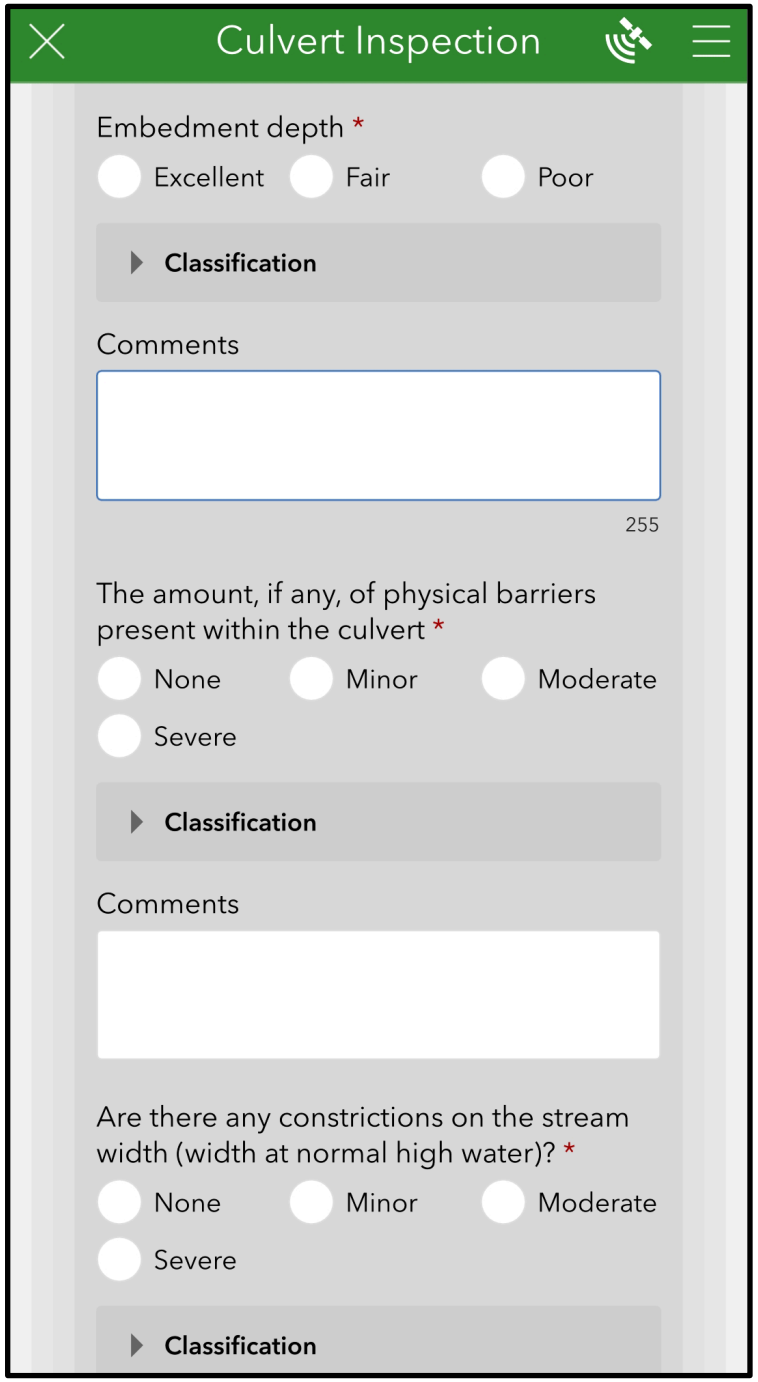
Intersection of Highest Value Habitat & Small-Medium Size Projects

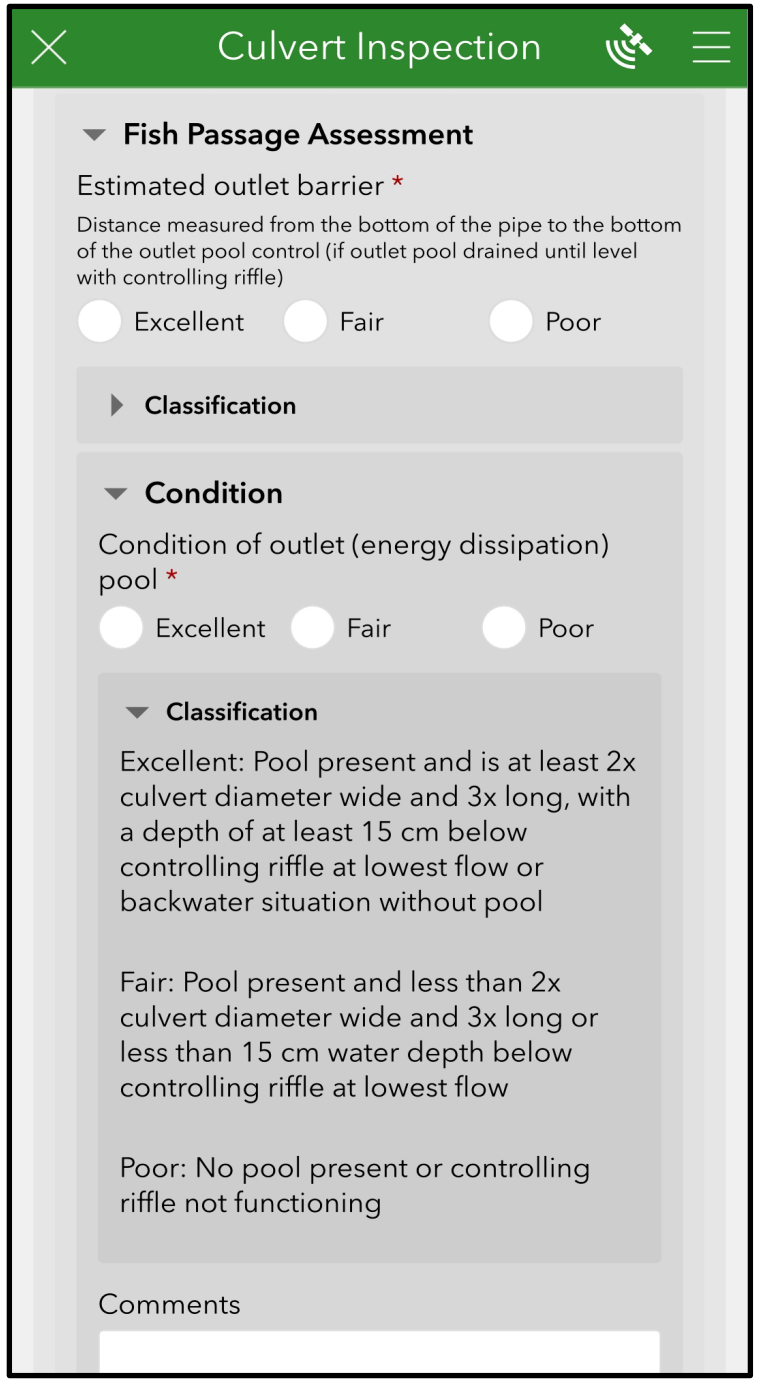
- 99 of the 241 projects identified above are road-stream crossings with two feet or less of road fill **and** the current culvert in place is 4 ft or smaller **and** the bank-full width of the stream is 15 feet or less. These parameters indicate the approximate size of the potential project and further cost implications.

Asset Inventory Project



N
Boston Brook Lodge
658
Rang-Cinq-
et-Six
Skin Gulch Rd
Skin Gulch Rd
Boston Brook Rd
BB Airstrip
Jardine
Brook
Boston Brook Rd
Felix Rd
657
21
22
23
32
24
25
27
South Restigouche Rd
West Restigouche Rd
653
Picnic table site
called camp 5
654
655
656
Ouellette Rd
Ouellette Rd
Yellow Brook Rd
Old Black Brook Garage
Emplacement
Black brook Rd
Black
Brook
Black Brook Gate (need key)
CN
VICTORIA COUNTY
MADAWASKA COUNTY
Ste-Anne Rd
Roussel Rd
Ste Anne
Gate
Dauteuil R





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Culvert Inspection

The amount, if any, of physical barriers present within the culvert *

None Minor Moderate Severe

Classification

None: No restriction

Minor: Partial restriction, <50% of stream width

Moderate: Patrial restriction, >50% stream width

Severe: Complete restriction

Comments

Are there any constrictions on the stream width (width at normal high water)? *

None Minor Moderate Severe

Classification

Comments

Culvert Inspection

Asset Condition Score (%):

*If the Condition Number is less than 80, indicate what repairs are required below

After reviewing all previous questions, do you think that this culvert will allow for the passage of fish? *

Yes No

Comments

Are there any repairs required for the fish passage through this culvert? *

Yes No

Culvert and Fish Passage Images

Include pictures of the inlet, outlet, and any additional pictures that are relevant

Pictures

Image

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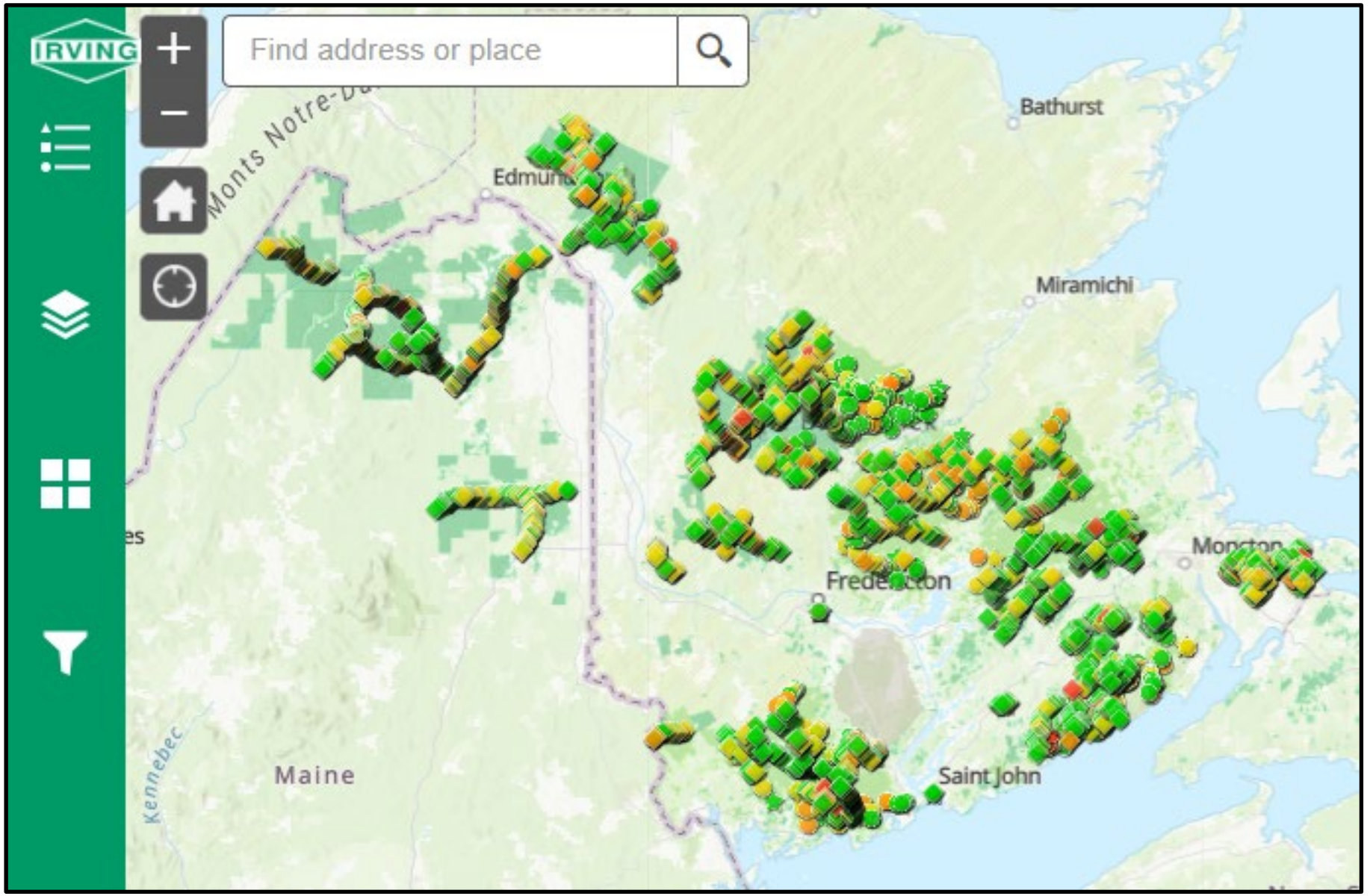

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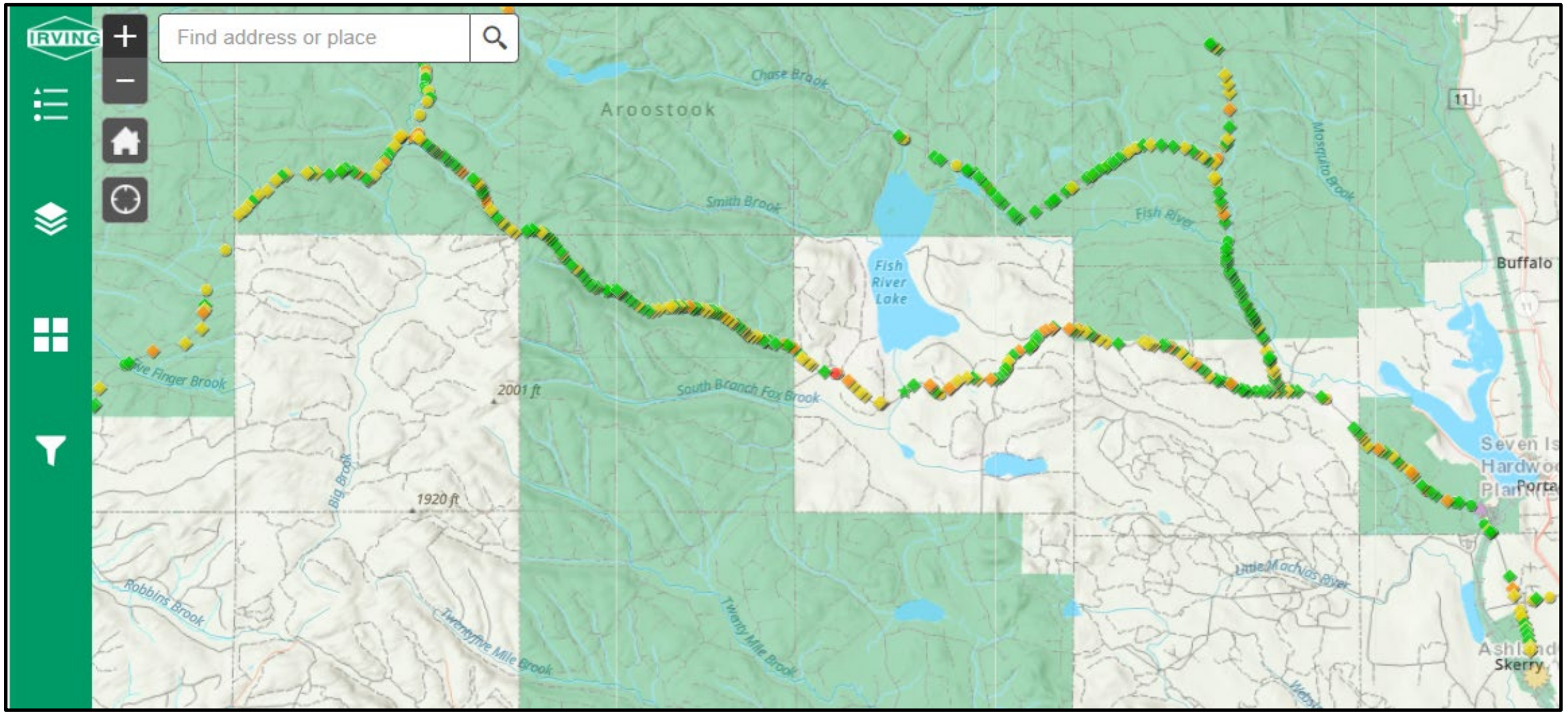

So what was the condition of our road crossing assets?

Similar to several studies, around 60% of watercourse crossing are a partial or complete barrier to fish passage.

Preferred methods of restoring fish passage at problem sites would include bridges, arches, embedded and total removal.

Round pipes, properly installed, should not be disregarded when considering options for fish passage improvement.

How do we make this work?

- Agree on field survey methods, measurement units and training of assessment crew personnel. This is not a summer student or ENGO volunteer program.
- Partners work with industry to select projects which sync with operational road maintenance programs - Operational plans, maintenance lists & budget dates.
- Prioritize sites with the best cost to fish habitat benefits (low hanging fruit).
- Prepare a high priority “wish list” for special sites (ESA listed, big habitat gains etc.)
- Identify research gaps and technology (swimming capabilities by species vs water velocity, LiDAR to calculate culvert slope, culvert exit add-ons for fish passage).
- Explore funding / cost sharing sources.
- Work with downstream land-owners, regulators and First Nations partners to coordinate projects.

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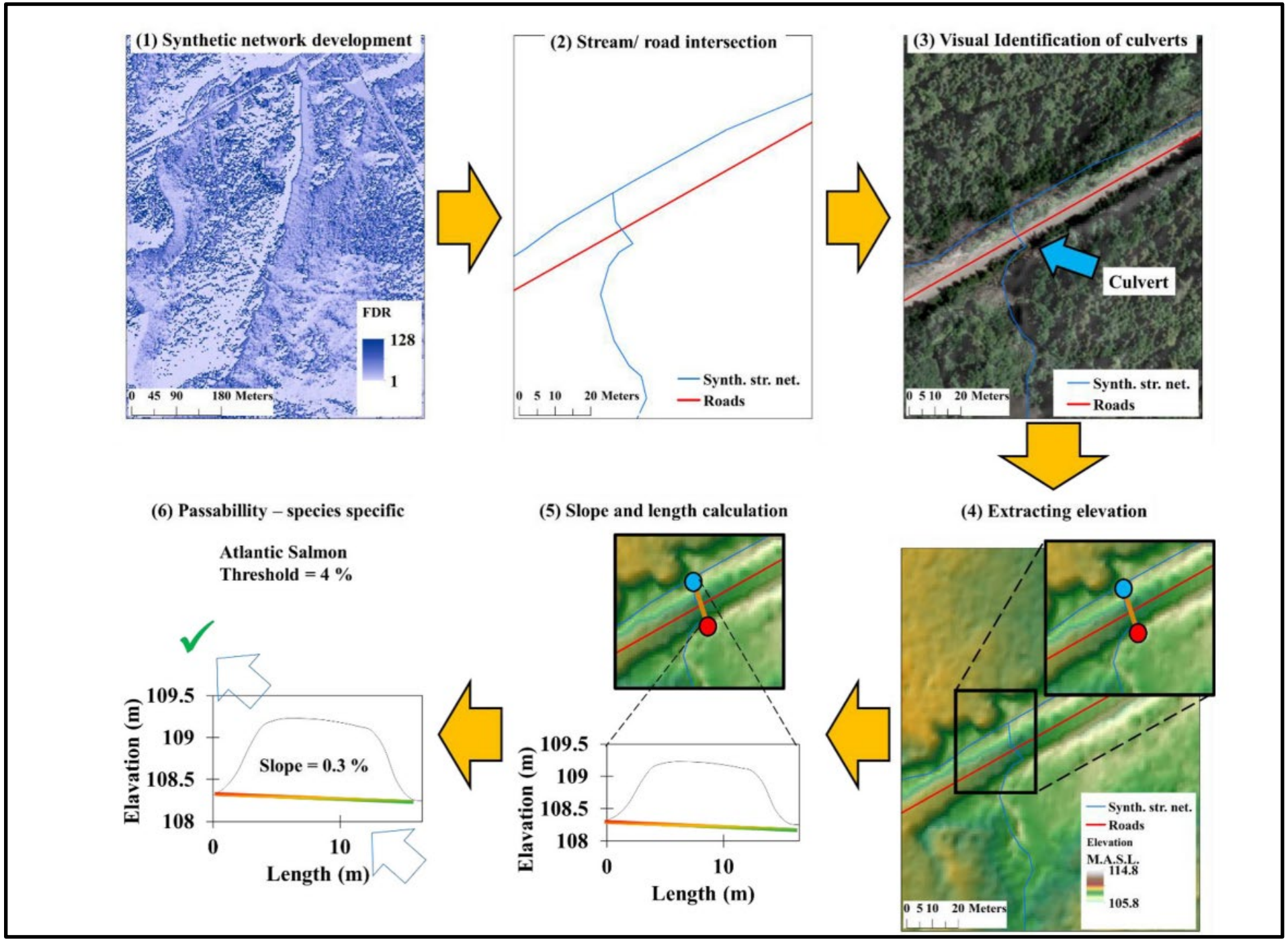

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KPMG

REPORT

Forest Certification

J.D. Irving, Limited Woodlands Operations – 2021 SFI® Surveillance Audit

Between September 27th and October 8th, 2021, a 3 person audit team from KPMG Performance Registrar Inc. (KPMG PRI) carried out a surveillance audit of J.D. Irving, Limited's (JDI's) woodlands operations against the requirements of the 2015-2019 versions of the Sustainable Forestry Initiative® (SFI®) Forest Management and Fiber Sourcing standards. To provide for a more efficient audit, an ISO 14001:2015 surveillance audit was conducted at the same time. This Certification Summary Report provides an overview of the audit process and KPMG's findings.

Description of J.D. Irving, Limited Woodlands Operations

1. Forest Management Operations

JDI's forestry operations occur on both freehold and Canadian Crown Land and are managed out of JDI's woodlands offices located in New Brunswick (St. Leonard, Chipman, Doaktown, Deersdale, Sussex and St. George), Nova Scotia (Truro) and Maine (Fort Kent). The freehold

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Fish Friendly

Fisheries Improvement Network

How can the FIN Network help?

Questions?