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Case Studies IV: An Evaluation of Fishway Passage and Spawning Migration Survival for Alewife

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AN EVALUATION OF FISHWAY PASSAGE AND SPAWNING MIGRATION SURVIVAL FOR ALEWIFE

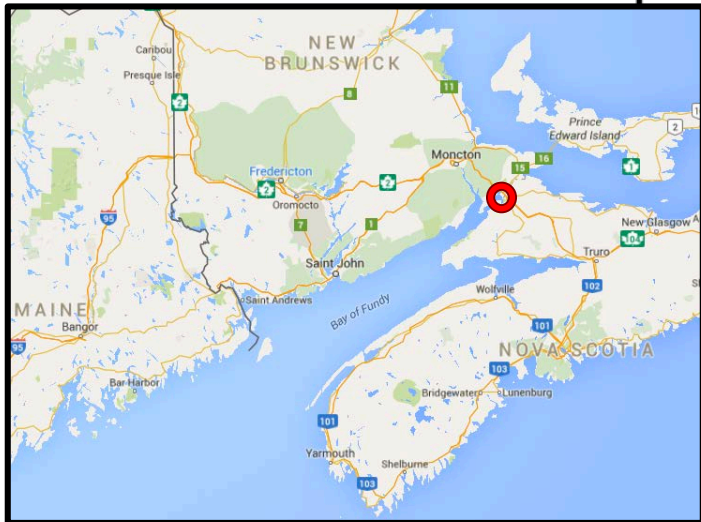
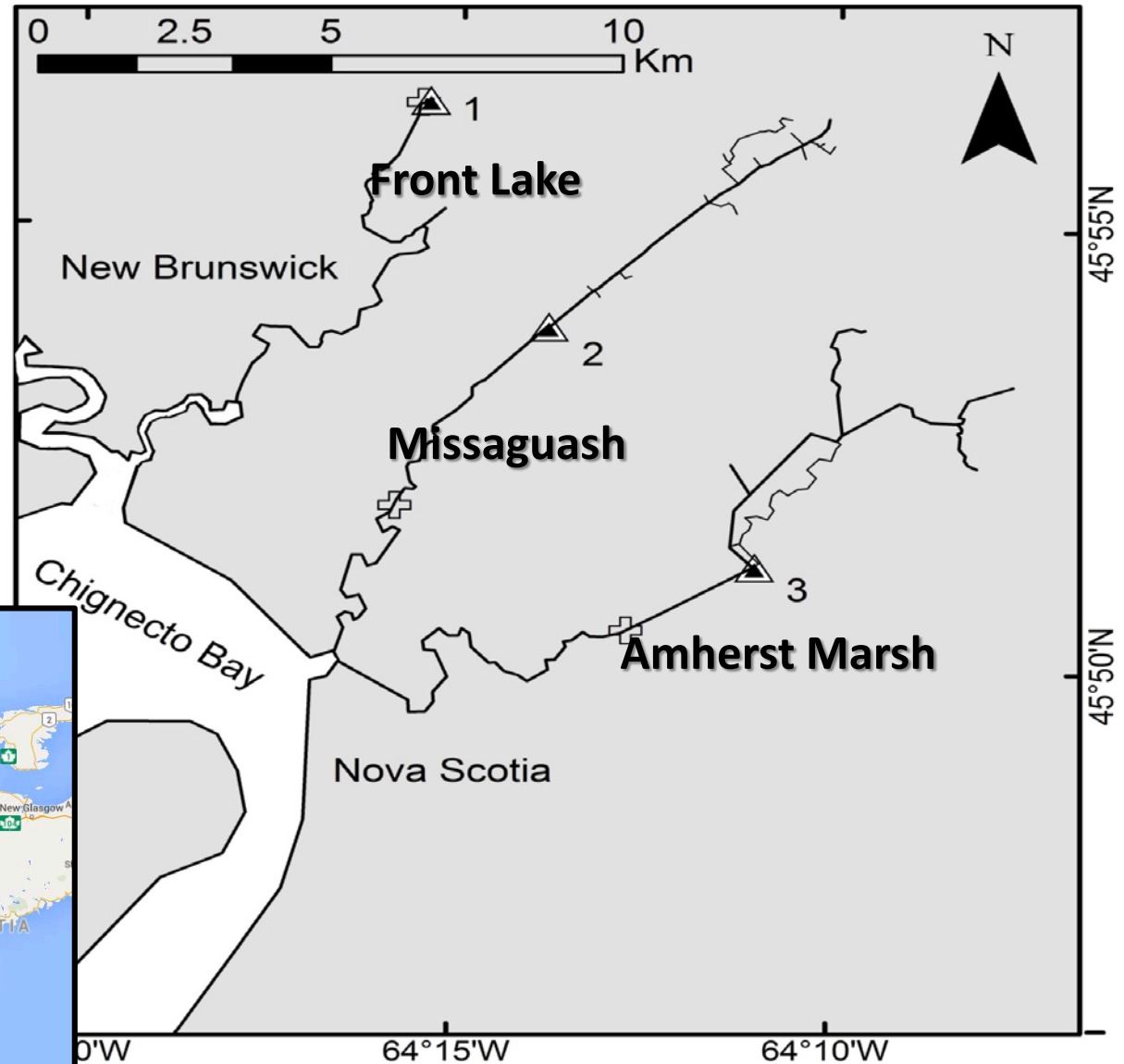
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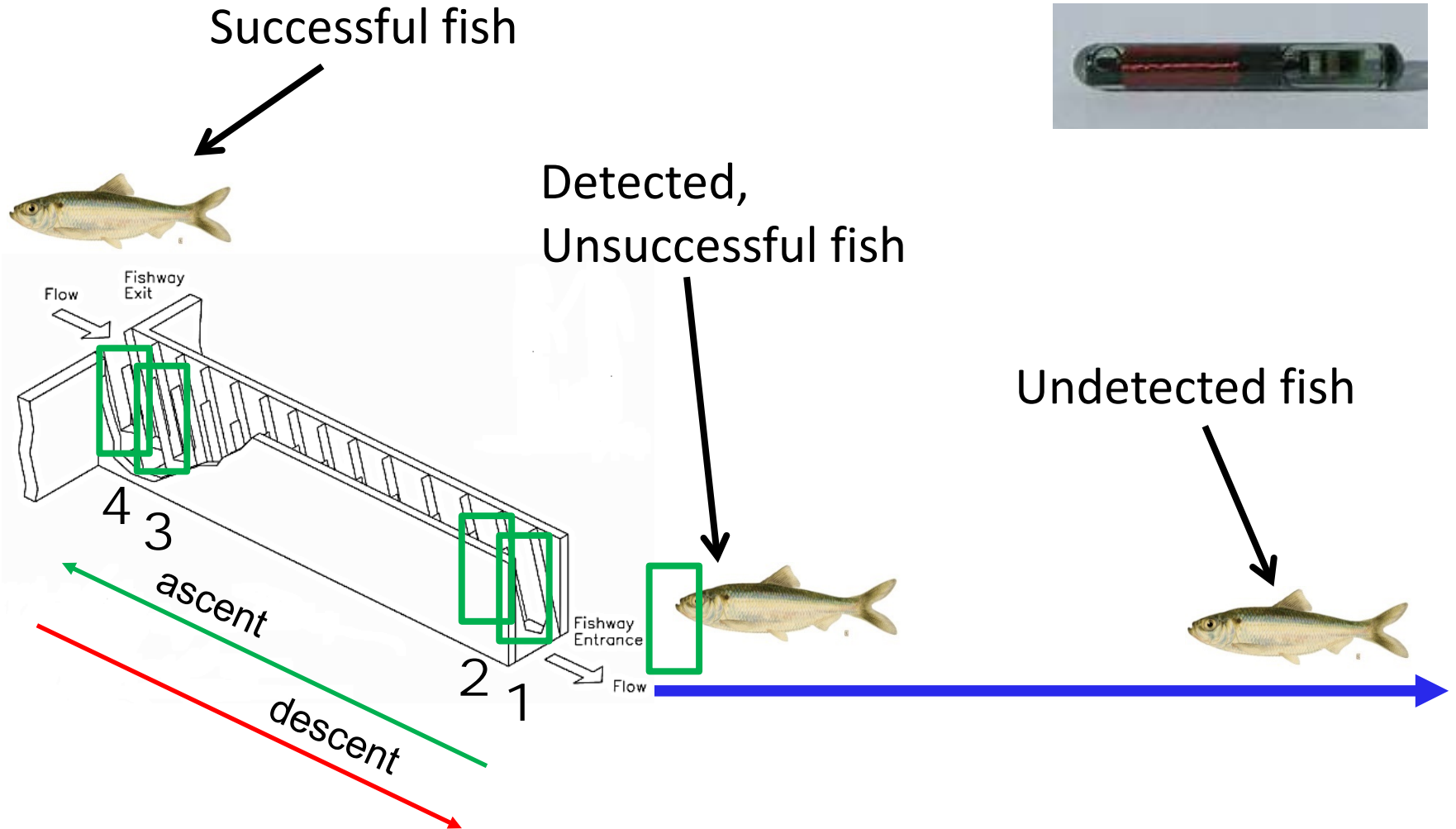
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Study Sites: Three Fishways in the Cumberland Marsh Region

Nova Scotia and New Brunswick, Canada

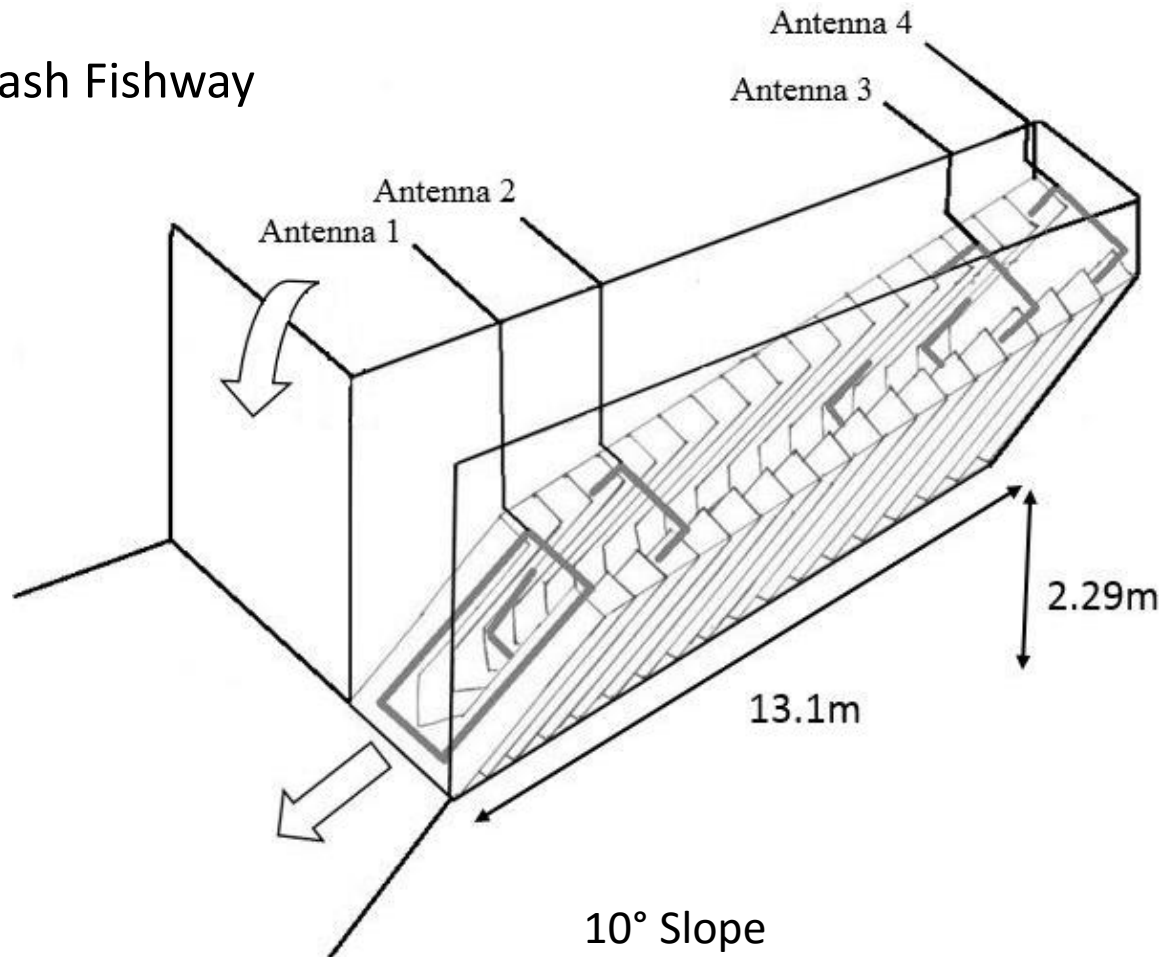


PIT Fishway Tracking



Antenna Arrays

Missaguash Fishway
(Denil)



Missaguash Fishway (Denil)



Fishway

Downstream Antenna



Amherst Marsh (Denil)



Fishway With Array

Downstream Antenna



Front Lake Fishway (Pool and Weir)



Fishway With Array

Downstream Antenna on Culvert



Alewife
(*Alosa
pseudoharengus*)



Photo: Mat Gregoire

PIT Tagging

- 23 mm HDX PIT tags
- Length, weight, sex, tag ID, time of release



Passage Efficiency of Alewife

Fishway	Successful Migrants		
	2013	2014	2015
Amherst Marsh (Denil)	88 (75%)	408 (91%)	377 (97%)
Missaguash (Denil)	158 (74%)	155 (77%)	209 (77%)
Front Lake (Pool-&-weir)	1 (0.01%)	148 (50%)	237 (63%)

deeper
plunge
pool

new
fishway

Return Rates in 2015

<u>Fishway Detected</u>	Year Tagged			Fishway Detection Totals
	<u>2013</u>	<u>2014</u>	<u>2015</u>	
Amherst Marsh	35	94	248	377
Missaguash	22	76	147	245
Front Lake	82	73	216	371
Year tagged <i>n</i> total	139	243	611	993
% n Tagged per year	10.0%	21.6%	48.1%	

SITE FIDELITY

Location and Year Tagged											
<u>Fishway Detected 2015</u>	Amherst Marsh (AM)			Missaguash (MS)			Front Lake (FL)			Robinson Brook	
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	
	AM	15	62	240	18	32	7	0	0	1	2
MS	4	19	27	17	55	119	1	2	1	0	
FL	0	2	1	2	3	0	78	68	215	2	
Total	19	83	268	37	90	126	79	70	217	4	

Future Directions

- Radiotracking and Spawning Sites
- Marine Nutrient Transfer
- Tide Gate and Estuary Monitoring (Cumulative Impact)
- Predator Effects

THANKS

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- Seth Newell
- Meghan Spares
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Questions?
Comments?
Suggestions?

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