

# A tar sands oil pipeline along New England's rivers

## What are we risking?



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### Purpose

1. Identify the freshwater ecosystems at risk from a tar sands oil spill of the Portland to Montreal Pipeline.
2. Raise awareness about the importance of these ecosystems to New England communities.

### The Challenge

#### Tar Sands Oil Spills

Since 2010, there have been five major spills in the US. They negatively impact ecosystems and communities both onsite and through downstream waterways. Costing up to \$1 billion in damage, clean-up has been more expensive per volume than conventional crude oil.<sup>1</sup>

#### The Portland to Montreal Pipeline

Plans are developing for tar sands transport through the Portland to Montreal Pipeline. Built in the 1950s, it has historically handled lighter crude oil and natural gas.<sup>1</sup> The pipeline route travels through floodplains, intersecting headwaters and rivers.

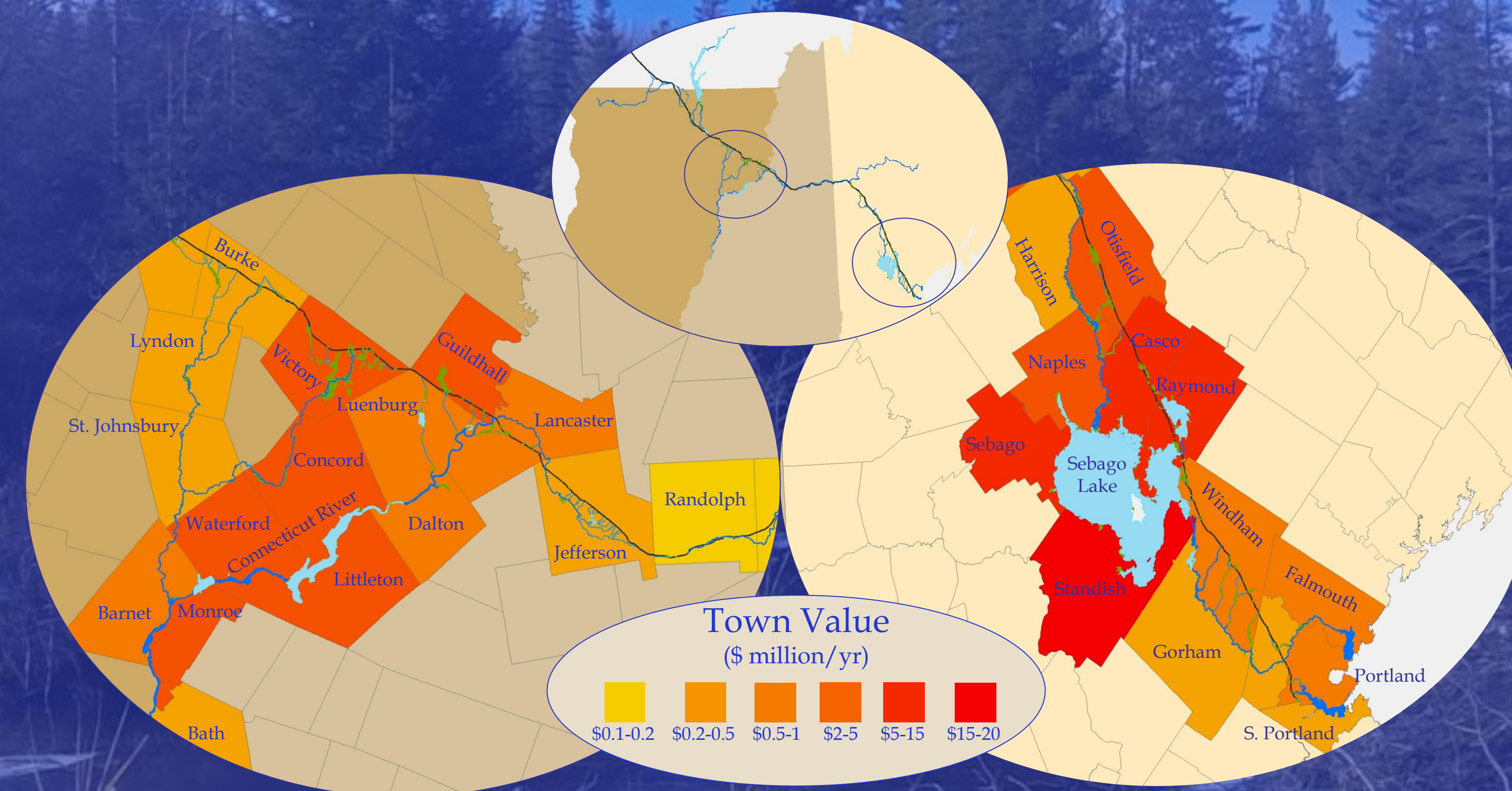
#### New England's Freshwater Ecosystem Services

Ecosystem services are the goods and services provided by the environment that support human quality of life.<sup>2</sup> The health of New England's rivers, lakes and wetlands are important to communities; they provide important services such as tourism, recreation and drinking water. A tar sands oil spill in freshwater would negatively impact the ecosystem services they provide.<sup>3</sup>

### Methods

1. Use satellite imagery to map the right-of-way of the Portland-Montreal Pipeline through ME, VT and NH.
2. Identify rivers, lakes and wetlands that intersect:
  1. the pipeline, and
  2. downstream waterways.
3. Quantify by annual flow of income per acre through a benefit-transfer analysis of the ecosystem services values from Troy, 2012.

### Results



| Ecosystem Type | Transfer Values (\$/acre/yr) | Total Area (acres) | Total Value (\$/yr) |
|----------------|------------------------------|--------------------|---------------------|
| Rivers         | \$ 1,182                     | 11,000             | \$ 12,500,000       |
| Lakes          | \$ 1,617                     | 64,000             | \$ 104,000,000      |
| Wetlands       | \$ 1,846                     | 21,000             | \$ 38,000,000       |
| <b>Total</b>   | -                            | 96,000             | \$ 150,000,000      |

### Discussion & Conclusions

This study is the first study for understanding the environmental and socioeconomic risks associated with a tar sands oil pipeline spill in New England.

\$150 million is an underestimate:

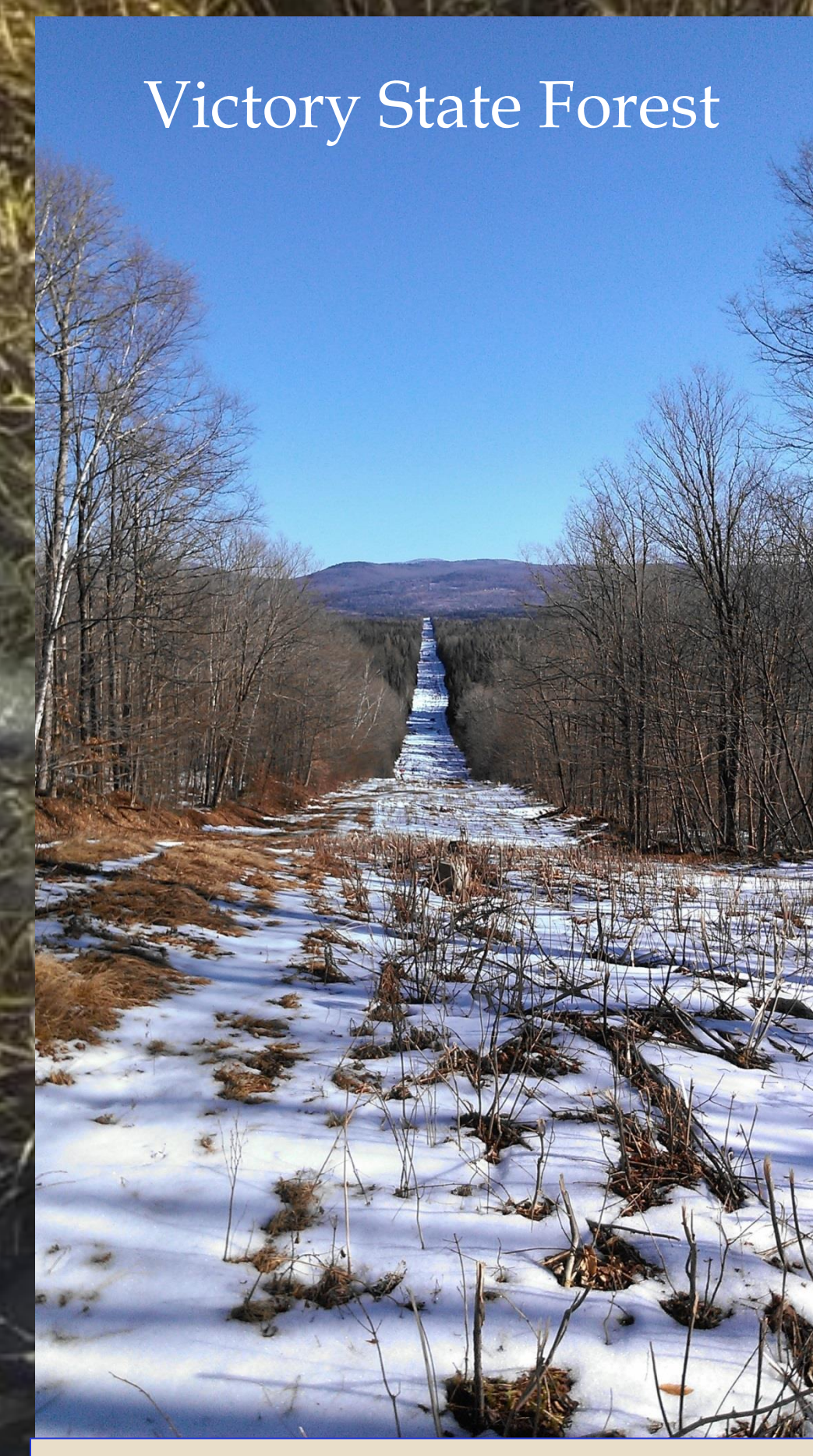
- Cultural and spiritual importance are under represented services.
- Recreation and water quality are undervalued in comparison to market estimates:

Average value from Troy, 2012 in \$/acre/yr.<sup>2</sup>

| Ecosystem Type | Aesthetic & Amenity | Gas Reg. | Habitat Refugium | Nutrient Reg. | Other Cultural | Recreation |
|----------------|---------------------|----------|------------------|---------------|----------------|------------|
| Rivers         | -                   | -        | -                | -             | \$9            | \$1,173    |
| Lakes          | \$180               | -        | -                | \$218         | \$9            | \$1,211    |
| Wetlands       | \$436               | \$5      | \$27             | \$908         | \$20           | \$450      |

#### The Bottom Line

This research is intended to be a gateway to community discussion and involvement around this issue. Therefore, the purpose of this project cannot be fulfilled without engaging them in conversations about the areas at risk and the ways in which they support the community's quality of life.



### References

1. Benzank J & Droisch D. Going in Reverse: the tar sands threat to Central Canada and New England. NRDC. 2012.
2. Troy A. Valuing Maine's Natural Capital. Spatial Informatics Group. 2012.
3. Nordstrom, A. The link between visitor perception, usage and spending. The New Hampshire Lakes, Rivers, Streams and Ponds Partnership. 2007.

### Acknowledgements

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