



# Environmental Observatory for the bay of Sept-Îles

## SEDIMENT QUALITY

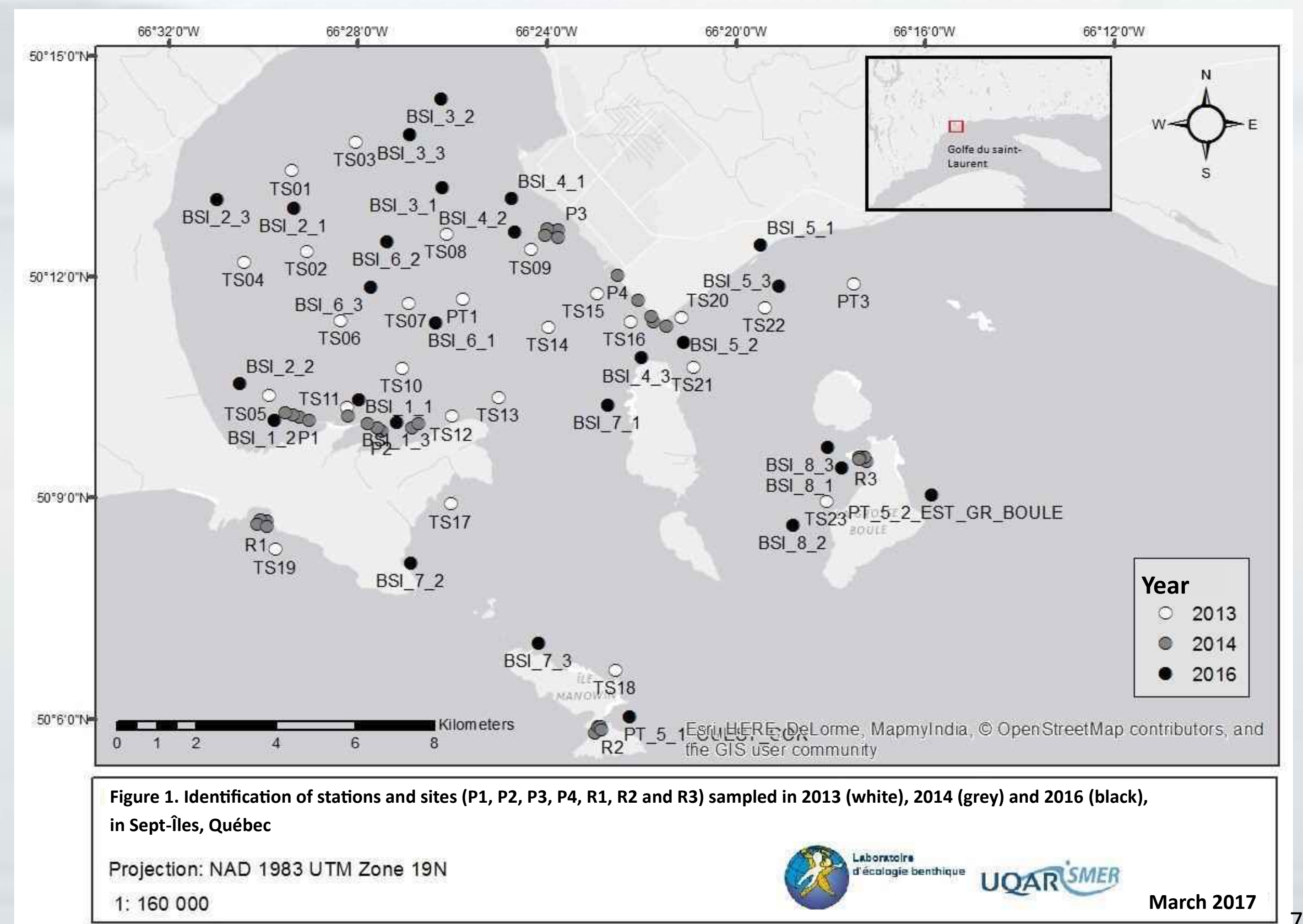
### OBJECTIVES

- Evaluate sediment quality in the Bay of Sept-Îles
- Ensure that the sampled parameters meet MDDELCC quality criteria and Canadian guidelines
- Determine whether certain sites in the Bay of Sept-Îles are affected by human activity



### SAMPLING PLAN

- Where: Within Port of Sept-Îles boundaries
- When: Summer 2013, 2014, and 2016



### EQUIPMENT

- Ponar grab sampler used to sample the top sediment layer (10 to 15 cm) over an area of 525 cm<sup>2</sup> (229 mm X 229 mm)



⇒ Sediments were sampled three times to analyze physical, chemical, and organic matter content, measure particle size, and characterize the benthic community



Example of sediments found at R1 (left) and P2 (right)

### SAMPLED PARAMETERS

Parameter	Description
Particle size	To determine the proportion of various particle sizes in the sediment
Metal and metalloids	Naturally present in the environment but may also come from the mining, metallurgy, or steelmaking industries, vehicle emissions, or coal-fired power plants
Linear hydrocarbons (paraffins)	Hydrocarbons made up of chains of atoms with simple bonds, found in their natural state in fossil fuels (oil and natural gas) and used as raw materials in the chemical industry
Polycyclic aromatic hydrocarbons (PAH)	Cyclic carbon and nitrogen compounds that can be released naturally into the environment (forest fires) but are more often of human origin: heating systems, vehicle exhaust, industrial processes, etc.
Organic matter and stable carbon and nitrogen isotopes	The amount and type of organic matter in the sediment can be determined by analyzing the percentage of organic matter, carbon and nitrogen data, and the carbon/nitrogen ratio in the sediments. Sediments contain different forms of organic matter (humic materials, chemical compounds, and plant and animal matter).

### PHOTO CREDIT

<sup>1,3,12</sup> Kim Aubut Demers / <sup>2,4</sup> Claudy Deschênes  
<sup>5</sup> Julie Carrière / <sup>6</sup> Elliot Dreujou / <sup>7</sup> INREST and UQAR-ISMER  
<sup>8</sup> [http://axis123.com/mall/m\\_mall\\_detail.php?fl\\_ctid=01032002&fl\\_goid=2266](http://axis123.com/mall/m_mall_detail.php?fl_ctid=01032002&fl_goid=2266)  
<sup>9,10</sup> WoRMS / <sup>11</sup> ISMER

### FINANCIAL PARTNERS

