PROGRAM
OBJECTIVES

Offer improved predictions in order to better understand flows and the St. Lawrence ecosystem.

Provide a decision-making tool for the integrated management of the St. Lawrence.

Facilitate the continuous improvement of management practices by all levels of government, as well as by key players from the private sector, to protect the ecosystem and ensure sustainable development.

HOW DOES THE PROGRAM WORK?

By pooling the expertise of various participants and working together to increase efficiency.

By carrying out numerical modelling activities using computer systems that rely on observed data.

By coupling the various participants' models to obtain optimal forecasts.

PARTICIPANTS

THE GOVERNMENT OF CANADA
Environment Canada
Fisheries and Oceans Canada

GOVERNMENT OF QUEBEC
Ministère du Développement durable, de l'Environnement, de la Faune et des Parcs

www.planstlaurent.qc.ca

ST. LAWRENCE
Action Plan 2011–2026

The Numerical Environmental Prediction Program for the St. Lawrence:

A NEW ST. LAWRENCE ACTION PLAN TOOL

A program to aid decision making and water management planning in the St. Lawrence and its watershed

WHAT IS NUMERICAL ENVIRONMENTAL PREDICTION?

It consists of activities that use numerical models to simulate the evolution of physical, biological or chemical processes in the St. Lawrence and its watershed in order to predict the state of the corresponding terrestrial and aquatic environment. These activities help predict the changing state of temperature and humidity levels in the soil and vegetation, and the quantity and temperature of the water, ice, currents, sediments, etc.

TARGET
CLIENTELE

GOVERNMENTS

SCIENTISTS

THE PUBLIC

Canada   Québec

Model that generates analyses and forecasts for water levels, flow velocity and water temperature in the St. Lawrence River. The image represents flow speed in metres/second. The simulation area extends from the Port of Montreal to Trois-Rivières for a discharge of 14 500 m³/s at Sorel. The black arrows indicate direction of flow.

Lake Saint-Pierre

0.93
0.82
0.72
0.62
0.52
0.41
0.31
0.21
0.11
0.01
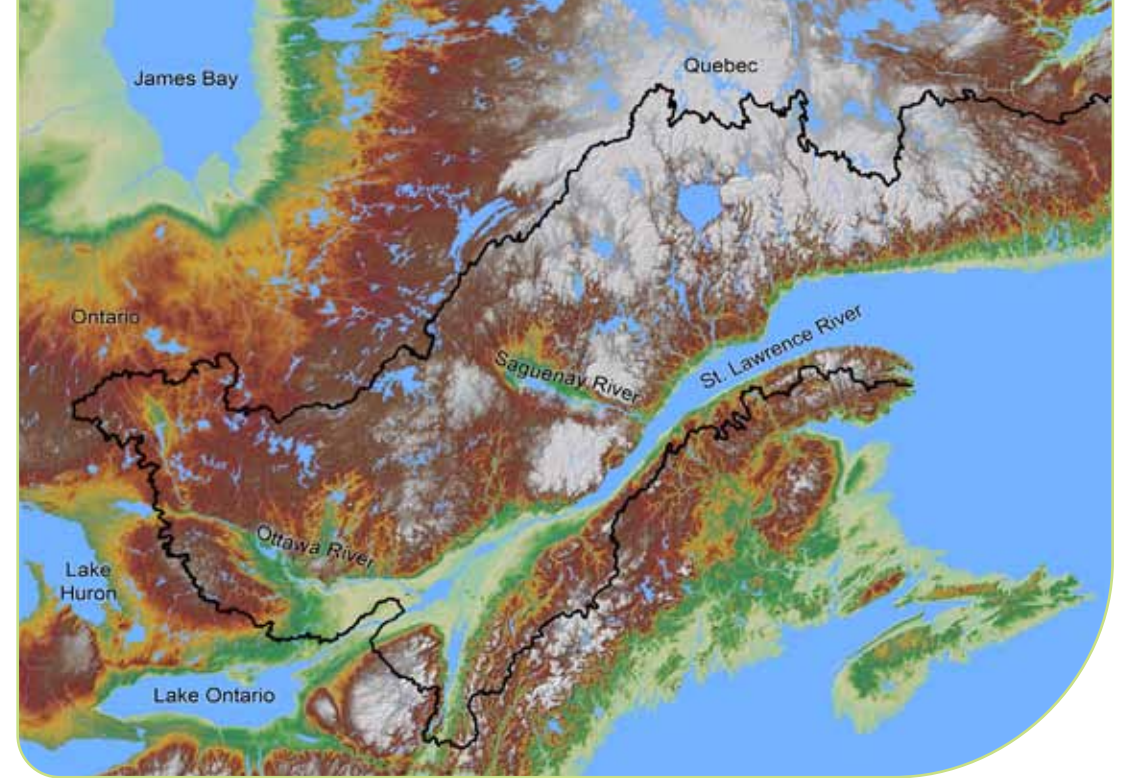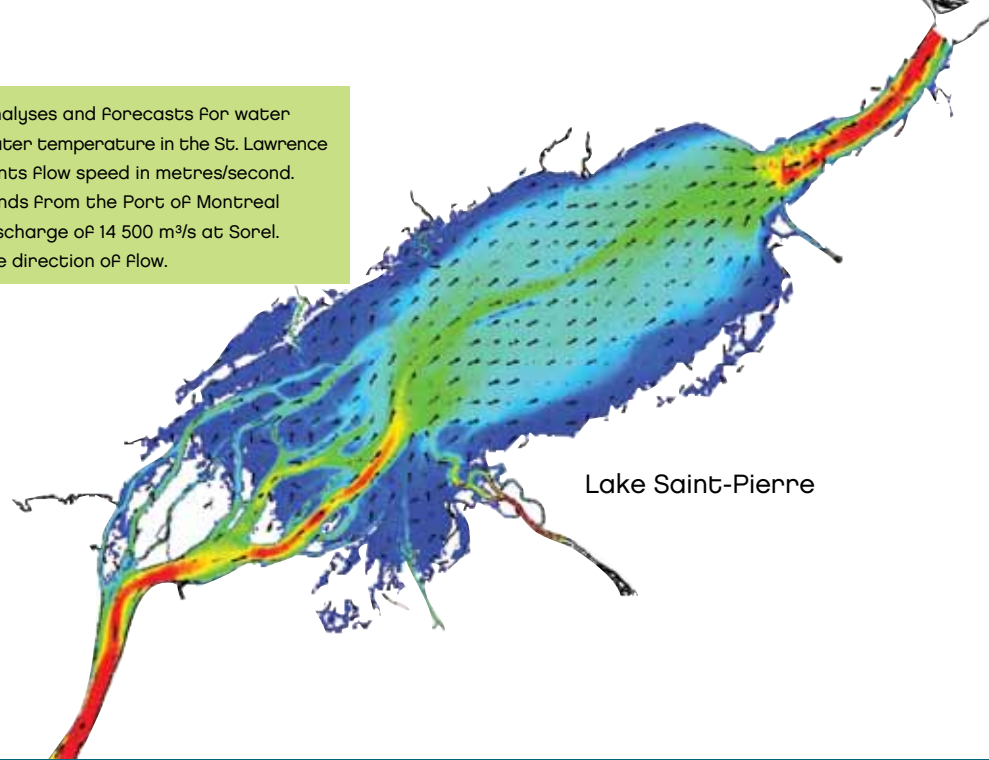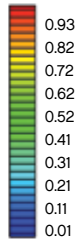
ACTIVITIES AND EXPECTED RESULTS: 2011-2026

ACTIVITIES	EXPECTED RESULTS: ANALYSES AND PREDICTIONS
Modelling and assimilation of surface data covering the watersheds of St. Lawrence tributaries	Humidity and temperature of the soil and vegetation, thickness and density of the snow, vegetation conditions, evaporation above lakes, carbon flux
Hydrological modelling and routing of waters entering via the watersheds of St. Lawrence tributaries	Flow rates, water quality and availability indicators
Hydrodynamic modelling of the St. Lawrence River, Lake of Two Mountains, Rivière des Mille-Îles, Rivière des Prairies and the Saint-Anne and Vaudreuil channels	Water levels, flow rates Water quality and availability indicators Currents and temperatures Waves, ice
Modelling of the dynamics of the major St. Lawrence ecosystems	Habitat modelling Indicators of ecosystem health Water quality Analyses of socioeconomic impacts
Modelling of ocean ice in the St. Lawrence Estuary and the Gulf of St. Lawrence	Improved atmospheric forecasts Ice forecasts Ocean forecasts

BENEFITS

PREDICTIONS ALLOWING US TO...

- Be proactive before the environment deteriorates
- Provide usable data to manage the levels, quality and availability of the water; and to manage and preserve the ecosystem
- Analyze the impacts of climate change
- Support public safety actions in the event of an environmental emergency
- Facilitate environmental assessments by analyzing the impacts of potential engineering work
- Support socioeconomic activities