A new record for an aquatic invasive species at the northern limit of its range

Dynamics of an Asian Clam population
in association with power plant

Ressources naturelles et Faune Québec

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The St.Lawrence: an ecosystem in evolution

Human development

Québec

Introduction

The St.Lawrence: an ecosystem in evolution

Species assemblage

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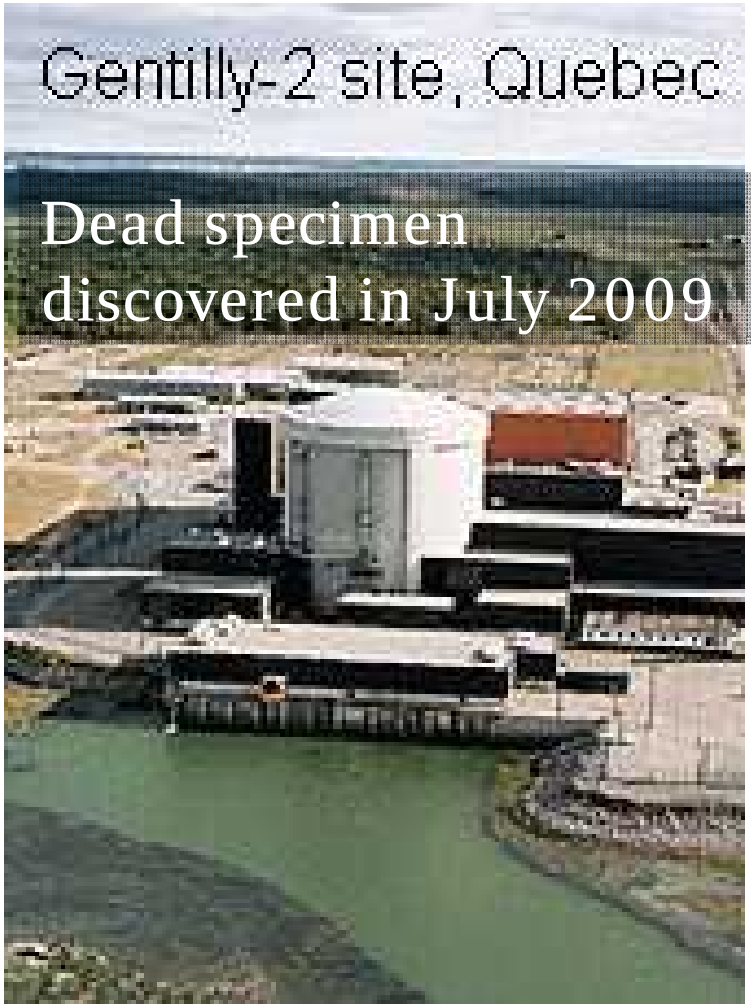
The St.Lawrence: an ecosystem in evolution

The latest addition!

Asian clam

Corbicula fluminea



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Species description

Corbicula: what are the risks of this species?

Asian clam

Biology and impacts

- Hermaphrodite bivalves
- Can produce up to 35 000 offspings/year
- Live up to 5 years
- Maximum size of 5 cm

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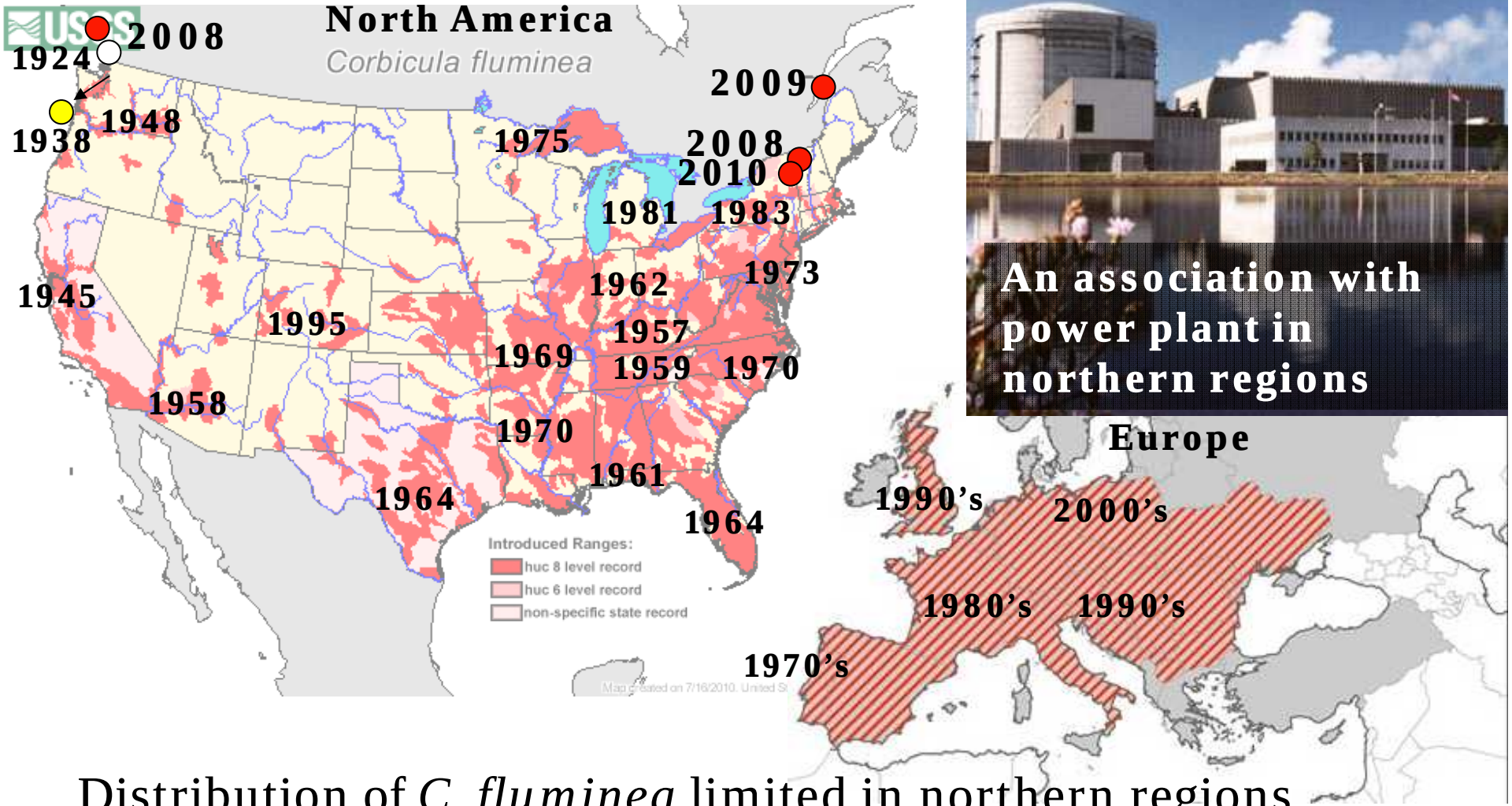
Species description

Corbicula: what are the risks of this species?

History of introduction & distribution



Distribution of *C. fluminea* limited in northern regions

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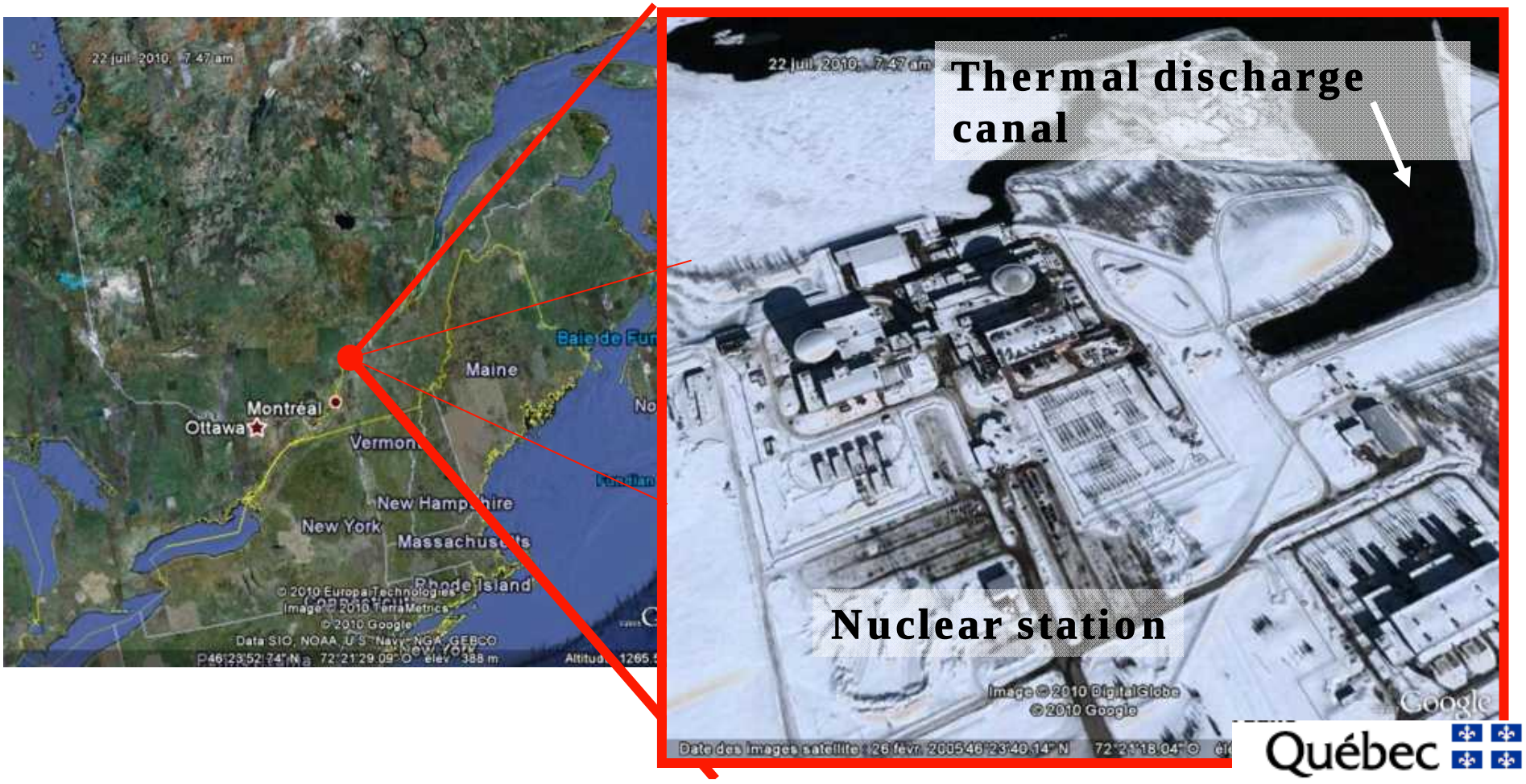
Study area

Corbicula: its situation in the St.-Lawrence

Description of the area



Methods

Corbicula: its situation in the St.-Lawrence

How we proceeded

- **First sampling in November 2009:**
  20 sampling sites around the nuclear station, 10 upstream and 10 downstream
- **Latest sampling in August 2010**
  50 sites outside thermal discharge
  20 sites in thermal discharge

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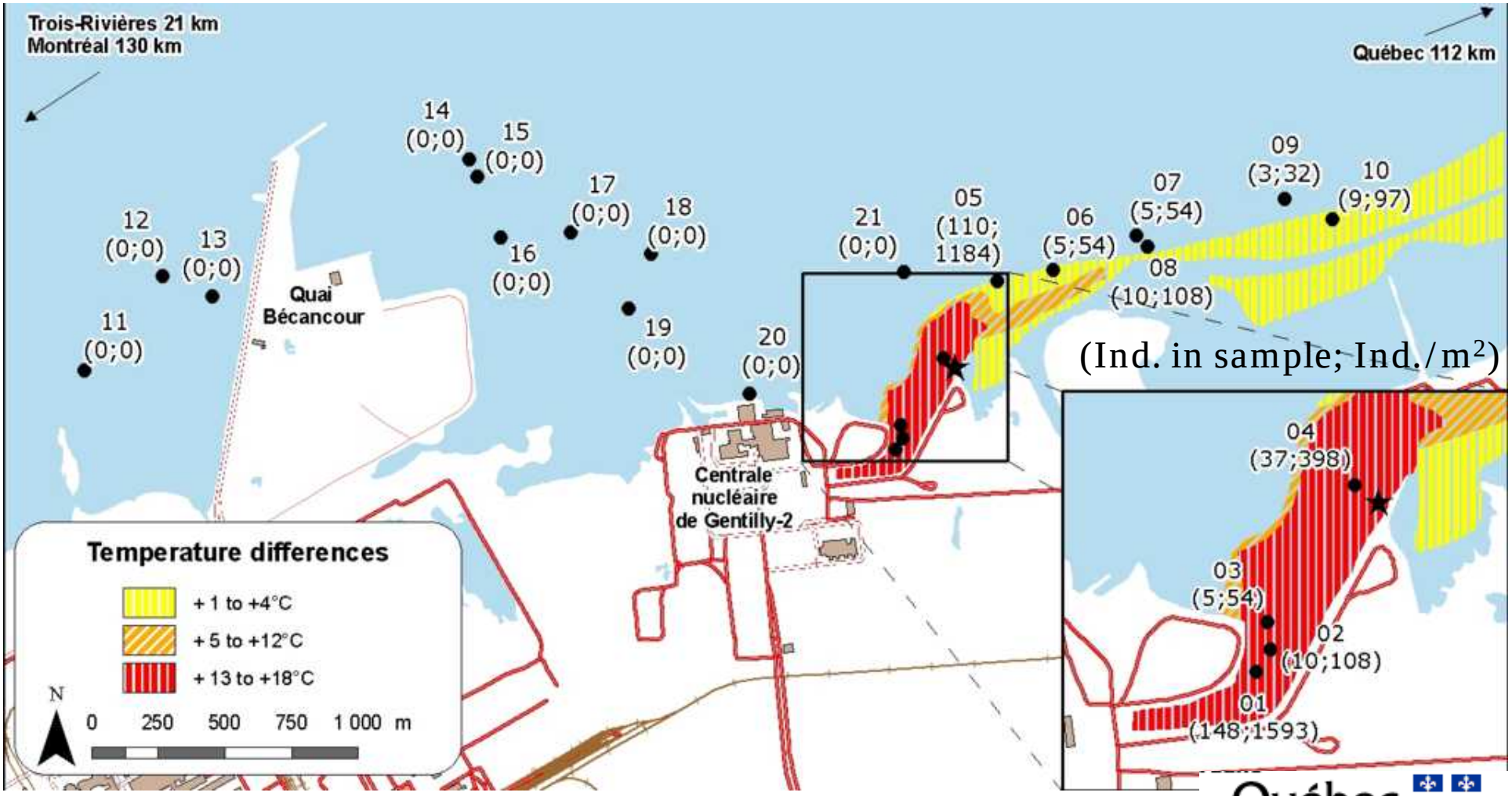
Results

Corbicula: its situation in the St.-Lawrence

What had we found in 2009



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Results

Corbicula: its situation in the St.-Lawrence in 2009

What had we found in 2009

- **Overall density: 368 ± 176 ind./m²**
- **Oldest individuals: about 3 years of age**

A. Paquet


A. Paquet

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Results

Corbicula: its situation in the St.-Lawrence in 2010

Latest research: preliminary results for 2010

Preliminary observations in 2010 from sieves during sampling

- **Absence** of *Corbicula* in sample (dead or alive)
- Presence of dead *Corbicula* in sample
- Presence of ***Corbicula* alive**
- 2009 results

➢ **Overall density: 3380 ind./m²**

In canal: 5339 ind./m2

outside canal : 1421 ind./m2

Largest specimen: 34 mm

6 km

3 km

0 km

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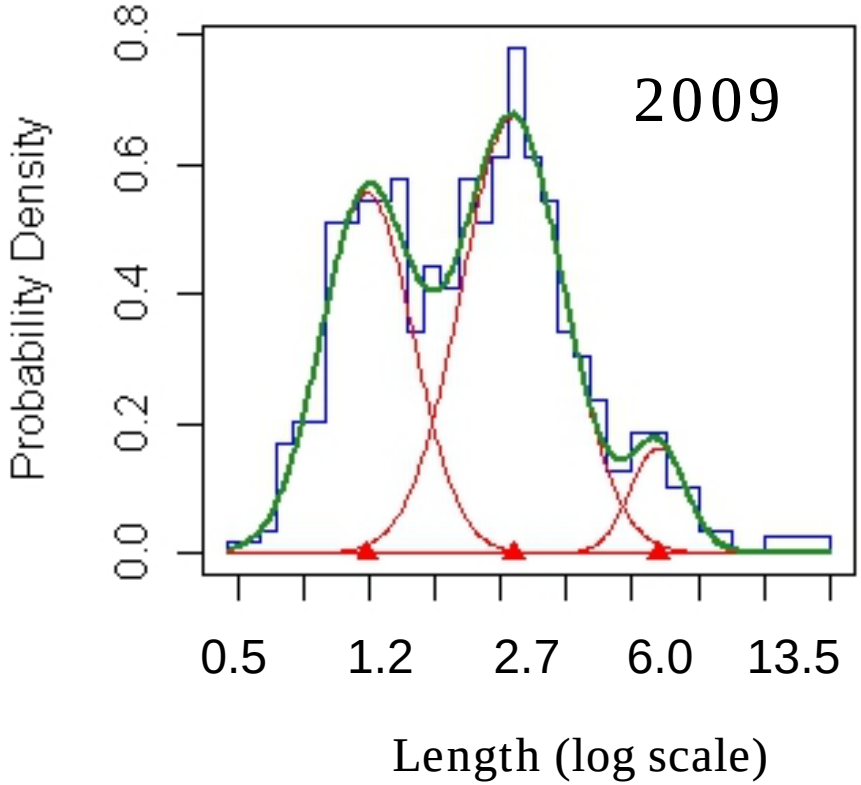
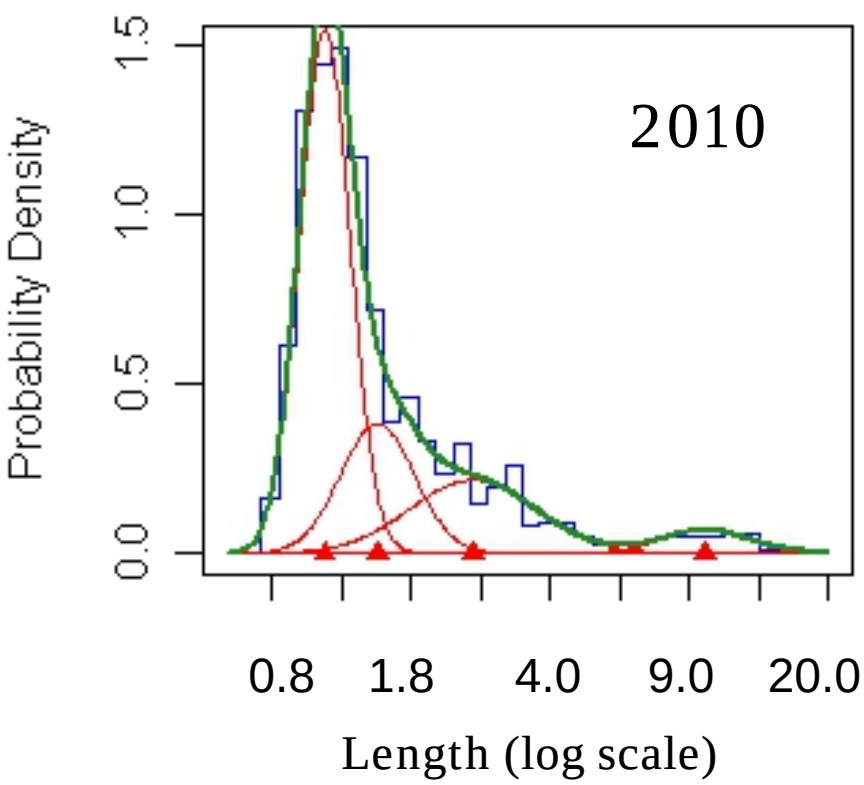
Results

Corbicula: its situation in the St.-Lawrence in 2010

Latest research: preliminary results

Size structure in 2009-2010





Perspectives

Corbicula: what should we expect in Québec ?

How was it introduced ?

Where does is come from?

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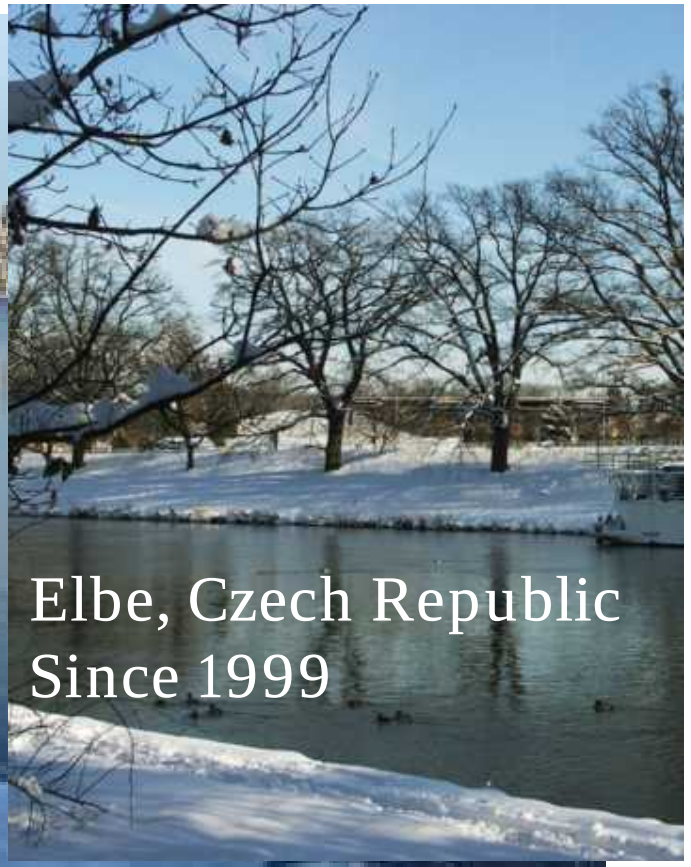
Perspectives

Corbicula: what should we expect in Québec ?

Could it adapt to northern winters ?



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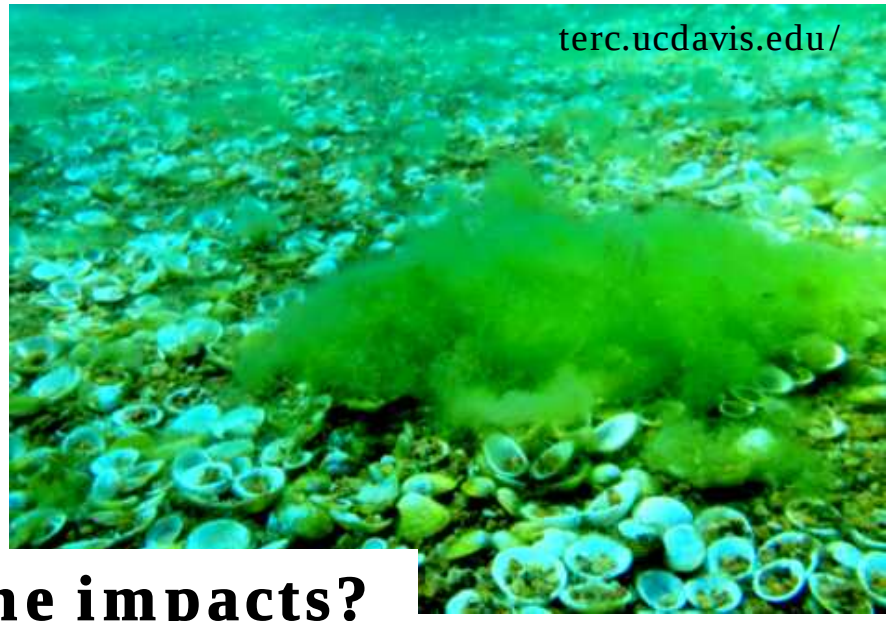
Perspectives

Corbicula: what should we expect in Québec ?

Could it reach high population density?



What can be the impacts?

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Perspectives

Corbicula: what should we expect in Québec ?

What are the possible control methods?

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Perspectives

Corbicula in Québec

Next steps

Is *Corbicula* somewhere else?

What is the dynamic of this species in cold environments?

Does *Corbicula* present evidence of adaptation to cold?

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Perspectives

Corbicula and friends in Québec

A global approach against invasive species

New strategies on exotic species in the province of Québec:

Increasing prevention and monitoring

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Acknowledgement

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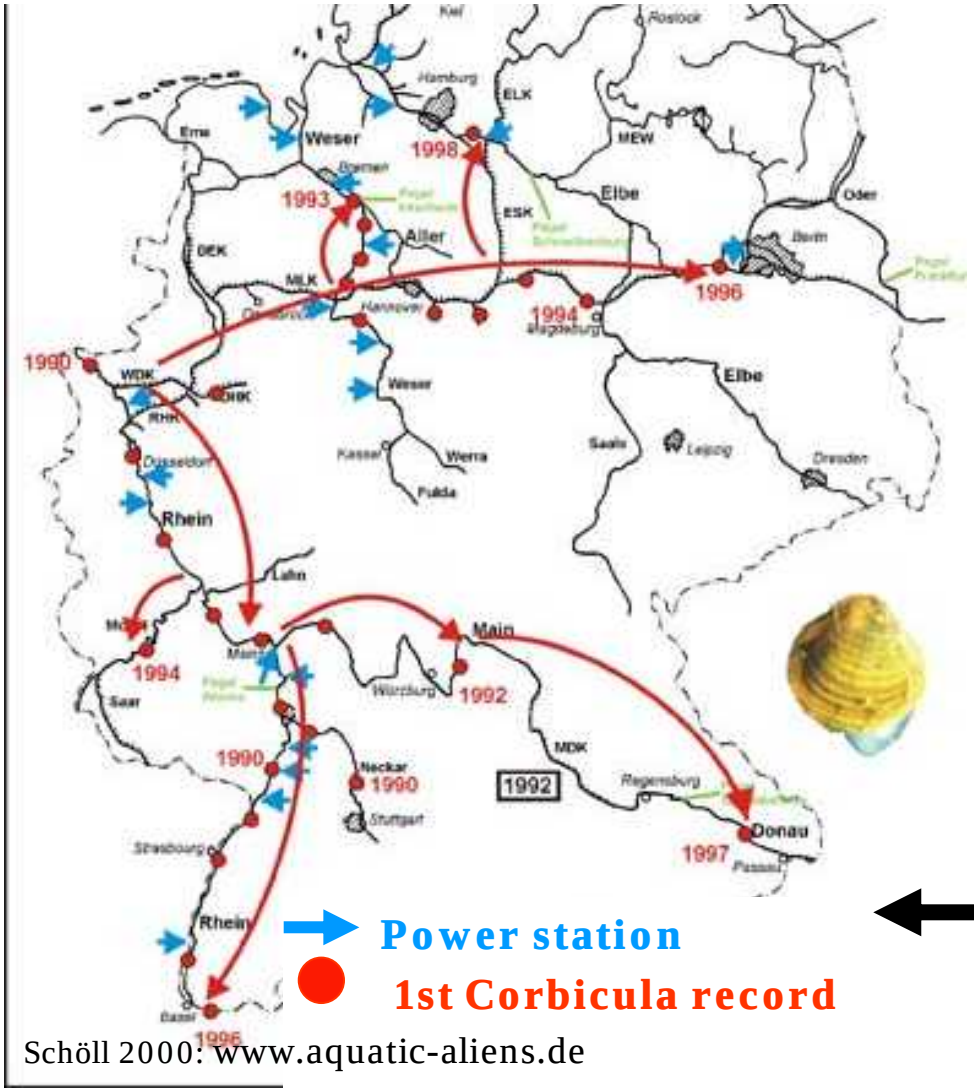
Species description

Corbicula: what are the risks of this species?

An association with power plant in northern regions



Schöll 2000: www.aquatic-aliens.de

Association with power stations in Germany since 1990

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