Explorer 2019

Dear Explorers, Supporters, and Friends

To say that the year 2018 turned out above and beyond our expectations is certainly not an overstatement. Many magical moments have marked this season, some of them unplanned and unexpected. Alltogether, the Mériscope is rapidly developing – our organization, our team and our activities. I would like to take a moment to thank all of you who have helped us in one way or another to make these projects a piece of reality. Without the support of so many of you, none of these goals would have been achieved.

Mériscope on ARTE TV

To kick off the season, a film crew from ARTE TV came on board of the Narval, shooting a documentary called «Wale in Kanada: Giganten in Gefahr». The report portrayed the main threats to marine mammals in the Gulf of St. Lawrence, i.e. entanglement in fishing gear, toxic contaminants and acoustic pollution of their habitat. Our study on the biological effects of halogenated flame retardants in minke whales was the core part of this documentary. If you missed the program, you will find a link on our website in the «Media» section. Thank you guys from ARTE for the very pleasant collaboration!

Our new board member: Jackie Egger

Before joining our team in 2017, Jacqueline Egger has been working as a biology teacher at the Kantonsschule Hohe Promenade in Zurich, Switzerland, for more than 10 years. She has earned a Master degree from the University of Zurich and she has always had a profound interest in marine science. She has been involved in a number of projects, e.g. as a field assistant in a research project on sharks in Florida. In the summer 2018, Jackie was elected as new board member of the Mériscope. Last November, she has succesfully completed several trainings at the Institut Maritime du Québec and is now a fully licensed boat captain under Canadian Law.

Jackie is directing an education program named **MérisCool**, which will be launched in 2019 (see p.3). She will give up her teaching career by the end of July 2019 and will put her skills to the service of the Mériscope. Welcome to the team, Jackie – we will do more than just cross our fingers to make this program a success !!

Our new car: a Dodge Grand Caravan CREW

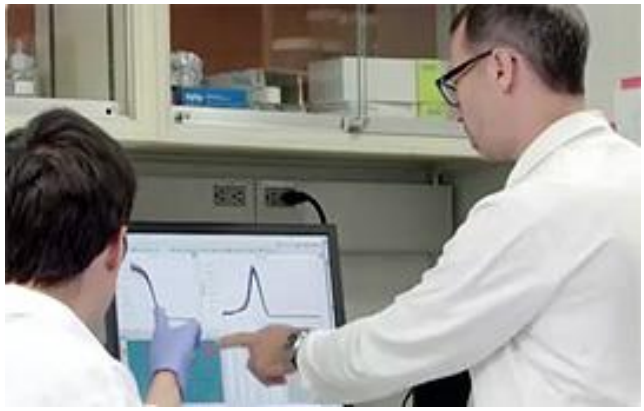
An acquisition that was long overdue: a van to make operations on the ground much easier and less expensive, both for the course program as well as the research projects. It carries a really nice logo on both sides and we just love it ☺ !!

Our contaminant study: continues to 2020

In spring 2014, a meeting was held at the Université du Québec à Montréal (UQAM) to discuss the possibility of launching a contaminant study on minke whales focusing on emerging flame retardants in the marine environment. In 2015, after one year of paperwork to get all the necessary permits, fund-raising and professional crossbow training, we took the first biopsies from minke whales in the St. Lawrence Estuary. Three years later, 16 biopsies have been taken and analyzed in the framework of a Ph.D.

Antoine Simond has accomplished a gigantic task, investigating correlations between elevated flame-retardant concentrations and hormone disruption in minke whales and belugas. In short, we found that concentrations of PBDEs (Poly-bromo-diphenyl-ethers) were on average 1.8 times higher in belugas than minke whales. However, 4 out of 34 halogenated flame-retardants (HFR) were found in much higher concentrations in minke whales. This is quite surprising, for two reasons: 1) Unlike belugas, minke whales are just seasonal visitors in the St. Lawrence Estuary and tend to have less contaminants in their tissues, and 2) all beluga biopsies were from males and all minke biopsies from females. Generally, females tend to have lower concentrations because they are transferring contaminants to their babies when lactating. We do not know yet, why minke whale females have so high concentrations of these four contaminants.

The main result, however, is that in both species elevated concentrations of persistent organic pollutants (POPs) are significantly associated with potential disruption of thyroid and steroid hormones. **In other words, emerging flame retardants clearly have an impact on the entire metabolism and the reproduction of these animals.**



Upon invitation by Prof. Dr. Jonathan Verreault, head of the ecotoxicology lab at UQAM, we decided to prolong our contaminant study to 2020. Parcs Canada has issued a 4-year permit for the biopsy collection and Fisheries and Oceans Canada is delivering yearly permits for our project. For those of you interested in more details about this study, the following paper will soon be published in Marine Pollution Bulletin: *Simond, A.E., Houde, M., Lesage V., Michaud, R., Zbinden, D., Verreault, J. «Is elevated organohalogen contaminent exposure linked to thyroid- and steroid-related gene responses in St. Lawrence Estuary beluga and minke whales?»*

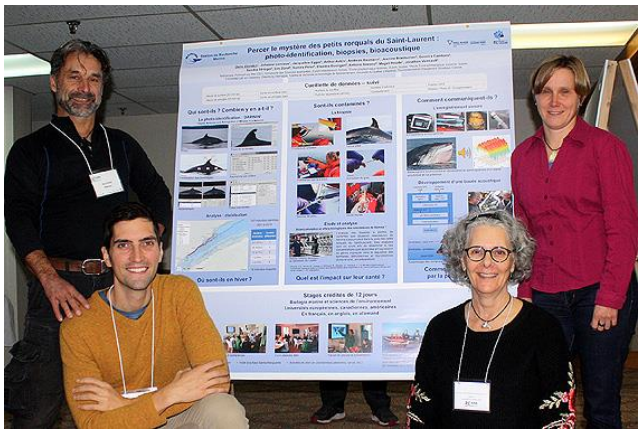
Summer courses: very encouraging feedback

Our first summer course from the 6th – 17th of August was attended by six students from Switzerland (Anna, Anouk, Julia and Lisa) and Germany (Claudia and Clara). They really enjoyed their stay as you can tell from their Tripadvisor feedbacks - not only due to their privilege having seen almost all the «big» whales of the St. Lawrence (blue, fin, humpback, minke, beluga), but also because they became immediately good friends. It was a real treat for the Mériscope Team to work with this enthousiastic and bubbly group.

Here's one of the Tripadvisor feedbacks: «***Beyond words:*** *If you like waking up next to nature every morning, staying with an incredibly kind team who makes you feel welcome and at home, looking for whales on a zodiac, learn about marine life and participate in actual scientific research and just have an incredible one time experience, definitely come here. We saw porpoises, harbour seals and humpback whales, we saw nine fin whales (the second biggest whales!!) at a time, we were part of two biopsies on minke whales (an impressive experience, you learn a lot, can actually participate and it serves to do good to the whales and our environment) and on one day, we were even so lucky as to see five blue whales, including one calf which came up right next to our zodiac!!! It was really magical. We also went to a museum, had dinner with local friends from Dany, got the chance to have a look at an old shipwreck, swam in the stream, learned some knots and generally just spent a great time together. I immediately felt at home and as if I were with friends (which I was in the end). So unless you're taking away my place when I'll hopefully come back, I'd definitely recommend to go visit Mériscope! :)* »

Saguenay-St. Lawrence Marine Park: 20 years of research, conservation and awareness

This year, the Saguenay-St. Lawrence Marine Park has celebrated its 20th anniversary and for this occasion, a scientific symposium was organized in Tadoussac from the 17th to 19th October. Four people of the Mériscope team have participated in this symposium (Johanne, Jackie, Antoine and Dany) and we have presented a poster of our research about minke whales (habitat use, photo-ID, biopsies). The Department of Fisheries and Oceans, in cooperation with Parks Canada, has organized a scientific workshop on the belugas of the St. Lawrence Estuary, focusing on research and protection of this threatened population. 20 scientists, park officials, provincial and federal practicioners were invited to this workshop. Two NGOs were present, the GREMM (Robert Michaud) and the Mériscope (Dany).



Our new program: MérisCool

One goal of MérisCool is to develop a school program – for the time being – for Canadian students of the secondary level: The idea is to offer courses of different duration (from ½ up to 4 days) based on different modules such as lectures on different topics, various group projects and of course boat trips. We also plan to work together with other local organizations such as «Parc Nature de Pointe-aux-Outardes» and «Explos-Nature» in Bergeronnes.

In addition to that, we also make our field courses accessible to younger students having just passed their Matura exam: therefore we have sent our annual flyer not only to universities but also to Swiss high schools which turned out to be a good idea as we already had two Swiss girls attending our student field course in 2018.

On top of that, we open doors for Swiss high school students to spend 4 weeks of their summer holidays at our place in Portneuf-sur-Mer in order to collect data for their Matura thesis and to voluntarily participate in our field courses.

Last but not least, we offer a wide range of lectures and workshops to Swiss schools no matter what level.

By the way, the MérisCool program has very recently been accepted by the Swiss Academy of Engineering Sciences in the framework of the MINT program known as «TecDay» and will be proposed on the website of educamint:
https://www.satw.ch/de/educamint/

Watch out for this logo:

Project Longue-Rive, 4 years later: file closed, learned a lot, different approach in 2019

In 2014, we have signed an agreement with the Municipality of Longue-Rive, laying the foundation to develep a permanent research station in a former church. Despite numerous funding applications over the past years, we have not received a single dollar from federal, provincial or regional government agencies for this project.

In early June 2018 we were informed by the Municipality of Longue-Rive that they will not extend our contract. We had to remove all our belongings from the church within two months. Although this did not come as a big surprise, it was not easy news to take. First, we started to sell things we do not need any longer, such as floating docks and a shipping container, resulting at least in a handsome income for the Mériscope.

Additionally, we put in quite a bit of physical work to dismantle our whale skeletons and the wooden structures that were holding them. The minke whale and the beluga skeletons are now safely stored in Portneuf-sur-Mer. Following constructive reflection among our board members, we have decided not to give up, but to develop a different approach to get funding for a permanent research station.

Prospects for 2019

For the last two years, we have been working on a number of documents to get the Mériscope ready for a major game changer. Last December, we have filed our application to the Canadian Government asking the Revenu Agency to recognize the Mériscope as a registered charity organization. We are expecting a response from the Federal Government in May/June 2019. If our application comes through, we will be entitled to issue tax-deductible receipts for donations. In addition, having the status of a registered environmental charity organization can make fund-raising campaigns much more efficient.

We are currently working on a fund-raising brochure that will be sent to several foundations, asking their support for one of our projects :

1) Disentanglement program:

- professional training by a certified whale disentanglement team;
- disentanglement equipment;
- custom built rescue boat for disentanglement operations.

If we succeed in getting a new boat, it will also be used for our research and education program.

2) Education program:

Create a fund to allow high-school students and students with little financial resources to participate in our course program, but also to facilitate intern-ships for high-school and university students.

3) Research station:

Create an endowment fund to develop a permanent research station in order to consolidate all programs of the Mériscope for future generations.

New partnerships: Canadian Coast Guard Auxiliary and Ecotoxicology Research Group

Early in 2018, the Mériscope was contacted by the **Canadian Coast Guard Auxiliary** with an invitation to become a supporting member for Search and Rescue (SAR) operations at sea. After a first meeting and a bit of paperwork, the Mériscope signed a membership agreement with the Coast Guard Auxiliary, which coordinates a rescue program from coast to coast under the slogan «Volunteers saving Lives on the Water». Every year, members of the Auxiliary respond to about 2'000 incidents and save more than 200 lives.

As a result of our biopsy program and our contribution to research of potential effects of contaminants on marine mammals, we were invited to become a member of **EcotoQ**, a significant network of ecotoxicology researchers in Canada and France.

Impressum: Text and photos: Jackie Egger, Dany Zbinden; **Contact:** info@meriscope.com