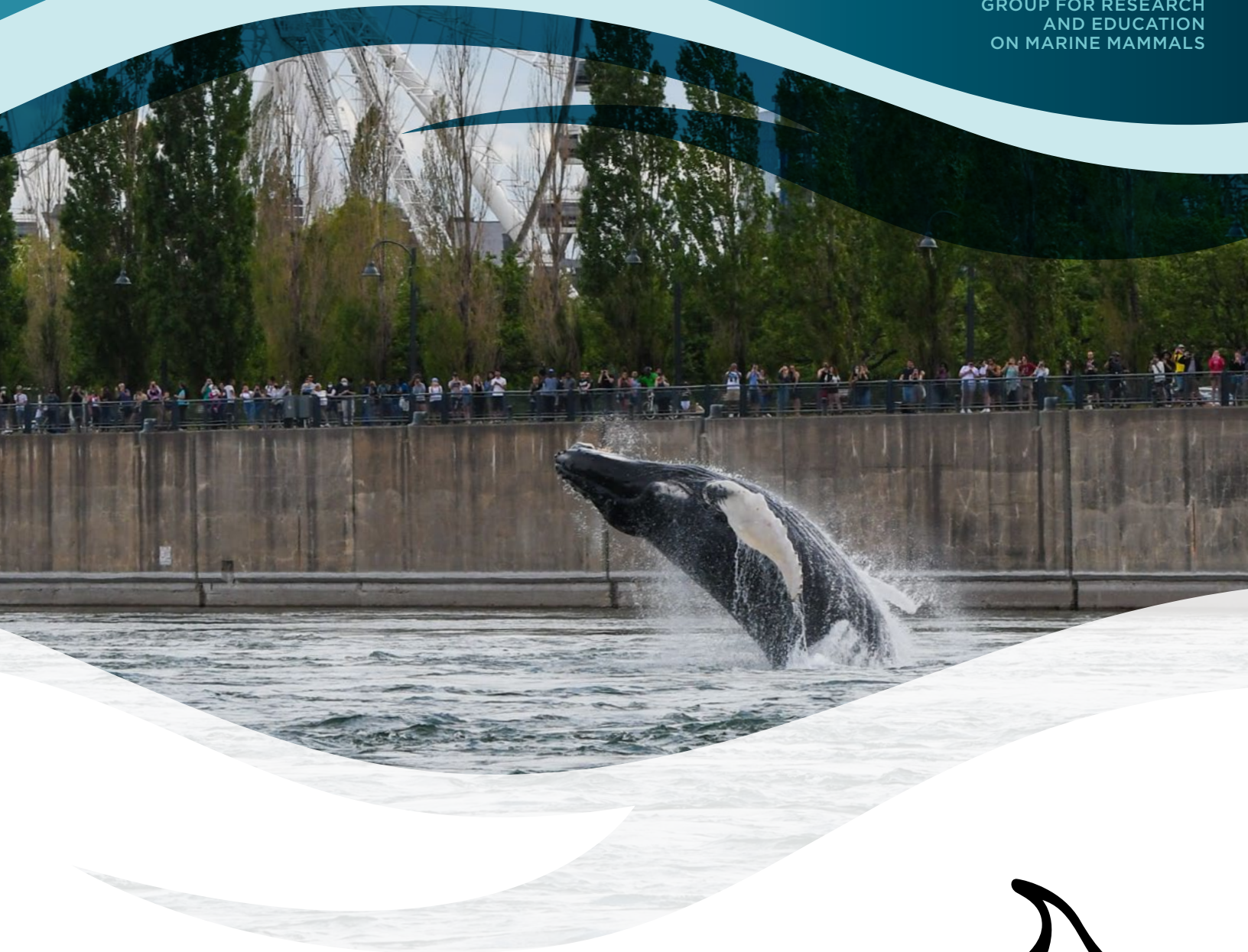


THE SOUFFLEUR

GROUP FOR RESEARCH
AND EDUCATION
ON MARINE MAMMALS



*Greater understanding
for better protection*



SUMMARY

FORWARD

GREMM team in 2020

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ABOUT GREMM

The fate of whales is linked to the value that we place on them. Getting to know them is the best guarantee for their future. This is the essence of the mission of the Group for Research and Education on Marine Mammals (GREMM). Founded in 1985 and based in Tadoussac, GREMM is a non-profit organization dedicated to scientific whale research and marine conservation education.

The threats faced by whales are many, varied, and increasingly well understood. Protecting their habitat requires concrete actions carried out over the long term. Our team and the know-how we have acquired have played a key role in developing strategies and implementing action plans for protecting whales. We dedicated ourselves to long-term research projects. We also manage the Marine Mammal Interpretation Center in Tadoussac and the magazine Whales Online. Since 2004, GREMM coordinates the Quebec Marine Mammal Emergency Response Network.

GREMM is a registered non-profit and charity organization. If you believe in giants like we do, help us to better understand and raise awareness about the whales of the St. Lawrence, so that we can better protect them.

2020: YEAR OF HOPE... AND DESPAIR

When the pandemic hit Quebec in March 2020, preparations for GREMM's milestone 35th anniversary celebrations were in full swing and we were gearing up to welcome three giants in the Marine Mammal Interpretation Centre's revamped showroom: a humpback whale, a fin whale and a North Atlantic right whale. Ice in the Estuary had just begun to break up, belugas were returning from their winter quarters and we were recruiting our naturalists and research assistants in anticipation of another year at sea with the whales. An exciting year was just around the corner. In hindsight, it was indeed an unforgettable year, but not exactly the one we were expecting.

Fortunately, with 35 years of experience under its belt, GREMM was in sufficiently robust health to weather such a storm. With your help — many of you renewed or even increased your support — and thanks to the solidarity of our "GREMMlins" who accepted pay cuts for a few weeks, we were able to keep our ship afloat. Our VP and director of education Patrice Corbeil also deserves credit for navigating these uncharted waters cautiously and adeptly in order to secure the continued support of numerous government programs.

In this year's edition of The Souffleur, we share part of this odyssey with you. Even if we cancelled celebrations of GREMM's 35th anniversary in favour of a bash for the organization's 40th, we did manage to welcome our three giants into their new home in the museum. With little fanfare, on August 1 we hosted our first visitors under the illuminated display of our extensive skeleton collection. We are determined to organize a proper inauguration as soon as health measures allow.

In terms of research, we had little choice but to reinvent many of our approaches. There for a while, I feared the entire season would have to be aborted. Although we had to scale down the size of our crews, we were ultimately able to work with belugas and large rorquals in the field. A few projects had to be pushed back a year (or two), but at least our team had plenty to do and we took advantage of the situation to advance our lab analyses.

And what did this pandemic year spell for our whales? The situation on the water was quite different: no international cruises, several months without any whale-watching expeditions, increased pleasure boating traffic and lighter commercial shipping. Will we observe more calves in the summer of 2021? Will we see anything different in the beluga biopsies? Will acoustic analyses reveal a real difference in noise levels between the summers of 2019 and 2020? To be continued!

Here we are in May 2021, and we still don't know exactly what to expect for the upcoming summer. Fortunately, we are going into the season with a strong and enthusiastic team and even a couple of new recruits. This is one of the things I am most proud of, the fact that we managed to keep the team intact. Together, we made it through a chaotic year while developing new ways of doing things, outside-the-box thinking and a proven ability to overcome adversity.

Thanks to your support, GREMM is able to continue its mission. Thank you for sticking with us, to better understand the whales of the St. Lawrence and raise awareness of them in order to better protect them.

Robert Michaud
President and scientific director
Group for Research and Education on Marine Mammals

SPECIAL REPORT



THE AMAZING JOURNEY OF A HUMPBACK WHALE TO MONTRÉAL

It left millions astonished, concerned, dazzled and sensitized, even as the province was under lockdown. The juvenile (2 to 4 years old) female humpback observed between Québec City and Montréal from May 24 to June 9, 2020 created quite a frenzy. Since coordinating the Quebec Marine Mammal Emergency Response Network (QMMERN) is the responsibility of GREMM, the latter's team was particularly busy during this period. The presence of this whale outside its natural habitat generated considerable public interest, raised significant conservation issues and raised many questions within the scientific community. Recap of this landmark event of the 2020 whale season.

A young humpback whale (*Megaptera novaeangliae*) is spotted in St. Lawrence waters near Québec City on May 24, 2020. It is later seen in Portneuf and then in Trois-Rivières, where it repeatedly performs breaches and other acrobatics. It continues upriver all the way to Montréal, more than 500 km from the species' usual summer range. From May 30 to June 7, the animal lingers around Île Sainte-Hélène, where it draws crowds of curious onlookers. However, it suddenly disappears after 11 days of rigorous monitoring before being found dead 48 hours later near the town of Varennes.

Cetaceans in general and toothed whales in particular are regularly observed in river estuaries, far from their natural habitat. Montréal has previously hosted minke whales and belugas. Cases involving large cetaceans swimming up estuaries to reach fresh water are rarer, however. Only a handful of cases involving humpback whales have been reported, including two well-documented incidents involving a total of three humpbacks that spent an extended period in the fresh water of the Sacramento River (Gulland et al., 2008).

The presence of a cetacean in an estuary creates a number of risks. Notably, prolonged exposure to fresh water can result in damage to the skin and eyes,

biochemical blood disorders, secondary infections and, ultimately, death. If they are unable to find food, the animals may starve. They can also be exposed to a high risk of harassment and collision with pleasure craft or merchant ships.

In cases involving small cetaceans, a number of responses have been attempted with success in the past, including capture and release as well as a technique called herding to force the animals to move downstream. For large cetaceans that cannot be captured due to their size, options for direct response are fewer and entail risks for the animal. Attempts to get the Sacramento River humpbacks to turn around or move downstream proved futile.

Soon after the first report was received, a response plan was put into place by the QMMERN. Further complicating matters was the fact that all activities had to be compliant with health measures related to the COVID-19 pandemic.

Based on the experience of the Sacramento River humpbacks as well as consultations with various experts on marine mammal (including humpback whale) rescues and in compliance with the QMMERN's response guidelines, it was decided not to perform any direct intervention to attempt to alter the

animal's course or relocate it. Instead, the plan aimed to monitor and document the animal's behaviour and condition as well as to reduce the risks of harassment and collision. A plan in the event of a stranding (dead or live) was also prepared.

Monitoring of the animal was carried out by volunteers and information was transmitted to the veterinary team affiliated with the QMMERN. The Canadian Coast Guard and Montréal's police service were also on the water to educate pleasure boaters about the whale's presence. Daily updates to whalesonline.org and hundreds of interviews also helped keep the general public properly informed.

AN ENIGMATIC JOURNEY AND DEATH

Despite having analyzed cross-referenced data on the humpback whale's body condition, behaviour and carcass, experts from the Centre québécois sur la santé des animaux sauvages and the QMMERN have been unable to pinpoint the cause of the animal's death. "Although a collision with a boat was initially suspected, the autopsy performed on this whale could not confirm this hypothesis. The cause of

death of this whale therefore remains uncertain. One possible explanation is that its prolonged exposure to fresh water might have impaired its physiological functions," explains the veterinarian who oversaw the necropsy, Stéphane Lair.

In any case, he and his team suspect that the mortality was sudden, as the animal did not show any signs of becoming weaker or noticeably thinner in the days preceding its death. Its spectacular surface activities (frequent breaching and slapping of the tail and pectoral fins) suggested that the young animal was physically fit. On the other hand, one of the things that deteriorated over the course of its stay was the condition of its skin. At the time of the necropsy, a good portion of the animal's back was covered with fungi (oomycetes), with skin lesions in some places. The extended period in fresh water might have affected its health in the form of a skin infection or an electrolyte imbalance, causing the central nervous system to fail and thereby contributing to its death. However, the analyses conducted were unable to confirm or infirm these hypotheses.

The factors that drove this whale to the freshwater portion of the St. Lawrence near Montréal are also uncertain. The most plausible hypothesis is that of a young,

inexperienced individual exhibiting exploratory behaviour in search of food resources. Ultimately, this individual did not seem to be capable of getting itself out of the bind that it was in. It can be concluded that this species is poorly suited to rivers. The growing population density of humpbacks in the species' foraging grounds in the St. Lawrence increases the level of competition for food resources, which might be conducive to high-risk exploratory behaviour.

This event shows that much remains to be discovered in terms of the ecology and behaviour of this species, as well as how best to respond when one of these animals is in difficulty. It is essential to expand our knowledge in order to better understand how the profound modification of the ecosystem is affecting this species.

SCIENCE IN ACTION

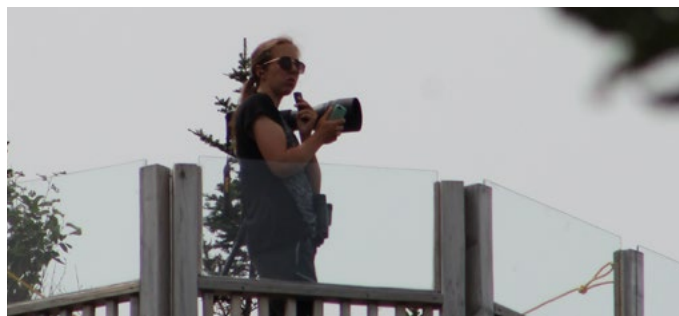
BRIEF OVERVIEW OF
COMPONENTS OF
ST. LAWRENCE BELUGA PROJECT
IN 2020



**PROJET
BÉLUGA**
Saint-Laurent

WITH THE BELUGAS

Since 1985, GREMM has been carrying out a beluga research program in addition to monitoring the St. Lawrence and Great Lakes ecosystem. Its mission: to better understand belugas by scientifically studying their behaviour and habitat and monitoring their health status, assisting stray or live stranded belugas, and raising the awareness of the general public with regard to these animals. Coordinated by GREMM, the St. Lawrence Beluga Project is carried out by a consortium of private and academic laboratories, in close collaboration with Fisheries and Oceans Canada's Maurice-Lamontagne Institute, Environment Canada St. Lawrence Centre and Parks Canada, which co-manages the Saguenay–St. Lawrence marine park. Discover here a bit of the projects of the program.



Laurence Tremblay describe the group of belugas she is watching from Pointe-Noire, after taking pictures for the family album. © Aurélie Villeneuve

FAMILY ALBUM

Despite the pandemic, **GREMM's** team was able to carry out its photo-ID survey of St. Lawrence belugas for a 36th consecutive season. From June 15 to October 26, 2020, the masked team on board the research boats *Bleuvet* and *BpJAM* established 59 “contacts” with belugas in 33 days on the water. Our research assistants were also posted at two land-based observation platforms to photograph belugas from shore, namely Pointe-Noire in Baie-Sainte-Catherine and Baie Sainte-Marguerite in Fjord-du-Saguenay National Park. As a matter of fact, Pointe-Noire was the first site to be used for photo-identification in the history of St. Lawrence belugas with Leone Pippard in the 1970s. This return to terra firma was a lifesaver for 2020. Approximately thirty days of observation resulted in an additional 59 “contacts” and dozens of invaluable identifications. Land-based photo-identification brings new challenges in terms of photo angles and distance. Protocols were adjusted over the course of the season. Whether from the water or from shore, our camera lenses captured 24,356 photos of belugas, from which 113 individuals have been identified to date amongst those featured in the St. Lawrence beluga catalogue, a.k.a. the “family album”.

BEHAVIOURAL ECOLOGY

Master's student Jaclyn Aubin of **Memorial University** completed her project on allomaternal behaviour in St. Lawrence belugas, which was co-directed by **GREMM**. Both chapters of her thesis have been submitted for publication (pending). Great news! Jaclyn is currently pursuing her PhD with our colleague Valeria Vergara of **Ocean Wise** under the supervision of Daniel Joshua Mennill at **University of Windsor**, once again in collaboration with our team. She is studying the vocal repertoires of different female communities in an attempt to answer the very exciting question: Do belugas have dialects?

Between these two projects, Jaclyn and Marie-Ana Mikus (Ocean Wise) spent last winter examining every drone flight conducted over the past three seasons in search of indicators to help us confidently identify the ideal flight conditions to minimize the risk of disturbing belugas. Although these novel devices open a new window into the lives of belugas, we must take care to use them with great caution. That is what we mean when we say, “better understanding for better protection.” This slogan also applies to our research. Another project to keep our eyes on!

ACOUSTIC UNIVERSE

More than half of all St. Lawrence belugas and two-thirds of females frequent the Saguenay. This finding was made by researchers at **Université du Québec en Outaouais (UQO)** and **GREMM**, who are currently developing a simulator to better evaluate the impacts of noise and navigation and identify the best strategies to mitigate such impacts. This discovery is significant: as predicted by the simulator, belugas' exposure levels to ship noise are three times higher when we take into account the species' complex social characteristics and habitat use patterns than if we only consider beluga presence at a given moment in time. By underlining the importance of the Saguenay for belugas, researchers emphasize the need to protect this watercourse, or at the very least to maintain its low noise levels. In fact, for now, the Saguenay is a natural acoustic refuge. This has led researchers to request a moratorium on projects that are likely to increase maritime traffic in the Fjord until scientists better understand not only the impact of such a change on belugas, but especially how to mitigate or offset these effects. In the fall of 2020, researchers were also invited to participate as expert witnesses in BAPE (Quebec's environmental assessment agency) consultations for GNL Québec's Énergie Saguenay project.

Another research project that resumed this year was that of Véronique Lesage of **Fisheries and Oceans Canada**, in collaboration with GREMM. This study consists of deploying archival tags to record acoustic and diving data in an effort to better document the reactions of belugas to noise exposure. A few technical glitches and not-so-cooperative belugas resulted in a lower number of animals being tagged in 2020. Nevertheless, 12 hours of priceless data were added to the data sets of previous years.

Since Valeria Vergara of **Ocean Wise** was unable to cross the country to join us in the field, GREMM set up two hydrophones at key locations to record the acoustic landscape of belugas off the coasts of Kamouraska and Rivière-du-Loup.

SCIENCE IN ACTION

MORTALITY MONITORING

In 2020, 14 beluga carcasses were found along the shores of the St. Lawrence. This figure lies within the average of recent years. Seven of these carcasses were transported whole to **Université de Montréal's Faculty of Veterinary Medicine** for comprehensive post-mortem examination. Analyses are ongoing. Five carcasses were calves, meaning they had been born in the summer of 2020. Since 2008, the number of calf carcasses discovered has been unusually high. As for the adult belugas, three were females, two were males and one was too deteriorated to determine the sex. Both the high number of newborns and the over-representation of females are very concerning for the future of this endangered population.

BELUGA HEALTH CHARTS

Our scaled-down crew also limited our ability to pursue this innovative component of the Beluga Project. Summer 2020 marked the third season of this project, which aims to measure the girth of belugas and the fine composition of their blubber in order to evaluate their physical condition. All this is done using an image captured by a small drone flying stealthily above the belugas and a biopsy of a few milligrams of skin and fat.

It is therefore chiefly at our computers and in the lab that we have refined the beluga health records. While Meridith Sherrill, a new PhD student recruited by Jonathan Verreault and his team from **UQAM's (Université du Québec à Montréal) TOXEN Laboratory**, was developing her lab procedures, Alexandre and Mathieu from our team in Tadoussac managed to identify in the drone sequences two-thirds of the 45 belugas that we sampled in 2019. An exercise that proved to be much more laborious than we had imagined.

HEALTH AND TOXICOLOGY

It has long been known that belugas are heavily contaminated. How exactly these toxins affect the animals is less well understood, however. Since 2017, we have been collaborating on a vast project initiated by **UQAM's (Université du Québec à Montréal) TOXEN laboratory** in an effort to better understand the effects of contaminants on beluga health. Funded by NSERC and Fisheries and Oceans Canada, this project involves several university laboratories throughout the country that, every fall, share a few milligrams of skin and fat that we collect (biopsies) from the backs of belugas using small sterile darts. Skin microbiota, genetics, fatty acids, stable isotopes, lipids... every possible correlation with the toxic load is explored.

For this project, the *Bleuвет* is transformed into a small floating lab. Each collected biopsy is promptly shared in multiple sub-samples that are preserved in an appropriate medium depending on the type of analysis planned. Due to the pandemic, it was decided to cancel the biopsy campaign. In order to carry out such a campaign, 4 or 5 crew members are needed on board, which is a little too many to maintain "healthy" social distancing.

In the meantime, however, our collaborators nevertheless kept their noses on the grindstone. Two of our students, Antoine Simond and Alexandre Bernier-Graveline, completed their PhD and master's degrees, respectively, and added new publications (see the 2020 list of publications) to shed light on the complex relationships between pollution and beluga health.

NARWHAL: LIKE ONE OF THE FAMILY

Once again this summer, the narwhal that has been swimming with belugas since 2016 made a few noteworthy appearances. Spotted by land-based observers from Pointe-Noire and from Cap de Bon-Désir, the narwhal continues to explore the St. Lawrence in the company of its beluga cousins. This unique interspecific association has been garnering attention around the globe. You can even see this rare narwhal swim with belugas on Disney+ in the new National Geographic series *Secrets of the Whales* produced by James Cameron (*Titanic*, *Avatar*). For the occasion, we decided to make the narwhal available for adoption.

Visit baleinesendirect.org/narwhal to sponsor the narwhal, suggest a name and receive updates about it every year!



A narwhal swims with the St. Lawrence belugas since 2016. © GREMM

GREMM... THROUGH PUBLICATIONS

- (2020) Bernier-Graveline, A., Lesage, V., Cabrol, J., Lair, S., Michaud, R et coll. Lipid metabolites as indicators of body condition in highly contaminant-exposed belugas from the endangered St. Lawrence Estuary population (Canada), *Environmental Research*, 192-110272, <https://doi.org/10.1016/j.envres.2020.110272>
- (2020) Simond, A E., Houde, M., Lesage, V., Michaud, R., Verreault, J. Metabolomic profiles of the endangered St. Lawrence Estuary beluga population and associations with organohalogen contaminants, *Science of the Total Environment*, 717-137204, <https://doi.org/10.1016/j.scitotenv.2020.137204>
- (2020) Michaud, R., Giard, J., Michaud, A., Moisan, M. Translocation of live-stranded newborn St. Lawrence Estuary belugas (*Delphinapterus leucas*) for adoption by nearby females: A review of past responses, and assessment of feasibility and risks, *Research Document 2020/006*, Canadian Science Advisory Secretariat (CSAS), Quebec Region.
- (2020) Chion, C., Michaud, R., Bonnell, T., Lagrois, D., Guetté, A., Dupuch, A., Dupras, J. Modélisation du trafic maritime et des déplacements des baleines dans l'estuaire du Saint-Laurent et le Saguenay pour informer le processus de réduction des impacts cumulatifs de la navigation sur les bélugas et les grands rorquals dans le contexte du déploiement de la Stratégie maritime du Québec: Rapport d'activités – An #1 (2018-2019) Programme de recherche 2018-2023, Université du Québec en Outaouais et Groupe de recherche et d'éducation sur les mammifères marins.

NEWS FROM THE ADOPT A BELUGA CAMPAIGN

In 2020, three families decided to add a beluga to their clan: the Mongeaux, the Bourgaults and the Casserleys. Hundreds of runners also elected to dedicate their sprints to these white whales.

During her visit to the Marine Mammal Interpretation Centre, Jocelyne Rivest had a brainstorm for the perfect birthday gift for her soon to be 90-year-old mother, Madeleine Bourgault: a beluga! Jocelyne and her family therefore offered Ms. Bourgault the young female Madeleine! Born around 1995, Madeleine the beluga may have numerous calves and “grand-calves” over the years. Ms. Bourgault’s grandchildren will be able to follow the adventures of grandma beluga for many years to come!

For the Casserleys, the birth of their daughter inspired them to add a beluga to their family ranks. Once their baby girl is old enough, she will be able to choose the beluga she wants to grow up with. This way, the Casserleys hope to pass on their love for the environment to their child.

The Mongeau family adopted Fayot to demonstrate their attachment to the St. Lawrence. “We are extremely grateful to GREMM for all of its research and conservation efforts.”

MILES AFTER MILES FOR BELUGAS

Les Trails SagLac, a non-profit that organizes trail races in the Saguenay–Lac-Saint-Jean region, presented in 2020 the very first edition of the Béluga Ultra Trail. The organizers have a keen interest in the conservation of the St. Lawrence beluga, the most emblematic species of their beloved Fjord. They therefore decided to contribute \$5 per registration toward the adoption of a beluga. Featuring trail races ranging from 1 to 45 km, this event hosted over 400 runners in an unprecedented health context. The organization was able to donate \$2,250 and hopes to complete the adoption of its beluga in 2021! On your marks... get set... adopt!

JOIN OUR FAMILY

New belugas are available for adoption.

Visit baleinesendirect.org/willibeyourbeluga to meet them.

The following is a preliminary list of belugas adopted and identified in 2020 :

[Annakpok](#) (CSL), [Artsea](#) (Clients of Simons), [Be-LOU-ga](#) (Red Rock Films), [Bilou](#) (The riverside municipalities of the St. Lawrence), [Blanche](#) (Tadoussac municipality), [Blanchon](#) (Yolande Simard Perrault), [Bleuoutremer](#) (Bleuoutremer), [Candy C](#) (Tiffany Chamandy and Matthew McMillan), [Céline](#) (Leslie B. Durst), [Corsaire](#) (GEO Magazine readers), [DL9039](#) (students of Polyvalente Chanoine Armand Racicot), [DL9104](#) (adoption pending), [Delphi](#) (Quebec premier), [Elle](#) (adoption pending by Lyne Morissette), [Gaston](#) (Pratte family), [Globule](#) (students of Collège de Chicoutimi, En Vert), [Hector](#) (Les Cowboys Fringants and their fans), [John A. Macdonald](#) (Fairmont Hotel Macdonald), [JP](#) (Jacob Issac), [Leucas](#) (Canada premier), [Mirapakon](#) (Les enduits Mirapakon INC.), [Miss Frontenac](#) (Fairmont Le Château Frontenac), [Nomi](#) (Road Scholar), [Or Blanc](#) (Beauharnois, Châteauguay and Salaberry-de-Valleyfield), [Pacalou](#) (Pascale Cauchi), [Pascolio](#) (Tadoussac business owners), [Polynix](#) (collective), [Pure Laine](#) (Cynthia Fish), [Vita](#) (Shaklee Canada Inc.) and [Yogi](#) (Bell Canada).

For the latest news on adopted belugas, check out their individual portraits on baleinesendirect.org/adopted.



© Trails SagLac



Other belugas featured in the family album, but not yet adopted in 2020 were also seen :

[Dimitri](#), [DL0235](#), [Geographis](#), [Néo](#) and more than forty others!

THANKS

TO OUR KEY FINANCIAL PARTNERS





SCIENCE IN ACTION



BETTER PROTECTION

BETTER UNDERSTANDING... LARGE RORQUALS

THE 2020 SEASON IN STATISTICS

- **19 systematic censuses** using photo-identification
- **5 blue whales** identified this season, including B093, Crinkle and Jaw-Breaker
- **29 fin whales identified**, including Boomerang, Caïman, Corsaire, Piton, Ti-Croche, Trou and Zipper
- **21 humpback whales** identified in the catalogue maintained by the Mingan Island Cetacean Study, including Tic Tac Toe and her calf, Chewbacca and Gaspar

And two North Atlantic right whales, including Wolf.

In 2020, in order to ensure the health and safety of our research team, we carried out large rorqual monitoring with the BpJAM, our inflatable vessel that had been requisitioned in recent years for beluga-related projects, rather than on board whale-watching cruises. Twice a week on average between July 6 and October 4, Timothée Perrero and Janie Giard plied the waters between Tadoussac and Îlets Boisés (tiny islets near Les Escoumins) to photograph humpback whales, blue whales and fin whales. This atypical year also helped answer a question that had long intrigued the team: will we see the same whale distribution patterns with a dedicated watercraft as we do with research assistants on board the whale-watching boats? Our former research assistant and still faithful collaborator Renaud Pintiaux went out to sea nearly every day and shared his photos with us. The pattern is similar for humpbacks, but differs for species that are less targeted by cruise companies.

This summer, humpback whale visits peaked in August with the presence of 21 different individuals observed the week of August 24. Fin whales on the other hand peaked in late August, but nevertheless showed a strong presence throughout the season, with an average of 10 different individuals identified every week.

A MOST UNEXPECTED VISITOR

In late September, Renaud Pintiaux calls the Quebec Marine Mammal Emergency Response Network (QMMERN) emergency line (1-877-722-5346) to report the presence of a North Atlantic right whale. A few minutes later, he calls back and shouts with excitement: "I got photos!" GREMM's research assistants also manage to snap a few pictures of the whale that would later be identified by experts at the New England Aquarium as Wolf. Because she represents an endangered species, it is against the law to come within less than 400 metres of Wolf. This 33-year-old female is not the only member of her species in the Marine Park sector during that time, as at least one other right whale is reported to the QMMERN. Wolf spent few weeks in the Marine Park. The most recent confirmed observation of this species in the area was in 2016. There is only about 350 North Atlantic right whales alive.

The white marks on Wolf's lower jaw are unique. © GREMM



QUEBEC MARINE MAMMAL EMERGENCY RESPONSE NETWORK: A NEW TEAM TO EXTEND OUR REACH

Thanks to the Government of Canada's Marine Mammal Response Program, the QMMERN was able to spread its wings a little with its new mobile team, which enabled the Network to cover more ground. And this team was extremely helpful in this hectic year!

In 2020, the QMMERN handled 916 calls (1-877-722-5346-7BALEINE) from individuals reporting troubled or dead whales and seals. These reports translated into 414 cases.

The Network would like to thank its 193 volunteers for their adherence to pandemic-related measures. Their exceptional dedication, motivation and collaboration made it possible to add invaluable scientific data to the projects of various Network partners and to come to the aid of dozens of marine mammals.

We would be remiss not to mention the implausible journey of a humpback whale from Québec City to Montréal between May 24 and June 9, 2020. The incident called for the collaboration of some one hundred individuals from nearly a dozen different organizations. This humpback's visit to Montréal shows that much remains to be discovered in terms of the ecology and behaviour of this species as well as how best to respond when one of these animals finds itself in difficulty. Learn more about this exceptional sojourn in the Special Report on Page 4.

The presence of harbour, bearded, and hooded seals in the greater Montréal region also raised a few eyebrows. For the Network, out-of-range seals are annual occurrences, but always represent a tricky balancing act in terms of public awareness. On one hand, it is important that the presence of these visitors be reported in order to prevent any



The humpback whale in Montréal kept the team in suspense like no other case before. © QMMERN

incidents, while on the other hand, caution must be exercised to avoid attracting large crowds seeking a glimpse of the cuddly critter. The mobile team was dispatched several times over the course of the summer to perform health checks of the animals and raise public awareness, and on a few occasions was called upon to relocate the seals for their own safety.

Carcass recovery and sampling capacity also increased thanks to the contribution of this team. In this context, a new case involving a dolphin attack on a porpoise was successfully documented.

To learn more about the various incidents that kept our team on its toes, you can read the Marine Mammal Emergencies column on Whales Online at baleinesendirect.org/en/marine-mammal-emergencies/.



The mobile team relocates a young harbour seal that was the victim of harassment. © QMMERN

FASCINATING AND RAISING AWARENESS

EDUCATION AT GREMM

MARINE MAMMAL INTERPRETATION CENTRE

November 2019: the expansion of the CIMM showroom is already slightly behind schedule. One section of wall is completely demolished, skeletons are crammed into one corner of the room together with exhibit modules... Then, just as the upgrade begins to take shape and we start to get excited about spending the summer in a newly renovated museum, the pandemic brings the construction site to a grinding halt... Delays in material deliveries and ensuing scheduling conflicts force us to postpone the inauguration until August 1, but with minimal hoopla so as to limit the event to no more than 30 individuals at a time while maintaining the proper social distancing of two metres.

Nevertheless, the first time the lights hit the immaculate skeletons and the Ballet des baleines soundtrack starts to play, our eyes begin to water. Never before has the CIMM been this grandiose... this relevant... this moving! The masterful lighting of the skeletons is the work of artist Caroline Ross and the soundtrack was produced by Normand-Pierre Bilodeau.

The opening was attended by numerous local Tadoussac residents, a number of whom were visiting our museum for the very first time. Additionally, the public was able to savour the latest enhancements made to the museum, take advantage of the expertise of naturalists present for the occasion and discover the fascinating world of whales.

Our warmest congratulations go out to the mastermind behind this colossal undertaking, Patrice Corbeil, who has devoted himself to this expansion since 2015. We would also like to acknowledge the excellent work of Michel Martin and Patrick Bérubé for the skeleton assembly work and Michel Moisan for his support at every step in the process. Thanks to Lise Gagnon and Patrice Lapointe for the new pictures of the exhibition.



Federal MP Rémi Massé made the investment announcement for the expansion with Patrice Corbeil, GREMM's Director of Education, and Charles Breton, Mayor of Tadoussac.



Patrick Bérubé and Michel Martin begin dismantling the showroom in the fall of 2019.



The metallic structure helps visualize the volume of the enlargement.



Michel Martin pampers the skeleton of the right whale.



Patrice Corbeil reviews the positioning of the skeletons before they are all hung from the ceiling.



Lise Gagnon and Jean Rasmussen prepare the pit of Felix the beluga subfossil.

FASCINATING AND RAISING AWARENESS



EDUCATION AT GREMM

ACTIVITIES AND MEDIAS

Through 340 media interviews, GREMM, the Quebec Marine Mammal Emergency Response Network and the Marine Mammal Interpretation Centre have maintained a strong presence in the news. The in-depth report “Une vie consacrée aux bélugas” (in French) posted on Radio-Canada’s “Empreintes” platform shares the passion and devotion of Robert Michaud and his team in words and images.

With the arrival of the pandemic, schools were forced to go virtual. In April 2020, chief naturalist Mélanie Bourque offered a course in whale biology for high school students in collaboration with the Cœur des Sciences cultural centre. Also with the Cœur des Sciences, QMMERN coordinator Robert Michaud describes the tremendous task of tracking the humpback whale in Montréal on YouTube in real time. A total of 3,500 people tuned in to the presentation and subsequent question-and-answer period, and a number of participants claimed that the activity gave them a new perspective on the pros and cons of intervention in such situations.

GREMM also invested considerable time in BAPE activities related to the Énergie Saguenay project being promoted by GNL Québec. This project has the potential to result in a significant uptick in maritime traffic in the Saguenay at a time when such traffic is also due to increase throughout the habitat of the St. Lawrence beluga. Invited by Quebec’s Ministry of Forests, Wildlife and Parks, Robert Michaud participated in the consultations as an expert resource. GREMM also submitted a brief requesting that the evaluation be postponed until science has provided all the elements necessary to conduct a truly effective assessment.



Whales online

Already 20 years of articles, columns and information-packed pages for Whales Online! In 2020, the online magazine reached a wider audience than ever before. In June, we beat our record for the number of visitors: 150,000 in a single day! How do we explain such heavy traffic? A humpback whale in Montréal. Our coverage will serve as a reference for the public and for journalists in search of information on the species, the Quebec Marine Mammal Emergency Response Network, further developments, etc. Even if the humpback whale saga didn’t end the way we would have liked, our readership nevertheless kept coming back for more “whale tales”. The weekly number of readers has spiked since the visit of this curious whale.

Once again this year, it is the weekly observations that have been the most popular. The richness of these articles is attributable to the local residents that share their sightings week in and week out. We are grateful for their contributions!

TRAINING PROGRAM

Portrait de baleines join the captains aboard

This summer, for the 19th consecutive year, the newsletter *Portrait de baleines* was distributed on a weekly basis to captains and naturalists working in the Marine Park. The season kicked off on July 1, the same time as the start of the whale-watching cruises, which had been pushed back due to public health measures. Through short, accurate and properly referenced articles, this publication is a tool to connect with, educate and raise awareness of the whale-watching community.

The weekly newsletter presents research being conducted in the St. Lawrence, astutely addresses common questions from the public pertaining to whales, identifies individual cetaceans present in the Estuary and chronicles the life stories of some of them. An awesome stewardship tool and critically acclaimed by captains!

This year, the *Portrait de baleines* team had the honour to welcome a new project manager and outreach officer, Laure Marandet. Due to the COVID-19 situation, emailing and posters were favoured, though face-to-face dialogue — indispensable for reinforcing awareness — was able to be maintained while complying with health guidelines.

Learning to “Navigate Whale Habitat”

For more and more people, the sea is calling! Sailboats, motorboats, kayaks and paddleboards offer the general public the chance to discover the St. Lawrence and the Saguenay on their own. In an outreach effort aimed at an enthusiastic public interested in doing their part to protect whales, GREMM teamed up with the Marine Mammal Observation Network, Parks Canada and Fisheries and Oceans Canada to create an online training program called “Navigating Whale Habitat”.

Fun, free and bilingual, this half-hour training, which can be completed on a computer or a mobile device, allows users to hone their knowledge about whales, the marine environment and current regulations to protect these animals. In 2020, approximately 300 users completed the training and were able to take to the water with all the necessary tools to avoid disturbing whales thanks to a responsible attitude.



**Navigating
Whale
Habitat**

DONATE



SUPPORT GREMM

A DONATION ACTING NOW

Every year, we spend hundreds of hours at sea with whales in an effort to better understand them and meet with tens of thousands of individuals whom we help get better acquainted with these fascinating animals. With your donations, we will be able to do even more.

You can make a donation by sending us a cheque, phoning us at 418-235-4701 or visiting our website at gremm.org/en/donate/. Whether it's \$50, \$20, or even \$5, your monthly donations all add up! We also accept donations in the form of stocks, material, capital property and bequests.

GREMM is a registered charity organization and an official donation tax receipt will be issued for any donation of \$20 or more. Contact Robert Boudreau at rboudreau@gremm.org or 418-780-3210 to discuss other ways you can give.

A DONATION THAT WILL GIVE US A WHALE OF A BOOST!

Show your support for marine mammals with a plaque in front of Tadoussac's Marine Mammal Interpretation Centre. Your message will be engraved in one of the 600 plaques that will form the outline of a life-size blue whale. Each plaque represents a generous donation of \$1,000.

A DONATION FOR THE FUTURE

Whales have a life expectancy comparable to our own. To understand them, they need to be monitored from generation to generation. Their protection requires sustained actions over the long term. With your help, we are preparing the next generations of researchers and citizen scientists.

Our Research and Education Endowment Fund, managed by the Fondation Québec Philanthrope, has collected nearly a half a million dollars to date. Proceeds from these funds are used to:

- Ensure the long-term pursuit of our research and education programs;
- Consolidate our permanent team as well as ensure succession; and
- Host master's or doctoral students.



ADOPT A BELUGA

In addition to being a thoughtful and philanthropic gesture, adopting a beluga allows you to pair up an individual, organization, business, school or group with a St. Lawrence beluga. Thanks to photo-identification, the belugas available for adoption have been known to our research team for years. They have a life story to which you can contribute. By adopting a beluga, you will be making a financial contribution to scientific research, participating in the search for solutions to stem the decline of the population, raising awareness in the history of the species and demonstrating your attachment to the St. Lawrence and all its denizens.

How does it work?

1. Select your beluga from amongst those featured in the "family album". No need to provide it with food or shelter... we'll keep an eye on your beluga for you when we're out on the water.
2. Come up with a name, which we will subsequently use to reference this individual in all of our official communications.
3. Make your donation of \$5,000 to complete the adoption. We encourage sponsors to renew their donation two times to symbolize the three years that a female cares for her calf. Smaller budget? Consider participating in a collective adoption.
4. Receive news about your beluga and the scientific research conducted on your behalf.

INVALUABLE DONATIONS

Over the years, more and more of you have chosen to help and support us in pursuing our mission. We are truly moved and encouraged by each and every one of your donations and gestures. This year, there is one in particular that we would like to highlight.

"It was here that I encountered my first whales.

Ever since, I can't bring myself to turn away."

This is the message that Marie-Ève Muller had engraved on one of the plaques that forms the outline of a blue whale near the entrance to the CIMM. Thank you, Marie-Ève, for your support, but especially for the past four years that you spent with us as editor-in-chief for Whales Online and head of communications. Thank you for having shared your talent and energy so efficiently and gratefully. Best of luck to you in all of your future adventures!



Robert Michaud and Marie-Ève Muller, at a cocktail for donors. © James Olson

THANK YOU FOR YOUR SUPPORT

OUR GENEROUS DONORS THAT GAVE 250\$ THIS YEAR OR HAVE NOW DONATED 250\$ WITH MONTHLY GIFTS

Kate Alexander, Catherine Badke, Jackie Balazsovits, Pierre Bérard, Deborah Black,
BNP Philanthropie (Christian Bolduc, Esther Tranchemontagne and Jonathan Tanguay), Josée Bouchard,
Cathy Faucher Illustratrice, Eve Charbonneau, Mylie Chong, Audrey Colussi, Isabelle Courchesne,
Lucie Filion, Clélia Gauduchon, Isaac Gauthier, Louise Giroux, Jean-Paul Gros, François Hogue,
Audrey Hottin, Ken Hough, Shannon Hugues, Thomas Huriaux, Odile Jalbert, Barry Jessiman,
Amanda Kendall, Kombucha Les chants du fleuve, Vincent Lecours, Nathalie Lucas, Patricia Lyonnet,
Shirley McFadyen, Pierre Meslin, Charlotte Meunier, Michelle Bertrand Céramiste, Paul Moreau,
Laure Mussier, Nathalie Paquette, Divya Paul, Huguette Pepin, Sarah Prevost, Planète Bambou,
Simonne Raffa, Stéphanie Rajotte, Alessandra Jennifer Ross, Alain Senécal, David Stanley, Julie Thérien,
Michèle Thibodeau, Alissa White-Gluz

AdoptaBeluga.org

In 2020,
4 BELUGAS
joined the family.

DL0553, adopted by Tadoussac Summer Community • **DL?**, adopted for Eleonore Rose Casserley

Madeleine, adopted by the Bourgault family • **Fayo**, adopted by Mongeau family

They join the 52 adoptees since 2014

AL, Les Bières Bélugas Itée • **AlbioriX**, Mathias Buchi • **Amalena**, Road Scholar • **Animo**, devoted viewers of the program Animo

Annakpok, Canada Steamship Lines • **April**, Regroupement des plaisanciers du Québec • **Aquabelle**, Aquarium du Québec

Aquarelle, City of Lévis • **Artsea**, customers of Simons • **Athéna**, collective adoption • **Bélibec**, Québec City

Be- LOU-ga, Red Rock Films • **Blanche**, Tadoussac • **Blanchon**, Yolande Simard Perrault • **Bleuoutremer**, Bleuoutremer • **Blue**, Ella Issac

Brad, Gail Wylie, in memory of Brad Wylie • **Candy C**, Tiffany Chamandy and Matthew McMillan • **Cœur**, Manon Ratelle

Delphi and Leucas, two belugas entrusted to Justin Trudeau, Prime Minister of Canada, and François Legault, Quebec Premier

DL0370*, Vancouver Aquarium • **DL1214***, Shedd Aquarium • **DL1670***, Great Lakes and St. Lawrence Cities Initiative

DL1935*, Mylène Paquette • **DL9071***, anonymus • **Dorothy**, Mathijs and Anneke Wittink • **Écho**, David Heurtel • **Gaston**, Pratte family

Hector, Cowboys Fringants and their fans • **Hope**, collective • **JP**, Jacob Issac • **Lula**, naturalists and CIMM's visitors

Marjo, 10th Medical congress on emergency medicine in regional communities CSSS-HCN–Manicouagan •

Mirapakon, Les Enduits MIRAPAKON inc • **Neige**, **Nics**, **Solidaire**, **Bilou and Cica**, riverside municipalities of the St. Lawrence

Nikamun, Project Red Alert • **Nomi**, Road Scholar • **Novo**, W. Maxwell Agendas • **Ocy**, collective

Or Blanc, Salaberry-de-Valleyfield, Beauharnois and Châteauguay • **Polynix**, adoption collective • **Pure Laine**, Cynthia Fish

Serena, Jo-Ann Florida • **Splash**, City of Montréal • **Uapameku and Samakwan**, prince Jacques and princess Gabriella of Monaco

And the 130 adopted
in between 1988 and 2013

Thank you!

* Names forthcoming



PROJET
BÉLUGA
Saint-Laurent





Part of the 2020 GREMM team

GREMM'S 35 YEARS OF SUCCESS ARE BASED ON ITS CREATIVITY, BOLDNESS, EFFICIENCY AND RIGOUR, BUT ALSO ON ITS PARTNERS AND COLLABORATORS. WITH YOU, IN 2019, WE HAVE CONTINUED TO ACHIEVE OUR MISSION :
« GREATER UNDERSTANDING FOR BETTER PROTECTION »

Thanks to

ALLIANCE DE L'INDUSTRIE TOURISTIQUE DU QUÉBEC, AMPHIBIA-NATURE, AQUARIUM DU QUÉBEC, BDO, BLEUOUTREMER, CAMPOBELLO WHALE RESCUE, CANADA ECONOMIC DEVELOPMENT, CANADIAN HERITAGE, CANADIAN MUSEUMS ASSOCIATION, CANADIAN MUSEUM OF HISTORY, CANADIAN WHALE INSTITUTE, CANADIAN WILDLIFE FEDERATION, CENTRE D'ÉDUCATION ET DE RECHERCHE DE SEPT-ÎLES, CENTRE QUÉBÉCOIS POUR LA SANTÉ DES ANIMAUX SAUVAGES, CENTRE DE RECHERCHE EN TOXICOLOGIE DE L'ENVIRONNEMENT DE L'UNIVERSITÉ DU QUÉBEC À MONTRÉAL, CREO, DEPARTMENT OF BIOLOGY OF SAINT MARY'S UNIVERSITY, DÉPARTEMENT DES SCIENCES NATURELLES DE L'UNIVERSITÉ DU QUÉBEC EN OUTAOUAIS, DIGITAL MUSEUMS CANADA, ENVIRONMENT AND CLIMATE CHANGE CANADA, ECO-WHALE ALLIANCE AND ITS MEMBERS, ESPACES POUR LA VIE - BIODÔME DE MONTRÉAL, EXPLORAMER, FACULTÉ DE MÉDECINE VÉTÉRINAIRE OF UNIVERSITÉ DE MONTRÉAL, FERME 5 ÉTOILES, FISHERIES AND OCEANS CANADA, FONDATION DE LA FAUNE DU QUÉBEC, FONDATION PRINCE ALBERT II DE MONACO (CANADA), FONDATION QUÉBEC PHILANTHROPE, GEORGIA AQUARIUM, LE QUÉBEC MARITIME, MARINE ANIMAL RESPONSE SOCIETY, MÉRISCOPE, MINGAN ISLAND CETACEAN STUDIES, MINISTÈRE DE LA CULTURE ET DES COMMUNICATIONS DU QUÉBEC, MINISTÈRE DE L'ÉCONOMIE ET DE L'INNOVATION DU QUÉBEC, MINISTÈRE DES FORÊTS, DE LA FAUNE ET DES PARCS DU QUÉBEC, MRC HAUTE-CÔTE-NORD, MUNICIPALITY OF TADOUSSAC, MYSTIC AQUARIUM, NEW ENGLAND AQUARIUM, OCEAN WISE, PARKS CANADA, RÉSEAU D'OBSERVATION DE MAMMIFÈRES MARINS, SAGUENAY-ST. LAWRENCE MARINE PARK, SHEDD AQUARIUM, SOCIÉTÉ DES ÉTABLISSEMENTS DE PLEIN AIR DU QUÉBEC, SOCIÉTÉ DES MUSÉES QUÉBÉCOIS, ST. LAWRENCE NATIONAL INSTITUTE OF ECOTOXICOLOGY, TOURISME CÔTE-NORD, TOURISME QUÉBEC, WHALE RELEASE AND STRANDINGS, WHALE STEWARDSHIP PROGRAM, YOUNG CANADA WORK, «OBSERVATION OF THE WEEK» NETWORK COLLABORATORS, THE POPULATION AND BUSINESS OWNERS OF TADOUSSAC.