

# THE SOUFFLEUR

GROUP FOR RESEARCH  
AND EDUCATION  
ON MARINE MAMMALS



*Greater understanding  
for better protection*



# SUMMARY

# FOREWORD

## GREMM team in 2019

### RESEARCH AND CONSERVATION

**Robert Michaud**, president, scientific director, coordinator of the Quebec Marine Mammal Emergency Response Network  
Sophie Bédard, Maude-Émilie Bourque, Méduline Chailloux, Marie-Hélène D'Arcy, Anthony François, Janie Giard, Mathieu Marzelière, Élisabeth Mélis, Albert Michaud, Michel Moisan, Timothée Perrero, Laurence Tremblay, Mélissa Tremblay

### EDUCATION

**Patrice Corbeil**, vice-president, director of education  
Alizé Bagot, Patrick Bérubé, Mélanie Bourque, Émilie Brisson, Rosalie Champagne-Côté, Madeleine Ford, Sylvie Chénard, Samuel Jay, Michel Martin, Marie-Ève Muller, Jeanne Picher-Labrie, Camille Proust, Noémie Roy, Camille Sanschagrin, Lydie Veilleux, Aurélie Villeneuve

### GIFT SHOP

Patrick Noël, Nathalie Ouellet, Milena Decaens, Joëla Saclier, Christiane Maltais, Nicole Savard

### SUPPORT TEAM

Mélanie Deschênes, Gabriel Dufour, Lise Gagnon, Lydia Gagné, Simon Moisan, Isabelle Perron

### Affiliated University Students

Jaclyn Aubin (Memorial University)  
Emmanuelle Barreau (UQO)  
Alexandre Bernier-Graveline (UQAM)  
Antoine Simond (UQAM)  
Marie Guilpin (UQAR)

### Contract Staff

Anne-Marie Asselin, Aurélie Lagueux-Beloin, Jean-Sébastien Létourneau, Richard Mardens, Renaud Pintiaux, René Roy, David Soares

[gremm.org](http://gremm.org)  
[cimmtadoussac.org](http://cimmtadoussac.org)  
[whalesonline.org](http://whalesonline.org)



GREMM \_ 108, de la Cale-Sèche \_ Tadoussac (Quebec) G0T 2A0 Canada  
Tel. : (418) 235-4701 \_ Fax. : (418) 235-4325 \_ Email : [info@gremm.org](mailto:info@gremm.org) \_ [www.gremm.org](http://www.gremm.org)  
Charity number : 102208881RR0001

ISSN 2561-794X-28

Thanks to David Soares for the translation of this document.

## SUMMARY

<a href="#">With the belugas</a>	<a href="#">4</a>
<a href="#">Adopt a beluga campaign news</a>	<a href="#">8</a>
<a href="#">With the large rorquals</a>	<a href="#">12</a>
<a href="#">GREMM's publications and presentations</a>	<a href="#">12</a>
<a href="#">Quebec Marine Mammal Emergency Response Network</a>	<a href="#">13</a>
<a href="#">Education at GREMM</a>	<a href="#">14</a>
<a href="#">Donate</a>	<a href="#">16</a>
<a href="#">Thanks for your support</a>	<a href="#">18</a>

## 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.

## 2019: A YEAR TO BE REMEMBERED

This year, *The Souffleur* is rolling off the printing press much later than usual. The text was nearly finalized when COVID-19 threw all of our plans into disarray. For this 28th edition, we were hoping to feed three birds with one seed, so to speak: a recap of the year that had just transpired, a merger with our newsletter *With the Belugas* and, last but not least, announce the upcoming celebrations of GREMM's 35th anniversary.

After several months in crisis management and survival mode —Patrice and I certainly picked up a few more grey hairs— we got back to work in the new reality of today's pandemic. As usual, summer hit us head-on! Later, once the dust of a frenetic season had finally settled, we were able to revisit this edition.

Despite being as late as it is, the year 2019 deserves to be acknowledged. For one thing, we hosted the biggest team in the history of our organization! Working and speaking with so many passionate individuals on a daily basis is one of my greatest pleasures. Throughout these pages, you will note the progress we have made thanks to their dedication, both in our research projects and in the development of our educational activities.

Up until 2018, we published a newsletter specifically dedicated to beluga sponsors entitled *With the Belugas*. Now, we have combined our two newsletters into a single, more content-rich publication, with the aim of keeping you up to date on our sustained efforts in all aspects of our mission. Special emphasis is placed on the St. Lawrence beluga and the actions that relate to it. What do you expect?, it's my favourite species! You will also see that we received an unexpected visitor!

Regrettably, we were forced to cancel our anniversary festivities, and it is still unclear when the situation will allow us to gather again. In the meantime, in a special newsletter, we will underscore the contribution of the 350 employees and volunteers who over the past few decades have embodied our motto "Greater understanding for better protection." We've already begun compiling photos, and boy, so many memories!

By the way, do not hesitate to send us your pictures in paper or digital format so that they can contribute to GREMM's collective memory!

You have my word, *The Souffleur 2020* will be sent out in a more timely manner, with all the ups and downs that characterized this extraordinary year. But with a few days remaining, perhaps the year still has a few more (pleasant) surprises in store for us? In any case, I hope you will still be with us to support our work in 2021.

**Robert Michaud**  
President and scientific director  
Group for research and education on marine mammals



Robert Michaud is photographed aboard the *Bleuvert* by photojournalist Martin Tremblay from La Presse, who was preparing a paper about belugas and GREMM. © Martin Tremblay

# SCIENCE IN ACTION

BRIEF OVERVIEW OF  
COMPONENTS OF  
ST. LAWRENCE BELUGA PROJECT  
IN 2019



**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.

## FAMILY ALBUM

From June 13 to October 11, 2019, **GREMM** carried out its 35th season of monitoring the belugas of the St. Lawrence. Thanks to photo-identification techniques, our team has added pages to our family album, the nickname we've given to our catalogue of St. Lawrence belugas. The research vessel *Bleuvet* and the inflatable craft *BpIAM* logged a combined 94 work days with these animals. In fact, the team took a total of 24,340 photos! Preliminary analysis has allowed Marie-Hélène D'Arcy and her team of "matchmakers" to identify 223 belugas featured in the catalogue. Big news this year: a number of belugas were able to be identified through aerial photos used for photogrammetry.



Mathieu Marzelière takes one of the 24,000 photos that allowed to identify already 223 belugas in 2019! © GREMM

## BEHAVIOURAL ECOLOGY

The use of drones adds a new dimension to beluga behavioural studies. Thanks to this non-invasive tool, Jaclyn Aubin, Master's candidate at Newfoundland's **Memorial University**, studies allomaternal behaviour in St. Lawrence belugas. After 68 flights, she has accumulated approximately 950 minutes of video footage of social behaviour. The images contribute to a better understanding of the allocare displayed by non-parental adult belugas toward young individuals. The evolutionary reason for these behaviours might lie in the theories of reciprocal altruism or kin selection, concludes Jaclyn Aubin. In any case, belugas are excellent caregivers!



Let's spy this beluga with an acoustic tag! © GREMM

## ACOUSTIC UNIVERSE

In a context where industrial port projects are on the rise, a proper understanding of the belugas' acoustic universe is critical. This is why a number of research projects address this very topic.

For example, good progress is being made with the latest modules of the 3MTSim (Marine Mammals and Marine Traffic Simulation) simulator. In fact, these modules are expected to play an important role in accurately assessing the acoustic impact of industrial projects or of protective measures. In close collaboration with **GREMM**, Clément Chion and his team from the **Université du Québec en Outaouais** were able to integrate beluga photo-ID data collected between 1985 and 2007, as well as information on the most heavily used sectors and behavioural data gathered over the past 35 years of research conducted on the St. Lawrence beluga. In this first year of the project, the beluga displacement modules and the acoustic propagation module were validated.

In order to support the development of this simulator as well as other projects associated with Canada's Oceans Protection Plan, acoustic data continue to be collected in the field. On board the *Bleuvet*, Véronique Lesage of **DFO's Maurice-Lamontagne Institute** and GREMM's lead technician Michel Moisan are busy tagging belugas with archival tags. In 2019, they managed to deploy 15 such tags. A total of 90 hours of data – including acoustic data – were recorded, i.e. 40 hours more than in 2018!

In another project, **Ocean Wise** researcher Valeria Vergara took a specific interest in the impact of underwater noise pollution on communication between beluga mothers and their newborns. This study underscores the important role that vocalizations and especially the exchange of "contact calls" play in the maternal bond. Preliminary results also show that, in noisy conditions, the potential communication range between a mother beluga and her calf might be reduced by half.

# SCIENCE IN ACTION

## MORTALITY MONITORING

In 2019, 16 beluga carcasses were found in and along the shores of the St. Lawrence. This figure, which is about average, does not represent the actual number of deaths, but the number of carcasses discovered. Dr. Stéphane Lair of the **Université de Montréal's Faculty of Veterinary Medicine** and his team examined nine of these carcasses in their lab, while the other seven were sampled directly on shore. Three females having a fetus trapped in their genital slit were analyzed, after which it was confirmed that they died during calving (a condition known as dystocia). According to Dr. Lair, these cases are the "No. 1 problem" faced by the St. Lawrence beluga population. Any number of factors can increase the risk of difficult calving, including human disturbance of females during pregnancy or when they are giving birth, poor nutrition, or exposure to endocrine disruptors.

One of the females found was DL0584. She had recently been adopted by naturalists and visitors to the Marine Mammal Interpretation Centre. This 34-year-old beluga died while giving birth. The fetus trapped in her genital slit was abnormally large – 184 cm – making it the largest calf ever documented to date.

## HEALTH AND PATHOLOGY

Analysis of 34 beluga carcasses that had washed up onto the shores of the St. Lawrence revealed the presence of a well known parasite: *Toxoplasma gondii*. In this study published in late 2018 by Dr. Stéphane Lair of **Université de Montréal** and his team, 44% of the animals tested were revealed to carry this parasite responsible for toxoplasmosis. Although very few mortalities can be directly attributed to this parasite (7 in over 30 years), the problem may be underestimated. This parasite is notably known for its neurological and behavioural impact in certain hosts. How belugas might become contaminated by a terrestrial parasite remains to be determined, though one might imagine that eggs trapped in the contaminated feces of cats – or wild felines such as lynx, birds or humans – could be carried into the river, at which point they could infect cetaceans.

## HEALTH CHART

In the second summer of this innovative project, 3,396 aerial photos and 108 videos were collected. These images and video footage are being used to develop body condition indices. **GREMM's** lead technician Michel Moisan, supported by Mathieu Marzellière, is actively working on this dossier. Already, initial analysis allows us to easily differentiate the males from the females. In the photo, can you guess which row is all females? The top one! They are more plump in the belly, while males show broader "shoulders".

One of the aspects of this project that we find particularly stimulating is pregnancy monitoring. In order to calibrate our measurements, we collaborate with various teams that keep belugas in captivity. In this context, pregnancy is monitored on a day-to-day basis and the girth of females is accurately measured. We are hopeful that soon we will be able to monitor pregnant belugas in the St. Lawrence without having to touch them!



## HEALTH AND TOXICOLOGY

PhD candidate Antoine Simond from the **Université du Québec à Montréal (UQAM)** is studying the impact of organic contaminants accumulated in the tissues of belugas. In this context, he analyzed 46 skin and fat samples from male St. Lawrence belugas biopsied in 2015 and 2016. His results seem to suggest that a number of organic contaminants are linked to disturbances with regard to stress response, the thyroid system and lipid metabolism. The cause-and-effect relationship is difficult to demonstrate, however, notably due to the lack of information on biopsied individuals and the contaminants present in the population. The results of his PhD research can be consulted on GREMM's website, namely in the section Research > Publications.

In another project, Master's candidate Alexandre Bernier-Graveline of UQAM analyzed fat samples taken from carcasses between 1998 and 2016. By comparing the characteristics of fatty tissues in relatively thin belugas to that of physically fit animals, the young scientist was able to identify indicator molecules for changes in energy reserves. Collected data also show a downward trend in belugas' overall energy reserves between 1998 and 2016.

## A MOST UNUSUAL OBSERVATION!

August 20, 2019: Swimming in circles slowly and awkwardly, with its tail still coiled, a beluga calf no more than a few hours old is filmed in Tadoussac Bay by **GREMM** using a drone. Its mother is close by. Surprisingly, she seems to be encouraging her offspring to dive by giving it an occasional downward nudge: is this behaviour that of a young and inexperienced mother or a crash course in diving to learn how to flee from danger?

This scene is captured on film thanks to a phone call from Tadoussac seasonal resident Susan Bruemmer. This remarkable sighting in the heart of the busy bay prompted her to report the situation to the **Quebec Marine Mammal Emergency Response Network**. Incidentally, our research team was on the verge of docking and managed to document the situation. It was one of the few times that we have ever filmed these first moments of life. The incident reminds us that calving can occur at the most unexpected places, including the outskirts of a busy marina!



The mother swims with her calf, as seen from the drone or from the boat. © GREMM



## NEWS FROM THE ADOPT A BELUGA CAMPAIGN

In 2019, eight belugas joined the “Adopt-a-Beluga” family. We have now surpassed the 50-beluga mark in adoptions since 2014. Beluga adoptions help fund the research programs of the St. Lawrence Beluga Project.

What could be better than an agenda featuring whales to place them at the heart of our day-to-day concerns? This is the brainstorm Montréal-based company **W. Maxwell Agendas**, which makes daily planners and agendas, had in 2019. A portion of the proceeds from sales of the company’s whale-coloured line of agendas went toward adopting beluga DL0988, which the W. Maxwell team named Novo. “We are troubled by the health of the St. Lawrence. We felt the need to take action to help the whales,” explains the company’s president Serge Turgeon. “That’s why we chose to continue our commitment to the environment by adopting a beluga.”

In the summer of 2019, a team from **Red Rock Films** came to document the work with belugas carried out by GREMM and Valeria Vergara of Ocean Wise. Initially, the film crew aimed to document the presence of a narwhal amongst the belugas. But the members were so moved by the belugas that they decided to adopt one of them, which they ended up naming “Be-LOU-ga”.

One donor chose to offer quite a curious wedding gift: a beluga! The female Candy C was entrusted to **Tiffany Chamandy and Matthew McMillan** in their honour and for the survival of the species.

As part of the announcement of a \$150,000 grant by the **Prince Albert II of Monaco Foundation (Canada)** for the “Health Chart” project (see p.6), Prince Albert II of Monaco received adoption certificates for two St. Lawrence belugas: Samakwan and Uapameku. Samakwan means “water” in the Maliseet language. This name was proposed by the Maliseet of Viger First Nation in Cacouna. Uapameku translates as “white whale” or “beluga” in Innu-aimun, the language of the Innu of Essipit. These two whales were symbolically adopted by two of Prince Albert II’s children, Prince Jacques and Princess Gabriella. Now, these sponsors will be kept up to date of breakthroughs in the research funded by the Canadian branch of their father’s foundation.

Lastly, the first beluga ever identified by drone photos – Lula! – was adopted by **naturalists and CIMM visitors**, who in doing so joined the greater beluga family. Will you be next to adopt one of these white whales?

The following is a preliminary list of belugas adopted and identified again in 2019 :

**Amalena** (Road Scholar), **Annapok** (CSL), **Aquabelle** (Aquarium de Québec), **Be-LOU-ga** (Red Rock Films), **Blanche** (Municipality of Tadoussac), **Blanchon** (Yolande Simard Perrault), **Céline** (Leslie B. Durst), **Coquine-Blanche** (Tourisme Charlevoix and Leurs Altesses Royales, le Duc et la Duchesse d’York), **DL0014** (Marell Foundation, Florida), **DL0743** (adoption pending), **DL1214** (Shedd Aquarium), **DL9039** (adoption pending), **Delphi** (Quebec Premier), **Elle** (adoption pending by Lyne Morissette), **Gaston** (Pratte family), **Globule** (students from Collège de Chicoutimi, En Vert), **Hector** (Les Cowboys Fringants and fans), **John A. Macdonald** (Fairmont Hotel Macdonald), **JP** (Jacob Issac), **Leucas** (Canada prime minister), **Marjo** (10<sup>th</sup> Medical congress on emergency medicine in regional communities CSSS-HCN-Manicouagan), **Miss Frontenac** (Fairmont Le Château Frontenac), **Nikamun** (Tadoussac Summer Community), **Nomi** (Road Scholar), **Or Blanc** (Municipalities of Beauharnois, Châteauguay and Salaberry-de-Valleyfield), **Pacalou** (Pascale Cauchi), **Pascolio** (ITadoussac business owners), **Polynix** (collective adoption), **Pure Laine** (Cynthia Fish), **Le Survivant** (Sorel-Tracy region), **Vita** (Shaklee Canada Inc.), **Yogi** (Bell Canada) and **Yorkie** (Fairmount Royal York).

For the latest news on adopted belugas, check out their individual portraits on [baleinesendirect.org/adopted](http://baleinesendirect.org/adopted).



Robert Michaud offers the adoption certificates to the Prince Albert II de Monaco, which is accompanied by the consul Diane Vachon on the picture. © Prince Albert II of Monaco Foundation (Canada)

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

**Dimitri**, **DL0458** (latest observation in 2004!), **DL2071** (available for adoption), **Néo** (available for adoption) and hundreds of more !

# THANKS

## TO OUR KEY FINANCIAL PARTNERS



Canadian Heritage, Canada Economic  
Development, Fisheries and Oceans  
Canada, Parks Canada



Donner Canadian  
Foundation



Fondation de la faune du Québec



Municipalité de  
TADOUSSAC



MUSÉE CANADIEN  
DE L'HISTOIRE  
CANADIAN MUSEUM  
OF HISTORY



Culture et Communications, Économie  
et Innovation, Forêts, Faune et Parcs,  
Stratégie maritime



## WITH THE LARGE RORQUALS

### THE 2019 SEASON IN STATISTICS: :

- **223 excursions** with photo-ID work
- **Not a single blue whale** identified!
- **29 fin whales** identified, including Boomerang, Kashkan, Piton, Oméga, Orion, Ti-Croche, Trou and Zipper.
- **118 humpback whales** identified in the catalogue maintained by the Mingan Island Cetacean Study (MICS), including Chewbacca, Gaspar and her calf, Le Souffleur, Tic Tac Toe and Snowball.

Jagged black-and-white tails abound in

the photos taken by volunteer research assistants this summer. A record number of humpbacks were photographed in the St. Lawrence Estuary since the start of the large rorqual photo-ID program! Additionally, around twenty humpbacks were present at the same time in early September in the Saguenay-St. Lawrence Marine Park area, which is unprecedented.

Photo-identification of large rorquals is carried out aboard whale-watching boats. Due to the popularity of humpbacks on these excursions, slightly less attention was paid to fin whales, even if they were quite plentiful. As for blue whales, they were almost completely absent from the Marine Park sector. Of the handful of individuals photographed, none has been identified to date.

## GREMM... THROUGH PUBLICATIONS AND PRÉSENTATIONS

- (2019) Simond A, Houde M, Lesage V, Michaud R, Zbinden D, Verreault J. Associations between organohalogen exposure and thyroid- and steroid-related gene responses in St. Lawrence Estuary belugas and minke whales, *Marine Pollution Bulletin*, 145, 174-185, <https://doi.org/10.1016/j.marpolbul.2019.05.029>
- (2019) Chion C, Bonnell TR, Lagrois D, Michaud R, Dupuch A. Reducing the impacts of shipping on the St. Lawrence estuary beluga population: Modelling and prediction of whale exposure to vessel noise under prospective scenarios, *The Journal of Ocean Technology*, Volume 14, No 3: 138-139.
- (2019) Guilpin M, Lesage V, McQuinn I, Michaud R. et col., Foraging energetics and prey density requirements of western North Atlantic blue whales in the Estuary and Gulf of St. Lawrence, Canada, *Marine Ecology Progress Series*, Volume 625: 205-223. <https://doi.org/10.3354/meps13043>

In December, some 2,500 biologists, veterinarians, conservationists and wildlife managers from 95 countries gathered in Barcelona for the World Marine Mammal Conference. GREMM's scientific director Robert Michaud and lead technician Michel Moisan attended the event. Seven presentations and three posters were co-authored by GREMM. These collaborations are giving the organization great visibility!



Tic Tac Toe in Barcelona! This reproduction was created by Ursula Tschertner, who has years of experience studying the whales of the St. Lawrence with ORES. © GREMM

## QUEBEC MARINE MAMMAL EMERGENCY RESPONSE NETWORK

In 2019, the call centre of the Quebec Marine Mammal Emergency Response Network (QMMERN) handled 682 calls (1-877-7BALEINE) from individuals reporting dead or troubled whales and seals. These reports translated into 284 cases.

The Network would like to thank its 201 volunteers for their exceptional motivation and collaboration. Thanks to their involvement, we were able to add another year of precious scientific data to our database.

This year, 16 beluga carcasses were found in Quebec waters: nine adults and five young, including one newborn. Nine carcasses underwent necropsies at the Université de Montréal's Faculty of Veterinary Medicine and seven were sampled directly on shore.

Four North Atlantic right whale carcasses were reported in Quebec waters, as were two cases of entanglement. Two necropsies were performed by the Centre québécois sur la santé des animaux sauvages.

The summer was also marked by two cases of entangled minke whales spotted on several occasions in the Saguenay-St. Lawrence Marine Park. Thanks to the collaboration of captains and naturalists from whale-watching cruises and rangers of the Marine Park, the quick-paced, relatively free-swimming minke whales were able to be documented at different moments. The Campobello Whale Rescue Team mobilized and attempted an intervention, which unfortunately was not successful.

Beyond these challenges, a number of new developments are on the horizon for the QMMERN. In fact, an intervention program is currently in the works and is due to be launched in 2020, with two teams on either shore of the St. Lawrence in order to boost the Network's response capacity in the field. The year 2019 was notably a year to experiment with and implement new protocols, as well as to kick off the program's training component. The teams will actively take part in the comprehensive documentation of strandings, in addition to sampling or – depending on the state of decomposition – recovering carcasses so that the cause(s) of mortality can be determined by the Centre québécois pour la santé des animaux sauvages. The teams will also be trained to administer first aid to live-stranded cetaceans and to attempt to release these animals back into the water.



Entangled minke whale © Michael Hawthorn

# FASCINATING AND RAISING AWARENESS



## EDUCATION AT GREMM

### AN EVER-DYNAMIC MARINE MAMMAL INTERPRETATION CENTRE!

As anyone who visits Tadoussac will tell you, the boulders outside the Marine Mammal Interpretation Centre (CIMM) represent an unparalleled observation site. The educational team took maximum advantage of this prime location: whether for visitors or lucky passers-by, the frequent appearances of minke whales just a stone's throw from CIMM became an opportunity for an open-air interpretation activity appreciated by all!



Quebec's Lanaudière region.

After the season ended, CIMM began looking more like a construction site as we prepared to install newly assembled skeletons. But first we had to make room for them and find a place to temporarily store those already on display before we started knocking holes in the walls!

Also in 2019, Quebec's Ministry of Economy and Innovation and Ministry of Culture and Communications recognized the exceptional work that GREMM carries out through CIMM by offering \$143,000 in support, in addition to awarding us with official museum certification (Institution muséale agréée).

That wasn't the only news. In the museum's showroom, the team proposed two other interpretation activities in an interactive formula: one on teeth and baleen, and the other entitled "Félix: From Yesterday to Tomorrow", a look at the history of Félix the beluga, a 10,700-year-old subfossil discovered in Saint-Félix-de-Valois, in

### WHALES ONLINE, NOW AVAILABLE ON YOUR MOBILE

People often joke: Whales Online is as meaty as a blue whale. Since 2000, our magazine and encyclopedia have become overloaded with news of the myriad events marking the history of whales of the St. Lawrence and related scientific research. The site is packed with hundreds of pages of articles in both French and English. We were starting to run out of room, especially for those who consult the site on their mobiles. The time had come to make a change!

For readers, the address remains the same: [whalesonline.org](http://whalesonline.org). But since December 2019, the viewer interface and architecture are completely different. The encyclopedia component can now be accessed directly from the home page and the magazine section is separate. The revamped Whales Online is the achievement of the team at Bleuoutremer.

Nearly the entire GREMM team participated in the undertaking, whether it was through technical advice, the production of new texts or photos, or the uploading of new content. The promotion of our natural heritage such as the whales of the St. Lawrence is made possible thanks to the financial support of the Secrétariat à la stratégie maritime du Québec, Quebec's Ministry of Economy and Innovation, Tourisme Québec and Tourisme Côte-Nord.

### A CONTINUOUSLY IMPROVING TRAINING PROGRAM

Offered by Eco-Whale Alliance, the annual training designed for whale-watching captains and naturalists was subdivided this year to meet the needs of two very different audiences: new employees and those with experience. For both these groups, a collaborative approach was used with workshops for developing interpretation tools as well as invitations to conferences with extensive question-and-answer sessions and a visit to the storage site for the skeletons that will ultimately enhance CIMM's existing collection in 2020.

For the remainder of the season, captains and naturalists received on a weekly basis the 18th edition of the bulletin *Portrait de baleines*. This year, these seasonal workers were able to enjoy a more reader-friendly formatting and more condensed content that is better suited to their hectic work schedules!

Écho des baleines (in French only), a stewardship newsletter intended for pleasure boaters and kayakers, was back for a second edition. Distributed every other week in marinas of the region, this newsletter was also streamlined as a way of educating readers while giving them the opportunity to dig deeper at their own discretion!

### ACTIVITIES AND MEDIA

Through some 200 interviews, Robert, Patrice, Marie-Ève and Mélanie shared our passion for whales and their marine environment. Noteworthy news stories include the January 2019 episode of La Semaine verte on underwater noise.

Hundreds of curious individuals also had the opportunity to hear whales in a completely different way at a sort of "lecture show" entitled "Conversations sous-marines" presented at Montréal's Cœur des sciences by Robert Michaud and musician Nick Kuepfer. The topic of whale communication sparked such an overwhelming interest that the activity was completely sold out.

In October, GREMM received a very special visitor: the young and inspirational activist Greta Thunberg. We had the honour to introduce her both to the field research we carry out on the St. Lawrence beluga as well as our educational work at the Marine Mammal Interpretation Centre. We commend her for her commitment to protecting the environment and safeguarding the climate for all the creatures that share our planet. We are delighted that she was inspired by the work we do. After all, her engagement is a source of motivation for us as well!



# DONATE



## SUPPORT GREMM

### A DONATION ACTING NOW

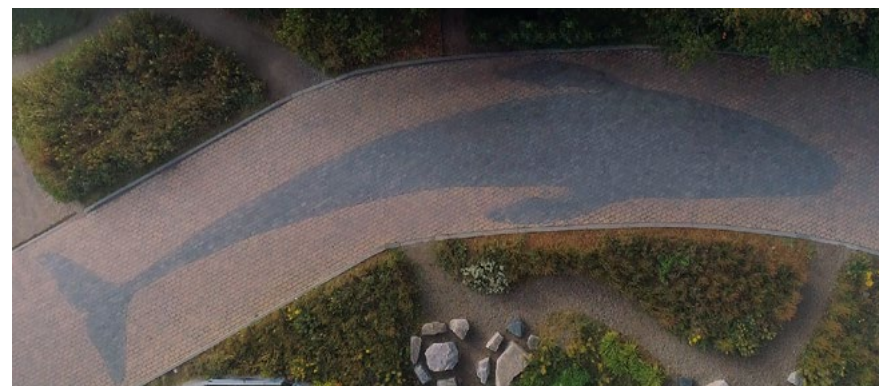
Every year, we spend hundreds of hours at sea with whales in an effort to better understand them and meet with tens of thousands of individuals whom we help get better acquainted with these fascinating animals. With your donations, we will be able to do even more.

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/](http://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 Marie-Ève Muller at [memuller@gremm.org](mailto:memuller@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.

### PRECIOUS DONATIONS

For a number of years now, the Mystic Aquarium in the US state of Connecticut has been a supporter of GREMM and its activities. The relationship debuted in 2005 when a beluga was discovered in a river a few kilometres away from the aquarium, and thousands of kilometres from the St. Lawrence. The vagabond in question was Hélix, a beluga our team knew well. At the time of the incident, the Mystic Aquarium team helped protect the animal by raising public awareness.

Ever since then, the aquarium's research team has collaborated with GREMM in different research projects. Most recently, in the context of the "Health Chart" project (see p.6), pregnant belugas from the Mystic Aquarium were measured using drone photos at various stages of their pregnancy to help create a body mass index for the St. Lawrence population.

In 2019, Mystic Aquarium decided to take its commitment to the belugas of the St. Lawrence to another level by offering a generous donation of \$25,000. "The partnership with GREMM exemplifies Mystic Aquarium's mission of conservation, education and research. We are extremely grateful and honoured to be teaming up with GREMM to help move forward their mission. We are especially committed to learning all we can about belugas in our care to contribute to the conservation, health and viability of St. Lawrence Estuary belugas. We want to ensure they not only survive but thrive for generations to come," shares Tracy Romano, Vice President of Research & Chief Scientist of Mystic Aquarium.



# THANK YOU FOR YOUR SUPPORT

## OUR GENEROUS DONORS (250 \$ AND MORE)

Michèle Bertrand Céramiste, Audrey Colussi, CSL Group, Charles Desmeules, Richard Elson,  
Robert and Gail Farquharson, Cathy Faucher Illustratrice, Lucie Filion,  
Pierre P. Gagnon and Manon Guilbert, Jean-Paul Gros, Ken Hough, Audrey Hottin, Thomas Huriaux,  
Odile Jalbert, Barry Jessiman, Kombucha Les chants du Fleuve, Julie Leroux, Dr Guillaume Lord,  
Charlotte Meunier, Paul Moreau, Laure Mussier, Oloe Yoga, Pharmacie Marie-Hélène Letendre,  
Marie-Lyne Pelletier, Isabelle Perron, Planète Bambou, Maurice Pleau and Diane Barnabé,  
Productions Ciné-Scène, Alessandra Jennifer Ross, Arthur Segond, Danielle Thibault,  
Tricots Saint-Laurent, Bradley Van Voorhis, Anonyme



[AdoptaBeluga.org](https://AdoptaBeluga.org)

In 2019,  
**8 BELUGAS**  
joined the family.

**Be-LOU-ga**, sponsored by Red Rock Films, **DL9071**\*, sponsored by Anonymus

**Candy C**, sponsored by Tiffany Chamandy and Matthew McMillan

**Novo**, sponsored by W. Maxwell Agendas, **Ocya**, collective adoption

**Lula**, sponsored by the naturalists and CIMM's visitors

**Uapameku** and **Samakwan**, sponsored by prince Jacques and princess Gabriella of Monaco

## They join the 44 belugas adopted 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

**Blanche**, municipality of Tadoussac • **Blanchon**, Yolande Simard Perrault • **Bleuoutremer**, Bleuoutremer • **Blue**, Ella Issac

**Brad**, Gail Wylie, in memory of Brad Wylie • **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 • **Dorothy**, Mathijs et Anneke Wittink

**Écho**, David Heurtel • **Gaston**, Pratte family • **Hector**, Les Cowboys Fringants and their fans • **Hope**, collective adoption

**JP**, Jacob Issac • **Marjo**, 10<sup>th</sup> Medical congress on emergency medicine in regional communities CSSS-HCN–Manicouagan

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

**Nikamun**, Project Red Alert • **Nomi**, Road Scholar • **Or Blanc**, municipalities of Salaberry-de-Valleyfield, Beauharnois and Châteauguay •

**Polynix**, collective adoption • **Pure Laine**, Cynthia Fish • **Serena**, Jo-Ann Florida • **Splash**, City of Montréal

And the 122 adopted  
in between 1988 and 2013

# Thank you!

\* Names forthcoming



PROJET  
BÉLUGA  
Saint-Laurent





Part of the 2019 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 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 OF UNIVERSITÉ DU QUÉBEC À MONTRÉAL, CREO, DEPARTMENT OF BIOLOGY OF SAINT MARY'S UNIVERSITY, DÉPARTEMENT DES SCIENCES NATURELLES OF UNIVERSITÉ DU QUÉBEC EN OUTAOUAIS, DONNER CANADIAN FOUNDATION, EARTH RANGERS, ECO-WHALE ALLIANCE AND MEMBER COMPANIES, ENVIRONMENT AND CLIMATE CHANGE CANADA, ESPACES POUR LA VIE - BIODÔME DE MONTRÉAL, EXPLORAMER, FACULTÉ DE MÉDECINE VÉTÉRAIRE OF UNIVERSITÉ DE MONTRÉAL, FERME 5 ÉTOILES, FISHERIES AND OCEANS CANADA, FONDATION DE LA FAUNE DU QUÉBEC, FONDATION QUÉBEC PHILANTHROPE, FONDATION PRINCE-ALBERT II DE MONACO (CANADA), LE QUÉBEC MARITIME, 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, PARK FOUNDATION, PARKS CANADA, RÉSEAU D'OBSERVATION DE MAMMIFÈRES MARINS, SAGUENAY-ST. LAWRENCE MARINE PARK, SECRÉTARIAT À LA STRATÉGIE MARITIME DU QUÉBEC, SOCIÉTÉ DES ÉTABLISSEMENTS DE PLEIN AIR DU QUÉBEC, SOCIÉTÉ DES MUSÉES QUÉBÉCOIS, ST. LAWRENCE NATIONAL INSTITUTE OF ECOTOXICOLOGY, TOURISME CÔTE-NORD, TOURISME QUÉBEC, TRENT UNIVERSITY WILDLIFE FORENSIC DNA LABORATORY, WHALE STEWARDSHIP PROGRAM, YOUNG CANADA WORK, «OBSERVATION OF THE WEEK» NETWORK COLLABORATORS, THE POPULATION AND BUSINESS OWNERS OF TADOUSSAC.