

LE SOUFFLEUR

GROUP FOR RESEARCH
AND EDUCATION
ON MARINE MAMMALS



*Better understanding
for better protection*





FOREWORD



2022-2023 GREMM TEAM

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2023 BOUTIQUE

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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 the village of Tadoussac, GREMM is a non-profit organization dedicated to scientific whale research and marine conservation education. GREMM carries out long-term research programs on St. Lawrence belugas and the large orqwal species that frequent the estuary. The organization also manages the Marine Mammal Interpretation Centre and edits the Whales Online magazine and encyclopedia. Lastly, GREMM coordinates the Quebec Marine Mammal Emergency Response Network.

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BELUGA DECADES (1973-2023)

Last May, the 2023 Beluga Symposium in Montréal brought together close to 100 experts and students who came to exchange information and ideas on beluga research and conservation in the St. Lawrence. Thirty-five years after the International Forum for the Future of the Beluga in Tadoussac in 1988, the organizing committee of the Symposium wanted to know: How far has science come?

Even if scientific advances continue to be made and conservation efforts are on the rise, belugas are still struggling. Indeed, the updated beluga population model presented at the closing of the symposium indicates that the population has remained stable since the early 1980s. There is good news, however: belugas are twice as plentiful as previously believed. Our *Whales Online* team presents a recap of symposium highlights in the Feature Story.

The Montréal event also coincided with the 40th anniversary of the launch of the beluga carcass recovery program, the brainchild of Pierre Béland and Daniel Martineau. This program is still ongoing and represents one of the most precious sources of data to date for monitoring the beluga population. A brief review of this program is also presented in this year's edition of *Le Souffleur*.

The year 2023 was marked by several other noteworthy anniversaries. It was 50 years ago, in 1973, that Leone Pippard saw her first belugas. This encounter likely changed the course of her life and certainly had an impact on the belugas themselves. The observations that she made together with her colleague Heather Malcolm helped draw attention to the precarious situation of this species, and ultimately led to a ban on beluga hunting in 1979. These two individuals proposed the creation of the Marine Park, which would be officially established in 1998 (25 years ago!). ... and had the St. Lawrence beluga added to the List of Wildlife Species at Risk in 1983 (40 years ago!).

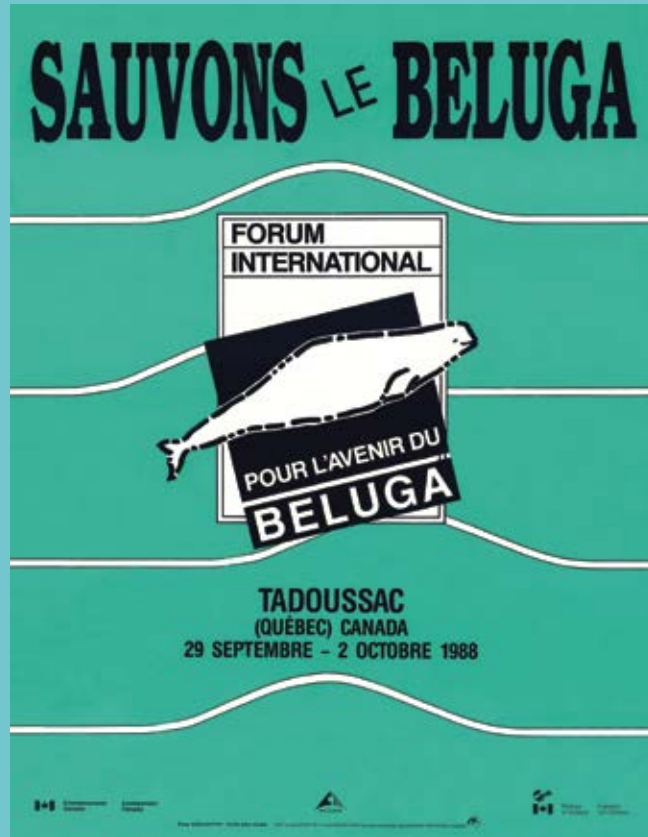


Leone Pippard passed through Tadoussac last summer to mark this anniversary. We took advantage of her visit to exchange ideas and information on beluga research and conservation. She is accompanied by Robert Michaud and Nadia Ménard in this photo taken during her visit.

Besides all these anniversaries and scientific advances, the symposium was also an opportunity to celebrate belugas. On the sidelines of the event, in UQAM's Coeur des Sciences, some 300 people joined Boucar Diouf and myself for a cabaret evening of poetry and humour. For about two hours, we discussed the nature of belugas and philosophized about the documentary *Pour la suite du monde* with the texts of Véronique Côté and Hugo Latulippe. The cabaret was set to music and images by Two Birdz (thank you, Kim and Simon) and my friend Alain Belhumeur. Created by my partner Janie Giard and directed by Frédérique Blanchet, this evening event was recorded and broadcast in the most recent season of *La Nature selon Boucar* on Radio-Canada's Première chaîne.

Robert Michaud
 President and Scientific Director
 Group for Research and Education on Marine Mammals

FEATURE STORY



In 1988, the International Forum for the Future of the Beluga was held in Tadoussac. Thirty-five years after this event, how far has science come? It was in an effort to address this question that the 2023 Beluga Symposium was organized.

The 2023 Beluga Symposium was held in Montréal from May 3-5, 2023. Approximately sixty scientific papers and three workshops under the themes “ecology and population,” “animal health and contaminants” and “maritime traffic and acoustics” allowed roughly 100 scientists and students at Université du Québec à Montréal to take stock of the beluga situation and the state of our knowledge on the matter... 40 years after they were added to Canada’s List of Wildlife Species at Risk.

GREMM’s contribution to this major gathering was significant. Nearly half the presentations involved a Beluga Project team member or data collected under this program. The *Whales Online* team was also there and offers us the following summary.

40 YEARS OF SCIENCE... FOR THE FUTURE OF BELUGAS



Pierre Béland, Daniel Martineau, Daniel Lefebvre and Robert Michaud at the 2023 Beluga Symposium

The first presentation of the symposium, presented by Pierre Béland and Robert Michaud, set the tone for the remainder of the event. Pierre Béland explained how his first encounters with belugas inspired him. “When you see them up close, they just pull you in. I was struck by their beauty, and at the same time by how fragile they looked.” Flashing back to the early 1980s, he explained how he launched the beluga carcass recovery program (see inset “Book of the Dead”) and his first experiences and research aimed at learning how belugas could be contaminated by insecticides from a manufacturing plant on one of the Great Lakes. In a bid to encourage young students to pursue careers in research, Pierre Béland asserted that knowledge has no limits.

Robert Michaud then presented a retrospective of beluga research. He underscored how the topics addressed by researchers have evolved over time, the uptick in multidisciplinary studies, and the importance of long data series in a large number of the scientific articles published over the past 40 years. He also presented an analysis of the networking between the authors of these scientific articles to illustrate the wealth and diversity of collaborations that science relies on to better understand and better protect. In conclusion, Robert reminded us that even if we have not yet saved the beluga, we have learned to work together... and continue to do so.



“BOOK OF THE DEAD”

Launched in September 1982, the beluga carcass recovery program was somewhat of an accident. While attending a marine science conference in Rimouski in September 1982, veterinarian Daniel Martineau and ecologist Pierre Béland learn of a beluga carcass that had washed up on the shores of Pointe-au-Père. They decide to travel to the site to examine and learn more about the animal. This would be the first of a long series of necropsies that continue to this day and that aim to document beluga mortality in the so-called “Book of the Dead.”

This carcass recovery program became the cornerstone of a number of research projects that have led to scientific advances and have helped better understand what is hampering the recovery of this endangered species. “Our work on belugas has been one of the driving forces behind continued decontamination efforts,” explains Pierre Béland, alluding to the PCBs, DDT and other organochlorine compounds that were omnipresent in the St. Lawrence in the 1990s.

The efforts deployed to recover carcasses throughout Quebec and analyze them is a prime example of collaboration for the continued survival of an animal species. Largely funded by Fisheries and Oceans Canada, the carcass recovery program was long overseen by two technicians, Richard Plante and Carl Guimont of the St. Lawrence National Institute of Ecotoxicology (co-founded by Pierre Béland and Robert Michaud), before being resumed in 2022 by the Quebec Marine Mammal Emergency Response Network (QMMERN) and coordinated by GREMM. To undergo comprehensive necropsies, the carcasses are transported to Université de Montréal’s Faculty of Veterinary Medicine in Saint-Hyacinthe. The recovered data will then be used by a vast network of scientists.

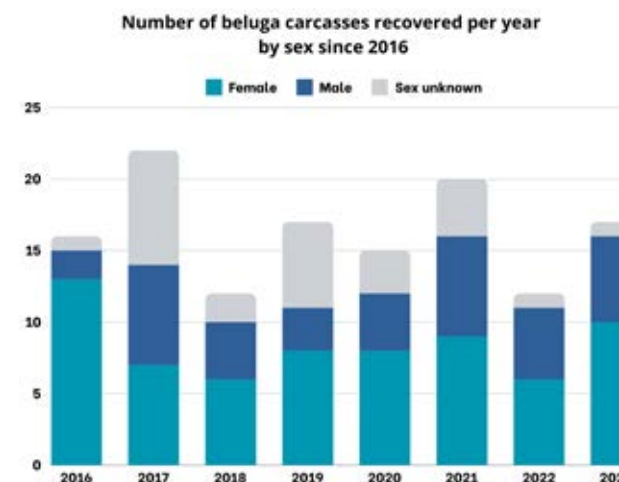


Carcasses are taken to Saint-Hyacinthe to be examined. © Pierre Béland

ECOLOGY AND POPULATION

Habitat use, diet, and birth rates are just a few examples of the research topics presented in this symposium. Several of these research projects are still in progress and will provide a critical look at the beluga’s distribution, especially in those areas used by female communities. New data were also presented on the beluga’s winter range, which stretches from the northeastern part of the Gulf of St. Lawrence to the head of the Laurentian Channel. In terms of food, belugas appear to be more of a generalist species than previously believed, with considerable prey diversity having been identified in their diets.

Artificial intelligence (AI) has clearly made its way into the field of whale research. It is now being used to study and assess the number of belugas in a given sector, which represents an important step forward. Great strides have also been made in the field of photo-identification using AI, making it increasingly straightforward and rapid to identify individuals that have already been observed in the past and saving scientists considerable time.



Pierre Béland examines a beluga carcass. © Pierre Béland



ANIMAL HEALTH AND CONTAMINANTS

A number of scientists are attempting to explain the spike in mortalities in newborns and calving females that has been observed since 2010. Changes in the beluga's environment might be to blame, whether it be disturbance caused by ships or the presence of new contaminants with the potential to disrupt the animals' hormones.

At the same time, scientists are working on assessing the animals' physical fitness levels by using photogrammetry and analyzing morphometric data, thereby gaining insight into the links between the body condition of individual belugas and the health status of the population at large. Stéphane Lair, professor at Université de Montréal's Faculty of Veterinary Medicine, had some positive news to share. "Cancer is no longer a conservation issue for the species," he explains. Indeed, PAH (a contaminant responsible for cancer in belugas) concentrations have been trending downward since 1977. However, this statement should be interpreted with caution, as there are still a number of issues affecting the health of the St. Lawrence beluga, including parasites such as *Toxoplasma*, whose hosts include domestic cats.



A large number of ships ply the St. Lawrence.

SCIENCE WORKING FOR ST. LAWRENCE BELUGA CONSERVATION

The second day of this scientific gathering kicked off with a presentation by Nadia Ménard, an ecosystem scientist with Parks Canada. Nadia begins by recalling the importance of research: "If we don't know what the problem is, how can we solve it?" After a brief recap of the last 50 years in conservation science, she sums up the various changes taking place in the St. Lawrence and their impacts, in particular rising winter air temperatures, increased inflow from the Gulf Stream, decreased inflow from the Labrador Current, and the presence of contaminants. To counterbalance discussions on the threats faced by the St. Lawrence, she recalls some of the positive results that science has helped achieve such as the creation of the Saguenay-St. Lawrence Marine Park or the designation of critical beluga habitat. The scientist ended with an inspiring quote from Charles Darwin: "In the long history of humankind, those who learned to collaborate and improvise most effectively have prevailed."

MARITIME TRAFFIC AND ACOUSTICS

For the final theme of the symposium, the speakers made no qualms about using mathematics, statistics or even artificial intelligence. To understand the different threats that are affecting the St. Lawrence beluga, let's not forget our equations and algorithms!

The research presented ranged from the simulation of beluga and watercraft movements to the creation of the Ocean Soundscape Atlas. However, all of them shared the objective of identifying solutions for improving belugas' living conditions. Nicknamed "canaries of the seas," belugas have a rich vocal repertoire and a complex social structure that can be disrupted by boat noise.

MORE BELUGAS THEN BELIEVED IN THE ST. LAWRENCE

It was on the final day of the 2023 Beluga Symposium that the announcement was made: There are more belugas in the St. Lawrence than previously estimated. Scientists now estimate that there might be anywhere between 1,530 and 2,180 belugas. This is much higher than the previous estimate of just 889!

To reach this conclusion, a new method was used to adjust the correction factors applied to visual and photo surveys. Amongst other things, researchers discovered that belugas spend more time under water than previously believed. The new estimate resulting from these adjustments is considered not only more accurate, i.e. closer to the true number of belugas, but also more precise, meaning it has a smaller margin of error.

Fisheries and Oceans Canada researcher Véronique Lesage points out that this upward revision does not mean that there are more belugas in the St. Lawrence. "Our analysis methods for estimating the size of the population suggest that population abundance was underestimated in the past. The population did not double, it's just that we now have better methods to help us estimate its true size," she explains to *Le Devoir*.



Belugas accompanied by a calf.

STILL NO SIGN OF RECOVERY

These new estimates and data from various long-term monitoring programs such as GREMM's mortality monitoring and photo-identification censuses were used to update the model that assesses how the population is trending. This update suggests that the population has risen slightly since the 2009 censuses, but may have entered into a new decline beginning in 2018. The minor increase detected after 2009 may be attributable to fewer occurrences of cancer, while the slight decline registered since 2018 may be the result of lower survival rates of calves and the uptick in mortality of calving females. In any case, variations in population abundance estimates since the early 1980s are relatively small and are a clear indication that the population is not yet on the road to recovery.

For GREMM's scientific director Robert Michaud, these new results are nevertheless reassuring. "The population is not strongly trending downward. In fact, it seems to be stable and belugas are twice as numerous as we had previously estimated. Even if we have not yet managed to save belugas, we can still help them," he says encouragingly. "In the short term, beluga conservation priorities are still to reduce disturbance, protect their prey and lower contamination levels," he adds, while reminding us that the recent announcement of the intention of the federal and provincial governments to quadruple the size of the Saguenay-St. Lawrence Marine Park is excellent news.



The St. Lawrence beluga population is still not increasing

SCIENCE IN ACTION



Coordinated by GREMM, the St. Lawrence Beluga Project is carried out by a broad network of NGO and academic partners and in close collaboration with Fisheries and Oceans Canada's Maurice Lamontagne Institute, Environment Canada's St. Lawrence Centre, and Parks Canada. The paragraphs below present an overview of our activities in 2022 and 2023.

Just by looking at the statistics for these seasons, one can see that our team was quite busy. Our core activity remains taking censuses at sea. Herd monitoring and photo-identification during these surveys will further our understanding of social structure and habitat use. Data collection in 2022 and 2023 reached an all-time low. Unfavourable weather conditions and the aging *Bleuvet*, GREMM's beluga research vessel, kept us landbound more often than usual.

For the past few years, our teams stationed in Cacouna, Kamouraska and Baie Sainte-Marguerite have added to and notably diversified our data collection efforts. Drone flights and thousands of hours of acoustic recordings using hydrophones anchored in proximity also contribute to our efforts to better understand how social groups of belugas use various portions of the species' critical habitat and how our activities affect their behaviour.

Drone-captured images are beginning to live up to our expectations. By measuring the animals' girth, we are now able to distinguish male and female belugas, identify pregnant females and assess their physical condition. After three years of development, we are ready to add a new component to the Beluga Project: the Beluga Observatory. The seasonal evaluation of the animals' physical condition and the monitoring of gestating belugas identified in our "Family Album" (register of photo-ID'd belugas) will help us compile genuine health charts as well as assess the reproductive success of females and the survival rates of their calves.

Through our multiple collaborations, we also contributed to the monitoring of beluga mortality, health and contamination. The data so patiently collected by our Beluga Project teams resurfaced in several scientific papers presented at the 2023 symposium as well as in scientific articles published over the past two years.

2022 SEASON IN STATISTICS

- 57 days at sea
- 54 days on land-based sites
- 12 000 photos
- 7627 minutes of drone flights
- 45 individuals pre-identified
- 28 biopsies

2023 SEASON IN STATISTICS

- 33 days at sea
- 34 days on land-based sites
- 5000 photos
- 1527 minutes of drone flights from land-based sites
- 8 000 photos taken by drone from research vessels
- 13 individuals pre-identified

THE NARWHAL NOW HAS A NAME!

Thanks to the support of our donors, the adoption of the narwhal was completed in 2022 and this unique individual has been given a nickname: "Nordet"! Just like the northeasterly wind after which it was named, Nordet has brought a breath of fresh air to the St. Lawrence ever since it first arrived in 2016. This arctic vagrant has managed to integrate a pod of belugas and is now observed annually in their company.

Nordet was spotted in 2022, though there were no confirmed sightings in 2023. We can hardly wait to return to sea to find out what happens next!

It's not too late to contribute to Nordet's adoption: [baleinesdirect.org/en/observer/qui/portraits-de-baleines/narval-monodon-monceros/](https://www.baleinesdirect.org/en/observer/qui/portraits-de-baleines/narval-monodon-monceros/)



This narwhal has been swimming with belugas since 2016.

WINDOW ON BELUGAS IN STATISTICS

- 6 sites to connect
- 3 different tourism regions
- 12 000 photos
- 2 beluga brigades
- 400 visitors who were able to test the project
- 6 strongly connected partners
- 5 affiliated scientific institutions

A WINDOW OPENS ON BELUGAS

fenêtre sur les bélugas s'apprête à déployer ses ailes dans les Window on Belugas is gearing up to spread its wings in the next few months! Bridging research and education, this project offers an alternative to watching belugas at sea by allowing the public to enjoy a one-of-a-kind immersion-like experience in the habitat of these cetaceans. The objective is to educate the public about belugas and their habitat without disturbing the animals.

The sounds and images captured by the beluga brigades will be rebroadcast to partner sites where naturalists will lead interpretation activities. It will therefore be possible to dive into the fascinating world of belugas from the Marine Mammal Interpretation Centre in Tadoussac, the Fjord-du-Saguenay National Park (Baie-Sainte-Marguerite sector), as well as the brand new Putep 't-awt beluga observation site in Cacouna.

In 2022 and 2023, the team put the finishing touches on developing its educational activities. The first presentations were also made to enthusiastic members of the public. In addition to offering very positive feedback, participants were clamouring to see more! Four beluga brigades were deployed, namely at Baie Sainte-Marguerite, Cacouna, La Grande Île (off the coast of Kamouraska) and on board the *Bleuvet*. Using drones, the brigades captured images that will be used for both research and education. Hydrophones were also installed at several locations in the St. Lawrence.

This project was made possible thanks to a collective effort. GREMM had the opportunity to collaborate with the Marine Mammal Observation Network and the Raincoast Conservation Foundation, in addition to being able to take advantage of the partnership between the Wolastoqiyik Wampanoag First Nation, Sépaq and Parks Canada. Activity development for the period 2019-2023 was funded by the Canadian and Quebec governments.

GREMM'S PUBLICATIONS

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SCIENCE IN ACTION



LARGE RORQUAL PROJECT

A TWO-COMPONENT PROJECT

In 2022 and 2023, our team continued carrying out photo-ID censusing of humpback, fin and blue whales in the St. Lawrence. This work is critical for piecing together the individual stories and distribution patterns of these great whales. The other component of the project, the Large Rorqual Observatory, was added to the censuses three years ago in the form of a pilot project.

This component consists of using a drone to perform vertical photo-identification and photogrammetry, as well as to document marks left by entanglements and ship strikes. This new method is proving to be very promising... To be continued!

The Large Rorqual Project team also had to deal with an unpredictable Mother Nature during the 2023 Season, which reduced the number of trips into the field early in the season. Fall was characterized by relatively favourable weather, which allowed for regular trips out to sea.

AVERAGE SEASONS?

"The 2022 and 2023 seasons were rather similar in terms of the number of individuals and distribution patterns," says Timothée Perrero, who spearheads the large rorqual census project. However, he points out changes in fin whale observations, which were much fewer in number compared to the 2018-2021 period. Individuals were also more difficult to track due to their long dives, while a number of other regulars in the region such as Bp913, Orion (Bp017) and Caïman (Bp034), were not spotted at all. Humpback whale visits were extremely short and rarely exceeded one week.

2022 SEASON IN STATISTICS

- 23 dedicated vessel-based censuses
- 46 censuses conducted from whale-watching boats
- 1621 photos
- 39 drone flights
- 2 photo-ID'd blue whales*
- 7 photo-ID'd fin whales*
- 44 photo-ID'd humpback whales*

2023 SEASON IN STATISTICS

- 23 dedicated vessel-based censuses
- 43 censuses conducted from whale-watching boats
- 5036 photos
- 75 drone flights
- 4 photo-ID'd blue whales*
- 6 photo-ID'd fin whales*
- photo-ID'd humpback whales*

* These figures include individuals observed by GREMM as well as by third parties.



Large Rorqual Project team in action © Guillaume Savard



Jaw-Breaker (B246) and her calf

EXCEPTIONAL ENCOUNTERS AND ADVENTUROUS WHALES

In 2022, GREMM's research team enjoyed a spectacular encounter with the female blue whale Jaw-Breaker (B246) and her calf. "It might have been a baby, though it was more than one-third the size of its mother!" recalls Laurence Tremblay, a research assistant that was on the water at the time of this unforgettable moment. In the past 10 years, none of the team members had ever before observed a female blue whale with calf in tow. Jaw-Breaker is a regular in the St. Lawrence Estuary and has been spotted in these waters nearly annually since she was first described in 1991.

The Saguenay Fjord also hosted two unexpected visitors on July 22, 2022: humpback whales H944 and H8045. On August 6, 2022, it was a North Atlantic right whale that swam up the fjord to Cap de la Boule, only to double back and return to the estuary later that evening. In 2023, a handful of humpbacks also made incursions into the Saguenay Fjord, some as far upstream as L'Anse-de-Roche. However, it was the presence of the blue whale Slash (B119) in the mouth of the fjord on August 19, 2023 that caused the most excitement. Although they are rare, these events occur more often than we think!

In 2023, the research team also observed on several occasions not whales... but bluefin tuna!



Humpback whale H944

THANKS

TO OUR KEY FINANCIAL PARTNERS



BETTER PROTECTION



QUEBEC MARINE MAMMAL EMERGENCY RESPONSE NETWORK

Cédric Gascon, assistant to the QMMERN's intervention program on the south shore of the St. Lawrence:

"This summer was full of surprises and learning. The diversity of incidents reported made us push ourselves harder and forced us to develop new skills, notably the ability to perform extensive carcass sampling in challenging conditions."

Patrick Weldon, head of QMMERN's intervention program and assistant coordinator:

"As is the case every year, we roll up our sleeves and we respond. Always ready, we work hard with our partners and collaborators for marine mammal conservation. We can be proud of the network's accomplishments!"

ENTANGLED HUMPBACKS

Entanglements continue to represent a major risk to the well-being and survival of marine mammals. Release attempts are difficult, high-risk interventions for the teams involved. In 2022, QMMERN coordinated large-scale interventions following two reports of entangled humpbacks in the Saguenay-St. Lawrence Marine Park.

MINKE WHALES IN MONTRÉAL

Spring 2022 was marked by the unusual presence of two minke whales in Montréal. This visit raised many questions about this unusual behaviour, just as the presence of a humpback did in this same sector in 2020. Unfortunately, why exactly these cetaceans travelled hundreds of kilometres upstream of their normal range is not known. However, the level of public attention paid to this event reminds us how important whale conservation is in the St. Lawrence!

2022 SEASON IN STATISTICS

- 498 interventions throughout Quebec
- 1188 reports
- 6 trainings completed
- 15 trainings offered
- 50 information videos
- 200 volunteers
- 71 marine mammals recovered for necropsy
- 46 carcasses sampled

2023 SEASON IN STATISTICS

- 367 interventions throughout Quebec
- 1075 reports
- 5 trainings completed
- 8 trainings offered
- 50 information videos
- 3 new satellite teams
- 220 volunteers
- 60 marine mammals recovered for necropsy
- 36 carcasses sampled



Two minke whales strayed to Montréal in May 2022. © QMMERN

SEALS AND BIRD FLU

In Spring 2022, numerous reports of dead or distressed seals had QMMERN and its volunteers holding their breath. Analyses conducted by Quebec's wildlife health centre (CQSAS) on 15 samples taken from the carcasses indicated that 11 of them were infected by H5N1, a highly pathogenic strain of avian influenza.

Early in 2022, the first cases of bird flu – a disease that had already taken its toll elsewhere in the world – were detected in certain wild bird populations in Canada. According to one hypothesis, the proximity of seals to wild birds at the haul-out sites and contact with bird fluids and excrement are to blame for the virus spreading to the seals.

VAGRANT SEALS

June 2023 was marked by the unusual presence of a large number of seals outside their normal range. Indeed, compared to past years, QMMERN registered a higher number of cases of seals upstream of Québec City. For Méliissa Tremblay, who heads the UMM call centre, it was a busy season for responders on the phone lines: "What's worrying about seals in an urban environment is the increased human presence."

At the request of QMMERN's partners, UMM teams have been compiling more information about these sightings and sampling the carcasses to allow scientists to monitor the situation and better understand the role of seals in the marine ecosystem.



Harbour seal

SEAL PREDATION BY GREAT WHITE SHARKS

In the summer of 2023, QMMERN also received several reports of suspicious cases of predation on marine mammals. The carcasses, samples and information collected were submitted to CQSAS for analysis. Combined with what researchers know about the distribution of various shark species in the Gulf of St. Lawrence, analysis of the carcasses suggest that these cases of predation were the work of great whites.

RESPONDING WITH TEAMWORK

In October 2023, QMMERN, in collaboration with its partners, respond to a humpback whale carcass not far from Saint-Maxime-du-Mont-Louis in the Gaspé Peninsula. This was the first stranding of the year that involved a large whale. The combination of complex access conditions to the site of the stranding, significant tidal fluctuations and the difficulty of moving the carcass created a real race against the clock to carry out the necropsy! After analyzing photos, GREMM's research team manages to identify the animal. The carcass was identified as H970, a humpback whale that had been spotted in the gulf, the Mingan Archipelago region, the Sept-Îles area as well as the estuary in 2021, 2022 and 2023.



UMM technician Méduline Chailloux (in red) explains to satellite teams how to respond to an incident involving a live stranded cetacean. © Îles-de-la-Madeleine ZIP Committee

FASCINATING AND EDUCATING

GREMM EDUCATION

MARINE MAMMAL INTERPRETATION CENTRE

- 38 639 visitors in 2022
- 45 266 visitors in 2023, including a record 1,236 persons in a single day!

In 2022, under the helm of chief naturalist MéliSSa Greene, the team of naturalists was able to capitalize on hybrid positions with a renewed contract at Pointe Noire as well as the opportunity to write a few days a week with the editing team. These popular positions entail a broad array of tasks. Also helping to draw crowds was an initiative funded by the Ministry of Culture and Communications whereby entry to the museum was free on the first Sunday of the month.

The poor weather conditions of 2023 translated into increased visitor traffic at CIMM. Thanks to chief naturalists Christine Stadelmann and Véronique Genesse, the team was well prepared to handle the influx. The spike in the number of visits was also synonymous with strong sales at the boutique. Considering that its profits are used to fund GREMM's projects, that's great news! In 2023, the return of whale song lessons as well as a new interpretation contract at Pointe de l'Islet were also warmly welcomed by the public.

During the busy 2023 season, the projection hall was gradually transformed into a virtual reality auditorium replete with acoustic panels, a sound system... and a huge LED screen measuring 6 metres wide by 4 metres high to show whales in all their splendour. Beginning in 2024, these new facilities will be used for Window on Belugas presentations. Drone footage of these white whales will be broadcast live on the big screen and the images will be interpreted by naturalists.

At CIMM, whales are not just projected on screens or displayed as skeletons. Célia Baratier, who spearheads GREMM's educational projects, shares a memorable moment from the 2023 season: "A blue whale surfaced to breathe right in front of the CIMM! Visitors had the exceptional opportunity to observe the largest animal on the planet. Memories aplenty for everyone!"



The skeleton of a northern bottlenose whale is being prepared to eventually be incorporated into CIMM's exhibit.



The Marine Mammal Interpretation Centre and the Jardin de la Grève

PART OF THE EDUCATION TEAM AT THE START-OF-THE-SEASON TRAINING



2022



2023

FASCINATING AND EDUCATING



WHALE PORTRAITS

2022 - 2023 SEASONS IN STATISTICS

- 17 issues
- 120 hard copies distributed weekly
- 377 email subscribers

Over the past two years, we have continued our efforts to guide and support the whale-watching industry to help make its offshore activities more “whale friendly,” educational and sustainable. Under the supervision of Chloé Warren (2022) and Odélie Brouillette (2023), Whale Portraits continued to inform and educate the community on the fate of St. Lawrence cetaceans through bulletins packed with whale stories, scientific news and questions from the public.

Chloé also travelled to the Manicouagan and Minganie regions in July 2022 to expand the distribution of *Whale Portraits* to cover the entire St. Lawrence. The publication was very well received by boat tour guides in the region. These outreach efforts with captains, naturalists and partners helped forge or renew connections with roughly twenty different organizations or tour companies throughout the St. Lawrence.

In parallel, our weekly distribution tour, our participation in activities of the Eco-Whale Alliance as well as our related communications (notably *Whale Portraits* and a Facebook photo-identification group) allowed us to maintain our relationships with local companies and businesses. Public interest in *Whale Portraits* continues to grow, having reached 370 subscribers to the electronic version and over 100 hard copies distributed every week by mail or in person.



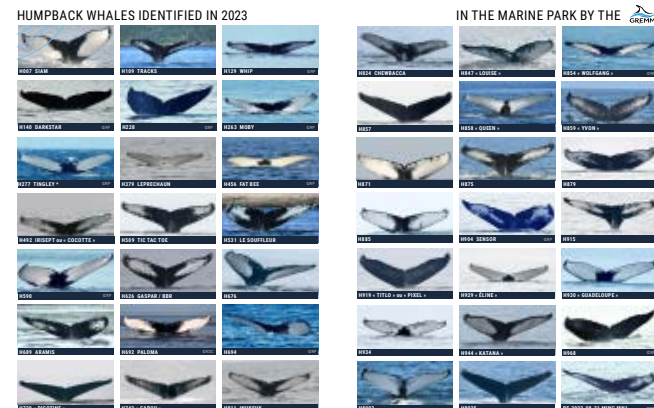
2023 editing team



- More than 1 million annual visits to the website!
- Over 5,500 subscribers to the French- and English-language versions of the newsletter
- Over 25,000 subscribers to the Whales Online Facebook page

Serving as both a magazine and encyclopedia, *Baleines en direct*, together with its English language spinoff *Whales Online*, continue to make their mark as leading references in the world of whales. Every week, the editing team strives to dig up the latest news on marine mammals both in our backyard and beyond, in addition to popularizing scientific articles and summarizing environmental situations. The articles are published not only in the newsletter, but also on the social networks, including Facebook and Instagram. In 2023, we began answering questions from the public directly in the newsletter in a column entitled “Question Box: Mysteries of the Deep.” Considering how many questions we received, we can conclude that our readers are firmly on board!

In an effort to increase editing capacity, scientific writing interns from Université de Sherbrooke joined the team in each of the last two years. Their contributions as well as those of CIMM employees filling the organization’s summer hybrid positions are enriching and bring new viewpoints as well as a diversity of writing styles



For the past few summers, the season’s final edition of *Whale portraits* has listed the individuals identified throughout the year.

GREMM IN THE MEDIA

- Over 100 interviews in the media per year

Whether it be at the local, national or even international level, GREMM’s interventions continue to make waves. Cases handled by the Quebec Marine Mammal Emergency Response Network, GREMM’s research work as well as articles by the editing team are shared in the media. Le Safari de Joanie, a family-friendly educational program, filmed an episode on fin whales and belugas at CIMM and with the research team, respectively. Robert Michaud has also been taking the time to answer questions from journalists on a variety of topics pertaining to cetaceans.



Joanie with CIMM chief naturalist Christine Stadelmann.

FOLLOW US ON SOCIAL NETWORKS



APPOINTMENT TO THE ORDER OF CANADA

In 2023, GREMM President and Scientific Director Robert Michaud was admitted to the Order of Canada “for his sustained contributions to the knowledge of marine mammals, notably those of the St. Lawrence River. The Order of Canada is one of the highest honours in the country.



DO YOU BELIEVE IN GIANTS?



SUPPORT GREMM

A DONATION FOR THE PRESENT

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, contacting us at 418-235-4701 or visiting our website at gremm.org/en/donate/. Whether it's \$50, \$20, or even just \$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 Patrice Corbeil at pcorbeil@gremm.org or at 418-235-4701 to discuss other ways that you can give.

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 Fondation Québec Philanthrope, has collected nearly a half a million dollars to date. 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 students or doctoral candidates

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.



Plaques forming a life-size blue whale outline in the CIMM's Jardin de la Grève

ADOPT A BELUGA

In addition to being a thoughtful and philanthropic gesture, adopting a beluga allows you to pair 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 each 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 plight 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 SUPPORT

The generosity of members of Aventure Écotourisme Québec has been helping support our team's mission since 2021. Thanks to the 1% For The Planet Outdoor Fund, a number of Quebec's non-profit organizations, including GREMM, are able to carry out their environmental protection activities.

For GREMM, this precious support ensures the long-term viability and advancement of the St. Lawrence beluga census project, notably by gradually incorporating artificial intelligence into the initiative. The financial support of Aventure Écotourisme Québec was renewed in 2021, 2022, and 2023, which made it possible to implement the AI-based photo-identification platform in our Tadoussac research center.



ACKNOWLEDGEMENT OF SUPPORT

BECAUSE JUST LIKE US, THEY TOO BELIEVE IN GIANTS...
AND SO THAT THESE GIANTS NEVER BECOME EXTINCT!

OUR GENEROUS DONORS HELP US BETTER UNDERSTAND
THEM SO THAT WE MIGHT BETTER PROTECT THEM.

Adelaide Park Gomer

Benny Beattie

Cynthia Price

Fondation Citadelle

Gail & Robert Farquharson

Judy & Michael Alexander

Lucie Filion

Michael Parfit, Mountainside films

Nathalie Pratte et la famille Pratte

Richard Elson, Imagerie

Yves Lafontaine, Productions Nova Média



CAMPAIGN NEWS

ADOPT A BELUGA

WELCOME AND ACKNOWLEDGEMENTS OF NEW SPONSORS

35 YEARS ALREADY!

In 2022 and 2023, six belugas and one narwhal (!) joined the “Adopt-a-Beluga” family. Launched in 1988 in Tadoussac at the International Forum for the Future of the Beluga, this unique funding campaign has raised over 1 million dollars for beluga research in the St. Lawrence. Beyond the incredible success of this fundraiser, every beluga adopted is a heartfelt gesture that connects families, businesses, students and citizen groups to the lives and the environment of St. Lawrence belugas.

Athletes, volunteers and the entire Béluga Ultra Trail team of Tadoussac joined forces to adopt their 2nd (“Trail”) and 3rd belugas (name TBD).

The agency Misa Tours International, which showcases Quebec and the St. Lawrence to tourists from all around the world, adopted DL9050, now known as “Sami.”

Pierre-Laurent Boullais and the Montréal gallery Pangée adopted DL9112 following a memorable visit to Tadoussac. DL9112 is still waiting for its new name!

Odile Jalbert adopted DL9096, which she named “Nêreus” after the Greek god of the sea nicknamed “Old Man of the Sea,” a gentle and caring deity.

Scouts in Pointe-Platon teamed up with students from high schools La Découverte de Saint-Léonard-d’Aston and Les Seigneuries de Saint-Pierre-les-Becquets to adopt DL3062, which has been named “Shipu CastaFjord.”

Surprise! A young narwhal also joined the “Adopt-a-Beluga” family through a collective adoption. Of all the names proposed, “Nordet” was the one ultimately chosen.

198 BELUGAS ADOPTED SINCE 1988

FOLLOW THEIR STORIES AT AdoptezUnBeluga.org



Part of the GREMM team in 2022...



and 2023

OUR TEAM'S ACHIEVEMENTS WOULD NOT BE POSSIBLE WITHOUT THE PASSION, CREATIVITY, AUDACITY AND DISCIPLINE OF OUR MEMBERS, AS WELL AS THE TRUST AND GENEROSITY OF OUR COLLABORATORS AND PARTNERS.

OUR COLLABORATORS

CAMPOBELLO WHALE RESCUE TEAM, CANADIAN WHALE INSTITUTE, CENTRE QUÉBÉCOIS SUR LA SANTÉ DES ANIMAUX SAUVAGES, ECCC ST. LAWRENCE CENTRE, EXPLORAMER, EXPLOS-NATURE, FACULTY OF VETERINARY MEDICINE, FISHERIES AND OCEANS CANADA, FJORD-DU-SAGUENAY NATIONAL PARK, GEORGIA AQUARIUM, JACQUES GÉLINEAU, MARINE ANIMAL RESPONSE SOCIETY, MARINE MAMMAL OBSERVATION NETWORK, MÉRISCOPE, MINGAN ISLAND CETACEAN STUDY, MYSTIC AQUARIUM, NEW ENGLAND AQUARIUM, OBSERVERS FOR THE "OBSERVATIONS OF THE WEEK" COLUMN, PARKS CANADA, RAINCOAST CONSERVATION FOUNDATION, RENAUD PINTIAUX, RENÉ ROY, SAGUENAY-ST. LAWRENCE MARINE PARK, SHEDD AQUARIUM, SOCIÉTÉ DES ÉTABLISSEMENTS DE PLEIN AIR DU QUÉBEC, UNIVERSITÉ DE MONTRÉAL, UNIVERSITÉ DU QUÉBEC À MONTRÉAL (ENVIRONMENTAL TOXICOLOGY RESEARCH GROUP), UNIVERSITÉ SAINT MARY'S (DEPARTMENT OF BIOLOGY), VOLUNTEERS OF THE QUEBEC MARINE MAMMAL EMERGENCY RESPONSE NETWORK, WHALE RELEASE AND STRANDINGS, WHALE STEWARDSHIP PROJECT, WOLASTOQIYIK WAHSIPEKUK FIRST NATION

OUR PARTNERS

AVENTURE ÉCOTOURISME QUÉBEC (1% FOR THE PLANET OUTDOOR FUND), BUSINESS OWNERS OF TADOUSSAC (AUBERGE DE JEUNESSE DE TADOUSSAC, BOULANGERIE À L'EMPORTÉE, CAFÉ L'ABRI CÔTIER, DOMAINE DES DUNES, HÔTEL LE PIONNIER, HÔTEL TADOUSSAC, LE GIBARD, LE GÎTE DU GOÉLAND, SOCIÉTÉ DES TRAVERSIERS DU QUÉBEC), CAFÉ KIBOIKOI, CAISSE POPULAIRE DESJARDINS, CANADA ECONOMIC DEVELOPMENT FOR QUEBEC REGIONS, CANADIAN HERITAGE, CANADIAN MUSEUMS ASSOCIATION, CITIZENS OF TADOUSSAC, ECO-WHALE ALLIANCE AND MEMBER COMPANIES (CROISIÈRES AML, SAGUENAY AVENTURES, CROISIÈRES ESSIPIT, NAVETTES MARITIMES DU FJORD, DUVETNOR), EMPLOI QUÉBEC, FÉDÉRATION DES CHAMBRES DE COMMERCE DU QUÉBEC, FISHERIES AND OCEANS CANADA, FONDATION DE LA FAUNE DU QUÉBEC, LE QUÉBEC MARITIME, MINISTÈRE DE L' ENVIRONNEMENT, DE LA LUTTE CONTRE LES CHANGEMENTS CLIMATIQUES, DE LA FAUNE ET DES PARCS, MINISTÈRE DE LA CULTURE ET DES COMMUNICATIONS, MRC LA HAUTE-CÔTE-NORD, MUNICIPALITÉ DE TADOUSSAC, PARADIS MARIN, PARKS CANADA, PRINCE ALBERT II OF MONACO FOUNDATION, SAGUENAY-ST. LAWRENCE MARINE PARK, SOCIÉTÉ DES ÉTABLISSEMENTS DE PLEIN AIR DU QUÉBEC, SPONSORS OF THE "ADOPT A BELUGA" CAMPAIGN, TOURISME CÔTE-NORD, TOURISME QUÉBEC