

Artificial Nesting Platform for the Common Tern in the Shediac Bay

**Prepared By:
Shediac Bay Watershed Association**



**Prepared For:
New Brunswick Wildlife Trust Fund**



December 2020

Acknowledgements

The Shediac Bay Watershed Association Board of Directors sends thanks to the numerous groups and individuals that contributed to making our programs a success again this year. In particular, the SBWA extends its appreciation to following individuals and organizations for their interest and involvement with the Shediac Bay Watershed Association to implement this project.



Shediac Bay Yacht Club



This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

TABLE OF CONTENTS

| | | |
|-----|---|----|
| 1 | Introduction - Tern Platform Project, Pointe-du-Chêne, NB | 1 |
| 1.1 | Nesting Platform Structure Evolution | 3 |
| 1.2 | Evaluating possible natural habitats in Shediac Bay | 5 |
| 2 | Tern Colony Nesting Surveys | 6 |
| 3 | Interpretation Panel | 8 |
| 4 | Hurricane Dorian – A Fresh Start | 9 |
| 4.1 | Debris Cleanup | 9 |
| 4.2 | New Raft Construction 2020 | 11 |
| 4.3 | Raft installation 2020 | 15 |
| 5 | Conclusion..... | 16 |
| | Annexe 1 – Tern Segment in “La Semaine Verte” | 17 |
| | Annexe 2 – News Coverages on the Tern Platform..... | 18 |

TABLE OF FIGURES

| | |
|--|----|
| Figure 1: Location of the SBWA nesting platform for the Common Tern, Pointe-du-Chêne, NB. | 2 |
| Figure 2: Original tern platform, 2014..... | 3 |
| Figure 3: Expanded platform with floating boat docks and added perimeters, 2015 | 4 |
| Figure 4: Tern platform with added predator guards, 2017 | 4 |
| Figure 5: New platform built in 2020 | 5 |
| Figure 6: Tern survey performed by SBWA staff, (photo June 2017) | 6 |
| Figure 7: Chart of nesting surveys on the SBWA nesting platform, 2014-2020..... | 7 |
| Figure 8: Image of tern platform interpretation panel installed in 2015..... | 8 |
| Figure 9: Sunny image of the location of 3 sections (arrows) in the upper marsh next to the walking trail. | 9 |
| Figure 10: Path we used to carry, drag, and winch demolished sections of old nesting platform | 10 |
| Figure 11: Location where staff deposited debris from last nesting platform section..... | 11 |
| Figure 12: Sections being rebuilt to produce a new nesting platform 2020 | 12 |
| Figure 13: Nesting platform sections floating before being attached together as one unit..... | 12 |
| Figure 14: Sections being towed from marina to work site beside walking trail | 13 |
| Figure 15: Sections with geotarp layer and nesting condos for the terns | 13 |
| Figure 16: Shows the platform anchored just off the walking trail at the start of the re-attachment of the predator guard task. | 14 |
| Figure 17: The platform was moved and temporarily anchored just off the sand bar | 14 |
| Figure 18: The platform was permanently anchored just offshore where it was before..... | 15 |

Abstract

The Shediac Bay Watershed Association (SBWA) has established an artificial nesting platform for the Common Tern (*Sterna hirundo*) seabird colony of the Shediac Bay. This project was made possible thanks to the support from Environment and Climate Change Canada and the province of New Brunswick. A first experimental platform was built in 2014, and with a successful couple fledging three chicks, continued with more funding to expand the platform in 2015. The second piece of the platform was built using boat docks, provided by the Shediac Bay Marina. The terns continued to adopt the platform to lay their eggs and raise their chicks. However, in 2016, a predator attack has brought the need for improvements to the structure. In 2017, predator guards made of sheet metal was installed to protect the nests from terrestrial predators from being able to climb aboard. Since this improvement, the project continues to be successful in terms of nesting by the tern colony. In September 2019, hurricane Dorian devastated the platform. The details of the cleanup and construction of the new platform, as well as the nesting survey results of each year the platform has been in operation can be found in this report.

Résumé

L'Association du bassin versant de la baie de Shédiac (ABVBS) a établi une plateforme de nidification artificielle pour la colonie sterne pierregarin (*Sterna hirundo*) de la baie de Shédiac. Ce projet fut réalisé grâce au support d'Environnement et Changement Climatique Canada, et de la Province du Nouveau-Brunswick. Une première plateforme expérimentale fut construite en 2014, et avec un succès d'un couple ayant élevé trois poussins, à continuer avec plus de financement pour agrandir la plateforme en 2015. La deuxième section de la plateforme fut construite en utilisant des quais flottants pour bateau, qui ont été fournis par la Marina de la baie de Shédiac. Les sternes ont continué à adopter la plateforme pour nicher et élevé leurs jeunes. Par contre, en 2016, une attaque d'un prédateur a prouvé le besoin d'avoir des améliorations à la structure. En 2017, des gardes anti-prédateurs faits à partir de tôle métallique ont été placés pour protéger les nids des prédateurs terrestres, les empêchant de pouvoir monter sur la plateforme. Depuis cette amélioration, ce projet continue à avoir du succès en termes de nidification par la colonie de sternes. En septembre 2019, l'ouragan Dorian a détruit la plateforme. Les détails du nettoyage et de la construction d'une nouvelle plateforme, ainsi que les résultats des inventaires de nidifications de chaque année d'opération de la plateforme peuvent être trouvés dans ce rapport.



1 Introduction - Tern Platform Project, Pointe-du-Chêne, NB

In 2014, the SBWA received funding to build an artificial nesting habitat for the Common Tern colony of the Shediac Bay, after their usual nesting area was remodeled. They had historically nested on the sunken barge that created a breakwater for the Shediac Bay Marina. While the colony had migrated down south, the marina removed the sunken barge and rebuilt the breakwater using large boulders, which was unfortunately not suitable for nesting. The SBWA was contacted by the Canadian Wildlife Service, and asked to take on a project to help the birds with an artificial nesting raft.

The SBWA found a contractor, the proper building materials, anchors, and a suitable location where a permanent raft could be installed with landowner permission. The platform was installed in the shallow estuary of Pointe-du-Chêne known as South Cove. The surrounding land is owned by the *Anglican Parish of Shediac*, and a partnership was created for this project. The raft was equipped with solar powered lights for nighttime safety and a navigation permit was granted.

The platform was filled with sand and gravel, and had triangle-style shelters for the chicks. For the first 2 years, tern decoys and a sound wailer programmed to play tern calls, were used to attract the birds. Even though the platform was installed late in the breeding season, it did attract one couple that laid a nest and fledged 3 chicks. Considering the difficulties in making this project happen in a short period of time, one nest was considered to be a great success and encouraged the continuation of this project.

In 2015, more funding was received and boat docks were donated by the Shediac Bay Marina to build a bigger and better platform. Again, using the tern decoys and a sound wailer, the artificial habitat attracted more common terns who adopted the structure for nesting. That year, 41 nesting couples laid a total of 100 eggs.



In 2016, even more birds returned to the platform, without the need for decoys or sound wailer. The survey showed 75 nesting couples had laid a total of 135 eggs. Unfortunately, only 2 weeks after the survey was done, a predator attacked the eggs and devastated the colony. It is assumed that during an extreme low tide, a predator, such as a raccoon or a muskrat, was able to gain access to the platform by climbing up on a corner that had beached. Several nests were destroyed, and with the subsequent departure of many adults, other nests were also abandoned. Only a dozen or so birds were seen to have remained on the platform in the attempt to save their chicks. There is no data on the number of chicks that may have succeeded that year.

In 2017, new funding was received by the New Brunswick Wildlife Trust Fund for the construction of predator guards. These predator guards are only effective against terrestrial predators, to prevent them from climbing aboard. The group of returning birds was a bit smaller than 2016, with 50 nesting couples laying a total of 99 eggs. This year was another success, with no predation on the platform.

The project continued with success in 2018 and 2019. In September 2019, hurricane Dorian hit the east coast of New Brunswick and unfortunately destroyed the tern platform. The SBWA was able to receive new funding to rebuild the nesting platform in time for the arrival of the colony in the spring of 2020. The present report summarizes the activities and results of the nesting platform for the tern colony of the Shediac Bay.

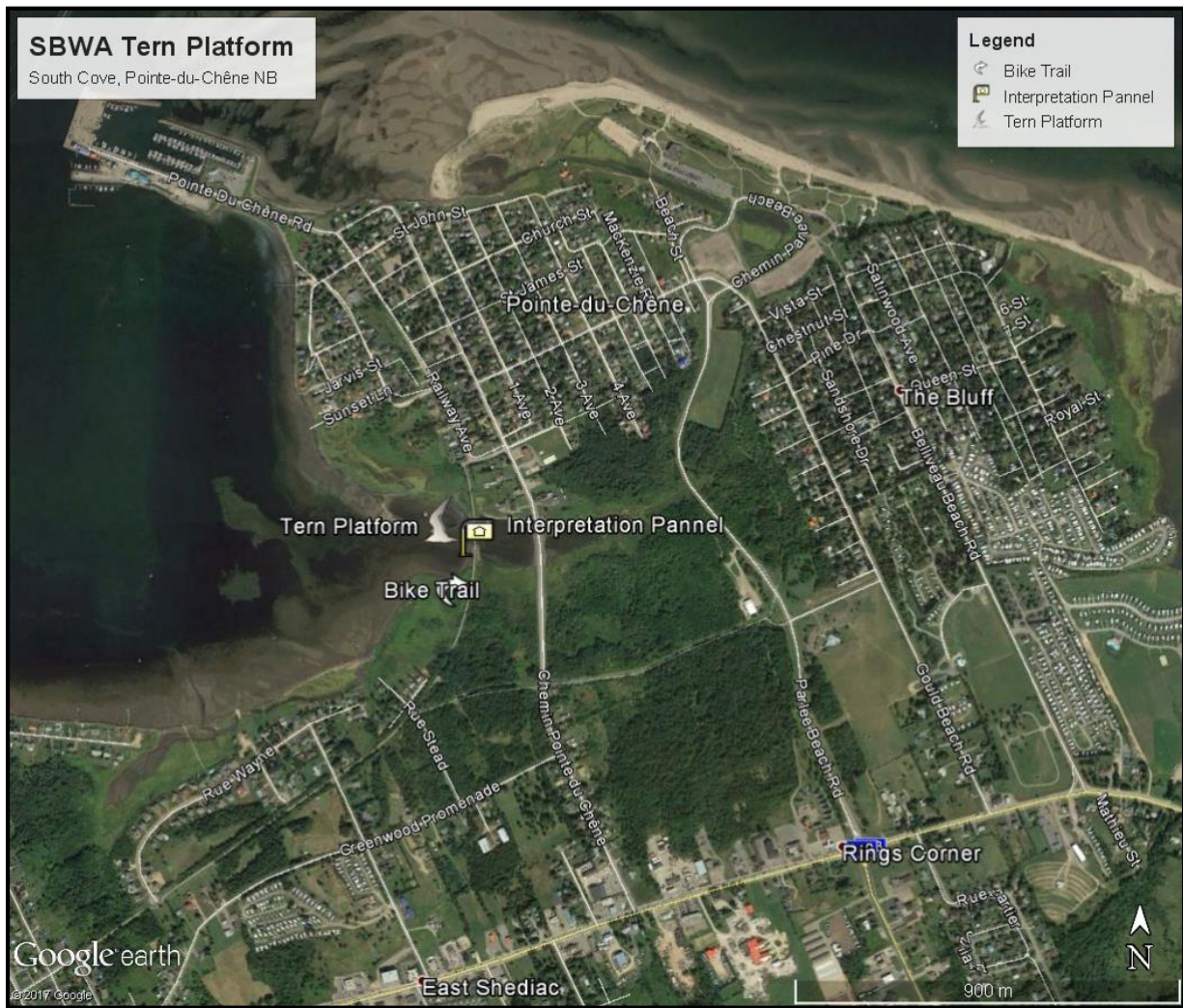


Figure 1: Location of the SBWA nesting platform for the Common Tern, Pointe-du-Chêne, NB.

1.1 Nesting Platform Structure Evolution

The tern platform project has evolved since it's beginning in 2014. The original was built by a contractor and equipped with 55-Gallon plastic barrels for buoyancy. In 2015, floating docks were donated by the Shediac Bay Marina and were used to expand the platform. Borders made of 1x4 inch boards were constructed around the perimeter, to keep the gravel and sand on the rafts and add security.

In 2017, predator guards were added following a devastating predator attack in 2016. The predator guards are designed to prevent any terrestrial predators from climbing up on the raft and reaching the nests. The predator guard was designed according to guidelines of the Common Tern Nesting Raft – A Construction Guideline by the Toronto and Region Conservation Authority. Metals Guards are attached around the whole perimeter with the outward facing bend at approximately 45 degrees.

In September 2019, hurricane Dorian destroyed the platform. In the Spring of 2020, the structure was rebuilt (see section 4).



Figure 2: Original tern platform, 2014



Figure 3: Expanded platform with floating boat docks and added perimeters, 2015



Figure 4: Tern platform with added predator guards, 2017



Figure 5: New platform built in 2020

1.2 Evaluating possible natural habitats in Shediac Bay

The artificial nesting platform is not big enough to support the number of birds at the historical colony of the Shediac Bay Marina. The 2019 Wildlife Trust Fund proposal also included evaluating potential tern habitat in the region of Beaubassin-Est with the Canadian Wildlife Service and Nature Conservancy Canada. Unfortunately, because of the COVID-19 pandemic, the CWS biologist was unable to organize field outings in 2020. This evaluation is planned for 2021 in the aims to establish a new colony if feasible.

2 Tern Colony Nesting Surveys

Every year around the second or third week of June, a 1 to 2-person survey is conducted aboard the floating raft to count the number of eggs and nests. The survey is a simple visual count of each nest, and is performed in a quick timeframe of 2-5 minutes, to minimize disturbance and stress to the birds. There is no data on the number of successful fledge chicks, although the success rates are expected to be in the 85-90%.



There has been a successful rearing of chicks each year of this project, with the exception of 2016, when a predator attack devastated the nests on the platform. In 2016, the majority of the colony abandoned the platform following the attack, leaving viable eggs and about a dozen couples to defend their remaining nests. It is unknown whether or not there were fledged chicks that year.

In 2017, predator guard were added to the platform to defend against terrestrial predator who might be able to swim and climb aboard the platform. The platform slowly regained the trust of the colony thereafter. The following tables contain the summary results of the productivity of nesting couples who've adopted the platform since 2014.



Figure 6: Tern survey performed by SBWA staff, (photo June 2017)

Table 1: Result of the nesting surveys on the SBWA artificial nesting platform, 2014-2020

| Survey Year | # Nest | # Eggs | # Nests per Clutch Sizes & Ratio (%) (Number of eggs per nest) | | | | |
|-------------|--------|--------|---|---------------|----------------|--------------|-------------|
| | | | 1 | 2 | 3 | 4 | 5 |
| 2014 | 1 | 3 | 0 | 0 | 1 (100%) | 0 | 0 |
| 2015 | 41 | 100 | 10 (24.4%) | 4 (9.8%) | 26 (63.4%) | 1 (2.4%) | 0 |
| 2016 | 75 | 135 | 37 (27.4%) | 17 (25.2%) | 20 (44.4%) | 1 (3.0%) | 0 |
| 2017 | 50 | 99 | 13 (13.1%) | 25 (50.5%) | 12 (36.4%) | 0 | 0 |
| 2018 | 167 | 339 | 53 (31.7%) | 60 (35.9%) | 51 (30.6%) | 2 (1.2%) | 1 (0.6%) |
| 2019 | 148 | 216 | 9 (6.2%) | 21 (14.5%) | 115 (79.3%) | 0 | 0 |
| 2020 | 216 | 388 | 23 (10.6%) | 42 (19.5%) | 130 (60.2%) | 20 (9.2%) | 1 (0.5%) |

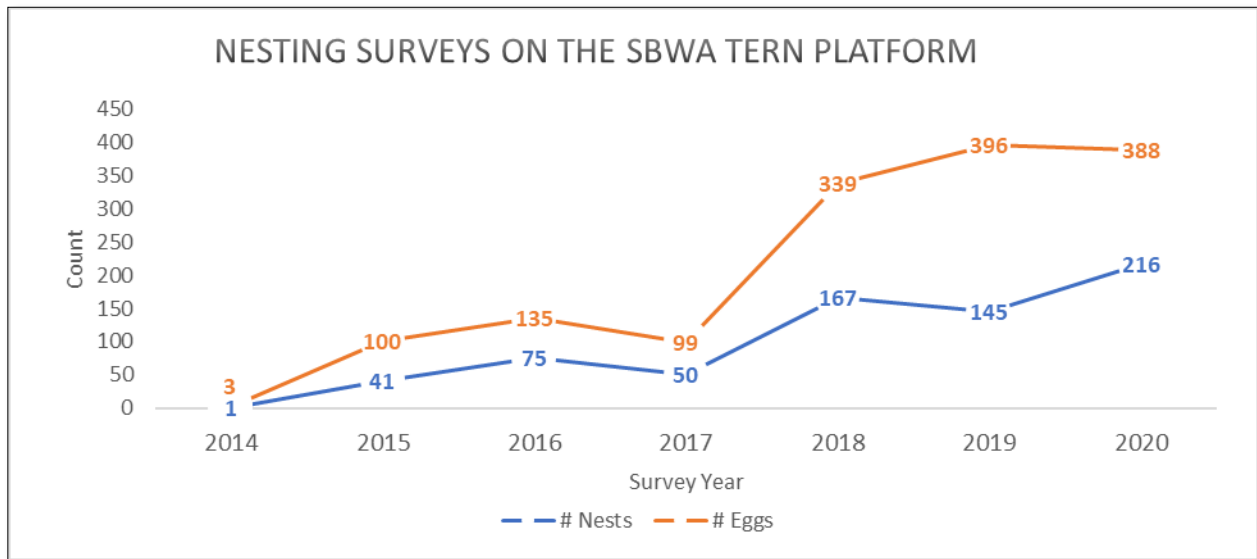


Figure 7: Chart of nesting surveys on the SBWA nesting platform, 2014-2020

3 Interpretation Panel

An interpretation panel was designed and installed on the bike trail adjacent to the platform location. It was created to explain the project and promote funding partners to passersby and people taking a rest on the park bench. The sign was produced the first year of the project. The WTF logo is added to the current version of the sign.



Figure 8: Image of tern platform interpretation panel installed in 2015

4 Hurricane Dorian – A Fresh Start

The nesting platform was anchored in the water when hurricane Dorian unleashed its effects in Shediac Bay on September 9, 2019. The storm surge caused a number of vessels at the Shediac Bay Yacht Club to be tossed into the corner of the marina, some out of the water and onto the shore. The storm surge was extensive and caused the platform to reach the end of its anchor lines and dislodge the sea anchor, and break the support board from the platform on the opposite side. The raft broke apart and was swept to the opposite shore and deposited at a considerable distance into the upper intertidal marsh.



Figure 9: Sunny image of the location of 3 sections (arrows) in the upper marsh next to the walking trail.

4.1 Debris Cleanup

After the storm, it was determined it was our responsibility to disassemble and remove all parts of the raft sections. This took several months, as pieces had to be broken down and brought to shore. The Town of Shediac was more than helpful in allowing us access to the trail with our truck and 4-wheeler, and helped to dispose of the debris. Nails and screws were removed from decking after buckets of gravel were collected off the top of the raft and brought ashore. We loaded wood and pieces in tote boxes and used the winch on the 4-wheeler to drag them across the marsh. Only one trail of disturbance was used for all the removal.



Figure 10: Path we used to carry, drag, and winch demolished sections of old nesting platform

After removing all the pieces from the platform, they were moved by truck and piled farther up the walking trail at an intersection where a truck from the Town of Shediac was able to access and load for removal. This process was repeated for a section that was by itself farther up the beach. It should be noted that the first section we dismantled and left for recycling and removal were stolen the night after we stacked it next to the trail. We did not let that happen again as we removed and stored recoverable materials after a day's work.



Figure 11: Location where staff deposited debris from last nesting platform section

After taking the nesting platform apart, we trucked debris to a location where the Town of Shediac trucks came and hauled away the debris. Notice the snow on the ground at the end of the clean-up in November 2019.

4.2 New Raft Construction 2020

When spring arrived, plans were made to secure materials for construction of a new nesting platform. After the hurricane, there was considerable damage to dock sections at the Shediac Bay Marina. The management generously provided damaged sections to SBWA along with the appropriate floatation sections. The Town of Shediac provided the logistics to get the damaged sections to the back-parking lot near the office. This involved loading at the marina and unloading at the SBWA office location, in the parking lot of *Time 2 Shine & Maximum Signs*. The sections had to be modified and repaired to get back to a length of 24 feet. This involved adding an approximate 2-foot section or more to each section and bolting on a reinforcing 2 x 6.

We used a portable generator and power tools to remove nuts and bolts, to drill new holes and to countersink bolt heads. This was necessary to match up the predator guard dimensions. Extra damaged sections of dock were salvaged for the extension sections. Bolts and nuts were recycled and used for the extensions. Altogether, 4 sections were constructed of identical 24-foot length. Because of COVID restrictions in the spring, this was accomplished by basically one person with limited help from the technician. We also used the truck to drag sections into place, pry bars to place in final position and clamps to hold *in situ* for attachment.



Figure 12: Sections being rebuilt to produce a new nesting platform 2020

After completion, the town provided a flatbed and front-end loader to load and transport the completed sections to the slip at the Point du Chene marina on May 4th.



Figure 13: Nesting platform sections floating before being attached together as one unit

Two days were needed to attach the sections together. This new raft was considerably stronger and more modern than the last raft and was also made from recycled parts.



Figure 14: Sections being towed from marina to work site beside walking trail

The raft was towed around the wharf and down to the inner section of beach where the walking trail and interpretive sign are located. Final work was done from shore near to where we would anchor the raft. This stage of preparation always involved waders, moving the raft around and in and out with the tide. The next step was to cover the entire raft with textile geotarp and staple it down.



Figure 15: Sections with geotarp layer and nesting condos for the terns

After the geotarp was secured, the bird condos as we call them were attached. The birds use them to get cover from the elements; otherwise they nest in the open spaces.



Figure 16: Shows the platform anchored just off the walking trail at the start of the re-attachment of the predator guard task.

The next task was to reattach the predator guard. We salvaged sections from land and some from the water the previous fall. One new section had to be purchased. We installed a short door to one corner of the new section, and a small wooden ladder for easier access to get up on the platform to perform the nesting surveys.

A truckload of correct sized gravel was purchased and transferred to the platform, using the trail as an access point. The gravel was shovelled into buckets and carried onto the raft. To make the most ideal nesting substrate, the gravel was thinly spread over the sand. This was the last step in completing the raft preparations for the bird return.



Figure 17: The platform was moved and temporarily anchored just off the sand bar

4.3 Raft installation 2020

The final step was to settle and screw in two 50-pound anchors on sufficient line to allow for tidal fluctuations. They point out the final location quite clearly at low tide where the raft still floats just beyond the low tide mark. And if you look closely, you will see the birds arriving the day after we secured the raft to its final location. This was on schedule on May 15th, 16th as in previous years.

Once the birds completed their nesting season and left for their migration back to their winter habitats, we went out and screwed the anchors in deeper and added a third line to a shore anchor. The plan this year is to leave the raft at this location, let the ice freeze around it and hope for no severe storms to remove the raft. At the time of this report, no fall storms affected the raft's integrity.



Figure 18: The platform was permanently anchored just offshore where it was before.

5 Conclusion

Thanks to the contribution of various partners, the SBWA has been able to provide an artificial nesting habitat for the Common Tern colony of the Shediac Bay. This project has received some media coverage since its beginning; CBC News, Times and Transcript, Telegraph Journal, and a segment featured in a documentary film on terns by “La Semaine Verte”.

Since the addition of the predator guards, the SBWA has significantly increased the success rate of the nesting colony. The Association has demonstrated resiliency in the wake of a devastating storm that sent this project back to the starting line. The Shediac Bay Yacht Club has been an invaluable partner during the course of this project.

The SBWA is committed to the yearly maintenance of the raft and the collection of nesting data. Nesting survey results are shared every year with the Atlantic Canada Seabird Working Group, to help monitor the tern population in the Shediac Bay.



Annexe 1 – Tern Segment in “La Semaine Verte”

The documentary series “La Semaine Verte” covered the story of the SBWA’s tern platform project, on October 22, 2016. A snapshot of the segment can be found here:

<http://ici.radio-canada.ca/tele/la-semaine-verte/2016-2017/segments/reportage/9979/sternes-pierregarin>



Annexe 2 – News Coverages on the Tern Platform

CBCnews | New Brunswick

LIVE NB More Streams
Radio One
Listen Live

Home Opinion World **Canada** Politics Business Health Entertainment Technology & Science Video

Canada NB

Shediac group aims to relocate colony of common terns

Shediac Bay Watershed Association hopes a new platform will encourage the terns to stay in the area

CBC News Posted: Jun 03, 2014 8:18 AM AT | Last Updated: Jun 03, 2014 8:18 AM AT



Rémi Donelle, the manager of the Shediac Bay Watershed Association, looks at a new platform that the group hopes will keep a colony of common terns in the bay. (Tori Weldon/CBC)

Stay Connected with CBC News

Mobile Facebook Podcasts Twitter Alerts

ADVERTISEMENT

Weather

Severe weather warnings or watches in for:

Miscou Island Point Lepreau Saint Andrews Tracadis
Bas-Caraquet Grand Manan Saint John Bathurst G
Dahousie Charlo

Fredericton Saint John Moncton Bathurst



Times & Transcript

ONE GOOD 'TERN' DESERVES ANOTHER
Published June 20, 2015

Nelson Poirier

As many of us flock to our coastline beaches this summer, we will be able to take note of a unique member of Mother Nature's avian community – the common tern.

The casual observer may tend to confuse the tern with the gulls, but a closer look shows there is a world of difference between our three common larger gulls and the terns. The tern is an absolute "fishaholic" and would never consider taking French fries or a morsel of hot dog from a beach picnic.



JOLYNE HEBERT PHOTO – The floating platform in this photo is still essentially a prototype however as can be seen from the tern activity above it, it has been "tern approved" as a suitable site for a nesting colony for a species in need of assistance.




PUBLICATIONS | HOME | NEWS - BUSINESS - SPORTS - OPINION - ENTERTAINMENT - LIFE - ARTS - OBITUARIES | ARCHIVES | LOGIN

ENVIRONMENT

A small bird at the heart of a big battle

JOHN CHILIBECK | Legislature Bureau
May 13, 2016

Share this article [f](#) [t](#) [h](#)



Related

A small bird at the heart of a big battle
1 year ago

NATURESCOPE COLUMN: One good 'fern' deserves another
2 years ago

Editorial: Collaborative effort could help preserve N.B. wildlife
1 year ago

Don't blame boaters for Shediac Bay pollution: yacht club manager
3 months ago

CBCnews | New Brunswick

LIVE NB More Stream
Radio One
Listen Live

Home | Opinion | World | Canada | Politics | Business | Health | Entertainment | Technology & Science | Video

Canada NB

Common terns return with the help of Shediac group

Group says tern colony is rebuilding after a devastating predator attack last summer

By Olivia Chandler, CBC News | Posted: Jul 28, 2017 11:32 AM AT | Last Updated: Jul 28, 2017 1:12 PM AT



Jolyne Hébert, an environmental technician with the Shediac Watershed Association, says the local tern colony is making a comeback after nests were destroyed last year by an unknown predator. (CBC News/Olivia Chandler)

Stay Connected with CBC News

Mobile | Facebook | Podcasts | Twitter

ADVERTISEMENT

FEEL THE Heat

2017 T
Selling P
9
on s

LEGAL

Build yours now



Common terns flock to Shediac Bay in record numbers

Kate Letterick 2020-07-20



© Kate Letterick/CBC News Jolyne Hebert is a project co-ordinator with the Shediac Bay Watershed Association. She says the common tern is an important part of the ecosystem in Shediac Bay.

When Jolyne Hebert goes to survey the number of common terns nesting on an artificial platform in Shediac Bay, she takes precautions.

Hebert says the migratory seabirds are territorial and very protective of their nests.

She wears a hat, raincoat and chest waders and tries to do her count as quickly as possible.

This year, the number is bigger than ever.

← Ads by
[Stop se](#)
Why t