

# Annual Report 2015-2016

## MESSAGE FROM THE CHAIR OF THE BOARD OF DIRECTORS

On behalf of the Board of Directors, committees, management, and staff of the Huntsman Marine Science Centre, welcome to our 2015 – 2016 Annual Report. Again this year the beautiful picture on the front cover depicts just one aspect of the Bay of Fundy. The environments and people of this area have inspired our research, education, and outreach work for over 45 years.

Every year the Huntsman serves as a key player in the cluster of world-class marine and coastal expertise that exists in Southwest New Brunswick. Our results in 2015 – 2016 are another demonstration of this role, as we conducted programs and projects in partnership with the universities and schools, the private sector, conservation organizations, community groups, international bodies, and all levels of government in Canada. Together with our own work, these combined activities provided over \$4 million in economic output and supported over 40 full time high skilled employees.

Based on solid foundations, the Huntsman looks forward to the coming years of responsible and sustainable operations. Please join us as we continue on this inspired journey.

## MESSAGE DU PRÉSIDENT DU CONSEIL D'ADMINISTRATION

Au nom du Conseil d'Administration, des comités, de la direction, et du personnel du Centre des Sciences de la Mer Huntsman, bienvenue à notre rapport annuel de 2015-2016. Encore une fois cette année, la superbe image sur la page couverture nous démontre juste un aspect de la baie de Fundy. Les environnements et les gens de cette région nous ont inspiré dans nos recherches, nos projets d'éducation et nos travaux communautaires pour plus de 45 ans.

Chaque année, le Huntsman joue un rôle crucial parmi le groupe d'experts mondial qui existe à travers le sud ouest du Nouveau-Brunswick dans le domaine marin et côtier. Nos résultats de 2015-2016 sont une démonstration additionnelle dans ce rôle, alors que nous avons dirigé des programmes et des projets en partenariat avec les universités et les écoles, le secteur privé, les groupes internationaux, et tous les niveaux de gouvernement au Canada. Ensemble avec nos propres travaux, ces activités conjoints ont fourni plus de \$4 millions à l'économie et ont supporté plus de 40 emplois à temps plein pour des employés hautement qualifiés.

Basé sur des fondations solides, le Huntsman anticipe des années à venir pleines d'opérations responsables et durables. S.V.P. Veuillez vous joindre à nous alors que notre chemin inspiré continue vers l'avant.

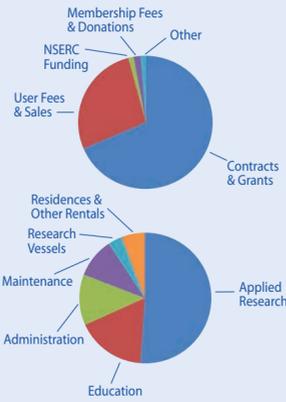
## FINANCIAL SUMMARY

As a federally registered not-for-profit charitable organization, the Huntsman is dependent upon many entities (members, universities, schools, private enterprise, government agencies, foundations, and donors) to sustain our marine research, applied science, public outreach, and education facilities and services. The governance and management teams of the Huntsman strive to ensure that operational revenues exceed expenses on an annual basis, that the balance of assets over liabilities remain strong, and that overall the organization remains financially viable going forward.

2015-2016 saw the Huntsman deliver a third consecutive surplus, with revenues in the Operating Fund of \$4,045,822 and expenses of \$3,834,228. This outstanding achievement resulted from contributions from all aspects of the Huntsman. As always, this surplus is totally re-invested back into the Huntsman. This provides significant confidence in the sustainability of the organization going forward.

### Financial Summary Operating Fund

	2015-2016	2014-2015
<b>Revenues:</b>		
Contracts and Grants	\$ 2,773,879	\$ 2,241,201
User Fees and Sales	1,101,422	1,038,311
NSERC Funding	51,310	22,109
Membership Fees and Donations	66,351	72,442
Other	52,860	73,092
	<b>\$ 4,045,822</b>	<b>\$ 3,447,155</b>
<b>Expenses:</b>		
Applied Research	1,957,925	1,548,750
Education	656,756	662,414
Administration	488,162	435,927
Maintenance	377,392	379,665
Research Vessels	136,704	175,720
Residences & Other Rentals	217,289	234,666
	<b>\$ 3,834,228</b>	<b>\$ 3,437,142</b>
	<b>\$ 221,594</b>	<b>\$ 101,013</b>



## OUR VISION

To design and deliver the highest quality marine research and education programs and to convey these to our Communities in support of sustaining the marine environment and the marine economy.

## OUR MISSION

Inspiring stewardship through:

- ~ The engagement of the Community in the discovery of the Oceans;
- ~ The design and delivery of inspirational educational experiences; and
- ~ The advancement of marine sciences through collaborative research and the development of innovative technical solutions for our public and private sector partners.

## BOARD OF DIRECTORS 2015-16

Chair .....	Mr. Fraser Walsh
Vice-Chair Finance and Administration .....	Mr. Bruno Del Bel
Vice-Chair Development .....	Mr. Paul Leger
Vice-Chair Research .....	Dr. Heather Hunt
Vice-Chair Education, Past Chair of the Board .....	Dr. Fred Whoriskey
Chief Executive Officer .....	Dr. Jamey Smith
Chair, Advisory Board .....	Mr. Tony Mais
Director .....	Dr. Robert MacKinnon
Director .....	Mr. Dan MacPhee
Director .....	Dr. David Burns
Director .....	Mr. William Thompson
Director (ex-officio) .....	Ms. Lara Cooper
Director (ex-officio) .....	Ms. Kathy Brewer-Dalton

## DR. AMBER GARBER RECEIVES THE R3 AWARD



The highlight for the fiscal year came on 23 March 2016 when Dr. Amber Garber was honored by receiving the New Brunswick R3 Innovator Award for her scientific leadership in the Atlantic salmon selective breeding program at the Huntsman. Working alongside our industry partner – Northern Harvest Sea Farms – the broodstock program is focused on traits of commercial importance such as survival, incidence of deformities and early sexual maturation, bacterial kidney disease and sea lice resistance, performance in commercial settings, and product quality at harvest such as fillet yield and colour. Tremendous gains have been made to date including a 26% increase in growth over one generation.

## AQUATIC SERVICES

Fiscal year 2015-16 was definitely one for the ages within the Huntsman Aquatic Services Department! We continued our efforts to diversify our client base and further implement internationally recognized Good Laboratory Practices and Good Clinical Practices. Aquatic Services staff was involved in implementing 28 projects during the 2015-16 fiscal year.

Huntsman Aquatic Services established the New Brunswick Innovation Research Chair in Aquatic Biosciences in July 2015 with a focus on fish health research, and welcomed Dr. Duane Barker to our staff in this role. This has already resulted in additional specialty sea lice studies and projects involving novel infection and treatment models for other pathogens within our portfolio.

Our efforts in environmental toxicology research continue to determine the effects of numerous compounds – such as pharmaceuticals, petroleum products and dispersant – in separate projects on a suite of species. Atlantic salmon eggs and yolk-sac fry, adult and juvenile American lobsters and Atlantic cod early life stages – more projects and species are planned for next year.

We were pleased to maintain our core of highly trained and dedicated technical staff and anticipate adding additional research and technical staff in the next fiscal year based on our successes to date that build on a solid reputation to conduct professional world-class third-party research. Our technical staff implemented all of the projects listed and continued to support ongoing efforts on our campus including:

- Several private companies continued to use our facilities as an incubation space to advance their proprietary efforts related to fish nutrition, health management and cryopreservation.
- The Huntsman Fundy Discovery Aquarium continued to use our technical skills to maintain its Life Support Systems and husbandry of numerous aquatic species.
- University researchers used our expertise and facilities to support student research activities.
- Our technical capacity assisted four Canadian Small and Medium Enterprises assess and overcome constraints to their success.

This year also saw significant investments into Aquatic Services research and infrastructure capacity:

- Renovations to the Christofo Research Laboratory to provide greater biosecurity, confidentiality and controlled access to meet the needs of various regulatory bodies and Good Laboratory Practices thereby facilitating our studies and animal transfers. Specific renovations to date have resulted in a dedicated Processing Lab, Biological Lab, Chemical Lab, Microscopy Lab, staff Gear Room and separate Documents and Samples Archives. These investments were possible through leveraged Huntsman funding with ACOA-ICF and NBIF.
- Complementary research equipment was purchased to effectively use our renovated spaces including necropsy table, biological safety cabinet, bacteriology incubators, autoclave, sperm density photometer and Minolta chromameter to quantify color. These investments were funded by ACOA-AIF, NBIF and Huntsman.



## OPERATIONS

2015-2016 was yet another busy year for the Operations group, which is composed of two divisions, maintenance, and vessels.

One of the projects taken on by the maintenance crew included extensive refurbishment of the interior of the Christofo Lab. The individual labs were refinished with a non-porous product so as to be able to be completely disinfected. Many of the labs had major plumbing modifications tailored to the projects which were housed within.

Plumbing modifications were also performed in the Small Field House, coinciding with experiments being either initiated or terminated.

On the Upper Campus, another notable project was taken on to renovate and transform the UNB apartment in South Hall into a student lounge/ common area. This involved completely gutting the unit and rebuilding the interior to a more modern look.

The Fundy Spray had another extremely busy year, continuing on with projects initiated in the last few years. The vessel completed numerous survey projects, equipment deployment, retrieval, and sampling cruises for a variety of clients. The vessel participated in field projects with various students and researchers from the University of New Brunswick.

Congratulations goes out to Gary Libby, who successfully completed his Transport Canada certification to operate the Fundy Spray as Captain. Gary will join Captain Brian Lord to provide Huntsman with two certified captains to operate the vessel, and offer increased flexibility to serve our clients.



## ATLANTIC REFERENCE CENTRE (ARC)

The Atlantic Reference Centre is a Huntsman-Fisheries & Oceans Canada partnership with a focus on biodiversity and environmental research supported by its research museum of Canadian Atlantic marine life. Contract and grant funded research, processing of biological samples, specimen identification, and provision of scientific information, advice, and training are the livelihood of the ARC. In 2015-16 services were provided to 7 government agencies on 25 occasions, 13 universities and schools on 22 occasions, and to a wide selection of museums, research institutions, NGOs, industry, and the public.



Importantly, the capacity of the ARC has been enhanced through the addition of two more technicians, bolstering lab staff to six to meet increasing service demands, and the search for a new ARC research scientist was also successfully completed. We look forward to Dr. Claire Goodwin joining our team early next year.

Notable project work included the characterization of the marine plankton community in the Canadian Arctic from a potential Marine Protected Area (MPA) in the Amundson Gulf (NW Territories); identification of benthic animals from the existing MPA of Musquash, NB and planned MPA in the Laurentian Channel; identification of juvenile fishes from the Arctic Beaufort Sea and Gully MPA off Nova Scotia; for monitoring purposes, the identification of plankton from Newfoundland and Arctic Hudson Bay waters and benthos from waters off Nova Scotia; a study on the zooplankton community structure in Passamaquoddy Bay; the evaluation of benthic far-field and site recovery effects from aquaculture in the lower Bay of Fundy; and two environmental assessment studies for an international commercial client. Four visiting researchers utilized ARC collections, facilities, and expertise.

## PUBLICATIONS

Wilson, B. M. and G. W. Pohle. 2016. Northern range extension of the American talon crab, *Euchirograpsus americanus* A. Milne-Edwards, 1880 (Decapoda, Grapsoidae, Plagusidae), to the Bay of Fundy, Canada. *Crustaceana* (in press Jan. 2016).

Murray, H.M., S.J. Hill and K.P. Ang. 2016. (in press). The external morphology of adult female *Argasius labracis* as shown using hexamethylsilazane treated uncoated specimens for Scanning Electron Microscopy. *Microscopy Research and Techniques*.

Hogans, W.E. (in review). *Argulus alosae* and *Argulus stizostethi* (Crustacea: Branchiura) parasitic on Shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (*Acipenser oxyrinchus*) in the Saint John River, New Brunswick, Canada. *Can. J. Zool.*

## RESIDENCES AND FOOD SERVICE



Huntsman Residences, located on the Upper Campus, is the hub for accommodating a wide variety of visiting students, researchers, meeting guests and hosting intimate special events and workshops. Guests who come to stay in one of the 20 executive style rooms at Anderson House are overtaken with the historic charm of the building, the picturesque view of the St. Andrews Harbour, Passamaquoddy Bay and the Algonquin Golf Course. The various apartments offer self sufficient accommodations for extended stays. Needle Hill

is home-away-from-home to many students, some who experience 'dormitory-style' accommodation for the first time. The Food Service Group caters both on and off campus, with customized packages that include coffee breaks, breakfast and lunch to hors d'oeuvres and entrées.

Huntsman is pleased to welcome Pam Shaw to the position of Manager of Residence and Food Service. Pam accepted the position in March 2016 and has some 30 years experience in the hospitality and food service industry, and has become a well-known restaurant and catering service owner/operator in the St. Andrews area.

## AQUARIUM



Your Aquarium saw another leap in visitors this fiscal year, up 19%, with just over 34,000 visitors. An additional 450 complimentary passes were also collected at the door.

We launched our first broadcast television advertisement for four weeks over June and July, and the Young Explorer Day Camps were also captured on CTV Atlantic for three television segments. A new mobile friendly website was also launched.

A partnership with Minister's Island resulted in sharing a storefront at Market Wharf in downtown St. Andrews; this provides Huntsman a presence in the core of the town. Our Mascot and the traveling touch tank are popular at many community events – allowing Huntsman to inspire stewardship by educating the public about the marine life in our own backyard.



We are pleased to welcome Cynthia Callahan as Manager of the Huntsman Fundy Discovery Aquarium, Cynthia accepted the position in March 2016, and brings over 16 years of professional experience to this role, most notably as an Interpretive Naturalist and Conservation and Education Lead with a leading public aquarium in the United States.

## PUBLIC EDUCATION AND OUTREACH



The Education Department delivers engaging, hands-on marine biology camps and programs, year-round, to a wide variety of students from Kindergarten, High School and University to Homeschoolers and Road Scholars.

Most of the Education department's schedule is set a year in advance, as schools book early to guarantee their regular dates each year. A large portion of schools come from the Ontario area and are on campus for up to five days.

Our yearly Young Explorer Summer Day Camp and March Break Camp saw an average of 16 kids per day! And our partnership with the Dragonfly Centre for Autism and NBCC Human Resources allowed us to launch the first multi-day Marine Experience for Autistic Youth Program.

The Road Scholars program, a Two Nation Vacation initiative brought to Huntsman through planning with the Province of New Brunswick, hosted two programs with us. One program focused on biology and the other on golf with a marine biology "twist".

Reba McIver joined Huntsman for a term position as Marine Debris Coordinator in 2015. With a program goal of reducing garbage in the Bay of Fundy, databases were collected from Bay of Fundy stakeholders and marine debris clean up initiatives were implemented.

We acknowledge the support from the Living Environmental Studies Foundation for the "Ocean Discovery Program" which allowed 1240 Grade 6 students from 54 classes to attend the program. Also Ganong Bros. provided support for the "Creatures in Your Marine Backyard" program for 211 Grade 4 students in 10 classes.

A NSERC PromoScience grant helps support all of the education department activities and we were the subject of a short promotional video for them that was released on YouTube in spring 2016. We were also invited to participate at PromoScience event the Museum of Nature's "Waterscapes" at the Moncton Museum.

## UNIVERSITIES

As a university field station, Huntsman provides all-inclusive opportunities for a variety of unique multi-day courses.

The Virginia Military Institute offered a Marine Mammals and Seabird course at the Huntsman for the first time in 2015. The students really enjoyed the relaxed Huntsman atmosphere which was so different than their usual daily routine. They didn't have to make their beds and they could have seconds at every meal, which endeared them to the ladies in the kitchen!

The four regular two-week credit courses were full or close to full: University of Waterloo Marine Mammals & Seabirds, U. of Guelph Marine Biology & Oceanography, McGill U. Marine Mammals and U. of Western Ontario Marine Biology. Mount Allison U., U. de Moncton and the U. of New Brunswick ran shorter field courses for botany, geology and marine biology on campus.

After a necropsy performed by the University of Waterloo Marine Mammal and Seabird students, an adult Harbour Seal is now occupying the 'pit' to which the baby Harbour Seal from last summer has been removed. The baby seals bones were clean, but in many pieces due to the young age of the animal as some bones had not yet fused together properly.

## BIRD BANDING

The St. Andrews Bird Banding Station, the only one of its kind in the Maritimes, has been banding songbirds on the Huntsman grounds for 26 years. A total of 23,729 birds of 101 species have been banded. White-throated Sparrow (2019), American Goldfinch (1625) and Black-capped Chickadee (1495) are the most commonly banded species.



The fall migration has become the main project for the Station. Supported by the New Brunswick Wildlife Trust Fund, qualified banders are hired to open the mist nets on a daily basis. There are not as many birds as there used to be. The birds per 100 net hours of effort have fallen from a high of 57 in 2001 to 19 in 2015.

The Bird Banding Station has seen many changes over the years – the once semi-open local fields are now grown up and the deer population has increased tenfold, often causing major damage to the nets. Birds keep adapting to these changes and the Station will continue to open its nets daily in the fall to teach students about the importance of banding data.

## LOBSTER AND SALMON ACADEMIES



Lobster Academy™ and Salmon Academy™ are not for profit organizations with a mission focused on increasing the sale and value of seafood worldwide. The Academies provide a unique learning opportunity at Huntsman for seafood buyers, importers and opinion leaders from around the globe. We are pleased to host the Academy sessions, which include accommodation, meals, meeting and lecture space. The curriculum involves lectures, training, field tours, food

handling, preparation and food cost seminars. These Academies have graduated hundreds of 'students' who often return to St. Andrews with their families, after appreciating the warm hospitality and charm that our beautiful region has to offer.

## DEVELOPMENT

The past year was another busy one for the Development team at Huntsman, with several initiatives bringing significant benefits to the organization.

With the generous support and partnership from the Rossmount Inn and NBCC Hospitality and Tourism, Huntsman hosted a five course sustainable seafood fundraising dinner - Catch of The Bay in September. The sold out event was a tremendous success and also raised funds in support of a Memorial Park, to be located on the Aquarium grounds. Huntsman also recognizes Magellan Aqua Farms Inc., Patrel International, Brunswick®, True North Salmon Company™ and special thanks to guest speaker John McLaughlin, President Emeritus, UNB and our dedicated volunteers.

An energetic crowd gathered at the Aquarium on the evening of September 18 in support of the fundraising event - Discover Your Flavour - a wine and beer tasting event, with live music and hors d'oeuvres. This event brought together both old and new friends and supporters of Huntsman.

Ganong, Canada's oldest independently family owned and operated chocolate company, provided funding for the "Creatures in Your Marine Backyard" program, where Huntsman staff travel to Grade 4 classrooms in Charlotte County to deliver a hands-on educational experience that connects to portions of the Grade 4 curriculum, Life Science: Habitat.

The ongoing and generous support of the Living Environmental Studies Foundation allows Huntsman to deliver a large portion of the Grade 6 curriculum, Diversity of Life. This is a hands-on experience where students go on a specimen collection field trip along the intertidal zone of the Bay of Fundy and work in a university style laboratory with scientist on species and habitat identification experiments.



Annual Report  
2015-2016



*Inspiring* Stewardship