



## Welcome to the End of 2022 and the Start of Winter Diving

December. The last month of the year. Winter officially starts in less than two weeks, the air is colder, water temps are dropping and it's dark before we sit down for dinner. What to do, what to do? Think about diving, read about diving and go diving! In this edition you can read stories to make you think about diving which hopefully inspires you to go diving. This month we have river diving, cold water diving tips and a story about a colourful jelly that appeared in great numbers in late November/early December. December is also when Christmas trees start sprouting underwater. Watch the local club pages for their annual Christmas tree decorating dive and head out to hang some garland!

## Dive Me A River

*(Michael Schwinghamer)*

Why on earth would anyone dive the rivers and lakes in Nova Scotia? The waters are sometimes tannin filled with quickly diminishing visibility. The weeds choke up the rivers and snare passersby, and the current doesn't follow a logical rhythm. Unfortunately, rivers and lakes are rarely explored in our province. If people dove one lake for an ice diving course and did not enjoy it, they assume all others are the same. This logic doesn't hold true if we extend it to the ocean but it seems to be a hard feeling to shake for freshwater diving.



*Baby Eels. Photo by Michael Schwinghamer*

I've dove quite a few lakes and rivers in Nova Scotia. My goal is to find vessels that once sailed the Shubenacadie Canal. In pursuit of this goal, I've snorkelled and dove over 20km of Nova Scotian rivers and lakes. I'm close to honing in on the wrecks that are out there, assisted by hints from locals, the public archives and museums. While I have not yet accomplished that goal, I have encountered massive amounts of life and history in our rivers. Waterways expose bottle dumps which were an easy place to toss refuse years ago and the upstream and downstream migrations of striped bass, eels, and gaspereau are remarkable.

Watching 10kg bass swim around you is so frigging cool. If you see one fish there are likely many more nearby. Watching a school push past is super cool and seeing pickerel fly at your face as they chase the gaspereau is jaw dropping!

There's a ton of Nova Scotia to discover underwater. Not all of it is in the ocean. And most definitely it is not all the common sites people go to.



*Gaspereau swimming up river. Photo by Michael Schwinghamer*



## It is Winter

The cold water and air that comes along with winter presents challenges to the North Atlantic diver, most notably keeping warm. For dry suit divers it is not a huge challenge: we stay dry throughout the dive, wear insulating undergarments and can take advantage of heating devices from simple handwarmers, to battery powered systems. Wetsuit divers, on the other hand, don't have that luxury: they are in contact with the cold water throughout the dive and contend with exposure to cold air when changing between surface wear and wet suit before and after the dive. However, there are things you can do to make it more tolerable:

1. If you are getting a new suit, consider buying:
  - a. A suit with an integrated hood to avoid the wash of cold water down your back.
  - b. Lobster claw gloves. They are warmer, but you lose some dexterity so practice skills such as BCD inflation/deflation, reg purge, buckle adjustment, etc.
  - c. A two- piece 7ml suit. The double torso layer makes a big difference.
2. Assemble your kit in the warmth of your home.
3. Bring a jacket to wear over your suit. Keep your shoes on for as long as possible.
4. Put your wetsuit and other wearables inside your vehicle on the way to the site to warm them.
5. Place items like hoodies and gloves on the dash or rear window to warm up in the sun.
6. Bring a mat to stand on.
7. Dive on calm sunny days.
8. Before donning your suit and gear, lay out your towel and dry clothes in your vehicle for quick and easy post-dive access – bring dark clothing and place in the windows.
9. Bring a thermos of tepid (not hot!) water to charge your suit with a warm layer of water before starting the dive. If there is any left, add some after your dive.
10. For all divers:
  - a. Use a regulator designed for cold water – consult manufacturer's information for operating limits.
  - b. Do not breath through your regulator or operate the purge button until underwater to avoid free flows from a frozen regulator.
11. Listen to your body: Turn the dive before you get too cold. You want to get out of the water before you are so cold it is difficult to operate your gear or deal with an issue. This also applies to dry suit divers.
12. Get out of your wetsuit as quickly as possible and towel off quickly.
13. Post dive hot chocolate!

## Ocean Tourists Still Visiting Our Shores (*Pelagia noctiluca*)

During a Saturday, December 3 dive at Paddy's Head I was treated to a new encounter. Throughout the dive there were purple, thick maned jellyfish everywhere. Hundreds of them. Most were motionless on the bottom but there were a few still pumping their way through the water column. The water temperature was about 6°C. As luck would have it, Dr. Chris Harvey-Clark and Sarah Burko had their own encounter on a recent dive at Outer Sambro Island. He sent us a write up about their encounter, along with a description of its habitat and life cycle.



## **Pelagia noctiluca in NS Waters**

*(Copyright Dr Chris Harvey-Clark, Dalhousie University, Photography by Sarah Burko)*

Purple stinger or Purple striped jellyfish is a temperate water species that until recent years was rare locally and lately has been an occasional visitor inshore around NS, especially after onshore winds bring this pelagic species close to shore.

One interesting thing about the storm cycle in the fall is the variety of odd creatures that come inshore to areas where divers and snorkellers can encounter them. Recently during a trip to Outer Sambro Island near Halifax NS (November 2022) I encountered a large aggregation of this species close to the surface in a back cove area.

### Distribution, habitat

This species is found world wide in all oceans at temperatures from 10-21 C, from Australia to the Mediterranean and from equatorial to boreal waters. It is regarded as a species complex with various regional populations having significant genetic differences.

A smallish jelly (up to 5 inch/12 cm bell), a poor swimmer and below 10°C the muscles that propel it stop working, so in colder waters as the seasons change, is commonly found in large swarms (up to 500 per cubic meter) washed up on beaches or, as we discovered it, crowded into the back cove gut at Sambro Island by the prevailing wind in the company of masses of comb jellies which are prey for this species.

It mostly ranges from the surface to a depth of 150 m (490 ft), but has been recorded to 1,400 m (4,600 ft), and is one of many species of macroplankton that migrates vertically in the water column, near the surface at night and deeper during the day.



*Purple Stinger. Photo by Sarah Burko*

### Description

*Pelagia noctiluca* have variable colour, ranging from mauve, purple, pink, light brown to yellow. The clear bell has characteristic radially symmetrical rows of small purple red spots dorsally over the outside of the bell. There is only one body cavity inside the bell known as the gastrovascular cavity with four long frilly pale pink-coloured oral arms surrounding a single fluffy mouth that are the primary food gathering surfaces, and eight long tentacles bearing stinging cells that emerge from the bell margin. The bell also carries stinging cells. Within the bell can be seen 4 yellow-white structures which are the gonads.

### Life cycle and reproduction

Being adapted to a pelagic, open-sea mode of life, this species does not go through the medusa-polyp alternation of generations typical of many jellyfish species (for more explanation of this process, see my book, *Maritime Marine Life*, 2021 edition). Males release sperm and females develop eggs within the bell, released as larva called a planula, which progresses to a second larval stage called an ephyra, then to a

# Nova Scotia Underwater Council Monthly December 2022



tiny mini jellyfish called a medusa stage by about 3 weeks of age. The final jellyfish stage lives about 9 months before spawning in late fall/to early spring, depending on location. This species is known for pulsating phosphorescent bioluminescence at night when disturbed.

## Feeding

*P. noctiluca* are generalist predators feeding on a wide range of planktonic organisms: crustaceans and mollusk larvae, larvaceans, hydromedusae, siphonophores, comb jellies, arrow worms, fish eggs and fish larvae, detritus suspended in the open water and microscopic phytoplankton. Phytoplankton consumption is atypical in cnidarians. The stinging cells assist in capture of prey and can cause symptoms in humans, although I suffered no ill effects hand capturing this species. Still, reports exist of long-term symptoms, scarring and hypersensitivity from this species so be aware.



*Purple Stinger. Photo by Sarah Burko*

## Following Up

For those of you who read November's monthly, we have an identity confirmation for Elli Ofthenorth's mystery fish. Dr. Chris Harvey-Clarke dropped us a line to let us know it is a juvenile monkfish (*Lophius*). Additionally, Dr. Harvey-Clarke wrote, "Fall is breeding season for this species however this one is a subadult."

## What's Happening Out There?

Are there any events or activities taking place in the upcoming months you think might be of interest to the underwater community? If you would like get the news out there let us know and we can post it in our newsletter. Just send your idea to any of the email addresses below and we'll get in touch.

## Contact Us

|                                     |                                                                                                                         |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| General enquiries:                  | <a href="mailto:novascotiaunderwatercouncil@gmail.com">novascotiaunderwatercouncil@gmail.com</a>                        |
| President (Mike Schwinghamer):      | <a href="mailto:presidentnsuc@gmail.com">presidentnsuc@gmail.com</a>                                                    |
| Vice President (Wayne Joy):         | <a href="mailto:vicePresidentnsuc@gmail.com">vicePresidentnsuc@gmail.com</a>                                            |
| Regional Director (Alanna Canaran): | <a href="mailto:regionalDirectornsuc@gmail.com">regionalDirectornsuc@gmail.com</a>                                      |
| Treasurer (Jenn Meisner):           | <a href="mailto:treasurernsuc@gmail.com">treasurernsuc@gmail.com</a>                                                    |
| Secretary (Cliff Andrews):          | <a href="mailto:secretarynsuc@gmail.com">secretarynsuc@gmail.com</a>                                                    |
| Website:                            | <a href="https://www.novascotiaunderwatercouncil.ca/">https://www.novascotiaunderwatercouncil.ca/</a>                   |
| Facebook:                           | <a href="https://www.facebook.com/NovaScotiaUnderwaterCouncil">https://www.facebook.com/NovaScotiaUnderwaterCouncil</a> |