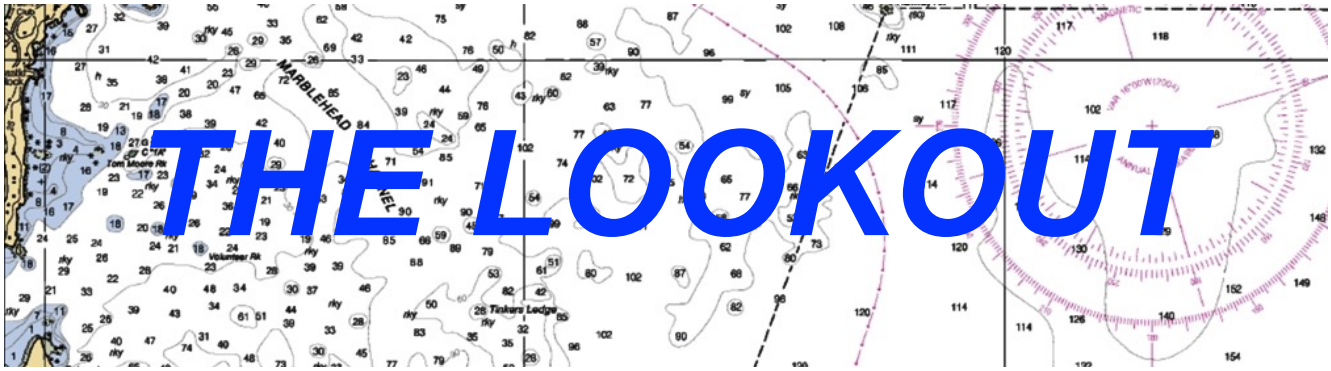

THE LOOKOUT

MANIFEST

THE LOOKOUT

Published by:

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A Message From the Wheelhouse

Thanks for checking out Issue #13 of The Lookout, our annual newsletter covering wide ranging topics that are historical, technical, and of interest to our diving community in New England. This issue covers our 2020 diving season, which has without a doubt been one full of immense challenges due to the coronavirus pandemic. This issue is a little bit shorter than past issues as a result, but there are still a few good things that happened worth reflecting on!

We'd like to thank all our customers and crew for your continued support and participation aboard Gauntlet. Many people contributed to the effort to keep things going and we are appreciative. In 2021, we hope that you'll join us on our adventures whether you are looking for training or just some great wreck diving off the coast of New England!

We hope you enjoy this issue of The Lookout!

Heather and Dave

Diver Propulsion Vehicle (DPV) Invasion!

Diver Propulsion Vehicles (DPVs; scooters) have been around for a long time and have been an essential tool in long range cave exploration and technical diving. And while DPVs have been successfully used in other settings such as for boat and shore dives, it has almost always been with a trade off—either trading off battery capacity for a smaller package, or dealing with a very large, heavy scooter in order to enable the dive and to achieve the desired objectives. There has not been a scooter that can be all things to everyone—at least not until recently.

Dive Xtras has been a long time pioneer in DPV design and development. When other manufacturers were still utilizing mechanical clutch and sealed lead acid (SLA) battery technology, Dive Xtras had differentiated themselves by developing electronically controlled scooters using Lithium Ion battery technology. They found success with this approach, offering divers looking for all-purpose scooters better options for scooter range, battery capacity and size. The scooters were lighter, in some cases faster and had more range. As time has gone on though, lithium batteries have become more challenging to travel with, and scooters using these large lithium batteries have obvious limitations that mean their utility is limited outside their primary purpose.

Again, this is a space where Dive Xtras has innovated to create another unique product, which is what drew our interest in 2020. In 2006 we began diving with DPVs and had chosen the Silent Submersion UV-18 for it's tried-and-true design, small package, low battery cost for the SLA version, and customer support. However, its limitations became apparent pretty quickly once we put them into use. First, they are extremely heavy coming in at about 68 pounds making small boat diving somewhat impractical. Second, they were limited to 45-60 minutes of burn-time depending on the setting. And as time has gone on, they do not compete well with modern day scooters with variable speed control and greater thrust making mixed DPV teams more challenging.

Setting up Silent Submersion UV-18 DPVs during training in 2006.

Dive Xtras came up with an innovative solution to these challenges by utilizing lithium ion batteries "packaged" in the form of power tool batteries, a rather ingenious idea utilizing something readily available, modular and low cost to power their scooters. The Piranha series scooters utilize power tool battery (PTB) technology. Dive Xtras did something else innovative; they created an affordable recreational scooter called the BlackTip, with substantially more capability than a traditional recreational scooter—so much so that the scooter can utilized to some degree in technical diving applications. The BlackTip has been met with incredible success—recreational divers and technical divers alike have found a scooter like this desirable.

The application of PTB technology along with an affordable, capable scooter resulted in a bolus of scooters—and scooter divers—entering the market. Now, there are powerful, lightweight (25-30 lb) scooters with 90-120+ minute burn times and 2.5+ mile ranges just a few keyboard clicks away from your home. DPVs are no longer an add-on tool for technical/cave divers, the BlackTip has made them accessible to everyone. Fold in the Piranha series technical scooters and the range of possibilities for DPVs opens up substantially.

So what does this mean for the local diving scene in New England? Well, it means that long range shore dives are not only possible, but are possible in ways not previously considered. Instead of a short excursion from shore if one was willing to lug the scooter into the water, it is now possible to reach some shipwrecks from shore, it is possible to do traverses, circumnavigations or long out-and-backs—things that might have otherwise required a boat or been impractical because of the DPV required. And while this is exciting, there is also now a greater need to ensure that divers are appropriately equipped to execute dives like this.

Reviewing skills on land before getting in the water during a DPV training workshop.

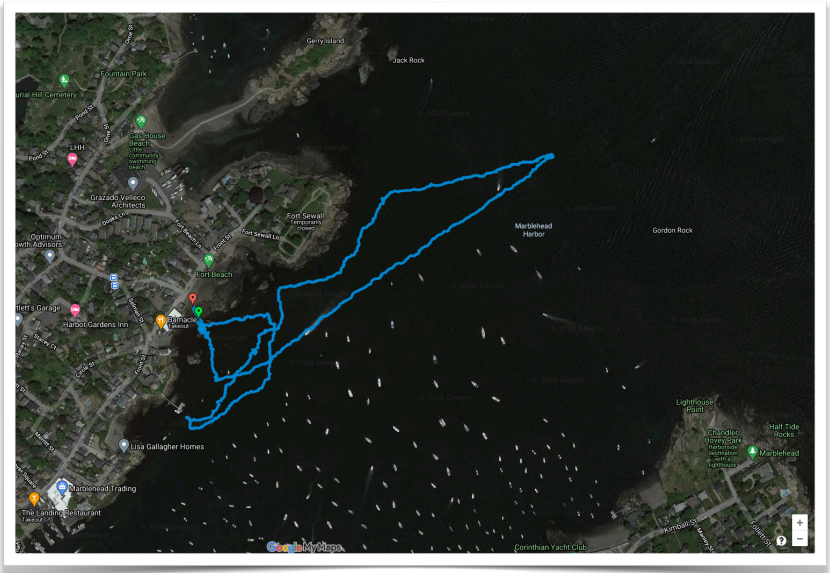
It is interesting that someone can buy a scooter and utilize it with zero formal training (with the exception of some cave diving locations that require DPV cave certification). One cannot buy a rebreather and use it without training. And in many (but not all) cases one cannot buy even a drysuit from a retail store without bundling it with training. So it is remarkable that something with the potential to put a diver in jeopardy (stranded, lost, out of gas) does not come with a requirement for formal training. There are good reasons to seek formal training if one intends to seriously use the scooter. These reasons include but are not limited to proper use and riding technique, emergency procedures for a malfunctioning or disabled scooter, out of gas situations, and dive planning with contingencies.

We recommend formal training, not only for safety reasons but also so that the scooter can be fully utilized. The specifications of the scooter and its capability is only as good as the diver riding it, so if someone is out of trim, has poor buoyancy and otherwise creates excess drag beyond the assumptions in the scooter testing, then the scooter will not perform to specification. This might yield surprises when using the scooter and suddenly the battery has run out well before one expected it to be depleted. Riding technique also matters not only for efficiency, but also comfort. These are learned skills.

Dive planning is probably the single most important element of DPV use because this identifies the limitations of the diver or scooter. It will tell the diver “what they are getting into” if they wish to be on the trigger for 20 minutes leaving the shore, for example. We recommend the following parameters be outlined when planning DPV dives:

- Minimum Gas (MG): Determine the amount of gas required for 2 divers sharing gas to make a safe ascent to the surface or a gas switch
- Usable Gas: Determine the amount of gas available after subtracting out MG. Determine what gas rule you will use to carve up the usable gas (all usable, halves, thirds).
- Estimated Bottom Time Based on Usable Gas: Determine the cylinder supply time based usable gas assuming an average depth, a SCR rate and cylinder capacity. Determine the turn-pressure based on the gas rule.
- Minimum Decompression Limit (or No-Decompression Limit): Determine whether your MDL/NDL time will limit the dive.
- Estimated DPV Burn time: Assume 80% of burn time is usable with 20% held in reserve. Divide up the 80% burn time based on the chosen gas rule.
- Identify Limiting Factor: Identify whether gas, decompression status or burn time will be the limiting factor and require you to “turn” the dive.
- Environment Assessment: Assess the environment, the conditions, weather and tide impacts, how remote the dive is, where are there exit points, who can assist in a problem.
- Sanity Check: Calculate an estimated distance you will cover based on your usable DPV burn time and the assumed rate of speed to determine whether your plan is practical and safe. Using an estimate of ~120 feet per minute is reasonable. Assess whether you are capable of swimming this far on the return if the DPV were to fail at maximum distance. Confirm you have enough gas to swim back if your assumed rate of swimming is 25 feet per minute.

Utilizing this method of planning will help to identify if the dive is feasible, safe and what additional resources might be needed to achieve the objectives (such as utilizing a towed DPV back-up). A limiting factor that represents a substantial risk may require a change in the dive plan.



GPS track overlay on a Google Map for a shore dive from Marblehead. Total distance was approximately 1.7 miles. This dive was done in December 2020 and ran ~85 minutes in duration.

DPVs are a powerful tool in technical diving, and while they are tools that come with a need to manage added complexity, they are also fun. And there is no reason that recreational divers can’t enjoy using DPVs in a variety of applications and settings. However, it is important to remember that DPVs are like any piece of sophisticated dive equipment—they can malfunction, they can allow you to exceed your limits without realizing it. It will be exciting to see how this new era of DPV diving opens up possibilities for adventures from the shores of lakes, ponds and the ocean across New England. Be safe out there and remember it is a sin to fin!

Diving and Training During COVID-19

Heaped on top of the already significant challenges trying to live and work during the coronavirus pandemic has been the challenge of safely diving from charter boats and conducting dive training. Diving is a sport that brings individuals into close contact with one another, whether it is being aboard a boat or performing skills as buddies or teammates in a training setting. Developing a way to operate during this time has been challenging because ensuring safety, not compromising quality or compliance with training standards and maintaining some degree of profitability is in conflict with what is necessary to reduce risk of exposure to the virus.

Dive Charters:

A spacious and quiet boat. Safety is always our #1 priority, and reducing capacity was necessary, but we missed having our usual contingent of divers aboard.

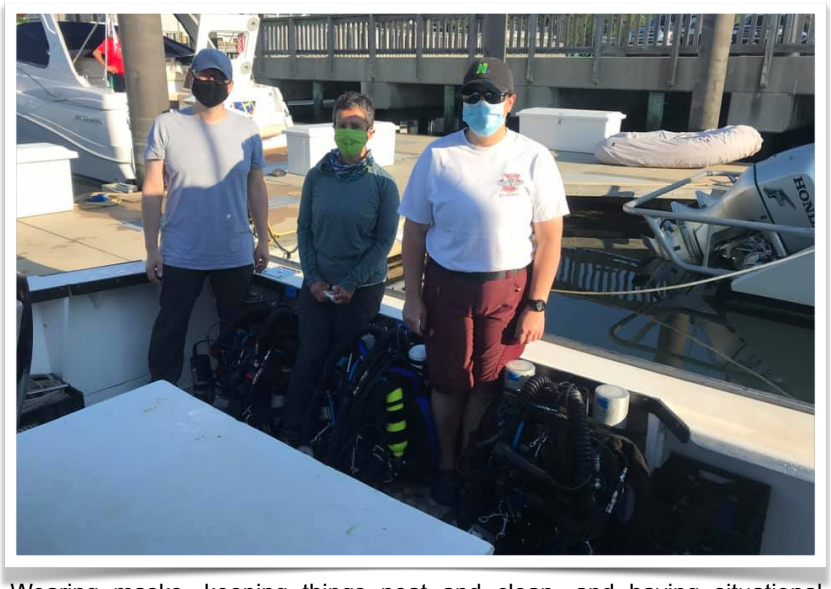
Large vessels with considerable open deck space have somewhat more opportunity to mitigate risk of exposure through physical distancing and remaining in open air, but smaller boats, including those with more interior space, have greater challenges in achieving physical distancing and reducing risk of exposure. On the Gauntlet, we were faced with some of these daunting challenges in determining how a boat that runs with a full complement of customers and crew could continue to run at all given the circumstances.

The first step we took was to declutter the boat, removing anything that was not necessary. We all love a good purge of clutter and junk, but this took us down to an almost unrecognizable state with the resulting starkness of the clean-up. Then, we devised an approach to maintain a minimalist approach by asking passengers to pack small and keep belongings contained in bags and totes that could be fully enclosed. We created more space by reducing the number of passengers permitted to be aboard, and we assigned spots on the back deck to provide dedicated spots. The assignment of dedicated spots has shown itself to be a somewhat popular configuration that we might have trouble undoing later! Finally, we asked passengers to complete a self-assessment and wear the proper PPE aboard the boat. We minimized eating (but not drinking necessary hydrating liquids). With all of that, the most important thing that occurred was the coming together of willing participants who supported the measures and maintained high situational awareness. When everyone feels the actions are appropriate and feels safer as a result, the actions result in a culture shift that makes compliance easier.

The fact of the matter, however, is that the financial impact of these mitigation efforts is significant and they are unsustainable for the longer term. The dive industry will look different by the end of this pandemic. As we learn more about the virus and see the implementation of vaccination campaigns play out we hope to relax these requirements in 2021. While it has been nice having a quiet, spacious boat, it isn't what the Gauntlet is made for—it is a dive boat for adventure, exploration and fun.

Dive Training:

Many throughout the industry wondered how dive training could continue during the coronavirus pandemic, especially in technical diving where close contact and skills like air sharing are core to the training. Doing land drills with close physical distance and equipment exchanges in hand-offs created significant challenges. In water equipment exchange for air sharing drills was simply off the table. Factoring in the need to stay within training standards, but with little or impractical guidance being offered from the training agencies as to how to deal with these issues, it really fell on instructors to determine how to adapt their training.



Wearing masks, keeping things neat and clean, and having situational awareness is key to staying safe on a boat.

Interestingly, there was a significant uptick in training this year, most likely driven by the inability to travel and a focus on doing local activities instead. That being said, it really was the pandemic and the state mandates that initially dictated when we could move forward with classes. During the time in which we were delayed we developed an approach to move forward and create options for our students.

We gave students the option to delay if they were not comfortable or did not desire to take a different approach. Beyond that we came up with ways to adapt. We moved all our academic presentations to Zoom, which has shown itself to be an effective tool and will probably remain integrated in our training to some degree even beyond the pandemic. We conducted equipment configuration work outside in open air, disinfecting surfaces, tools and maintaining dedicated workspaces. We sought out modified procedures recommended by training agencies; the most important procedure being the modified s-drill which involves moving through the gas exchange drill but without having students actually placing the teammate's regulator in his or her mouth.

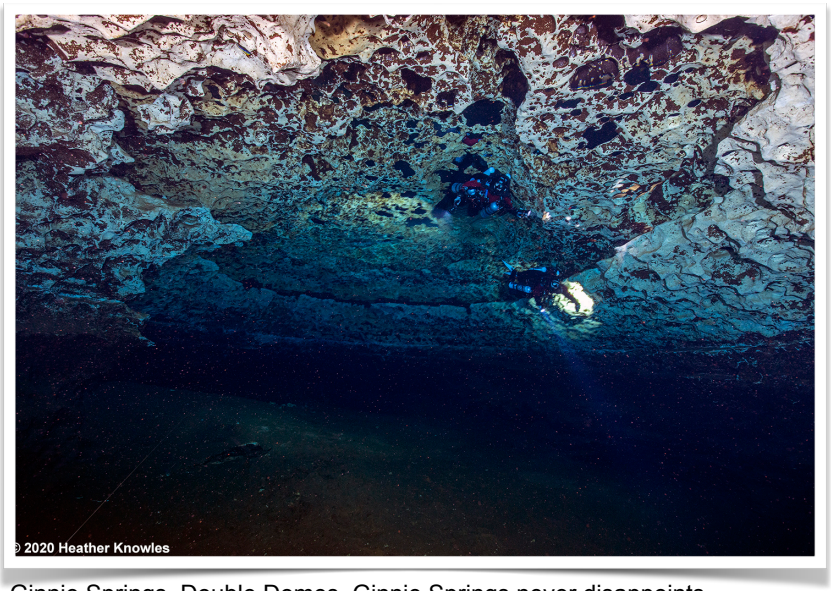
There is no question there were some pretty chilly days doing things outside, and there were added challenges with locations like Hathaway Pond being closed for several weeks, but with a little planning it worked quite well and we were able to move forward with all of our classes.

2020 Diving Highlights

2020 had auspicious beginnings and by all accounts was shaping up to be a very good year. Now, thinking back to the early part of 2020, it feels like a distant memory. Almost as if it never happened. That is how much life has changed in such a short time. Here is a rundown on the highlights over 2020, which were hard fought and won in making a path through this challenging year.

Cave Country:

Things got off to a great start with an awesome trip to cave country in January. We had some really fantastic diving opportunities which included doing some training and finally get the camera in the water for a photoshoot in Ginnie Springs. We also made a trip to the amazing Eagle's Nest cave. The conditions were great and we not only gained valuable experience but made a few new friends who we hope to dive with again soon.



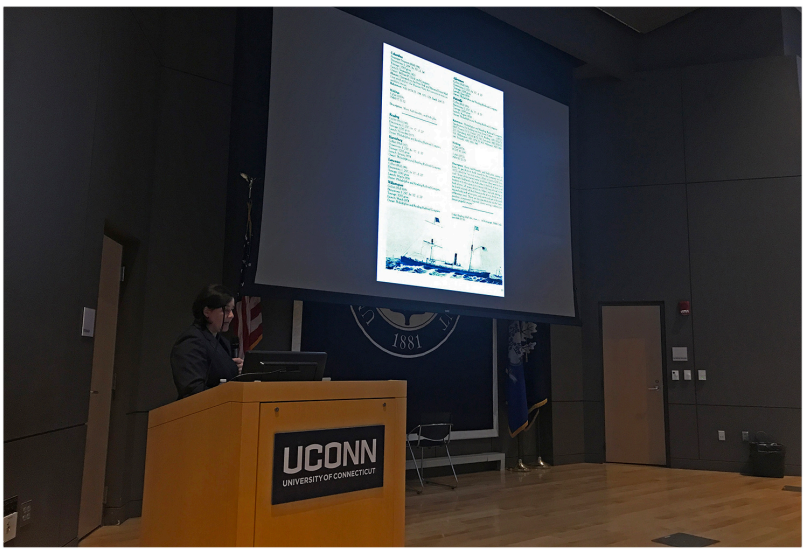
Ginnie Springs, Double Domes. Ginnie Springs never disappoints.

New England Shipwreck Symposium:

After making a slight gaffe with scheduling and realizing we were going to be in Florida when the SECONN and Avery Point Dive Club New England Shipwreck Symposium was scheduled to occur, we needed to work into our plan leaving from Florida and heading straight to Connecticut. So we did exactly that. With a truck and trailer full of dive gear, we drove to the dive show in the midst of an ice storm. What an unpleasant change from the fine Florida weather! The New England Shipwreck Symposium was great, as the dive club built upon the success of the previous year's show. Attendance was excellent and we presented, for the first and now only time in person, our Allentown discovery and identification project.

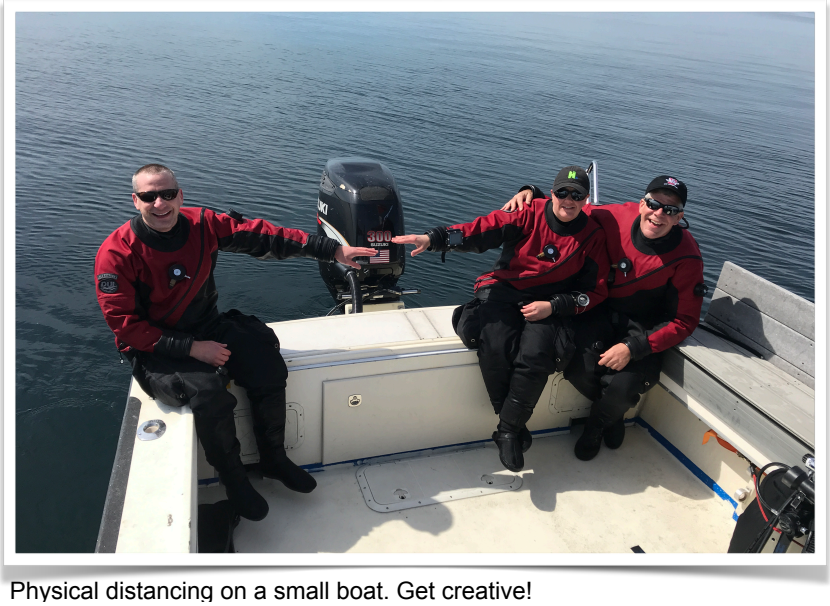
Home Scene and Alexandria Bay:

When we arrived back home and settled in, the coronavirus pandemic was on the verge of unfolding here in the US. Suddenly we couldn't find toilet paper and the dive schedule we were in the process of rolling out had to go on hold. As things went on, our diving ground to a halt and we stopped diving for several weeks during the lockdown. But we soon realized we needed an outlet and began carefully diving again, exploring lakes in Southern NH. We found some really cool spots that are new go-to dive sites for training and fun diving. We also did some Zoom interviews and presentations.



The New England Shipwreck Symposium in January 2020. Our first and only in person presentation on the steamship Allentown.

By May were able to think about starting up some charters but decided on a short trip to Alexandria Bay first to stretch our legs and venture back out into a post-covid world. We drove up to Alexandria Bay with a full plan for minimizing exposure risks whether they be stops along the way or dining. We came prepared to cook our own meals and were totally self sufficient otherwise. Alexandria Bay had very few cases and although things were closed down, it was clear this area really had no idea what many other places in the US had been experiencing. It was both a welcome relief to be out of the fray and at the same time, remember the risks and keep everyone safe.



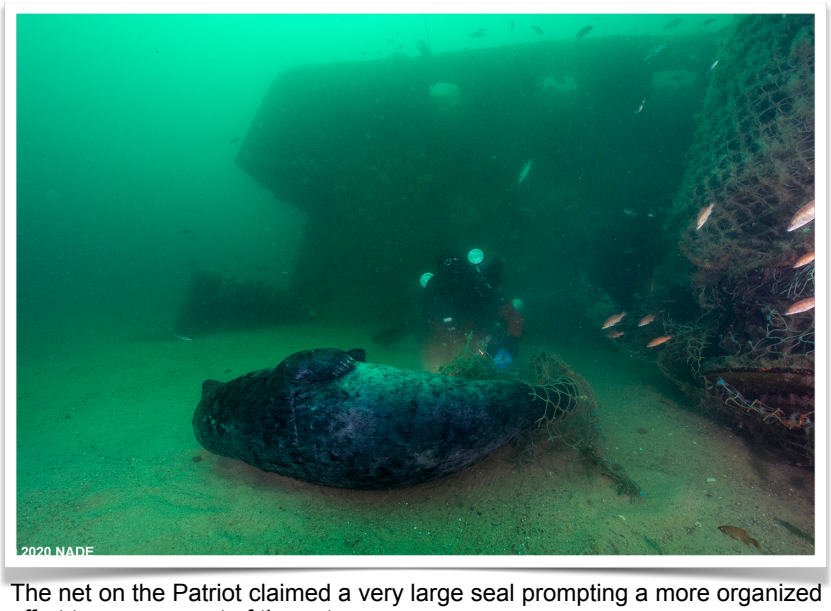
Physical distancing on a small boat. Get creative!

We returned to Alexandria Bay two more times since it offered the best opportunity for some really good diving without the challenges and risks of air travel. With our fall trips the cooking had come to an end since it gets chilly up there pretty early. But fortunately by the fall restaurants were well-versed in the art of take-out. For sure we were grateful to have the chance to go to Alexandria Bay as much as we did this year.

The Push for Dive Charters:

With the resuming of our dive charters in late May, we moved forward cautiously with a limited schedule. Things were obviously scaled back and our exploration plans took a major hit since some of the team were not able to do enough dives to feel ready for 200+ stuff. This is totally understandable and in an effort not to add to the many problems we were already coping with, we decided to postpone exploration dives for this season. That said, we still had some really fabulous local dives.

The visibility appeared markedly better than usual throughout the summer and it certainly made us wonder whether the reduction in industrial business activities (like dredging) and other impacts due to human uses such as runoff affecting water clarity had anything to do with it. It could have just been a good year for diving conditions but it seem different.



The net on the Patriot claimed a very large seal prompting a more organized effort to remove part of the net.

The Barge 200, which we wrote about in our 2019 issue of The Lookout was indeed salvaged. So, that dive is gone. It isn't the first wreck we dived that disappeared! We made a few trips to the Patriot, but were unable to get the net removal collaborative project off the ground this season due to scheduling, weather and COVID-19 related staffing issues with NOAA. The net snarled on the Patriot claimed at least 2 seals this season.

One of the other highlights from this year was the unexpected opportunity to visit the Pinthis in November. Running light on a flexible schedule does offer a few advantages, one being the ability to be somewhat spontaneous. The weather was beautiful and everyone had the time, so we diverted off our course to the Poling and made the jaunt down to Scituate to dive the Pinthis. It was a great day. The Pinthis is deteriorating very quickly now. It won't be much longer before the hull plates flatten and the wreck becomes a debris pile.

Lake Champlain:

In our wanderings throughout New England searching for diving opportunities, we had the pleasure of getting to do a bit more diving in Lake Champlain (VT). We dived a few really cool wrecks—the well-known Water Witch being one of them, as well as the rarely dived and extremely pristine Cornelia. We also planned and executed an ambitious scooter dive to the wreck of the General Butler from shore. That was a cool dive and gave us a few more ideas for shore-based excursions.

The wreck of the Cornerlia in Lake Champlain, VT. Paint is still visible.

Closing Out 2020:

Once again diving is becoming challenging as COVID-19 restrictions ratchet up again making interstate travel more difficult. We decided to end our charter schedule early, concluding at the end of September and running the boat informally until the end of November. For now, we're back to lake and pond dives but we're still seeking out fun and trying to make the best of this awful situation. Let's all hope for better days ahead. Until then…

Gauntlet News & Updates

Gauntlet will be in the water this winter and in our regular winter slip. We plan to resume charters in March 2021 with a less restrictive set of requirements due to what we hope will be some progress in ending the coronavirus pandemic. In the meantime, check the website's Gauntlet Blog for periodic updates, and if you have any questions about the upcoming season or would like to join our email list, drop us a note.

We are dealers for Light Monkey, Divesoft, and Dive Xtras! Let us know if you're interested in any of these great products!