



THE SAFETY STOP

COJO's MONTHLY NEWSLETTER

On Location from: Lincoln, New Brunswick

ISSUE 65

What's New

Welcome to the **June 2016** edition of the **COJO Diving Safety Stop** newsletter.

May really picked up with both courses and diving!! **COJO** started out May doing the **Recreational Sidemount** course in the **Bathurst** area and carried on through the month with several classes, the gear swap and a beach clean-up. As well, **Joe** and **Mike** had to go to Montreal for the **Mares** Service Clinic and two expeditions started!! Holy!! What a busy time!!



A very special thank you to **New Brunswick Nature Trust** for making the **Pea Point Clean-up Dive** such a success!! This was an awesome dive and a very fun day to spend on the surface with a great crew!!

Congratulations to **Abby Cammack**, who finished her **PADI** Junior Open Water Diver course on that day as well!! Great Job Abby!!

Atlas Park is finally opened up and COJO has been there a couple times to work on some training as well as enjoy the scenery!! This weekend, again they are there for the **Intro to Technical Diving** and the **Technical Sidemount Diver** courses!!

Doc Octo is back with both a beautiful fairy tale about **Ondine's Curse** and some insight on **Carbon Dioxide buildup** while diving (Hypercapnia) and how it affects breathing. This is a MUST READ for anyone that dives. It talks about regulators and work of breathing, breath-hold diving and a lot more!! Thanks Doc!!

Our **NEW** Summer COJO Lincoln Store Hours:

Monday	5pm to 9pm
Tuesday	5pm to 9pm
Wednesday	5pm to 9pm
Thursday	5pm to 9pm
Friday	5pm to 9pm

Thanks and Safe Diving!!

Connie and Joe
COJO Diving



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Courses During May

During **May**, COJO ran a crazy amount of courses.

- **PADI/SDI** – Sidemount Diver Course
- **PADI** – Open Water Diver (Checkouts)
- **PADI** – Rescue Diver Course
- **PADI** – Discover Scuba Diving
- **TDI** – Intro to Technical Diving
- **PADI** – Divemaster course (Cont'd)

Great job to all of the students!! Especially the **Abby Cammack** on all the courses completed and ongoing!! Great job!! **WOO HOO!!!**





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Courses To Come

Looking ahead into **spring and summer**, we have plenty of courses scheduled!! We are getting booked up so if you are interested in any of the courses listed, don't delay!! Gets enrolled now!!!!

- **31 May - 5 Jun – TDI – Intro to Tech/Tech Sidemount (Bathurst)**
- **4 June – PADI – Enriched Air Nitrox course (Bathurst)**
- **6 to 10 June – PADI – Rescue Diver course**
- **22 June – PADI – Enriched Air Nitrox**
- **23 to 26 June – PADI – Advanced Open Water course**
- **2 to 4 July – PADI Open Water Checkout Dives (Bathurst)**
- **2 to 4 July – PADI Advanced Open Water (Bathurst)**
- **5 to 7 Aug – PADI – Rescue Diver course (Bathurst)**
- **31 Aug 16 – PADI – Enriched Air Nitrox**
- **Ongoing – PADI – Divemaster course**

If you would like information on courses for 2016 or on our **Training Calendar**, contact us at cojodiving@gmail.com for more details!!





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Events During May

Diving Through the Age Continuum

By: **Neal W. Pollock**, Ph.D. - Research Associate in Anesthesiology, Duke University Medical Center

On **Wednesday May 4 from 7:30pm to 9pm** COJO hosted an **AWESOME** webinar by Neal Pollack on the aging diver!!

A very special thanks to **Neal** for the great talk and to our very own **Doc Octo** for his article on "**How Not To Age Gracefully**" that was the perfect prelude for the talk!!

Kimble Cove Expedition Brief

On **May 11th** the details of this awesome expedition were revealed and we put out the call for the dive team!! This is going to be an awesome expedition!! It is set to be completed in **July of 2016**. We are looking for a crew of **10 to 12 people** to help with the expedition. Don't miss out!! For more information on this or any COJO Expeditions, contact us at cojoexpedition@gmail.com or check out our **COJO Exploration Group Facebook page**!!





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Gear Sale & Swap



COJO's annual Gear Sale & Swap was a huge success again!! This year it was on **May 15**, right before **Mother's Day**!! Tables were setup for divers to display their goodies in the classrooms due to the rain and **both classrooms were full!!** COJO also had some of our **rental gear** sale.

Kingsclear Expedition

That's right, on **May 21st** COJO started back exploring the lost town at **Kingsclear**!! More information on this and all of our expeditions can be found on the **COJO Exploration Group Facebook page**!! Look us up. If you would like to know more about any of our expeditions, please feel free to send us a note or come in to the World Headquarters and talk to our explorers!! This ongoing project promises to be one of the best expeditions yet with tons of insight into the local community pre-Mactaquac Dam!





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"Pea Point" Cleanup Dive

New Brunswick Nature Trust put on an excellent event here!! What an awesome time!! Thanks to all who came out for the fun. We had tons of divers and surface garbage cleaner uppers!! What an awesome day to have it. The weather was amazing!! Also thanks to co-sponsor, **Eastern Charlotte Waterways!!**





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EVENTS TO COME!!

Great Annual Fish Count & New Brunswick Nature Trust's Whale Cove Cleanup Dive In Grand Manan

Join us for a fun weekend of diving on **Grand Manan!!** We have a weekend full of diving planned!! Details are still evolving but will include;

- **Whale Cove Cleanup dive**, partnering with the **Nature Trust of NB**, Sat Jul 23
- **REEF "Great Annual Fish Count"** dive at **Pettes Cove**, Sun Jul 24
- We will also be doing a night dive on the 23rd!
-

Lodging on the island goes quickly over the peak summer period, so **book your lodging early!!**





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And Now, Doc Octo!!



Ondine's Curse



Dear gentle readers, this month I will tell you a tale of true love, wicked betrayal and the importance of carbon dioxide for the regulation of breathing. Our story, of course, began a long long time ago. Ondine the beautiful and immortal water sprite, fell in love with the devilishly handsome knight, Hans. Once Hans set eyes on that stunner Ondine, he too fell deeply and completely in love. So deeply and completely in fact, that he conveniently forgot that he had already pledged his love to a mortal woman, Bertha. Our flawed Hans also made a rather curious pledge to his new love Ondine. Despite common wisdom that one should not make deals with immortals and water sprites in particular, Hans promised to "love Ondine with his every waking breath." Shortly after their affair began, Hans and Ondine were married. As time passed, the now mortal Ondine began to age. As Ondine aged her beauty and sadly Hans' devotion both began to fade. Hans no longer finding the aging Ondine attractive, returned to his former mortal love, Bertha. Ondine, discovering her husband's infidelity, unleashed her now famous curse. Recalling his promise to love her with "every waking breath," the unfortunate and now cursed Hans, was doomed to stop breathing as soon as he was no longer awake. In short, as soon as Hans fell asleep, he died.



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This tale, among other things, illustrates the deadly consequences of losing the automatic control of breathing. In fact, the expression "Ondine's curse" is now used to describe a group of neurological disorders where the automatic control of breathing is lost. But as we shall see, even our automatic control of breathing can be flawed. In fact, two serious diving related disorders, shallow water black-out and hypercapnia are both caused by problems with this automatic system.

Let's start with some basics. Breathing involves two processes; the movement of gas in and out of the lungs and the diffusion of carbon dioxide and oxygen across lung tissue. The medulla is responsible for automatic breathing and is located in a primitive part of the brain called the brainstem. Of course you know that breathing can also be controlled consciously. If you are anxious or on a whim decide to speed up or slow down your breathing, you can easily do so. Think of breathing like driving your car. You can control your speed manually (by depressing the gas pedal) or automatically by engaging the cruise-control mechanism. In the tale above, Hans died because he lost his breathing cruise-control.

Many mistakenly believe that the rate of breathing and the trigger to breathe are controlled by decreasing blood levels of oxygen. This is not true! The urge to breathe and the rate of breathing are normally triggered by climbing levels of carbon dioxide. As you recall, carbon dioxide is a by-product of metabolism. The more active you are the more carbon dioxide you make. It is this high level of carbon dioxide, and not decreasing oxygen, that triggers that irresistible urge to take your next breath.

People who want to hold their breath for a long time, such as apnea divers, have figured out a trick to by-pass this automatic system. Many have found that hyperventilation before breath holding delays the urge to take the next breath. Naturally, this means that you can hold your breath longer. This trick works because hyperventilation flushes out carbon dioxide normally present in the blood. Unfortunately, hyperventilation does not actually increase blood oxygen levels to any significant degree. The problem becomes that without the normal carbon dioxide signal to take a breath, some apnea divers will lose consciousness as blood levels of oxygen plummet. This hyperventilation induced loss of consciousness is one cause of the diving disorder called shallow water blackout. The tragic consequences of this should be obvious.



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While shallow water blackout is caused by too little carbon dioxide, hypercapnia is caused by too much. The problem starts like this; as good as modern regulators are, breathing still requires effort. The denser the breathing gas, the more divers exert themselves, the poorer the regulator is tuned and the deeper the depth, the greater the work of breathing. The body, always interested in economy, responds to this extra work by slowing breathing down. Slow breathing is the opposite of hyperventilation, and is called hypoventilation. Hypoventilation causes blood levels of carbon dioxide to climb. This is a big issue, as high carbon dioxide levels cause confusion, sedation and even convulsions. The added problem is that divers often intentionally slow their breathing down to save gas, an old and discredited technique called "skip-breathing." I'm sure you see the problem here, divers already have increased levels of carbon dioxide because of the increased work of breathing, and now they are consciously slowing their breathing even more. Hypercapnia can cause a loss of judgement or consciousness. Unfortunately, losing consciousness in water is almost always fatal.

So, gentle reader this month you learned about the fickle hearts of men, the folly of crossing a water-sprite and the importance of carbon dioxide for the automatic control of breathing. You also know the perils of consciously breathing too fast or too slow. So let's close with a thought for Hans and have a great sleep.



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COJO “Rent To Own” Program

The **COJO “Rent to Own” Program** is born from the need for divers to get into their own gear sooner. You’ve already decided the diving sport is awesome and you want to go diving as much as you can! But spending money on rental gear doesn’t allow you to save up to buy your own gear. This program supports your dive habit AND gets you into your own gear sooner!

How It Works

- You set up an appointment for a gear consultation, and we put together your perfect gear package.
- We provide you a quote.
- You pay at least 30% deposit towards your personal “**Rent To Own**” gear package.
- Every time you rent items from our awesome rental fleet that are in the same category as your “**Rent To Own**” package, 100% of those rental fees go towards your gear package!
- Once you have at least 60% down towards your personal “**Rent to Own**” package, we’ll order in your shiny new gear for your personal rental use until your package is fully paid!

More detail is available on our website [here](#).

[Contact Us](#) to setup your appointment!



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PADI Deep Diver Specialty

IANTD Recreational Trimix Diver

\$225.00+HST either course

After your first few scuba dives, you soon want to explore a bit deeper. There's something exciting and mysterious about the depth that attracts divers. You will learn techniques for diving in the deeper range of 60 – 130ft, and deep diving equipment considerations.

This course includes classroom and ocean dives.

Gear rental packages are available.

To enroll, students must be at least 15yrs old, and have Adventure Diver (or equivalent).

Recreational Trimix Diver allows sport divers to extend their dives to Sport Diving Depths by using "END"s in the 40 to 80fsw. This course qualifies divers to do no-stop dives using Recreational Trimix Gas mixtures to a depth of 130fsw.

PADI Deep Diver Classroom Aug 9 – 6pm
IANTD Recreational Trimix Diver Classroom Aug 11 – 6pm
Ocean Dives Aug 13 - 14



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Featured Product "THERMALUTION"

It's time to **redefine your diving!**

Tired of being **cold** on your dives? We have the solution for you!

We are pleased to be new dealers for the **Thermalution** product line. Thermalution have a series of shirts and vests that brings powered heat into the water with you, whether you are diving wet or dry.

**ADVANCED
YELLOW GRADE**

Thermalution Yellow Grade is the first power heated undersuit to endorse the ground breaking heating technology with a **wireless control system**. It is an advanced model for those who wish to dive deeper and stay longer under the sea.

PSD08-BI Size: XS, S, M, L, XL, XXL

It's **waterproof**, **washable**, and available as a **wireless solution**.

Contact us for a quote! Or come in and try it, we have a demo model in store!

Read more about the styles & models [here](#)!



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Other Awesome News!!



COJO will be making approximately **1 trip a month to Bathurst** to fill Nitrox for the divers there. There has been a request for nitrox fills so COJO is on the go!! Woo Hoo!!

We would love for you to follow us on **Facebook**. Become a **friend** of **COJO Diving** at <http://www.facebook.com/COJODiving>

COJO has a YouTube Channel where you can view some of our dives as well as training videos. It is constantly being updated so don't miss out!!

[Click for COJO YouTube Channel](#)

Thanks and we are looking forward to diving with you soon!!

Connie and Joe!!