



UNDERCURRENTS

Newsletter of the Bluegrass Dive Club / www.bluegrassdiveclub.com

August 2023

Volume 53, Number 4

August Newsletter and September Club Meeting

August **Newsletter**

Meeting: **Tuesday, September 12th**
Time: 7:30-PM (business)
 Social at 7:00

Location: **Roosters**
 Program: TBA

President's Message

By John Geddes



You would think we are in the lazy days of August, but not yet... The Newsletter is a little late due to my work, so here it is.

We did not have anyone to come forth for the Pig Roast, so we did not have one.

It's not too early to seek out a volunteer to host the Christmas Party, think about it and give me a call. 🚩

Vice President Report

By Kris Harn



Hope to see you at the September meeting at Roosters on the 12th. Have a couple of great videos to show for the program. If you have any requests on programs or door prizes you would like to see offered this year, let me know your ideas. 🚩

Secretary's Report

By Charlie Denham



No report this Month. 🚩

2023 BGDC Officer's

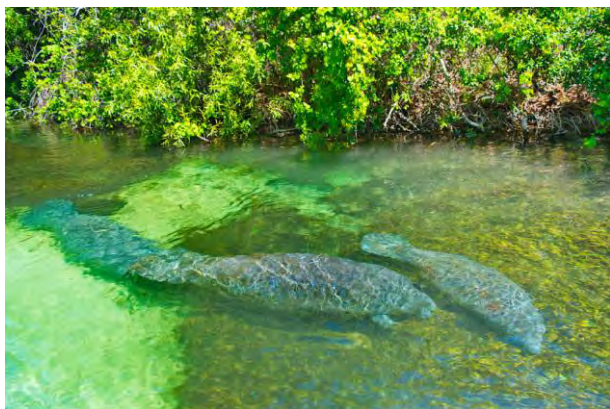
John Geddes, President	608-0682
Kris Harn, Vice President	333-6911
Charlie Denham, Secretary	621-8655
Dan Miller, Treasurer	948-5133
L. A. Bowe-Geddes, Trip Director	553-6251
Kathryn Bowers, Safety Info Dir.	619-0166
Alex Fassas, Webmaster	582-1600
Newsletter Editor, VACANT	

Trip Director Report

By Leigh Ann Bowe Geddes



Happy August, Dive Buddies! Who is interested in some spring freshwater springs diving in Florida? Let me know if this is something that would interest you, and we shall put it on the Dive Committee agenda. You know where to find me...



From the Treasurer

By Dan Miller




2023 Membership Dues **\$10.00**

Student with ID
Single & Family (1 diver)
Family (non divers)
Family (2 or more divers)

Renewal: Please send payment to the address listed below. Please make sure to include your mailing address and phone number, and it is essential that we also have your current email address.

Contact / Mail to: Bluegrass Dive Club c/o
Dan Miller
824 Gunpowder Drive
Lexington, KY 40509

New Members: Visit the website to fill out an on-line form or to access a Microsoft Word printable form. [CLICK HERE](#). 



Webmaster

By Alex Fassas



Tales from the Watery Web

Club Web Stuff

If you have any news to share for the good of the club and dive community, please send it to webmaster@bluegrassdiveclub.com. If you or a friend want to subscribe to receive our newsletter and club emails, subscribe on our website

at <https://bluegrassdiveclub.com/subscribe/>; you can do this right from your mobile browser.

Whose Side Are You On?

Regardless of your politics, if you are reading this then you have an interest in diving and the underwater realm of our world. I truly do not know what to believe anymore. Contradictory news reports, scientific research, and myriads of opinions on all topics. When you drill down on topics that affect our oceans and the circle of life that revolve around and depend on them, the contradictions continue. Sometimes the opposing arguments remind me of the, "Which is better, butter or margarine?" debate that went back and forth over several decades. I am a butter man myself and olive oil too.

What am I to believe? I am blasted with reports that our planet and its circle of life are being irrevocably altered by plastic pollution. While just this past week, I read an article suggesting that by cleaning up large areas of floating plastic pollution we will be harming what has become a habitat for the smallest of our ocean's food chain. Do we need ocean floor mining to supply growing industrial requirements for rare earth raw

materials, or to preserve the ocean habitat and its ecosystems undisturbed? Mankind sourced water runoff is fueling vast changes in coastal waters and beyond, or not. Rising water temperatures are triggering many changes in our environment, including mass coral bleaching events, or is this just part of a bigger cycle that has happened many times before we had the tools and desire to measure it all.

Whatever side of any data point or argument that you land, we have a today and tomorrow question before each of us. I choose today to continue to enjoy the underwater environment and be aware of its need for preservation during my lifetime, while being mindful of my choices and how they affect tomorrow. It may be part of the bigger plan that we will, as a species, become extinct as we know it, for some geologic period of time. I am zipping up my flame suit as I finish typing this. All I want to do is get each of you to ask the hard questions and look into your impacts. Know that in some way, each of us are our brothers and sisters keepers.

Renew, Refresh, Replenish

Our club is in need of some fresh ideas and energy. This starts with the club leadership; we need an infusion of travel destinations, meeting programming, and activities that draw the dive community at large to participate in what the Bluegrass Dive Club has to offer. You don't necessarily need to live in Central Kentucky to be an active part of this club's leadership. Our club is looking for trip ideas all the time and needs them to come from people who are interested in going there. Each year beginning around August, the club's nominating committee starts its search for to find the best candidates for the club's leadership. Be the change!! Contact a current club officer to discuss helping to lead this club in 2024.

As you will be reading this, I will be packing for our club dive trip to Anthony's Key Resort on the island of Roatan, Honduras. We'll be gone 8/26 and returning 9/2/2023; hopefully renewed, refreshed, and replenished. 🚩

Safety Information Dir.

By Kathryn Bowers



Calculating Your Buoyancy and Trim While Diving

Our August topic is from Scubadiving.com and covers 2 topics that go hand in hand. I'll add the source links at the end of the articles.

Buoyancy, it's the bane of all divers. We want to go down, but the inherent buoyancy in our wetsuits, our BCs, our lungs and our fat cells are all conspiring to keep that from happening. To overcome the force of buoyancy you have to counterbalance it with ballast weight. The question is, how much? While the answer is different for every diver, the goal is the same: carry enough weight to enable you to function efficiently and safely at all depths, and not an ounce more.

By deconstructing your buoyancy status, you know exactly where your counterweight needs are greatest, and that might reveal ways to reduce the amount of weight you ultimately have to carry. Here's how:

STEP 1: Calculate for Your Body

How much weight do you need to make your body neutral? Take a few weights into the water wearing just a swimsuit. You will be perfectly weighted when you can hang motionless with half a breath, and sink when you exhale. (Using a snorkel can make this test easier.)

Tip for Shaving Ballast Weight: Lose weight. Also, work to turn your fat to muscle. Fat mass is a lot more buoyant than muscle mass, so any fat you can convert to muscle will lower your buoyancy deficit.

STEP 2: Calculate for Your Wetsuit

Wearing your wetsuit, get into the water and repeat the procedure outlined in Step 1. Then take the total amount of weight required to get

neutral, subtract Step 1's total, and you'll have the net buoyancy budget for your wetsuit.

Tip for Shaving Ballast Weight: If water conditions permit, cut down on the thickness of your wetsuit.

STEP 3: Calculate for Your BC

BCs can be a huge source of inherent buoyancy, especially the older, full-featured models that have lots of traditional-style padding. Most modern BCs carry much less inherent buoyancy.

To test your BC's inherent buoyancy, submerge it while venting all exhaust valves to bleed air from the bladder. Knead the padding in the shoulders and backpad and behind the pockets to release air bubbles. Slowly rotate the BC to enable any trapped air to escape. When you stop seeing bubbles, release the BC into the water column. If it heads to the surface you've got some inherent buoyancy to deal with. Add weights until the BC will hang neutrally buoyant in the water. Then count up how many weights it took to get there and you'll have your number.

Tip for Shaving Ballast Weight: Buy a modern BC. Models that have come onto the market within the last three or four years carry, on average, from one to 2.5 pounds of inherent buoyancy, and some carry none at all. Note: while most manufacturers don't provide the inherent buoyancy of their BCs, you can always find that info in ScubaLab BC reviews.

STEP 4: Calculate for Your Tank

The buoyancy characteristics of tanks vary widely. For example, a standard aluminum 80 is 1.6 pounds negatively buoyant when topped off, and 2.8 pounds positively buoyant at 500 psi. That's close to a four and a half pound buoyancy differential between the beginning of a dive and the end of a dive that, of course, needs to be dealt with by adding ballast weight.

A steel tank, on the other hand, tends to start off negatively buoyant and stay that way. For example, a high-pressure 80 is about nine pounds negative when full and three pounds negative when empty. That's three pounds that can be removed from your weight system.

Tip for Shaving Ballast Weight: Switch from an aluminum cylinder to a steel cylinder. A properly-weighted diver who goes from an

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aluminum 80 to, say, a HP steel 80 could theoretically take six pounds off his weightbelt.

STEP 5: Calculate for Everything Else

Gather your reg, gauges, knife, fins and any other items you regularly dive with, place them in a neutrally buoyancy mesh bag, and submerge it. The goal here is primarily to see if the total package is positively buoyant. If it is, add some weight until it becomes neutral. If it's negative it probably won't be by much, so consider it a ballast slush fund. It's not working against you, and that's all that matters.

STEP 6: Put it All Together

Add it all up. This should be very close to your target ballast weight requirements, and it should also give you a clear picture of where your biggest buoyancy challenges lie. To double-check your calculations, gear up with all the components you measured separately, get back into the water and repeat Step 1. If the above scenario played out like it's supposed to, you should be floating at eye or forehead level in a relaxed position. When you exhale you should start to slowly sink. If not, you couldn't be more than a pound or so off your target. Make the final adjustment and go diving.

SALT WATER VS FRESH?

If you dive mostly in the ocean, then do the calculations in salt water. If you switch back and forth, you'll need to adjust your ballast needs as you go. Be prepared to add anywhere from 4 to 7 pounds going from fresh to salt water.

Want to reduce your air consumption? Be able to fin faster and farther with less effort? Look relaxed and in perfect control? Finish the dive with less fatigue?

The secret is to pinpoint buoyancy control, and it all begins with fine-tuning your weighting—that's how much lead you thread on your belt or put into your integrated weight system. When you have exactly as much as you need, you have the smallest amount of air in your BCD needed for neutral buoyancy at a given depth. That means less drag and more

efficient finning. It also means there's less BCD volume change with depth change, so you'll make smaller adjustments.

Many divers add weight until they sink and call it good enough. But it's worth asking yourself: How much weight do I really need?

Every extra pound requires a pound of buoyancy to balance it. An extra pound of lead means you need an extra pint of air in your BCD, which expands and contracts with depth changes, causing you to constantly fiddle with your air. Five extra pounds of lead, which is common, means a bubble five times as big and requires five times as much extra air going in and out as you change depth. On the other hand, when you've got the proper weight for diving, your BCD only has enough air to offset changes in your exposure suit's buoyancy, and that's way less to adjust as you descend and ascend.

It would be great if there were an app that's a scuba weight calculator. While there have been attempts at making a practical dive weight calculator, in the end they're less effective and convenient than the recommended way to find how much weight you need, which is to get in the water. Do this in full scuba gear – exactly what you will wear on the dive – and adjust your weight until you float at eye level with an empty BCD and holding a normal breath. You should sink slowly when you exhale. If you check with a full tank (often necessary), then add 5 pounds to account for the buoyancy increase you'll have at about reserve pressure with a typical cylinder. If you're diving in salt water, do this in salt water, or in fresh for fresh.

Tips to Calculate Your Scuba Weight

1. You Have to Get Wet

It's no one item that determines your buoyancy, but you plus all your gear together. You can "ballpark" guess how much weight you need with experience, but you can only fine tune it by getting in the water.

2. Pay Attention to Your Tank

Cylinder buoyancy characteristics change your buoyancy a lot. So, recheck your weight when changing to a different size and/or different material (steel vs aluminum) tank. Usually, but not always, going from aluminum to steel requires removing weight.

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3. Air is Air

A common misconception is that with X cylinder, you don't need to worry about weight change due to air consumption. This is not true. Once you're properly weighted, consuming 70 cubic feet of air reduces your weight exactly the same whether it you breathed it from a steel or aluminum cylinder.

4. Build Muscle to Drop Weights

Muscle weighs more than fat, so the more you build, the less weight you need to submerge.

5. Recheck

Any change to your kit affects your buoyancy. This is obvious with a big change, like going from a wetsuit to a drysuit, but lots of little changes like a new knife, different computer and upgrading your regulator can add up.

6. Check at Your Safety Stop

With 500 psi at 15 feet, if you vent all the air from your BCD, you should be very close to neutrally buoyant, rising slowly as you inhale, sink slowly as you exhale. If not, adjust your weight afterward -- but if you've followed the other steps, you should be very close and fine adjustments should do it.

7. Log It

Although you might find a scuba diving weight calculator or buoyancy calculator online, in the end they're only going to get you close and you'll still have to get wet to dial it in. A much more useful way is to write down what exposure suit you wore, what equipment you used, how much lead you carried, how much your body weighs, how much weight you needed etc., after each dive. This gives you a good start point for checking your weight each time, and over time you'll have the start point you want for different exposure suits, salt or fresh, aluminum or steel tank and so on. Keep it up until you get your weighting correct. With experience, you'll discover that the best scuba weight calculator is your log book and brain followed by a buoyancy check. Even if

you've got a new BCD or wetsuit, you'll be able to estimate the lead you need within a couple of pounds. You'll be your own dive weight calculator.

8. Breath Control

If your weighting is correct, at a given depth you can control your buoyancy with your lungs alone most of the time (unless you're using a rebreather). With practice, you'll do this without thinking instead of grabbing your low-pressure inflator hose every time you need to make a minor adjustment.

9. Be Patient.

Water is a viscous fluid, more like molasses than air, so buoyancy changes can seem slow or delayed if you're new to diving. When you want to ascend a little, you inhale and it takes a few beats before you start to rise. This is why many divers don't realize how well they can control their buoyancy with breathing. Give it a minute as you breathe in and out (slowly and deeply) to see what adjustment you can achieve naturally.

10. Get Trained

The PADI Peak Performance Buoyancy course can help you master proper weighting, plus trim (where you wear weight), streamlining and keel effect faster because you have pro guidance.

Once you know how to adjust your buoyancy to truly achieve the feeling of "weightlessness", the golden elixir of diving you must also master body positioning—or trim. Trim is just as important for good air consumption, ease of movement, and orientation in the water. Perfect trim for divers means you are horizontal in the water, have all your hoses and gauges tucked in place, and you use your legs to turn and propel you easily through the water. Proper body positioning reduces your drag in the water. The art of achieving trim starts from the moment you descend.

After you deflate your BCD or drysuit completely on the surface, lower your shoulders and let the weight of your tank and weights push you toward the bottom. You'll need to add air to your BCD to compensate as

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you become more negative. As you descend, engage your lower back and butt to help lift your legs and fins up as you slide into a horizontal position parallel with the bottom. This horizontal position is called neutral trim.

Once neutrally buoyant, you should be able to hover in one place as you descend, without feeling the need to use your arms, breathe deep or kick your legs to keep your body up and off the bottom. If you are having trouble with this skill, do a weight check to determine if you are over- or underweighted.

Remember that if you do a weight check with a full cylinder, you will need to add about two to six pounds of weight, depending on the tank, to compensate for the weight of the gas you consume during the dive. Mastering trim and understanding how to break trim in order to release air from your BCD are skills every diver can achieve.

Trim Specifics

The physics of diving are simple. Air spaces compress as you descend, and expand as you ascend. However, it is very rare to descend, maintain one depth throughout your dive and ascend at the end. You will need to add and release air throughout the dive as you change depths, and you will also need to adjust your trim in response to the site you are diving.

For instance, imagine you are swimming along a reef and come across a large coral that you want to swim over. Assuming you are neutrally buoyant, you will swim in the direction your shoulders point. Adjust your trim so that your shoulders are slightly higher than your fins. This position is called positive trim, and it will cause your fins to propel your body up so that you don't have to add or release air from your BCD. After you pass the coral bommie, adjust your trim so that your shoulders are lower than your fins. This is negative-trim position. By kicking your fins, your body will follow. The positioning of your shoulders impacts your trim.

Equipment

In order to achieve perfect trim, you need to understand how different pieces of equipment

impact your body position. The more familiar you are with your equipment, the easier it is to dive. It takes about eight to 10 dives (relatively close together) to truly feel comfortable when you change your exposure suit.

The positioning of the BCD on your tank, the material of the tank itself, and your weight system affect trim. Try on a variety of BCDs with a dive professional until you find one that's comfortable and fits properly with your exposure suit. If a BCD is too big or too small, it's difficult to maintain proper in-water positioning.

Different BCD styles suit different body types and change body positioning. Many divers start with rental BCDs that are a looser jacket style and less expensive than the more streamlined back inflate models with lots of straps to adjust the fit. No matter what style you choose, take time to center your BCD on your tank, ensuring you balance your weight system.

Most BCDs today are weight-integrated, with options for both back and front weight pouches. Often the trim pockets in the back are positioned higher than the integrated weight pockets in the front. If you notice you tend to be in a head-up position in the water, move some weight from your front weight pockets to your back trim pockets to push your torso down, and lift hips up to meet your tank. If your legs and hips still feel like they drag, you might be overweighted.

If you are diving in cold water with a steel tank, you may feel pulled backward by your tank. Try wearing a few extra pounds in the front weight pouches to help adjust body position. You can also attach 1- or 2-pound trim weights to the D-rings on your shoulders to get you into neutral-trim position. Eventually you'll want to take these off, but this helps beginners stay in a streamlined position.

Breaking Trim

Throughout your dive you may need to get all the air out of your BCD or drysuit. This will require you to break trim. Use your fins to pivot from the hips, drop your legs to bring your shoulders and head up, and dump the air. Although BCD and drysuits differ slightly, all main dump valves are on the left side.

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Remember that when you dump air, you have less control over the amount of air going out. Anytime you break trim to dump air, immediately get back into trim and check buoyancy.

Physical Fitness

Being physically fit helps you master neutral buoyancy and trim. I always recommend divers build up to 20 pushups a day to help develop body strength. Mastering buoyancy and trim helps protect fragile underwater environments and maximizes fun for every aspect of your diving life!

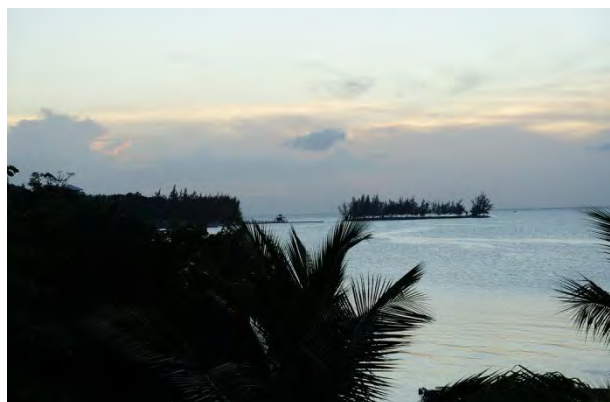
PRO TIP: Every time you equalize your ears, check your buoyancy. If you pay close attention to what your ears are doing and the depth on your computer, you will adjust your trim until it becomes a habit throughout your dive, not only on the way up and down.

“Calculating the proper weight for diving lets you achieve neutral buoyancy”
By Karl Shreeves Updated On *August 25, 2021*

[Buoyancy Calculator - How Much You Need in Dive Weights | Scuba Diving](#)

“Here’s How to Improve Your Trim”,
By Annie Crawley Updated on *December 24, 2022*

[Here's How to Improve Your Trim While Scuba Diving | Scuba Diving](#)



Local Diving

New Horizons/Diventures, Lexington, KY
Call them to inquire at (859) 277-1234

Mermet Springs

September 2-3

Laurel Lake

October 7 (Underwater Pumpkin Carving)

Pennyroyal Scuba Center

August 26-27
September 23-24

Bluegrass Dive Club 2023 Calendar

August

8, Tuesday NEWSLETTER
26, Roatan Dive Trip
29, Tuesday E.C. Meeting

September

12, Tuesday Dive Club Meeting
26, Tuesday E.C. Meeting

October

10, Tuesday NEWSLETTER
24, Tuesday E.C. Meeting

November

14, Tuesday Club Meeting (Elections)
28, Tuesday E.C. Meeting

December

10, Saturday Christmas Party