

# KELP KRAWLERS DIVE CLUB

July 2005

Volume 21, Number 7

## Effects of diving in Cold Water

by Scott Boyd

As soon as your skin temperature begins to drop, your body begins constricting blood vessels in your limbs as a protective response termed **Vasoconstriction**. This reduces the blood flow and effectively reduces the heat loss to your body by increasing the thickness of your insulating layer and decreasing your skin temperature (which reduces the temperature gradient and heat loss with the water). The blood vessels in your head do not constrict, meaning **your head maintains a very high level of heat loss**.

### *Myth: Head heat loss.*

*It actually is not true that you lose the majority of your heat through your head. Several experiments have shown that at rest you lose about 30% of your heat through your head, and when doing moderate exercise, this will drop to about 19% of your heat loss. This is actually a significant amount of heat, since your head only makes up about 8% of the surface area of your body, so if you feel cold, put on a hat.*



**Prolonged cold water exposure** can cause cold injury to your extremities. Vasoconstriction is the reason our hands and feet will feel the brunt of long cold-water exposures, even if they are well insulated. A lowering of your core or skin temperature or significant heat loss from your head will often make your hands and feet feel very cold. This can cause divers to mistakenly think they need to increase the insulation on their hands and feet, when in fact they need to increase it on their core or head.

When your surface skin temperature falls below 50 degrees, the vessels in your limbs will enlarge briefly a few times each minute in an attempt to bring warmth back to the surface of your skin. This alternating **vasodilatation** and **vasoconstriction** is what gives you rosy cheeks when you swim around without your mask for more than a few minutes in our cold water.

**Severe conditions of cold, lack of food, dehydration, sleep deprivation and stress** are common elements found in both warfare and on dive trips. They are also well known to increase a diver's risk of Decompression sickness (DCS). These conditions will increase the levels of **Epinephrine** (adrenaline) in your body, further constricting your blood vessels.

This becomes dangerous to divers, especially as they approach the limits of No Decompression diving. Logic would indicate that if we start a dive warm, then we will load Nitrogen into our tissues normally, throughout our body. If we end the dive cold, with significant **Vasoconstriction**, then the exchange of nitrogen from our body tissues back to our blood (and then out through our lungs) will be much less

efficient because there is little to no blood getting to our extremities. This is thought to significantly increase the risks of DCS for cold water divers.

The **bottom line** is that it is important to stay warm. If you find yourself cold, especially if you are shivering underwater, don't try to "tough it out". It isn't going to get any better. The best thing to do at that point is to call the dive, surface slowly as you normally would, and get warm on the surface. **Summertime thermoclines** can help to warm you up a bit at the end of the dive, but the hotter surface conditions pre-dive cause many divers to wear much less insulation than they normally do, and this can lead to a very cold diver as they extend their bottom times.

### 2005 OFFICERS

*President*  
Jamie Welsh  
426-7755

*Vice President*  
Steve Fornoff  
426-1267

*Treasurer*  
Wayne Campbell  
789-3467

*Secretary and Editor*  
Scott Boyd  
456-2066  
[scott@boydski.com](mailto:scott@boydski.com)

*Historian and Dive Officer*  
Rodger Gomez  
486-5739

**MEMBERSHIP**  
Kelp Krawler dues:  
\$15 single or  
\$25 for a family  
Membership.

Make checks payable to:  
Wayne Campbell

Mail to:  
Scott Boyd

### *Inside this issue:*

June Dive Reports	2
WSA Meeting Notes	2
June Meeting Notes	2
Staghorn Bryzoan	3
Dive Shop News	3
Contact List	4
Calendar of Events	4

**June 12th Club Dive**

by Rodger Gomez

And for your reading pleasure, the dive report from Hood Canal for Sunday, June 12th: **INCREDIBLE VIS**. Several of the Kkers gathered on the aft deck of the good ship **Down Time** Sunday morning to sneak in a quick couple of dives. And boy, were they something.

The first dive was Pulali Point East wall. We were looking at between 40 and 50 feet of clear water under 30 feet. Even the Lion's Mane jelly's were easy to see in the shallows. Our free fall down the wall was like sky diving in slow motion. The view was outstanding. Although we didn't see any Orcas, we did see one of the last remaining seals in the canal while we burnt off nitrogen on our 15 foot safety stop.

The next dive was on The Pinnacle. The vis wasn't as spectacular as the first dive but, we did conjure up a modest 30 feet or so at the 60 foot level. This site is just covered with wolfies. One of the other buddy teams found an octo at 80 feet. And, on the way home, I didn't even get stopped by the State Police for going ..... Two weeks ago they reminded me that the speed limit from Pleasant Harbor to Mike's Beach is 50 mph, not 65. A word to the wise: do the speed limit.

**Nuisance Species (ANS)**. He is with the Washington Sea Grant Program which is designed to help divers identify, monitor, and report invasive tunicates in the Puget Sound.

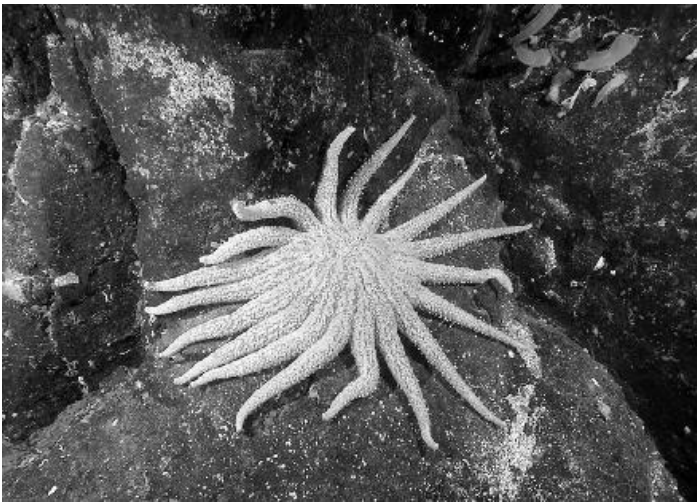
Simon would love to have the club organize a couple of dives where we do transects and report our findings (especially the absence of ANS) back to Simon at [sigee@u.washington.edu](mailto:sigee@u.washington.edu).

**Jamie** reported the mooring buoys for Sund Rock have been repaired and are waiting on Mike to move the anchors. **Wayne** reported we have about \$450 in the bank and that we are getting low on Kelp Krawler shirts so he is planning on putting in an order soon. Get your orders into Wayne. The June club dive was held at Titlow, with about 8 divers taking the plunge for a pleasant night dive.

Meeting Attendees: The **Ehrlich Family, Scott Valentine, Rick and Diane Cooper, Duane and Debbie Hamrick, Wayne Campbell, Becky Lundin, Steve Griffith, Steve and Carolyn Fornoff, Jamie Welsh, Amy Kurtenbach, Simon Geerlofs, Faith Haney, Scott and Janet Boyd.**

**July 19th Dive Club Meeting:**

The speaker for our July Meeting will give a presentation on the remediation efforts to pull the old pilings at Maury Island.



**WSA Meeting June 20th**

by John Tupper

John Tupper and Arline Fullerton attended the June 20th Washington Scuba Alliance (WSA) meeting. Arline agreed to be the club representative and board member.

WSA has also agreed to fund the Replacement of Mooring Buoys at Sund Rock by the Kelp Krawlers.

It's time to start gearing up for Oysterfest which is coming up the first weekend in October. Setup is on the weekend before.

**June 21 Dive Club Meeting:**

**Simon Geerlofs** of the **Washington Sea Grant Program** gave an excellent presentation on Tunicate Identification and **Aquatic**

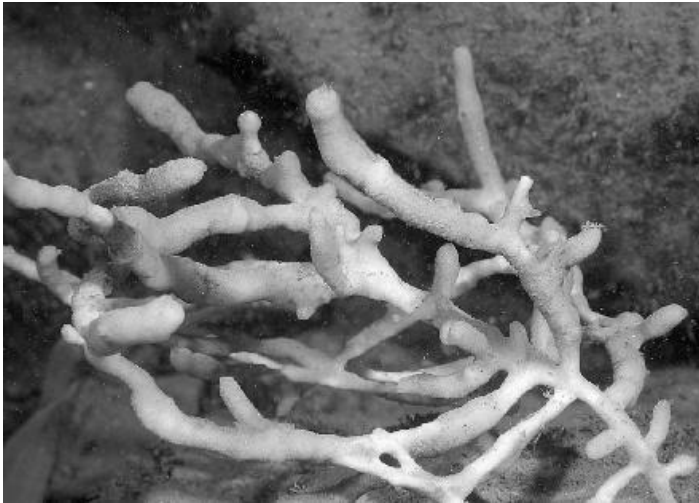
Please email your **Dive Reports** and Newsletter Submission to **Scott Boyd**. Deadline for the August newsletter is August 1 2005.

**Kelp Krawlers Dive club celebrates 25 years.**

South Puget Sound's independent dive club, the **Kelp Krawlers** celebrates 25 years of Scuba Diving this summer. The dive club was started 25 years ago at **Salt Creek**, with the club name coming from the divers crawling out of the surge by crawling through the kelp forests off the campground.

**Northern Staghorn Bryozoan** *Heteropora pacifica*  
by Scott Boyd

A very common animal that divers swim by in our lush emerald waters is the **Northern Staghorn Bryozoan**. This colonial invertebrate is often confused with a coral, and looks much like it's tropical cousin with its yellow branching structure. In fact, it is a sessile animal found at depths from subtidal to about 90' that ranges from Alaska to Central California.



The branching colonies that make up the Bryozoan grow to over 4 inches in height with a round cross section that is made up of many individual animals called zooids. Each zooid posses a simple nervous system along with a digestive track and reproductive systems. A typical zooid consists of a body within a calcareous chamber and an exposed tentacle crown. The tentacles are used to capture bacteria, plankton and other suspended detritus in the water. There are no advanced sensory organs present.

Bryozoans reproduce sexually, but grow their colonies by asexual budding. Many nudibranchs and sea stars feed upon the Northern Staghorn Bryozoan. The Phylum Bryozoan is referred to as the "Moss Animals".

**Staghorn Bryozoans** are very common in Hood Canal and throughout Puget Sound, so next time you are cruising along the wall at **Sund Rock**, and you see what looks like a piece of yellow staghorn coral or sponge, now you'll know it's a colony of Northern Staghorn Bryozoans.



**Salt Creek Dive**

**The Kelp Krawlers are tentatively planning an anniversary dive at the Salt Creek Campground on September 10th - 11th. Be sure to pencil that in on your calendars.**

**DIVE SHOP NEWS:**

**Capital Divers** **866-3684**  
[www.capitaldivers.com](http://www.capitaldivers.com)

**Palau** trip on the Palau Aggressor June 25-July 2 2006 (still 2 spots left). **Akumal, Mexico** trip November 6th through 17th. Nitrox, argon and hyper filtered air fills available.

**Bandito Charters** on **Saturday, July 16th**, Aug 28th, Sept 24th, Oct 23rd, Nov 19th and Dec 18th.

**Hood Sport 'n Dive** **(360) 877-6818**  
[www.hoodsportndive.com](http://www.hoodsportndive.com)

The shop is now pumping nitrox while you wait, trimix, deco gases, and argon. Also, they are offering discounted access to the **Sund Rock Marine Preserve** for paid members of the Kelp Krawlers dive club.

**Underwater Sports** **493-0322**  
[www.underwatersports.com](http://www.underwatersports.com)

The Olympia Shop is now pumping hyper filtered Air. Discounted air cards for Kelp Krawlers: 10 fills for \$25.

**Blue Diamond Dive Tours** **(360)426-1267**  
[BlueDiamondDiver@aol.com](mailto:BlueDiamondDiver@aol.com)

**Bonaire Trip** at the Sand Dollar Beach Resort November 5-13.

**Port Hardy Trip** with Sun Fun Divers. - Sept. 22-26. Three days of diving (9/23-25). We'll leave Olympia on Thursday, Sept. 22 and return Monday, Sept. 26. Contact **Don Chase**.

**Dive Safe and Play Nice!!!!**