



2017

SharkBait Dive Club

May Speaker

Our May Speaker will be Ron Fonstad from the W.A.V.E.S. Project. W.A.V.E.S. (Wounded American Veterans Experience SCUBA) Providing Wounded American Veterans and their families the opportunity to Experience SCUBA diving.

The Waves Project helps wounded American veterans to participate in a challenging and exciting sport designed to facilitate the rehabilitation process of their injuries as well as rehabilitating the entire family unit. Unlike most veteran organizations that are focused on serving the veteran only, WAVES Project encourages involvement with the entire families to be a part of the process, assisting rehabilitation for the entire family.

Aquatic therapy takes advantage of the properties of water to provide a unique exercise and therapeutic environment for patients experiencing pain, weakness, muscle spasms, limited range of motion, and decreased strength in an environment of weightlessness. Our instructors have specialized training from both PADI (Professional Association of Dive Instructor's) and HSA (Handicapped Scuba Association) to insure safe and suitable instruction for diver with various injuries or disabilities.

Come join us for what will be an interesting and inspiring presentation



May 9 Club Meeting

May 14 Beach Dive
Little Corona 7:00 AM

June 24 Club Summer Party
Vlad's House

Warm Water Trip

Sharkbait Dive Club invites one and all to the Island of Cozumel on the Yucatan Peninsula. Join us for a week of warm water; spectacular diving, good food and good company. Divers and non-divers alike are welcome.

When: Saturday, November 4th to Saturday, November 11th.

The Resort: Sunscape Sabor Cozumel Resort & Spa

Sunscape Sabor Cozumel is the perfect getaway for endless fun in a beautiful destination. Located on the small island of Cozumel, just 12 miles off the coast of the Yucatan Peninsula, this is the largest and most complete beachfront resort in Cozumel. With 2000 feet of white sand beach, this is an excellent choice, with limitless food and beverages from four reservation-free restaurants, unlimited top-shelf spirits from three bars & lounges! The 218 guest rooms and suites at Sunscape Sabor Cozumel offer spacious and finely appointed accommodations, most with oceanfront views. Amenities include: World-class beachfront and mesmerizing ocean views *Ocean view restaurants*On-site scuba diving and watersports center *Sunscape Spa by Pevonia*Fitness center

Check out this site for dive spots:

<http://reefsofcozumel.com/pages/reefmap.html>

The Diving:

Dive House offers two tank boat dive trips twice daily with departures at 8:00 AM and 1:00 PM. Dive sites are decided upon by the divers on the boat and usually include one "wall" dive and one reef dive. Night dives are available on Monday, Wednesday and Friday. Dive House is a PADI 5 Star Dive Resort.

They own and operate five boats all fully equipped with VHF radios, depth sounders, DAN oxygen units, first aid kits and life vests. The four larger boats, a 46' Sea Ray, a 42' Sea Ray, a 35' Bruno Stillman and a 30' Island Hopper, are also equipped with camera racks, heads, freshwater showers and water level dive platforms with ladders. Boat capacities vary and can accommodate between 8 – 26 divers, ideal for individuals as well as groups. For individuals, the maximum number of divers per boat is limited to twelve.

They have developed an "Experienced Diver Program" where divers are grouped on boats according to their own experience level allowing them to enjoy their dives in the company of other divers of similar experience level. Gear storage lockers, fresh water showers and gear-washing facilities are available at all locations.

Scubapro rental equipment available.

These two southern sites, Punta Sur and Maracaibo, are available weather permitting for a bit more \$\$.



The Particulars:

Sunscape Sabor Cozumel Resort & Spa

Double occupancy: \$1,210 for 7 nights, all inclusive, deluxe tropical view (\$160 per night total).

Single occupancy: \$ 847 for 7 nights, all inclusive, deluxe tropical view (\$121 per night total).

*Applying for discount but not guaranteed. \$100 in resort coupons issued per person with group reservation. With 5 rooms booked, 6th room is free

Diving

\$ 435 per person (no discounts; \$87 per day for 2 tank dives).

5 days of 2 tank morning dives. Night dives are \$57 each. Weights, tanks, and a guide are included. 32 pesos

per person per day for Marine Park fee.

1 Night Deposit due no later than June 19th for

Resort; Balance due 14 days prior to arrival.

Cancellation allowed up to 4 days prior to arrival with \$50 fee, or 2 nights deposit will be retained if cancelled outside this cancellation period.

Full Payment for Dive Package by Check In.

Air Fare: (not included)

Available on several airlines; currently airfare is about \$665 RT (United) to \$747 RT (American) for a decent one stop flight.



Other Info

A passport is required. Airport transfers through Amstar dmc are \$46 RT.

Contacts: Jeff Tunstall: (310) 913-1105 (cell)

Email: jtunstall@bolcofplastic.com or

Silvia Swigert (714) 349-0872

Email: SilviaSwigerts@gmail.com



Beach Dives

Change in Beach Procedure

Participation in our beach dives has been pretty spotty of late and to save Martin the hassle of getting to the dive site and having to abort because no one is there



we have initiated a RSVP protocol. If you are participating in our beach divem, E-mail Martin at n1diver@aol.com or call at 714-833-9167.

May 14 Little Corona Corona Del Mar
7:00 AM RSVP to Martin

Little Corona has a good supply of sightseeing and photo subject matter. On the reefs, in water 20 feet and deeper, small gorgonian sea fans, starfish, feather worms and assorted invertebrates can be found.

Visibility is generally good. Water clarity on the outer reefs can reach 30 feet but is generally in the 15 to 20 feet range.

The reefs start shallow and slope gradually to 30 feet 150 yards out. The reefs lie on either side of a sandy cove with the more interesting reefs to the south side.

Little Corona is located in Corona Del Mar and is easily reached by turning toward the ocean from PCH onto Poppy Street. Poppy will end overlooking the ocean and turn into Ocean Blvd. the path to Little Corona is just left of this intersection. A paved path winds down to the beach. Restrooms and showers are located half way down the path.



More Warm Water Fun

WITH SHARKBAIT TEAMING UP WITH ALICIA'S
DIVE/ADVENTURE TOURS FOR A SUMMER TRIP
TO ISLA MUJERES.



This summer we are going to Isla Mujeres, off the Yucatan Peninsula in Mexico. We will stay at the all-inclusive resort Catalonia Riviera Maya. The big draw is cenote diving and diving with whale sharks. There will be some other adventures scheduled for this trip and we'll let you know what they are as soon as we finalize them. The trip is planned for July 21-29. The cost for the land and diving package is \$1700. This price is the cash discounted price. Air fare is not included in the package. Right now the air fare is around \$400 from LAX. If we get enough people we might be able to swing a group rate for the air.

Here are the specifics of the land/diving package:

Package Includes:

- 7 nights accommodations in the all inclusive Catalonia Riviera Maya
- Garden View Room
- All food and drinks
- 3 days of two tank reef diving
- 1 day of two tank cenote diving
- 1 day whale shark excursion
- Tanks and weights
- Airport transfers
- Taxes

Package does not include:

- Airfare
- Gear rental
- Trip Insurance
- Anything else not listed



We are accepting a \$500 nonrefundable deposit for the land/diving package at this time. Final payment will be due April 30th. Deposits may be forwarded to Alicia. She may be contacted at trailgoddess@yahoo.com or 949-584-8408.

Another kind of Drone

Thanks to Jeff who found this article in Crains magazine.

Apium Swarm Robotics puts drone technology to work in the sea
By Wendy Donahue

A drone launch usually draws eyes to the skies, but Tom Zambrano looks to the sea spray off of Catalina Island instead. Zambrano, an environmental scientist at Apium Swarm Robotics in Glendale, Calif., serves as technical director of Apium's SeaSwarm project, which is leveraging autonomous vehicle technology in watercraft, the smaller of which resemble Minions boring through the waves.



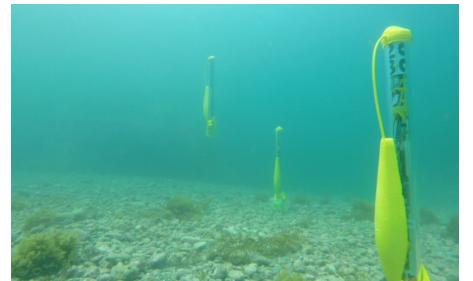
But these capsules aren't designed for entertainment. Apium's aquatic drones are engineered to collect data for oceanographers and, soon, to clean up oil spills, deployed from shore to execute their mission with a fish's intuition for others' position in the water.

In a phone conversation with Crain's Los Angeles, Zambrano shared how he joined Apium founder Tyler MacCready in translating drone technology and swarm instincts to seafaring vessels. The story begins at AeroVironment, another California company that MacCready's father founded in the 1970s and expanded with Zambrano's help.



Q: What are the roots of Apium?

A: I worked with Tyler's father, Paul MacCready, who started AeroVironment just after the Clean Water Act and Clean Air Act were passed. Paul recognized a need for a new branch of aerodynamics to deal with the built environment — how does smog move and how do buildings interfere with air movement. Paul was always an aviator and thought it would be great to put his love of airplanes to use for the environment. Lo and behold here I was with a degree in environmental aerodynamics.



I've been here for 35 years now, working on myriad things, including making specialty aircraft and drones.

Tyler joined the company with his father. He said, "I wonder if we can look into the ocean the way we looked into the air a generation ago." So we started an ocean environmental division, which became sort of an unsanctioned spin off. We called it Ocean Lab initially.

Q: How did you come up with the idea for these aquatic drones?

A: Just as AeroVironment evolved into making drones for air, we thought maybe we can make specialty drones for measuring things in the ocean. We started working on these small Data Divers, 2- or 3-foot-long yellow water drones. They skim the surface and can dive into the water

and come back up. We started using them for scientific measurement of things right off the coast. The reason we did that is, we are a small company. Large companies make equipment that does deep ocean stuff, but their drones are a million dollars apiece. So we focus from the beach to a mile or so offshore.

One of Tyler's brothers, Parker MacCready, is a professor of oceanography at the University of Washington, and he gave us some good use cases about what to measure, such as tidal flows entering an estuary, salinity, pH and temperature of water. From that, scientists have a lot of ecological information they can use in developing their models. If we have a large storm, for example, they want to know how much organic material has entered the ocean, and they want this data as soon as possible, so they can forecast whether communities are going to have to close a beach and things like that.



Because of the connection with the University of Washington, one of the premier oceanographic schools, we got a little street cred, so to speak. We were dealing with bona fide oceanographers and addressing a measurement problem that is very useful for them. It's a bit nerdy, but that's what we're doing.

Q: Where does the oil spill application enter the picture?

A: We started talking with the directors of the Senseable City Lab at MIT, Carlo Ratti and Asoff Biderman. They showed us something they worked on after the BP oil spill, a swarm of ocean drones that could clean up oil. They called it Seaswarm.

We are licensing some technology from the scientists who came up with the big picture, but we aren't using the same vehicle design.

Q: How do the drones work for the oil spill application?

A: Imagine if you have liquid, and put oil on top of it, it's pretty easy to get it off, but once that oil hits the beach, then it's a whole different story; it gets really hard to clean it off of sand and rocks. So really all the effort in science is on how can you stop the oil before it hits the shoreline.

We saw that right here in southern California with an oil spill in the ocean a couple of years ago. Santa Barbara is probably the most environmentally advanced community in the U.S., with a great university that has some of the best oceanographers in the world. Swarms of people were showing up on the beach doing anything they could, but it still takes hours and hours for the work boats to come in. Once the oil started advancing onto the beach, it was a problem.

We'd like to have, at the first threat of oil approaching a beach or community, a 20-pound shipping container show up, and you open it up, and one or two emergency professionals or people could carry these things, each about the size of a kayak, and literally throw them in the water, and they'll take it from there. Once the vehicles are out there, they would be able to skim the oil and ingest it. It would be great to have these as a first responder type of thing before the big guys come.

We make no illusions to being the only ones who would deal with this sort of thing. We're not

the Tesla of the ocean or anything. But we hope to have these on the market in 2018.

Q: What role does swarming play in these?

A: Swarming is how a simple fish or bee that possess very limited innate resources can reach destinations it never could on its own. While [the] movement of individuals within a swarm may look to us very chaotic, they never collide. Also, viewed as a whole, the collective motion of the swarm is incredibly fluid and seemingly unlimited in size and number.

While the science of swarming has been widely studied, it has been difficult to apply to robotic vehicles, mainly because our robotic vehicles most often are constrained to work in a structured environment. There are no roads or traffic laws that contain how and where a bird or bee moves through the sky or a fish through the ocean.

Our SeaSwarm vehicles will be operating in something very close to an unstructured environment. While they are programmed to stay within the perimeter of a designated region, there are no other preset rules limiting their motion within it. They are programmed to just follow a few simple rules with respect to their neighboring vehicles. This enables our vehicles to be very simple, not needing incredibly advanced computers and sensors, and their numbers can be in the tens, hundreds and potentially thousands if that is what is needed to surround an oil spill.

Operating in this unstructured environment is what will allow our SeaSwarm to move very efficiently over an oil spill and skim it up before it can drift onto the shore.

I just came from the Dodger Stadium parking lot yesterday; that was probably the biggest swarm locked in a structured environment I've ever seen. If we were free to swarm like bees, I would have been able to get home in 45 minutes as opposed to 2 hours.

Q: Why did the company change from Ocean Lab to Apium?

A: We had our first round of funding, private money, that we've been using the last few years. Our first round is when we changed our company name. Apium was one of those great names where you hire guys from Silicon Valley — well, it was Silicon Beach — to come up with five-letter words. Apium means "liked by bees." We thought, we'll go with Apium. We were working with a small company called Liftoff, and they would like us to become the next Tesla.

When we began talking to Liftoff, they said, "We know you like the ocean, and boating is a lot of fun, but does your technology relate to aerial drones and self-driving cars?" — which are the two things everyone is talking about right now. They asked, "The swarm autopilot, could this be used in cars?" We said, "Well, yes, it can, in certain applications." They said, "Can it be used in aerial drones?" and certainly, it can be. So we realized if we are to be selling this technology, we should come up with a name that isn't just ocean-focused.

We kind of had a little lesson like that in my hundred-year career at AeroVironment. When we started getting in to the serious business of drones, all of the new, young people called the company "AV," whereas the old people called it AeroVironment. The young people said, "No one knows how to spell that. We need to make it more useful for the clientele and easier to say."

Annual Membership Renewal

It's time to renew your membership. As you recall, we changed the annual dues renewal from an anniversary system to a set date system.

At the February Board Meeting, yhe Board voted to reduce the dues to \$20 per year with no additional charge for a family membership.

See Alf Johnson at the meeting to renew your membership.



Don't Forget Our Sponsors

We are fortunate to have a great group of sponsors who contribute to the success of SharkBait Dive Club. Without their help and support, we wouldn't be able to provide the benefits that membership in SharkBait gives our members.

We need to do our part also by supporting our sponsor/friends with our continuing business support. When considering a purchase of equipment, a class or a trip, or when you have that irresistible taste for Italian food please remember our sponsors. They are great partners !!!!

Hollywood Divers is located right near Universal City Walk. They are giving us raffle Gift Certificates from time to time. You will be able to redeem these online through their web site, <http://www.hollywooddivers.com>. You will remember Heather Hamza and her husband Karim. They have both been speakers at our meetings.

Dive Seekers is located across the country in New Jersey. They will also be giving us Gift Certificates from time to time. The certificates can be redeemed through their web site at <http://www.diveseekers.com>.

Both of these sponsors carry a complete line of equipment and are reputable SCUBA shops. Give their sites a visit, we think you will be pleased with their GOODIES.



SCUBA World

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(714) 998-6382



17487 Imperial Hwy
Yorba Linda, Ca 92886
(714) 524-2770

<http://www.grazianosrestaurants.com/>



HOLLYWOOD DIVERS

Club Information



Monthly club meetings
with speakers and raffle
prizes
Monthly Newsletter
Land-based Club activities
and events for the whole
family
Organized local dives
Resort warm-water trips
Good dives and good
buddies
Membership costs are as
follows . . .
New Membership:
\$30
Renewal:
\$20

membership renewals are
due in February for all
current members. New
members dues will be
prorated depending on the
month they join the club



SCUBA World



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Randy Garzes

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Scubaboard

Scubaboard.com