

Our World Underwater Scholarship Society

REEF Internship – Summer 2006

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Deciding to Dream: Interning for REEF

Decisions, decisions, decisions. We're never through with them-- it seems as though every time we make one decision another unfolds, needing an immediate response. And the curious thing about decisions is that, they're seemingly definitive-- final-- but the outcomes are uncertain, and always accompanied by another set of decisions waiting to be made.

And so it came time to decide. Final semester of undergrad. *Now what?* Go to grad school like the rest of my peers who didn't know what else to do? No. I knew what I wanted to do. I wanted to continue in the spirit of conservation through education and teach people to how to dive. Allow them the opportunity to have the majesty & mystery of the ocean touch them in a way that would make them want to explore deeper, know deeper, and maybe care deeper. I knew what I had to do to get there -- finish up the IDC course, maybe take some basic science at a community college before going back to grad school for marine science, keep my eye out for opportunities doing marine research and fieldwork, and most importantly keep my dreams in sight. I, of course, had to also find a paying job so that these dreams could be possible and thus applied, interviewed and got accepted as a New York City Teaching Fellow.

In the maelstrom of preparing my colloquium, working three part-times, practicing a performance piece for the Gallatin Arts Festival, finding a sublet for the apartment, applying, interviewing, attempting to formulate my next move in life, and graduating, I came across the Our World Underwater Scholarship Society. I heard the chorus of angels in the background. And so I applied to 3 of the 4 internship opportunities, crossed my fingers, and let fate do the rest. When George Wozencraft, the internship director for the Society called to notify me that I had been accepted as an intern for REEF (Reef Environmental Education Foundation), I now had to make a choice. REEF is a 503(c) non-profit organization that works with divers, dive shops, schools, researchers, national parks and other organizations to collect biodiversity and

abundance data by educating divers in conducting species identification and abundance surveys at numerous dive sites on the both the Pacific and Atlantic Coasts of North America and around Hawaii. The internship is designed to introduce young adults to the non-profit aspect of marine conservation. It was perfect. The opportunity only looked slightly imperfect when compared to the 40k salary, subsidized Master's degree, and full health coverage offered by the Teaching Fellowship. It was a toss up between financial stability and moving in the direction of my dreams. In retrospect, I suppose the decision was easier than it should have been because financial stability is something that has been engrained as socially valuable. I wonder how many people, with the same stakes, would have made the same decision that I made.

As soon as the decision was made to go down to Key Largo, FL to intern with REEF new plans were put into gear. New decisions had to be made. Should I leave on the fly or finish out the term with my 3 jobs (2 of which were based around the public school year)? Should I take my car, whose lifeline was fierce but questionable? What and how much do I pack? Who should I sucker in to driving down 22 hours to the Keys with me? Like the best laid plans of mice and men, the answers to these questions among the hundred other ones, changed on a daily basis due to circumstance.

Four days, five family member visits, and eight states after leaving New York, I arrived in Key Largo and began to settle into the cozy trailer at 81 Tarpon Basin Drive. Ashley, my new roommate was in the Virgin Islands for the next two weeks with her internship for National Park Services. Goga, my mom, who had made the trip down with me, tried to hide her slight repugnance for my future trailer home, which ended up growing on her by the last day of her stay. The time between Goga leaving and Ashley arriving passed slowly, but I got used to having the trailer to myself, choosing to walk around naked and sing loudly –off key-- in the shower everyday.

The other two interns, Glynnis and Emily, who lived in a similar trailer three blocks away, stopped by the first night I was there. They both seemed like nice girls, cool chicks—I could tell that they already had a steady dynamic going between the two of them being that they lived together, worked at REEF together, and hung out together. The

day after Fourth of July, my first day at the REEF office, they both showed me how to do some of the basic daily office work, like settling the credit card batch, adding new member requests to the database, sending welcome e-mails to new members, updating the e-News listserv in the outreach account, processing orders for merchandise, ordering supplies, and stocking merchandise. I got straight to it—taking care of that seemingly menial stuff, as Glynnis was working on the curriculum for a fish behavior course and Emily in the midst of planning and executing a fish ID talk. One of the things that REEF does in partnership with field stations is that they provide a curriculum for qualified individuals to teach local fish identification of the most commonly sighted species in each geographic area that is REEF surveyed. The fish are grouped by appearance (i.e. body and fin shape/size) and then distinguished by different types of colorations and markings (such as bands, stripes, bars, spots, oscillated spots, blotches etc.) in different areas of the body and fins (dorsal, caudal, pectoral, and pelvic/anal). Fish ID is a way to engage the recreational divers in a non-invasive, non-disruptive diving activity (as opposed to spear fishing or flash photography). I gathered that idea is: by encouraging divers to learn more about the species and environment they are exploring, and by allowing them to participate in a meaningful activity, such as surveying fish populations and contributing to a large database that is used by scientists and management organizations, they become more invested in the issues pertaining to the integrity of this environment. It makes sense – it's a way of directly linking the monitoring of a resource to the people who use the resource.

Joe, the internship coordinator, and I sat down at the picnic table outside (aka conference room) on the afternoon of my first day at headquarters. That was where we held most of our meetings. It was the clear space away from everyone's individual work inside the office. What happened at the picnic table, stayed at the picnic table. I saw it as a safe space where we could discuss openly and honestly what was working and what wasn't working, and it would prove to be a great tool for communication in the near future after the changeover, which was a time of confusion and uncertainty.

The goal of this first meeting was to set up the internship, customize it, if you will, in a way that would work to the benefit of REEF and myself. Prior to this meeting,

Joe had me fill out a form that asked me about my expectations for the internship and my short-and long term goals, which would serve as a skeleton for our discussion. The next hour and a half was my verbal introduction to REEF. I told Joe about why I was interested in working for REEF and what I hoped to learn during the internship. I was looking forward to being involved in any aspect of marine conservation and education. The idea of working with a grassroots(ish) non-profit organization, seeing the way things work from the ground up, being part of that, fed my enthusiasm for being at REEF. I was excited to see the inner workings of a non-profit and to gain hands on experience in operations. I looked forward to helping with grant writing, and with marketing and outreach efforts...really “real” any work I could get my hands on. And I was especially eager to get out into the field again. I missed data collecting and research, even though I know that there wouldn’t be much of an opportunity for that, being that there was far too much other work to be done around the office, I still looked forward to getting out and doing REEF surveys.

Joe also gave me the breakdown on the staff positions and what areas they covered, told me a little bit about the history of REEF, and told me about the strengths and weaknesses of REEF as an organization. We had over 31,000 members, from the Pacific to the Atlantic and even in some countries abroad—basically we had a lot of potential man power in an extensive network. However, one of the main pieces that was missing from REEF, Joe said, along with a consistent financial situation, was a vision statement—a common directional goal for the organization of where they all see REEF in the future. *“Were going to see a lot of changes when Leda comes in.”*

Also within that hour and a half, I got prepped for the arrival of Leda, who would be stepping in as the new Executive Director. REEF is a very small office. When I arrived the staff consisted of Joe (who worked on maintaining the database, coordinating field surveys and trips, and coordinating the internships), Bryan (who coordinated the Great Annual Fish Count, and directed all education and outreach efforts), Lad the Executive Director at the time (also one of the founding members), and Audrey who checked & organized every scanform survey that REEF HQ received. And then there were the interns who mainly took care of all the small stuff that falls to the wayside and the day-to-day upkeep of the office and member relations (non-specific phone & e-mail

inquiries). Leda interned for REEF back in the early days. A couple of years after her internship she came back to REEF full-time as Office Manager, before pursuing her Master's degree then working with the big dawgs in Washington DC. All before turning 28. Pretty noteworthy, if you ask me. There was a curiosity in the air; what would change when she arrived?

The curiosity however was easily dismissed and quickly replaced by the day-to-day. Glynnis, busy with the fish behavior course, Emily with the fish ID course, and me with my first project, translating an application for the Gulf Guardian Award into Spanish for Lad. The application didn't *have to* be in Spanish, but since the award REEF was applying for was in the category of Bi-National Cooperation, he thought that the effort would be noteworthy. REEF had worked in partnership with the Veracruz National Park to start a program that involved local divers and dive businesses, in setting up fish ID & survey technique field workshops. The program included a series of 3 lectures, with local and regional professionals of the marine world. The goal of the program was to educate the local populations to be able and willing to surveys to monitor their reefs as volunteers—to have the community become active stewards of the marine resources that were integrated in to the interest of wellbeing of the local and regional communities connected to the Park.

During its initial run in 2003, the program was such a success that they coordinated a second and third series of workshops and staff trainings in 2004 and 2005. This effort was a result of the cooperation of REEF with government agencies in Mexico (PSNAV), Pronatura (Central American NGO), along with the National Aquarium of Veracruz, Guardians of the Bay, and seven dive operators. I saw this project was a complete microcosm of REEF's mission; it integrated science education with community activism and practical application leading to the acquisition of continually useful information to management efforts and to the scientific community. It successfully attempted to increase the level of public involvement, those who maintain and use the resources, so that they have direct experience with the conditions and changes that take place, and help them to process the implications of the changes and the importance of the

resources. It was while I was doing this translation that I ended up learning the most about what REEF is about-- through writing one of their specific ongoing projects.

REEF's most well known annual event, the month-long Great Annual Fish Count, is part of their primary ongoing Fish Count Project. During the Great Annual Fish Count, REEF coordinated Fish ID events and survey trips, and sold survey materials at a discounted price. Early on a beautiful Saturday morning (the second Saturday that I was there), Glynnis and I headed out to Biscayne Bay National Park, where we were going to deliver a Fish ID talk and then assist the class in surveying and ID-ing fish for the Great Annual Fish Count. We got to Biscayne Bay National Park at 8am to meet up with Max Tritt, one of our primary contacts at Biscayne, to set up for the slide presentation in the visitor's center. It took us a while, after experiencing some technical difficulties with the computer and the slide projector, but luckily the crowd of 30 or so was patient enough to wait for us to get things going. In the end, it was the technical expertise of Shelby Moneysmith that got the presentation up and running.

It wasn't the first time that I had seen a Fish ID talk; I had gone with Lad the night before and helped him to do the same talk at the Conch Republic, a dive shop down in Tavernier. After Glynnis was done with her talk, she had asked me about Lad's talk. Lad had obviously been doing Fish ID talks for a while--his tone was relaxed, and he spoke with natural conviction and fluidity. As someone who had made many presentations to groups in the past, I knew that it takes several times doing the same presentation to get comfortable enough in making it your own, and when you master that, that's when the audience really listens. I wasn't sure how many times Glynnis had done the talk before, but at the end, the group seemed pretty eager to ask questions...mostly about sharks and what ones best course of action would be to survive one.

After a break for lunch, we prepared for our afternoon on the boat. We would be visiting 2 sites with the group --Glynnis would be diving and I would be snorkeling (since I didn't bring any gear or my C-card). The skies were clear, but the swell was a bit turbulent so I strapped on a weight belt as fast as I could and jumped overboard. Even though Glynnis was diving and I was snorkeling, the reefs were both shallow enough that I could dive down and swim along and survey along side her for a minute or two at a

time. Glynnis who was a level 3 surveyor, knew far many more species than I did – she had taught at SeaCamp in the Lower Keys, a couple of years earlier and was more familiar with Florida-Caribbean species of fish. By partnering with her, I was able to learn a few more species than I had known before...like the Bridled Goby and the Green Razorfish, which I had never really kept and eye out for before then. By partnering with her, she was also able to get back to the boat because of my 1) keen sense of direction and 2) ability to scan the surface a full 360 degrees. She and I had an excellent symbiosis that afternoon.

As we tore down our gear on the boat, I noticed a gold pendant with Arabic writing around Max's neck. "How come you have that?" I asked him. "I got it at the Gold Souk in Riyadh..." He replied casually. Turns out that Max and I had been living in Riyadh, Saudi Arabia at the same time, coincidentally also under the care of the same company. Small world, ain't it? I thought it was pretty cool.

I was back at Biscayne later that week. REEF usually volunteers their interns for monthly beach seining, in assistance to none other than Max Tritt. The seining was part of ongoing data collection in a study that was meant to assess the juvenile bonefish population. The data collection took place over the course of two days – one day to sample the bay side and one day to sample the ocean side. It was timed so that we sampled when the tide was lowest; in the time between it going out and coming back in. We sampled five sites on each side, taking three samples at each site. We used a 60ft net with a pocket in the middle and pulled it along 20 meters parallel to the shore. Then, depending on the terrain, we would either drag the net up to the beach or close it in and pull up the bag. Sorting through the catch was my favorite part. Mojarra. Redfin needle fish. Timmicue. Gold Spot Killie Fish. Barracuda. The occasional permit. Siversides. Hardheaded silversides. Peapod Trunkfish. Tiny flatfish. Tiny snapper. Tiny grunts. An endless variety of tiny juvenile fish. And a baby nurse shark that I reached in and pulled out of the net.

They first day out seining, it was me, Max and Hervey, the French SCA grad student. Shelby joined us at the first site. I was quick to pick up on the different species and more than happy to pull the net. All the species and relative abundance had to be

recorded. All of the juvenile grunts had to be keyed out (there was a diagram that differentiated the different juveniles), and all the snappers had to be measured and recorded. In addition at each site, we took a water quality reading (temperature and salinity).

Shelby also did the turtle monitoring. One Saturday when Ashley, my roommate, was back, we volunteered to go out and check for nests on Elliot Key. Hervey got the boat ready, and we picked up the rest of our volunteers on the way out—two sisters, 8 and 11, who lived on Adam's Key inside the Park, their entire lives. They went out every week to check for nests. They knew where all the nests were located; they knew which ones were predated, and how old each of the nests were. They knew to look for the shells and they knew how to tell the difference between a hatched nest and a predated nest. It was pretty impressive. I was amazed at the simple fact that there were even nests present. The beach was no more than 3 feet of sand and for a turtle to get to that beach, it would cross a large expanse of rough miscellaneous sea debris and trash that had washed up to comprise the majority of the shoreline of Elliot Key (and stank like airplane bathrooms). I remember just feeling saddened by the overwhelming amount of random garbage washed up on those beaches. Apparently, Alternative Spring Breakers come down for clean up, but two weeks later, the beaches are back to the way they were before they got cleaned up.

Another volunteer opportunity that the internship warranted was ReefMedic trainings and missions, such as the Diadema Taskforce, lead by the Florida Keys Marine National Sanctuary in partnership with the Florida Institute of Oceanography. Apparently since the mass mortality of the long-spine sea urchin (*Diadema antillarum*), algal cover remained unchecked by these formerly integral grazers. In efforts to rebalance the population of Diadema on the reefs, FKMNS and FIO devised a Diadema relocation plan that would transplant the urchins from one reef to another. Nick Tagalerini, from the FKMNS, and his crew stocked the urchins and brought them in buckets over to the boat that we were on. The urchins were then placed in nets (ten per net) and shuttled down to our divers, who were checking out strategic locations to plant the Diadema, by yours truly; me. I understood the effort and at the same time didn't understand. In my mind the

mass mortality was a result of anthropogenic effect on the marine environment. How would a further disruption of the ecosystem 'remedy' and already bad situation? It seemed like it was using a Band-Aid for internal bleeding. But then again, I'm not a government scientist and there probably are many facets to the situation that I don't understand or know about.

In late August, Paul Humann, infamous underwater photographer extraordinaire and co-founder of REEF, lead a series of lectures and dives as part of his Discovery Tour. This was a week jam packed with diving with Horizon Divers and talks about every type of life form that you would encounter under the sea, from barrel sponges to ascidians by none other than Paul Humann. The week of Paul's Discovery Tour also happened to coincide with the coral spawning. Pat, one of the women who had come down from Canada to participate, was determined to see the once in a lifetime event of coral spawning. Although the coral spawn every year, to have the opportunity and the conditions be right to see coral spawn is rare. Each species of coral spawn at distinct times as to maximize probability of fertilization. On all three night dives that week, we were on the look out for spawning coral. Now, I myself had never seen coral spawn, and I didn't know quite what to look for. On the first night dive, Emily found some spawning coral. Everyone gathered around to see. It wasn't anything too crazy – a small montastrea head excreting a short burst of milky liquid. On my second night dive I found some spawning coral, and this time it fascinated me, maybe because this coral was spawning like crazy. Here I saw multiple streams of liquid bursting all at once and rising in the water like thick smoke. Pat, of course, was elated about the find. The part I enjoyed the most about the Discovery Tour was talking to the participants like Pat, and showing her stuff that she got excited out-- feeling as though my efforts were contributing to her have a good time going out with us at REEF.

My time with REEF passed quicker than I had noticed. Before I knew it, Glynnis had left, and the interns for the fall, Alecia Adams Ashley Apel, had arrived. My time was running out and I had just gotten settled in the office. Things were picking up in terms of trips and outside events. Joe had recently shown me how to take care of adding

new geographical coordinates and dive sites into the database. And there was so much that I hadn't gotten to get my hands into yet. While I had organized and catalogued the library of scientific papers, helped print and put together the batch of member cards we had to send out, among other things around the office, I didn't get to do any grant searching or writing, give any fish ID talks, or help with any marketing/publicity projects. In our exit discussion/evaluation Joe and I talked about the summer. It was a hectic time for all of us with the changeover and all. I think perhaps the most valuable thing that I learned from the internship this summer was about office dynamics and the different factors that affect what ends up happening and what doesn't—it's a matter of priority and possibility.

I had come full circle and was now training them to do the things that I was trained to do, seemingly yesterday... I remembered my first dive with Horizon that summer to the S.S. Duane, down to 120 ft. And the dives on the S.S. Spiegel, notorious for its temperamental smokin' current right off of the Gulf Stream. Little Joe, one of the divemasters for Horizon, was my buddy the first time I dove on the S.S. Spiegel. We dove through several rooms on the bow. In one of the rooms there was a table in the middle. I stopped and signaled to Joe that we should take a moment and sip some tea at the table. My days and weekends of diving with Horizon and doing surveys were coming to a close. On September 13, I took Ashley seining with me to show her how to get to Biscayne and show her the seining ways. The day was pretty perfect. Clear, calm water and skies. On the way back, Max spotted a recently dead turtle. We doubled back to investigate, being that Shelby was keeping an eye on the turtles in the Park. This particular one was a Green Turtle and had been run over by a boat at high speed. The back of its carapace was cracked and its back flippers were torn off. We used a tape measure to get the size of its carapace around at its widest point. It was definitely at mature reproductive age and definitely sad since the turtle population was already in jeopardy due to nest predation. We headed back once again only to stop once more, but this time for a pod of dolphins that were not 20 feet from the boat. Max idled the boat and we just watched the dolphins jump and play near the boat until they moved along before we started up again towards the Park.

With the Subaru packed and ready to head north, my last day with the REEF crew was also spent at Biscayne, this time assisting on an Advanced Assessment Team Survey Trip. The AAT were highly active members of levels 4 and 5. Whenever there was a survey monitoring project that needed to be done, the AAT was called in. They participated in the long-term monitoring efforts the REEF took care of. I was onboard with Todd Ellison of NOAA and Sara Goldman, a previous REEF intern who was completing her Master's, along with Shelby and Hervey. I once again snorkeled while the rest dived. It was my first encounter with Ballyhoo, thin schooling fish that swam in the water column with thin, elongated purple snouts and purple & orange caudal fins. I followed a bunch of yellow stingrays and came within a few inches of the face of a baby nurse shark nestled in small patch of gorgonians. At the last site, I found a bunch of pieces of pipe with lobsters in them. When I told Shelby about them, she told me that people illegally dropped *casitas*, old pipe pieces, for lobster habitat, and then came back to lobster them. She asked me to show me where I found them, so we could GPS the location of them and remove the casitas. Of all the places that I had worked with over the summer for REEF, I probably spent the most time and felt most in place at Biscayne.

They day before I left, I received an e-mail from Biscayne, asking if I would be interested in meeting with the water quality crew, as they needed an emergency hire and Max had let them know that I was interested in any opportunity they have available. So hopefully, I'll be going back to Biscayne shortly. Through this internship and the support of Our World Underwater Scholarship Society I got a taste of what the marine conservation world is like. I got to meet really great people and got to do and see amazing, amazing things. It was a once in a lifetime opportunity, that I could not turn down (not even for health benefits). It wasn't always easy, often exhausting, and often requiring compromise and patience with others, and myself, in dealing with sudden changes of weather. I decided to learn. I decided to grow. I decided to contribute. I decided to get a head-start on my dreams.

And I am so thankful.