



Student Association  
for International  
Water Issues

# SAIWI Panama Trip Report

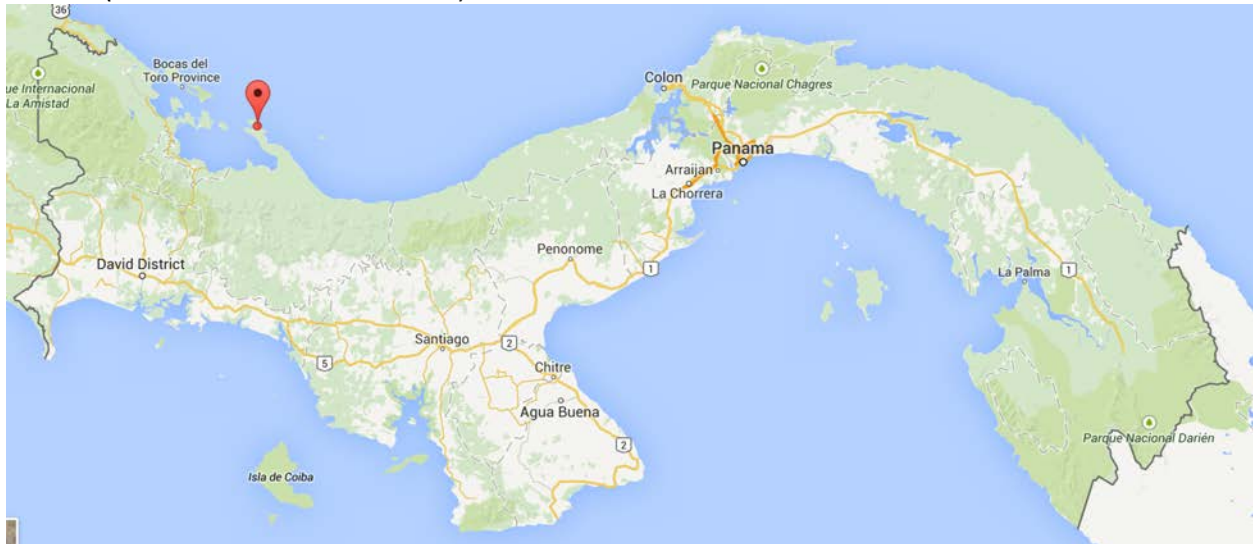
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January 1-16, 2015



## Location

La Ensenada, Ngöbe-Boglé Comarca, Bocas del Toro, Panama  
(9°09'18.0"N 81°52'14.7"W)



Google Maps

## Participants

Karen Gastineau (trip leader and UNR graduate student)  
Austin Bennett (UNR undergraduate)  
Brittany Taylor (UNR undergraduate)  
Kate Berry (UNR faculty advisor)  
Miles Wathen (Volunteer)  
Colleen Hickey (In-country contact and Peace Corps Volunteer)

## Travel from Reno to La Ensenada

The three students departed early on the morning of January 1<sup>st</sup> for Panama City. Staying one night at the Jamraka Hostel, we continued on the next morning with a flight to Bocas del Toro with Kate and Miles. Arriving around noon in Bocas Town, we first met Colleen Hickey, who showed us around Bocas Town and introduced us to our boat driver.

## Supplies

Supplies purchased at the hardware store in Bocas Town after meeting Colleen included: a paintbrush, rubber gloves, a *flota*, wire, PVC outlets (4), PVC elbows (4), a tarp, and Sika. A community member also purchased an extra trowel for cement in Chiriqui Grande during our stay. Before we arrived Colleen had already bought cement, wire, chicken wire, and PVC pipes. In addition, sand and clay have been passed down from the previous Peace Corps Volunteer who pioneered ferrocement rainwater catchment tank projects in the area.

## Rainwater Catchment Tank Construction

*Day 1:* The first day began with Colleen introducing us to some key members of the community and letting us explore the area, most importantly, the path to the beach. Early on we met Enrique, one of two self-appointed presidents of the water committee and one of Colleen's most enthusiastic supporters. We began by stuffing the two sewn sacks with sawdust, one

made of canvas that was 12 gallons and one made of blue fabric that was 85 gallons. With the larger sack stuffed, we had accurate dimensions of the base of the tank to create a clay mold for the concrete base.



Kids help pack down sawdust in the bag that will serve as the form for the 12-gallon tank

*Day 2:* We made a clay mold for the smaller tank and shaped chicken wire for the base. Then, we learned how to mix concrete (shown by the *jefe de cemento*) and constructed bases for two of the tanks.

*Day 3:* The cement bases were not quite finished curing by the morning, so the day began with a trip to the beach. Afterwards, we continued construction of the 12-gallon tank. First, we placed the sawdust-filled bag over the base, and then tightened chicken wire around the entire tank. Once this was done, we could put on our first layer of cement, aiming to cover all of the chicken wire. About two hours later, we applied a second coat of cement, and Enrique expertly smoothed the sides of the tank.

*Day 4:* We practiced our skills learned yesterday on the larger tank, repeating the process. This time Oro smoothed out our slightly sloppy attempts at working with cement.

*Day 5:* We spent a rainy morning in Colleen's house molding four PVC pipes for the tank lids. After sawing several "teeth" into the pipes, we dipped them in hot oil which made the pipes soft enough to shape. At the other end of the pipe, we used the same hot oil to expand the pipes so that another PVC of the same size could fit inside easily. This was a cheap way to avoid buying PVC attachments. In the afternoon, we constructed lids for both the 12- and 85-gallon tanks. The cement for the lids was poured on top of the curing tanks to ensure a perfect fit.



Enrique, Austin, and Brittany add the first coat of cement to the 12-gallon tank.

Again, clay underneath the lids provided structural support while the cement hardened.

*Day 6:* We began a second 12-gallon tank by constructing the base. While the other two tanks were curing, we helped to complete a fourth tank that Colleen had started during her water seminars. The second and final coat of cement on the interior of the tank was a mixture referred to as “neat cement,” which is water, cement, and Sika, used for waterproofing.



PVC pipes shaped and ready to use in making the tank lids

*Day 7:* By this point, the first small tank was done curing, so we emptied the sawdust from the bag, cleaned the interior, and applied another coat of cement. Because the first small tank no longer needed its form, we could refill the bag with sawdust and use it with the other small tank, again, tightening chicken wire around the entire bag. Getting the sawdust-filled bag to look symmetrical proved challenging this time around, taking multiple tries. Carmen and

Tomasa made *chocolate* for us, a hot, non-sweet beverage made from local cacao. After, Colleen took us on a short field trip to see projects from previous PCVs. A gravity-fed aqueduct served the community by the beach, and we walked through the jungle to see the large 500-gallon plastic storage tank and the concrete spring box. In addition, Colleen showed us a composting latrine that had been constructing by the beach.



The group at the spring box constructed by an earlier Peace Corps Volunteer

*Day 8:* The second tank was ready to apply the two coats of cement on the second tank. In addition, the larger tank had finished curing, so we slowly unpacked all the sawdust to get the bag out of the tank.

*Day 9:* We constructed the lid for the second small tank and did the interior coats of cement on the larger tank. At the very end, we realized our remaining cement had gone bad, and considered ourselves lucky that we hadn't run out of good cement sooner. We celebrated in the sunny afternoon by drinking Cokes on the dock and taking a few trips paddling the bay in a dugout canoe.

*Day 10:* With all the work done on the tanks that we could accomplish for now (the second small tank was still curing), we visiting the family that Colleen had in mind as the recipients of our first available rainwater catchment tank. They were excited about installing a tank and were welcoming, giving us coffee and food, and showing us around their house. Using the Peace Corps' rubric as a guide, we asked questions about their water source, water storage, water usage, and sanitation facilities. Currently, they use an open plastic 5-gallon bucket to store water in the house, and estimated that they use fewer than two buckets a day. The family made plans with Colleen to carry the tank up to their house as soon as it would be done curing, and they discussed the tank's placement in the house.



Saying farewell to our cooks, sisters Carmen and Tomasa, on our last morning

### **Travel from La Ensenada to Reno**

On Tuesday, January 13<sup>th</sup>, we left La Ensenada in the morning and traveled to Bocas Town on an hour and a half long boat ride. On Wednesday, we were able to snorkel, swim, surf, and soak up the vibes of laid-back Bocas Town, spending two nights at the hostel Casa Verde. Early Thursday morning (January 15<sup>th</sup>) we flew to Panama City, where we had a chance to explore the old and colorful neighborhood of Casco Viejo as well as tour Casa Providencia. The project, located in Colón and funded by the Reno Rotary Club, aims to provide a home for orphans with special needs in Panama. On the way back to Panama City, we stopped by the Panama Canal to see cruise ships and container ships travel through the locks. Friday, January 16<sup>th</sup>, we took a taxi to the airport and flew back to Reno.



Casa Providencia, the special needs orphanage in Colón, under renovation

## Future Recommendations

It would be best to know more specifics about the process of constructing rainwater catchments tanks so that we could have had more reasonable goals. We had hoped to set up at least once of the tanks with its catchment system, but cement takes at least two more weeks to cure after everything else was finished with the construction, making this goal impossible. Overall, it was beneficial to have looser goals because the pace at which SAIWI works is dependent on the community's preferences.



Sunset over the bay in La Ensenada

## Final Budget Summary

Description	SAIWI Cost	Individual Cost (per person)
International Airfare	\$2,390.10	
Airfare in Panama	\$798.08	
Boat transportation	\$410.00	
Overweight baggage fees	\$14.77	\$10.55
Tank supplies	\$198.62	
Lodging		\$43
Food		\$172
Tourism		\$61
Taxis		\$36
Gifts for children		\$20
<b>Total</b>	<b>\$3,811.57</b>	<b>\$342.55</b>