



Shock or Awe?

The Cessna's single engine sputtered and died for the fourth time. Sitting next to the pilot, I looked over my shoulder at my co-worker and biologist Manrique Esquivel, and at William Alfaro, president of AFAMAAR, a local conservation organization. I wondered if they noticed the worried look on my face. I certainly saw it on theirs. The worn appearance of the cockpit controls only increased my anxiety. As I was mustering the nerve to call off the whole flight, the engine caught, revved and in a matter of minutes we were 7,000 feet up in the air, being bounced around by the turbulence from the Atlantic winds.

We were the beneficiaries of LightHawk, a non-profit organization of volunteer plane pilots who donate flight services for conservation organizations. In their experience, "There is not much that you can't see from a small plane" – just what we needed! After three years working on the ground, we were eager to get a preliminary overview of the Balsa River watershed, both visual and mental, to map out our future work and share with our partner communities any data from our aerial survey.

Luck was with us that day. The weather was exceptionally good for a region famous for its persisting cloud cover. Our flight route took us over the upper Balsa River watershed, which skirts the western perimeter of Juan Castro Blanco "Water" National Park. We wanted to get a bird's eye view of remaining forest and to assess its degree of connectivity to the park, a 35,000-acre biodiversity haven and source of water for the entire northern third of the country. Before long, we began to spot familiar landmarks as we made our way northwest towards the surveillance area. There was Poas Volcano to our right and the sugar cane fields of Grecia directly below it. Straight ahead we could see the rapidly expanding town of San Ramón, where our Institute's office is located. A little later, we began to spot the numerous dairy farms of the Alfaro Ruiz area. There was the town of Zarcero with its quaint central park populated by whimsical cypress topiaries, and the rock quarry that has eaten into half a mountain so far.

Also visible were the properties purchased by the rural community water management associations under Nectandra Institute's Eco-Loan program. The involved communities are planting trees and systematically monitoring restoration progress. Thanks to their effort, former cow pastures are now protected for the forest to regenerate. I recognized the ten-acre property purchased by the water association of La Palmita and noticed it was closer to large tracts of forest upstream than I previously thought. This was good because in time the reforested La Palmita property will help bridge the forested neighboring areas of the Barranca and Espino watersheds, the latter a sub-watershed of the Balsa basin.



The Water National Park, as seen from above. Haven for biodiversity and source of freshwater for Balsa watershed communities and many others.



Forest fragments in a sea of agricultural activity in the upper Balsa watershed near the Water National Park.

Despite being pleasantly surprised with the unexpected degree of biological connectivity between newly protected properties like La Palmita's and relatively large forested areas, it was disheartening to see the

general state of land-use in the region. There were tiny forest fragments scattered throughout, now insignificant islands in a vast sea of dairy farms, cow pastures, and other agricultural activity. With the rapidly shrinking forest cover plainly visible below me, I had little doubt as to why some local communities were so worried about the future viability of their freshwater sources.

It was with this on my mind and turbulence-provoked queasiness in my stomach that we approached the national park. Suddenly, there it was. And for a moment at least, I forgot all about the uncurbed deforestation and my nausea. Juan Castro Blanco National Park appeared before us, and I immediately understood why it is also referred to as the Water National Park. It is a rounded mass of pre-montane and lower-montane tropical forest buttressing three dormant volcanoes, each about 7,000 feet high. From the plane's window, I could see several waterfalls spilling out from its steep sides and many rivers flowing forth from its base, guided by canyons of lush, green vegetation. Wearing a crown of clouds, it loomed majestically, out of the surrounding agro-scape. I was awestruck by its magnificence and beauty.

Since this mesmerizing (and dizzying) flight, it has occurred to me that awe is more effective than shock to convince people to care for the natural world. The feeling I got upon seeing the Water National Park in all its glory convinces me of this. So does the joy clearly evident in the many schoolchildren who spent a day at Nectandra Cloud Forest Garden Preserve. Further proof is the mainstream success of top-notch nature documentaries, such as the award-winning *Planet Earth* series, highlighting nature's magnificence rather than the threats against it.

Nature has unlimited potential to wow us all and make us fall in love with it. We must be open to learning about it, get to know it personally, spend time with it, feel it, smell it, and taste it. If we do this, there is no doubt the awe it will inspire will be more powerful than the shock we feel when we learn about the countless injustices against it. I believe this is critical to reaching a tipping point in environmental action. This will be the point at which society in general, not just us "tree-huggers", will identify with noted environmental writer Wendell Berry's words, "What I stand for, is what I stand on."

— Luis Villa

Changing Attitudes

As a professional advocate for sustainable development, I am convinced that paradigm change can best be achieved through everyday examples, starting in the home. For this reason, I have always considered it

important to work with women of the community. Environmental and education outreach programs targeting these individuals can benefit greatly from the critical role they play as principal educators in their families. With this multiplying effect in mind, Nectandra Institute started encouraging women in our action area to form "VIDA clubs" to organize activities on different themes related to water and the natural environment.

During one of my presentations to a VIDA club, the discussion centered on the legal recourse that exists in this country for protecting communal freshwater sources inside private properties. For example, Costa Rican law states that the area within a 100 meter radius of a spring must be protected. These and many other water-related issues are regularly discussed with VIDA club participants in an effort to bring awareness to the developing water crises. Admittedly though, I had not, until that point, stopped to truly analyze the prevailing attitudes towards water and the environment in the communities I work with.

At one point during the conversation, a member of the audience made a comment that caught me completely off guard. It was not her words so much as the background behind them that surprised me. She mentioned that her husband (who had been a volunteer board member of his community's water management association) believed it was best that the springs located inside their own property *not* be protected, and better yet that they dry up. After all, they were not using that water, so it would be preferable if no one else take advantage of it either, especially people from other communities.

I tried to come up with a well-thought out rebuttal to this line of thinking. I reviewed with the group everything we had talked about in previous sessions regarding the limited quantity of water available globally for human consumption. I mentioned the water shortage in some regions of the world, including parts of Costa Rica. We went over statistics concerning mortality rates due to lack of access to drinking water. I reminded them that water in Costa Rica is a state-owned resource. In pleading my case, I appealed to what I know about geography, hydrology, watershed management, ecology, human rights, sociology, psychology, and even religion!

I also tried putting myself in her husband's shoes to understand why he would make such a comment, especially after having been one of the individuals entrusted with the management of his community's water supply. Perhaps he was afraid of potential headaches associated with easements placed on his property if the government granted water concessions to an outside party, such as a neighboring community's water management association. However, this did not

seem like a good enough reason given that he, like many others from his community, depends on water sources inside private properties further upstream.

This experience triggered two questions for me. First, why are people in our current society so selfish? And second, how long before we can overcome this self-interested approach to the way we do things and what will be the key to this change? Obviously, we have to do a better job of promoting certain values in order to change attitudes, but I am far from being able to offer a complete answer. I hope that you as the reader take a moment to reflect upon this challenging dilemma, and I welcome any ideas for change from you!

— Randall Varela

Randall is Nectandra Institute's community outreach and education coordinator. You can email him at randall.varela@nectandra.org.

Nature's Reminder

The Water Management Association of Tapezco, a community in Costa Rica's Balsa River watershed, recently purchased a ten-acre property with an interest-free Eco-Loan from Nectandra Institute. In exchange, the community legally pledged to protect their primary water supply through active watershed restoration and reforestation. As part of the community's celebration of the purchase, Dayana Rodriguez, a 5th grader, recited the speech below written by a kindred-spirit:

*An eye for an eye, a tooth for a tooth.
A measure delivered, a measure received.
He who lives by the sword, dies by the sword.
You reap what you sow.*

Only four quotations, but there are more. They are expressive, ostentatious phrases tinged with vengefulness, but they reflect today's reality. A depressing and disgusting reality, but one that I, as a young person, have to live with because of you adults. In turn, if I do nothing, it will be a reality that my descendants will have to face.

Today, I direct these words to the grown ups who are listening and who are often at odds with my generation, blaming us for innumerable problems, without looking at themselves in the mirror.

The natural environment entrusted to us by God is unforgiving. I am not referring to vindictiveness on the part of the Almighty, but to the inevitable price for abusing the laws of nature, which are no less than the laws of God.

And the cost will be high. Who will want to live in [the coastal town of] Puntarenas, knowing that it may be underwater in 20 or 30 years? If these predictions hold true, my children will only know this town from old photographs.

And for that, the adults are to blame. And the older the adult, the more the blame.

Couldn't you have avoided the slashing and burning that devastated the flora and fauna and polluted the air? Couldn't you have made frugal use of your automobiles and strived to minimize their emissions? Couldn't you have composted the residues of sugar cane and other crops, instead of burning them? Couldn't you have recycled and reused, instead of incinerating? Couldn't you have avoided suicidal wars that generated massive pollution such as the Persian Gulf War, with its backdrop of oil wells set ablaze?

The greenhouse effect is due to the accumulation of atmospheric carbon dioxide and the destruction of the ozone layer from chlorofluorocarbons. They contribute to climate change and are also consequences of the mistreatment of nature and misuse of the earth's natural resources.

Today, both you adults and we young people are seeing the effects of global warming. Photojournalists have recorded astonishing images of disappearing glaciers and crumbling icebergs. The glacial retreat took many decades, but the dramatic photos took only days to shoot and show to the world. Are these not the images of a crime? Nature is being murdered. Snow-covered Alps were once a perennial phenomenon, but no longer. Previously unseen rocky mountain-tops, now exposed, are the norm.

The patterns of climate have changed. "The weather is just crazy" say some people, while refusing to recognize their crazed acts against nature. Each flood, each home that is destroyed, each life that is lost should be a blow inflicted on those who provoked these tragic events. I am now sentenced to live the rest of my life in a world suffering the effects of global warming produced by the generations before me. Imprisoned on this changed earth, I must fight to free my yet unborn grandchildren. Sadly, for me and my future children, there is no escaping this incarceration.

How much damage you have caused us!

Sadly, the solution is not easy. Everything is still viewed as business as usual. We negligently leave the responsibility to others. We have allowed consumerism to trap us into unnecessary, materialistic extravagance that is hurtful to our planet.

It's up to you and me, children and young people, to raise the environmental flag. It is urgent and cannot be postponed. Either we work to clean the environment for future generations or we will be party to the approaching disaster. Global warming is real and those responsible for the crisis are here before me.

Nature reminds us...

*An eye for an eye, a tooth for a tooth.
A measure delivered, a measure received.
He who lives by the sword, dies by the sword.
You reap what you sow.*

Thank you.

Dear Dayana, We hear your urgent and clear message. Your impassioned pleas give me great hope, that perhaps your generation, unlike mine, is well on its way to confronting the heart of our current environmental problems. Your charges may be heavy for us adults to bear, but we can do no less than accept the challenge and continue to do our outmost. – The editor

Activities, January to June 2009

January – Nectandra Institute’s partner communities planned their 2009 restoration work for land acquired with eco-loan assistance. They decided to propagate native species seedlings themselves for purposes of assisted reforestation. They will monitor and document the progress of natural regeneration underway at the sites.

The Tapezco Water Management Association became the newest sponsor of a youth water board. Nectandra Institute assists associations with organizing and training these young people. By building awareness among the youths about the importance of protecting freshwater resources today, we hope to secure a better tomorrow for them and future generations.

February – Youth and adult water board members, as well as VIDA club participants from several communities began attending training workshops from Nectandra Institute. The attendees are forming a volunteer network to study and monitor water quality (using effective and standardized bio-indicators) for select locations within the upper Balsa River watershed.

Nectandra Institute joined LightHawk, a volunteer-based environmental aviation organization, for a flight over the upper Balsa River watershed to photo-document remaining forest cover and other land uses. The information collected will be shared with local water management association representatives and other community partners to promote the protection of the watershed.

March – VIDA clubs from the Balsa River watershed began this year’s water education program called “*Caring for our Communities’ Water*” for local sixth graders. VIDA clubs are groups of women organized with assistance from Nectandra Institute for the purpose of carrying out environmental initiatives in their communities. The watershed communities of Tapezco and San Antonio de Naranjo host the newest VIDA clubs.

April – Nectandra Institute staff gave a series of presentations to water management board representatives on establishing community-run nurseries in order to produce the trees of native species needed for reforestation of properties purchased with eco-loan assistance. In response, youth water board members from the Balsa River watershed community of

Tapezco engaged in a series of seed-collection outings in the forested area near the property purchased by the town’s water association.

May – The second cycle of Nectandra Institute’s CUENCAS workshop series concluded. Workshop participants gained a practical understanding of the water cycle and watershed hydrology, environmental law, water quality analysis, and the principals of water management. Attendees included representatives from the Balsa watershed communities of Anateri, La Peña, and San Luis.

Nectandra Institute staff began training community youths on the use of GPS receivers for mapping purposes. Youth water boards, VIDA clubs, and water management association representatives will partner with the Institute to create GIS (Geographical Information Systems) maps that include key information such as the location of freshwater springs, groundwater recharge areas, forest cover, properties that have been acquired and are being restored, water quality analysis results for different sampling points, and aqueduct infrastructure such as pipelines and distribution tanks. These “*green maps*” are intended to serve as a powerful educational tool to promote a holistic watershed vision by all community residents.

June – AFAMAAR, a grassroots conservation organization working in the upper Balsa watershed acquired a 250-acre property with financing assistance from Nectandra Institute. Like lands acquired previously with Eco-Loans, AFAMAAR’s is located near or within the southwest slopes of the Water National Park. Reforestation on these sites will help restore the critical buffer zone between the park and areas dedicated to human land-use.

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