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STRANDED IN RURAL SOUTHERN VIETNAM

Hot & Humid Climate

Our group decided to travel to Vietnam to study the ecological effects of herbicides used by American forces during the Vietnam War. More than 19 million gallons of herbicides were sprayed throughout southern Vietnam between 1961 and 1972, including Agent Orange, which contained the chemical dioxin. The purpose of this operation was to clear forests that the North Vietnamese forces were using as cover, and to damage any crops that could potentially be used to feed them.

In addition to illnesses and disabilities in the human population, Agent Orange caused deforestation and defoliation. This drastically changed the ecological landscape and building culture of rural Vietnam. Forests that provided construction materials have vanished, allowing the proliferation of invasive species of bamboo and cogon grasses.

The purpose of our trip was to research the impact of this deforestation on traditional building materials and practices. This consisted of taking samples from potential building materials, both indigenous plants and invasive plants, and analyzing their material properties. From these results, we could form conclusions about proper design adaptations that locals could use in their construction practices.

We bought a used 4x4 with an attached winch in Ho Chi Minh City, and equipped ourselves with a hatchet, a machete, rope, twine for collecting samples, matches, a compass, 2 buckets, bug netting, and a tarp, a map of southern Vietnam, a first aid kit, water bottles, and

non-perishable rations as basic supplies. We then set out to visit the rural villages throughout Vietnam's central highlands.

After a few weeks, during a trip between distant villages, we were driving our 4x4 along a path on a ridge, and decided to take a detour off the path and into the valley below to collect more samples. While we were working in the back of the valley, a freak thunderstorm appeared. We hastily packed up our equipment, and started to drive out of the valley to escape any potential flooding. On our way back up to the path though, our truck was caught in a flash mudslide that pushed it sideways back down the grade. Alex Hippen, who was driving, struggled to regain control, but the truck slid into an exposed rock, and flipped onto its side.

We were all thrown from the truck. The only serious injury was to Alex Westby, who sustained a broken arm. We set her arm with a makeshift splint, then gathered our supplies and protected them with the tarp. We found that kingpin and tie-rod on the 4x4's front right wheel had snapped, rendering the truck inoperable.

After the thunderstorm had passed, we set about exploring the immediate area to properly understand the landscape in which we found ourselves stranded. The most abundant building material was bamboo, however there were still sporadic tree groves; and there was a substantial presence of wildlife that we could potentially hunt for food (thankfully, Alex Hippen is a skilled bowhunter). A small river cut through the bottom of the valley; but the valley floor had some protected hills. Using this information, and our previous experience with Vietnamese construction, we set about designing and building a shelter to survive rural Vietnam.

Works Cited

- “Agent Orange.” *History Channel.com*. A&E Networks, 2015. Web. 2 Feb 2015. <<http://www.history.com/topics/vietnam-war/agent-orange>>
- Chiras, Daniel D. *Environmental Science*. 8th ed. Sudbury, MA, United States: Jones and Bartlett Publishers, 2010. Print.
- “Environmental Impact of Agent Orange.” *Make Agent Orange History*. The Aspen Institute, 2012. Web. 2 Feb 2015. <<http://makeagentorangehistory.org/agent-orange-resources/background/environmental-impact-of-agent-orange-dioxin>>
- Furukawa, Hisao, et al. *Ecological Destruction, Health, and Development : Advancing Asian Paradigms*. Kyoto University Press, 2004. Print.
- “The Invisible Enemy.” *Agent Orange Record*. War Legacies Project, 2010. Web. 2 Feb 2015. <http://www.agentorangerecord.com/agent_orange_history/in_vietnam>
- Nguyễn, Bá Đàng, Vũ Phương Nguyễn, and Hoàng Vân Tạ. *Traditional Vietnamese Architecture*. Hà Nội, Việt Nam : Thế giới publishers, 2004. Print.
- Tukiainen, Matti. *Nha Trang, Vietnam - Sun Path Diagram*. GAISMA. 4 Feb. 2015. Web. 4 Feb, 2015. <<http://www.gaisma.com/en/location/nha-trang.html>>
- The Climate of Vietnam*. The Embassy of the Socialist Republic of Vietnam in the United Kingdom. 2007. Web. 4 Feb, 2015. <<http://www.vietnamembassy.org.uk/climate.html>>