

THE MAD SCIENTIST'S CLUB: SCIENTIST PROFILE



RAINFOREST MAPPER

GREG ASNER

CARNEGIE INSTITUTION IN PENNSYLVANIA, STANFORD UNIVERSITY IN CALIFORNIA

Greg maps Hawaii's rainforests with a Twin Otter Plane. His technology can find the chemistry of a forest.

Job Description:

His maps can show

- the amount of water in an area which can be used to predict and track drought
- nitrogen levels which can be used to identify which invasive species are spreading fastest
- levels of carbon which could be used to regulate tree-planting projects designed to counter global warming.

His technology gets maps to Hawaiian land managers that help them make smarter decisions about controlling invasive species.

In 2005, Greg studied logging in the Amazon rainforest and proved that “selective logging” in which the best trees are harvested from the forest, can be just as hard on the forest as clear-cutting. He thought up a method to use old satellite images to see the forest down to single trees that had been cut down. His studies found that up to 25 trees can be killed when trying to harvest just one.

Biography:

Young Greg was all about nature, space, and sports when he was a kid. In school, he loved science, mainly biology. He liked to collect many things, including model airplanes, rocks, and beer cans.

Greg was an A- or B+ student. “I couldn’t often reach the A or A+ level,” he says. Sometimes he felt that he just wanted to quit -- like in grade school when he was in competitive swimming, or in AP calculus in high school. “I survived,” he says. Though he was pushed hard in high school, that’s when he realized he wanted to be a scientist. He was really interested in biology and physics by his senior year. He chose to go to college at the University of Colorado, where he got a degree in engineering.

Greg’s Advice for young scientists:

“Learn the basics now, like math, physics and chemistry, but also ask how the basic knowledge applies in real world applications. Students should feel comfortable in asking for some practical applications of the science early on in their education. Doing so will inspire them to continue on to harder scientific topics. For example, I think looking at chemical reactions in a beaker is good

once, but how about chemical reactions in a car or rocket engine, or in an ecosystem? That's where chemistry gets exciting. That's where all of the sciences come together. Students should ask for these connections up front, not years after learning what otherwise might appear to be abstract or boring."

http://cao.stanford.edu/highlights/hawaii_forest_invaders.html

http://cao.stanford.edu/highlights/airborne_carbon_studies.html

http://cao.stanford.edu/cao_gallery.html