

# HIPPNEWS:

## Newsletter of Hawaii's Permanent Plot Network

Volume 2

April 2008



UCLA

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Next issue:

- More on protocols.
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## Background

How fast do native Hawaiian trees grow in different forest types? How long do they live? What are the chances a sapling will make it to the canopy under a tree of the same species vs. a different species? What is the carbon storage capacity of native forests and how will climate change impact forests? In other words: What makes native Hawaiian forests tick and how can we preserve them for future generations?

The Hawaii Permanent Plot Network (HIPNET) is creating the infrastructure to help answer these and many other questions about native forest dynamics. HIPNET is a collaborative project funded by NSF through a University of Hawaii EPSCoR-EREC grant in partnership with state agencies and the U.S. Forest Service. Our goal is to establish a network of permanent plots throughout the Hawaiian Islands that will provide long term data on forest dynamics and serve as focal points for future research.

Our plot sites are selected to represent the

best, most intact native forest within each forest type across a gradient of elevation and rainfall. This will allow comparisons of the dynamics, diversity, biomass, and spatial structure across native Hawaiian ecosystems and will also serve as a benchmark to understand long-term changes. Our methods follow international standards so our forests can be directly compared to tropical and temperate forests around the world that are part of the Center for Tropical Forest Science permanent plot network (see below).

HIPNET is also installing climate stations at each plot to collect continuous climate data. Paired with detailed forest plot data, climate data is an essential component for research on the effects of climate and climate change on native forest dynamics.

This infrastructure and long-term data set will enable the University of Hawaii and collaborators to become leaders in tropical forest ecology research and will also draw top researchers from around the world.

## HIPNET is Newest CTFS Member

The Center for Tropical Forest Science (CTFS) is the world's largest tropical forest research program. HIPNET is now part of the CTFS network, adding Hawaii to the growing number of permanent census plots. As part of the CTFS network, researchers are now eligible for CTFS grants of up to \$30,000. For more information, please visit their website.

<http://www.ctfs.si.edu>

Smithsonian Tropical Research Institute  
Center for Tropical Forest Science



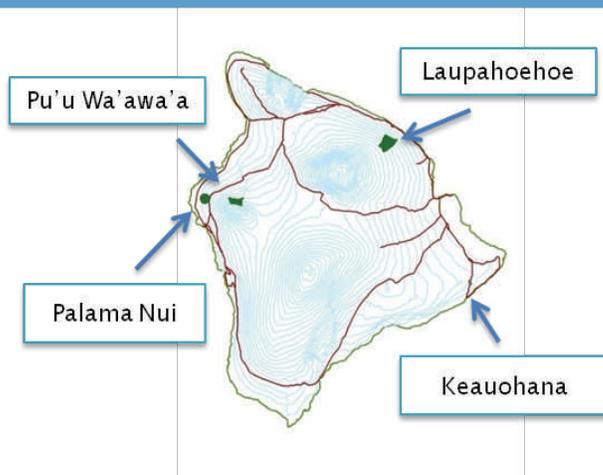
Putting Hawaii on the map! Map not to scale ©

# Progress report

## Permit Application

We invite researchers interested in doing projects in any of the HIPNET plots. We now have a permit application form. Please contact HIPNET supervisors or Project Coordinators for a permit application.

## Site selection

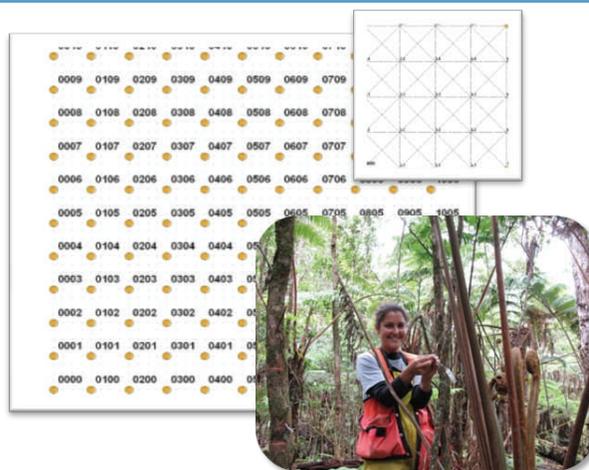


Locations of four proposed HIPNET plots.

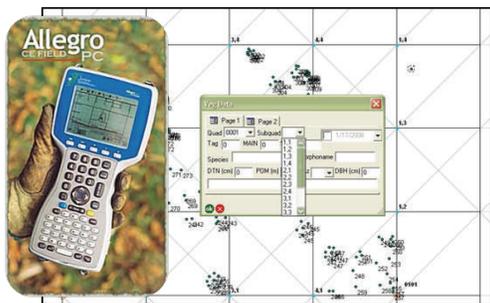
The results of our plot selection survey are in and we have selected 2 additional sites for HIPNET plots. We are currently establishing one plot at Palama Nui (lowland dry forest) and have begun the initial plant inventory to locate a fourth plot at Keauohana Forest Reserve (lowland wet forest).

## Grid Installation & Tagging

Each 4-ha plot (200 x 200 m square) is subdivided into a grid made up of 20x20m quadrats further divided into 5x5 m subquadrats. All grid points are permanently marked. In all of our plots we tag, measure, and map every woody stem >1 cm DBH. We have completed the grid installation at Laupahoehoe and Palama Nui and have already tagged >3,000 trees with >6,500 stems.



## Electronic Data Collection



Example of ArcPad map with customized HIPNET data collection form.

We are developing an electronic data collection system using ESRI products including ArcMap. Loaded onto a field computer along with customized toolbars, forms and lists, we can efficiently collect spatially explicit data that uploads directly into an ArcGIS geodatabase. Once in the data base, we can create queries and reports for data checking. Currently, we are building models in ArcGIS to summarize the tree data and map tree species distributions. Check our next HIPPNEWS for examples of maps and graphs we have created.

## Meet the Field Crew: HIPPTeam



*Chris Carlson, Jimmy Parker, & Chris Junge*



*Andra Forney*



*Rachel Moseley, Katie Thompson, & Tiana Maple*

All our progress is thanks to our great field crew. We've had 5 interns and 3 techs so far. This month we have a new and very promising group of interns and are looking for an undergraduate research assistant and a full-time technician to complete our fun and dynamic team. Please contact us for more information if you are interested.

## HCC Forest Team Training



*Anthony Kim & Jaime Enoka*

As part of our commitment to making Hawaii a leader in tropical forest science, we trained Hawaii Community College Forest TEAM students in survey methods and worked with them to establish plots at Laupahoehoe. They provided essential assistance, were wonderful to work with, and we appreciate their efforts.

## Contact HIPNET

For more information, please contact us or visit our new website. Our website is still under development but will soon contain links to HIPNET permit application forms, species lists, pictures, and current news.

**New Website**

<http://www.hippnet.hawaii.edu>



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