Manoa Cliff Native Forest Restoration
Glenn Metzler, Mashuri Waite, Brandon Stone, Edoardo Biagioni
Manoa Cliff Restoration Group

Site Selection and Goals
- Appealing site with easy access
- Some remaining native species diversity for easy propagation
- Public education and enjoyment
- Potential for a demonstration area
- Potential location for outplanting rare species
- Research possibilities

Strategy and Methods
- Techniques
  - Cutting and girdling trees, hand weeding, seed collection and dispersal, outplanting, fencing
- Persistence
  - A core group of regulars
  - Regular, scheduled, and publicized work days
  - 2330 volunteer hours through June 2010

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The Site

Our Worst Invasives
- Cinnamon (Cinnamomum burmannii)
- Koka (Bischofia javanica)
- Bamboo (Phyllostachys nigra)
- Strawberry guava
- Ginger
- Palm grass

Vascular Plant Diversity in the Manoa Cliff Area

No. of Species Historically

The ferns are diverse
- 69 fern species historically
- 45 fern species currently

No. of Species Currently Found

46 % of the native species documented historically are no longer found in the area

+ 115 Naturalized Species
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Specific Successful Techniques
- Cutting ginger repeatedly to weaken and kill the plants
- Direct seeding and from locally collected material
- Propagation in the greenhouse and in containers at the site

Biggest Recruitment Successes
- Koa and mamaki natural regeneration after opening the canopy
- Clermontia kakeana and Bidens asymmetrica from spread seed
- Oloha (Touchardia latifolia) and Papala (Charpentiera ovata) propagation and outplanting

Conclusions
- Significant remnants of lowland native forest can be found on Oahu
- Intensive care will be required to preserve and restore these remaining lowland forests
- A few people with persistence can make a difference over time
- Trial and error is required
- The model used here could be repeated elsewhere

Future Challenges
- Site Maintenance
- Attracting and keeping volunteers
- Education
- Application to other areas

Manoa Cliff Forest Restoration Group thanks all the volunteers too numerous to mention, but special thanks to Laurie and Alex Loomis for extraordinary effort and to Joel Lau for local plant information. We are grateful to DLNR for their support and encouragement and for putting up the fence. Numerous other organizations also provided assistance for the project.

To help out: please join us on the 1st and 3rd Sunday of every month – see www.manoacliff.org.

Successful Species

- Touchardia latifolia, Pipturus albidus
- Charpentiera ovata
- Clermontia kakeana and heteros
- Clermontia kakeana
- B. asymmetrica
- Pisonia umbellifera, Pipturus albidus
- Antidesma platyphyllum
- Cyanea angustifolia in flower

Results of clearing invasives: before and after

- December 2007 → July 2010
- April 2007 → July 2010
- October 2006 → December 2007