

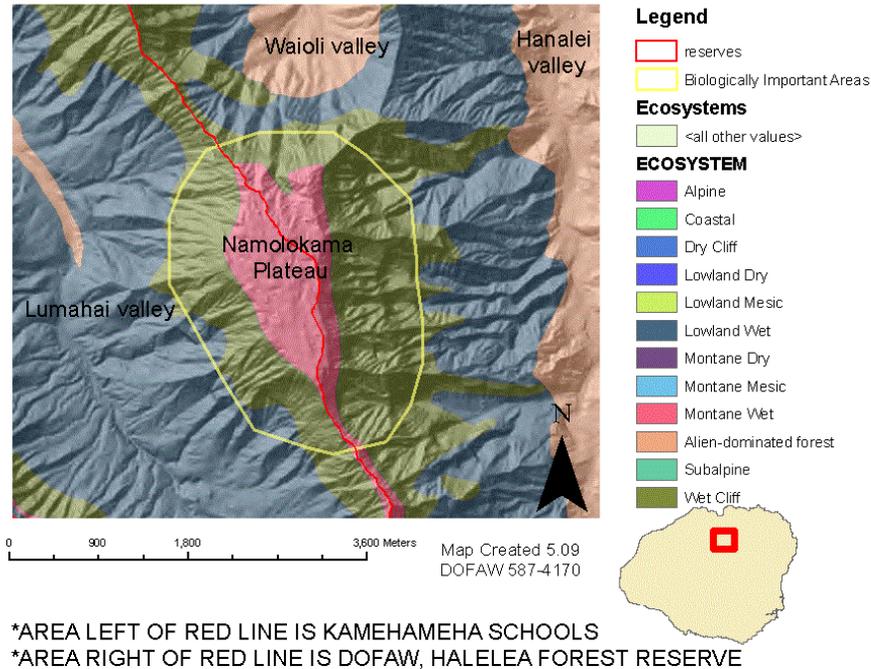
# NAMOLOKAMA BIOLOGICALLY IMPORTANT AREA PROPOSAL

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## I INTRODUCTION (General)

This area encompasses approximately 370 acres of plateau between Hanalei and Lumahai valleys in Kauai, which is owned primarily by Kamehameha Schools. The easternmost part of the plateau, as well as a northern drainage is owned by DOFAW as part of the Halelea Forest Reserve. The wet cliff surrounding this area is also biologically important.

### Namolokama Ecosystems



## II BACKGROUND AND HISTORY

### *Past Land Use*

The portion of Namolokama owned by the State was designated part of Halelea Forest Reserve by Governor's Proclamation on August 24, 1905.

This area became part of the Kauai Watershed Alliance in 2003.

### *Present Land Use and Access/Cultural/Recreational Uses*

No known land use is occurring and the area is only accessible by helicopter. Weather patterns in the area make helicopter access unpredictable and difficult. A survey on this area reported:

The nature of the shrubland with its relatively flat topography makes travel over the region relatively simple. In addition, goat and pig trails have opened up scars through the native vegetation. The entire outer perimeter can be negotiated safely and crossing the central regions is also quite easy on the southern end. The northern portions of Namolokama become more weathered and dissected. As the drainages in the southern

end wind through a landscape of soft rolling hills and open bog-land a traveler could easily pass from one divided and the streams form into larger flowing systems that restrict the traveler within their vertical walls of seeping basalt. Many of these water-carved drainages have vertical banks that reach 10--20 meters in height. Namolokama is usually shrouded in clouds or drenched in rain and it is easy to become lost. Caution is advised for all researchers traveling on these summit regions and it is recommended that a researcher carefully flags his path or uses a modern global positioning guidance system.

(Wood, 2000)

While public hunting is unfeasible except if aided by helicopters, it is part of DOFAW's Kauai Hunting Unit C.

Insufficient information has been compiled about the cultural significance of this area.

#### *Previous Studies*

A 2000 biological report prepared for Kamehameha Schools and the US Fish and Wildlife Service provided a vascular plant species checklist and topographical maps, as well as observations by the author (Wood, 2000). The area has been surveyed for invertebrates as well, revealing similar types of species found in the Alakai Plateau (Polhemus, 2009).

#### IV JUSTIFICATION (Specifics)

##### *Scientific Value*

This area has value for its watershed and native wet montane and cliff ecosystems, including rare bogs containing endangered plant species. Wet cliff ecosystems in Kauai are almost completely unrepresented in the NARS (Menard, 2008). These cliffs have some of the highest potential plant species richness in the State (Price et. al., 2007). While little data is available for aquatic species in the headwaters of the Waioli watershed, the lower reaches of the stream are remarkable for a high diversity of macrofauna and few invasive species (Parham, et. al., 2008).

Rare Plants of Namolokama:

*Lagenifera erici* and *L. helenae* (Candidate)\*

*Melicope cruciata* (SOC)\*

*Eurya sandwicensis* (SOC)

*Myrsine petiolata*

*Cyrtandra cyaneoides* (E)

(Wood, 2000)

\*Rare bog species not found in surveyed Alakai Plateau bogs (Perlman, et. al., 1995)

During the 2000 survey by Ken Wood, the following native bird species were observed, which includes forest, raptor, migratory, and wetland birds.

Apapane (*Himatione sanguinea*)

Amakihi (*Hemignathus virens*) Elepaio (*Chasiempis sandwichensis*)  
Koloa-maoli (*Anas wyvilliana*)  
Hawaiian pueo (*Asio flammeus sandwichensis*)  
Kolea (*Pluvialis fulva*)  
(Wood, 2000)

As the plateau is around 4,000-4,400 feet elevation, mosquitoes are able to persist and carry diseases to native forest birds (Mitchell, et. al., 2005).

#### *Natural Communities and their Status, and Threats*

The Hawaii GAP analysis indicates that native communities in this area are native wet cliff vegetation, open and closed ohia forest, and native forest and shrubland (USDOI, 2006). From these aerial surveys, the condition of this area appears to be relatively intact at the plateau and upper portions of the surrounding cliff faces, but below 1,000 feet elevation becomes more disturbed, especially in the drainages of nearby Hanalei and Waioli valley (USDOI, 2006).

The 2000 survey indicated that bogs, which concentrate in the southwest portion of the plateau, have been “seriously impacted” by ungulates and almost all the large standing *Metrosideros* were dead, possibly due to the past hurricanes (Wood, 2000). The bogs seemed to have the most serious invasive plant species problems: “Weedy plant species are invading these disturbed sites and include the following in their order threat: *Clidemia hirta* var. *hirta* (Melastomataceae), *Cyathea cooperi* (Cyatheaceae), *Juncus planifolius* (Juncaceae), *Axonopus fissifolius* (Poaceae), *Cyperus meyenianus* (Cyperaceae), *Rubus rosifolius* (Rosaceae), and *Setaria gracilis* (Poaceae) (Wood, 2000).

However, the survey notes that without ungulate damage, these bogs could recover.

DOFAW Management guidelines have described the eastern cliffs of the area as V2 – “Relatively Intact” (DOFAW, 2001).

#### *Biological/Ecological Design*

This Biologically Important Area is a roughly triangular ridge/plateau and surrounding cliffs of the head of Waioli valley, which separates Lumahai from Hanalei. Vertical cliffs make the area remote, inaccessible, and a distinguishable management unit.

#### *Location and Size*

Most of the plateau and western cliffs in Lumahai are owned by Kamehameha Schools, a portion of TMK 4-5-7-001:001. The State pieces in the Halelea Forest Reserve are portions of TMK 4-5-4-001:001 and TMK 4-5-6-001:001.

The plateau is roughly 2.5 km by 1.1 km (370 acres) (Wood, 2000).

#### *Present Level of Protection*

These areas are in the Protective subzone of the Conservation District. The Kauai Watershed Alliance has planned fences and ungulate control activities along the southern ridge line to protect Lumahai valley to the east, which is part of the KWA’s remote core region of highest management priority (KWA, 2005). Additionally, work to control Australian Tree Fern and *Clidemia*, as well as prevent the spread of strawberry guava into the very back of Lumahai valley is ongoing, and affords some protection to

Namolokama.

*Long-term Ecological Viability and Environmental Consequences of No Action/Urgency*  
Long-term ecological viability is threatened as bogs are extremely vulnerable to ungulates, especially pigs. The large amount of pig disturbance and some goat damage has opened up weedy areas, especially in the bogs (Wood, 2000).

## V. RECOMMENDATIONS

Based on past discussions, below are lists of various recommendations and issues they seek to address. These recommendations do not represent the positions of the agencies/organizations listed, only suggestions from various staff or members.

### *Threats Requiring Management*

Construct strategic fences in various access points along ridge.

There are only a few access points in this area for ungulates, so eradication may be feasible. However, it is extremely difficult to land a helicopter to do any management. The 2000 survey states that “The author strongly suggests that *No* fencing projects be considered until hunting and monitoring teams have spent adequate field time in these region. Eventually, fencing will play a critical role in preventing the influx of invasive animals” (Wood, 2000).

Set up base camps in Namolokama, with research stations (Wood, 2000).

More closely monitor and collect plant material of seed, tissue culture, and cultivated individuals (Wood, 2000).

### *Administrative*

Support watershed partnership activities.

Kamehameha Schools was recommended to create a facility in Lumahai for both educating students and as a baseyard for the partnership (Wood, 2000).

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