Department of Land and Natural Resources Sustainability Hotspot

EAST MAUI WATERSHED

~Island of Maui~

Top to bottom: Kopiliula Stream, Clermontia tuberculatis is just one of the many rare native plants unique to the upper East Maui Watershed forest, the beautiful *iiwi* is just one of nine native forest birds inhabiting the upper forests of Mt. Haleakala.

The East Maui Watershed Hotspot is a huge area comprising 20% of the island of Maui (100,000 acres), including the entire windward slope of East Maui from the summit of Mt. Haleakala to the shoreline and from Haiku and Kipahulu.

This important watershed currently delivers 60 billion gallons of water per year to central Maui for agricultural and domestic uses, serving Hawaiian Commercial and Sugar Company, and upcountry residents and farmers. The watershed also fuels native ecosystems, especially at higher elevations where numerous plant and bird species are currently endangered. This area is inhabited by a rural population that is practicing indigenous culture to a large extent, and to whom this lifestyle is very important.

The major obstacle to sustaining this resource is damage to the eco-system inflicted by feral pigs, mostly in the lower elevations. As a result:

- understory fern and moss layers are being consumed and soil disturbance is widespread. This damage leads to soil displacement, degradation of stream habitats and increased sediment deposits in both stream intakes and ditch systems and into the ocean;

- rare plant and bird species are being impacted by pig rooting and habitat destruction;

- as native habitats are disturbed, weed species invade, altering the structure and functioning of ecosystems.

Elsewhere, the increase in tourist numbers overload local infrastructures that deal with traffic, trash disposal, water and recreational facilities.

DLNR's Sustainability Hotspot Team for the East Maui Watershed:

Bob Hobdy - Forestry and Wildlife, Maui, 984-8100;
Rando Awo - Conservation and Resources Enforcement;
Skippy Hau - Aquatic Resources;
Charlie Ice - Water Commission;
Sam Lemmo - Land Division;
Floyd Miyazono - State Parks;
Phil Ohta - Land Division;

is responsible for the sustainable management of this hotspot.

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The East Maui Watershed currently delivers 60 billion gallons of water per year to central Maui for agricultural and domestic uses, a segment of the East Maui Irrigation Company's complex ditch system, the major obstacle to sustaining this resource is damage to the eco-system inflicted by feral pigs.

DLNR's Vision for the Future and How to Attain It

For the future of the East Maui Watershed, DLNR envisions healthy forests and productive watersheds free from excessive levels of feral pig activity, soil erosion and siltation. The forests have dense understory vegetation with thick layers of ferns and mosses that blanket the ground. These layers protect the soil from being washed away in heavy rainfall and contribute to a loose organic layer that keeps the soil permeable. Rainfall collects in the moss blanket and organic layer like it would in a sponge, and then it gradually percolates into the groundwater aquifers rather than running off the land quickly, carrying soil with it.

DLNR envisions stable native ecosystems at the upper elevations where rare bird and plant species thrive. The diversity of species is high and all components of the ecosystems are present and reproducing. Feral mammals are in very low numbers and their effect on the environment is minimal. Public access to pig hunting areas will be increased in the lower forests to enhance subsistence lifestyles. Local families will supplement their incomes with wild game and maintain their rural habits and native culture by utilizing forest products.

DLNR also visualizes clean State parks with adequate supplies of fresh water to accommodate local residents and tourist recreational activities. Endangered bird and plant programs may be instituted. To realize this ideal situation:

- the feral pigs inflicting damage on the ecosystem need to be brought under better control to reduce forest and watershed disturbance;

- serious weed species problems need to be addressed and control efforts for the worst of them, such as Miconia (*Miconia calvescens*), need to be increased. These actions will require monitoring of introduced species and expansion of eradication efforts in upper and lower forests;

- a fence maintenance program and increased opportunities for subsistence hunting will aid DLNR in feral animal control efforts;

- additional enforcement is needed;

- park facilities should be upgraded to address increasing tourist traffic, including improvements to the Kaumahina State Wayside Park Water System.

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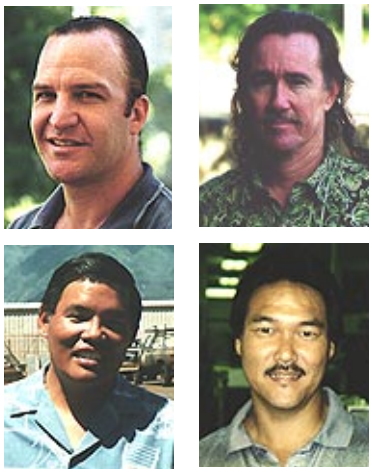

Hotspot Team members for the East Maui Watershed: (top row, l-r) Lemmo, Ice, (bottom row) Hau, Ohta.

DLNR's Division of Forestry and Wildlife (DOFAW) has the lead in implementing the action plan for the East Maui Watershed and coordinating the efforts of numerous Federal, State, County and private organizations.

To implement DLNR's vision of the future, the Department would require a budget of nearly $10.2 million. This funding would provide for additional personnel, vehicles, surveys and monitoring, office and communication equipment, infrastructure improvements, alien species control and educational efforts.

DLNR's Hotspot Team members for the East Maui Watershed (l-r): Awo, Miyazono, Hobdy.