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August 25, 2017

Honorable Alan M. Arakawa
Mayor, County of Maui
200 South High Street
Wailuku, Hawaii 96793

For Transmittal to:

Honorable Alika Atay
Chair, Water Resources Committee
Maui County Council
200 S. High Street
Wailuku, Maui, HI 96793

APPROVED FOR TRANSMITTAL
8/31/17
Mayor Date

SUBJECT: **GRANT MONITORING AND EVALUATION FOR DEPARTMENT OF WATER SUPPLY FISCAL YEAR 2015 WATERSHED PROTECTION PROGRAM GRANTS**

Please find attached the Watershed Protection Grants Program Accomplishment Report for Fiscal Year 2015. We are pleased to report that all grantees attained the intended results and met contracted deliverables.

Should you have any questions, please feel free to contact me at ext. 7816.

Sincerely,

DAVID TAYLOR, P.E.
Director of Water Supply

cc: Gladys C. Baisa, Deputy Director

COUNTY OF MAUI
DEPARTMENT OF WATER SUPPLY

WATERSHED PROTECTION GRANTS PROGRAM
Accomplishment Report
Fiscal Year 2015

By Water All Things Find Life

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INTRODUCTION

DWS has taken a proactive role to ensure the protection and sustainability of our water sources by providing financial support to several highly capable watershed management partners and organizations experienced at protecting, preserving and conserving our water resources. Projects that comprehensively address threats to the department's water sources are considered for funding. For example, watershed protection grantees considers the effects of climate change and devotedly captures and eradicates, non-native, invasive, animals and plants responsible for loss of habitat and upland forests linked to water recharge, fog drip and source availability. Protecting our water absorbing watersheds is the most cost effective and efficient way to ensure that both surface and ground water supplies can be sustainably replenished.

Feral ungulates and invasive plants and weeds are some of the greatest threats to our watersheds. Scientific evidence show that feral animals not only eat native vegetation, but also trample and dig—all of which changes the landscape with the creation corridors which increases surface water run-off and allows non-invasive plants to invade and take root. Without efforts by our watershed protection grantees, less surface and ground water absorption for aquifer recharging will occur and non-native invasive plants may eventually out-compete native animals and plants for space, sunlight, water and nutrients. Other evidence also suggests that non-native plants and animals have the potential to alter soil chemistry, change fire regimes, affect soils stability, and consume more water.

DWS continues its critical role in watershed protection by funding active management, control and monitoring of non-native invasive plants and animals to preventing irreversible damage to Maui's watersheds.

From mid-1990s to date, the department provided a total of $12.265M to the following organizations:

- East Maui Watershed Partnership – University of Hawaii (EMWP – UH)
- East Maui Watershed Partnership (Waikamoi Source Protection and Waikamoi Watershed Preserve Management) – The Nature Conservancy (EMWP – TNC)
- Leeward Haleakala Watershed Restoration Partnership (includes Auwahi Forest Restoration Project) – University of Hawaii (LHWRP – UH)
- West Maui Mountains Watershed Partnership –University of Hawaii (WMMWP –UH)
- Pu'u Kukui Watershed Preserve – Tri-Isle Resource Conservation and Development Council (PKW Tri_Isle RC&D)
- East Molokai Watershed Partnership – The Nature Conservancy (EMoWP - TNC)
- Maui Invasive Species Committee – University of Hawaii (MISC – UH)
- Hawaii Agriculture Research Center (HARC)

These watershed protection grantee partners work collaboratively with more than 54 private and public partners in an effort to protect hundreds of thousands of acres of vital forested watersheds.

SUMMARY OF THE DWS WATERSHED PROTECTION GRANTS PROGRAM ACCOMPLISHMENTS BY ITS GRANTEE PARTNERS

Managed Watershed Area (Maui and Molokai)	**249,362 acres**
Fence Construction	**130.87 miles**
Forest Area Protected by Fencing	**63,619 acres**
Actively Managed Feral Ungulates Area	**<75,000 acres**
Feral Ungulates Removed (FY11-FY15)	**(6,858 animals)**
Actively Managed Invasive Species Area	**119,500 area**
Invasive Plant Species Removed (FY11-FY15)	**1,897,181**
Native and Endangered Species Planted (FY11-FY15)	**59,320**
Leveraged Funds	**$3.6M**
Grant-Funded Staff (from 15%-100% of salary)	**22.7 FTE**

Notable Research Work Being Undertaken:

- Research on the effects of restoration on hydraulic properties at Auwahi and other project sites by assessing the effects of reforestation on soil moisture dynamics and aquifer recharge.
- Cooperative studies to evaluate, assess and record the impacts of land-cover changes on groundwater recharge.
- Cooperation and knowledge exchange to establish a framework for evaluating the hydrologic effects of watershed restoration programs on the islands of Maui and Moloka'i.
- Continuing research towards adapted, *Fusarium oxysporum f.sp.koae* (koa wilt) resistant, koa seed orchards for distribution to various restoration and reforestation projects on Maui.

PROGRAM DATA SUMMARY - FY 2015

GRANTEE	ACREAGE MANAGED	MILES OF FENCE INSTALLED	UNGULATE CONTROL	INVASIVE/ WEED CONTROL	REVEGETATION	RESOURCE MONITORING	COMMUNITY OUTREACH
East Maui Watershed Partnership - UH	6,003 of 122,000 ac	7.7 EMWP + 37.3 partners = 45	41,000+ ac - ungulate free 2,228 traps checked	47.73 ac surveyed - himalayan ginger			15 presentations/16 hikes/10 community events/57 media releases - over 460,000 people reached
The Nature Conservancy - Waikamoi Haipua'ena Source Protection Project	8,951 of 122,000 ac	19 mi	1,144 miles scouted 16 total hunts 1 deer removed	~119.5 ac swept for himalayan ginger with 1,671 sq mtr removed, 33 ac swept - 3,431 pine trees removed	18 natives outplanted	rare plant mapping and restoration	134 hikes/12 service trips - 3 outreah events participated
Leeward Haleakala Watershed Restoration Partnership/ Auwahi Forest Restoration Project - UH	16,706 ac	15		10,505 ac.	collected 4.769M seeds from native species; 173 trees planted		3 community -based restoration trips (48 volunteers); 4 offsite events/presentations -
West Maui Mountains Watershed Partnership - UH	47,321 ac (14,282 DWS land)	26.5 (5.5 -DWS land)	4,726 traps checked /124 catches	Multiple aerial surveys to monitor weeds were conducted this grant period - 4,288 weeds removed on over 37.22 acres	14 plots were monitored, all disturbance within these plots has since been covered up with vegetation.	Eight base flow and 11 storm samples were collected during this grant period and have been sent to UH Hilo Analytical Lab for analysis.	7 Water story sessions ; 8 presentations
Pu'u Kukui Watershed Preserve - Tri-Isle RC&D	8,600 ac	12.37	2,203 traps checked 52 pigs removed	assisted in 6 inter agency invasive species removal	volunteers engaged in native planting projects (4,278 native plants), invasive plant removals, bushing fence lines	checks 3 rain-gauges monthly in collaboration with USGS; rare species protection in coordination with other agencies	12 rain gauge hikes /13 service trips/6 events/ 270 volunteers recruited
The Nature Conservancy - East Molokai Watershed Partnership	18,500 ac	13 mi	102 hunt sweeps - removed 1,223 goats, pig, deer	406 weed sweeps, 708 acres surveyed - 13,600 individual plants removed			Molokai Earth Day event was held over1,000 people attending and over 40 Partners participating
Maui Invasive Species Committee - UH	119,500 ac			Aerial and ground survey (incl residential visits)- 38,114 ac - 55,841 invasive plants removed			8 public events with 1,525 people and 55,751 hits on website
Hawaii Agriculture Research Center	6 ac			six acres of maintenance work performed such as weed control, fertilization. pruning	reconnaissance for koa seed and collection ongoing		

FINANCIAL SUMMARY - FISCAL YEAR 2015

GRANTEE	PAYROLL	TRANSPORTATION	CONTRACTUAL	UTILITIES	TRAVEL	FIELD CREW COSTS	SUPPLIES, MATERALS, EQUIPMENT	OTHER COSTS	Administrative and Overhead costs	Total Grant Amount	Funds Used	UNUSED FUNDS	FUNDS LEVERAGED
East Maui Watershed Partnership - UH	$188,683.00		$65,450.00	$4,634.00	$4,577.00		$7,094.00	$9,782.00	$9,808.00	$290,028.00	$289,991.53	$36.47	$323,965.00
Leeward Haleakala Watershed Restoration Partnership - UH	$142,653.00			$7,545.00	$4,900.00		$7,006.00	$16,640.00	$6,256.00	$185,000.00	$166,386.20	$18,613.80	$379,172.00
West Maui Mountains Watershed Partnership - UH	$221,402.00		$37,000.00	$3,441.00	$1,000.00		$8,535.00	$6,400.00	$9,722.00	$287,500.00	$287,298.94	$201.06	$437,400.00
Pu'u Kukui Watershed Preserve - Tri-Isle RC&D	$96,200.00	$29,225.00	$42,525.00	$2,000.00		$6,900.00	$12,450.00	$13,200.00	$22,500.00	$225,000.00	$209,343.65	$15,656.35	$100,000.00
The Nature Conservancy - Waikamoi Haipua'ena Source Protection Project	$90,909.00		$81,818.00						$17,273.00	$190,000.00	$176,566.23	$13,433.77	$259,023.00
The Nature Conservancy - East Molokai Watershed Partnership	$75,000.00		$115,900.00						$19,100.00	$210,000.00	$183,507.00	$26,493.00	$500,000.00
Maui Invasive Species Committee - UH	$239,091.00								$23,909.00	$263,000.00	$262,947.60	$52.40	$532,040.00
Hawaii Agriculture Research Center	$26,000.00	$1,000.00	$12,000.00	$1,000.00	$3,500.00		$1,500.00		$5,000.00	$50,000.00	$50,000.00	$0.00	$50,000.00
TOTAL	$1,079,938.00	$30,225.00	$354,693.00	$18,620.00	$13,977.00	$6,900.00	$36,585.00	$46,022.00	$113,568.00	$1,700,528.00	$1,626,041.15	$74,486.85	$2,581,600.00