



Cannabis Cultivation Complex Clean-up Reclamation Operation Synopsis: Northwestern California, Summer 2018



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Northwestern California Cannabis Cultivation Complex Clean-up

Reclamation Operation Overview

Summer 2018 Update

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During summer 2018 (May through September), Integral Ecology Research Center (IERC) and project partners implemented reclamation efforts at 33 trespass marijuana cultivation complexes (TMCC) composed of 59 independent sites (Table 1) within Six Rivers, Shasta-Trinity, and Klamath National Forests in northern California (Figures 1 and 2). Within these areas, human refuse and grow site related infrastructure was completely removed at 51 sites totaling 41,264 lbs. of trash and 159,723 feet of irrigation pipe. Refuse was staged for future removal at six additional sites but was unable to be removed due to time and logistical constraints, and safety concerns in the immediate areas. Staging is still required at two sites within these TMCCs. Refuse at these locations will be staged (if needed) and removed via manual or aerial extraction during a future reclamation operation.

Thirty of the TMCCs were eradicated by federal, state and/or local Law Enforcement between summer 2011 and summer 2017 to disrupt the continued misuse of these public lands. Three TMCCs (nine independent sites), previously unknown to law enforcement officials, were identified by the Detection and Interdiction of Marijuana to aid Enforcement and Conservation (DIMEC) model, a deep learning image recognition model developed to identify TMCCs based on high-resolution aerial imagery by collaborators at the Pacific Southwest Research Station. Research scientists from IERC visited all TMCCs between August 2015 (prior to the initiation of this grant) and August 2018 to document and ascertain the magnitude of impacts caused by these TMCCs. During initial documentation of the site, IERC estimated the length of irrigation line, quantity of refuse, and recorded all identifiable water diversions, fertilizers and pesticides.

All complexes lie within tributaries of the Klamath River, a Hydrological Unit with a population of sensitive and federally listed salmonids, including steelhead (*Oncorhynchus mykiss*) and chinook (*Oncorhynchus tshawytscha*). All but three complexes, are located within United States Fish and Wildlife Service delineated Critical Habitat for the northern spotted owl (NSO) that is listed as Threatened under the Endangered Species Act (ESA) and occupied habitat for the Pacific fisher (*Pekania pennanti*). The remaining three complexes are located within one kilometer of NSO critical habitat.

A multi-prong approach was utilized for the scale of reclamation and coordination efforts based on site- / area- specific needs to maximize efficiency and leverage the strengths of project partners ranging from large, multi-day, targeted operations to single-day, multi-organization



efforts to low-scale, opportunistic, single-day operations undertaken with just IERC staff. This document is structured to: provide operational synopses for two large staging operations conducted with California Conservation Corps (CCC), Trinity County Resource Conservation District (TCRCD), and the Watershed Research and Training Center (WRTC), and one large air removal operation performed in cooperation with United States Forest Service (USFS); an additional summary for smaller single site efforts; and site-level breakdowns displaying summary statistics for each site.

Staging Operation 1: June 06 – June 13, 2018 (CCC)

IERC, subcontracting to CCC, staged a collection of 13 TMCCs (Figure 1, Table 1) on the Six Rivers and Klamath National Forests managed by USFS at 35 individual sling locations around the Somes Bar Area between June 6 and June 13, 2018. The TMCCs encompass 24 individual sites each with camps, associated growing plots and infrastructure. The operation was implemented on sites specifically within the Lower Klamath and Salmon River watersheds, reclaiming areas where a total of 4,500 pounds of fertilizer and 55 pounds of pesticides were recorded by IERC researchers during pre-reclamation site assessments.

Thirty-three people participated in the operation, including two California Department of Fish and Wildlife (CDFW) Wardens and nine USFS Law Enforcement Officers (LEO) (contributes to Federal cost-share match) to clear sites prior to entry by reclamation teams and provide general site security. Total active operational time (does not include travel, briefing, or coordination times) equaled 726 person hours.

Staging Operation 2: July 30 – August 03, 2018 (TCRCD and WRTC)

IERC, subcontracting to TCRCD and WRTC, staged a collection of seven TMCCs (Figure 1, Table 1) on the Shasta-Trinity National Forest managed by USFS at 31 individual locations between July 30 and August 03, 2018. The TMCCs encompass 14 individual sites each with camps, associated growing plots and infrastructure. The operation was implemented on sites specifically within the East Fork Hayfork Creek, Big Creek, Little French Creek, Butter Creek, and Sulfur Glade Creek watersheds reclaiming areas where a total of 2,884 pounds of fertilizer and 86 pounds of pesticides were recorded by IERC researchers during pre-reclamation site assessments.

Twenty-eight people participated in the operation, including three USFS Law Enforcement Officers (contributes to cost-share match) to clear sites prior to entry by reclamation teams and provide general site security. Total active operational time (does not include travel, briefing, or coordination times) equaled 434.5 person hours.



Refuse Removal Aerial Operation: August 14 – August 21, 2018 (USFS)

Between August 14 and August 21, 2018, grow site refuse and infrastructure was removed via helicopter from 19 public land TMCCs totalling 38 individual grow sites (Table 1, Figure 1) on the Six Rivers, Shasta-Trinity, and Klamath National Forests managed by USFS. IERC led staging efforts for every site during the staging operations summarized above, except three, between June and August 2018. The last three complexes (Raspberry Delight, Knot Bowlin, and Big Creek 2) were staged on the day of the aerial removal and overseen by IERC staff.

Over 20,000 pounds of human-generated trash, refuse, and grow site infrastructure, including 97,555 feet of irrigation pipe was removed from 61 individual staging locations through 67 long line loads by helicopter (Table 2), with an additional staging location removed via truck (62 total staging locations). The reclaimed TMCCs encompass 38 individual sites each with camps, associated growing plots and infrastructure.

Thirty-one total people participated in the operation, including fifteen USFS Law Enforcement Officers and six California National Guardsmen (CaNG) to be included as cost-share match. Additionally, all helicopter flight time was donated by USFS as cost-share match under a cooperative agreement between IERC and USFS. Total active operational time (does not include travel, briefing, or coordination times) equaled 565.1 person hours. All helicopter flight time and USFS LEO staff time combined for nearly \$70,000 in federal cost-share match during the operation.

Miscellaneous Reclamation Efforts: Summer 2018

During the late spring and summer 2018 (May through September) IERC led, or significantly contributed, to reclamation efforts at an additional 13 TMCCs comprised of 20 independent sites on the Six Rivers, Shasta-Trinity, and Klamath National Forests managed by USFS. The operation was implemented on sites specifically within the Ukonom Creek, Lower Hayfork Creek, Horse Linto Creek, Lower South Fork Trinity River, and Middle South Fork Trinity River watersheds reclaiming areas where a total of 11,360 pounds of fertilizer and 114 pounds of pesticides were recorded by IERC researchers during pre-reclamation site assessments.

These efforts were undertaken either as individual, one-off operations, or material was staged and removed during aerial helicopter refuse removal operations of nearby staged sites. Across all individual operations, approximately 22,885 pounds of human-generated trash, refuse, and grow site infrastructure, including 70,618 feet of irrigation pipe was removed.



Table 1. Summary information by complex listed by staging date for quantity of site per complex and current status of complexes with reclamation efforts led by Integral Ecology Research Center during summer 2018.

Staging Operation	Map ID	Complex Name	Stage Date(s)	# of Independent Sites Reclaimed	# of Sites Still Need Assessment/ Staging	Total # Sites	Aerial removal during USFS Operation	Status
Other	1	Grassy Flat 1	5/7/2018	2	0	2		Complete
	2	Grassy Flat 2	5/7/2018	1	0	1		Complete
	3	HayshedComplex	05/07/2018, 05/08/2018	3	0	3		Complete
	4	LimeDyke2	5/8/2018	2	0	2		Complete
	5	Hayshed 4	5/8/2018	1	0	1		Complete
	6	CorralCreek2	5/9/2018	1	0	1		Complete
CCC	7	Go Road	6/6/2018	1	0	1	X	Complete
	8	Offield Mountain	6/7/2018	1	0	1	X	Complete
	9	Offield Saddle	6/7/2018	1	0	1	X	Complete
	10	Mud Creek	6/8/2018	2	0	2	X	Complete
	11	Pre Brush	6/8/2018	1	0	1	X	Complete
	12	Squirrel Creek	6/8/2018	1	0	1	X	Complete
	13	Crapo Creek	6/9/2018	1	0	1	X	Complete
	14	Lazy Stanshaw	6/10/2018	1	0	1	X	Complete
	15	Sandy Bar	6/10/2018	1	0	1	X	Complete
	16	Fortilla	6/11/2018	3	0	3	X	Complete
	17	5Mile	6/12/2018, 6/19/2018, 7/8/2018	9	0	9	X	Complete
	18	RedCap1	6/13/2018	1	0	1	X	Complete
	19	RedCap2	6/13/2018	1	0	1		Staged
Other	20	SideWinder	6/21/2018	2	0	2	X	Complete
	21	LimeDyke3	7/10/2018	1	0	1		Complete



Staging Operation	Map ID	Complex Name	Stage Date(s)	# of Independent Sites Reclaimed	# of Sites Still Need Assessment/Staging	Total # Sites	Aerial removal during USFS Operation	Status
TCRCD/ WRTC	22	Wildwood.ChinaGulch	7/30/2018	2	0	2		Staged
	23	Little French Creek	7/31/2018	1	0	1	X	Complete
	24	Whites Bar	7/31/2018	1	0	1	X	Complete
	25	ChinaPeak	7/31/2018	2	0	2		Staged
	26	Eye In The Sky	8/1/2018	5	*1	6	X	Complete
	27	Pattison Ranch	8/2/2018	2	0	2	X	Complete
	28	OakRidge	8/3/2018	1	0	1		Staged
Other	29	BigCreek2	8/20/2018	1	0	1	X	Complete
	30	KnotBowlin	8/20/2018	1	0	1	X	Complete
	31	Raspberry Delight	8/20/2018	2	0	2	X	Complete
	32	Bear Peak	8/26/2018	1	0	1		Staged
	33	Dowd	9/20/2018	1	*1	2		Complete
# COMPLETED				51	2	53		
# STAGED				6	0	6		
GRAND TOTAL				57	2	59		

* At least one site remains to be staged but complex is categorized as 'Complete' for this report as at least 80% of fully reclaimed.

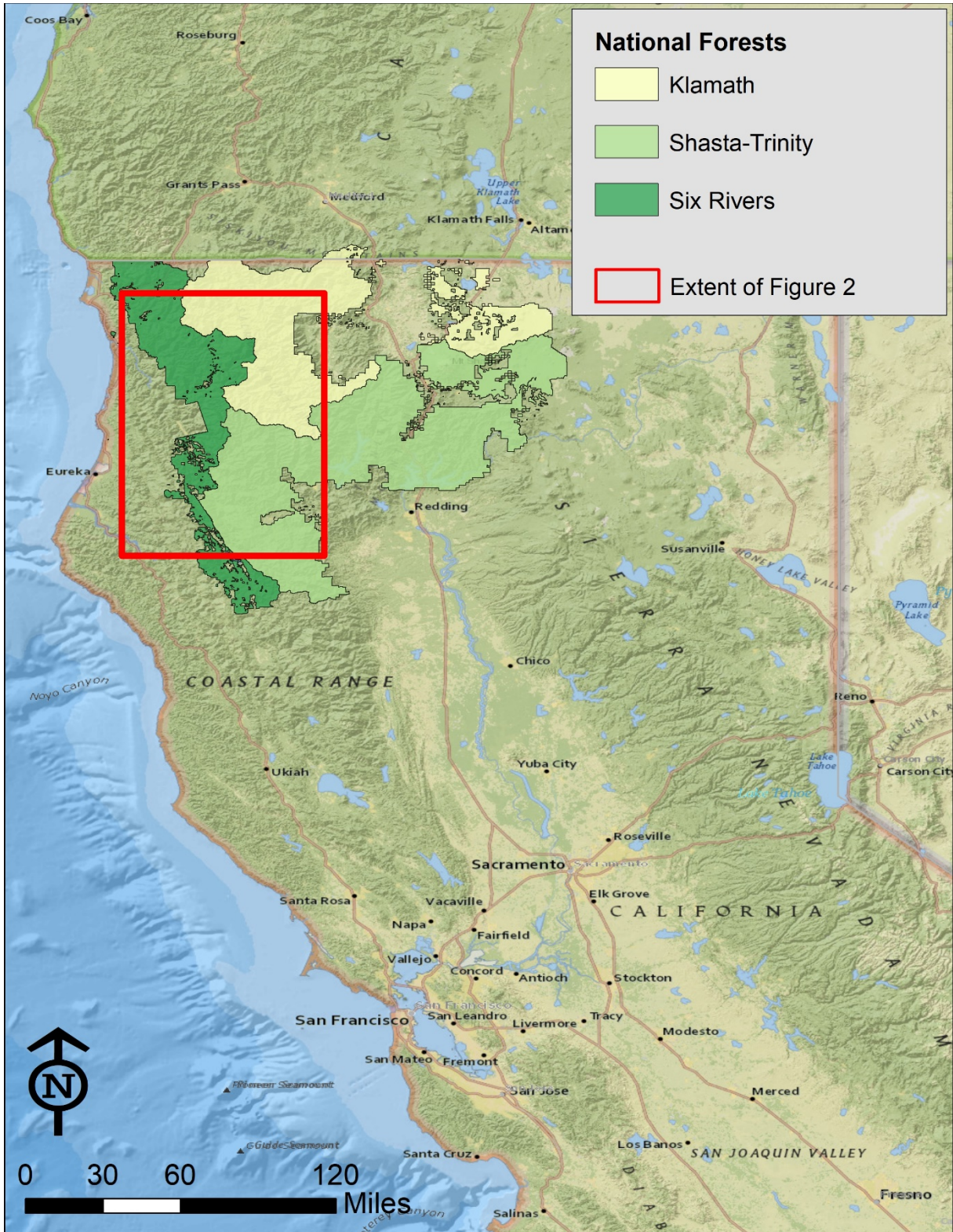


Figure 1. General overview of reclamation locations led by Integral Ecology Research Center during summer 2018 within the Shasta-Trinity, Six Rivers, and Klamath National Forests. Note the red square indicates the spatial extent of Figure 2.

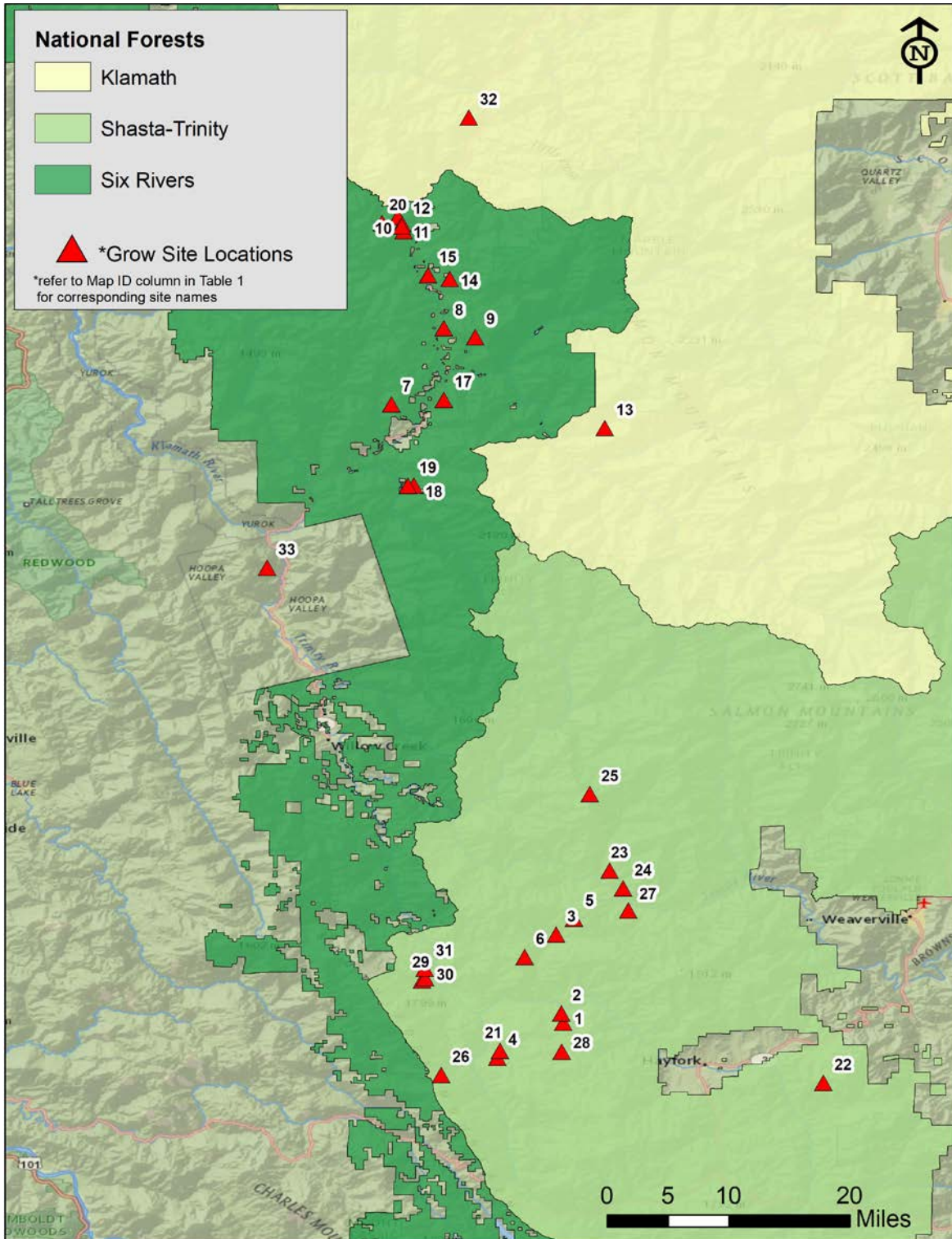


Figure 2. Locations of all complexes with reclamation efforts led by Integral Ecology Research Center during summer 2018 within the Shasta-Trinity, Six Rivers, and Klamath National Forests. Complex no. 33 (i.e. Dowd) is located on the Hoopa Valley Indian Reservation.



Table 2. Summary of all complexes, refuse quantities, and helicopter resources used during the August 14 – 21, 2018 reclamation air operation within Six Rivers, Klamath, and Shasta-Trinity National Forests. Note the person hours only include active operation time and do not account for travel, briefings, or coordination times.

Complex Name	Date	People	Person Hours	Location	Total (Pounds)	Pipe (feet)	# Nets (trash)	# Cobiners (pipe)	Long Line Loads: HazMat Staged	# Sites
5-Mile	08/14/2018	19	88.35	██████████	3,375	8,770	12	9	11: Yes	9
Crapo Creek	08/15/2018	16	62.93	██████████	1,231	8,000	2	6	5: No	2
Go Road				██████████	350	1,300	2	0	1: Yes	1
Sandy Bar	08/16/2018	22	76.88	██████████	275	685	1	3	3: Yes	1
Lazy Stanshaw				██████████	500	4,000	1	1	1: Yes	1
Offield Mountain				██████████	460	1,200	1	2	1: Yes	1
Offield Saddle				██████████	150	250	1	1	1: No	1
Fortilla	08/17/2018	21	78.74	██████████	1,360	8,700	7	4	3: Yes	3
Mud Creek				██████████	690	1,600	3	2	4: No	2
Pre-Brush				██████████	210	-	2	0	2: No	1
Side Winder				██████████	900	7,900	2	3	2: Yes	2
Squirrel Creek				██████████	970	5,000	1	3	3: Yes	1
Pattison Ranch	08/18/2018	13	23.18	██████████	380	700	2	0	2: No	2
Whites Bar Creek				██████████	630	2,500	3	2	3: Yes	1
Little French Crk	08/19/2018	13	19.93	██████████	1,120	3,900	3	3	4: Yes	1
Big Creek 2	08/20/2018	19	101.33	██████████	1,570	3,800	6	3	5: Yes	1
Knot Bowlin				██████████	200	150	1	0	1: Yes	1
Raspberry Delight				██████████	1,100	4,400	3	4	3: Yes	2
Eye In The Sky	08/21/2018	19	113.75	██████████	4,950	34,700	9	12	12: Yes	5
TOTAL					20,421	97,555	62	58	67	38