National Park Service
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Natural Resource Stewardship and Science

Invasive Plant Monitoring in the Mediterranean Coast Network

Santa Monica Mountains National Recreation Area 2013-2014 Pilot Study Report

Natural Resource Report NPS/MEDN/NRR—2015/1009

ON THE COVER
Italian thistle (*Carduus pycnocephalus*)
Photograph by: Tony Valois

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Contents

Figures

Page

Tables

Page

Appendices

Page

Executive Summary

The purpose of the National Park Service (NPS) Mediterranean Coast Network Invasive Plant Monitoring Program is to determine the status and trends in the distribution and cover of target non-native, invasive plant species within Santa Monica Mountains National Recreation Area (SAMO), and to provide information to assist park managers with control of invasive plant species that threaten native plant communities. The monitoring was conducted at all points of entry (trailheads, parking lots and campgrounds) and at randomly selected locations along dirt roads and trails on public lands throughout SAMO for 25 target invasive plant species (Figure 1). This report summarizes the first two years of pilot data (2013 and 2014) from monitoring all points of entry and at randomly selected points along dirt roads and trails at SAMO.

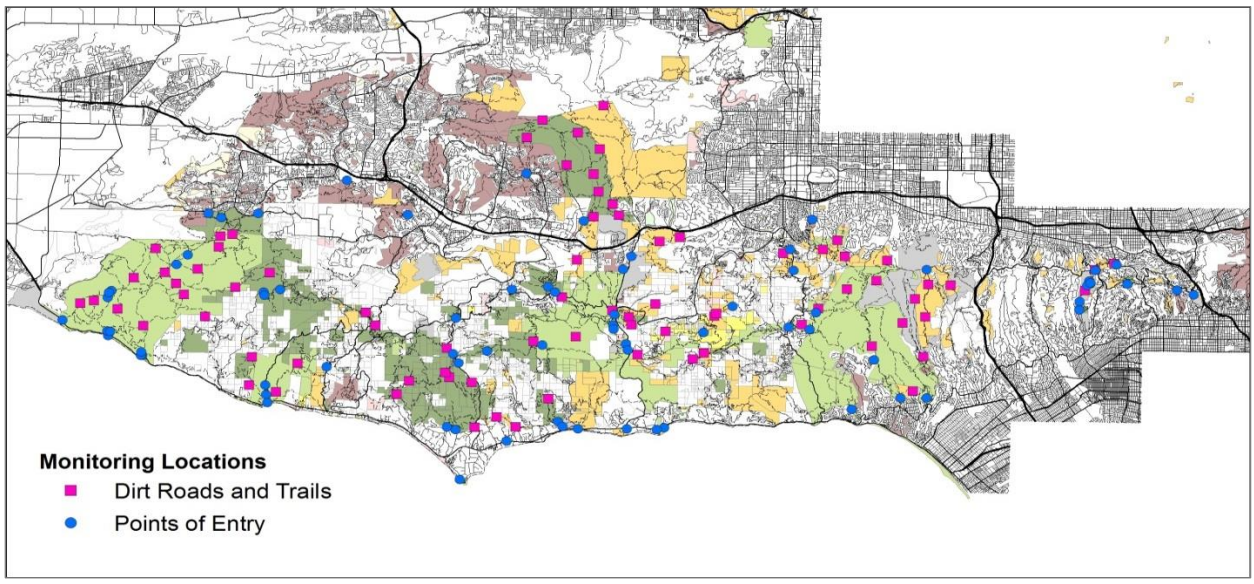

Figure 1. Map of invasive plant monitoring locations.

Monitoring at Points of Entry (POE)

We completed our biannual census of SAMO's 72 POE, visiting 35 sites in 2013 and the remaining 37 sites in 2014. We detected a total of 24 target invasive plant species and 83% of the POEs sampled had at least one invasive plant species present (Figure 2). Most of the POEs (69) had less than 1000 m^2 infested, and 42 sites had less than 10 m^2 infested. The highest number of invasive plant species found at one site (9) was at Will Rogers State Historic Park, which is a popular entry point with several trailheads and a polo field adjacent to urban developments. This site also had the second largest total area infested (3,050 m^2). Thirty-five POEs were treated for invasive plants due to routine control efforts and several species on the target invasive plant list were treated. All POEs received annual fire clearance treatment (*e.g.*, brushcutting, mowing). The most common invasive plant species at POEs were sweet fennel (*Foeniculum vulgare*, 29 sites), Russian thistle (*Salsola australis*, 21 sites), Italian thistle (*Carduus pycnocephalus*, 20 sites) and tree tobacco (*Nicotiana glauca*, 15 sites). No new non-native plant species were detected.

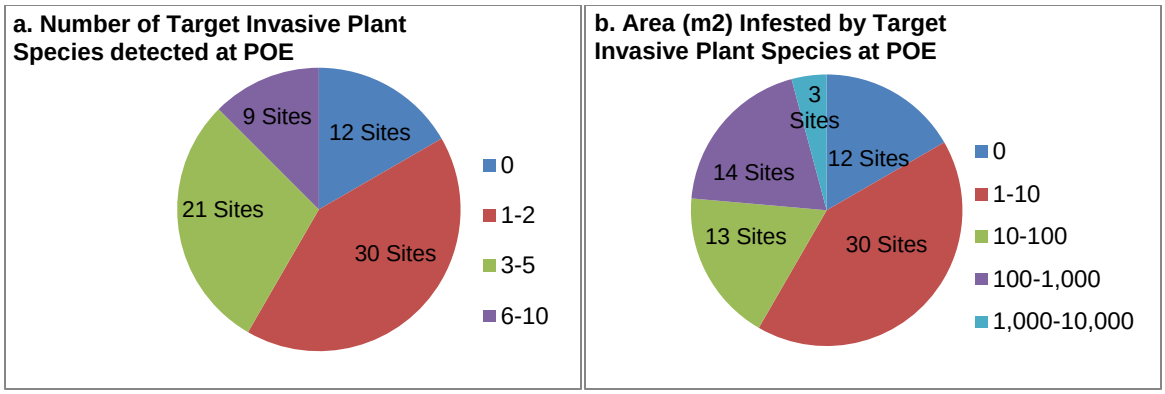

Figure 2. Total number of POEs with (a) target invasive plant species detected at POE and (b) area of infestation (m^2) in 2013 and 2014.

Monitoring at Dirt Roads and Trails (DRT)

In 2013 and 2014, we collected data at 79 sites which were randomly located along dirt roads and trails, at least 50 m away from a POE on the public lands of SAMO. We visited the same sites to quantify inter-annual variation for an analysis of statistical power to detect status and trends for the protocol. In contrast to the POE, a total of 13 invasive plant species were found at only 29 DRT sites (36%). Among the sites with invasive plant species, 17 sites had one target invasive plant species, 11 sites had two target species, and only one site had three target species. Italian thistle was the most common invasive and was recorded at 11 sites. Sweet fennel (7 sites) was the second most common target invasive species found. Most species were recorded in both years at a site. Pampas grass (*Cortaderia selloana*), milk thistle (*Silybum marianum*), and Smilo grass (*Stipa miliacea*) were observed in one year but not the other. There were some instances in which a species was detected in several more sites than the previous year (*i.e.*, sweet fennel). Sixteen DRT sites had less than 10 m^2 infested, another 11 sites had less than 100 m^2 infested, and only two sites had infestations totaling over 100 m^2 (Figure 3). The areas closest to the trails had more invasive plant species present at higher abundance than areas farther away from the trail. No new non-native species were detected.

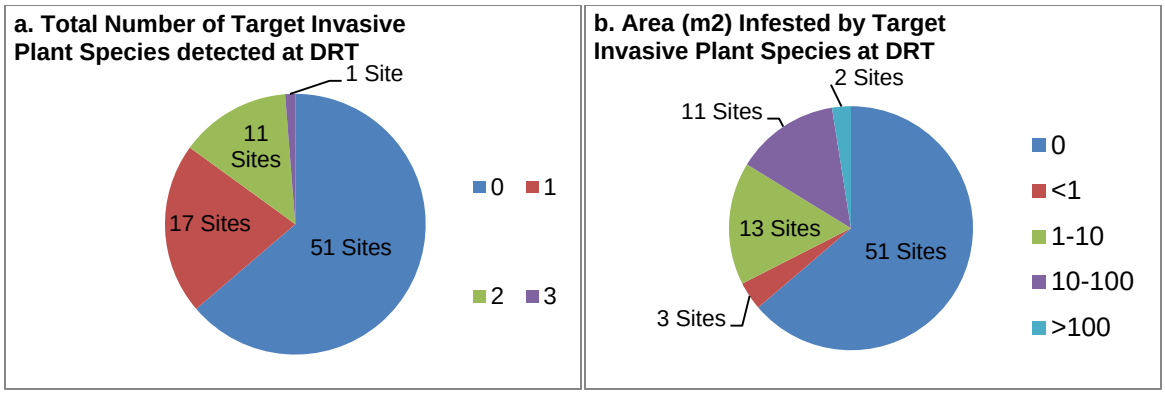

Figure 3. Number of DRT monitoring sites (a) where target invasive plant species were detected and (b) the area infested (m^2).

Discussion

The two years of data suggest that the interior regions of the park are less impacted by target invasive plant species than at the POE at SAMO. We will need several more years of monitoring at many more sampling points on DRT to confirm this pattern. The pattern suggests, however, that by focusing our treatments at POE now, we may protect the interior areas of the park from the spread of target invasive plant species along the roads and trails leading from POEs. Fortunately, this strategy is feasible and cost-effective because of the relative ease of access at POEs for treatment, in contrast to backcountry work. However, certain species on our target invasive plant list have wind-blown seeds that do not require roads and trails or disturbance to establish in remote areas (e.g., Pampas grass, fountain grass, thistles) so surveillance of interior, high priority regions of the park is required to detect small infestations and treat them before they grow in size. Data on invasive plants detected by the Terrestrial Vegetation Monitoring program (Tiszler et al. *in review*) that focuses on interior vegetation, and infestations found along riparian corridors (that are typically highly invaded) through the Water Quality and Riverine Monitoring program (Federico *in preparation*) will be very important to give an accurate estimate of invasive plant distribution at SAMO.

Acknowledgments

We would like to thank interns, T. Barancik, T. Condo, S. Del Rio, A. Huffman, V. Ryden, and J. Woo, as well as park staff, L. Aguilar, B. Clarke and T. Valois for assistance with fieldwork. S. Ostermann-Kelm, C. Brigham, J. Gibson and J. Knapp provided valuable comments on earlier drafts of this report. We also thank our colleagues and park partners at California Department of Parks and Recreation, Mountains Conservation and Recreation Authority and Conejo Open Space Conservation Authority.

List of Acronyms

BBT	Backbone Trail
COSCA	Conejo Open Space Conservation Authority
GIS	Geographic Information System
GPS	Geographic Positioning System
GRTS	Generalized Random Tessellation Stratification
MCSP	Malibu Creek State Park
MEDN	Mediterranean Coast Network Inventory and Monitoring Program
SAMO	Santa Monica Mountains National Recreation Area
SMM	Santa Monica Mountains
POE	Point of Entry
DRT	Dirt Roads and Trails

Introduction

The National Park Service Mediterranean Coast Network Inventory & Monitoring Program (MEDN) comprises three parks in coastal southern California – Cabrillo National Monument, Channel Islands National Park and Santa Monica Mountains National Recreation Area (SAMO, Figure 4). These parks protect a unique and diverse flora within California's South Coast Ecoregion (Hickman 1993, Bailey et al. 1994). This ecoregion contains more than 30 percent of California's native plant species in less than ten percent of the state's land area (California Department of Fish and Game 2008). Vegetation communities in Mediterranean-type climate regions such as coastal southern California typically have high species richness, including evergreen chaparral and summer-deciduous sage scrub occurring in association with woodland, grassland, riparian and coastal bluff communities (Rundel and Tiszler 2007).

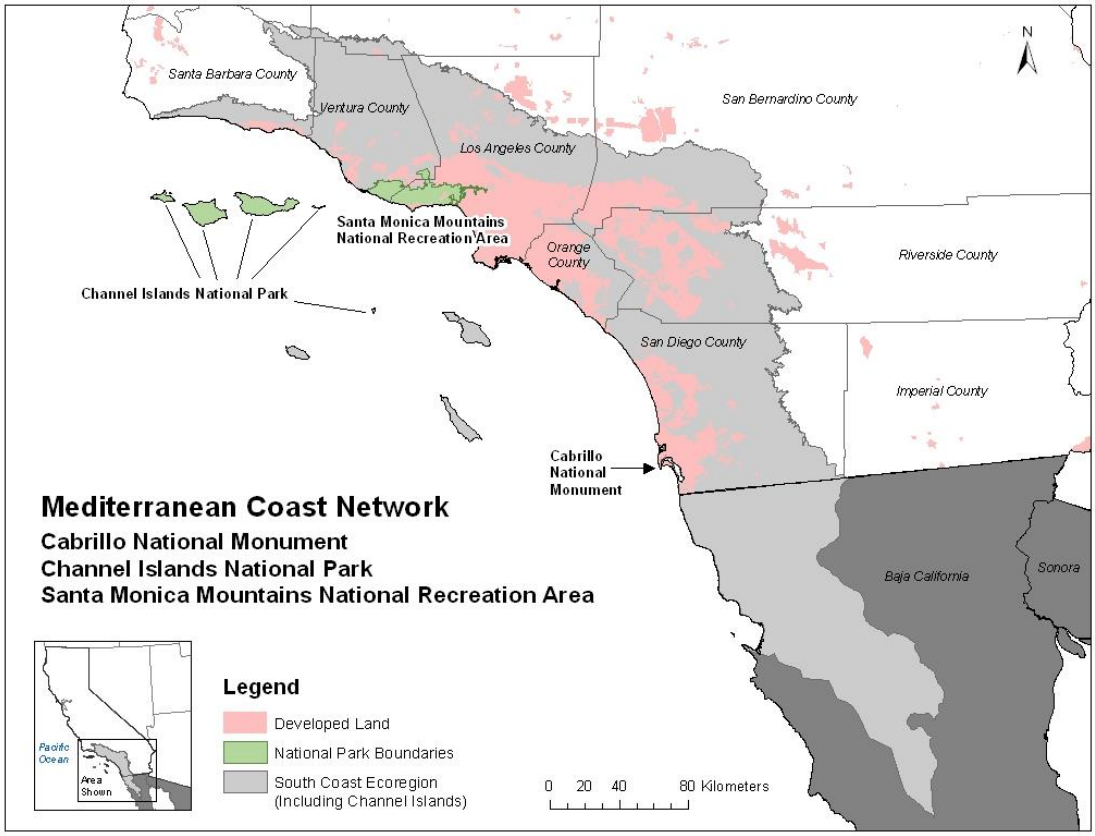

Figure 4. Location of the three parks within the South Coast Ecoregion boundary comprising the NPS Mediterranean Coast Network Inventory & Monitoring Program.

The South Coast Ecoregion is also notable for the tremendous human population growth and urban expansion that has occurred since the mid-20th century. The establishment and spread of non-native plants species that follows agricultural land use and urban expansion is one of the most significant threats to native plant diversity in the MEDN parks. Presently at SAMO, non-native plants comprise 31% of the Santa Monica Mountains flora (353 of 1155 species total, NPSpecies 2011).

While many non-native species become relatively minor elements in the landscape, others are invasive and have the capacity to transform ecosystems (*e.g.*, by displacing native plants, altering ecosystem processes, and reducing native wildlife habitat quality, Pimentel et al. 1999, Bossard et al. 2000). In 2006, a panel of park staff, subject matter experts, and the Bren School of the University of California at Santa Barbara ranked and prioritized the Santa Monica Mountains non-native species for control and/or eradication. Several criteria were used such as a species' invasiveness, limited distribution in the park, and feasibility of control. These criteria resulted in 19 invasive species prioritized by SAMO for control/eradication. A comprehensive map of these 19 target species was prepared in 2007, and revealed over 4000 infestations; approximately 90% of which covered less than 100 m^2. Since then, an additional six species have been added to the list for a variety of reasons (*e.g.*, new treatment methods, their arrival in the park) for a current total of 25 target invasive plant species (Table 1).

Because non-native invasive species tend to establish in disturbed areas and impact native biota, the frequency and distribution of plant invasions are valuable measures of ecosystem health. Invasive plant monitoring was the top-ranked MEDN Vital Sign for implementation (Cameron et al. 2005). The overall goal of the Invasive Plant Monitoring Program is to determine the status and trends of non-native invasive plants within MEDN parks and to provide information to assist park managers with strategic and cost-effective control of invasive plants. Specifically, our monitoring objectives are:

1. Determine the status of and trends in the distribution and cover of target non-native invasive plant species at points of entry and roads and trails on public lands.
2. Provide regular updates (annually or more frequently) on all target non-native invasive plant populations to park invasive plant management programs. Provide immediate notification if any previously unknown non-native plant species are detected during monitoring, or if a new location of a known target species is discovered.

In this report, we summarize the first two years of a pilot study for the MEDN invasive plant monitoring program at SAMO. This monitoring was not implemented in Channel Islands National Park during 2013 or 2014 due to a lack of staff and resources. This monitoring will not be implemented at Cabrillo National Monument because of its small size (65 ha), nearly target invasive plant-free status, and the use of a comprehensive "search and destroy" management strategy. Future reports will include also summaries of data collected through the MEDN Terrestrial Vegetation Monitoring (Tiszler et al. *in review*) and MEDN Water Quality and Riverine Integrity Monitoring (Federico *in preparation*) programs after those programs have been launched. This report is only meant to provide summary information and periodic trend reports will be prepared at five-year intervals.

Methods

Monitored Species

Twenty-five high priority target invasive species known to occur at SAMO were selected for monitoring (Table 1). Due to the large number of invasive plant infestations at SAMO, invasive plant removal efforts will be performed separately from monitoring, unless the population is exceedingly small or is a newly detected species for the park. In all other cases, infestations will be systematically evaluated and prioritized according to the park's Invasive Plant Management Plan (*in draft*) before a management decision is made regarding whether to treat the populations or simply monitor them over time. All non-native invasive plant species newly discovered within a park are considered target species until a decision is made to remove that species from the target list. Non-native plant species that are new introductions to the park were also sought and recorded during monitoring.

Table 1. List of 25 target invasive species that were monitored in 2013 and 2014 at SAMO. All species on this list are prioritized for treatment and may have been treated during the monitoring period.

Species	Common name	Observed
Acroptilon repens	Russian knapweed	No
Ailanthus altissima	tree of heaven	Yes
Arundo donax	giant reed	Yes
Asphodelus fistulosus	onionweed	Yes
Carduus pycnocephalus	Italian thistle	Yes
Carthamus lanatus	saffron thistle, wooly distaff thistle	No
Centaurea solstitialis	yellow starthistle	Yes
Cirsium vulgare	bull thistle	Yes
Conium maculatum	poison hemlock	Yes
Cortaderia jubata	Pampas grass	No
Cynara cardunculus	artichoke thistle	No
Cyperus involucratus	umbrella plant	Yes
Delairea odorata	Cape ivy	Yes
Euphorbia lathyris	caper spurge	Yes
Euphorbia terracina	Geraldton spurge, carnation spurge	Yes
Foeniculum vulgare	sweet fennel	Yes
Lepidium latifolium	perennial pepperweed	Yes
Myoporum laetum	myoporum	Yes
Nicotiana glauca	tree tobacco	Yes
Phalaris aquatica	Harding grass	Yes
Salsola australis	Russian thistle	Yes
Spartium junceum	Spanish broom	Yes
Stipa miliacea	smilo grass	Yes
Tamarix ramosissima	tamarisk	Yes
Vinca major	periwinkle	Yes

Field Methods

Points of Entry

We defined Points of Entry (POE) within SAMO as any hardscaped area at trailheads, parking lots or campgrounds (Irvine et al. *in review*). More specifically, the POE Search Area includes the POE plus the first 50 m of any road or trail connected to the POE and a 15 m buffer surrounding this area. The POE General Area includes the area extending 50 m out from the edge of the POE and 15 m buffer. The General Area was used to estimate vegetation, litter and bare ground (Figure 5).

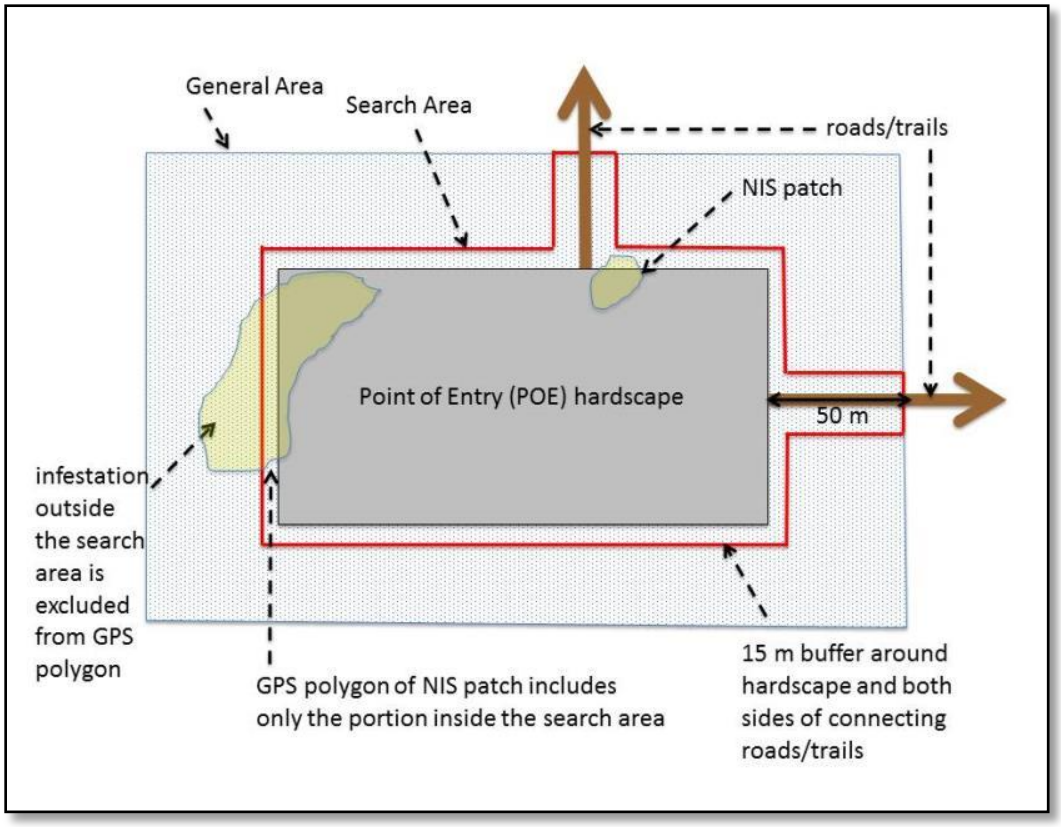

Figure 5. Diagram of an example POE. The POE Search Area includes the hardscaped area, the first 50 m of any connected dirt roads or trails, and a 15 m buffer surrounding this area. The POE General Area (stippled) is the area extending 50 m out from the edge of the POE and the 15 m buffer. Non-native invasive plant species (NIS).

We recorded the type of vegetation and percent cover of litter or bare ground within the POE General Area, as well as the substrate surface of the POE (*e.g.*, dirt, pavement, gravel, mixed). The POE was also walked systematically and all target invasive plant species were mapped with a GPS unit. Due to technical difficulties with the data dictionary specifically designed for this protocol for use with a Trimble Geo XT GPS unit, target invasive plant species were recorded via Garmin GPS units. Infestations were recorded as points (not polygons) and the area of the infestation was measured. In some cases data were recorded on paper datasheets because the GPS units could not receive satellite signal (*e.g.*, under tree canopies, cloud cover). For each target species detected, we recorded species name, area infested by the species and percent cover, whether the infestation was within the

hardscape or the buffer, the predominant phenophase, and distribution pattern (as described in Irvine et al., *in review*).

Dirt Roads and Trails

To determine the distribution and relative abundance of target invasive plant species along dirt roads and trails (DRT), we monitored sets of transects placed at randomly selected locations along dirt roads and trails. The transect length was a 30 m-long strip established on the road or trail, centered along the randomly selected location. The transect width included the road or trail (and therefore was of variable width), as well as three parallel 5 m x 30 m strip transects on each side of the road/trail (Figure 6). Within each transect, we recorded substrate characteristics and the percent cover and distribution of the target species, as well as their dominant phenophase.

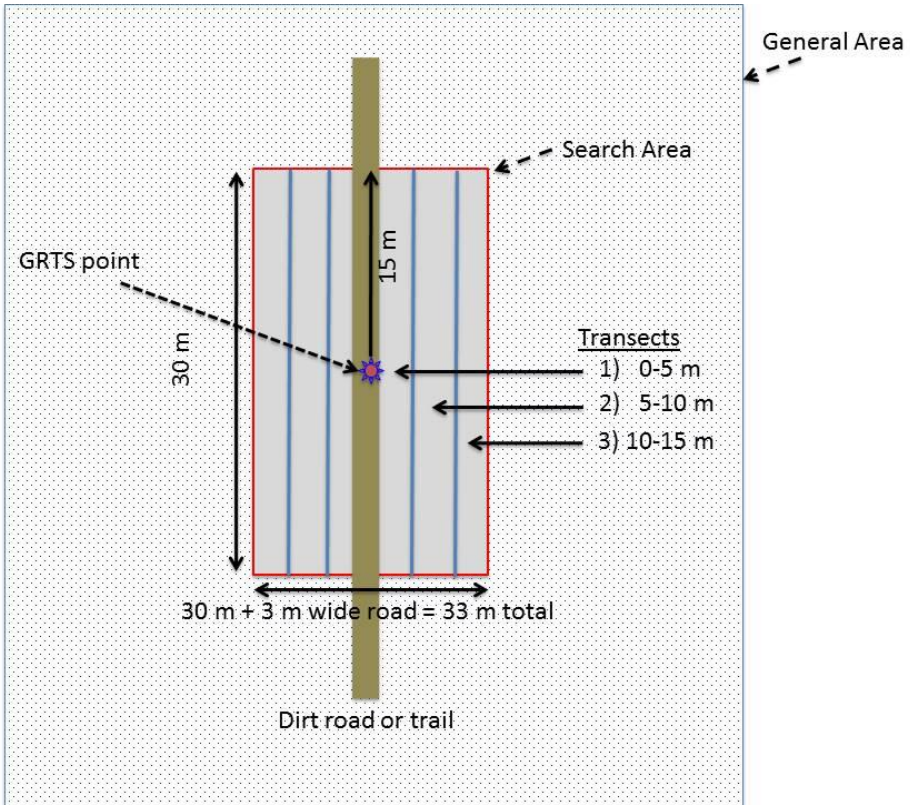

Figure 6. Diagram of DRT strip transects at a sampling point along dirt roads and trails.

Interior Parklands

Monitoring of target invasive plant species in areas away from roads, trails and developments will be conducted by the MEDN Terrestrial Vegetation Monitoring Program beginning in 2015. The Terrestrial Vegetation Monitoring Program records percent canopy cover, density, richness and frequency of invasive plant species at randomly selected locations throughout SAMO. Summary data on invasive plant species will be reported in the annual and trend reports for that program.

Monitoring Using Smart Phones

To monitor with smart phones, a freely available smart phone application "What's Invasive" was available to record invasive plant species detected by citizen scientists.

Data Entry and Certification

All data were entered into the MEDN Invasive Plants Database by park staff and interns. Data were checked and verified by the program staff to ensure the data were complete and that electronic data matched paper datasheets where applicable. Validation queries were run to highlight field values that were not consistent with expected results (*i.e.,* out-of-range values). These values were double-checked against field datasheets and discrepancies were corrected and/or noted in the database.

Results and Discussion

Four staff and six interns collected the data for the Invasive Plant monitoring program in 2013 and 2014. POE and DRT monitoring components were completed both years. No data were collected by citizen scientists using the smart phone application either year, and the interior parkland component will be initiated during the 2015 field season as part of the Terrestrial Vegetation Monitoring Program.

Monitoring was conducted in 2013, from May 14 to June 3 (POE) and July 4-10 (DRT), and in 2014, from May 13 to June 30 (POE) and June 2 to July 2 (DRT). In 2013, one POE and two DRT were monitored off season, POE 27 in Topanga State Park was monitored on September 22 due to monitoring the wrong location earlier in the season; DRT 42 in Trancas Canyon was done on August 7 due to earlier access problems; DRT 102 in Circle X Ranch was done on July 21 due to time and staff constraints.

Twenty-two of the original randomly selected (GRTS) points for DRT monitoring could not be accessed and were rejected and replaced. Of the 22 points, 13 fell on private property that is on the future land acquisition list and therefore was included in the GRTS draw, three fell on beaches where there was no well-defined trail, five were inaccessible because of terrain or restricted access (*e.g.*, fenced Encinal Reservoir), and one was located in a narrow, convoluted canyon with no GPS signal so the point location could not be determined.

Points of Entry

2013

In 2013, we monitored 35 of the 72 randomly selected POE (Figure 7 and Appendix A). Twenty-two target invasive plant species were observed at 31 of the 35 POEs. Only four POEs were free of target invasive plant species (Backbone Trail - Latigo Canyon Road, Cheeseboro Canyon, Ed Edelman Park, and Red Rock Canyon). The most common target invasive plant species found at POEs were Italian thistle (*Carduus pycnocephalus*, 14 sites), sweet fennel (*Foeniculum vulgare*, 11 sites), and tree tobacco (*Nicotiana glauca*, nine sites) (Table A-1). Onionweed (*Asphodelus fistulosus*), yellow starthistle (*Centaurea solstitialis*), bull thistle (*Cirsium vulgare*), perennial pepperweed (*Lepidium latifolium*) and Harding grass (*Phalaris aquatica*) were found only at one POE each. All of these target species, however, are known to occur at other locations in SAMO along roads and trails.

Of the 31 sites with target invasive species, 25 POEs had one to five target species, six sites had six to nine target species, and four POEs had no target species (Table A-1). The highest number of target species found at one site (9) was at Will Rogers State Historic Park, which is a popular entry point with several trailheads and a polo field adjacent to urban developments. This site also had the second largest total area infested (3,050 m^2). All other POEs had less than 1,000 m^2 infested, and 14 sites had less than 10 m^2 infested (Table A-1 and A-2).

Twenty-four POEs were treated for various target species (Table A-1) and all POEs received annual fire clearance treatment (e.g., mowing, brushcutting) in spring. No new non-native species were

detected in 2013. (See Appendix A for POE sites that include target invasive plant species and their areas of infestation.)

2014

In 2014, 37 separate POEs were monitored, completing the total bi-annual census of 72 POEs. Twenty-nine POEs (78%) had target invasive plant species. Only eight were free of target invasive plant species (Figure 8 and Appendix A). Twenty target invasive plant species were observed at the remaining 29 POEs. Most sites (26 POE) had 1 to 5 invasive plant species present. Half of the sites had only one to two target species present, and were generally in low cover, except periwinkle (*Vinca major*) and Cape ivy (*Delairea odorata*), which nearly always form a continuous dense cover regardless of patch size (Figure 9). The most common POE target invasive plant species were sweet fennel (15 sites) and Russian thistle (*Salsola australis*, 14 sites). Thirty-five POEs were treated for various target invasive plant species between June 2012-2014 (Table A-1) and all POEs received annual fire clearance treatments that are not specifically aiming to remove invasive plants (*i.e.*, mowing and brushcutting). No new non-native plant species were detected in 2014.

Temescal Gateway Park, an urban edge POE in West Los Angeles with long history of various camps and settlements, had seven target invasive species present. Certain species such as periwinkle and Cape ivy had extensive cover although Cape ivy seemed to be dying back possibly due to extended drought. Other very popular POEs with long histories of human use and that are located close to developed areas include Point Dume and Malibu Creek State Park (Reagan Meadows), which had six target species each, and Topanga State Park's Los Liones Trail, which had five target invasive species. Eight POE (La Jolla Valley North and South Camps, La Jolla Valley individual camps, Bark Park, Castro Crest, Top O'Topanga, Stunt Ranch, and Big Sycamore Horse Camp) had no target invasive plant species.

In terms of the area infested at each POE, all but two had than less than 1,000 m^2 infested. POE 41(Tree People) and POE 59 (Temescal Gateway Park) were the only two sites with net area of infestation totaling more than 1,000 m^2. However, the high number was mainly due to periwinkle, which forms a dense carpet along the trailheads and parking area adjacent to neighboring private properties. Tree People's property itself is managed aggressively for fire clearance and invasive plant species, and is mulched within the POE boundary up to adjacent landscaped private properties. Non-native plants at this site are treated as soon as they appear.

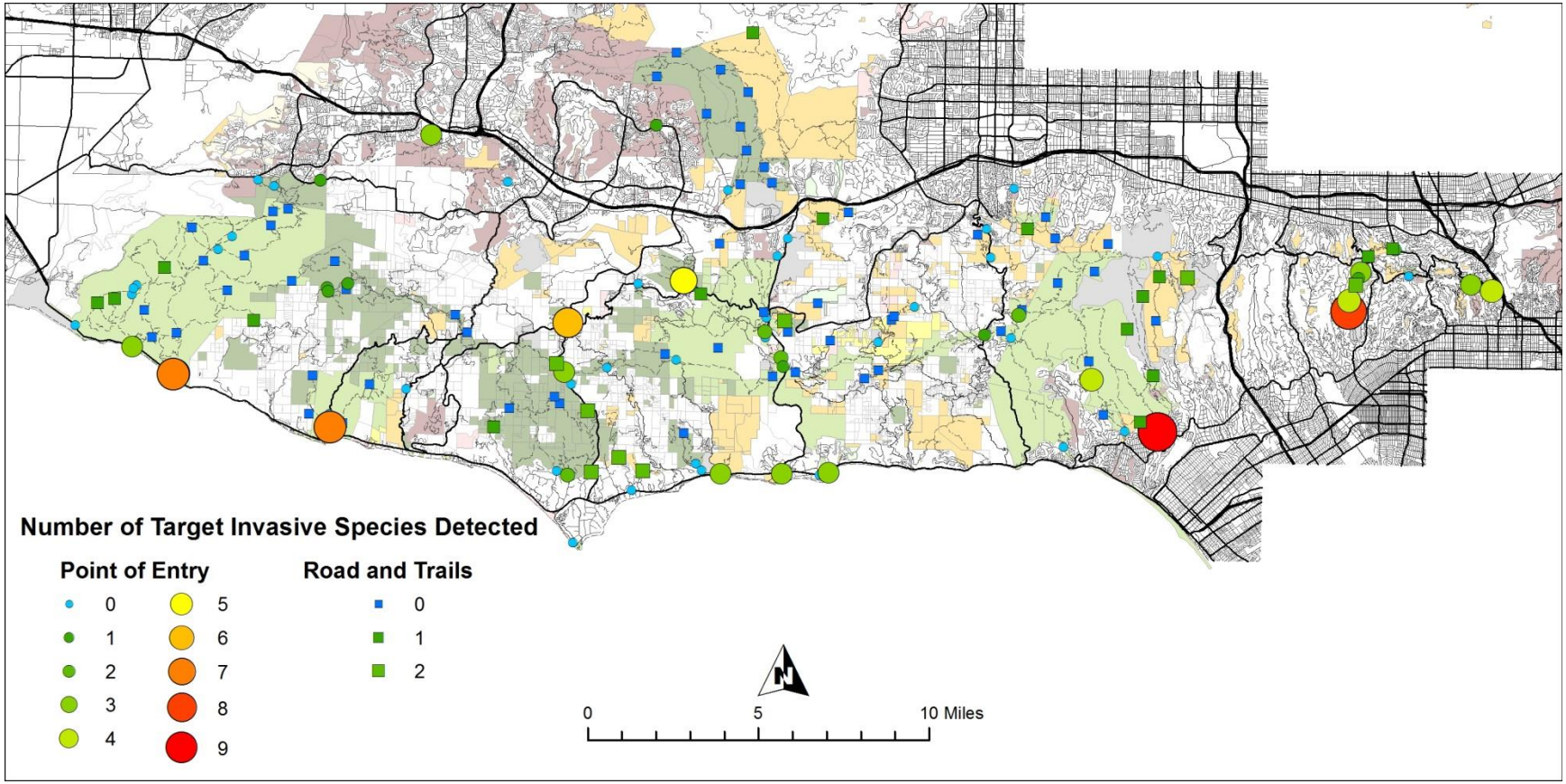

Figure 7. Number of target invasive plant species detected in 2013 at selected POE and at sampling sites along DRT within SAMO.

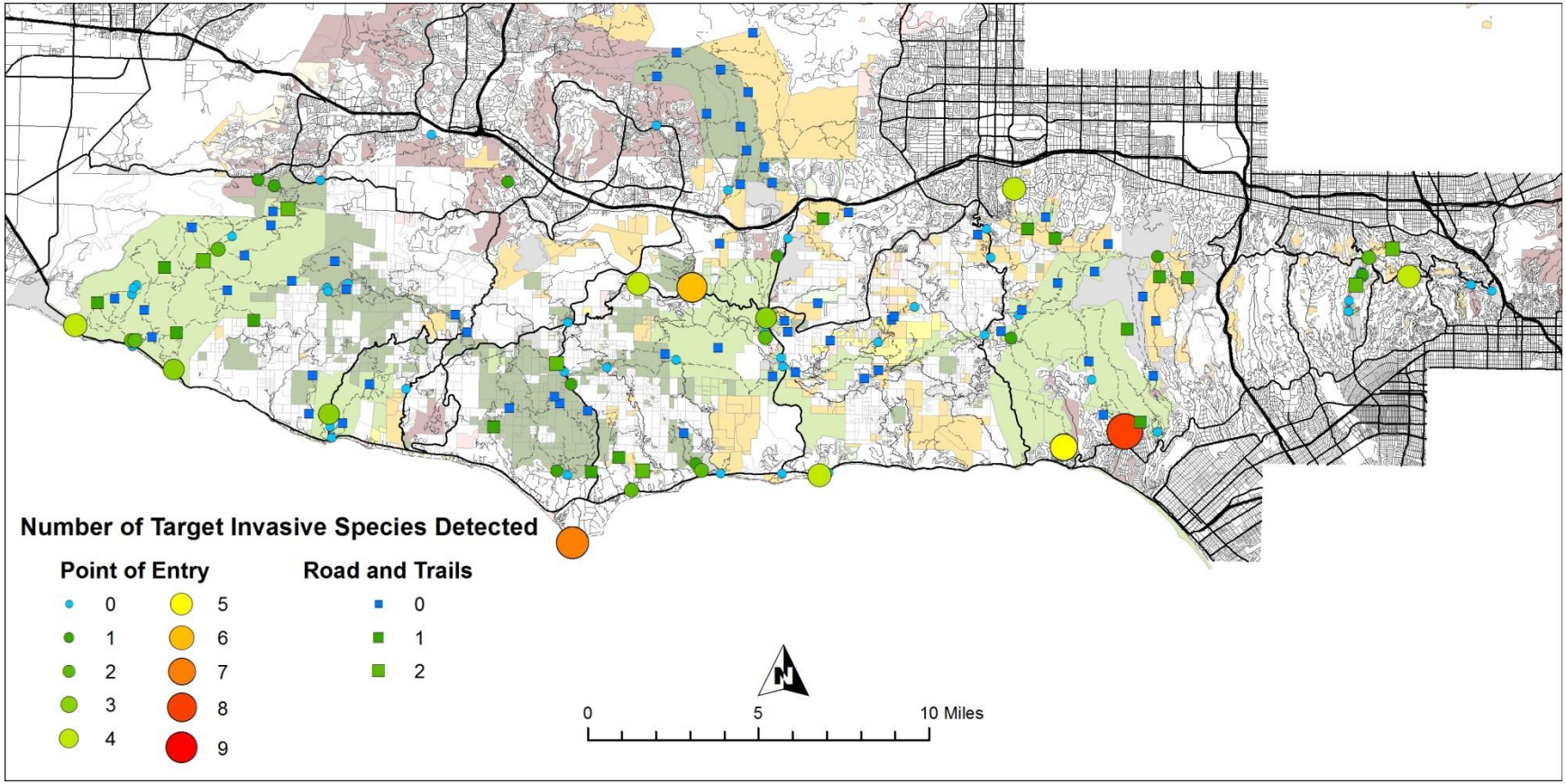

Figure 8. Number of target invasive plant species detected in 2014 at selected POE and at sampling sites along DRT within SAMO.

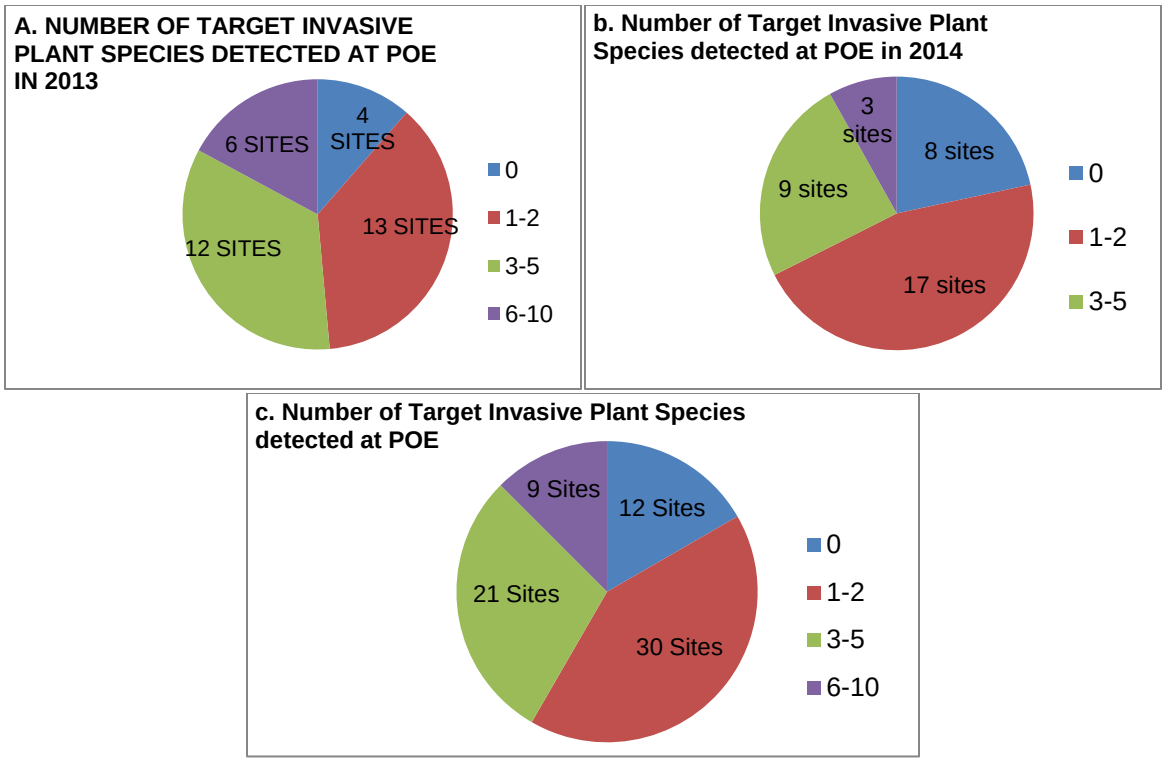

Figure 9. Number of target invasive plant species detected at each POE in 2013 (a), 2014 (b), and combined (c). A total of 72 different POEs at SAMO were monitored over 2 years: 35 in 2013 and 37 in 2014.

Dirt Roads and Trails

In an effort to collect sufficient data for an analysis of statistical power to detect trends in the distribution and abundance of target invasive plant species, we monitored 79 DRT sites in 2013 and the same 79 sites again in 2014 (Appendix B). The results of the power analysis (L. Starcevich, unpublished report) indicated that we do not have adequate power to detect trends with this sampling effort due to a zero-rich dataset. Therefore, we will revise the protocol for this monitoring component.

We have confirmation that six DRT sites were treated for target invasive plant species between the 2013 and 2014 monitoring seasons, although information from other land agencies regarding the remaining sites was incomplete. The treated sites are all within the Springs Fire perimeter, where aggressive invasive plant treatment is ongoing in the post-fire environment to support the native plant community recovery (Figure 13).

There were low numbers of target invasive plant species at the DRT transects. Although many transects had no target species and all others had only one or two species reported, all species on the target list have known locations throughout the range, including occurrences along trails.

2013

In 2013, 25 of the 79 (31%) randomly located DRT sites had 11 target invasive plant species. Among the sites with target invasive plant species, eight had two target species and 17 had only one (Figures

10a, 11 and 12, Table B-1 and B-2). Italian thistle was the most common target invasive plant species and was recorded at nine sites distributed throughout the range, varying from warm dry locations to more shaded cooler conditions.

2014

In 2014, 22 of the same DRT sites (27%) had target invasive plant species and Escondido Falls had three target species [Geraldton carnation spurge (*Euphorbia terracina*), sweet fennel and periwinkle], six sites had two target invasive plant species, and 13 had only one (Table B-3). The most common target invasive plant species in 2014 was sweet fennel, recorded at seven sites, mainly in the western coastal half of the range from Malibu Bluffs to Big Sycamore Canyon. Italian thistle was recorded only at four sites, but its decline may be temporary, resulting from extended drought.

Pampas grass (*Cortaderia selloana*) and milk thistle (*Silybum marianum*) were observed in 2014 but not 2013. Smilo grass (*Stipa miliacea*, formerly *Piptatherum miliacea*) was the only species observed in 2013 that was not also observed in 2014. All other species recorded in 2013 were also recorded in 2014, sometimes in several more sites (sweet fennel), and in some cases at fewer sites (Italian thistle, periwinkle), see Appendix B.

Two transects, DRT 6 at Malibu Creek State Park Reagan Meadows and DRT 91 along West Saddle Peak Road, are mowed annually for fuel reduction purposes. Therefore, depending on the timing of the mowing, we may not be able to detect or identify target invasive plant species.

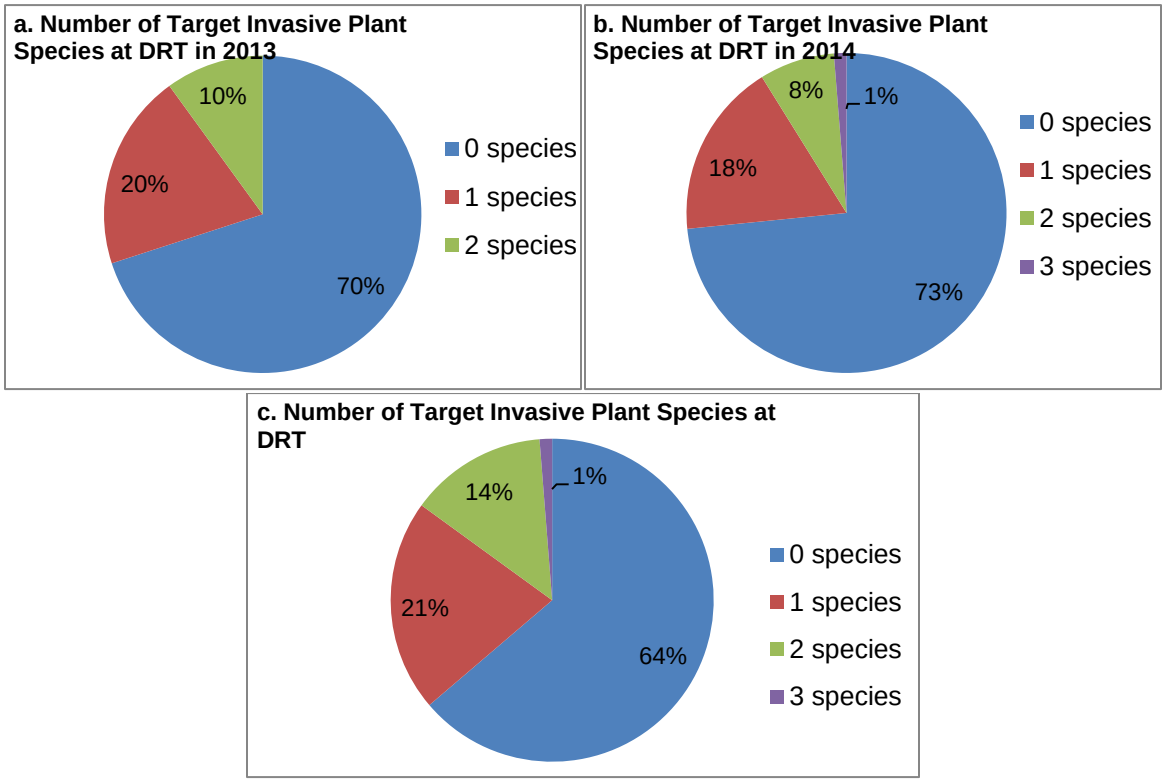

Figure 10. Number of different target invasive plant species found per site at 79 randomly located points along DRTs in SAMO during 2013 (a), 2014 (b), and (c) combined.

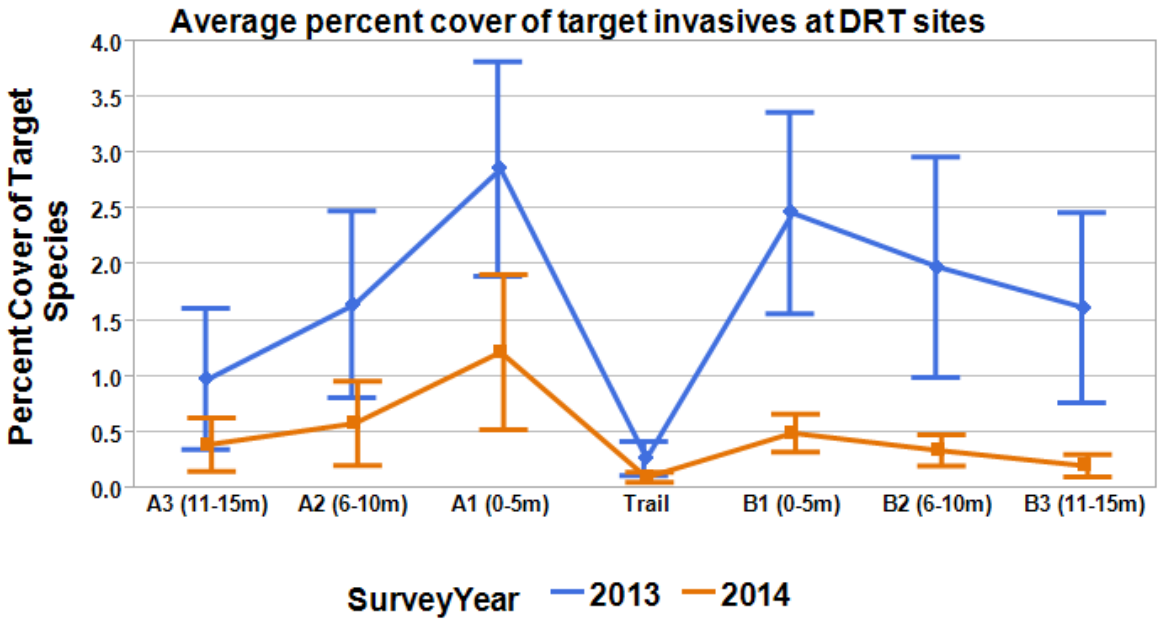

Figure 11. Average percent cover of target invasive plant species (± standard error of the mean; SEM) recorded in transects along DRTs for 2013 (blue line) and 2014 (orange line). There were more detections and more invasive plant species closer to the trail (transects A1 and B1) than farther away from the trail (A3 and B3).

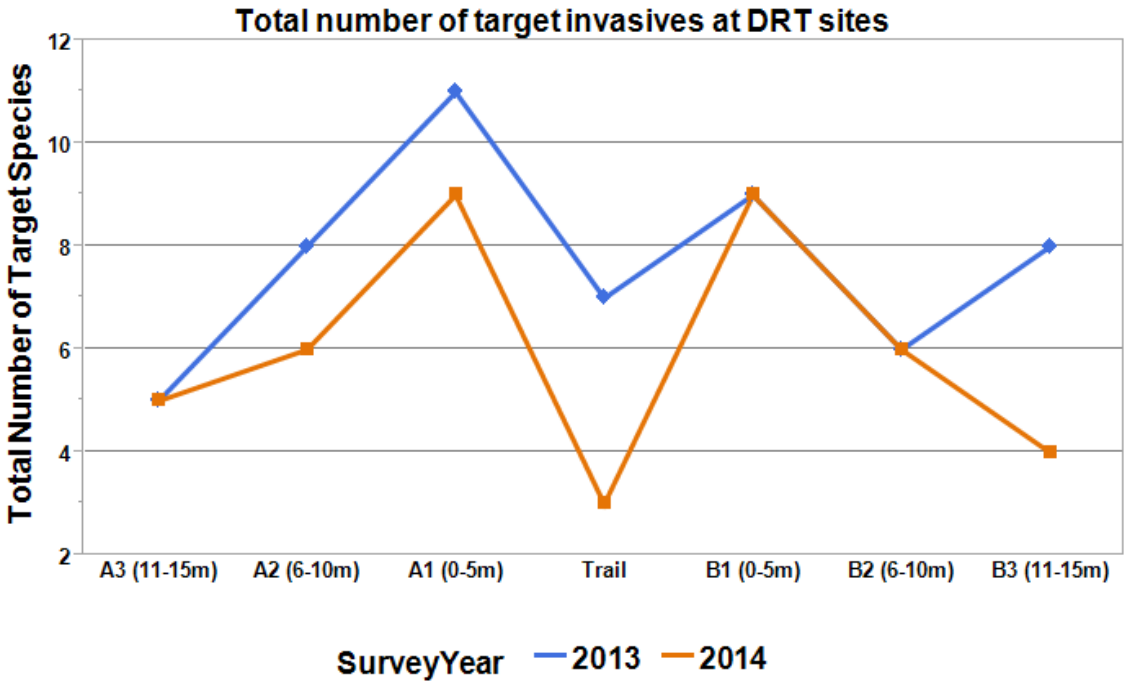

Figure 12. Total number of target invasive plant species (sum of the different species) found per transect along DRTs in 2013 (blue line) and 2014 (orange line). There were more detections and more invasive plant species closer to the trail (transects A1 and B1) than farther away from the trail (A3 and B3).

Unusual Event – Springs Fire May 2-10, 2013

In early May 2013, the Springs Fire burned approximately 24,000 acres of the west end of the Santa Monica Mountains. This included approximately 70% of NPS lands at Rancho Sierra Vista and Deer Creek and much of the 40,000-acre Point Mugu State Park. Six of the DRT sites and11 POE were located within the fire perimeter. NPS Burn Area Emergency Rehabilitation and Burn Area Rehabilitation funding enabled NPS and California Department of Parks and Recreation to assemble a dedicated four-person crew to map, treat and monitor target invasive plant species and some lower priority species within the watershed, in and around the burn area. These infestations were treated at least once and in many cases two to three times between July 2013 and September 2014 to protect the native plant communities during the vulnerable post-fire regeneration period (Figure 13). In 2014, sweet fennel was recorded in two more sites within the fire perimeter and Italian thistle at one more site. Additionally, Spanish broom was recorded at two sites in 2014, with no sites within fire perimeter in 2013. Harding grass was recorded at one new site although it was not detected in 2014 at the site recorded in 2013. Smilo grass was recorded at one site in 2014, with no sites within fire perimeter in 2013 (see Table 2).

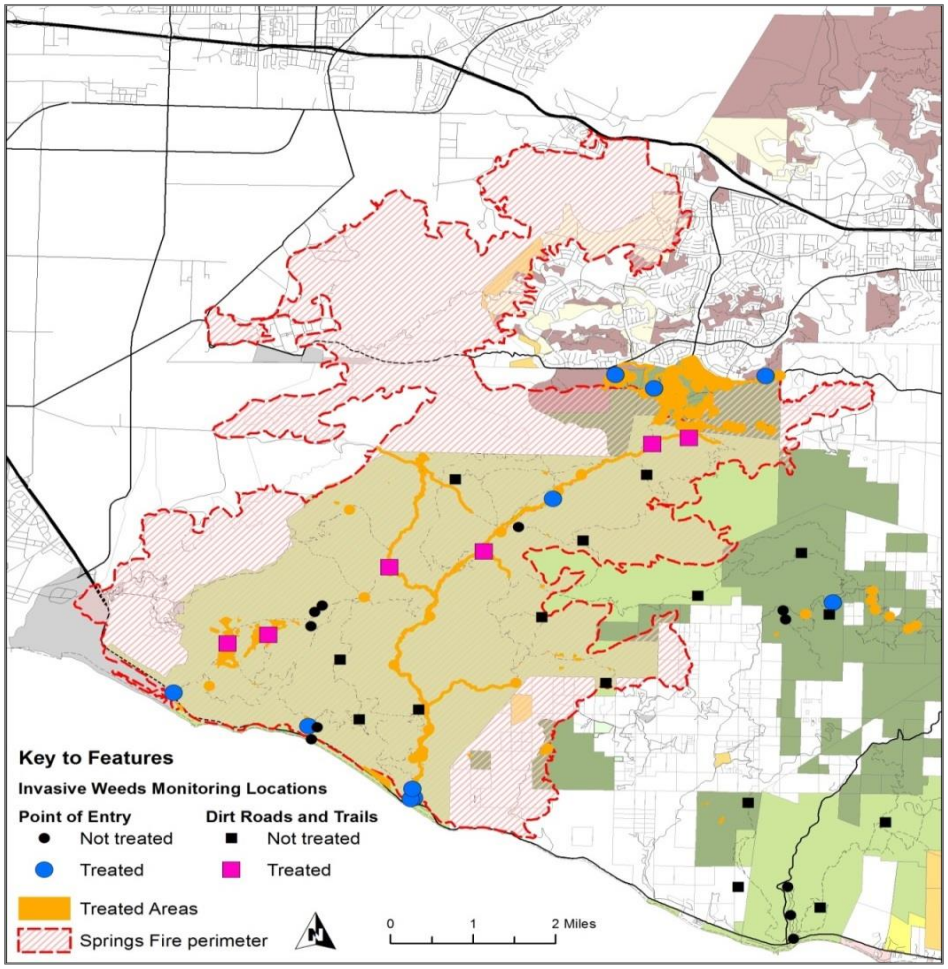

Figure 13. Map of Springs Fire and treatment of target invasive plants at POE and DRT within the fire perimeter.

Table 2. SAMO target invasive plant species with the number of monitoring sites (POE and DRT) where the species was observed and percent of sites where they were observed in 2013 and 2014.

	N Sites Spp Observed						% of Sites Observed					
	POE		DRT		Total		POE		DRT		Total	
Species	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014
AIL_ALT	2	-	0	-	2	-	6	-	0	-	2	-
ARU_DON	2	-	0	-	2	-	6	-	0	-	2	-
ASP_FIS	1	3	0	0	1	3	3	8	0	0	1	3
CAR_PYC	14	4	9	4	23	8	40	11	11	5	19	7
CEN_SOL	1	1	2	0	3	1	3	3	2	0	3	1
CIR_VUL	1	-	0	-	1	-	3	-	0	-	1	-
CON_MAC	7	0	1	1	8	1	20	0	1	1	7	1
COR_JUB	2	1	0	0	2	1	6	3	0	0	2	1
CYP_INV	-	1	-	0	-	1	-	3	-	0	-	1
DEL_ODO	3	2	2	2	5	4	9	5	2	3	4	3
EUP_LAT	-	1	-	0	-	1	-	3	-	0	-	1
EUP_TER	6	6	1	2	7	8	17	16	1	3	6	7
FOE_VUL	11	15	5	7	16	22	31	41	6	9	13	19
LEP_LAT	1	4	0	0	1	4	3	11	0	0	1	3
MYO_LAC	3	1	0	0	3	1	9	3	0	0	3	1
NIC_GLA	9	6	3	3	12	9	26	16	4	4	10	8
PEN_SET	6	1	0	0	6	1	17	3	0	0	5	1
PHA_AQU	1	1	2	1	3	2	3	3	2	1	3	2
RIC_COM	8	4	0	0	8	4	23	11	0	0	7	3
SAL_AUS	7	13	2	3	9	16	20	35	2	4	8	14
SIL_MAR	2	2	0	2	2	4	6	5	0	3	2	3
SPA_JUN	0	4	2	2	2	6	0	11	2	3	2	5
STI_MIL	0	1	1	0	1	1	0	3	1	0	1	1
VIN_MAJ	4	4	3	1	7	5	11	11	4	1	6	4

Suggestions for Future Monitoring

1. In a few instances, target invasive plant species were found somewhere along the trail/road between the trailhead and the sampling site (*e.g.*, yellow starthistle in Mandeville Canyon) or they are known from nearby areas (*e.g.*, onionweed at Malibu Creek State Park Reagan Ranch grassland). Observations during the first two field seasons suggest that our DRT sampling scheme may potentially miss some target species infestations. Additional work comparing the number of GRTS points that intersect (or "hit") a known infestation from the 2007 SAMO comprehensive weed map will be useful. Appendix B provides a list of DRT monitoring sites with invasive species found, their percent cover per transect and the total area of infestation.

2. Two transects, DRT 6 at Malibu Creek State Park Reagan Meadows and DRT 91 along West Saddle Peak Road, are mowed annually for fuels reduction purposes. Therefore, depending on the timing of the mowing, we may not be able to detect or identify target species. It will be helpful to communicate with fuels reduction staff about when they plan to treat and to shift the timing of monitoring of these points before they are treated. In the alternative, these transects can be compared to others to determine if mowing is making the infestations better or worse over time.

3. Certain species on our target list have wind-blown seeds that do not require roads and trails or disturbance to establish in remote areas (e.g., Pampas grass, fountain grass, thistles) so surveillance of interior regions of the park is required to detect small infestations and treat them before they grow in size. Data on invasive plants detected by the Terrestrial Vegetation Monitoring program (Tiszler et al. *in review*) that focuses on interior vegetation, and infestations found along riparian corridors (that are typically highly invasible) through the Water Quality and Riverine Monitoring program (Federico *in preparation*) will be very important.

4. Staff verified that no data were uploaded by citizen scientists into the *What's Invasive* website in 2013-2014. However, data from 2009-2011 have been verified and the application is functioning properly. More outreach to the public is needed to make this component of the monitoring protocol useful. Further, because only positive data are collected (*i.e.*, data are collected only when a target plant species is found) these data will not be used to assess trends in distribution and cover, but will be used to supplement and interpret the data collected at POE and DRT. The overall effectiveness of this part of the monitoring program will be determined based on the number of public participants and the level of taxonomic certainty with each participant. If poor citizen scientist participation persists, we may consider removing this monitoring component from the protocol.

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Appendix A

Table A-1. SAMO POE monitoring sites where target invasive plant species were detected including year of survey, general location (within POE boundary or in the surrounding 50 m wide general area), net area infested (size of area where target species occurred * percent cover of target species), and whether the species was treated. (The numbers in hard brackets denote size of the area where target species occurred in cases where percent cover was not recorded.)

Year	POE	Location	Species	Net Area Infested (sq. m.)	POE or Buffer	Treated June 2012-2013	Treated June 2013-2014
2013	POE-01	Franklin Canyon Park -- Ranch	AIL_ALT	10	Both		
			CAR_PYC	5	Both	Yes	
			CAR_PYC	1.05	Buffer	Yes	
			CAR_PYC	1	POE	Yes	
			CON_MAC	10	Buffer	Yes	Yes
			DEL_ODO	125	Buffer	Yes	
			FOE_VUL	5	Buffer	Yes	Yes
			NIC_GLA	26	Buffer	Yes	Yes
			PEN_SET	0.3	Buffer	Yes	Yes
			PEN_SET	11.25	POE	Yes	Yes
			RIC_COM	12	Buffer	Yes	Yes
2013	POE-02	Sycamore Canyon Campground Hike and Bike (Point Mugu State Park)	CON_MAC	11	Buffer	Yes	
			FOE_VUL	0.6	POE	Yes	Yes
			MYO_LAC	85	POE	Yes	Yes
			NIC_GLA	5.5	Buffer	Yes	Yes
			NIC_GLA	25.5	POE	Yes	Yes
			RIC_COM	42	Buffer	Yes	Yes
			SAL_AUS	32	Buffer	Yes	Yes
2013	POE-03	Malibu Beach (Malibu Lagoon State Beach)	ARU_DON	1.5	Buffer		
			CAR_PYC	1	Buffer		Yes
			EUP_TER	5.8	Buffer		Yes
2013	POE-04	BBT - Kanan Trailhead (Zuma/Trancas Canyons)	CAR_PYC	[95]	POE	Yes	
			CAR_PYC	[140]	Buffer	Yes	
			FOE_VUL	[25]	POE	Yes	
			FOE_VUL	[7]	Buffer	Yes	
			SPA_JUN	[98]	POE	Yes	Yes
			SPA_JUN	[133]	Buffer	Yes	Yes

Year	POE	Location	Species	Net Area Infested (sq. m.)	POE or Buffer	Treated June 2012-2013	Treated June 2013-2014
2013	POE-05	BBT - Will Rogers SHP Main Entrance (Topanga State Park)	CIR_VUL	1.12	Buffer		
			CON_MAC	0.5	Buffer		
			DEL_ODO	2384.5	Buffer		
			EUP_TER	427.25	Buffer		
			FOE_VUL	0.052	Buffer		
			NIC_GLA	5.55	Buffer	Yes	
			RIC_COM	10.9	Buffer		
			SAL_AUS	2.1	Buffer		
			VIN_MAJ	225	Buffer		
2013	POE-06	Thornhill Broome Beach - Campground	ARU_DON	0.9	POE		
			MYO_LAC	440.25	POE	Yes	Yes
			SAL_AUS	8.5	Buffer		Yes
2013	POE-07	Malibu Ck St Pk/Tapia Park (Malibu Creek State Park)	CAR_PYC	4.1	Both		Yes
			CAR_PYC	1.13	Buffer		Yes
			VIN_MAJ	0.06	Buffer		Yes
2013	POE-08	Paramount Ranch Main Entrance (Paramount Ranch)	CAR_PYC	255.325	Buffer	Yes	
			CAR_PYC	0.05	POE	Yes	
			CEN_SOL	3.115	Buffer	Yes	
			CEN_SOL	1.28	POE	Yes	
			CON_MAC	0.2	Both	Yes	
			CON_MAC	299.25	Buffer	Yes	
			LEP_LAT	35.705	Buffer	Yes	
			LEP_LAT	36.065	POE	Yes	
			SIL_MAR	0.065	Buffer	Yes	
2013	POE-09	WODOC parking lot (Franklin Canyon - upper)	AIL_ALT	38.5	Buffer		
			CON_MAC	151	Buffer	Yes	Yes
			SAL_AUS	5	Buffer	Yes	Yes
2013	POE-10	BBT - Sandstone Peak Trailhead (Circle X Ranch)	PEN_SET	1	POE	Yes	
2013	POE-11	Musch Camp (Topanga State Park)	CAR_PYC	34.305	Buffer		
			VIN_MAJ	45	Both		
2013	POE-12	Corral Canyon /Sara Wan Trailhead	COR_JUB	0.2	Buffer	Yes	Yes
			EUP_TER	0.1	Buffer	Yes	Yes
			FOE_VUL	1.25	Buffer	Yes	Yes
			FOE_VUL	4.65	POE	Yes	Yes

Year	POE	Location	Species	Net Area Infested (sq. m.)	POE or Buffer	Treated June 2012-2013	Treated June 2013-2014
2013	POE-13	Leo Carillo State Park (Campground and parking lot)	CAR_PYC	5.655	Buffer	Yes	Yes
			COR_JUB	0.8	Buffer		
			FOE_VUL	3	Buffer	Yes	Yes
			NIC_GLA	0.2	Buffer	Yes	Yes
			PEN_SET	0.4	POE	Yes	Yes
			RIC_COM	0.015	Buffer	Yes	Yes
2013	POE-15	Temescal Ridge Trailhead (Topanga State Park)	EUP_TER	1.5	Buffer		
			FOE_VUL	7.5	Buffer		
			RIC_COM	27.7	Buffer		
			VIN_MAJ	1.9	Buffer		
2013	POE-16	BBT - Latigo Cyn Rd (NPS BBT)	CAR_PYC	-	-	Yes (Feb 2012)	
2013	POE-17	Hastain Trailhead (Franklin Canyon - upper)	CON_MAC	3.75	Buffer	Yes	Yes
			DEL_ODO	450	Buffer		
			FOE_VUL	5	Buffer	Yes	Yes
			RIC_COM	4.25	Buffer	Yes	
2013	POE-18	Sycamore Canyon Campground (Point Mugu State Park)	CAR_PYC	0.45	POE	Yes	
			CON_MAC	10	Both	Yes	
			CON_MAC	56.25	Buffer	Yes	
			CON_MAC	1.1	POE	Yes	
			FOE_VUL	1	Buffer	Yes	Yes
			MYO_LAC	5.5	POE	Yes	Yes
			NIC_GLA	1.5	Buffer	Yes	Yes
			RIC_COM	7	Buffer	Yes	Yes
			RIC_COM	1.5	POE	Yes	Yes
			SIL_MAR	0.5	POE	Yes	Yes
2013	POE-19	Malibu Bluffs, Michael Landon Center	ASP_FIS	1.5	Buffer		
			EUP_TER	10	Both		
			EUP_TER	73.35	Buffer		
			FOE_VUL	1.225	Buffer		
2013	POE-20	Rocky Oaks (Rocky Oaks)	CAR_PYC	[70]	Buffer	Yes	Yes
			CIR_VUL	[1]	Buffer	Yes	Yes
			CON_MAC	[2]	POE	Yes	Yes
			FOE_VUL	[1]	POE	Yes	Yes
			FOE_VUL	[11]	Buffer	Yes	Yes
			PHA_AQU	[1]	POE	Yes	Yes
			SIL_MAR	[1]	POE	Yes	Yes
			SIL_MAR	[200]	Buffer	Yes	Yes

Year	POE	Location	Species	Net Area Infested (sq. m.)	POE or Buffer	Treated June 2012-2013	Treated June 2013-2014
2013	POE-21	Runyon Cyn Rd Trailhead North (Runyon Canyon Park)	NIC_GLA	3	Buffer		
			PEN_SET	0.11	POE		
			SAL_AUS	0.085	POE		
2013	POE-22	Los Robles Trail (COSCA off Potrero)	SAL_AUS	1.215	POE	Yes	
2013	POE-23	BBT - Tapia Trailhead (MCSP BBT)	CAR_PYC	0.05	Both		Yes
			CAR_PYC	0.3	Buffer		Yes
			CAR_PYC	0.001	POE		Yes
2013	POE-24	Cheeseboro Canyon Trailhead (Simi Hills)	-	-	-	-	-
2013	POE-25	Redwood Grove (Franklin Canyon - upper)	PEN_SET	27	Buffer	Yes	
2013	POE-26	Circle X Ranch Campground Entrance (Circle X Ranch)	CAR_PYC	0.8	Both		
			CAR_PYC	1.65	Buffer		
2013	POE-27	BBT - Dead Horse Trail Trailhead (Topanga State Park)	NIC_GLA	0.001	Buffer		
2013	POE-28	Malibu Creek State Park Campground	CAR_PYC	22	Buffer		
			CAR_PYC	4	POE		
			PHA_AQU	0.9	POE	Yes	Yes
2013	POE-29	Circle X Ranch Campground	CAR_PYC	0.25	Both	Yes	
			CAR_PYC	0.1	Buffer	Yes	
2013	POE-30	Ed Edelman Park Trailhead	-	-	-	Yes	Yes
2013	POE-31	Bonsall Trailhead (Zuma/Trancas Canyons)	EUP_TER	207.5	Buffer	Yes	
			FOE_VUL	0.35	Buffer		
2013	POE-32	Los Robles Trail -- T.O./Greenmeadow Av (Los Robles Trail)	CAR_PYC	2.26	Buffer	Yes	
			NIC_GLA	0.285	Buffer	Yes	
			SAL_AUS	0.605	Buffer	Yes	
2013	POE-33	Runyon Canyon Mulholland Eastern	FOE_VUL	0.5	Buffer		
			NIC_GLA	0.005	Buffer		
			PEN_SET	15	Buffer		
			PEN_SET	15	POE		
			RIC_COM	0.75	Buffer		

Year	POE	Location	Species	Net Area Infested (sq. m.)	POE or Buffer	Treated June 2012-2013	Treated June 2013-2014
2014	POE-34	La Jolla Valley South Camp (Note that this POE was done in 2014)	-	-	-		Yes
2013	POE-35	Red Rock Canyon Entrance	-	-	-	-	-
2013	POE-36	Oak Canyon Community Park (Rancho Simi OS)	CAR_PYC	2	Buffer		
2013	POE-37	Wilacre Park Main Entrance (Wilacre Park)	CAR_PYC	3	Both		
			CAR_PYC	0.125	POE		
2014	POE-38	Big Sycamore Horse Camp (Point Mugu State Park) (note that this POE was done in 2014)	FOE_VUL	0.03	POE		
			SIL_MAR	0.09	POE		
2014	POE-39	Bark Park Trailhead (Baldwin OS)	-	-	-		
2014	POE-40	Solstice Canyon Trailhead - inner lot (Solstice Canyon)	EUP_TER	0.705	Buffer	Yes	Yes
			EUP_TER	0.25	POE	Yes	Yes
2014	POE-41	Tree People parking lot (Coldwater Cyn/ Wilacre)	CAR_PYC	0.005	Buffer	Yes	Yes
			VIN_MAJ	1130	Buffer	Yes	Yes
2014	POE-42	RSV Main Entrance (RSV/Satwiwa)	FOE_VUL	0.1	Buffer	Yes	Yes
2014	POE-43	Topanga SP -- Los Liones Dr (Topanga State Park)	ASP_FIS	0.01	POE		
			DEL_ODO	5	Buffer		
			EUP_TER	0.1	POE		
			FOE_VUL	0.005	POE		
			SPA_JUN	0.2	POE		
2014	POE-44	Castro Crest – Backbone Trail trailhead at North end of Corral Canyon Road	-	-	-	-	-
2014	POE-45	Point Mugu State Park/Chumash Trail	FOE_VUL	0.135	Both		
			FOE_VUL	0.195	Buffer		
			PEN_SET	130.06	Buffer		
			PEN_SET	3.035	POE		
			RIC_COM	0.365	Buffer		
			SAL_AUS	2.305	Buffer		
			SAL_AUS	0.005	POE		
2014	POE-46	Top of Topanga Overlook	-	-	-	-	-
2014	POE-47	Not done. Campground has been closed indefinately	-	-	-	-	-

Year	POE	Location	Species	Net Area Infested (sq. m.)	POE or Buffer	Treated June 2012-2013	Treated June 2013-2014
2014	POE-48	Los Robles Trail Access (Los Robles Trail)	SAL_AUS	7.5	Both		
			SAL_AUS	2	POE		
2014	POE-49	Nike Missile Overlook (Westridge-Canyonback Wilderness Park)	SPA_JUN	5	Buffer		
2014	POE-50	BBT - Ray Miller Trailhead / La Jolla Canyon (Point Mugu State Park)	FOE_VUL	57.875	POE		
			SAL_AUS	0.01	POE		
2014	POE-51	Stunt Ranch	-	-	-	-	-
2014	POE-52	Peter Strauss Ranch (Peter Strauss Ranch)	CEN_SOL	1	POE	Yes	Yes
			FOE_VUL	0.005	Buffer	Yes	Yes
			LEP_LAT	0.2	Buffer	Yes	Yes
			SAL_AUS	0.7	POE	Yes	Yes
2014	POE-53	Blinderman Trailhead (Franklin Canyon - upper)	SAL_AUS	150	Buffer		
2014	POE-54	Big Sycamore Canyon Horse Corral	-	-	-		
2014	POE-55	BBT - Topanga State Park Main Entrance (Topanga State Park)	VIN_MAJ	149	Buffer		
2014	POE-56	Solstice Canyon - outer parking lot (Solstice Canyon)	EUP_TER	4.85	Buffer	Yes	Yes
			FOE_VUL	0.005	Buffer	Yes	Yes
2014	POE-57	Portion of Leo Carillo Campground. Included in POE 13.	-	-	-	-	-
2014	POE-58	La Jolla Valley Individual camps	-	-	-		
2014	POE-59	Temescal Gateway Park (Temescal Gateway Park)	ASP_FIS	0.2	POE		Yes
			CYP_INV	0.25	POE		Yes
			DEL_ODO	540	Buffer		Yes
			EUP_TER	0.5	Buffer		Yes
			FOE_VUL	2.15	POE		Yes
			NIC_GLA	0.5	Buffer		Yes
			RIC_COM	0.5	Buffer		Yes
2014	POE-60	Malibu Creek SP Group Camp	CAR_PYC	0.62	Buffer		Yes
			SIL_MAR	0.015	Buffer	Yes	Yes

Year	POE	Location	Species	Net Area Infested (sq. m.)	POE or Buffer	Treated June 2012-2013	Treated June 2013-2014
2014	POE-61	Big Sycamore Cyn Main campground	FOE_VUL	7	Buffer	Yes	Yes
			FOE_VUL	3.05	POE	Yes	Yes
			NIC_GLA	1.6	Buffer	Yes	Yes
			NIC_GLA	5	POE	Yes	Yes
			SAL_AUS	0.1	Buffer	Yes	Yes
2014	POE-62	Wells Dr / Serrania Ave Park (Serrania Avenue)	CAR_PYC	0.26	Buffer		
			EUP_LAT	8.0005	Buffer		
			SAL_AUS	0.025	Buffer		
			VIN_MAJ	225	Buffer		
2014	POE-63	Kanan-Dume Rd (Zuma/Trancas Canyons)	SPA_JUN	3.05	Buffer	Yes	Yes
2014	POE-64	Winding Way Trail (Escondido Cyn Natural Area)	FOE_VUL	1.5015	Buffer		
			SAL_AUS	1.19	Buffer		
2014	POE-65	Leo Carrillo Group Camp	FOE_VUL	0.05	Buffer	Yes	Yes
			NIC_GLA	0.15	Buffer	Yes	Yes
			RIC_COM	0.02	POE	Yes	Yes
2014	POE-66	Busch Trailhead (Zuma/Trancas Canyons)	SAL_AUS	12	Buffer		
2014	POE-67	RSV Equestrian Parking Lot (RSV/Satwiwa)	SAL_AUS	0.01	Buffer	Yes	Yes
2014	POE-68	Malibu Creek State Park Main Entrance (Malibu Creek State Park)	FOE_VUL	0.01	Buffer		Yes
			LEP_LAT	0.05	Buffer		Yes
			LEP_LAT	0.5	POE		Yes
			SAL_AUS	0.8	Buffer		Yes
2014	POE-69	Fryman Canyon -- Nancy Hoover Pohl Overlook (Fryman Canyon Park)	FOE_VUL	0.005	POE		
			RIC_COM	3.305	POE		
			SPA_JUN	0.81	POE		
			VIN_MAJ	115	POE		
2014	POE-70	De Anza Park (Malibu Creek SP)	TAM_RAM	2.5	Buffer		
2014	POE-71	La Jolla Cyn Group Camp at bottom	NIC_GLA	0.6	Buffer		Yes
			NIC_GLA	1.6	POE		Yes
			SAL_AUS	0.25	POE		Yes
2014	POE-72	Malibu Creek State Park/Reagan Meadows (Malibu Creek State Park)	ASP_FIS	2.65	Buffer		
			CAR_PYC	0.005	Buffer		
			FOE_VUL	0.01	Buffer		
			LEP_LAT	10	Buffer		
			PHA_AQU	0.005	Buffer		Yes
			SAL_AUS	0.895	Buffer		

Year	POE	Location	Species	Net Area Infested (sq. m.)	POE or Buffer	Treated June 2012-2013	Treated June 2013-2014
2014	POE-73	Malibu Lagoon State Beach	EUP_TER	0.4	Both		Yes
			EUP_TER	0.3	Buffer		Yes
			FOE_VUL	0.005	POE		Yes
			LEP_LAT	0.06	Buffer		Yes
			LEP_LAT	0.275	POE		Yes
			NIC_GLA	0.005	POE		Yes
2014	POE-74	Point Dume, Lower Trailhead from Beach (Point Dume State Preserve)	COR_JUB	1	Buffer		
			EUP_TER	9	Buffer		
			FOE_VUL	0.75	Buffer		Yes
			MYO_LAC	188.5	Buffer		
			NIC_GLA	25.08	Buffer		
			SAL_AUS	3.3	Buffer		Yes

Table A-2. Total area infested per species (sum of all POEs) for 2013 and 2014.

Park	Year	N Sites Surveyed	N of NIS Observed	N Sites w/ NIS	N Sites w/o NIS	% of Sites w/ NIS	% of Species Detected	Area Infestation [sq. m.] Gross Area	Area Infestation [sq. m.] Net Area
SAMO	2013	35	22	31	4	89	96	33,334.00	6,598.00
SAMO	2014	37	20	29	8	78	95	9,202.00	2,638.00

Infestation by Species

Park	Species	Area Infestation [sq. m.] 2013 Gross Area	2013 Net Area	2014 Gross Area	2014 Net Area
SAMO	AIL_ALT	85.00	48.50	-	-
SAMO	ARU_DON	5.00	2.40	-	-
SAMO	ASP_FIS	102.00	1.00	67.00	2.86
SAMO	CAR_PYC	7,895.20	640.28	43.00	0.85
SAMO	CEN_SOL	876.00	0.03	50.00	1.00
SAMO	CIR_VUL	14.00	2.12	-	-
SAMO	CON_MAC	5,154.00	541.30	-	-
SAMO	COR_JUB	3.00	1.00	1.00	1.00
SAMO	CYP_INV	-	-	1.00	0.25
SAMO	DEL_ODO	6,310.00	2,959.50	700.00	545.00
SAMO	EUP_LAT	1.00	1.00	20.10	8.00
SAMO	EUP_TER	3,610.00	724.65	671.00	14.80
SAMO	FOE_VUL	786.20	73.90	1,097.30	26.53
SAMO	LEP_LAT	2,668.00	62.76	68.00	11.00
SAMO	MYO_LAC	1,366.00	530.75	313.00	188.50
SAMO	NIC_GLA	1,415.20	61.98	692.00	34.40
SAMO	PEN_SET	338.00	70.06	11.00	1.79
SAMO	PHA_AQU	2.00	1.90	1.00	0.00
SAMO	RIC_COM	727.00	106.10	128.00	3.83
SAMO	SAL_AUS	1,031.00	48.50	2,781.00	171.36
SAMO	SIL_MAR	215.00	201.50	4.00	0.00
SAMO	SPA_JUN	247.00	247.00	43.00	4.05
SAMO	TAM_RAM	-	-	5.00	2.50
SAMO	VIN_MAJ	483.00	271.96	2,506.00	1,620.00

Infestation at each POE by Species

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-01**	8	DEL_ODO	150.00	125.00
				NIC_GLA	40.00	26.00
				RIC_COM	30.00	12.00
				PEN_SET	26.00	11.55
				CON_MAC	200.00	10.00
				AIL_ALT	20.00	10.00
				CAR_PYC	141.00	7.05
				FOE_VUL	20.00	5.00
				Sum:	627.00	206.60

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-02**	6	MYO_LAC	100.00	85.00
				RIC_COM	410.00	42.00
				SAL_AUS	80.00	32.00
				NIC_GLA	225.00	31.00
				CON_MAC	211.00	11.00
				FOE_VUL	6.00	0.60
				Sum:	1,032.00	201.60

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-03**	3	EUP_TER	54.00	5.80
				ARU_DON	3.00	1.50
				CAR_PYC	20.00	1.00
				Sum:	77.00	8.30

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-04**	3	SPA_JUN	247.00	247.00
				CAR_PYC	235.00	235.00
				FOE_VUL	32.00	32.00
				Sum:	514.00	514.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-05**	9	DEL_ODO	5,660.00	2,384.50
				EUP_TER	1,890.00	426.60
				VIN_MAJ	325.00	225.00
				RIC_COM	14.00	10.90
				SAL_AUS	300.00	1.20
				CIR_VUL	13.00	1.12
				CON_MAC	1.00	0.50
				FOE_VUL	5.20	0.05
				NIC_GLA	1,110.00	0.00
				Sum:	9,318.20	3,049.87

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-06**	3	MYO_LAC	1,256.00	440.25
				SAL_AUS	350.00	8.50
				ARU_DON	2.00	0.90
				Sum:	1,608.00	449.65

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-07**	2	CAR_PYC	636.00	4.10
				VIN_MAJ	6.00	0.06
				Sum:	642.00	4.16

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-08**	5	CON_MAC	3,800.00	295.70
				CAR_PYC	2,627.00	254.30
				LEP_LAT	2,668.00	62.76
				CEN_SOL	876.00	0.03
				SIL_MAR	13.00	0.00
				Sum:	9,984.00	612.79

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-09**	3	CON_MAC	220.00	151.00
				AIL_ALT	65.00	38.50
				SAL_AUS	100.00	5.00
				Sum:	385.00	194.50

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-10**	1	PEN_SET	10.00	1.00
				Sum:	10.00	1.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-11**	2	VIN_MAJ	150.00	45.00
				CAR_PYC	171.00	34.30
				Sum:	321.00	79.30

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-12**	3	FOE_VUL	43.00	5.90
				COR_SEL	2.00	0.20
				EUP_TER	1.00	0.10
				Sum:	46.00	6.20

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-13**	7	FOE_VUL	300.00	3.00
				CAR_PYC	1,032.00	1.00
				EUP_LAT	1.00	1.00
				COR_SEL	1.00	0.80
				PEN_SET	40.00	0.40
				NIC_GLA	2.00	0.20
				RIC_COM	3.00	0.00
				Sum:	1,379.00	6.40

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-15**	4	RIC_COM	230.00	27.70
				FOE_VUL	250.00	7.50
				VIN_MAJ	2.00	1.90
				EUP_TER	150.00	1.50
				Sum:	632.00	38.60

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-17**	4	DEL_ODO	500.00	450.00
				FOE_VUL	11.00	5.00
				RIC_COM	5.00	4.25
				CON_MAC	25.00	3.75
				Sum:	541.00	463.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-18**	7	CON_MAC	695.00	67.35
				RIC_COM	20.00	8.50
				MYO_LAC	10.00	5.50
				NIC_GLA	3.00	1.50
				FOE_VUL	10.00	1.00
				SIL_MAR	1.00	0.50
				CAR_PYC	1.00	0.45
				Sum:	740.00	84.80

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-19**	3	EUP_TER	813.00	83.15
				ASP_FIS	102.00	1.00
				FOE_VUL	46.00	1.00
				Sum:	961.00	85.15

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-20**	6	SIL_MAR	201.00	201.00
				CAR_PYC	70.00	70.00
				FOE_VUL	12.00	12.00
				CON_MAC	2.00	2.00
				PHA_AQU	1.00	1.00
				CIR_VUL	1.00	1.00
				Sum:	287.00	287.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-21**	3	NIC_GLA	15.00	3.00
				PEN_SET	2.00	0.11
				SAL_AUS	17.00	0.00
				Sum:	34.00	3.11

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-22**	1	SAL_AUS	123.00	1.20
				Sum:	123.00	1.20

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-23**	1	CAR_PYC	60.20	0.10
				Sum:	60.20	0.10

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-25**	1	PEN_SET	60.00	27.00
				Sum:	60.00	27.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-26**	1	CAR_PYC	260.00	2.30
				Sum:	260.00	2.30

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-27**	1	NIC_GLA	0.20	0.00
				Sum:	0.20	0.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-28**	2	CAR_PYC	1,706.00	26.07
				PHA_AQU	1.00	0.90
				Sum:	1,707.00	26.97

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-29**	1	CAR_PYC	40.00	0.30
				Sum:	40.00	0.30

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-31**	2	EUP_TER	702.00	207.50
				FOE_VUL	1.00	0.35
				Sum:	703.00	207.85

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-32**	3	CAR_PYC	332.00	1.20
				SAL_AUS	61.00	0.60
				NIC_GLA	19.00	0.28
				Sum:	412.00	2.08

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-33**	4	PEN_SET	200.00	30.00
				RIC_COM	15.00	0.75
				FOE_VUL	50.00	0.50
				NIC_GLA	1.00	0.00
				Sum:	266.00	31.25

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-36**	1	CAR_PYC	400.00	0.00
				Sum:	400.00	0.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2013	**POE-37**	1	CAR_PYC	164.00	3.11
				Sum:	164.00	3.11

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-38**	2	FOE_VUL	2.00	1.00
				SIL_MAR	1.00	0.00
				Sum:	3.00	1.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-40**	1	EUP_TER	191.00	0.00
				Sum:	191.00	0.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-41**	2	VIN_MAJ	1,200.00	1,130.00
				CAR_PYC	1.00	0.00
				Sum:	1,201.00	1,130.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-42**	1	FOE_VUL	1.00	0.10
				Sum:	1.00	0.10

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-43**	5	DEL_ODO	100.00	5.00
				SPA_JUN	20.00	0.20
				EUP_TER	10.00	0.10
				ASP_FIS	1.00	0.01
				FOE_VUL	1.00	0.00
				Sum:	132.00	5.31

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-45**	4	PEN_SET	10.00	0.79
				SAL_AUS	8.00	0.31
				RIC_COM	2.00	0.03
				FOE_VUL	7.00	0.02
				Sum:	27.00	1.15

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-48**	1	SAL_AUS	1,700.00	2.00
				Sum:	1,700.00	2.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-49**	1	SPA_JUN	1.00	0.00
				Sum:	1.00	0.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-50**	2	FOE_VUL	11.00	11.00
				SAL_AUS	1.00	1.00
				Sum:	12.00	12.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-52**	4	CEN_SOL	50.00	1.00
				SAL_AUS	80.00	0.60
				LEP_LAT	20.00	0.20
				FOE_VUL	1.00	0.00
				Sum:	151.00	1.80

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-53**	1	SAL_AUS	500.00	150.00
				Sum:	500.00	150.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-55**	1	VIN_MAJ	505.00	149.00
				Sum:	505.00	149.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-56**	2	EUP_TER	290.00	4.80
				FOE_VUL	1.00	0.00
				Sum:	291.00	4.80

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-59**	8	DEL_ODO	600.00	540.00
				FOE_VUL	15.00	2.15
				VIN_MAJ	1.00	1.00
				RIC_COM	50.00	0.50
				NIC_GLA	50.00	0.50
				EUP_TER	50.00	0.50
				CYP_INV	1.00	0.25
				ASP_FIS	1.00	0.20
				Sum:	768.00	545.10

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-60**	2	CAR_PYC	34.00	0.60
				SIL_MAR	3.00	0.00
				Sum:	37.00	0.60

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-61**	3	FOE_VUL	1,010.00	10.00
				NIC_GLA	502.00	6.60
				SAL_AUS	10.00	0.10
				Sum:	1,522.00	16.70

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-62**	4	VIN_MAJ	300.00	225.00
				EUP_LAT	20.10	8.00
				CAR_PYC	7.00	0.25
				SAL_AUS	5.00	0.00
				Sum:	332.10	233.25

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-63**	1	SPA_JUN	19.00	3.05
				Sum:	19.00	3.05

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-64**	2	FOE_VUL	30.30	1.50
				SAL_AUS	88.00	1.00
				Sum:	118.30	2.50

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-65**	3			
				NIC_GLA	30.00	0.00
				RIC_COM	4.00	0.00
				FOE_VUL	10.00	0.00
				Sum:	44.00	0.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-66**	1	SAL_AUS	60.00	12.00
				Sum:	60.00	12.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-67**	1	SAL_AUS	2.00	0.00
				Sum:	2.00	0.00

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-68**	3	SAL_AUS	40.00	0.80
				LEP_LAT	11.00	0.50
				FOE_VUL	1.00	0.01
				Sum:	52.00	1.31

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-69**	4	VIN_MAJ	500.00	115.00
				RIC_COM	72.00	3.30
				SPA_JUN	3.00	0.80
				FOE_VUL	1.00	0.00
				Sum:	576.00	119.10

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-70**	1	TAM_RAM	5.00	2.50
				Sum:	5.00	2.50

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-71**	2	NIC_GLA	5.00	2.22
				SAL_AUS	5.00	0.25
				Sum:	10.00	2.47

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-72**	6	LEP_LAT	25.00	10.00
				ASP_FIS	65.00	2.65
				CAR_PYC	1.00	0.00
				FOE_VUL	2.00	0.00
				PHA_AQU	1.00	0.00
				SAL_AUS	179.00	0.00
				Sum:	273.00	12.65

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-73**	4	EUP_TER	100.00	0.40
				LEP_LAT	12.00	0.30
				NIC_GLA	1.00	0.00
				FOE_VUL	1.00	0.00
				Sum:	114.00	0.70

Park	Year	Site	Total N Spp	Species	Area Infestation [sq. m.] Gross Area	Net Area
SAMO	2014	**POE-74**	7	MYO_LAC	313.00	188.50
				NIC_GLA	104.00	25.08
				EUP_TER	30.00	9.00
				SAL_AUS	103.00	3.30
				COR_JUB	1.00	1.00
				PEN_SET	1.00	1.00
				FOE_VUL	3.00	0.75
				Sum:	555.00	228.63

Appendix B

Table B-1. SAMO DRT monitoring sites for 2013 and 2014.

Year	N Sites Surveyed	N of NIS Observed	N Sites w/ NIS	N Sites w/o NIS	% of Sites w/ NIS	% of Species Detected
2013	80	12	25	55	31	48
2014	79	12	21	58	27	50

Table B-2. SAMO DRT monitoring sites for 2013 with observed target invasive plant species, their percent cover per transect, percent visibility for each transect, and sum of area of net infestation per species per transect (30 m * 5 m * percent cover of target species).

			A3		A2		A1		Trailbed		B1		B2		B3		Total Area Infested (sq. m.)	% of Site Infested	Treated in <2 years
DRT	Location	Species	%	Vis	%	Vis	%	Vis	%	Vis	%	Vis	%	Vis	%	Vis			
1	Serrano Cyn Rd, W end	FOE_VUL	0	100	0	100	0.5	100	0.5	100	0	100	0	100	0	100	1.2	0.1	
6	MCSP Regan Ranch driveway	CAR_PYC	0	100	0	100	0.5	100	0	100	0.5	100	0	100	0	100	1.5	0.1	Yes
23	Diamond X Ranch	CAR_PYC	15	100	10	100	7	100	0	100	0	100	0	100	0	100	48.0	4.9	
		VIN_MAJ	15		0		0		0		0		0		0		22.5	2.3	
28	Tree People	VIN_MAJ	0	100	3	100	3	100	0	100	5	100	10	100	5	50	39.0	3.8	
30	Escondido Falls	VIN_MAJ	0	10	0	90	0	100	0.5	100	5	100	2	100	1	10	10.8	1.1	
32	West Mandeville Fire Road	NIC_GLA	0	0	0	30	0.5	100	0	100	0	100	0	30	0	0	0.8	0.1	
37	La Jolla Valley from Pacific Coast Highway	PHA_AQU	1	100	1	100	0.5	100	0.5	100	0	100	0	100	0.5	100	4.6	0.5	Yes
42	Trancas Canyon	FOE_VUL	0.5	100	0.5	100	0.5	100	0.5	100	1	100	0.5	100	0	100	4.7	0.5	
44	Temescal to Rivas Cyn (Will Rodgers) connector	DEL_ODO	0	40	25	70	25	100	0	100	25	100	100	100	7	70	112.5	12.1	
45	Murphy Way	CAR_PYC	0	0	0	0	0.5	100	0	100	0	100	0	100	0	50	0.8	0.1	
		FOE_VUL	0		0		10		0		0.5		0		0		15.8	1.5	
47	Upper Toganga from Mulholland	SAL_AUS	0	90	0	100	0.5	10	0.5	100	0.5	100	0	100	0	100	2.3	0.2	
48	Spencer Canyon W of Mandeville Fire Road	CAR_PYC	0	100	0	100	0.5	100	0	100	0.5	100	0.5	100	0.5	100	3.0	0.3	
59	Malibu Bluffs	EUP_TER	0	20	8	90	10	100	0	100	3	100	20	100	10	70	76.5	8.3	
		FOE_VUL	0		0		0		0		3		0.5		0.5		6.0	0.7	

DRT	Location	Species	A3		A2		A1		Trailbed		B1		B2		B3		Total Area Infested (sq. m.)	% of Site Infested	Treated in <2 years
			%	Vis	%	Vis	%	Vis	%	Vis	%	Vis	%	Vis	%	Vis			
60	Sullivan Fire Road	STI_MIL	0	10	0	40	10	100	0	100	0	100	0	40	0	100	15.0	1.5	
61	Off Kanan, S of BBT	CAR_PYC	0	0	0	40	0.5	100	0.5	100	0.5	100	0	10	0	50	2.2	0.2	
		SPA_JUN	0		0		0.5		0		0		0		0.5		1.5	0.1	
63	East end of Albertson Fire Road, Las Virgenes Canyon	CAR_PYC	0	100	0	100	0	100	0	100	0	100	0.5	100	0.5	100	1.5	0.2	
64	Franklin Canyon	CON_MAC	0	30	2	80	5	100	5	100	10	100	5	100	1	100	36.0	3.9	
		DEL_ODO	0		0		0		0		15		25		25		97.5	10.5	
80	Rustic Canyon	NIC_GLA	0	100	0	80	0	100	0	100	0.5	100	0	100	0	100	0.8	0.1	
85	La Jolla Valley/Loop Trail	PHA_AQU	0	100	0	100	0	100	0	100	0	100	0	100	10	100	15.0	1.6	Yes
86	BBT south of Newton Falls	CAR_PYC	0	0	0	50	3	100	0	100	5	100	0	40	0	0	12.0	1.3	
		SPA_JUN	0		0		0.5	100	0		0		0		0		0.8	0.1	Yes
89	Big Sycamore Canyon, Wood Canyon Connector	CAR_PYC	0	15	0	75	0	100	0	100	0.5	100	0	100	0	100	0.8	0.1	Yes
92	Laurel Canyon/Fryman Road	CAR_PYC	0	10	0	50	0.5	100	0	100	1	100	1	30	0	100	3.8	0.4	
94	Kanan Road to Ocean View Connector	CEN_SOL	0	100	0	100	0	100	0.5	100	0.5	100	0	80	0	75	0.8	0.1	
		FOE_VUL	0		0		0.5		0		3		0.5		0		6.0	0.7	
96	Canyonback Fire Road, up at the top	CEN_SOL	0	100	0	100	0	100	0	100	0.5	100	0	100	0	80	0.8	0.1	
		NIC_GLA	1		5		15		0		1		0		0		33.0	3.0	
100	Juan de Anza W from Las Virgenes Road	SAL_AUS	0	100	0	100	0	100	0.5	100	0	100	0	100	0	100	0.5	0.0	

Table B-3. SAMO DRT monitoring sites for 2014 with observed target invasive species, their percent cover per transect, percent visibility per transect, and sum of area of net infestation per species per transect (30 m * 5 m * percent cover of target species).

DRT	Location	Species	A3		A2		A1		Trailbed		B1		B2		B3		Total Area Infested (sq. m.)	% of Site Infested	Treated in <2 years
			%	Vis	%	Vis	%	Vis	%	Vis	%	Vis	%	Vis	%	Vis			
1	Serrano Cyn Rd, W end	FOE_VUL	0	-	0	30	0.5	100	1	100	0	100	0	50	0	20	3.15	0.3	
13	Upper Sycamore	CAR_PYC	0.5	100	0	100	0	100	0	100	0	100	0	100	0	100	0.75	0.1	Yes
30	Escondido Falls	EUP_TER	0		0		0		0		0.5		0		0		0.75	0.1	
		FOE_VUL	0	60	0	90	0.5	100	0	100	0.5	100	0	70	0	50	1.5	0.2	
		VIN_MAJ	0		0		0		0		5		2		0		10.5	1.1	
31	Canyonback Fire Road from top, upper Topanga	SAL_AUS	0	100	0	100	0.5	100	0	100	0	100	0	100	0	100	0.75	0.1	
32	West Mandeville Fire Road	NIC_GLA	0	-	0	10	0	100	0	100	0.5	100	0	100	0	100	0.75	0.1	
37	La Jolla Valley from Pacific Coast Highway	PHA_AQU	5	100	5	100	5	100	0.5	100	1	100	2	100	1	100	28.65	3.1	Yes
42	Trancas Canyon	FOE_VUL	0	100	0	100	0	100	0.5	100	0.5	100	0.5	100	0	100	2.25	0.2	
44	Temescal to Rivas Cyn (Will Rodgers) connector	DEL_ODO	0	30	0	80	0.5	100	0	100	0	-	0	-	0	10	0.75	0.1	
45	Murphy Way	FOE_VUL	0	100	0	100	1	100	0	100	0	100	0	100	0	100	1.5	0.1	
47	Upper Toganga from Mulholland	SAL_AUS	0	75	0	100	1	100	0	100	0.5	100	0	100	0	100	2.25	0.2	
49	Overlook Trail, Lower Big Sycamore Canyon	FOE_VUL	0	100	0	100	0	100	0.5	100	0	100	0	100	0	100	0.15	0.0	Yes
59	Malibu Bluffs	EUP_TER	0.5	100	0.5	100	1	100	0	100	0.5	100	1	100	2	100	8.25	0.9	
		FOE_VUL	0		0		0.5		0		0.5		0.5		0		2.25	0.2	
64	Franklin Canyon	CON_MAC	0	100	0.5	100	0	100	0	100	0	-	0	100	0	80	0.75	0.1	
		DEL_ODO	5		10		20		0		0		0		0		52.5	5.6	
73	Big Sycamore Canyon, south of Danielson Ranch	CAR_PYC	0	100	0	100	0	100	0	100	0.5	100	0	100	0.5	100	1.5	0.2	Yes
		SIL_MAR	0		0		0		0		0.5		0.5		0.5		2.25	0.2	Yes
80	Rustic Canyon	NIC_GLA	0	100	0	100	0	100	0	100	0.5	100	0	95	0	95	0.75	0.1	
86	BBT south of Newton Falls	CAR_PYC	0	40	0	80	0.5	100	0	100	0	100	0	80	0	30	0.75	0.1	
		SPA_JUN	0		0		0.5		0		1		0		0		2.25	0.2	
89	Big Sycamore Canyon, Wood Canyon Connector	SIL_MAR	0.5	90	0.5	100	1	100	0	100	0	100	0	60	0	60	3	0.3	Yes
92	Laurel Canyon/Fryman	CAR_PYC	0	90	0.5	100	1	100	0	100	0.5	100	3	90	2	50	10.5	1.0	

DRT	Location	Species	A3		A2		A1		Trailbed		B1		B2		B3		Total Area Infested (sq. m.)	% of Site Infested	Treated in <2 years
			%	Vis	%	Vis	%	Vis	%	Vis	%	Vis	%	Vis	%	Vis			
	Road	SPA_JUN	0		0		0.5		0		0.5		0		0		1.5	0.1	
94	Kanan Road to Ocean View Connector	FOE_VUL	0	100	0	100	0.5	100	0	100	0.5	100	0.5	100	0	100	2.25	0.2	
96	Canyonback Fire Road, up at the top	NIC_GLA	0	100	0	100	1	100	0	100	0.5	100	0	100	0	100	2.25	0.2	
100	Juan de Anza W from Las Virgenes Road	SAL_AUS	0	100	0	100	0	100	0.5	100	0.5	100	0	100	0	100	1.2	0.1	

Table B-4. SAMO DRT monitoring sites not visited.

DRT	Reason for not visiting the location
2	Private land
3	Private land
7	Beach; no clearly defined trail
14	Beach; no clearly defined trail
15	Point falls on private backyard
18	Private land
22	Private land
26	Not accessible; not close to any trail
38	Private land
42	Trancas Canyon; not accessible
46	Beach; no clearly defined trail
53	Private land
62	Public land is closed off by private properties with gates and fences. Very steep slopes--not possible to come from the top
70	Private land
76	Encino Reservoir; no access
78	Not accessible
82	Private land
97	Private land
98	Private land
99	Narrow deep canyon; cannot get GPS signal and therefore could not locate the point
103	Point falls on private backyard
104	Private land

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

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