USE AND EFFECTIVENESS OF LANDSCAPE-SCALE SURVEYS IN DEVELOPING WEED MANAGEMENT STRATEGY

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WEED MANAGEMENT PROGRAM

- Identification and removal of emerging invaders = incipient weeds
- Control of long-term target weeds
- Focused surveys and elimination of riparian invasives by watershed
- Active restoration -- for entrenched weeds
- Partnering with other land managers to improve success

You must know where the weeds are!!!



TNC 1998, 2002 Weed Polygons







METHODOLOGY

35 species
31,000 acres
12 days

Altitude 15-150'
2-man team
Late season





Variables Recorded

Species Date/time Who mapped Habitat Age-class Density Gross area







SIGNIFICANT NEW FINDS

Yellow starthistle – 2 pop. 0.51 ac Spiny emex -1 pop. 0.04 ac Tree of heaven – 6 pop. 0.96 ac Canary Island date palm -21 pop. 0.7 ac







WAKE-UP CALLS

- Reserve-wide control of Italian thistle is unfeasible
- Artichoke thistle is still far from being controlled (868 pop., 94 acres)
- Tree tobacco cover is greater than previously thought (897 pop., 40 acres)
- BUT Local effects of artichoke thistle, tree tobacco and castor bean control are visible

DETECTABILITY















CAVEATS

Foot survey

- Conducted one year later
- Occurred w/in limited & accessible areas
- Allowed more time/area
- Guided by aerial survey
- Population cover & gps accuracy only accounted for by 200' buffer

PROS AND CONS

CATEGORY	HELICOPTER	FOOT SURVEY	
Accuracy	Moderate	High	
Consistency	High	Low	
Cost	High	Very High	
Optimal Coverage	Large-scale	Small-scale	
Speed	Fast	Slow	
Disturbance	Low	Moderate	
Greatest Practical Constraint	Obstruction of vegetation	Inaccessibility of many areas by foot	

PRIORITIZATION



COMPONENTS

Mean Area
Median population size
Total no. populations
Old IRC priority
Cal-IPC Ranking

New priority rank = ave (area, size, pop. rank) + old priority + Cal-IPC rank

Species	Old Priority	Eradication Rank	New Priority
Spiny emex	High	High	High
Sahara mustard	High	N/A	High
Yellow starthistle	High	High	High
Perennial pepperweed	High	High	High
Giant reed	Mod	High	High
Garland chrysanthemum	High	High	High
Spanish broom	High	Mod	High
Tamarisk	High	Mod	High
Pampas grass	Low	High	Mod
Fennel	Mod	Low	Mod
Bull thistle	Mod	High	Mod
Artichoke thistle	High	Low	Mod
Castor bean	High	Mod	Mod
Canary Island date palm	Low	High	Mod
Mexican fan palm	Low	High	Mod
Tree tobacco	Mod	Low	Mod
Tree of Heaven	Low	Mod	Mod





CONCLUSIONS

- A reserve-wide aerial survey means we can prioritize weeds with complete information.
- Several new populations and a few new species were identified on the reserve area.
- Aerial surveys will not locate all species or all populations, but you don't need that.
- Past effort, Cal-IPC ranking, and distribution and abundance are all important in prioritization.

ACKNOWLEDGMENTS

Special thanks to OC Parks for providing additional funding for invasive surveys. Steve Junak provided additional botanical expertise.

Thanks especially to a core team of volunteer land stewards that have regularly and relentlessly beaten back our weeds: Stephen Chung, Henry DiRocco, Bob Huttar, Ken Kadlec, Dave Wilson, and Doug and Donna Bell.

