

The Perils of Pampas in Precarious Places

Mike Ade, Brooke Mahnken, Adam Radford, Teya Penniman



MISC

MAUI INVASIVE SPECIES COMMITTEE

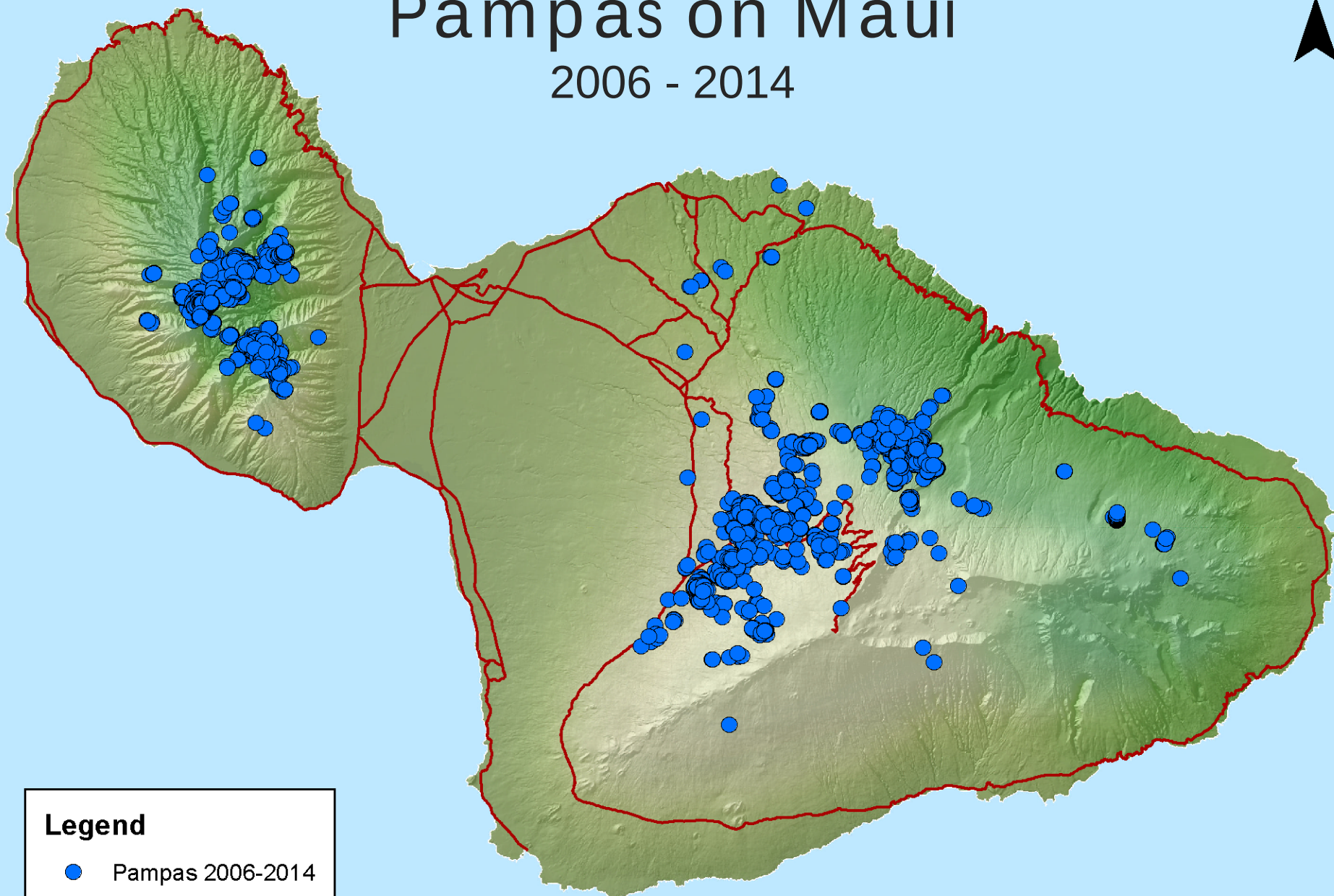
Impacts

- Rapid growth; wind-dispersed seeds; prolific seeder
- Easily invades disturbed areas
- Substantial threat to native ecosystems
- Highly competitive with native plants
- Damaging even at low densities: single plants can cover large areas
- Fire hazard: produces high volume of dry material



Pampas on Maui

2006 - 2014



Legend

- Pampas 2006-2014
- Major Roads

0 1.5 3 6 9 12 Kilometers

Control Methods

Aerial: chemical



Ground: manual



Ground: chemical





Aerial vs Ground Control: Pros & Cons

Aerial

- Access remote locations easily
- Survey large areas
- Cannot survey residential areas
- Cannot identify immature plants effectively
- Expensive

Ground

- Remote access difficult, hazardous
- Ground coverage is time-consuming
- Only way to access private residences
- Very thorough; can eliminate the smallest plants

**Combination of both methods is ideal*

Buffer Strategy



Select all control points going 3 years back, then buffer

Ground:
200 m accessible areas
20 m remote/rugged

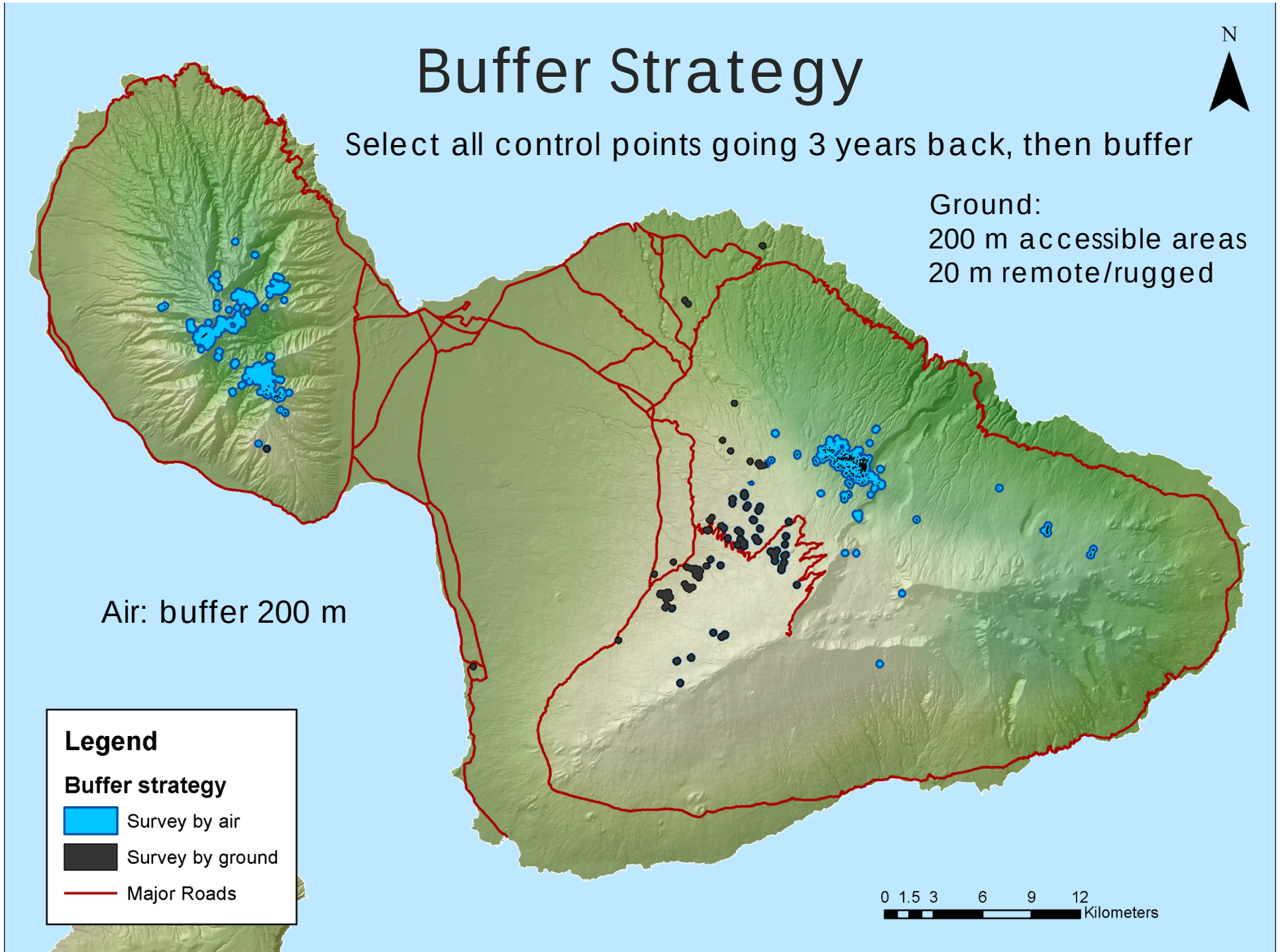
Air: buffer 200 m

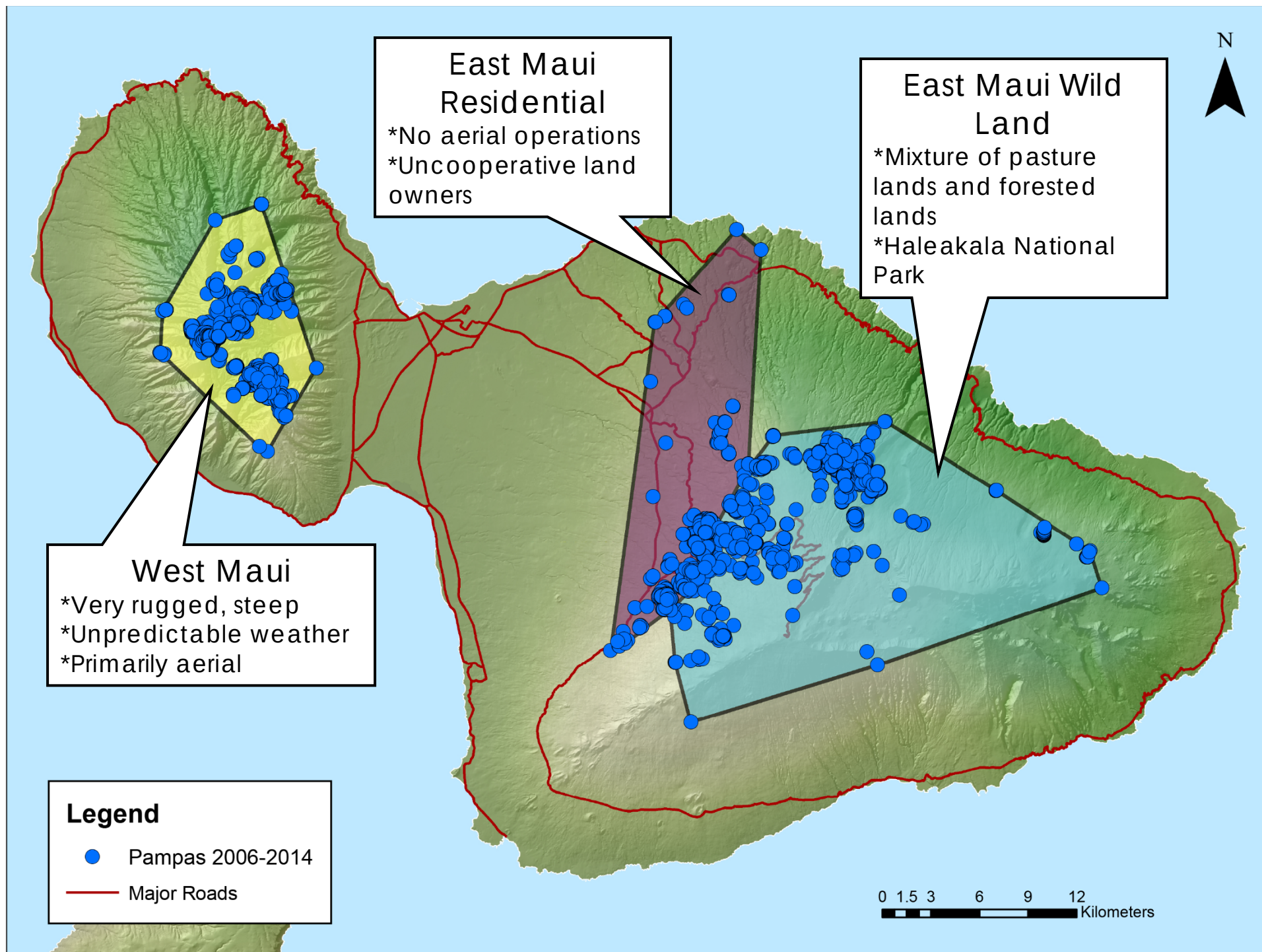
Legend

Buffer strategy

-  Survey by air
-  Survey by ground
-  Major Roads

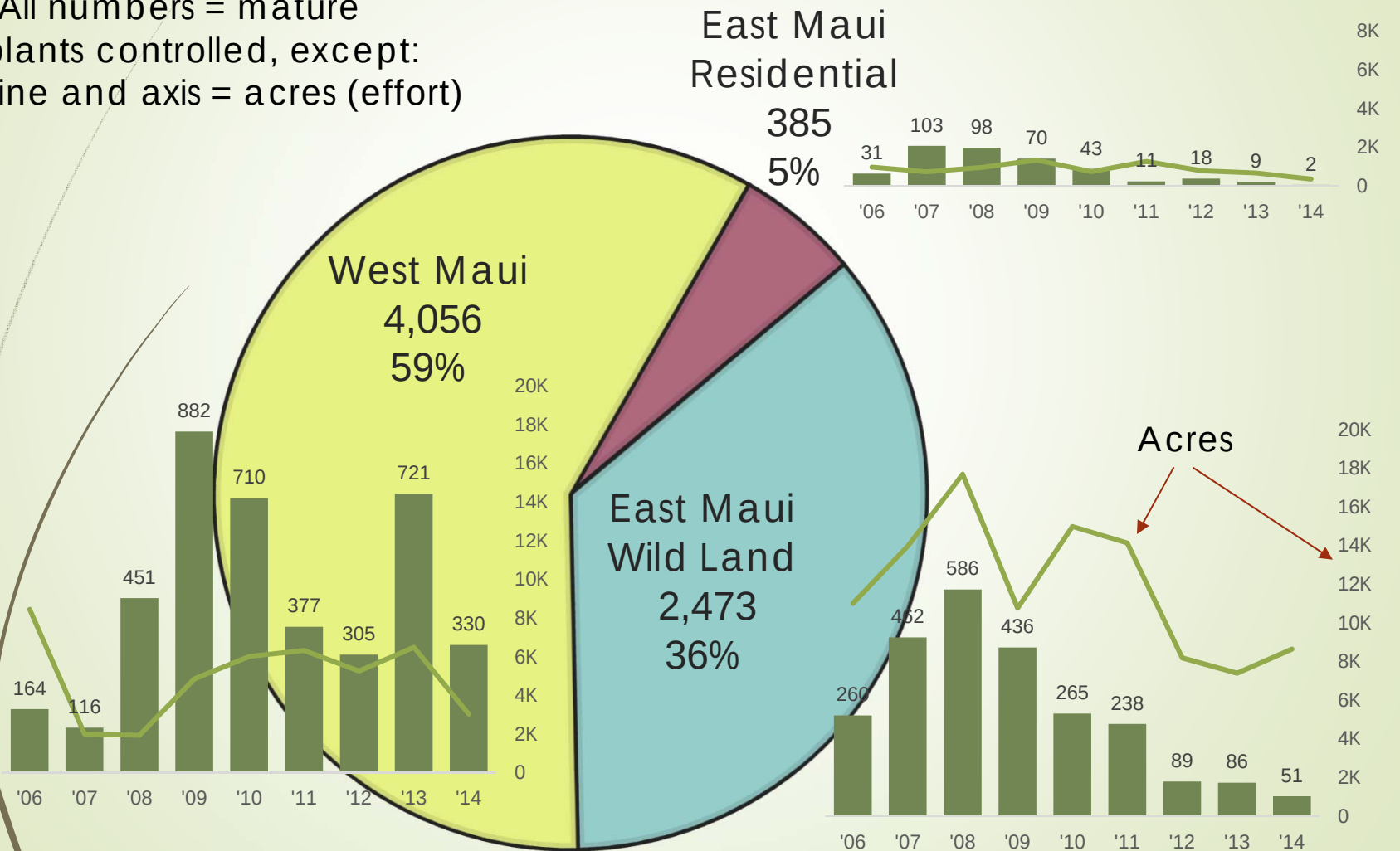
0 1.5 3 6 9 12 Kilometers





Mature plants controlled 2006 - 2014

*All numbers = mature plants controlled, except:
Line and axis = acres (effort)



Challenges

Extreme terrain



Recalcitrant land owners





Conclusions

- Increased effort and combined ground-air strategy has proven highly effective at controlling pampas grass, despite complex land characteristics (residential, wildland, and backcountry sites)
- Adaptive strategy for remote back-country sites allowed crews to successfully interrupt reproductive cycle
- Remaining challenges: maintain momentum (funding), more effective aerial control techniques, and recalcitrant landowners
- We need HBT for pampas

Thank you

- MISC Crew, MISC Committee Members
- County of Maui, EMWP, DLNR, Haleakala Ranch, HISC, NPS, PCSU, RCUH, TI-RC&D, TNC, UH-CTAHR, USFS, USFWS, USGS, WMMWP, Windward Aviation

