

San Diego County's Wild Pig Damage Control Project



Status of Pigs

- Present in 39 states in the U.S.
- Classified as game or invasive animals
- Until recently, were in 56 of the 58 counties in California.
- Now they are likely in 57 out of 58 counties.



Biology and Behavior

- Habitat Preferences
 - Standing water
 - Cover
 - Sufficient food sources - omnivores
 - acorns, vegetable matter (~ 85%)
 - vertebrates (small mammals, herps) and invertebrates (insects, earthworms)
- Mostly nocturnal
- Readily adapt
- Sign includes tracks, scat, rooting, wallowing, mud rubs on trees, scent marking –loss of tree bark

Why are pigs a problem?

- Generalists
- Elusive and smart
- Require water
- ***Prolific breeders***
 - Reproduce year one
 - Breed year-round
 - Two litters/year
 - 12 piglets/litter



Why control or manage pigs?

- Impacts to the landscape
- Destruction of native habitats
- Threat to conserved lands and sensitive species
- Damage to agriculture (rangeland & crops)
 - Forty counties reporting \$1,731,920 worth of damage
- Impacts to cultural and historical resources
- Health concerns: disease transmission
 - Brucellosis, salmonellosis, trichinosis, foot and mouth disease, etc.
- Impacts to water quality

Impacts to the land...



Rooting Damage

Damage to
cultural resources
(shown here Cleveland
National Forest)



Deciding to Take Action in San Diego



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48°F

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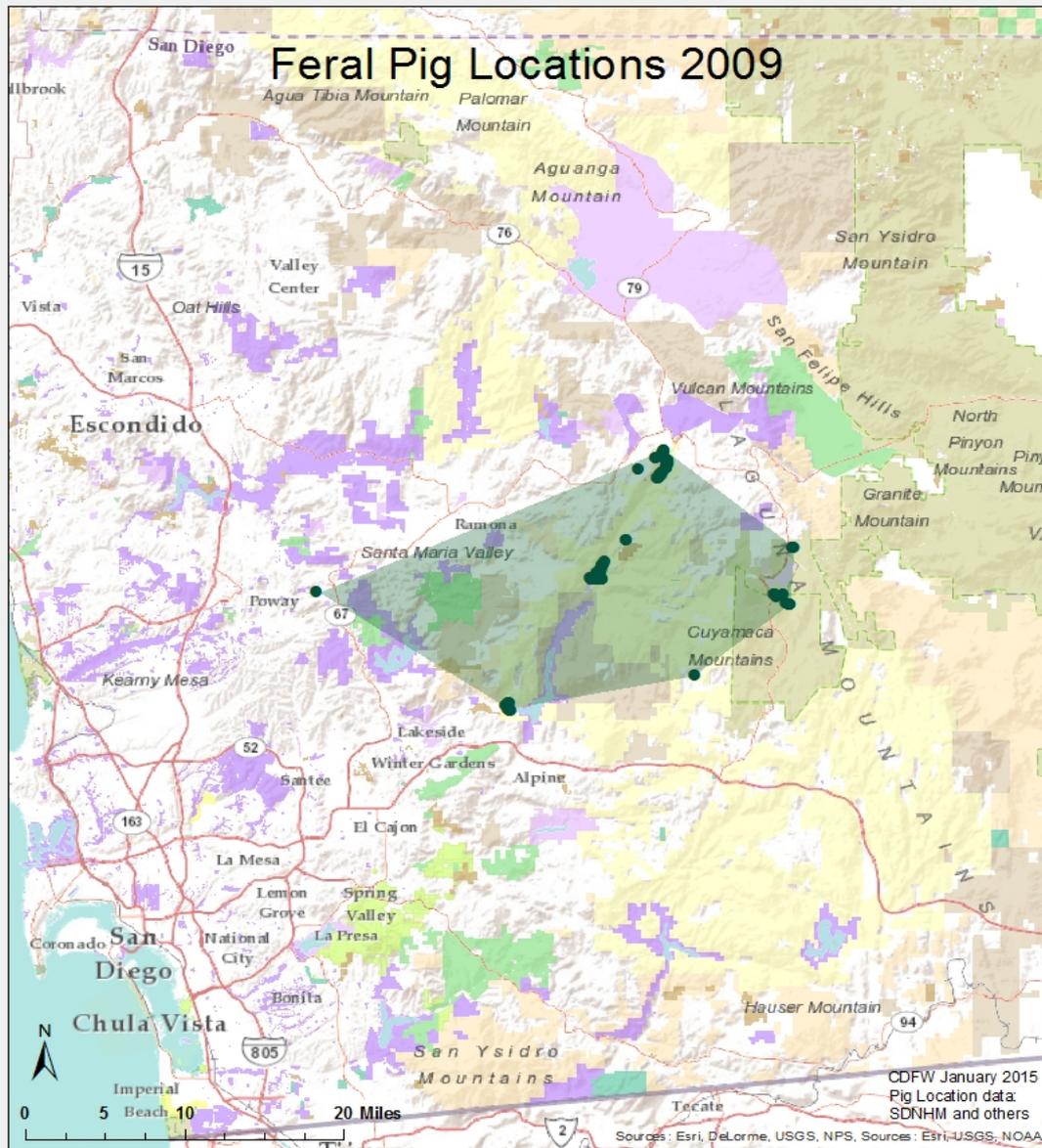
Formation of an Inter-governmental Group

- California Department of Fish and Wildlife
- US Forest Service
- United States Fish and Wildlife Service
- California State Parks
- Bureau of Land Management
- County of San Diego Parks and Recreation
- Native American Tribes (Barona, Sycuan, Viejas)
- Vista Irrigation District
- City of San Diego
- Helix Water District

What Action do we Take?

- With the recent introduction, limited range, and small population, public land managers in San Diego County are attempting to eradicate pigs.
- Using a cooperative, all-lands approach
- But, is it too late??
 - 3-year initial implementation program to determine if eradication is possible
 - If not, move to long-term control strategy

Feral Pig Locations 2009



Pig Locations

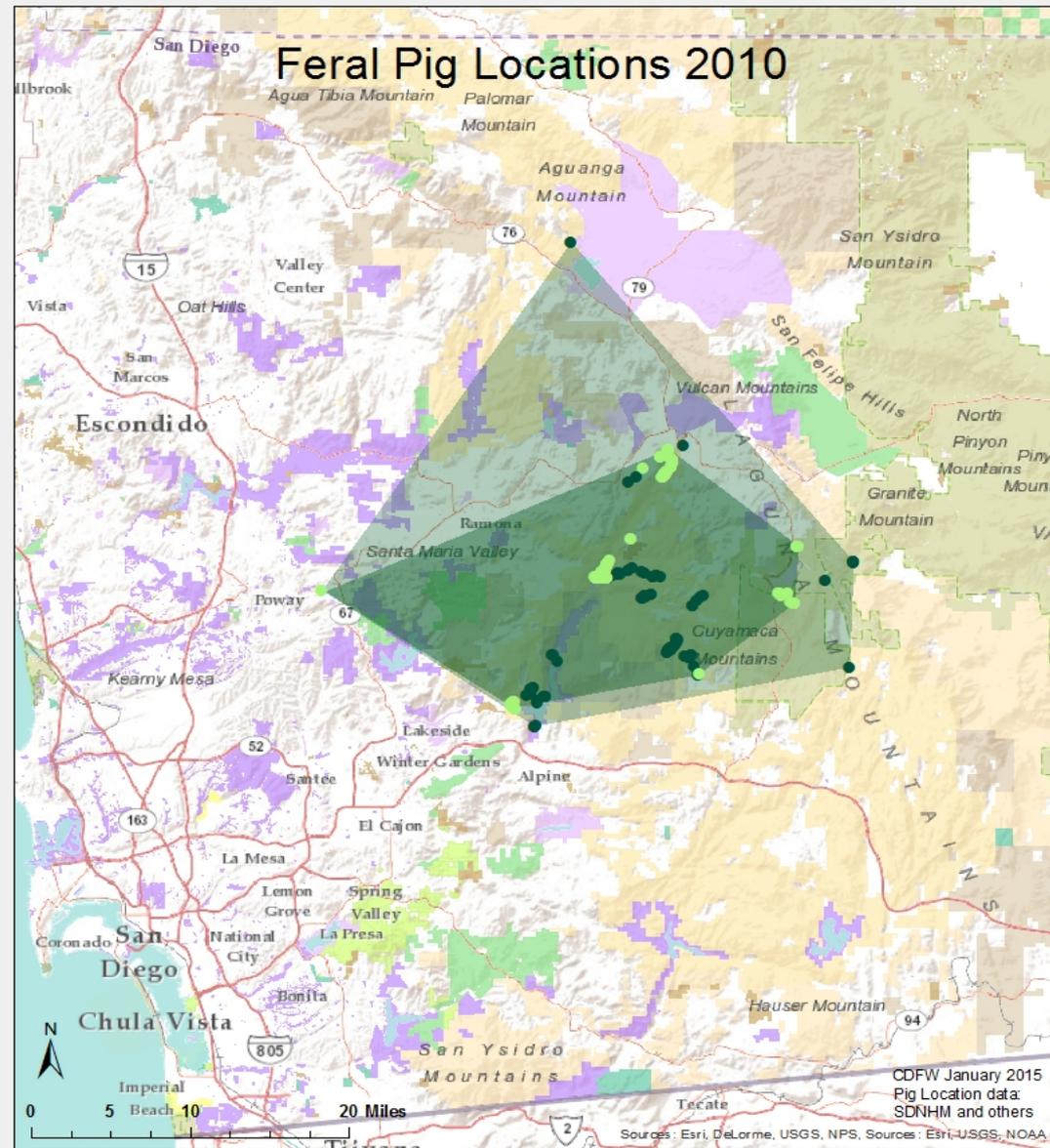
- 2009 Locations
- 2009 Area

Land Ownership

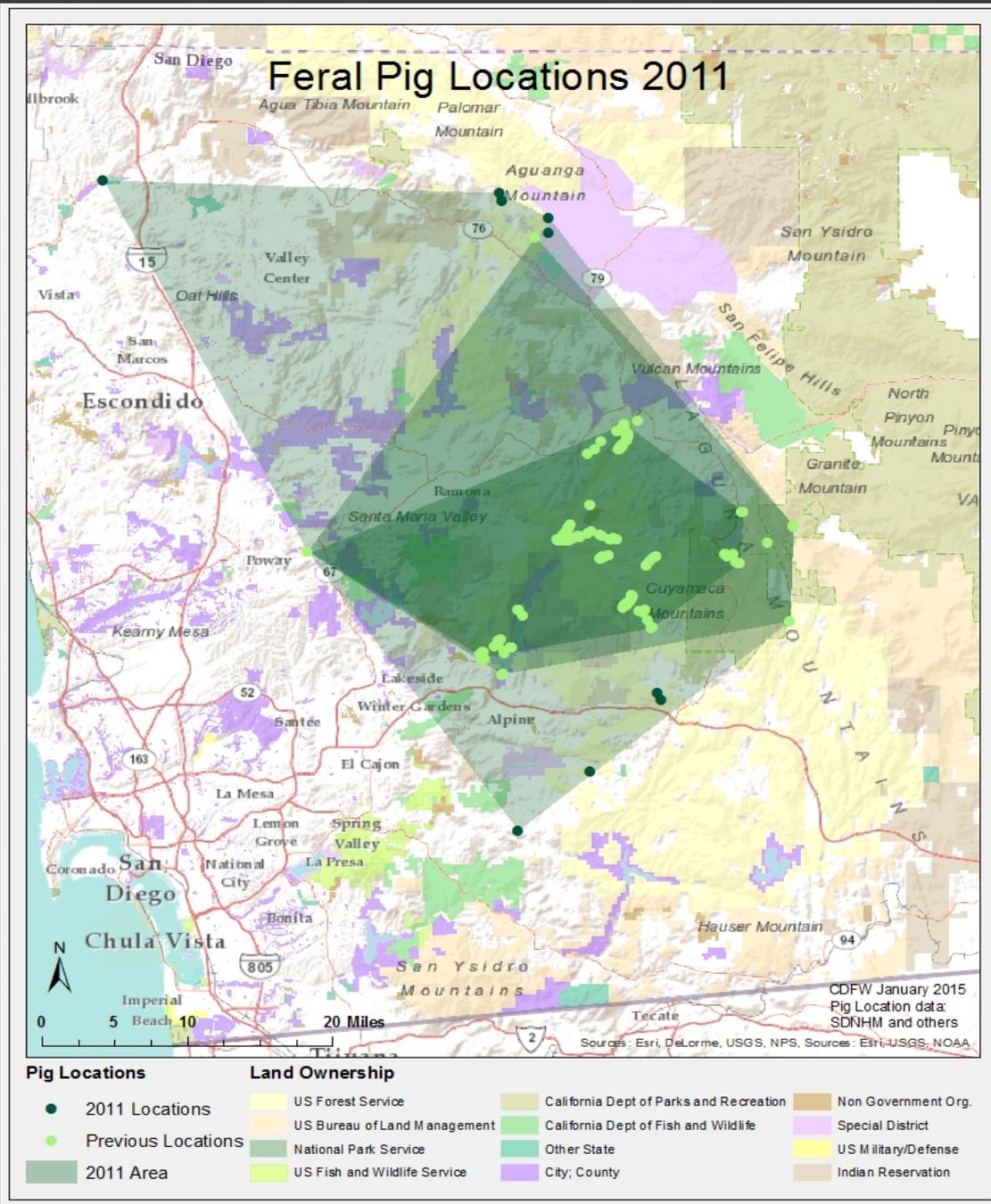
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| ■ US Bureau of Land Management | ■ California Dept of Fish and Wildlife | ■ Special District |
| ■ National Park Service | ■ Other State | ■ US Military/Defense |
| ■ US Fish and Wildlife Service | ■ City, County | ■ Indian Reservation |

2009
Expansion

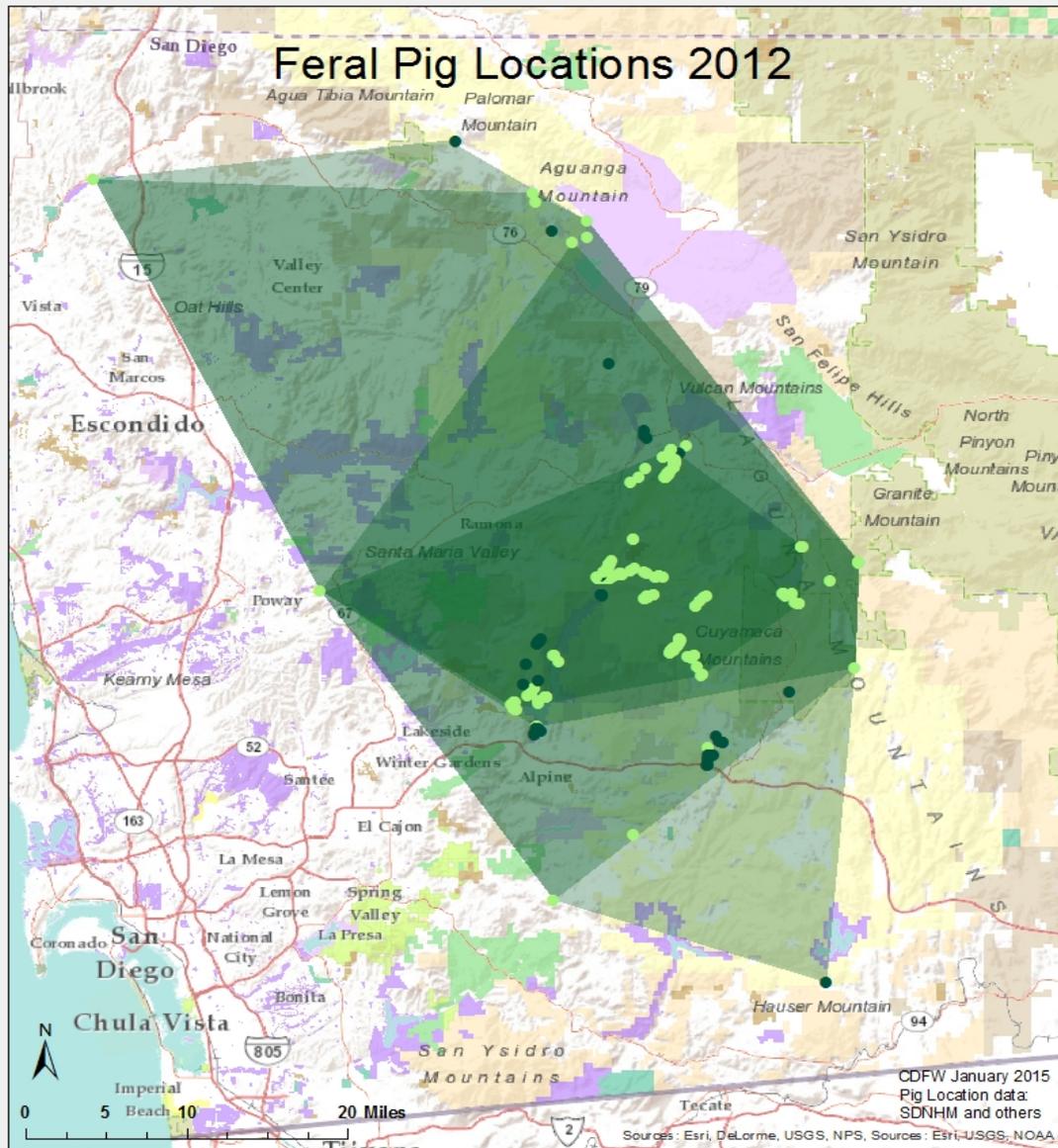
2010 Expansion



2011 Expansion



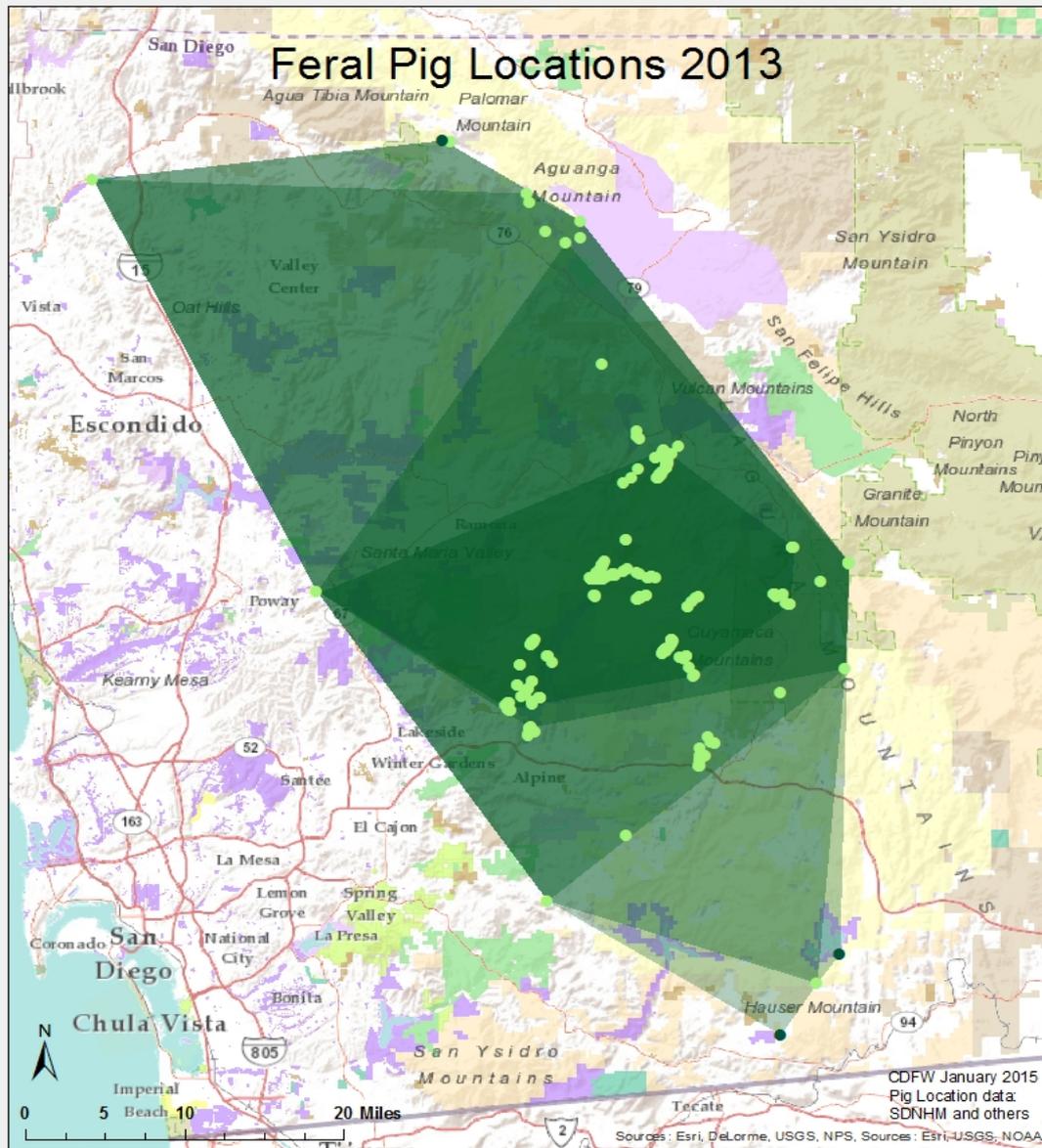
Feral Pig Locations 2012



2012
Expansion

Pig Locations		Land Ownership			
● 2012 Locations	● Previous Locations	■ US Forest Service	■ US Bureau of Land Management	■ National Park Service	■ US Fish and Wildlife Service
■ 2012 Area		■ California Dept of Parks and Recreation	■ California Dept of Fish and Wildlife	■ Other State	■ City; County
		■ Non Government Org.	■ Special District	■ US Military/Defense	■ Indian Reservation

Feral Pig Locations 2013



Pig Locations

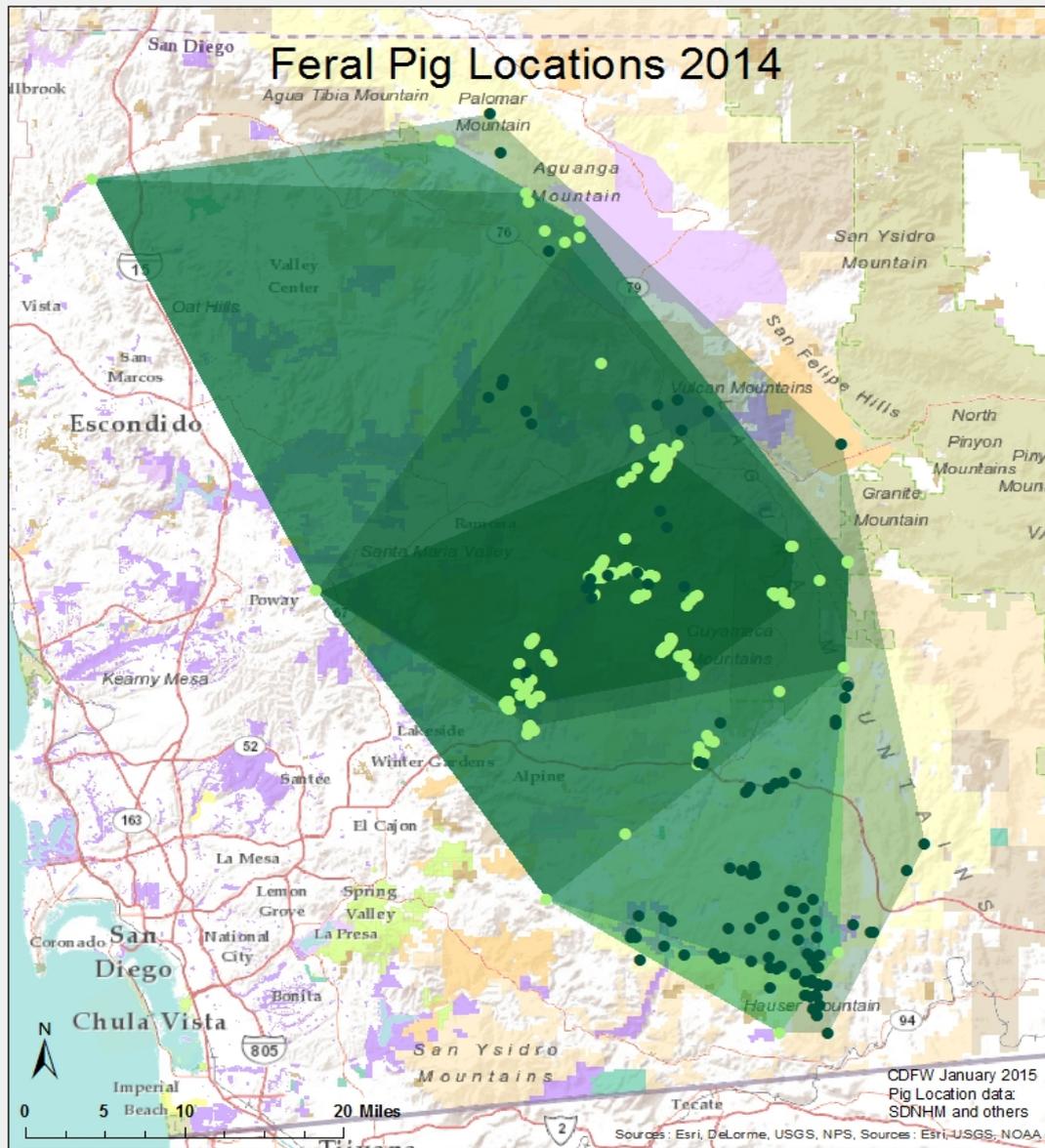
- 2013 Locations
- Previous Locations
- 2013 Area

Land Ownership

- | | | |
|--------------------------------|---|-----------------------|
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2013
Expansion

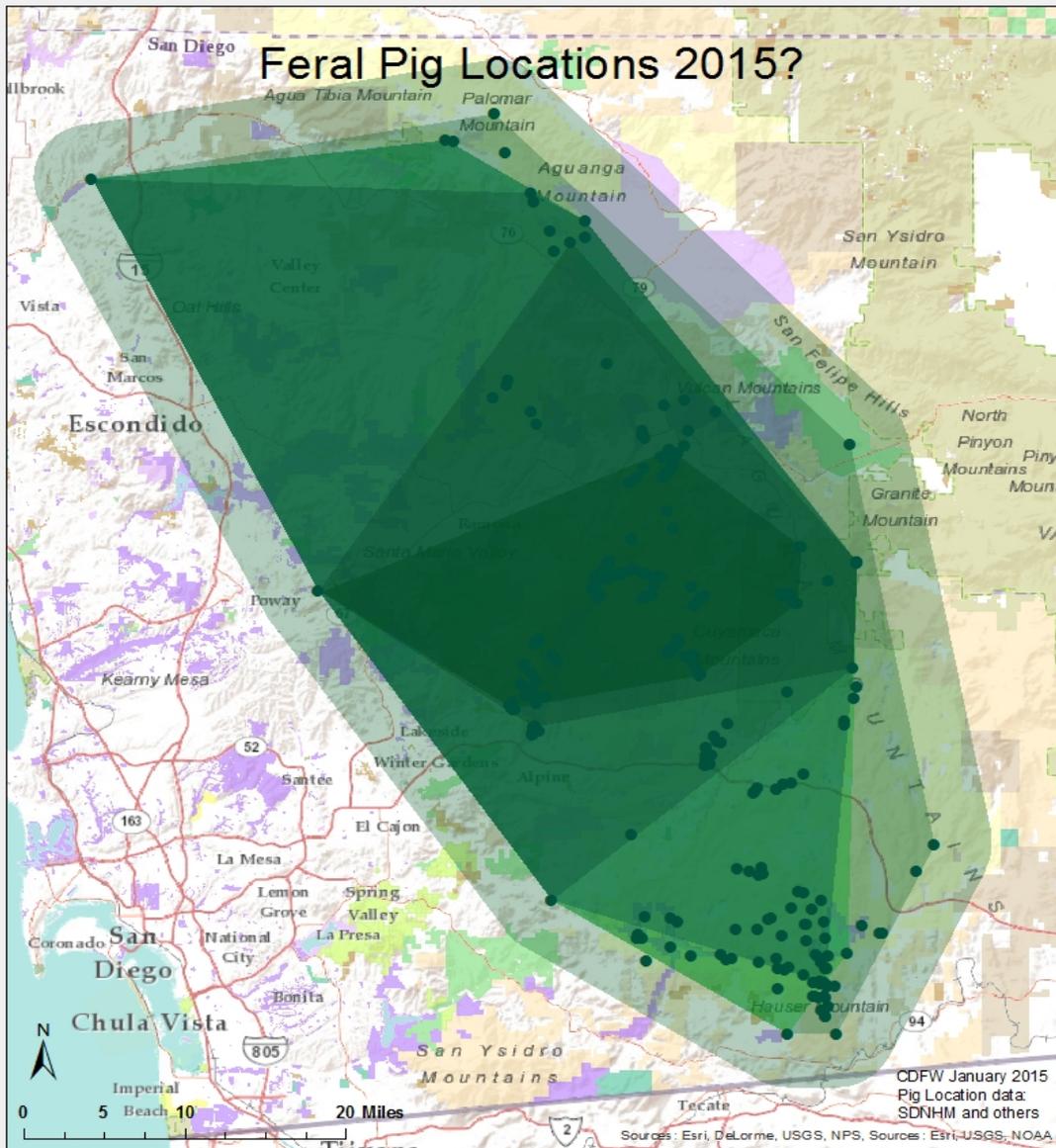
Feral Pig Locations 2014



2014
Expansion



Feral Pig Locations 2015?



CDFW January 2015
Pig Location data:
SDNHM and others
Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

Pig Locations

- 2009-2014
- 3 Mile Buffer

Land Ownership

- | | | |
|--------------------------------|---|-----------------------|
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2015 Expansion

Can we Control Pigs with Existing Regs?

- DFW regulations: Wild Pig is classified as a Game Mammal §3950
 - Can be taken year round
- 3 authorized ways to take pigs
 - Sport Hunting (35 reported harvested 2005-2015)
 - Depredation Permit
 - Encounter Law

Other Ways to Control

- Special hunts
- Birth control
- Exclusion
 - Fencing
- Remove attractants
 - Water sources (troughs)
 - Feed

These largely are not practical –
And require the landowner to implement

Actions to Date

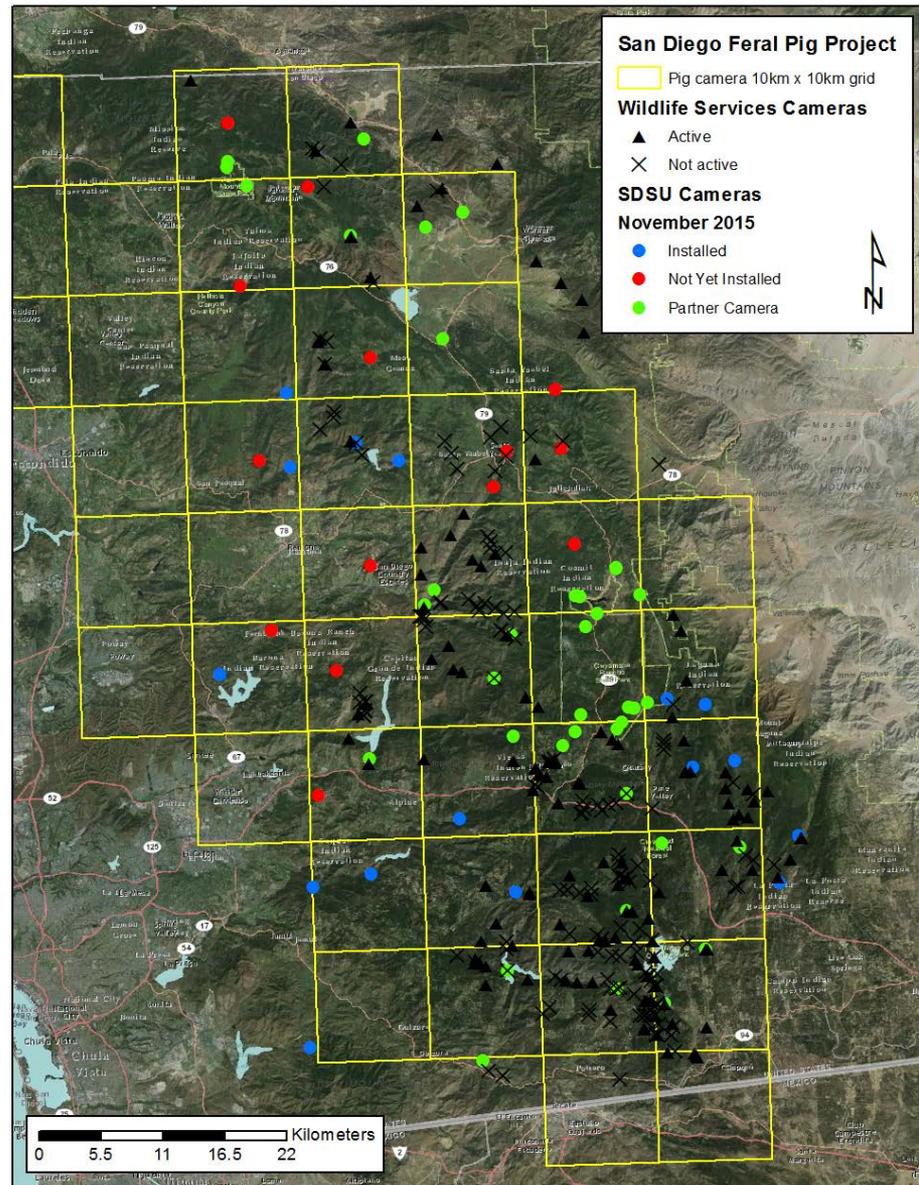
- Formation of Inter-Governmental group and subcommittees
- Preparation of POU
- Researched effective methods for management
- Population and Distribution Surveys
- Established a website (<http://sdferalpigs.org/>)
- NEPA/CEQA documents completed
- USDA Wildlife Services National Feral Swine Effort

Actions to Date

- Developing plans for public outreach
- Incrementally secured funding for first 1-2 then 3-5 years
- Began implementation June 2014
- Contracts with USDA Wildlife Services (USFS, SANDAG and City of San Diego funds) for pig removal
- Contract with SDSU (CDFW with USFWS funds) for monitoring
- Multiple partners installing and monitoring cameras
- CDFW Collaring Effort

- SDSU developed a camera grid system for the pig project
- Wildlife Services operates most in conjunction with trap locations
- CDFW provides assistance to both SDSU and WS in monitoring the cameras
- Partners are helping

- Note we need more monitoring in the north part of the county

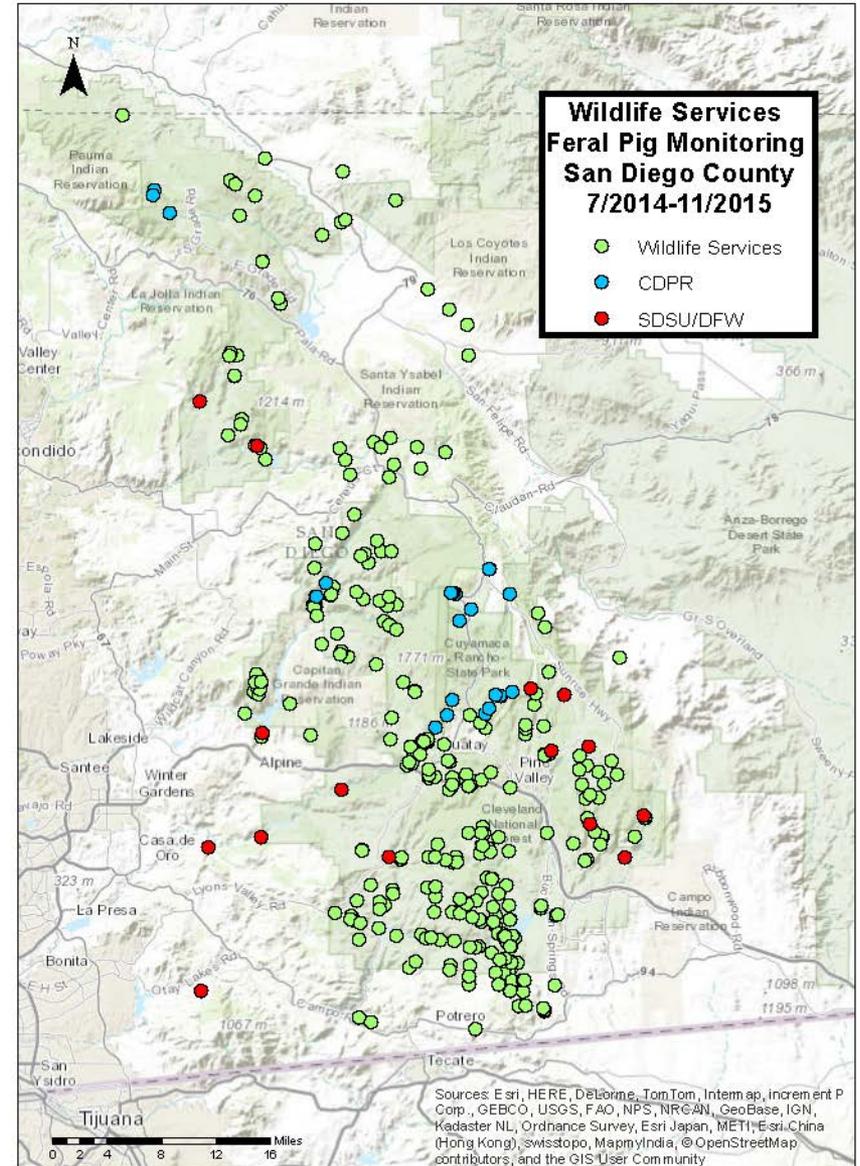


Camera Locations

- 315 different camera locations (WS)
- 125-150 currently active



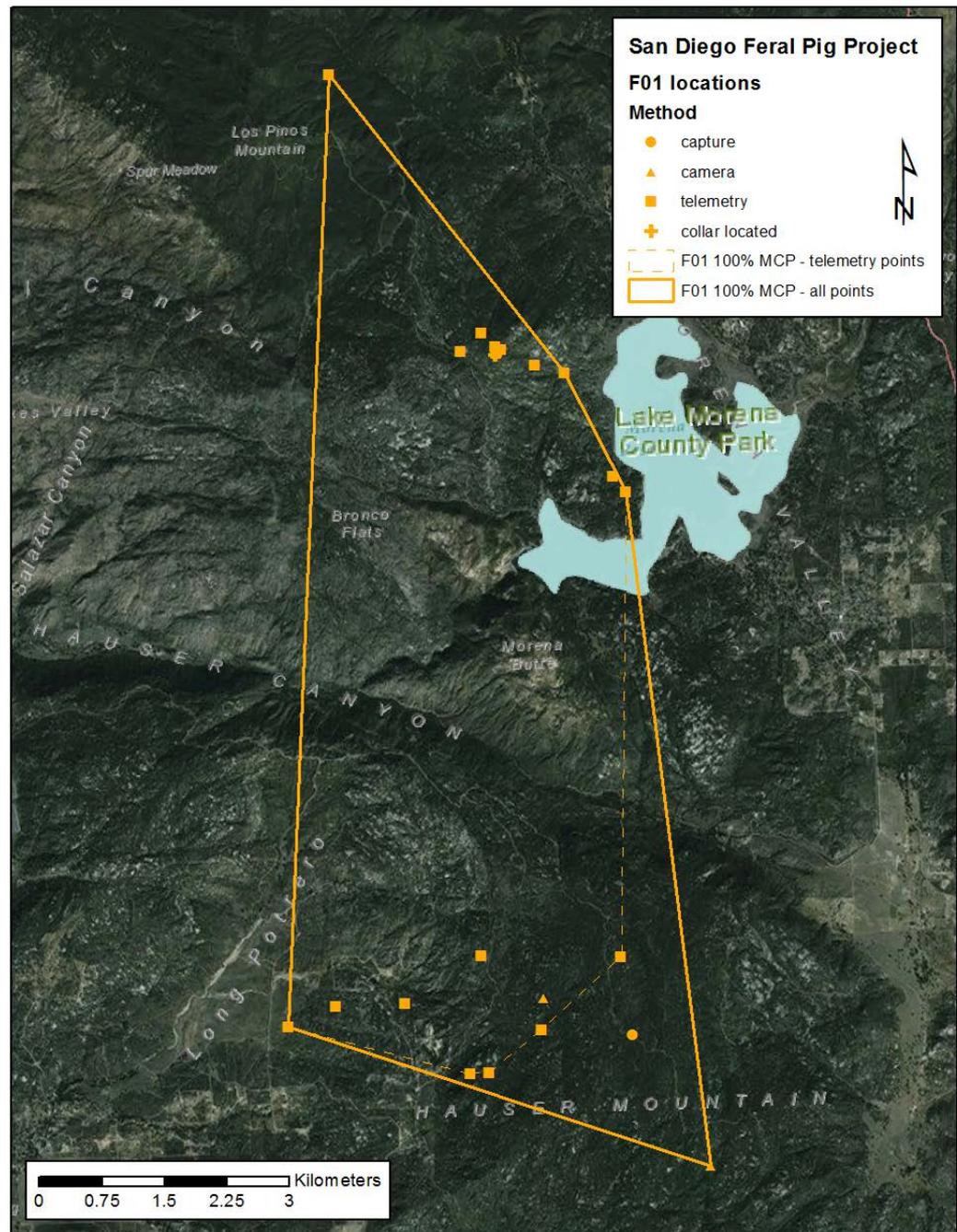
Moultrie 35°F RMG7 CAM 25 DEC 2015 04:30 pm



One pig was collared in September 2015, tracked and then the collar (alone) was found in early January 2016.

When the opportunity presents itself, and when determined advantageous and not detrimental to the effort, CDFW is ready to collar additional pigs

Note additional movement data gathered by telemetry vs camera locations alone



Stats to Date (2014-2016)

- 49 pigs removed, 12 off private land and 37 on public. (114 since 2010)
- 2600+ trap nights (corral and cage traps most successful)
- Over 54,000 camera nights (WS) 3,000 (SDSU) = 250,000 photos
- 13,000 labor hours (WS)
- 56 "dog hours" (WS)

- General Areas of take: Hauser Canyon, Hauser Mountain, Morena Butte, Descanso, Corral Canyon, Corte Madera

- No evidence pigs are south of Highway 94
- Adult Boar home range ~50-70 square miles
- Sows/sounders home range ~3-15 square miles
- Possibly 3-4 releases
- 200-250 pigs removed by all methods from 2006-2015

Financial and In-Kind Contributions

(not including staff time and technical staff support)

- California State Parks
 - Lead CEQA agency for MND
- USFS
 - Lead NEPA agency for MND
- SANDAG –
 - \$400,000 -Contract with Wildlife Services
- City of San Diego
 - Facilitator \$20,000
 - Contract to Wildlife Services \$210,000

Financial and In-Kind Contributions –cont'd

- Sec 6 grant - \$140,000 (DFW Contract with SDSU)
- Forest Service – \$700,000
- APHIS – \$200,000
- TNC - \$350,000
 - Technical studies, pig tracking, facilitator, project coordinator
- Vista Irrigation - \$30,000
 - tracking
- County of San Diego- Wildlife Services Contract

Bureaucratic Challenges

- Additional funding – securing and managing
- Public communication – who, when, how much?
 - Education and outreach
 - Media
- Land access
 - Private properties
 - Tribal lands
- Stakeholder coordination
 - How to accommodate other groups
 - Involving sportsmen groups
- Staffing levels (gov't)

Implementation Challenges

- Ensuring no new releases
- Avoiding education of pigs during eradication efforts
- Certifying an area has been cleared of pigs and stays that way
- How to know when the last pig has been removed ??
- Maintaining an effective long-term monitoring program

What's Next -2016?

- Re-Engage all partners
 - Current contact info for all
 - Filling out field survey forms (SDSU)
 - Sharing data from cameras, pig detection information
- Camera Trap Data Analysis by USDA National Wildlife Research Center
- Genetics analysis by USDA NWRC
- Installation and monitoring of cameras to north
- Land-owning agencies taking action

Goals:

- Continued commitment of multiple agencies and partners
- Continued cooperation of federal, state and local land owning agencies, Tribal and private land owners
- ID pig locations/populations not known to our effort
- Prevent future releases from all sources
- Focus efforts on removing all known pigs
- An effective, long-term monitoring strategy

Can we help?

- Assistance in locating future funding for pig removal, if needed
- Connecting to technical expertise from Wildlife Services, CDFW, SDSU
- Potential help with environmental compliance (NEPA?)

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