

Evaluation of Feral Hog Removal to Reduce Damage to Sensitive Plant Sites at Avon Park Air Force Range in Florida

Preliminary Results and Challenges

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Avon Park Air Force Range

Challenges for Hog Removal and Monitoring Damage

- 106,000 acre facility in central Florida
- Active military range
- Public recreation uses
- Grazing and forestry programs

The Study Site



NWRC
National Wildlife Research Center

Hog Problems at APAFR

- Rooting by feral hogs impacts
 - Ecologically sensitive plant sites
 - Listed species
 - Forestry and grazing programs
 - Archeological sites
- Federally-mandated responsibilities require natural resource management at APAFR

NWRC
National Wildlife Research Center

Purpose

Reduce hog rooting damage using scientifically-based management strategy that is humane, cost-effective, and integrates with ecologically sustainable land management.

Hypothesis

Cumulative effect of hog removal will result in a decline in new rooting damage

Data Needed to Test Hypothesis

- Quantify hog damage to sensitive plant sites over time
- Evaluate the effectiveness of hog removal using passive tracking index to monitor hog populations

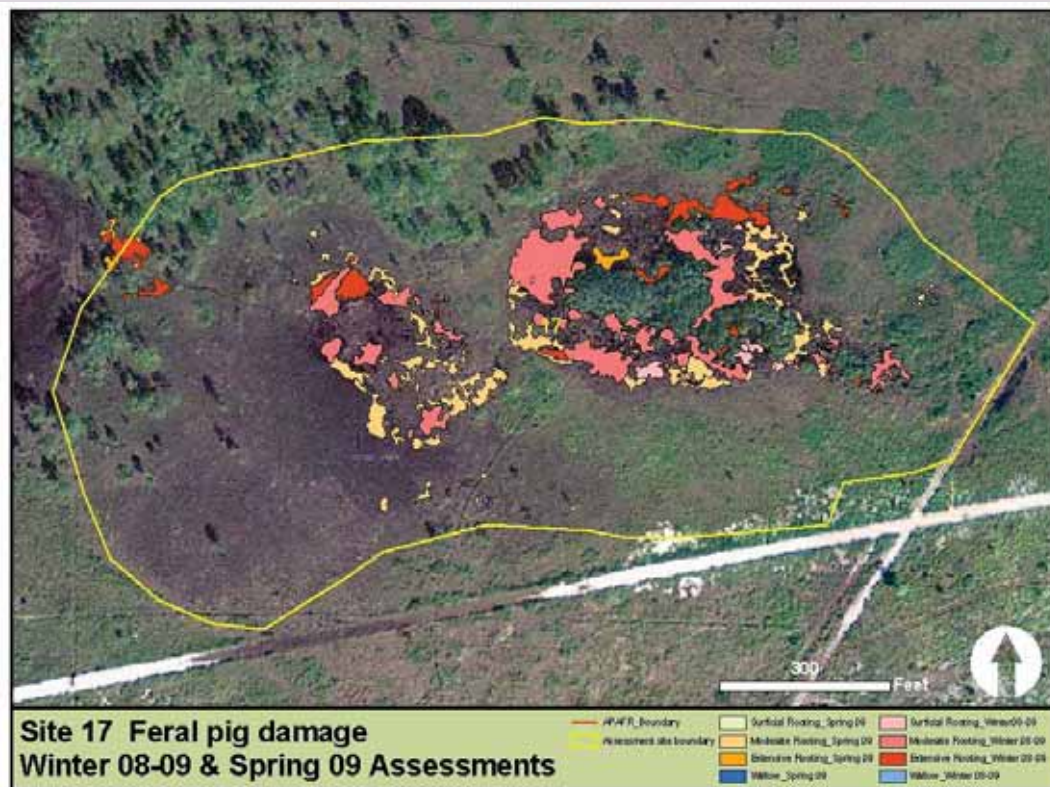
Quantifying Damage to Plant Sites

- To determine whether hog removal has an impact, damage must be quantified
 - Prior to start of hog removal
 - At seasonal intervals during ongoing hog removal efforts
 - Repeat Annually to document trend

Quantifying Damage to Sensitive Plant Sites

- GPS measurements of damaged sites used to create shape files of recent damage caused by rooting.
- Measurements made in Winter and Spring each year
- Compare damage by season and year, relative to hog removal effort.

What do the data look like?



Quantification of damage results

Covered in Eric Tillman's talk at 2:20 in this session

“Quantifying feral pig rooting in ecologically-sensitive plant communities at Avon Park Air Force Range in Florida”

Monitoring changes in the hog population

- **What is a population index?**
 - A Statistic
 - Based on a measure that changes with abundance
 - Seasonal, annual changes
 - Immigration, emigration
 - Other spatial effects
 - Track Plots used to measure changes in hog abundance

Methods for Track Plots

- **Plot design, location and preparation**
 - Surface must be able to be smoothed and easily read
 - 0.5 mile long
- **Reading the plots and recording the data**
 - Record counts over 3 consecutive days
 - Use same plots, for seasons and subsequent years
- **Plot distribution**
 - Random throughout APAFR, where pigs likely to intrude
 - Record GPS location
- **Analysis and interpretation of the data**

Plot preparation



Reading Plots and Recording Data

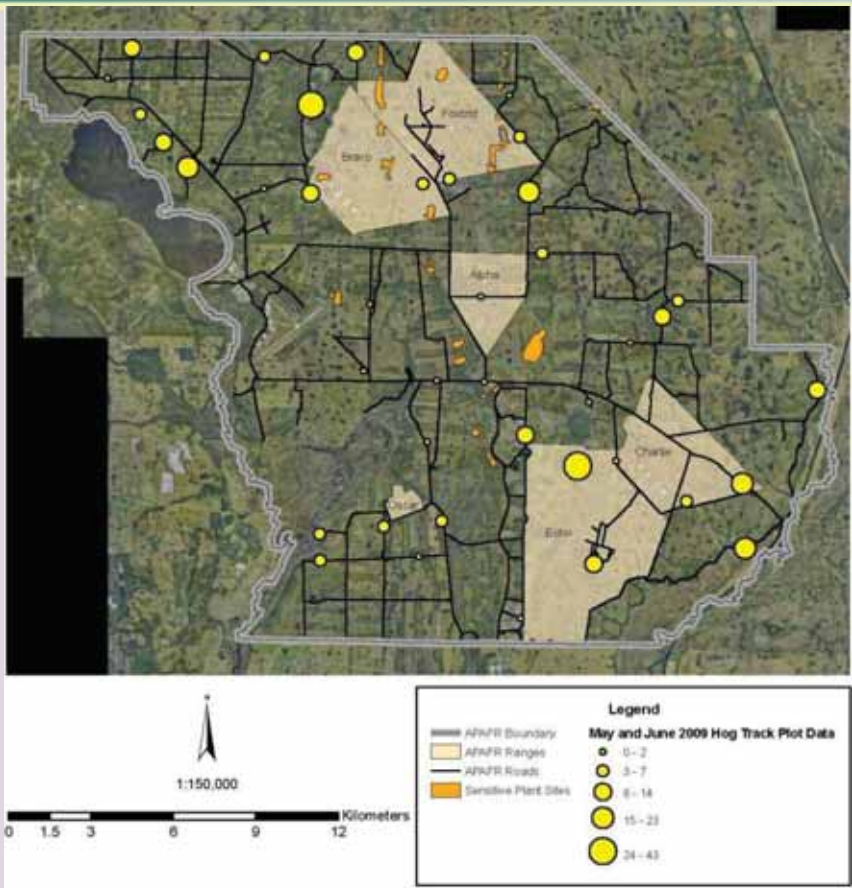


Track Plot Data
December 2008, May/June 2009

Occasion	Day	Mo	Yr	ObsDay	Plot	UnitRange	Brdr1mi	Brdr2mi	ImpactAr	CountRP	Hunted	AcresRP	Hog	Deer	Coyote
1	3	12	2008	1	1	10A	i	i	n	0	h	0	9	3	2
1	3	12	2008	1	2	11A&echo	s	s	bce	0	h	0	0	0	2
1	3	12	2008	1	3	12&oscar	i	i	n	0	h	0	2	0	1
1	3	12	2008	1	4	12	i	i	n	0	h	0	2	0	0
1	3	12	2008	1	5	12	i	s	n	0	h	0	2	0	0
1	3	12	2008	1	6								1	0	0
1	3	12	2008	1	7	12	i	s	n	0	h	0	3	1	0
1	3	12	2008	1	8	11&12	i	i	n	2	h	40.26	0	1	2
1	3	12	2008	1	9	11&echo	i	i	bce	6	h	231.16	0	2	0
1	3	12	2008	1	10	9	i	i	n	2	h	159.34	0	0	0
1	3	12	2008	1	11	4&11	i	i	n	9	h	263.31	2	1	0
1	3	12	2008	1	12	4&12	i	i	n	9	h	263.31	2	2	0
1	3	12	2008	1	13	4	i	i	n	4	h	67.9	1	2	0
1	3	12	2008	1	14		i	i	n	5	h	82.55	2	2	0
1	3	12	2008	1	15	fxrt	i	i	bbf	8	u	187.61	-	-	-
1	3	12	2008	1	16	bravo	i	i	bf	10	u	284.51	-	-	-
1	3	12	2008	1	18		i	i	ce	0	u	0	6	4	0
1	3	12	2008	1	19	echo	i	i	ce	1	u	25.44	6	4	2
1	3	12	2008	1	20	echo	i	s	ce	0	u	0	1	2	2
1	3	12	2008	1	21	10A&charl	i	i	ce	0	b	0	2	4	1
1	3	12	2008	1	22	10A&charl	i	i	ce	0	b	0	3	3	2



Track counts May/June 2009



The Hog Removal Effort



Procedures for Trapping

- Identify areas with “Fresh” hog rooting (≤ 72 hr) or other signs of recent activity
- Bait site for 3-5 days, check daily for activity
- Erect traps at active sites; pre-bait site for 3-4 days, check daily
- Bait and set traps, kill and remove trapped hogs daily
- Repeat process until no further activity

Data Collected

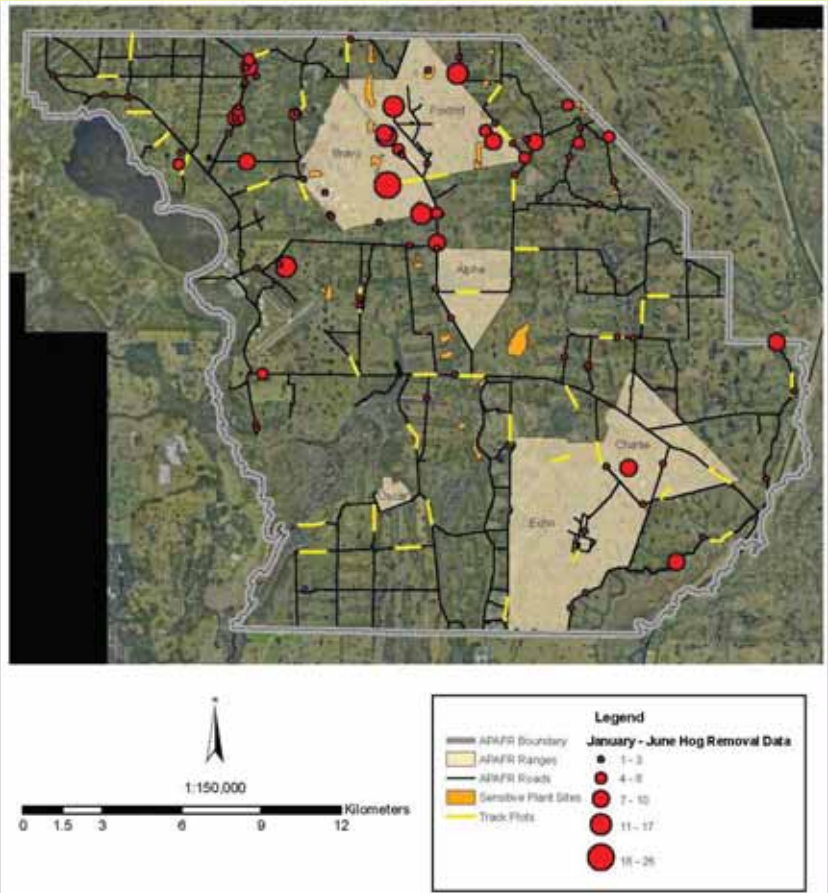
- GPS locations of baited and trap sites
- Estimated weight and gender
- Juveniles identified through dentition
- Data summarized for monthly processing

Results

- 595 hogs removed January – December 2009
- 311 males (52%) and 284 (48%) females
- Monthly average, 49.5 hogs removed
- 456 trapped(77%), 139 shot(23%)

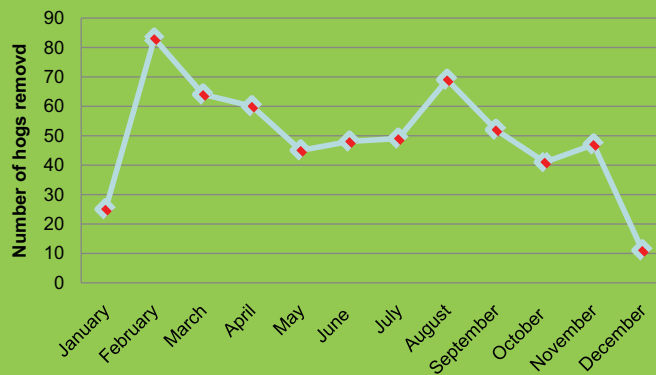
Locations of Hogs Removed

January-June 2009

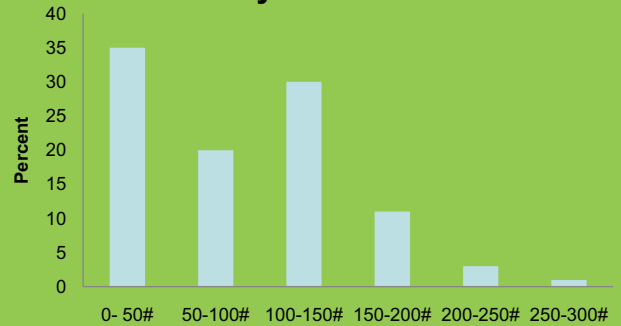


Population Characteristics

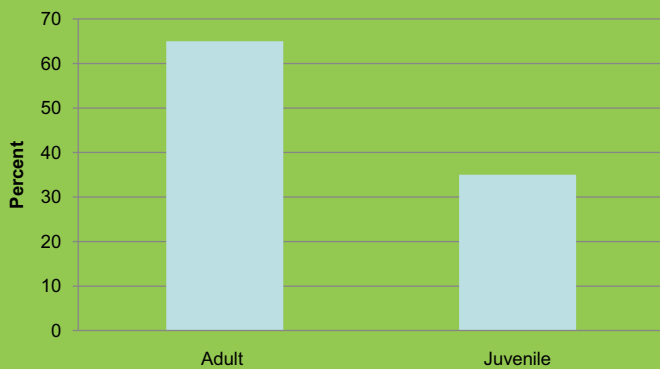
January-December 2009



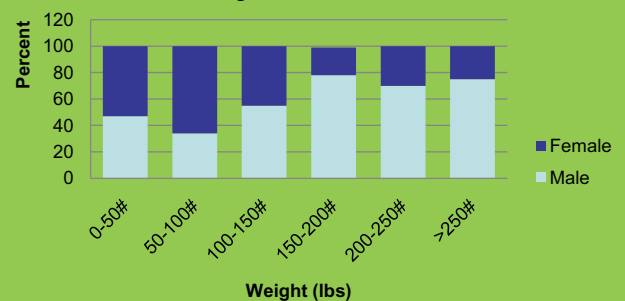
Weight distribution January-December 2009



January-December 2009



Gender Distribution by Weight Group January-December 2009



Accomplishments for Year 1

- Staff hired and trained
- Protocols established and implemented
- Challenges recognized and addressed when possible
- Procedures for data recording and summarization established.
- Plans for subsequent years prepared