Department of Defense
Legacy Resource Management Program

LEGACY PROJECT NUMBER 10-437

Utilizing Cooperative Invasive Species Management Areas (CISMAs) to Effectively Reduce Re-infestation of Invaders on six (6) Military Bases and Adjacent Lands in Florida

PHASE I MONITORING REPORT FOR EGLIN AFB

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Eglin AFB Invasive Species Treatment - Phase I Interim Monitoring Report - November 3, 2010

I. Overview:

From mid-March 2010 until mid-may 2010 EST members treated Eglin reservation lands for invasive species infestations using mechanical and chemical methods. Targeted species included Chinese Tallow (*Sapium sebiferum*), Lantana (*Lantana camara*), Mimosa (*Albizia julibrissin*), and Japanese Cimbing Fern (*Lygodium japonicum*). .

Limited post-treatment site visits were conducted on October 25th, 2010 to determine the effectiveness of efforts in areas of heavy and/or persistent infestation. This report emphasizes *Sapium s*. specifically, due to the high percentage of time spent on these infestations in relation to other species. One sampling each from the Mary Esther sprayfield and Okaloosa Island public area treatments sites are represented, with the balance focused on Chinese Tallow sites bordering private lands south of the East Bay Flatwoods at the south-west border of the Eglin reservation. As with almost every site in this area, the presence of large (15'-30' h.) Chinese Tallow in residential yards along the fence lines--as well as ambiguity over the exact location of property lines when treating infestations--made the possibility of a hundred-percent kill extremely remote.

II. Methodology:

Each site was evaluated for treatment effectiveness on existing stems and the presence of new and/or untreated stems. A radius 150' out from each infestation cluster was gridded for missed and/or newly emergent invasives. The following parameters were used to rate each site:

- *Re-emergence of treated stems*: Stems were examined for post-treatment growth. Possible failures due to: inadequate treatment techniques (e.g. hack and squirt not completely encircling cambium), weather, etc..
- *Presence of untreated mature stems within target cluster:* Mature stems probably present during initial treatment bearing no evidence of treatment. Possibly missed/not treated due to heavy foliage, standing water precluded treatment, etc.
- *Emergence of new stems in donut area:* Presence of new stems due to factors such as post-treatment mechanical disturbance, seeding from neighboring stems, etc.

III. Results:

# 1:	**Species**:	*Sapium sebiferum*
	Location:	Okaloosa Island Public Area
	GPS Coordinate:	N 30° 23.745' W 086° 34.637'
	Re-emergence:	None
	Untreated mature:	None
	New stems:	None
	Comments:	This was a persistent infestation driven by a large (8" plus DBH) stem which successfully resisted two prior treatments. (pre-2010 and Spring 2010) A second hack and squirt treatment in May of 2010 proved effective. (See picture - below)
# 2:	**Species**:	*Sapium sebiferum*
	Location:	Mary Esther Spray Fields
	GPS Coordinate:	N 30° 27.771' W 086° 40.085'
	Re-emergence:	None
	Untreated mature:	None
	New stems:	None

Comments: Centered in a baygall, this cluster of over thirty stems saw over an acre of gross area treatment in the spring of 2010, with the largest stems found in shaded interior areas. Regular prescribed fires in the surrounding flatwoods may be contributing to the lack of new stems around the baygall.

3:
Species: *Sapium sebiferum*
Location: East Bay Flatwoods
GPS Coordinate: N 30° 24.918' W 086° 45.034'
Re-emergence: None
Untreated mature: None
New stems: ~ 15 in surrounding area
Comments: Kill on mature stems was very successful, however a large number of new stems in the surrounding area were discovered. Some were found in fireline mechanically treated during the Summer of 2010. This may be from propagule disturbance or seeding from neighboring stems on private ground within 100' of the site. At least five new stems were growing in undisturbed areas, possibly indicating a need for better reconnaissance during treatment sessions.

4:
Species: *Sapium sebiferum*
Location: East Bay Flatwoods
GPS Coordinate: N 30° 24.930' W 086° 45.138'
Re-emergence: None
Untreated mature: None
New stems: 3
Comments: None

5
Species: *Sapium sebiferum*
Location: East Bay Flatwoods
GPS Coordinate: N 30° 24.705' W 086° 44.810'
Re-emergence: None
Untreated mature: None
New stems: None
Comments: At least ten mature (3' plus height) stems treated without reemergence

6
Species: *Sapium sebiferum*
Location: East Bay Flatwoods
GPS Coordinate: N 30° 24.900' W 086° 44.628'
Re-emergence: None
Untreated mature: 1
New stems: ~5
Comments: Several large DBH (> 6") stems showed no signs of reemergence, but several new stems (located on private property) are within five feet (not counted). One untreated mature and at least five new stems were found in heavy understory within 100' of the site within reservation boundaries.

(Site #1 - Large DBH stem on Okaloosa Island Public area resisted several cut-stump and hack and squirt treatments)

(Site #2 - Dense baygall successfully treated for Chinese Tallow at Mar y Esther spray fields)

(Site #3 - Dead mature stem along East Bay/ private boundary)

(Site #6 - Live Tallow stems in foreground against backdrop of treated matures illustrate the challenges of East Bay/private boundary.