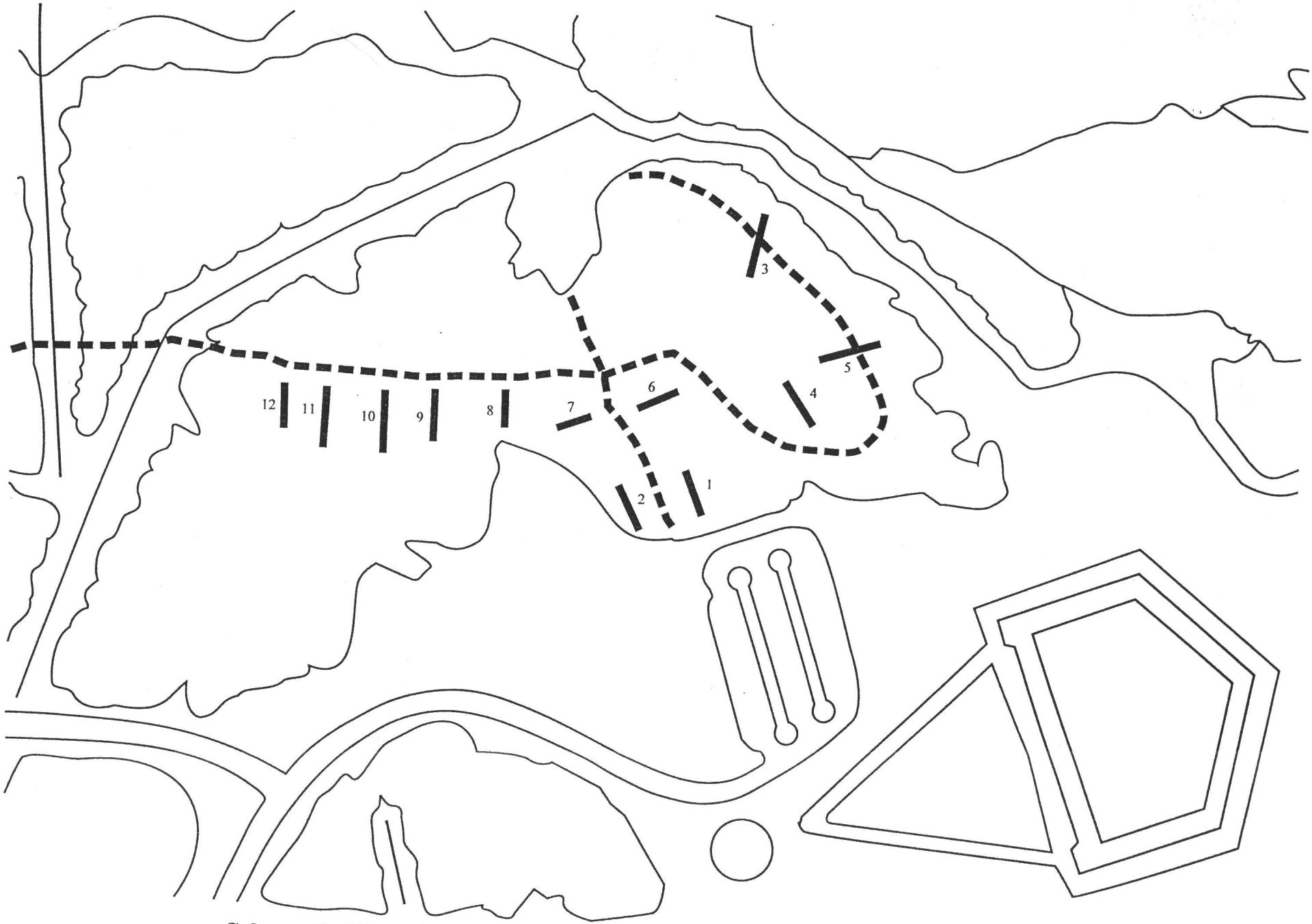


Schematic Map of Monitoring Transects — Fort Pulaski National Monument

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 1 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Very large tallow at beginning of transect.

Location: Parallel to nature trail, starting at tallow tree on east side of trail only 5 m into woods from visitor center. About 10 m east of trail.

Starting Point Labeled: 1A
Witness Tree 1: 1.53 m circumference Sapium sebiferum Distance and Bearing: 1.22 m @ 52°
Tag #: 1

Witness Tree 2: 0.39 m circumference Myrica cerifera Distance and Bearing: 2.20 m @ 186°
Tag #: 2

Transect Length and Bearing: 20 m @ 12°

Ending Point Labeled: 1B
Witness Tree 1: 1.16 m circumference Sabal palmetto Distance and Bearing: 1.81 m @ 100°
Tag #: 3

Witness Tree 2: 0.41 m circumference Myrica cerifera Distance and Bearing: 3.34 m @ 356°
Tag #: 4

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 2 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: Starting point on west side of beginning of Nature Trail, about 50' opposite of transect # 1, about 35 ft into the woods.

Starting Point Labeled: 2A
Witness Tree 1: 1.16 m circumference Sapium sebiferum Distance and Bearing: 2.87 m @ 80°
Tag #: 5

Witness Tree 2: 0.80 m circumference Celtis laevigata Distance and Bearing: 3.72 m @ 196°
Tag #: 6

Transect Length and Bearing: 15m @ 0°

Ending Point Labeled: 2B
Witness Tree 1: 0.36 m circumference Celtis laevigata Distance and Bearing: 1.45 m @ 34°
Tag #: 7

Witness Tree 2: 0.68 m circumference Celtis laevigata Distance and Bearing: 1.90 m @ 310°
Tag #: 8

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 3 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m	1	1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Juvenile tallow removed. Transect crosses nature trail, total length extended to compensate for maintained area..

Location: Begins 12 m from Nature Trail Interpretive Station #12 @ 20°

Starting Point Labeled: 3A

Witness Tree 1: 0.68 m circumference Sapium sebiferum — Distance and Bearing: 0.75 m @ 260°
Tag #: 9

Witness Tree 2: 0.95 m circumference Sabal palmetto — Distance and Bearing: 2.52 m @ 110°
Tag #: 10

Transect Length and Bearing: 30 m @ 200°

Ending Point Labeled: 3B

Witness Tree 1: 1.90 m circumference Juniperus virginiana — Distance and Bearing: 0.60 m @ 200°
Tag #: 11

Witness Tree 2: 1.30 m circumference Sabal palmetto — Distance and Bearing: 3.50 m @ 240°
Tag #: 12

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 4 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect located in dense yaupon thicket towards central part of trail. Transect choosen for Melia azedarach.

(Waiver #5)

Location: From stake labeled "4 start" just southeast of Nature Trail Interpretive Station #13, starting point (4A) is 9.3 m @ 74°.

Starting Point Labeled: 4A
Witness Tree 1: 0.47 m circumference Melia azedarach — Distance and Bearing: 1.30 m @ 08°
Tag #: 13

Witness Tree 2: 0.25 m circumference Ilex vomitoria — Distance and Bearing: 1.10 m @ 46°
Tag #: 14

Transect Length and Bearing: 15m @ 44°

Ending Point Labeled: 4B
Witness Tree 1: 1.67 m circumference Juniperus virginiana — Distance and Bearing: 4.31 m @ 325°
Tag #: 15

Witness Tree 2: 0.36 m circumference Ilex vomitoria — Distance and Bearing: 2.74 m @ 80°
Tag #: 16

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 5 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m	1		1			
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect crosses Nature Trail.

Location: 31 m southeast from Station # 12 on Nature Trail, 3 m east from trail.

Starting Point Labeled: 5A
Witness Tree 1: 1.33 m circumference Sabal palmetto
Tag #: 17

Distance and Bearing: 1.53 m @ 192°

Witness Tree 2: 0.21 m circumference Ilex vomitoria
Tag #: 18

Distance and Bearing: 2.73 m @ 80°

Transect Length and Bearing: 25 m @ 280°

Ending Point Labeled: 5B
Witness Tree 1: 1.13 m circumference Sabal palmetto
Tag #: 19

Distance and Bearing: 0.62 m @ 122°

Witness Tree 2: 0.36 m circumference Ilex vomitoria
Tag #: 20

Distance and Bearing: 1.89 m @ 324°

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 6 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		1
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect crosses old roadbed, potential here for juvenile recruitment

Location: 10.4 m @ 212° from intersection of Nature Trail with John Wesley Memorial Trail.

Starting Point Labeled: 6A
Witness Tree 1: 0.80 m circumference Melia azedarach Distance and Bearing: 1.30 m @ 192°
Tag #: 21

Witness Tree 2: 0.35 m circumference Prunus caroliniana Distance and Bearing: 2.48 m @ 352°
Tag #: 22

Transect Length and Bearing: 30 m @ 272°

Ending Point Labeled: 6B
Witness Tree 1: 1.98 m circumference Juniperus virginiana Distance and Bearing: 4.76 m @ 168°
Tag #: 23

Witness Tree 2: 1.31 m circumference Celtis laevigata Distance and Bearing: 5.18 m @ 344°
Tag #: 24

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 7 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: 5.7 m @ 250° from Nature Trail Interpretive Station #5

Starting Point Labeled: 7A
Witness Tree 1: 1.18 m circumference Sabal palmetto Distance and Bearing:3.57 m @ 352°
Tag #: 25

Witness Tree 2: 1.78 m circumference Ulmus americana Distance and Bearing: 7.36 m @ 320°
Tag #: 26

Transect Length and Bearing: 20 m @ 270°

Ending Point Labeled: 7B
Witness Tree 1: 1.02 m circumference Sabal palmetto Distance and Bearing: 2.71 m @ 100°
Tag #: 27

Witness Tree 2: 0.38 m circumference Ilex vomitoria Distance and Bearing: 2.86 m @ 30°
Tag #: 28

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 8 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: 1.6 m @ 150° from Nature Trail Interpretive Sign describing redbay.

Starting Point Labeled: 8A
Witness Tree 1: 1.45 m circumference Juniperus virginiana Distance and Bearing: 1.54 m @ 46°
Tag #: 29

Witness Tree 2: 0.43 m circumference Ilex vomitoria Distance and Bearing: 3.93 m @ 104°
Tag #: 30

Transect Length and Bearing: 20 m @ 192°

Ending Point Labeled: 8B
Witness Tree 1: 1.14 m circumference Sabal palmetto Distance and Bearing: 1.30 m @ 330°
Tag #: 31

Witness Tree 2: 0.88 m circumference Ilex vomitoria Distance and Bearing: 0.83 m @ 118°
Tag #: 32

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 9 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: 19 m west from Nature Trail Interpretive Sign describing redbay, on south side of trail to picnic area.

Starting Point Labeled: 9A
Witness Tree 1: 0.96 m circumference Sabal palmetto Distance and Bearing: 2..79 m @ 70°
Tag #: 33

Witness Tree 2: 2.51 m circumference Juniperus virginiana Distance and Bearing: 2.68 m @ 140°
Tag #: 34

Transect Length and Bearing: 25 m @ 186°

Ending Point Labeled: 9B
Witness Tree 1: 1.27 m circumference Sabal palmetto Distance and Bearing: 2.60 m @ 104°
Tag #: 35

Witness Tree 2: 1.64 m circumference Juniperus virginiana Distance and Bearing: 4.20 m @ 210°
Tag #: 36

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 10 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Melia azedarach – mature, with fruit opposite starting point

Location: Begins 36.7 m west along trail to picnic area from transect #9. Stake is 5 m south of trail

Starting Point Labeled: 10A
Witness Tree 1: 0.49 m circumference Ilex vomitoria Distance and Bearing: 2.13 m @ 304°
Tag #: 37

Witness Tree 2: 1.41 m circumference Sabal palmetto Distance and Bearing: 2..60 m @ 220°
Tag #: 38

Transect Length and Bearing: 25 m @ 186°

Ending Point Labeled: 10B
Witness Tree 1: 0.44 m circumference Ilex vomitoria Distance and Bearing: 2.50 m @ 252°
Tag #: 39

Witness Tree 2: 0.90 m circumference Juniperus virginiana Distance and Bearing: 4.87 m @ 180°
Tag #: 40

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 11 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: Starts 31.0 m southwest along trail to picnic area from start of transect #10, 1.9 m south from edge of trail.

Starting Point Labeled: 11A
Witness Tree 1: 0.27 m circumference Ilex vomitoria — Distance and Bearing: 2.82 m @ 238°
Tag #: 41

Witness Tree 2: 0.80 m circumference Sabal palmetto — Distance and Bearing: 2..68 m @ 162°
Tag #: 42

Transect Length and Bearing: 25 m @ 150°

Ending Point Labeled: 11B
Witness Tree 1: 1.24 m circumference Sabal palmetto — Distance and Bearing: 2.40 m @ 326°
Tag #: 43

Witness Tree 2: 1.44 m circumference Juniperus virginiana — Distance and Bearing: 2.58 m @ 124°
Tag #: 44

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 12 Date: 7/13/98 Observers: Tom_Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: Along trail to picnic area, 50.4 m east from where trail crosses dike, 1.7 m south from edge of trail.

Starting Point Labeled: 12A
Witness Tree 1: 2.34 m circumference Juniperus virginiana Distance and Bearing: 2.63 m @ 280°
Tag #: 45

Witness Tree 2: 2.30 m circumference Juniperus virginiana Distance and Bearing: 5.72 m @ 76°
Tag #: 46

Transect Length and Bearing: 25 m @ 196°

Ending Point Labeled: 12B
Witness Tree 1: 0.94m circumference Sabal palmetto Distance and Bearing: 2.38 m @ 192°
Tag #: 47

Witness Tree 2: 0.33 m circumference Ilex vomitoria Distance and Bearing: 1.50 m @ 246°
Tag #: 48

FORT PULASKI

NATIONAL MONUMENT

VEGETATION MONITORING

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 1 Date: 11/13/03 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Very large tallow at beginning of transect.

Location: Parallel to nature trail, starting at tallow tree on east side of trail only 5 m into woods from visitor center. About 10 m east of trail.

Starting Point Labeled: 1A
Witness Tree 1: 1.53 m circumference Sapium sebiferum Distance and Bearing: 1.22 m @ 52°
Tag #: 1

Witness Tree 2: 0.39 m circumference Myrica cerifera Distance and Bearing: 2.20 m @ 186°
Tag #: 2

Transect Length and Bearing: 20 m @ 12°

Ending Point Labeled: 1B
Witness Tree 1: 1.16 m circumference Sabal palmetto Distance and Bearing: 1.81 m @ 100°
Tag #: 3

Witness Tree 2: 0.41 m circumference Myrica cerifera Distance and Bearing: 3.34 m @ 356°
Tag #: 4

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 2 Date: 11/13/03 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: Starting point on west side of beginning of Nature Trail, about 50' opposite of transect # 1, about 35 ft into the woods.

Starting Point Labeled: 2A

Witness Tree 1: 1.16 m circumference Sapium sebiferum — Distance and Bearing: 2.87 m @ 80°
Tag #: 5

Witness Tree 2: 0.80 m circumference Celtis laevigata — Distance and Bearing: 3.72 m @ 196°
Tag #: 6

Transect Length and Bearing: 15m @ 0°

Ending Point Labeled: 2B

Witness Tree 1: 0.36 m circumference Celtis laevigata — Distance and Bearing: 1.45 m @ 34°
Tag #: 7

Witness Tree 2: 0.68 m circumference Celtis laevigata — Distance and Bearing: 1.90 m @ 310°
Tag #: 8

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 3 Date: 11/13/03 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Juvenile tallow removed. Transect crosses nature trail, total length extended to compensate for maintained area..

Location: Begins 12 m from Nature Trail Interpretive Station #12 @ 20°

Starting Point Labeled: 3A

Witness Tree 1: 0.68 m circumference Sapium sebiferum — Distance and Bearing: 0.75 m @ 260°
Tag #: 9

Witness Tree 2: 0.95 m circumference Sabal palmetto — Distance and Bearing: 2.52 m @ 110°
Tag #: 10

Transect Length and Bearing: 30 m @ 200°

Ending Point Labeled: 3B

Witness Tree 1: 1.90 m circumference Juniperus virginiana — Distance and Bearing: 0.60 m @ 200°
Tag #: 11

Witness Tree 2: 1.30 m circumference Sabal palmetto — Distance and Bearing: 3.50 m @ 240°
Tag #: 12

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 4 Date: 11/13/03 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect located in dense yaupon thicket towards central part of trail. Transect choosen for Melia azedarach.

(Warm-up)

Location: From stake labeled "4 start" just southeast of Nature Trail Interpretive Station #13, starting point (4A) is 9.3 m @ 74°.

Starting Point Labeled: 4A

Witness Tree 1: 0.47 m circumference Melia azedarach — Distance and Bearing: 1.30 m @ 08°
Tag #: 13

Witness Tree 2: 0.25 m circumference Ilex vomitoria — Distance and Bearing: 1.10 m @ 46°
Tag #: 14

Transect Length and Bearing: 15m @ 44°

Ending Point Labeled: 4B

Witness Tree 1: 1.67 m circumference Juniperus virginiana — Distance and Bearing: 4.31 m @ 325°
Tag #: 15

Witness Tree 2: 0.36 m circumference Ilex vomitoria — Distance and Bearing: 2.74 m @ 80°
Tag #: 16

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 5 Date: 11/13/03 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m	1		1			
5-10 m			2			
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect crosses Nature Trail. 2 new juvenile china-berrys observed in 5-10m range.

Location: 31 m southeast from Station # 12 on Nature Trail, 3 m east from trail.

Starting Point Labeled: 5A
Witness Tree 1: 1.33 m circumference Sabal palmetto — Distance and Bearing: 1.53 m @ 192°
Tag #: 17

Witness Tree 2: 0.21 m circumference Ilex vomitoria — Distance and Bearing: 2.73 m @ 80°
Tag #: 18

Transect Length and Bearing: 25 m @ 280°

Ending Point Labeled: 5B
Witness Tree 1: 1.13 m circumference Sabal palmetto — Distance and Bearing: 0.62 m @ 122°
Tag #: 19

Witness Tree 2: 0.36 m circumference Ilex vomitoria — Distance and Bearing: 1.89 m @ 324°
Tag #: 20

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 6 Date: 11/13/03 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		1
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect crosses old roadbed, potential here for juvenile recruitment

Location: 10.4 m @ 212° from intersection of Nature Trail with John Wesley Memorial Trail.

Starting Point Labeled: 6A
Witness Tree 1: 0.80 m circumference Melia azedarach Distance and Bearing: 1.30 m @ 192°
Tag #: 21

Witness Tree 2: 0.35 m circumference Prunus caroliniana Distance and Bearing: 2.48 m @ 352°
Tag #: 22

Transect Length and Bearing: 30 m @ 272°

Ending Point Labeled: 6B
Witness Tree 1: 1.98 m circumference Juniperus virginiana Distance and Bearing: 4.76 m @ 168°
Tag #: 23

Witness Tree 2: 1.31 m circumference Celtis laevigata Distance and Bearing: 5.18 m @ 344°
Tag #: 24

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 7 Date: 11/13/03 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: None observed

Location: 5.7 m @ 250° from Nature Trail Interpretive Station #5

Starting Point Labeled: 7A
Witness Tree 1: 1.18 m circumference Sabal palmetto
Tag #: 25

Distance and Bearing:3.57 m @ 352°

Witness Tree 2: 1.78 m circumference Ulmus americana
Tag #: 26

Distance and Bearing: 7.36 m @ 320°

Transect Length and Bearing: 20 m @ 270°

Ending Point Labeled: 7B
Witness Tree 1: 1.02 m circumference Sabal palmetto
Tag #: 27

Distance and Bearing: 2.71 m @ 100°

Witness Tree 2: 0.38 m circumference Ilex vomitoria
Tag #: 28

Distance and Bearing: 2.86 m @ 30°

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 8 Date: 11/13/03 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: None observed

Location: 1.6 m @ 150° from Nature Trail Interpretive Sign describing redbay.

Starting Point Labeled: 8A
Witness Tree 1: 1.45 m circumference Juniperus virginiana Distance and Bearing: 1.54 m @ 46°
Tag #: 29

Witness Tree 2: 0.43 m circumference Ilex vomitoria Distance and Bearing: 3.93 m @ 104°
Tag #: 30

Transect Length and Bearing: 20 m @ 192°

Ending Point Labeled: 8B
Witness Tree 1: 1.14 m circumference Sabal palmetto Distance and Bearing: 1.30 m @ 330°
Tag #: 31

Witness Tree 2: 0.88 m circumference Ilex vomitoria Distance and Bearing: 0.83 m @ 118°
Tag #: 32

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 9 Date: 11/ 13/03 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: None observed
Stake 9A missing

Location: 19 m west from Nature Trail Interpretive Sign describing redbay, on south side of trail to picnic area.

Starting Point Labeled: 9A
Witness Tree 1: 0.96 m circumference Sabal palmetto Distance and Bearing: 2..79 m @ 70°
Tag #: 33

Witness Tree 2: 2.51 m circumference Juniperus virginiana Distance and Bearing: 2.68 m @ 140°
Tag #: 34

Transect Length and Bearing: 25 m @ 186°

Ending Point Labeled: 9B
Witness Tree 1: 1.27 m circumference Sabal palmetto Distance and Bearing: 2.60 m @ 104°
Tag #: 35

Witness Tree 2: 1.64 m circumference Juniperus virginiana Distance and Bearing: 4.20 m @ 210°
Tag #: 36

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 10 Date: 11/13/03 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Melia azedarach – mature, with fruit opposite starting point No invasives observed

Location: Begins 36.7 m west along trail to picnic area from transect #9. Stake is 5 m south of trail

Starting Point Labeled: 10A
Witness Tree 1: 0.49 m circumference Ilex vomitoria
Tag #: 37

Distance and Bearing: 2.13 m @ 304°

Witness Tree 2: 1.41 m circumference Sabal palmetto
Tag #: 38

Distance and Bearing: 2..60 m @ 220°

Transect Length and Bearing: 25 m @ 186°

Ending Point Labeled: 10B
Witness Tree 1: 0.44 m circumference Ilex vomitoria
Tag #: 39

Distance and Bearing: 2.50 m @ 252°

Witness Tree 2: 0.90 m circumference Juniperus virginiana
Tag #: 40

Distance and Bearing: 4.87 m @ 180°

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 11 Date: 11/13/03 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: None observed
Stake 11A missing

Location: Starts 31.0 m southwest along trail to picnic area from start of transect #10, 1.9 m south from edge of trail.

Starting Point Labeled: 11A
Witness Tree 1: 0.27 m circumference Ilex vomitoria Distance and Bearing: 2.82 m @ 238°
Tag #: 41

Witness Tree 2: 0.80 m circumference Sabal palmetto Distance and Bearing: 2..68 m @ 162°
Tag #: 42

Transect Length and Bearing: 25 m @ 150°

Ending Point Labeled: 11B
Witness Tree 1: 1.24 m circumference Sabal palmetto Distance and Bearing: 2.40 m @ 326°
Tag #: 43

Witness Tree 2: 1.44 m circumference Juniperus virginiana Distance and Bearing: 2.58 m @ 124°
Tag #: 44

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 12 Date: 11/13/03 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: None observed
Stake 12A missing

Location: Along trail to picnic area, 50.4 m east from where trail crosses dike, 1.7 m south from edge of trail.

Starting Point Labeled: 12A
Witness Tree 1: 2.34 m circumference Juniperus virginiana Distance and Bearing: 2.63 m @ 280°
Tag #: 45

Witness Tree 2: 2.30 m circumference Juniperus virginiana Distance and Bearing: 5.72 m @ 76°
Tag #: 46

Transect Length and Bearing: 25 m @ 196°

Ending Point Labeled: 12B
Witness Tree 1: 0.94m circumference Sabal palmetto Distance and Bearing: 2.38 m @ 192°
Tag #: 47

Witness Tree 2: 0.33 m circumference Ilex vomitoria Distance and Bearing: 1.50 m @ 246°
Tag #: 48

FORT PULASKI

NATIONAL MONUMENT

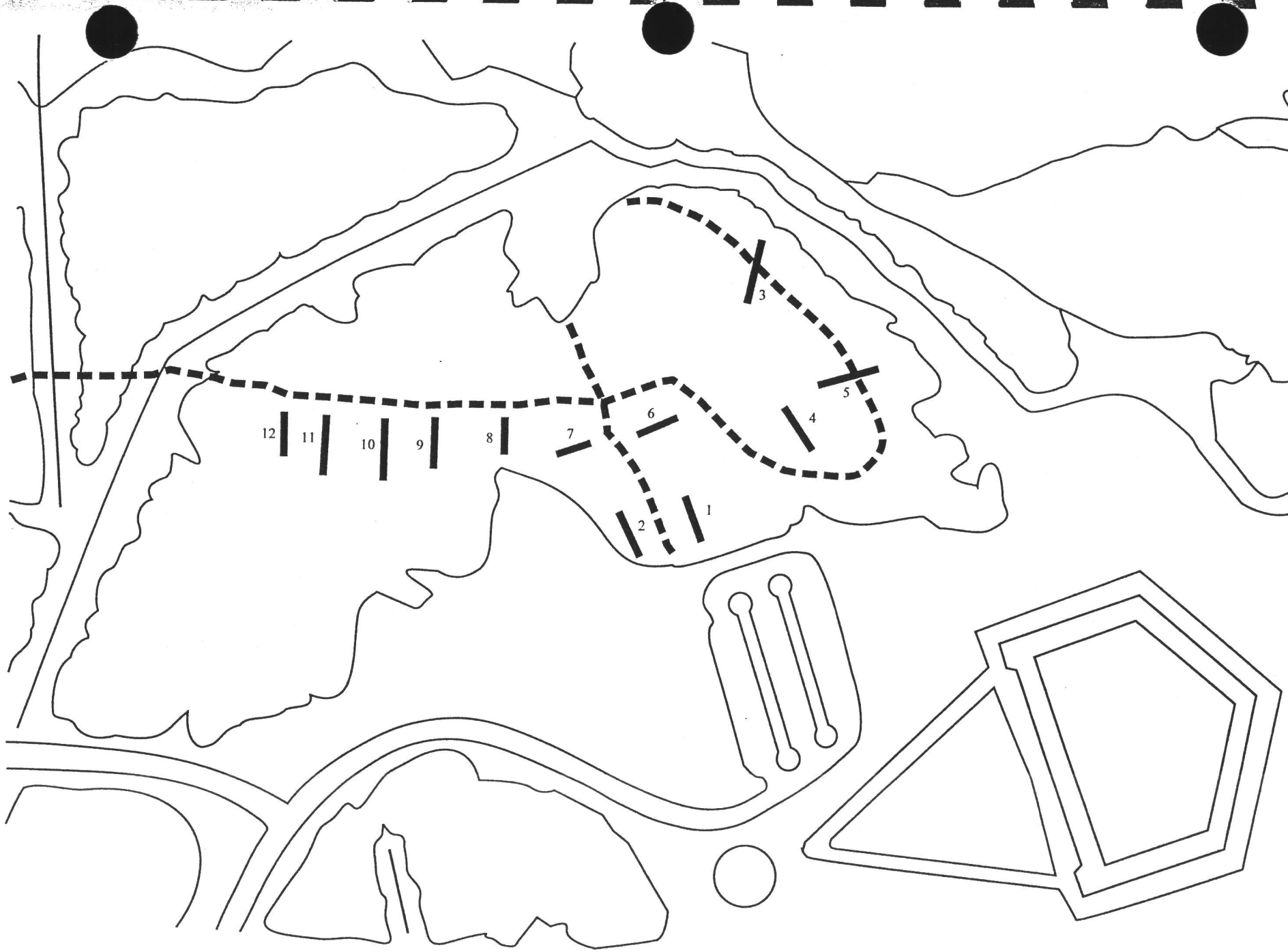
VEGETATION MONITORING

Monitoring Program

An important goal identified for this project by the National Park Service was the consideration and development of a monitoring program for this site. An important criterion specified for this effort was that it be simple enough and limited in scope so that Park Service personnel could continue the program into the future. The Southeast Regional Office of the Nature Conservancy assisted in discussions and development of techniques to use for this effort. Two approaches were decided upon to answer two basic questions regarding vegetation at Fort Pulaski. The first was to determine whether or not exotic tree and shrub species, already established on site, were increasing in abundance and possibly threatening the more pristine communities. The second approach was a simple technique to monitor general changes in vegetation through time. The first approach involved the establishment of permanent presence/absence transects in the more pristine portions of the older maritime forest near central Cockspur Island. The second involved the installation of twelve permanent photopoints scattered throughout the Monument to track gross changes in particular communities and plant species. Although two special concern plants were located during the inventory, only *Forestiera segregata* would seem to be rare. This population appears to be stable and self-sustaining and therefore not worthy of monitoring efforts. A more detailed discussion of the rationale and methods of the two monitoring techniques follow.

Transects for Invasive Non-native Plant Species

The 1981 inventory of vegetation (Southeastern Wildlife Services) identifies two exotic tree species as being a component of portions of the plant communities of Fort Pulaski National Monument. These species are *Sapium sebiferum* (Chinese tallow) and *Melia azederach* (China-berry). At the time of this study these species were regarded as a minor component of the vegetation and not of concern to management. During the current inventory, qualitative analysis would suggest that in some small areas, particularly the southeast portion of Cockspur Island, Chinese tallow might be a dominant canopy species. China-berry also would appear to have significant presence in these low, wetter and primarily shrub dominated areas. Another plant noted during this study was *Ligustrum sinense* (Chinese privet), another invasive species of concern to land managers. The central portion of Cockspur Island, in the vicinity of the nature trail, supports a mature, diverse maritime forest that is largely free from these non-native species. As one goal of this initial monitoring program, it was decided to establish simple presence or absence transects to determine if these species were becoming established and/or increasing over time. To this end twelve permanent transects were established in the vicinity of the nature trail within the dike system on central Cockspur Island. One inch aluminum conduit was used to mark the beginning and endpoints of each transect and marked with permanent tags. Two witness trees were also tagged and data on distance and bearing to each permanent stakes was recorded. Data sheets were prepared for the initial round of work and data on the location, length of transects and exotic species present in the transects were noted. Figure 3 (p. 23) shows a schematic location of these transects. Transect length varied from 15-30 meters (depending on site conditions) and exotic species were recorded within 5 meters on each side of the tape for each 5 meter segment of the transect (each presence/absence cell is 5x10 meters). Data was collected separately for juvenile or adult (fruit producing) individuals. Six transects were selected to include a starting point near the edge of the forest where at least one exotic species would be



Schematic Map of Monitoring Transects — Fort Pulaski National Monument

included in the transects. The remaining six transects were randomly located in the open forest interior and did not include exotic species. The data sheets and location data have been provided to the Park Service in both a hard copy and electronic copy for archival purposes. Although it is not anticipated that it is necessary to collect monitoring data more frequently than every two to three years, for the purpose of making sure that the program is followed through with, it is recommended that this data be collected on an annual basis. The estimated amount of time necessary to sample these monitoring transects is approximately four hours.

Photopoint Establishment and Photomonitoring Techniques

The use of photomonitoring techniques, particularly photopoints, is often suggested as a simple, inexpensive and useful method of detecting gross changes in vegetation over time. For the limited needs of Fort Pulaski National Monument it is felt that the twelve photopoints established during this study should allow the tracking of large changes in the appearance and composition of forested communities and ecotone areas surrounding Cockspur Island. For the convenience of the National Park Service, the techniques were simplified somewhat to make the process quicker and easier to repeat. For example, rather than employ tripods and record camera heights, all views were taken handheld and repeatability and accuracy are probably not affected enough to influence the usefulness of the process. Three photopoints were established at known positions on the fort wall that offer superior vantages of the nearby-forested areas of Cockspur Island. Additional points were established along the perimeter of Cockspur Island to track changes in the ecotonal areas between upland and tidal commentates. Four photopoints were established in relatively new spoil deposit areas to study the changes in successional vegetation for this portion of north central and western Cockspur Island. Many points were located at known positions that are easy to relocate (such as particular positions on the fort wall). For other photopoints, a permanent stake was positioned and marked with numbered tags. Where possible or appropriate witness trees were also tagged and distance and bearing to the photopoints were recorded. Figure 4 (p. 25) shows the approximate location of these points. All data regarding the twelve photopoints including bearing for view, f-stop, shutter speed, lens, film type and ASA were recorded on data sheets provided by the Nature Conservancy and are on file at Fort Pulaski National Monument.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #:_____ Date:_____ Observers:_____

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

INVASIVE NON-NATIVE

MONITORING

2002

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 1 Date: 11/24/02 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Very large tallow at beginning of transect.

Location: Parallel to nature trail, starting at tallow tree on east side of trail only 5 m into woods from visitor center. About 10 m east of trail.

Starting Point Labeled: 1A
Witness Tree 1: 1.53 m circumference Sapium sebiferum Distance and Bearing: 1.22 m @ 52°
Tag #: 1

Witness Tree 2: 0.39 m circumference Myrica cerifera Distance and Bearing: 2.20 m @ 186°
Tag #: 2

Transect Length and Bearing: 20 m @ 12°

Ending Point Labeled: 1B
Witness Tree 1: 1.16 m circumference Sabal palmetto Distance and Bearing: 1.81 m @ 100°
Tag #: 3

Witness Tree 2: 0.41 m circumference Myrica cerifera Distance and Bearing: 3.34 m @ 356°
Tag #: 4

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 2 Date: 11/24/02 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: Starting point on west side of beginning of Nature Trail, about 50' opposite of transect # 1, about 35 ft into the woods.

Starting Point Labeled: 2A

Witness Tree 1: 1.16 m circumference Sapium sebiferum — Distance and Bearing: 2.87 m @ 80°
Tag #: 5

Witness Tree 2: 0.80 m circumference Celtis laevigata — Distance and Bearing: 3.72 m @ 196°
Tag #: 6

Transect Length and Bearing: 15m @ 0°

Ending Point Labeled: 2B

Witness Tree 1: 0.36 m circumference Celtis laevigata — Distance and Bearing: 1.45 m @ 34°
Tag #: 7

Witness Tree 2: 0.68 m circumference Celtis laevigata — Distance and Bearing: 1.90 m @ 310°
Tag #: 8

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 3 Date: 11/24/02 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Juvenile tallow removed. Transect crosses nature trail, total length extended to compensate for maintained area..

Location: Begins 12 m from Nature Trail Interpretive Station #12 @ 20°

Starting Point Labeled: 3A
Witness Tree 1: 0.68 m circumference Sapium sebiferum Distance and Bearing: 0.75 m @ 260°
Tag #: 9

Witness Tree 2: 0.95 m circumference Sabal palmetto Distance and Bearing: 2.52 m @ 110°
Tag #: 10

Transect Length and Bearing: 30 m @ 200°

Ending Point Labeled: 3B
Witness Tree 1: 1.90 m circumference Juniperus virginiana Distance and Bearing: 0.60 m @ 200°
Tag #: 11

Witness Tree 2: 1.30 m circumference Sabal palmetto Distance and Bearing: 3.50 m @ 240°
Tag #: 12

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 4 Date: 11/24/02 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect located in dense yaupon thicket towards central part of trail. Transect choosen for Melia azedarach.

(Warm #5)

Location: From stake labeled "4 start" just southeast of Nature Trail Interpretive Station #13, starting point (4A) is 9.3 m @ 74°.

Starting Point Labeled: 4A
Witness Tree 1: 0.47 m circumference Melia azedarach — Distance and Bearing: 1.30 m @ 08°
Tag #: 13

Witness Tree 2: 0.25 m circumference Ilex vomitoria — Distance and Bearing: 1.10 m @ 46°
Tag #: 14

Transect Length and Bearing: 15m @ 44°

Ending Point Labeled: 4B
Witness Tree 1: 1.67 m circumference Juniperus virginiana — Distance and Bearing: 4.31 m @ 325°
Tag #: 15

Witness Tree 2: 0.36 m circumference Ilex vomitoria — Distance and Bearing: 2.74 m @ 80°
Tag #: 16

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 5 Date: 11/24/02 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m	1					
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect crosses Nature Trail. No juvenile China-berry as reported by Govus in 1998. Possibly removed by maintenance division during trail clearing.

Location: 31 m southeast from Station # 12 on Nature Trail, 3 m east from trail.

Starting Point Labeled: 5A
Witness Tree 1: 1.33 m circumference Sabal palmetto — Distance and Bearing: 1.53 m @ 192°
Tag #: 17

Witness Tree 2: 0.21 m circumference Ilex vomitoria — Distance and Bearing: 2.73 m @ 80°
Tag #: 18

Transect Length and Bearing: 25 m @ 280°

Ending Point Labeled: 5B
Witness Tree 1: 1.13 m circumference Sabal palmetto — Distance and Bearing: 0.62 m @ 122°
Tag #: 19

Witness Tree 2: 0.36 m circumference Ilex vomitoria — Distance and Bearing: 1.89 m @ 324°
Tag #: 20

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 6 Date: 11/24/02 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		1
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect crosses old roadbed, potential here for juvenile recruitment

Location: 10.4 m @ 212° from intersection of Nature Trail with John Wesley Memorial Trail.

Starting Point Labeled: 6A
Witness Tree 1: 0.80 m circumference Melia azedarach Distance and Bearing: 1.30 m @ 192°
Tag #: 21

Witness Tree 2: 0.35 m circumference Prunus caroliniana Distance and Bearing: 2.48 m @ 352°
Tag #: 22

Transect Length and Bearing: 30 m @ 272°

Ending Point Labeled: 6B
Witness Tree 1: 1.98 m circumference Juniperus virginiana Distance and Bearing: 4.76 m @ 168°
Tag #: 23

Witness Tree 2: 1.31 m circumference Celtis laevigata Distance and Bearing: 5.18 m @ 344°
Tag #: 24

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 7 Date: 11/24/02 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: None observed

Location: 5.7 m @ 250° from Nature Trail Interpretive Station #5

Starting Point Labeled: 7A

Witness Tree 1: 1.18 m circumference Sabal palmetto — Distance and Bearing:3.57 m @ 352°

Tag #: 25

Witness Tree 2: 1.78 m circumference Ulmus americana — Distance and Bearing: 7.36 m @ 320°

Tag #: 26

Transect Length and Bearing: 20 m @ 270°

Ending Point Labeled: 7B

Witness Tree 1: 1.02 m circumference Sabal palmetto — Distance and Bearing: 2.71 m @ 100°

Tag #: 27

Witness Tree 2: 0.38 m circumference Ilex vomitoria — Distance and Bearing: 2.86 m @ 30°

Tag #: 28

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 8 Date: 11/24/02 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: None observed

Location: 1.6 m @ 150° from Nature Trail Interpretive Sign describing redbay.

Starting Point Labeled: 8A

Witness Tree 1: 1.45 m circumference Juniperus virginiana — Distance and Bearing: 1.54 m @ 46°
Tag #: 29

Witness Tree 2: 0.43 m circumference Ilex vomitoria — Distance and Bearing: 3.93 m @ 104°
Tag #: 30

Transect Length and Bearing: 20 m @ 192°

Ending Point Labeled: 8B

Witness Tree 1: 1.14 m circumference Sabal palmetto — Distance and Bearing: 1.30 m @ 330°
Tag #: 31

Witness Tree 2: 0.88 m circumference Ilex vomitoria — Distance and Bearing: 0.83 m @ 118°
Tag #: 32

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 9 Date: 11/24/02 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: None observed
Stake 9A missing

Location: 19 m west from Nature Trail Interpretive Sign describing redbay, on south side of trail to picnic area.

Starting Point Labeled: 9A
Witness Tree 1: 0.96 m circumference Sabal palmetto
Tag #: 33
Distance and Bearing: 2..79 m @ 70°

Witness Tree 2: 2.51 m circumference Juniperus virginiana
Tag #: 34
Distance and Bearing: 2.68 m @ 140°

Transect Length and Bearing: 25 m @ 186°

Ending Point Labeled: 9B
Witness Tree 1: 1.27 m circumference Sabal palmetto
Tag #: 35
Distance and Bearing: 2.60 m @ 104°

Witness Tree 2: 1.64 m circumference Juniperus virginiana
Tag #: 36
Distance and Bearing: 4.20 m @ 210°

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 10 Date: 11/24/02 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Melia azedarach – mature, with fruit opposite starting point No invasives observed

Location: Begins 36.7 m west along trail to picnic area from transect #9. Stake is 5 m south of trail

Starting Point Labeled: 10A
Witness Tree 1: 0.49 m circumference Ilex vomitoria Distance and Bearing: 2.13 m @ 304°
Tag #: 37

Witness Tree 2: 1.41 m circumference Sabal palmetto Distance and Bearing: 2..60 m @ 220°
Tag #: 38

Transect Length and Bearing: 25 m @ 186°

Ending Point Labeled: 10B
Witness Tree 1: 0.44 m circumference Ilex vomitoria Distance and Bearing: 2.50 m @ 252°
Tag #: 39

Witness Tree 2: 0.90 m circumference Juniperus virginiana Distance and Bearing: 4.87 m @ 180°
Tag #: 40

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 11 Date: 11/24/02 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: None observed
Stake 11A missing

Location: Starts 31.0 m southwest along trail to picnic area from start of transect #10, 1.9 m south from edge of trail.

Starting Point Labeled: 11A
Witness Tree 1: 0.27 m circumference Ilex vomitoria Distance and Bearing: 2.82 m @ 238°
Tag #: 41

Witness Tree 2: 0.80 m circumference Sabal palmetto Distance and Bearing: 2..68 m @ 162°
Tag #: 42

Transect Length and Bearing: 25 m @ 150°

Ending Point Labeled: 11B
Witness Tree 1: 1.24 m circumference Sabal palmetto Distance and Bearing: 2.40 m @ 326°
Tag #: 43

Witness Tree 2: 1.44 m circumference Juniperus virginiana Distance and Bearing: 2.58 m @ 124°
Tag #: 44

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 12 Date: 11/24/02 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: None observed
Stake 12A missing

Location: Along trail to picnic area, 50.4 m east from where trail crosses dike, 1.7 m south from edge of trail.

Starting Point Labeled: 12A
Witness Tree 1: 2.34 m circumference Juniperus virginiana Distance and Bearing: 2.63 m @ 280°
Tag #: 45

Witness Tree 2: 2.30 m circumference Juniperus virginiana Distance and Bearing: 5.72 m @ 76°
Tag #: 46

Transect Length and Bearing: 25 m @ 196°

Ending Point Labeled: 12B
Witness Tree 1: 0.94m circumference Sabal palmetto Distance and Bearing: 2.38 m @ 192°
Tag #: 47

Witness Tree 2: 0.33 m circumference Ilex vomitoria Distance and Bearing: 1.50 m @ 246°
Tag #: 48

INVASIVE NON-NATIVE

MONITORING

2001

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 1 Date: 11/16/01 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 2 Date: 11/16/01 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 3 Date: 11/16/01 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

No juvenile tallow as reported by Govus in 1998

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 4 Date: 11/16/01 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 5 Date: 11/16/01 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m	1					
5-10 m			2			
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

No juvenile china-berry observed in 0-5m range

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 6 Date: 11/16/01 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 7 Date: 11/16/01 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 8 Date: 11/10/01 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 8 Date: 11/10/01 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed
Stake 9A missing

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 10 Date: 11/10/01 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: None observed

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 11 Date: 11/10/01 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed

Stake 11A missing

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 12 Date: 11/10/01 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: None observed

INVASIVE NON-NATIVE

MONITORING

2000

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 1 Date: 11/5/00 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 2 Date: 11/5/00 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 3 Date: 11/5/00 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

No juvenile tallow reported by Govus in 1998

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 4 Date: 11/5/00 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 5 Date: 11/5/00 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m	1		1			
5-10 m			11			
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Two juvenile China-berry (5-10m) not previously observed

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 6 Date: 11/5/00 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		1
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 7 Date: 11/5/00 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 8 Date: 11/19/00 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 9 Date: 11/19/00 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed.
Stake 9A missing.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 10 Date: 11/19/00 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 11 Date: 11/19/00 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed.
Stake 11A missing.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 12 Date: 11/19/00 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed.
Stake 12A missing.

INVASIVE NON-NATIVE

MONITORING

1999

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 1 Date: 10/24/99 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Tallow adult in this transect is witness tree #1.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 2 Date: 10/24/99 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Tallow adult in this transect is witness tree #5.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 3 Date: 10/24/99 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

3 Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Did not observe juvenile tallow reported by Govus in 1998.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 4 Date: 10/24/99 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Stake 4A flagged with blue due to difficulty locating.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 5 Date: 10/24/99 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m	1					
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Tallow juvenile trimmed by maintenance during nature trail cut-back.

China-berry juvenile not observed, but might also have been trimmed.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 6 Date: 10/24/99 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		1
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 7 Date: 10/24/99 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 8 Date: 10/24/99 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed.
Stake 8A missing tag.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 9 Date: 10/24/99 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed.
Stake 9A missing.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 10 Date: 10/24/99 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 11 Date: 10/24/99 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed.

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 12 Date: 10/24/99 Observers: Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

None observed.

INVASIVE NON-NATIVE

MONITORING

1998

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 1 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Very large tallow at beginning of transect.

Location: Parallel to nature trail, starting at tallow tree on east side of trail only 5 m into woods from visitor center. About 10 m east of trail.

Starting Point Labeled: 1A
Witness Tree 1: 1.53 m circumference Sapium sebiferum — Distance and Bearing: 1.22 m @ 52°
Tag #: 1

Witness Tree 2: 0.39 m circumference Myrica cerifera — Distance and Bearing: 2.20 m @ 186°
Tag #: 2

Transect Length and Bearing: 20 m @ 12°

Ending Point Labeled: 1B
Witness Tree 1: 1.16 m circumference Sabal palmetto — Distance and Bearing: 1.81 m @ 100°
Tag #: 3

Witness Tree 2: 0.41 m circumference Myrica cerifera — Distance and Bearing: 3.34 m @ 356°
Tag #: 4

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 2 Date: 7/13/98 Observers: Tom_Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m		1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: Starting point on west side of beginning of Nature Trail, about 50' opposite of transect # 1, about 35 ft into the woods.

Starting Point Labeled: 2A
Witness Tree 1: 1.16 m circumference Sapium sebiferum — Distance and Bearing: 2.87 m @ 80°
Tag #: 5

Witness Tree 2: 0.80 m circumference Celtis laevigata — Distance and Bearing: 3.72 m @ 196°
Tag #: 6

Transect Length and Bearing: 15m @ 0°

Ending Point Labeled: 2B
Witness Tree 1: 0.36 m circumference Celtis laevigata — Distance and Bearing: 1.45 m @ 34°
Tag #: 7

Witness Tree 2: 0.68 m circumference Celtis laevigata — Distance and Bearing: 1.90 m @ 310°
Tag #: 8

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 3 Date: 7/13/98 Observers: Tom_Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m	1	1				
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Juvenile tallow removed. Transect crosses nature trail, total length extended to compensate for maintained area..

Location: Begins 12 m from Nature Trail Interpretive Station #12 @ 20°

Starting Point Labeled: 3A
Witness Tree 1: 0.68 m circumference Sapium sebiferum Distance and Bearing: 0.75 m @ 260°
Tag #: 9

Witness Tree 2: 0.95 m circumference Sabal palmetto Distance and Bearing: 2.52 m @ 110°
Tag #: 10

Transect Length and Bearing: 30 m @ 200°

Ending Point Labeled: 3B
Witness Tree 1: 1.90 m circumference Juniperus virginiana Distance and Bearing: 0.60 m @ 200°
Tag #: 11

Witness Tree 2: 1.30 m circumference Sabal palmetto Distance and Bearing: 3.50 m @ 240°
Tag #: 12

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 4 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect located in dense yaupon thicket towards central part of trail. Transect choosen for Melia azedarach.

(Waxmyrtle)

Location: From stake labeled "4 start" just southeast of Nature Trail Interpretive Station #13, starting point (4A) is 9.3 m @ 74°.

Starting Point Labeled: 4A

Witness Tree 1: 0.47 m circumference Melia azedarach — Distance and Bearing: 1.30 m @ 08°
Tag #: 13

Witness Tree 2: 0.25 m circumference Ilex vomitoria — Distance and Bearing: 1.10 m @ 46°
Tag #: 14

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 5 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m	1		1			

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 4 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect located in dense yaupon thicket towards central part of trail. Transect choosen for Melia azedarach.

(Walmart)

Location: From stake labeled "4 start" just southeast of Nature Trail Interpretive Station #13, starting point (4A) is 9.3 m @ 74°.

Starting Point Labeled: 4A
Witness Tree 1: 0.47 m circumference Melia azedarach — Distance and Bearing: 1.30 m @ 08°
Tag #: 13

Witness Tree 2: 0.25 m circumference Ilex vomitoria — Distance and Bearing: 1.10 m @ 46°
Tag #: 14

Transect Length and Bearing: 15m @ 44°

Ending Point Labeled: 4B
Witness Tree 1: 1.67 m circumference Juniperus virginiana — Distance and Bearing: 4.31 m @ 325°
Tag #: 15

Witness Tree 2: 0.36 m circumference Ilex vomitoria — Distance and Bearing: 2.74 m @ 80°
Tag #: 16

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 5 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m	1		1			
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect crosses Nature Trail.

Location: 31 m southeast from Station # 12 on Nature Trail, 3 m east from trail.

Starting Point Labeled: 5A
Witness Tree 1: 1.33 m circumference Sabal palmetto
Tag #: 17

Distance and Bearing: 1.53 m @ 192°

Witness Tree 2: 0.21 m circumference Ilex vomitoria
Tag #: 18

Distance and Bearing: 2.73 m @ 80°

Transect Length and Bearing: 25 m @ 280°

Ending Point Labeled: 5B
Witness Tree 1: 1.13 m circumference Sabal palmetto
Tag #: 19

Distance and Bearing: 0.62 m @ 122°

Witness Tree 2: 0.36 m circumference Ilex vomitoria
Tag #: 20

Distance and Bearing: 1.89 m @ 324°

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 6 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m				1		1
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Transect crosses old roadbed, potential here for juvenile recruitment

Location: 10.4 m @ 212° from intersection of Nature Trail with John Wesley Memorial Trail.

Starting Point Labeled: 6A
Witness Tree 1: 0.80 m circumference Melia azedarach Distance and Bearing: 1.30 m @ 192°
Tag #: 21

Witness Tree 2: 0.35 m circumference Prunus caroliniana Distance and Bearing: 2.48 m @ 352°
Tag #: 22

Transect Length and Bearing: 30 m @ 272°

Ending Point Labeled: 6B
Witness Tree 1: 1.98 m circumference Juniperus virginiana Distance and Bearing: 4.76 m @ 168°
Tag #: 23

Witness Tree 2: 1.31 m circumference Celtis laevigata Distance and Bearing: 5.18 m @ 344°
Tag #: 24

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 7 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: 5.7 m @ 250° from Nature Trail Interpretive Station #5

Starting Point Labeled: 7A
Witness Tree 1: 1.18 m circumference Sabal palmetto
Tag #: 25
Distance and Bearing:3.57 m @ 352°

Witness Tree 2: 1.78 m circumference Ulmus americana
Tag #: 26
Distance and Bearing: 7.36 m @ 320°

Transect Length and Bearing: 20 m @ 270°

Ending Point Labeled: 7B
Witness Tree 1: 1.02 m circumference Sabal palmetto
Tag #: 27
Distance and Bearing: 2.71 m @ 100°

Witness Tree 2: 0.38 m circumference Ilex vomitoria
Tag #: 28
Distance and Bearing: 2.86 m @ 30°

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 8 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: 1.6 m @ 150° from Nature Trail Interpretive Sign describing redbay.

Starting Point Labeled: 8A

Witness Tree 1: 1.45 m circumference Juniperus virginiana Distance and Bearing: 1.54 m @ 46°
Tag #: 29

Witness Tree 2: 0.43 m circumference Ilex vomitoria Distance and Bearing: 3.93 m @ 104°
Tag #: 30

Transect Length and Bearing: 20 m @ 192°

Ending Point Labeled: 8B

Witness Tree 1: 1.14 m circumference Sabal palmetto Distance and Bearing: 1.30 m @ 330°
Tag #: 31

Witness Tree 2: 0.88 m circumference Ilex vomitoria Distance and Bearing: 0.83 m @ 118°
Tag #: 32

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 9 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: 19 m west from Nature Trail Interpretive Sign describing redbay, on south side of trail to picnic area.

Starting Point Labeled: 9A
Witness Tree 1: 0.96 m circumference Sabal palmetto Distance and Bearing: 2..79 m @ 70°
Tag #: 33

Witness Tree 2: 2.51 m circumference Juniperus virginiana Distance and Bearing: 2.68 m @ 140°
Tag #: 34

Transect Length and Bearing: 25 m @ 186°

Ending Point Labeled: 9B
Witness Tree 1: 1.27 m circumference Sabal palmetto Distance and Bearing: 2.60 m @ 104°
Tag #: 35

Witness Tree 2: 1.64 m circumference Juniperus virginiana Distance and Bearing: 4.20 m @ 210°
Tag #: 36

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 10 Date: 7/13/98 Observers: Tom Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES: Melia azedarach – mature, with fruit opposite starting point

Location: Begins 36.7 m west along trail to picnic area from transect #9. Stake is 5 m south of trail

Starting Point Labeled: 10A
Witness Tree 1: 0.49 m circumference Ilex vomitoria — Distance and Bearing: 2.13 m @ 304°
Tag #: 37

Witness Tree 2: 1.41 m circumference Sabal palmetto — Distance and Bearing: 2..60 m @ 220°
Tag #: 38

Transect Length and Bearing: 25 m @ 186°

Ending Point Labeled: 10B
Witness Tree 1: 0.44 m circumference Ilex vomitoria — Distance and Bearing: 2.50 m @ 252°
Tag #: 39

Witness Tree 2: 0.90 m circumference Juniperus virginiana — Distance and Bearing: 4.87 m @ 180°
Tag #: 40

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 11 Date: 7/13/98 Observers: Tom_Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: Starts 31.0 m southwest along trail to picnic area from start of transect #10, 1.9 m south from edge of trail.

Starting Point Labeled: 11A
Witness Tree 1: 0.27 m circumference Ilex vomitoria — Distance and Bearing: 2.82 m @ 238°
Tag #: 41

Witness Tree 2: 0.80 m circumference Sabal palmetto — Distance and Bearing: 2..68 m @ 162°
Tag #: 42

Transect Length and Bearing: 25 m @ 150°

Ending Point Labeled: 11B
Witness Tree 1: 1.24 m circumference Sabal palmetto — Distance and Bearing: 2.40 m @ 326°
Tag #: 43

Witness Tree 2: 1.44 m circumference Juniperus virginiana — Distance and Bearing: 2.58 m @ 124°
Tag #: 44

Monitoring of Invasive Non-natives at Ft. Pulaski

Transect #: 12 Date: 7/13/98 Observers: Tom_Govus, Cliff Kevill

Location (circle one): Nature trail/forest edge OR Forest interior

Check if present

Location	Tallow Juvenile	Tallow Adult	China-berry J	China-berry A	Privet J	Privet A
0-5 m						
5-10 m						
10-15 m						
15-20 m						
20-25 m						
25-30 m						

NOTES:

Location: Along trail to picnic area, 50.4 m east from where trail crosses dike, 1.7 m south from edge of trail.

Starting Point Labeled: 12A
Witness Tree 1: 2.34 m circumference Juniperus virginiana Distance and Bearing: 2.63 m @ 280°
Tag #: 45

Witness Tree 2: 2.30 m circumference Juniperus virginiana Distance and Bearing: 5.72 m @ 76°
Tag #: 46

Transect Length and Bearing: 25 m @ 196°

Ending Point Labeled: 12B
Witness Tree 1: 0.94m circumference Sabal palmetto Distance and Bearing: 2.38 m @ 192°
Tag #: 47

Witness Tree 2: 0.33 m circumference Ilex vomitoria Distance and Bearing: 1.50 m @ 246°
Tag #: 48