Deepwater Horizon/Mississippi Canyon 252 Oil Spill Plan for Assessing Recovery of Submerged Aquatic Vegetation Propeller Scars at Gulf Islands National Seashore

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Each party reserves its right to produce its own independent interpretation and analysis of any data collected pursuant to this work plan.

This plan will be implemented consistent with existing trustee regulations and policies. All applicable state and federal permits must be obtained prior to conducting work.

All materials associated with the collection or analysis of samples under these protocols or pursuant to any approved work plan, including any remains of samples and, including remains of extracts created during or remaining after analytical testing, must be preserved and disposed of in accordance with the preservation and disposal requirements set forth in Pretrial Orders ("PTOs") # 1, # 30, #35, # 37, #39

and #43 and any other applicable Court Orders governing tangible items that are or may be issued in MDL No. 2179 IN RE: Oil Spill by the Oil Rig "DEEPWATER HORIZON" (E.D. LA 2010). Destructive analytical testing of oil, dispersant or sediment samples may only be conducted in accordance with PTO # 37, paragraph 11, and PTO # 39, paragraph 11. Circumstances and procedures governing preservation and disposal of sample materials by the trustees must be set forth in a written protocol that is approved by the state or federal agency whose employees or contractors are in possession or control of such materials and must comply with the provisions of PTOs # 1, # 30, # 35, 37, #39 and #43.

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APPROVED:

Department of the Interior Trustee Representative	Date
Kevin D Reynolds	7/23/2012
BP Representative	7/25/2012 Date

Introduction

This document presents a plan to monitor submerged aquatic vegetation (SAV) prop scars within the boundaries of Gulf Islands National Seashore (GUIS) that were identified by the Trustees and BP as caused by response actions to the Deepwater Horizon/Mississippi Canyon 252 (MC 252) Oil Spill. The physical injuries to SAV in Gulf Islands National Seashore include propeller (prop) scars and blowholes. NOAA (on behalf of the Trustees) and BP negotiated an Emergency Restoration Plan for Response Impacts to Seagrasses in the Northern Gulf of Mexico (NOAA 2011b).

During the initial efforts of the Emergency Restoration Plan, 52 prop scars and 5 blowholes were identified by the Trustees within the boundaries of GUIS as potential response injuries (Appendix A). Following mutually agreed upon protocols (NOAA 2011a), 7 of these prop scars and 5 of the blowholes were identified by the Trustees as injuries from response. Of these 12 scars/blowholes, 9 were determined by the Trustees to be no-action scars/blowholes. This assessment plan proposes to monitor these 9 no-action scars to ascertain whether recovery is occurring. Any potential recovery will rely on natural sedimentation and re-colonization of seagrasses. Lack of adequate progress via natural recovery, based on comparisons with appropriate reference areas for each site, may merit consideration of active restoration at the 9 injured sites.

Project Description

The purpose of the Project is to monitor each seagrass scar within GUIS that was identified by the Trustees as a response injury. This will help ensure that natural recovery within the Gulf Islands National Seashore occurs. This project will monitor all 9 no-action scars identified in GUIS. All monitoring will follow the Trustee/BP agreed upon protocols described in the signed Emergency Restoration Plan for Response Impacts to Seagrasses in the Northern Gulf of Mexico" (NOAA 2011b) and excerpted below where applicable to the monitoring of no-action scars.

Monitoring

Monitoring of the no-action sea grass scars is necessary to permit the detection of, and if warranted, response to, significant changes in seagrass recovery rates.

Monitoring Parameters and Methodology

The 9 no-action injury sites will be monitored to assess natural recolonization to ensure that no corrective actions (e.g., transplanting) will be needed in these areas. The execution and application of the monitoring effort is adapted from "Guidelines for the Conservation and Restoration of Seagrasses in the United States and Adjacent Waters" (Fonseca et al. 1998). Percent cover and shoot density of seagrass will be observed and/or measured at each of the GUIS no-action sites.

Methodologies are provided in Table 1 and include use of similar methodologies as in reconnaissance efforts (e.g., Braun-Blanquet for percent cover). Local reference sites near the injured areas will be assessed to determine if baseline conditions (that cannot be controlled nor affected through a mid-course correction), such as poor water quality or disease might affect natural re-colonization of the sites. Disturbances affecting the performance of recovery of the injured sites that also affect surrounding uninjured seagrass beds to a similar degree will be considered baseline events for which BP will not be held responsible. Furthermore, it will be assumed that conditions within reference sites adjacent to prop scars represent the condition of injured areas at baseline, which makes them an appropriate benchmark for determining progress towards recovery. Monitoring will include documentation of percent cover by Braun- Blanquet quadrat analysis and shoot density.

Video transects will be performed to provide an unambiguous record of the status of the no-action site restoration. This methodology should be used to confirm the Braun-Blanquet quadrat analysis and is particularly valuable to parties not familiar with

seagrass systems and interpretation of statistical data.

Performance Criteria and Corrective Action

Monitoring data will be used to determine if natural recovery is successful for restoring injured sites. If not, these data will be used to plan and execute mid-course corrective actions, which may include active restoration or extension of natural recovery monitoring.

Percent Cover (Braun-Blanquet)

Percent cover measured by the Braun-Blanquet method will be a primary performance metric used to determine the success of natural recovery in GUIS no-action scars. Natural recovery will be deemed successful for individual no-action scars when the mean percent cover within the scar equals or exceeds the lower bound of the 95% confidence interval of percent cover within the adjacent reference area.

Shoot Density

As with percent cover, shoot density measurements will be collected during monitoring. Natural recovery will be deemed successful for individual no-action scars when the mean shoot density within the scar equals or exceeds the lower bound of the 95% confidence interval of shoot density within the adjacent reference area.

TABLE 1

	Monitoring Parameter	Methodology
1	Percent cover of no-action scar	Ten* random Braun-Blanquet percent cover measurements within 0.04m^2 quadrat (20 cm sides) taken within 1-3 meters laterally of the injury to determine reference percent cover of surrounding SAV and 10* random Braun Blanquet quadrat measurements taken within the injured areas.
2	Shoot Density of no-action scar	Ten* random shoot count measurements within a 0.01m2 quadrat (10 cm sides) within scar/blowhole and 10* comparable counts within reference areas 1-3 meters laterally of the injured site.

Monitoring Scheduling

Seagrasses in the northern GOM exhibit a distinct growing period from spring through early fall followed by an over-winter dormancy period. Prior to entering dormancy, seagrasses senesce or shed their leaves. Monitoring should not occur after the onset of senescence or during the winter months as results obtained during this period will not accurately represent the actual status of restored seagrasses. Instead, monitoring should occur during the active growing season.

During 2012, monitoring events will be performed between July 15th and August 3rd and also between October 15th and November 15th.

No action sites will be evaluated to verify that natural recovery is actually occurring. If, based on such assessment, technical representatives of the Trustees and BP concur that implementing one or more of the restoration actions outlined in the Emergency Restoration plan ((NOAA 2011b) would be beneficial, restoration treatment(s) will be developed and implemented, subject to BP review, in a timely manner subject to seasonal considerations.

In the event that adequate natural recovery has not been demonstrated based on the performance criteria defined above, or offsetting compensatory restoration has not been executed or planned, the parties will enter into an agreement to conduct monitoring during the 2013 northern GOM SAV growing season.

Data Sharing

Copies of all data collected in accordance with this Plan, including raw data, field sheets, and field notes, will be provided to BP and its representatives within one month of completion of field work of each monitoring period, i.e., by September 3 for the July 15 to August 3 monitoring, and by December 2 for the October 15 to November 2 monitoring. Non-analytical data includes field sheets, photos, photologger forms and GPS files.

BP or its representative will be provided an opportunity to observe all sampling events occurring after the Plan is signed, subject to logistical feasibility and permit requirements. BP or its representative will be notified no less than 72 hours prior to each sampling event, and the Trustees will make all reasonable efforts to accommodate a designated observer.

Cost Estimate

The total field cost for this 2012 Assessment Plan is $19,769. The Parties acknowledge that this budget is an estimate, and that actual costs may prove to be higher. BP's commitment to fund the costs of this work includes any additional reasonable costs within the scope of this approved work plan that may arise. The Trustees will make a good faith effort to notify BP in advance of any such increased costs.

Reservations

Except as explicitly set forth herein, nothing in this plan shall limit, restrict, or derogate any rights, recourse, or remedy that the Parties may have.

BP reserves the right to challenge the Trustees' determination that SAV injury is a result of response activity in relation to the Deepwater Horizon spill.

The Parties agree that references to literature cited herein are for background and context only and do not constitute endorsement of, or agreement with, the methods, analysis, or conclusions of any study cited.

Personnel						
Qty of Position	**Position Description**		**Unit of Time**	**Qty**	**Cost Per Unit of Time**	**Total Project Budget**
	1	PI (PhD) - 2 weeks	week	2	$0	$0
	1	Project Manager (MS)	month	1.5	$4,755	$7,132
	1	Technician	month	1.25	$2,721	$3,401
					Subtotal Salaries	*$10,533*
Benefits				**% Compensation**		
	1	PI (PhD) - 2 weeks				$0
	1	Staff (MS)- 1.5 months		37.36%		$2,665
	1	Technician - 1.5 months		44.88%		$1,526
					Subtotal Benefits	*$4,191*
		Supplies (miscellaneous)				$150
Travel						
		Vehicle	miles	1244	0.555	$690
		Ferry pass	trips	4	$15	$60
		Vessel	trip	6	200	$1,200
Direct Charges						$16,824
CESU Allowed Indirect Charges (17.5%)						$2,944
TOTAL BUDGET						$19,769

References

Fonseca, M.S., Kenworthy W.J., Thayer G.W. 1998. "Guidelines for the Conservation and Restoration of Seagrasses in the United States and Adjacent Waters". NOAA Coastal Ocean Program Decision Analysis Series No. 12. NOAA Coastal Ocean Office, Silver Spring, MD. 222pp.

National Oceanic and Atmospheric Administration (NOAA). 2011a. "Mississippi Canyon 252/Deepwater Horizon Scope of Work for Emergency Restoration Project: Response Impacts to Seagrass within Alabama, Florida, Louisiana, and Mississippi Coastal Waters".

http://www.doi.gov/deepwaterhorizon/adminrecord/Emergency-Restoration.cfm

National Oceanic and Atmospheric Administration (NOAA). 2011b. "Mississippi Canyon 252/Deepwater Horizon Emergency Restoration Plan for Response Impacts to Seagrasses in the Northern Gulf of Mexico".

Schwenning, L.M. December 2001. Seagrass management plan for Big Lagoon and Santa Rosa Sound. Florida Department of Environmental Protection (FDEP). Pensacola, FL. Available at http://www.epa.gov/gmpo/habitat/seagrassmanagementplan.pdf

Appendix A

Table: Information on
Considered Prop Scars/Blowholes at GUIS

GUIS SAV Scar Monitoring - 2012

Site ID	Type	Location	Restoration Action	Length (m)	Area (m2)	Longitude (centroid)	Latitude (centroid)
BIGLA GOON_I_BH1	Blowhole	Big Lagoon	No Action		2.0	-87.334775	30.319791
BIGLA GOON_F_BH2	Blowhole	Big Lagoon	No Action		0.5	-87.334791	30.319794
BIGLA GOON_I_SCAR1	Scar	Big Lagoon	No Action	33.4		-87.334706	30.319723
BIGLA GOON_I_SCAR2	Scar	Big Lagoon	No Action	8.2		-87.334891	30.319625
BIGLA GOON_WPT009_H1	Blowhole	Big Lagoon	Planned Restoration Fill and plant		62.1	-87.327678	30.325079
BIGLA GOON_WPT009_M	Blowhole	Big Lagoon	No Action		22.6	-87.327747	30.325068
CHOCTAW_F_SCAR1	Scar	Choctaw hatchee Bay	Planned Restoration Fill and Plant	11.3		-86.523300	30.394431
CHOCTAW_F_SCAR2	Scar	Choctaw hatchee Bay	No Action	131.8		-86.523668	30.394710
CHOCTAW_F_SCAR3	Scar	Choctaw hatchee Bay	No Action	75.7		-86.524566	30.395133
NPS_SANTAROSA_BH1	Blowhole	Santa Rosa Isl					
and	No Action	27.7	-87.236447		30.321587		
NPS_SANTAROSA_SCAR1	Scar	Santa Rosa Island	No Action	110.8		-87.229333	30.323854
SANTAROSA_ _SCAR2	Scar	Santa Rosa Sound	Planned Restoration Plant	593.7		-87.038729	30.357767
SANTAROSA_ _SCAR1	Scar	Santa Rosa Sound		120.4		-87.038258	30.356588
NPS Big Lagoon East	Scar	Perdido Key		17.2		-87.328100	30.324500
NPS Big Lagoon West	Scar	Perdido Key		49.8		-87.418541	30.306802
NPS Big Lagoon West	Scar	Perdido Key		89.0		-87.418204	30.305884
NPS Santa Rosa Island	Scar	Santa Rosa Island		110.8		-87.229300	30.323900
Big Lagoon E	NOAA Recon Site	Big Lagoon			47,804.6	-87.360606	30.317340
Big Lagoon G	NOAA Recon Site	Big Lagoon			58,431.9	-87.350045	30.319363
Big Lagoon H	NOAA Recon Site	Big Lagoon			14,354.8	-87.339317	30.318155
Big Lagoon I	NOAA Recon Site	Big Lagoon			12,683.7	-87.334686	30.320004
Big Lagoon J	NOAA Recon Site	Big Lagoon			88,073.5	-87.328024	30.321107
Choctaw hatchee Bay F	NOAA Recon Site	Choctaw hatchee Bay			68,068.8	-86.522079	30.395066
Horn Island A	NOAA Recon Site	Horn Island			437,200.8	-88.764176	30.244353
Horn Island B	NOAA Recon Site	Horn Island			58,015.5	-88.731143	30.247785
Horn Island C	NOAA Recon Site	Horn Island			9,327.7	-88.727721	30.248064
Horn Island D	NOAA Recon Site	Horn Island			13,645.9	-88.723349	30.250452
Horn Island E	NOAA Recon Site	Horn Island			10,903.8	-88.722167	30.251927
Horn Island F	NOAA Recon Site	Horn Island			19,453.3	-88.718320	30.252842
Horn Island G	NOAA Recon Site	Horn Island			117,241.9	-88.710470	30.253308
Horn Island H	NOAA Recon Site	Horn Island			11,626.0	-88.704548	30.250984
Horn Island I	NOAA Recon Site	Horn Island			13,052.7	-88.702161	30.250289
Horn Island J	NOAA Recon Site	Horn Island			19,062.5	-88.691778	30.245669
Horn Island K	NOAA Recon Site	Horn Island			26,201.0	-88.689773	30.245018
Horn Island L	NOAA Recon Site	Horn Island			32,744.0	-88.680369	30.243587
Horn Island M	NOAA Recon Site	Horn Island			34,428.8	-88.647972	30.235271
Horn Island N	NOAA Recon Site	Horn Island			83,331.9	-88.641279	30.232603
Horn Island O	NOAA Recon Site	Horn Island			60,941.3	-88.609838	30.228710
Horn Island P	NOAA Recon Site	Horn Island			36,965.1	-88.602517	30.227504
Horn Island Q	NOAA Recon Site	Horn Island			38,230.7	-88.734983	30.247322
Pensacola A	NOAA Recon Site	Pensacola Bay			16,501.4	-87.272700	30.326150
Pensacola B	NOAA Recon Site	Pensacola Bay			21,729.9	-87.260716	30.321678
Pensacola C	NOAA Recon Site	Pensacola Bay			9,499.0	-87.230219	30.322851
Pensacola D	NOAA Recon Site	Pensacola Bay			33,408.7	-87.224545	30.322985
Pensacola E	NOAA Recon Site	Pensacola Bay			107,084.3	-87.157799	30.336398
Pensacola F	NOAA Recon Site	Pensacola Bay			37,483.1	-87.151826	30.338153
Pensacola G	NOAA Recon Site	Pensacola Bay			280,368.4	-87.047939	30.358640
Pensacola H	NOAA Recon Site	Pensacola Bay			141,454.6	-87.041656	30.359124
Pensacola I	NOAA Recon Site	Pensacola Bay			58,548.7	-87.118332	30.367101

Pensacola J	NOAA Recon Site Pensacola Bay	196,252.6	.87.137612	30.360402
Pensacola Z	NOAA Recon Site Pensacola Bay	24,251.8	.87.078205	30.351151
Petit Bois A	NOAA Recon Site Petit Bois Island	84,920.3	.88.477752	30.207540
Petit Bois B	NOAA Recon Site Petit Bois Island	9,084.7	.88.445880	30.201869
Petit Bois C	NOAA Recon Site Petit Bois Island	13,990.8	.88.434106	30.208135
Petit Bois D	NOAA Recon Site Petit Bois Island	30,052.2	.88.420364	30.210351
Petit Bois E	NOAA Recon Site Petit Bois Island	518.5	.88.416207	30.209084
Petit Bois F	NOAA Recon Site Petit Bois Island	3,194.0	.88.412874	30.209679

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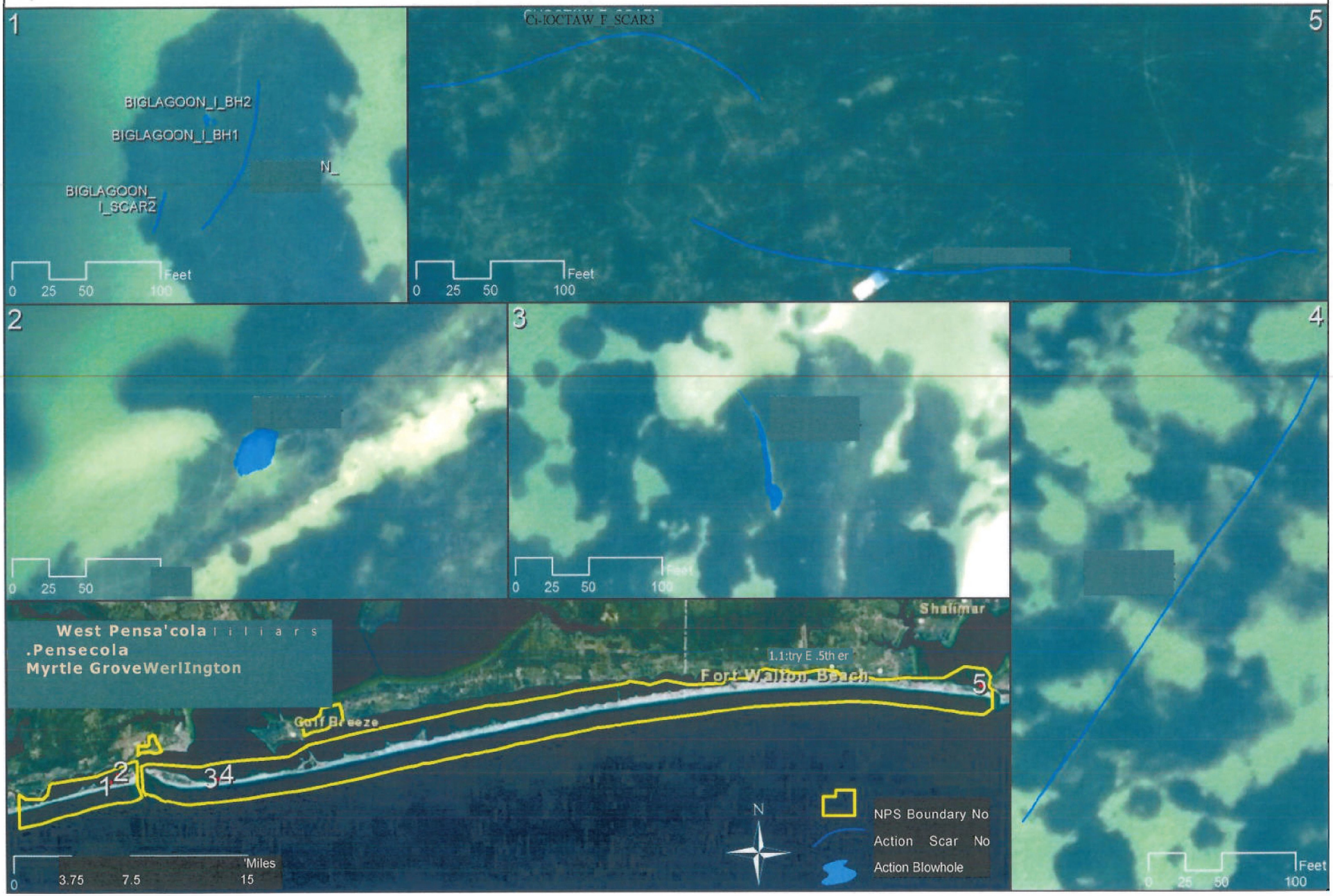
Appendix B

Maps: No Action Locations

Gulf Islands National Seashore
Florida, Mississippi

National Park Service
U.S. Department of the Interior

No Action Locations



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