

**USACE Hopper Dredging Interactions with Sea Turtles:
Fiscal Year 2008 Annual Summary Report
For the Northern Gulf of Mexico Region**

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FINAL REPORT



BACKGROUND

This report summarizes data collected for dredging interactions with sea turtles during USACE hopper dredging operations throughout the northern Gulf of Mexico in Fiscal Year (FY) 2008 (1 October 2007 through 31 September 2008). Data were collected by contracted observer companies as part of the Endangered Species Observer Program administered by the USACE Districts Galveston, New Orleans, Mobile, and Jacksonville as specified and mandated by the Gulf of Mexico Regional Biological Opinion (GRBO) (issued by the Southeast Region National Marine Fisheries Service (NMFS) on 19 November 2003 and revised 24 June 2005 (Revision 1) and 9 January 2007 (Revision 2) and the USACE GRBO Management Protocol (UGMP) (issued by the USACE South Atlantic Division on 29 December 2006). These data are for hopper (trailing-suction style) dredging projects only and do not include non-hopper (i.e. clamshell bucket, cutterhead) dredging projects. Non-hopper dredges are not monitored for sea turtle entrainments since the mechanical operation of these dredges has been identified as having minimal or no risk to sea turtles (GRBO). Hopper dredges were used instead of non-hopper dredges for the projects presented in this report due to factors related to crew/vessel safety, sea and weather conditions, project configurations, and productivity costs. This report fulfills the reporting requirements, as specified in both the GRBO and the UGMP, for an annual regional summary of hopper dredging-related incidental takes and trawling-related captures/relocations of sea turtles.

METHODS AND DATA SOURCES

Appendix A provides a map designating the 9 locations (Houston & Galveston projects shown together) for the 11 USACE hopper dredging projects in the northern Gulf of Mexico during FY 2008 by USACE District and geographic subregion. The USACE Districts Galveston, New Orleans, Mobile, and Jacksonville were responsible for implementing these hopper dredging projects and for complying with the environmental requirements designated by the GRBO and the UGMP (i.e., use of deflectors, 100% observer coverage, relocation trawling). Due to potential differences in habitat use by sea turtles and differences in dredging environments, the northern Gulf of Mexico region was divided into 4 subregions (West Gulf (WG), Northwest Gulf (NWG), Northeast Gulf (NEG), and East Gulf (EG)) for some data presented in this report. These subregions were defined using the 29° 00" latitude and Mississippi River outlet as boundaries. These subregions are consistent with those presented in Dickerson et al. 2007 to allow continuity in data comparisons.

Data summarized in this report were compiled from individual project summary reports and annual hopper dredging reports on sea turtle interactions for FY 2008 submitted by the USACE Districts Galveston, New Orleans, Mobile, and Jacksonville as well as the Endangered Species Observer Reports submitted by each of the contracted observer companies. Reports are electronically linked within the reference section of this document. These reports, along with individual data profiles for each documented sea turtle incidental take, protocols for mitigation efforts and data collection, and links to the GRBO and UGMP are archived for reference on the USACE Sea Turtle Data Warehouse website: (<http://el.erdc.usace.army.mil/seaturtles/>).

RESULTS

During FY 2008, 11 hopper dredging projects (10 civil works (CW) channel/harbor maintenance and 1 regulatory (R) beach renourishment) were conducted along the northern Gulf of Mexico with a total of 6 (5 CW; 1 R) dredging-related incidental takes of sea turtles, and 17 (CW) trawler relocated sea turtles. There were no regulatory trawling projects in FY 2008. All summaries for these data are provided in the following appendices.

REFERENCES AND RESOURCES

USACE Sea Turtle Database Warehouse, (<http://el.erdc.usace.army.mil/seaturtles/>).

Dickerson, D., C. Theriot, M. Wolters, C. Slay, T. Bargo, W. Parks. (2007). "[Effectiveness of relocation trawling during hopper dredging for reducing incidental take of sea turtles,](#)" *In: Proceedings of the World Dredging Congress XVIII, USACE ERDC Research Initiatives*. Central Dredging Association, 27 May-1 June 2007, Lake Buena Vista, Florida.

Dickerson, D. D., M. S. Wolters, C. T. Theriot, C. Slay. (2005). "[Dredging impacts on sea turtles in the Southeastern USA: A historical review of protection,](#)" *In: Proceedings of the World Dredging Conference XVII, Dredging in a Sensitive Environment*. Central Dredging Association, 27 September-1 October 2004, Hamburg, Germany.

[Gulf Regional Biological Opinion \(GRBO\). 2003.](#)

[Gulf Regional Biological Opinion \(GRBO\). 2005 revision.](#)

[Gulf Regional Biological Opinion \(GRBO\). 2007 revision.](#)

[USACE Gulf GRBO Management Protocol.](#)

FY 2008 USACE District Annual Reports for Sea Turtle Monitoring during Maintenance Dredging/Beach Nourishment Projects along the Gulf of Mexico Coast:
(Archived at: <http://el.erdc.usace.army.mil/seaturtles/>)

USACE Galveston District. FY 2008. [Annual Sea Turtle Monitoring Report](#)

USACE New Orleans District. FY 2008. [Annual Sea Turtle Monitoring Report](#)

USACE Mobile District. FY 2008. [Annual Sea Turtle Monitoring Report](#)

FY 2008 Project Sea Turtle/Dredging Data Submitted by Endangered Species Observer Companies and USACE Districts (Archived at: <http://el.erdc.usace.army.mil/seaturtles/>)

[USACE Galveston District \(FY 2008\)](#)

[Brazos Island Harbor](#) (East Coast Observers, Inc.)

[Brazos Island Harbor](#) (Coastwise Consulting, Inc.)

[Freeport Harbor \(Entrance & Jetty Channels\)](#) (East Coast Observers, Inc.)

[Houston Ship Channel](#) (Coastwise Consulting, Inc.)

[Galveston Harbor & Channel](#) (Coastwise Consulting, Inc.)

[Sabine-Neches Waterway \(Sabine Pass Outer Bar Channel\)](#) (Coastwise Consulting, Inc.)

[USACE New Orleans District \(FY 2008\)](#)

[Calcasieu River Bar Channel](#) (Coastwise Consulting, Inc.)

USACE Mobile District (FY 2008)

MobileHarbor (Bay Channel) (Coastwise Consulting, Inc.)

Pascagoula Harbor (Horn Island Pass) (Coastwise Consulting, Inc.)

USACE Jacksonville District (FY 2008)

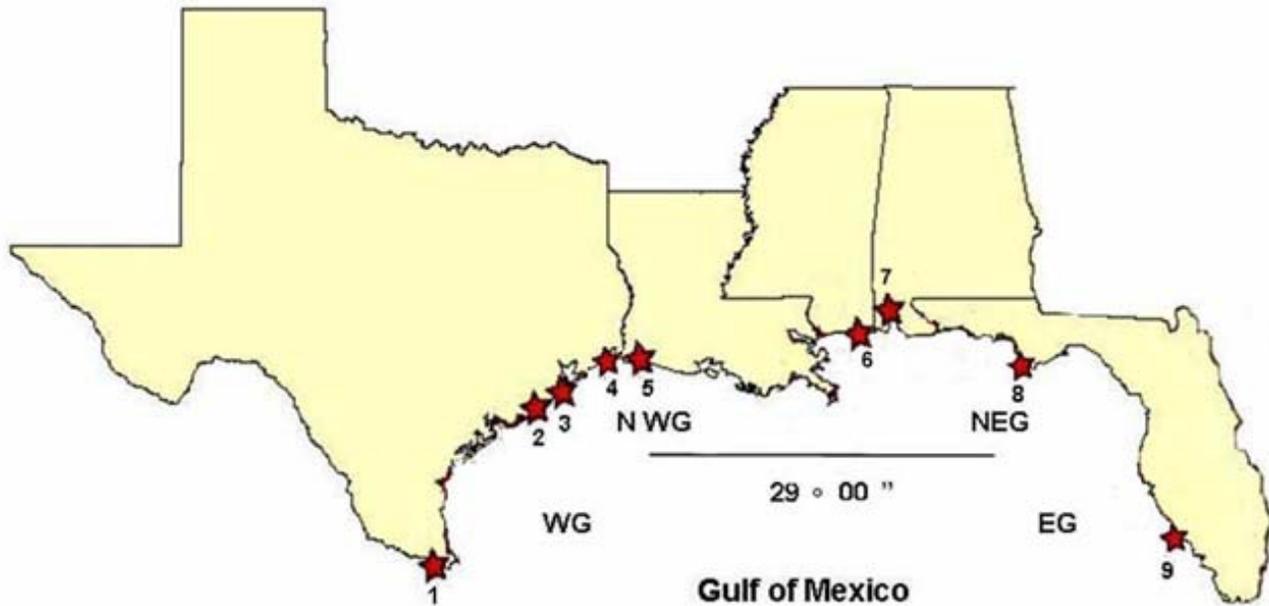
Captiva Island Shore Protection Project (Coastwise Consulting, Inc.)

St. Joe Peninsula Shore Protection Project (Coastwise Consulting, Inc.)

APPENDICES

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APPENDIX A
FY08 Gulf of Mexico Hopper Dredging Projects



West Gulf (WG)

1. Brazos Island Harbor (SWG)
2. Freeport Harbor (SWG)

Northwest Gulf (NWG)

3. Houston & Galveston Channels (SWG)
4. Sabine-Neches Waterway (SWG)
5. Calcasieu Pass (MVN)

Northeast Gulf (NEG)

6. Pascagoula (SAM)
7. Mobile Bay (SAM)
8. St. Joe Peninsula (SAJ)

East Gulf (EG)

9. Captiva Island (SAJ)

Key

SWG = USACE Galveston District
MVN = USACE New Orleans District
SAM = USACE Mobile District
SAJ = USACE Jacksonville District

APPENDIX B-1
Incidental Take Limits Designated by the
Gulf of Mexico Region Biological Opinion

<i>FY08 Incidental Take Limits for Civil Works (CW) and Regulatory (R) Projects as defined by Revision 2 of the Gulf of Mexico Regional Biological Opinion (2007) for Hopper Dredges</i>									
Loggerhead <i>(Caretta caretta)</i>		Green <i>(Chelonia mydas)</i>		Kemp's ridley <i>(Lepidochelys kempii)</i>		Hawksbill <i>(Eretmochelys imbricata)</i>		Gulf Sturgeon <i>(Acipenser oxyrinchus desotoi)</i>	
CW	R	CW	R	CW	R	CW	R	CW	R
32	8	11	3	16	4	3	1	3	1

<i>FY08 Take Limits for Capture Relocation Trawling Operations as defined by Revision 2 of the Gulf of Mexico Regional Biological Opinion (2007)</i>			
Sea Turtle Relocations	Sea Turtle (any species) Relocation Takes (injured or killed)	Gulf Sturgeon Relocations	Gulf Sturgeon Relocation Takes (injured or killed)
300	2	8	1

APPENDIX B-2
FY 2008 Documented Incidental Takes
Designated by Civil Works (CW) vs. Regulatory (R) Projects

<i>FY08 Documented Incidental Takes for Gulf of Mexico Civil Works (CW) and Regulatory (R) Hopper Dredging Projects</i>									
Loggerhead <i>(Caretta caretta)</i>		Green <i>(Chelonia mydas)</i>		Kemp's ridley <i>(Lepidochelys kempii)</i>		Hawksbill <i>(Eretmochelys imbricata)</i>		Gulf Sturgeon <i>(Acipenser oxyrinchus desotoi)</i>	
CW	R	CW	R	CW	R	CW	R	CW	R
1	1	2	0	2	0	0	0	0	0

<i>FY08 Total Relocated Turtles and Sturgeon by Gulf of Mexico Civil Works and Regulatory Hopper Dredging Projects</i>							
Sea Turtle Relocations		Sea Turtle (any species) Relocation Takes (injured or killed)		Gulf Sturgeon Relocations		Gulf Sturgeon Relocation Takes (injured or killed)	
CW	R	CW	R	CW	R	CW	R
17	0	0*	0	0	0	0	0

17 Civil Works relocated turtles = 13 Cc, 1 Cm, 3 Lk

* Fragments of a single loggerhead turtle were retrieved from two separate tows and were determined to be casualty from a large ship propeller; therefore, this incident was considered a stranding and not a dredge take.

APPENDIX C
Dredging Project Summary Data
(FY08 Gulf of Mexico Hopper Dredging)

District	Sub-region	Project*	Project Type	Dredge	# Drag-heads	Dredge Dates**	Total Dredge Days**	Total Y ³ Dredged***	Total M ³ Dredged***	Observer Co.
SWG	WG	Brazos Island Harbor	M/C/OD	<i>R.N. Weeks</i>	2	6/3/08-6/23/08	21	490,690	375,159	CWC
SWG	WG	Brazos Island Harbor	M/C/OD	<i>B.E. Lindholm</i>	2	8/30/08-9/5/08	7	130,933	100,145	ECO
SWG	WG	Freeport Harbor	M/C/OD	<i>Liberty Island</i>	2	10/12/07-12/4/07	54	1,415,421	1,082,167	ECO
SWG	NWG	!Galveston Channel	M/C/OD	<i>Glenn Edwards</i>	2	10/1/07-12/14/07	75	2,268,933	1734724	CWC
SWG	NWG	Houston Ship Channel	M/C/OD	<i>Glenn Edwards</i>	2	12/18/07-1/28/08	42	1,151,801	880,615	CWC
SWG	NWG	Sabine-Neches Waterway	M/C/OD	<i>Columbia/ Glenn Edwards/ Newport</i>	1/2/2	12/28/07-1/17/08; 3/24/08-4/24/08 1/31/08-2/8/08 1/15/08-2/12/08	53 9 29	1,471,813 416,860 757,789	1,125,282 318,712 579,371	CWC
MVN	NWG	Calcasieu River Bar Channel	M/C/OD	<i>Atchafalaya/ Columbia</i>	1/1	11/17/07-12/15/07 1/18/08-3/24/08	29 67	1,830,497 4,785,783	1,399,515 3,658,994	CWC
SAM	NEG	Mobile Harbor & Bay Channel	M/C/OD	<i>Glenn Edwards</i>	2	2/13/08 - 2/23/08; 3/28/08 - 4/29/08; 5/12/08 - 6/3/08	67	1,853,551	1,417,141	CWC
SAM	NEG	!Pascagoula Harbor Bar Channel & Horn Island Pass	ED C/OD	<i>Glenn Edwards</i>	2	9/5/08-9/30/08	26	1,106,404	845,906	CWC
SAJ	NEG	!St. Joe Peninsula	O/BD	<i>Bayport</i>	2	3/24/08-9/30/08	191	2,260,177	1,728,029	CWC
SAJ	EG	Captiva Island	O/BD	<i>R.N. Weeks</i>	2	4/16/08-4/26/08	11	99,390	75,989	ECO

M = Maintenance; ED = Emergency dredging; C = Channel sediment source; O = Offshore/non-channel sediment source; OD = Ocean disposal; BD = Beach disposal

Gray shaded = Regulatory project

ECO = East Coast Observers, Inc.; CWC = Coastwise Consultants, Inc.

* Data included only for projects that occurred in FY08

** Project and dredge dates include non-dredging down time

*** Dredge quantities (provided by USACE Districts) may be estimates instead of actual amounts

! Projects carried over two FY's. Galveston started in FY07 and Pascagoula & St. Joe worked over into FY09.

Y³ = Total Cubic Yards dredged material; M³ = Total Cubic Meters dredged material

Gray shaded = Regulatory project

APPENDIX D
Distribution of Sea Turtle Incidental Takes by Species
(FY08 Gulf of Mexico Hopper Dredging)

District	Sub-Region	Project	Dredge	Cc	Cm	Lk	Total Takes
SWG	WG	Brazos Island Harbor	<i>R.N. Weeks</i>	1	1	0	2
SWG	WG	Brazos Island Harbor	<i>B.E. Lindholm</i>	0	0	0	0
SWG	WG	Freeport Harbor*	<i>Liberty Island</i>	0	1	2	3
SWG	NWG	Galveston Channel	<i>Glenn Edwards</i>	0	0	0	0
SWG	NWG	Houston Ship Channel	<i>Glenn Edwards</i>	0	0	0	0
SWG	NWG	Sabine-Neches Waterway	<i>Columbia</i>	0	0	0	0
SWG	NWG	Sabine-Neches Waterway	<i>Glenn Edwards</i>	0	0	0	0
SWG	NWG	Sabine-Neches Waterway	<i>Newport</i>	0	0	0	0
MVN	NWG	Calcasieu River Bar Channel	<i>Atchafalaya</i>	0	0	0	0
MVN	NWG	Calcasieu River Bar Channel	<i>Columbia</i>	0	0	0	0
SAM	NEG	Mobile Harbor & Bay Channel	<i>Glenn Edwards</i>	0	0	0	0
SAM	NEG	Pascagoula Harbor Bar Channel & Horn Island Pass	<i>Glenn Edwards</i>	0	0	0	0
SAJ	NEG	St. Joe Peninsula	<i>Bayport</i>	1	0	0	1
SAJ	EG	Captiva Island	<i>R.N. Weeks</i>	0	0	0	0
TOTAL				2	2	2	6
Cc = Loggerhead (<i>Caretta caretta</i>); Cm = Green turtle (<i>Chelonia mydas</i>); Lk = Kemp's Ridley (<i>Lepidochelys kempii</i>)							
* Fragments of a single loggerhead retrieved from two separate trawl tows determined to be casualty from a large ship propeller; therefore, considered a stranding and not a dredge take.							
Gray shaded = Regulatory project							

APPENDIX E
Hopper Dredge/Capture Trawler-related Incidental Take Summary
(FY08 Gulf of Mexico Dredging)

District	Sub-region	Project	Species	Take Date	Dredge Load #	Time Recovered	Lat	Long	Water Temp*	SI used?	Trawling used?
SWG	WG	Brazos Island Harbor	Cc	6/20/08	172	1846	26' 03.97	97' 09.19	28.0	Yes	Yes
			Cm	6/21/08	178	0815	26' 03.97	97' 09.19	28.0	Yes	Yes
SWG	WG	Freeport Harbor ^	Cm	11/2/07	262	0820	20' 55.31	95' 16.93	21.7	Yes	Yes ⁺
			Lk	11/3/07	285	2022	N/A	N/A	22.8	Yes	Yes ⁺
			Lk	11/4/07	293	0100	N/A	N/A	22.8	Yes	Yes ⁺
SAJ	NEG	St. Joseph Peninsula (Regulatory)	Cc	8/29/08	749	0105	29' 42.464	85' 25.696	27.0	Yes	No

Cc = Loggerhead (*Caretta caretta*); Cm = Green turtle (*Chelonia mydas*); Lk = Kemp's ridley (*Lepidochelys kempi*)

N/A = Data not available; SI used? = Silent Inspector in use during dredging project?

* Method and location in water column for temperature data collection not identified in reports

^ * Fragments of a single loggerhead retrieved from two separate trawl tows determined to be casualty from a large ship propeller; therefore, considered a stranding and not a dredge take.

+ Capture trawling was not initiated until 7 November 2007 after the 3 takes occurred. (Closed bag type trawling used to capture turtles.)

Gray shaded = Regulatory project

Observer's record lat/long of turtle takes either at the beginning, middle, or end of the load. Usually the beginning of the load (Chris Slay, Coastwise Consulting).

APPENDIX F
Capture Relocation Trawling Summary Data
(FY08 Gulf of Mexico Hopper Dredging)

District	Sub-Region	Project	Trawl Vessel*	Trawl Dates	Total Trawl Days	Total Tows	Cc	Cm	Lk	Total Relocated	Avg. Tows/Day/Per Trawler	Observer Co.
SWG	WG	Brazos Island Harbor	**Miss Vaness, **Miss Taylor	5/30/08-6/23/08	25/25	1304	11	1	2	14	26.08	CWC
SWG	WG	Brazos Island Harbor	**Miss Adrienne, **Breakaway	8/29/08-9/5/08	8/8	411	2	0	1	3	25.68	ECO
SWG	WG	Freeport Harbor	Miss Adrienne	11/7/07-12/4/07	28	430	0	0	0	0	15.36	ECO
SWG	NWG	Galveston Channel	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MVN	NWG	Sabine-Neches Waterway	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SAM	NEG	Calcasieu River Bar Channel	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SAM	NEG	Mobile Harbor - Bay Channel	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SAM	NEG	Pascagoula Harbor – Horn Island	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SAM	NEG	St. Joseph Peninsula	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SAM	EG	Captiva Island	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL TURTLES RELOCATED BY SPECIES							13	1	3	17		
Cc = Loggerhead (<i>Caretta caretta</i>); Cm = Green turtle (<i>Chelonia mydas</i>); Lk = Kemp's ridley (<i>Lepidochelys kempi</i>)												
N/A = Not Applicable since relocation did not occur during that project												
ECO = East Coast Observers, Inc.; CWC = Coastwise Consultants, Inc.												
*Each trawlers worked 24 hours/2 crews during the project. **Two trawlers worked simultaneously.												
Gray shaded = Regulatory project												

APPENDIX G
Dredging Project Summary Data by Subregion and USACE District
(FY08 Gulf of Mexico Hopper Dredging)

Dredging Data Summary	Subregion				
	West Gulf	Northwest Gulf	Northeast Gulf	East Gulf	TOTAL
Total Dredge Projects	3	4	3	1	11
Total Turtle Takes	5	0	1	0	6
Total Dredge Days	82	304	284	11	681
Total Turtle Takes/Days Dredged	0.0610	0	0.0035	0	0.0088
Total Cubic Yards	2,037,044	12,683,436	5,220,132	99,390	20,040,002
Total Cubic Meters	1,557,432	9,697,183	3,991,077	75,989	15,321,681
Total Turtle Takes/1000-y ³	0.00245	0	0.00019	0	0.00030
Total Turtle Takes/1000-m ³	0.00321	0	0.00025	0	0.00039

Dredging Summary Data	USACE District				
	Galveston	New Orleans	Mobile	Jacksonville	Total
Total Dredge Projects	6	1	2	2	11
Total Turtle Takes	5	0	0	1	6
Total Dredge Days	290	96	93	202	681
Total Turtle Takes/Days Dredged	0.0172	0	0	0.0050	0.0088
Total Cubic Yards	8,104,240	6,616,240	2,959,955	2,359,567	20,040,042
Total Cubic Meters	6,196,136	5,058,478	2,263,048	1,804,018	15,321,712
Total Turtle Takes/1000-y ³	0.00062	0	0	0.00042	0.00030
Total Turtle Takes/1000-m ³	0.00081	0	0	0.00055	0.00039

APPENDIX H
Capture Relocation Trawling Summary Data by Subregion and USACE District
(FY08 Gulf of Mexico Hopper Dredging)

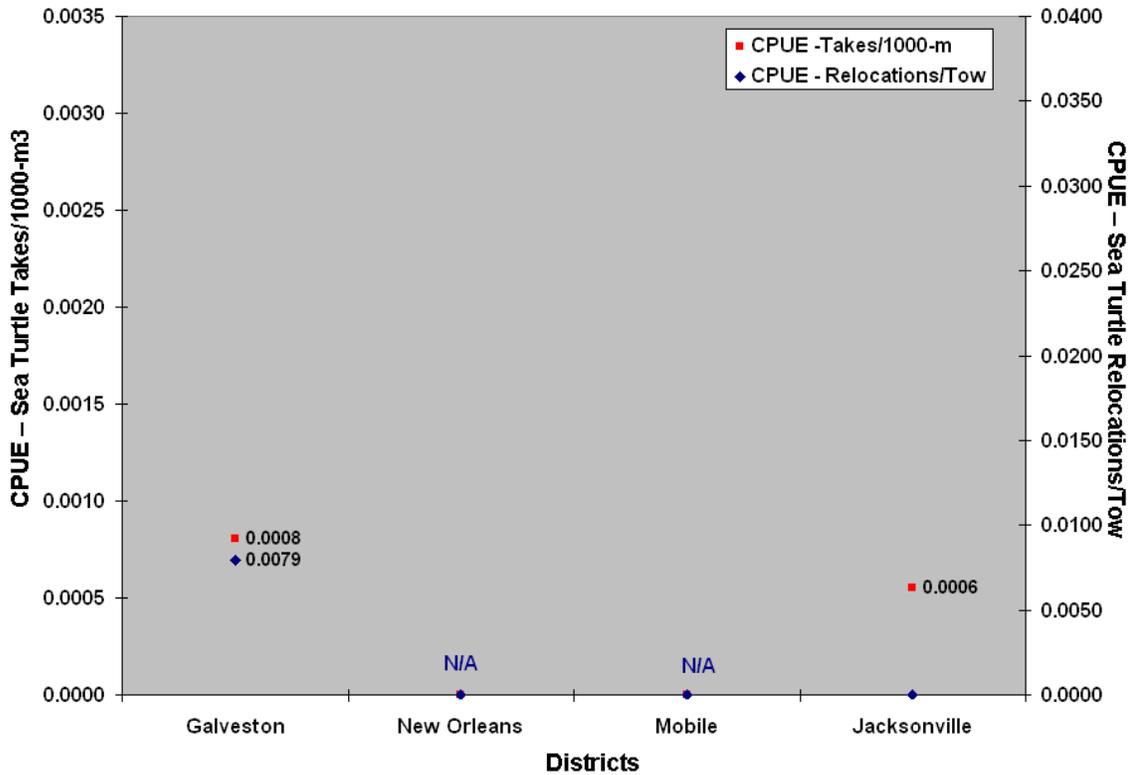
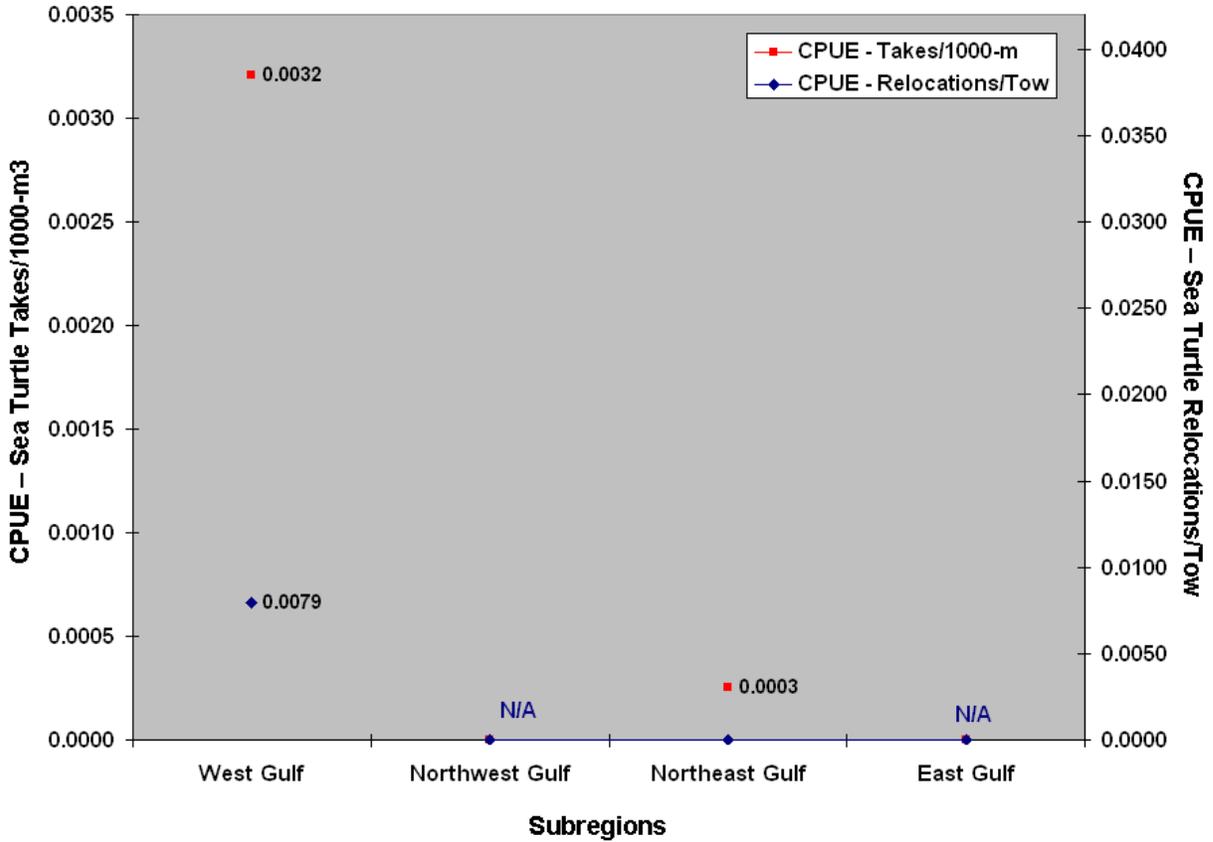
Relocation Trawling Summary Data	Subregion				
	West Gulf	Northwest Gulf	Northeast Gulf	East Gulf	TOTAL
Total Trawl Projects	3	N/A	N/A	N/A	3
Total Turtles Relocated	17	N/A	N/A	N/A	17
Total Trawl Days	94	N/A	N/A	N/A	94
Total Tows	2145	N/A	N/A	N/A	2145
Total Turtles Trawled/Total Days	0.1809	N/A	N/A	N/A	0.1809
Total Turtles Trawled/Total Tows	0.0079	N/A	N/A	N/A	0.0079
Average Tows per day	22.82	N/A	N/A	N/A	22.82

Relocation Trawling Summary Data	USACE District				
	Galveston	New Orleans	Mobile	Jacksonville	Total
Total Trawl Projects	3	0	0	0	3
Total Turtles Relocated	17	N/A	N/A	N/A	17
Total Trawl Days	94	N/A	N/A	N/A	94
Total Tows	2145	N/A	N/A	N/A	2145
Total Turtles Trawled/Total Days	0.1809	N/A	N/A	N/A	0.1809
Total Turtles Trawled/Total Tows	0.0079	N/A	N/A	N/A	0.0079
Average Tows per day	22.82	N/A	N/A	N/A	22.82

N/A = No relocation trawling performed; Each trawler worked 24 hours/day with 2 crews during the project; Both Brazo Island Harbor projects had two trawlers working simultaneously during project.

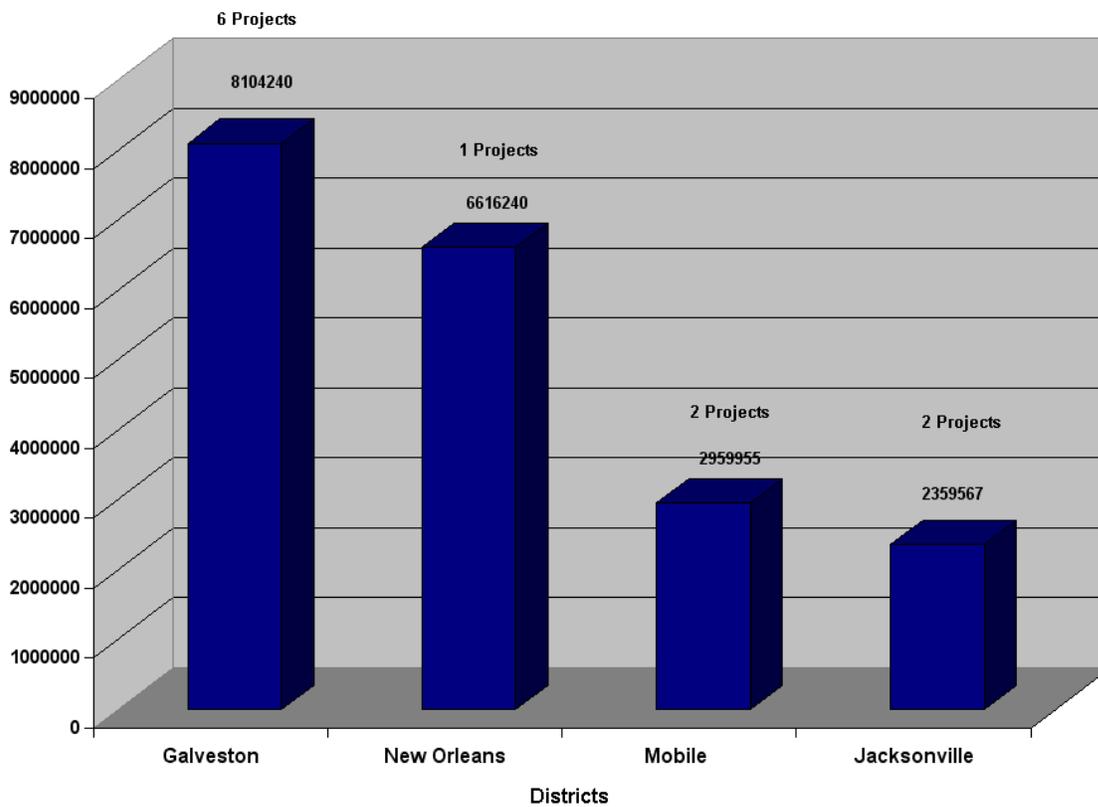
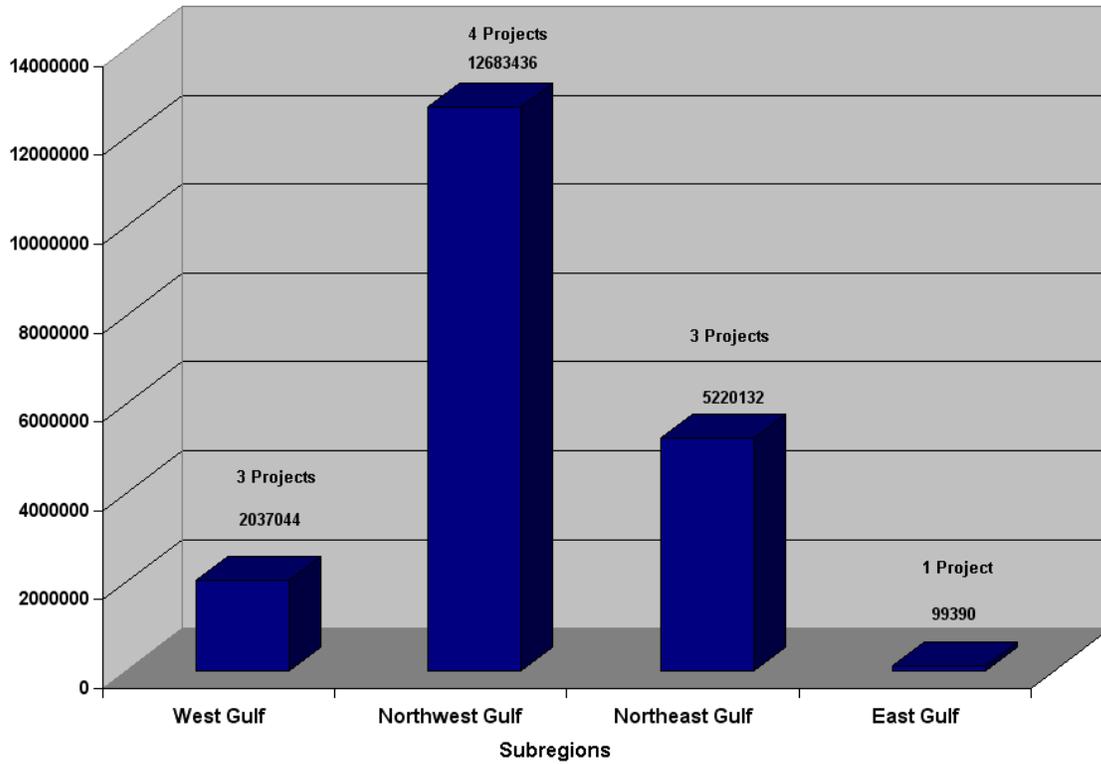
APPENDIX I

Catch per Unit Effort Comparisons for Sea Turtle Dredge Takes and Capture Trawl Relocations by Subregion and USACE District (FY08 Gulf of Mexico Hopper Dredging)



APPENDIX J

Distribution of Dredged Material Quantities (Cubic Yards) by Geographic Subregion and USACE Districts



APPENDIX K
Distribution of Sea Turtle Takes by Month
(FY08 Gulf of Mexico Hopper Dredging)

PROJECT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Brazos Island Harbor						1 Cc 1Cm						
Brazos Island Harbor												
Freeport Harbor											1 Cm 2 Lk	
Galveston Channel												
Houston Ship Channel												
Sabine-Neches Waterway												
Calcasieu River Bar Channel												
Mobile Harbor – Bay Channel												
Pascagoula Harbor – Horn Island												
Captiva Island												
St. Joseph Peninsula								1 Cc				
TOTAL LOGGERHEAD TAKES	0	0	0	0	0	1	0	1	0	0	0	0
TOTAL GREEN TURTLE TAKES	0	0	0	0	0	1	0	0	0	0	1	0
TOTAL KEMP’S RIDLEY	0	0	0	0	0	0	0	0	0	0	2	0
TOTAL TURTLE TAKES BY MONTH	0	0	0	0	0	2	0	1	0	0	3	0
TOTAL PROJECTS BY MONTH	0	0	0	0	0	2	0	1	0	0	3	0
Cc = Loggerhead (<i>Caretta caretta</i>); Cm = Green turtle (<i>Chelonia mydas</i>); Lk = Kemp’s ridley (<i>Lepidochelys kempi</i>) Shaded areas = project occurrence (projects under 5 days in one month not included)												

APPENDIX L
Distribution of Project Dredge Days by Month
(FY08 Gulf of Mexico Hopper Dredging)

PROJECT	DREDGE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Brazos Island Harbor	<i>R.N. Weeks</i>						21						
Brazos Island Harbor	<i>B.E. Lindholm</i>									5			
Freeport Harbor	<i>Liberty Island</i>										19	30	
Galveston Channel	<i>Glenn Edwards</i>										31	30	14
Houston Ship Channel	<i>Glenn Edwards</i>	28											14
Sabine-Neches Waterway	<i>Columbia/ Glenn Edwards/ Newport</i>	17/0/17	0/8/12	8/0/0	24/0/0								
Calcasieu River Bar Channel	<i>Atchafalaya/ Columbia</i>	0/14	0/28	0/24								14/0	15/0
Mobile Harbor – Bay Channel	<i>Glenn Edwards</i>		11		29	20							
Pascagoula Harbor – Horn Island	<i>Glenn Edwards</i>									26			
Captiva Island	<i>R.N. Weeks</i>				11								
St. Joseph Peninsula	<i>Bayport</i>				30	31	30	31	31	30			
TOTAL DAYS DREDGED BY MONTH		76	59	32	94	51	51	31	31	61	43	74	43
TOTAL TURTLE TAKES BY MONTH		0	0	0	0	0	2	0	1	0	0	3	0
TURTLES TAKES PER DREDGE DAY BY MONTH		0	0	0	0	0	0.0392	0	0.0323	0	0	0.0405	0
Shaded areas = Project occurrence (projects under 5 days in one month not included)													

APPENDIX M
Non-Sea Turtle Species Incidental Takes or Noted Occurrences
(FY08 Gulf of Mexico Hopper Dredging)

Species	Project	Observations/Remarks
Sturgeon	N/A	N/A
Whales/Manatees	N/A	N/A
Dolphin	N/A	N/A
Shark	Brazo Island (Aug-Sept) - Dredging Freeport Harbor – Dredging Brazo Island (Aug-Sept) – Trawling Freeport Harbor - Trawling	1 juv Bonnethead 1 Atlantic Sharpnose 2 Black Tip, 2 Bonnethead, 2 juv Hammerhead 1 BlackTip and 1 Nurse
Horseshoe Crab	Mobile Harbor-Bay Channel Pascagoula Harbor Captiva Island St. Joseph Peninsula	2 counted and a few another times mentioned 1 counted and a few other times mentioned 7 counted and a few other times mentioned ~15 counted but mentioned numerous times throughout project
<p>N/A = No known significant occurrences No observer reports for Galveston Harbor project at time of submittal. Other projects not found in table had no incidents of these species to occur.</p>		