

PMLevyCOLNPEm Resource

From: Miracle, Ann L [ann.miracle@pnl.gov]
Sent: Wednesday, March 09, 2011 5:21 PM
To: Masnik, Michael; Miller, Beverly M
Cc: Scherpelz, Robert I; Bruner, Douglas
Subject: FWS info for manatees
Attachments: manatee aerial surveys 2006 to 2011.pdf

Hi Mike,

The attached is a fax I received from Joyce Kleen at the Chassahowitzka National Wildlife Refuge in Crystal River, FL. She does the aerial surveys for manatees within the area, and provided the aerial survey results from 2006 to present. This definitely helps us with assessing impacts to manatees in showing roughly how many frequent the areas in question for the LNP project.

Bev, this needs to be docketed.

Thanks!

Ann Miracle, Ph.D.

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Environmental Assessment

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Hearing Identifier: Levy_County_COL_NonPublic
Email Number: 3731

Mail Envelope Properties (BD2CFF51B34B9840820E7DF980EE1B370122C9B4ED97)

Subject: FWS info for manatees
Sent Date: 3/9/2011 5:21:02 PM
Received Date: 3/9/2011 5:21:07 PM
From: Miracle, Ann L

Created By: ann.miracle@pnl.gov

Recipients:

"Scherpelz, Robert I" <scherpelz@pnl.gov>
Tracking Status: None
"Bruner, Douglas" <Douglas.Bruner@nrc.gov>
Tracking Status: None
"Masnik, Michael" <Michael.Masnik@nrc.gov>
Tracking Status: None
"Miller, Beverly M" <Beverly.Miller@pnl.gov>
Tracking Status: None

Post Office: EMAIL05.pnl.gov

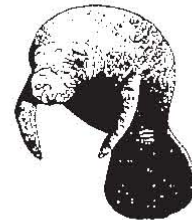
Files	Size	Date & Time
MESSAGE	795	3/9/2011 5:21:07 PM
manatee aerial surveys 2006 to 2011.pdf		188389

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Fax

Chassahowitzka National Wildlife Refuge Complex



Chassahowitzka National Wildlife Refuge * Crystal River National Wildlife Refuge * Egmont National Wildlife Refuge
Passage Key National Wildlife Refuge * Pinellas National Wildlife Refuge
1502 SE Kings Bay Dr., Crystal River, FL 34429
PHONE: (352) 563-2088 FAX: (352) 795-7961

To: Ann Miracle

Fax Number: 509/375-2019

From: Joyce Kleen

Date: 3/8/11

Pages to follow: 6

Subject: Aerial Manatee Survey
counts 2006-3/2011

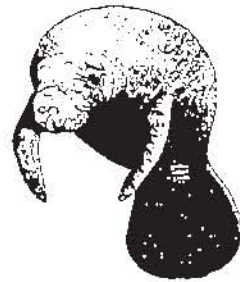
Did you know that the U.S. Fish and Wildlife Service...

- manages 93-million acre National Wildlife Refuge System comprised of more than 540 national wildlife refuges
- operates 66 national fish hatcheries and 78 ecological services field stations
- enforces Federal wildlife laws
- administers the Endangered Species Act
- manages migratory bird populations
- restores nationally significant fisheries
- conserves and restores wildlife habitat and helps foreign governments with their conservation efforts



Fax

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AERIAL MANATEE COUNTS - 2011

DATE	TOTAL	SURVEY LOCATIONS													
	T (C)	KB	CRY	UHOM	LHOM	SR	PP	BC	WAC	WIT	SWR	SRE	CH	WW	
05JAN11	465(66)	353(50)	38(4)	45(8)	2	12(3)	15(1)	0	X	X	X	X	X	X	
19JAN11	453(70)	365(61)	42(3)	30(5)	8(1)	8	X	0	X	X	X	X	X	X	
24JAN11 ¹	541(73)	408(59)	12(2)	101(9)	0	0	4	0	0	0	3(1)	0	5(1)	8(1)	
02FEB11	Cancelled due to fog														
16FEB11	423(53)	321(40)	48(8)	28(3)	14	7(1)	5(1)	0	X	X	X	X	X	X	
01MAR11 ²	48(4)	25(3)	6	X	X	X	7	4	6(1)	X	0	0	X	X	

Key:

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 (C): Calves
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 BC: Barge Canal
 SWR: Suwannee River
 SRE: Suwannee River Estuary
 CH: Chassahowitzka River Estuary
 WW: Weeki Wachee River

Summary:

Highest survey count was.
 Largest # in Kings Bay was
 Largest # of calves was
 Largest # in Up. Homosassa was
 Largest # in Crystal River was

¹ Statewide Synoptic Manatee Aerial Survey.

² Statewide Manatee Abundance Survey-special survey-not a complete refuge survey

Information provided by U.S. Fish and Wildlife Service, Crystal River, FL

AERIAL MANATEE COUNTS - 2010

DATE	TOTAL	SURVEY LOCATIONS													
	T (C)	KB	CRY	UHOM	LHOM	SR	PP	BC	WAC	WIT	SWR	SRE	CH	WW	
06JAN10	323(25)	258(20)	0	64(5)	0	0	1	0	X	X	X	X	X	X	
13JAN10 ¹	651(99)	566(91)	0	76(8)	1	0	3	0	0	0	0	0	1	4	
20JAN10	548(74)	437(60)	12(1)	68(7)	14(4)	7(2)	10	0	X	X	X	X	X	X	
03FEB10	430(36)	286(26)	6(1)	54(5)	4	17(2)	63(2)	0	X	X	X	X	X	X	
17FEB10	625(49)	498(36)	2	120(13)	2	0	3	0	X	X	X	X	X	X	
04MAR10	419(33)	256(20)	1	153(11)	1	2(1)	6(1)	0	X	X	X	X	X	X	
19MAR10	279(41)	168(24)	2	61(11)	11(4)	3	34(2)	0	X	X	X	X	X	X	
31MAR10	226(28)	123(14)	3	62(10)	19(3)	3(1)	16	0	X	X	X	X	X	X	
14APR10	55(12)	40(10)	0	0	11(1)	2	2(1)	0	X	X	X	X	X	X	
28APR10	114(17)	69(11)	18(3)	9(2)	9	2	4	3(1)	X	X	X	X	X	X	
12MAY10	73(13)	40(8)	1	4(1)	3	6(2)	0	1	X	X	X	X	18(2)	X	
08JUN10	73(6)	39(3)	9	8(1)	2	9(1)	1	0	X	X	X	X	5(1)	X	
23JUN10	87(9)	48(5)	11(1)	6(1)	9(1)	3	0	2	X	X	X	X	8(1)	X	
07JUL10	82(11)	37(4)	7(1)	14(2)	3	12(3)	0	3	X	X	X	X	6(1)	X	
21JUL10	41(4)	27(1)	0	1	0	4(1)	0	0	X	X	X	X	9(2)	X	
04AUG10	55(10)	14(3)	7(1)	0	9(1)	2	0	0	0	2(1)	8(1)	6(1)	3	4(2)	
18AUG10	30(4)	17(3)	3	3	0	2	1	1	X	X	X	X	3(1)	X	
02SEP10	19(3)	16(2)	2(1)	0	0	1	0	0	X	X	X	X	X	X	
15SEP10	22(4)	9(2)	3	7(2)	0	0	3	0	X	X	X	X	X	X	
29SEP10	44(6)	36(5)	1	3	2	2(1)	0	0	X	X	X	X	X	X	
13OCT10	47(10)	35(9)	1	8(1)	1	0	1	1	X	X	X	X	X	X	
27OCT10	59(10)	44(8)	4	4(1)	3	2	0	2(1)	X	X	X	X	X	X	
10NOV10	293(33)	166(23)	6	37(6)	12(3)	2	70(1)	0	X	X	X	X	X	X	
24NOV10	117(15)	63(9)	15(2)	7(2)	4(1)	12	16(1)	0	X	X	X	X	X	X	
10DEC10	621(53)	516(48)	3	75(5)	0	0	27	0	X	X	X	X	X	X	
23DEC10	506(44)	441(39)	8	53(5)	3	0	1	0	X	X	X	X	X	X	

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 SRE: Suwannee River Estuary
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 WW: Weeki Wachee River

Summary:

Highest survey count was 651 on January 13, 2010.
 Largest # in Kings Bay was 566 on January 13, 2010.
 Largest # of calves was 99 on January 13, 2010.
 Largest # in Up. Homosassa was 153 on March 4, 2010.
 Largest # in Crystal River was 18 on April 28, 2010.

¹ Statewide Synoptic Manatee Aerial Survey.

Information provided by U.S. Fish and Wildlife Service, Crystal River, FL

AERIAL MANATEE COUNTS - 2009

	TOTAL	SURVEY LOCATIONS													
DATE	T (C)	KB	CRY	UHOM	LHOM	SR	PP	BC	WAC	WIT	SWR	SRE	CH	WW	
09JAN09	324(28)	212(21)	4	67(7)	7	0	34	0	X	X	X	X	X	X	
21JAN09 ¹	461(33)	248(16)	4(1)	156(8)	0	0	36(5)	0	0	0	1	0	5(1)	11(2)	
06FEB09	476(28)	296(16)	0	124(9)	0	0	56(3)	0	X	X	X	X	X	X	
18FEB09	257(23)	110(15)	23	43(2)	7(1)	4	70(6)	0	X	X	X	X	X	X	
04MAR09	466(31)	285(18)	3	120(9)	0	0	58(4)	0	X	X	X	X	X	X	
18MAR09	75(7)	32(2)	7(1)	8(1)	20(1)	7(2)	1	0	X	X	X	X	X	X	
30MAR09	124(11)	55(6)	21(2)	14(1)	19(1)	6	3	6(1)	X	X	X	X	X	X	
17APR09	133(10)	80(6)	15(1)	8(1)	3	18(1)	7	2(1)	X	X	X	X	X	X	
30APR09	116(17)	58(9)	13(1)	5(1)	14(4)	5	1	0	X	X	X	X	20(2)	X	
13MAY09	101(19)	61(12)	9(1)	8(2)	11(2)	3(1)	0	4(1)	X	X	X	X	5	X	
27MAY09	Cancelled-no one to fly														
10JUN09	93(12)	59(8)	1	10(1)	15(2)	3	0	0	X	X	X	X	5(1)	X	
24JUN09	55(11)	36(9)	4(1)	1	2	2	0	3(1)	X	X	X	X	7	X	
08JUL09	38(7)	26(4)	0	4(2)	0	0	0	0	X	X	X	X	8(1)	X	
22JUL09	67(8)	31(7)	2	6	1	0	9	3	0	1	0	0	6(1)	8	
05AUG09	29(5)	11(2)	4(1)	5	0	4(1)	2	3(1)	X	X	X	X	0	X	
19AUG09	73(16)	59(13)	1	6(2)	2(1)	2	2	0	X	X	X	X	1	X	
03SEP09	65(7)	39(4)	10(1)	13(2)	0	3	0	0	X	X	X	X	X	X	
16SEP09	58(9)	45(8)	3	8	0	0	2(1)	0	X	X	X	X	X	X	
30SEP09	46(4)	29(3)	6	5(1)	0	3	3	0	X	X	X	X	X	X	
14OCT09	28(6)	22(5)	3(1)	3	0	0	0	0	X	X	X	X	X	X	
29OCT09	98(10)	24(3)	10	4(1)	9(4)	27(1)	24(1)	0	X	X	X	X	X	X	
10NOV09	55(5)	15(2)	4(1)	4	1	5(1)	25(1)	1	X	X	X	X	X	X	
02DEC09	224(31)	120(20)	22(4)	27(5)	3(1)	8(1)	43	1	X	X	X	X	X	X	
09DEC09	Cancelled-conflict with SHC meeting														
16DEC09	Cancelled-cloud ceiling too low														
23DEC09	438(42)	328(33)	2	78(6)	0	0	30(3)	0	X	X	X	X	X	X	

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Highest survey count was 476 on February 6, 2009.

Largest # in Kings Bay was 328 on December 23, 2009.

Largest # of calves was 42 on December 23, 2009.

Largest # in Up. Homosassa was 156 on January 21, 2009.

Largest # in Crystal River was 23 on February 18, 2009.

¹ Statewide Synoptic Manatee Aerial Survey.

corrected

AERIAL MANATEE COUNTS - 2008

DATE	TOTAL	SURVEY LOCATIONS													
	T (C)	KB	CRY	UHOM	LHOM	SR	PP	BC	WAC	WIT	SWR	SRE	CH	WW	
09JAN08	365(29)	230(21)	10(1)	57(3)	10(1)	29(1)	29(2)	0	X	X	X	X	X	X	
25JAN08	Manatee survey was cancelled to accommodate a statewide synoptic survey which also was cancelled.														
08FEB08	138(16)	54(7)	17	7(1)	14(3)	21(3)	24(2)	1	X	X	X	X	X	X	
20FEB08	324(24)	216(22)	0	66(1)	4	0	38(1)	0	X	X	X	X	X	X	
05MAR08	245(18)	135(11)	13	37(3)	11(2)	4	45(2)	0	X	X	X	X	X	X	
19MAR08	106(11)	39(4)	11	8	21(5)	2(1)	13	12(1)	X	X	X	X	X	X	
07APR08	No flight-planes not available.														
17APR08	No flight-planes not available.														
30APR08	142(18)	85(13)	6	19(4)	17(1)	1	13	1	X	X	X	X	X	X	
14MAY08	123(17)	69(13)	17	16(2)	10(1)	4	0	7(1)	X	X	X	X	X	X	
27MAY08	113(22)	76(15)	6(2)	11(1)	6	7(2)	0	7(2)	X	X	X	X	X	X	
11JUN08	Survey cancelled-higher priorities-FOIA.														
25JUN08	54(11)	43(7)	5(1)	1	0	2(1)	0	3(2)	X	X	X	X	X	X	
09JUL08	Survey cancelled-no one available to fly.														
23JUL08	58(7)	34(5)	12	0	3	9(2)	0	0	X	X	X	X	X	X	
06AUG08	26(3)	16(2)	4	0	0	3(1)	3	0	X	X	X	X	X	X	
20AUG08	Survey cancelled-Tropical Storm Fay.														
03SEP08	50(13)	26(9)	6(3)	3	0	6	0	0	0	2	0	0	0	7(1)	
17SEP08	30(7)	24(6)	1	3(1)	0	0	2	0	X	X	X	X	X	X	
01OCT08	Survey cancelled-mgmt. decision														
16OCT08	60(8)	41(7)	1	4	9(1)	1	3	1	X	X	X	X	X	X	
31OCT08	230(24)	170(18)	5(1)	21(3)	3(1)	0	30(1)	1	X	X	X	X	X	X	
14NOV08	72(12)	41(8)	2	6(1)	1	8(2)	14(1)	0	X	X	X	X	X	X	
26NOV08	443(41)	344(37)	3	76(3)	1	0	19(1)	0	X	X	X	X	X	X	
09DEC08	389(29)	301(26)	6	59(3)	2	0	21	0	X	X	X	X	X	X	
19DEC08	167(27)	72(10)	20(3)	13(2)	22(2)	26(7)	14(3)	0	X	X	X	X	X	X	

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Summary:

Highest survey count was 443 on November 26, 2008.
 Largest # in Kings Bay was 344 on November 26, 2008.
 Largest # of calves was 37 on November 26, 2008.
 Largest # in Up. Homosassa was 76 on November 26, 2008.
 Largest # in Crystal River was 20 on December 19, 2008.

¹ First Statewide Synoptic Manatee Aerial Survey.

Information provided by U.S. Fish and Wildlife Service, Crystal River, FL

AERIAL MANATEE COUNTS - 2007

DATE	TOTAL	SURVEY LOCATIONS													
	T (C)	KB	CRY	UHOM	LHOM	SR	PP	BC	WAC	WIT	SWR	SRE	CH	WW	
10JAN07	372(21)	193(11)	1	96(6)	1	0	81(4)	0	X	X	X	X	X	X	
24JAN07	304(33)	198(22)	3	37(6)	6	2	56(4)	2(1)	X	X	X	X	X	X	
30JAN07 ¹	409(28)	234(14)	3(1)	90(6)	0	0	63(2)	0	X	X	4	X	2(1)	13(4)	
07FEB07	424(47)	263(35)	4	63(6)	5	0	89(6)	0	X	X	X	X	X	X	
22FEB07	315(45)	163(25)	11(3)	50(7)	30(5)	20(3)	41(2)	0	X	X	X	X	X	X	
08MAR07	352(45)	176(23)	24(6)	63(5)	23(5)	10	31(6)	5	X	X	X	X	X	X	
21MAR07	323(40)	184(25)	14(1)	27(3)	25(7)	29(3)	41(1)	3	X	X	X	X	X	X	
04APR07	71(13)	26(3)	2(1)	4(1)	23(2)	9(3)	5(2)	2(1)	X	X	X	X	X	X	
18APR07	187(31)	73(15)	14(4)	32(3)	23(5)	16(1)	22(2)	7(1)	X	X	X	X	X	X	
02MAY07	113(17)	53(8)	6(1)	13(1)	22(3)	12(2)	0	7(2)	X	X	X	X	X	X	
16MAY07	118(22)	78(14)	10(1)	11(4)	3(1)	13(2)	0	3	X	X	X	X	X	X	
30MAY07	103(11)	71(9)	8	3	2(1)	11	8(1)	0	X	X	X	X	X	X	
13JUN07	76(8)	42(4)	18(4)	0	6	4	0	6	X	X	X	X	X	X	
27JUN07	59(7)	33(6)	20(1)	0	3	2	0	1	X	X	X	X	X	X	
11JUL07	74(15)	43(13)	8	0	0	5(1)	1	2	0	5(1)	0	0	0	10	
25JUL07	52(15)	44(15)	3	0	1	3	0	1	X	X	X	X	X	X	
08AUG07	37(5)	30(5)	6	0	0	1	0	0	X	X	X	X	X	X	
22AUG07	52(8)	38(5)	6(2)	1	1	5	0	1(1)	X	X	X	X	X	X	
05SEP07	54(11)	40(8)	6(2)	2	1	2(1)	3	0	X	X	X	X	X	X	
21SEP07	38(8)	24(5)	5(1)	8(2)	0	0	0	1	X	X	X	X	X	X	
03OCT07	67(12)	43(8)	5(1)	6(2)	3(1)	2	8	0	X	X	X	X	X	X	
17OCT07	57(7)	39(2)	4(1)	3(1)	7(3)	1	3	0	X	X	X	X	X	X	
31OCT07	111(16)	71(12)	2(1)	7(2)	2	0	29(1)	0	X	X	X	X	X	X	
16NOV07	313(29)	213(22)	1	60(4)	5	5(1)	27(1)	2(1)	X	X	X	X	X	X	
28NOV07	260(27)	119(17)	53(5)	18(2)	19(2)	6	45(1)	0	X	X	X	X	X	X	
13DEC07	94(14)	52(8)	13(3)	6(1)	5	9(2)	9	0	X	X	X	X	X	X	
28DEC07	238(31)	161(23)	17(3)	13(2)	8(1)	14	25(2)	0	X	X	X	X	X	X	

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Summary:

Highest survey count was 424 on February 7, 2007.

Largest # in Kings Bay was 263 on February 7, 2007.

Largest # of calves was 47 on February 7, 2007.

Largest # in Up. Homosassa was 96 on January 10, 2007.

Largest # in Crystal River was 53 on November 28, 2007.

¹ First Statewide Synoptic Manatee Aerial Survey.

AERIAL MANATEE COUNTS - 2006

DATE	TOTAL	SURVEY LOCATIONS													
	T (C)	KB	CRY	UHOM	LHOM	SR	PP	BC	WAC	WIT	SWR	SRE	CH	WW	
10JAN06	390 (36)	234(22)	3	99(10)	4	1	49(4)	0	X	X	X	X	X	X	
23JAN06	144 (15)	75(10)	4(1)	14(1)	8(1)	24(1)	19(1)	0	X	X	X	X	X	X	
06FEB06	438 (43)	259(24)	1	124(12)	15(3)	0	39(4)	0	X	X	X	X	X	X	
13FEB06 ¹	455 (35)	310(22)	0	94(6)	2	0	15(2)	0	0	0	0	0	0	34(5)	
24FEB06	174 (19)	110(10)	15(3)	31(3)	2	10(3)	6	0	X	X	X	X	X	X	
10MAR06	178 (22)	100(14)	9(2)	10(2)	4	3	46(4)	6	X	X	X	X	X	X	
22MAR06	130 (23)	58(11)	22(4)	3	12(1)	22(4)	11(3)	2	X	X	X	X	X	X	
05APR06	No flight-no one available														
19APR06	94 (7)	34(2)	15(1)	0	11(1)	20(1)	14(2)	0	X	X	X	X	X	X	
03MAY06	104 (20)	75(16)	11(1)	0	10(2)	8(1)	0	0	X	X	X	X	X	X	
17MAY06	125 (16)	59(11)	28(1)	1	24(2)	12(2)	0	1	X	X	X	X	X	X	
31MAY06	94 (18)	41(10)	11(2)	2	14(1)	26(5)	0	0	X	X	X	X	X	X	
28JUN06	37 (9)	17(5)	8(1)	0	4	8(3)	0	0	X	X	X	X	X	X	
12JUL06 ²	93 (13)	61(8)	1	0	17(4)	7	1	X	X	X	X	X	2	4(1)	
26JUL06	89 (8)	45(2)	9(1)	0	0	0	0	0	3(1)	2	1	8	3(1)	18(3)	
09AUG06	87 (11)	71(8)	3	0	4(1)	9(2)	0	0	X	X	X	X	X	X	
23AUG06	44 (11)	37(9)	0	0	6(2)	1	0	0	X	X	X	X	X	X	
06SEP06	61 (7)	37(4)	5(1)	2	8(2)	4	5	0	X	X	X	X	X	X	
20SEP06	79 (5)	50(5)	3	1	2	22	1	0	X	X	X	X	X	X	
04OCT06	99 (16)	74(11)	9(3)	2	2	12(2)	0	0	X	X	X	X	X	X	
18OCT06	90 (15)	68(12)	9(2)	10(1)	1	2	0	0	X	X	X	X	X	X	
31OCT06	166 (18)	108(14)	26(2)	7(1)	6	5(1)	14	0	X	X	X	X	X	X	
15NOV06	214 (20)	136(14)	14(2)	5	12(1)	13	33(3)	1	X	X	X	X	X	X	
29NOV06	163 (19)	118(13)	21(3)	2(1)	6(1)	9	7(1)	0	X	X	X	X	X	X	
13DEC06	360 (36)	187(24)	41(8)	9(1)	12	30(3)	78	3	X	X	X	X	X	X	
27DEC06	381 (18)	175(11)	2(1)	116(6)	2	0	86	0	X	X	X	X	X	X	

Key:Summary:

X: No Survey
 T: Total of all manatees; adults + calves
 (C): Calves
 KB: Kings Bay
 CRY: Crystal River
 UHOM: Upper Homosassa River
 LHOM: Lower Homosassa River
 SR: Salt River
 PP: Crystal River Nuclear Power Plant
 Discharge Canal
 WAC: Waccasassa Bay and River
 WIT: Withlacoochee River
 BC: Barge Canal
 SWR: Suwannee River
 SRE: Suwannee River Estuary
 CH: Chassahowitzka River Estuary
 WW: Weeki Wachee River

Highest survey count was 455 on February 13, 2006.

Largest # in Kings Bay was 310 on February 13, 2006.

Largest # of calves was 43 on February 6, 2006.

Largest # in Up. Homosassa was 124 on February 6, 2006.

Largest # in Crystal River was 28 on May 17, 2006.

¹ First Statewide Synoptic Manatee Aerial Survey.

² Attempted to fly long summer survey; mechanical problems prevented finishing the flight.

Information provided by U.S. Fish and Wildlife Service, Crystal River, FL