

**RAPTORS AND WATERBIRDS  
ON THE GREAT EGG HARBOR RIVER**

**ATLANTIC COUNTY, NJ**

**WINTER 2011 - 2012**

**The Ninth Field Season of a Systematic Study  
of an Important Avian Wintering Area**

*including Key Comparisons to the MULLICA RIVER*

*and an update on continuing investigation of*

*FALL and SPRING MIGRATION and the BREEDING BIRDS  
of the Great Egg Harbor River Watershed*

**Submitted to: THE GREAT EGG HARBOR WATERSHED ASSOCIATION**



**by Clay Sutton and James Dowdell**

June 2012

**Submitted to:**  
The Great Egg Harbor Watershed  
Association  
c/o Fred Akers, Director  
PO Box 395  
Newtonville, NJ 08346  
[www.gehwa.org](http://www.gehwa.org)

**Submitted by:**  
Clay and Pat Sutton LLC  
129 Bucks Avenue  
Cape May Court House, NJ 08210  
609-465-3397  
[claysutton@comcast.net](mailto:claysutton@comcast.net)  
[www.patandclaysutton.com](http://www.patandclaysutton.com)



***On the cover:***

An adult **Bald Eagle** soaring overhead. Bald Eagles are an everyday sight on the Great Egg Harbor River at all seasons. During this study, a peak of 19 was recorded on January 20, 2012.

– Photo by Clay Sutton, November 2011

***Above:***

Eagles took over an Osprey nest on the Tuckahoe River and raised 2 chicks.

– Photo by Lynn Maun. May 2012

# RAPTORS AND WATERBIRDS ON THE GREAT EGG HARBOR RIVER

## The Ninth Field Season of a Systematic and Long-term Study Fall 2011 through Spring 2012

### INTRODUCTION AND OVERVIEW

Beginning in November 2011, then through the core winter study period, and finally through spring of 2012, raptor and waterbird counts were conducted on the Great Egg Harbor River in Atlantic County, New Jersey. This marked the ninth consecutive field season for these studies carried out for the Great Egg Harbor Watershed Association. This short form summary report of the 2011-2012 field season will be followed by an in-depth analysis and report at the conclusion of the planned tenth year of study in May 2013. Ten years of data will allow for a full evaluation of ornithological status and trends and avian ecovalues on the Great Egg Harbor River.

Survey locations and methodology remained the same as in the first eight seasons of study (see: *Wintering Raptors and Waterbirds of the Great Egg Harbor River, Atlantic County, NJ – A Summary of the First Five Years of Study, 2003-2008*, as well as subsequent yearly reports). Eight core program winter surveys were conducted between 8 December 2011 and 23 March 2012. The results of these counts are shown in **Table 1. Peak winter season counts are shown in Bold Face.** Also shown are seasonal averages for key winter species. As in the first eight seasons of study, rare, threatened, and endangered species mapping (field sighting locations) for all survey dates are included at the end of this report.

While the core winter segment of this survey was carried out with the exact same methodology as the prior eight seasons of survey efforts, in 2011-2012 the survey scope was again expanded to include the migration cycle, including fall and spring surveys. Survey efforts were conducted in order to assess and document spring and fall migration as well as breeding species. Table 1 also shows the findings of one systematic count conducted in fall 2011 and two counts done in spring 2012.

Accordingly, core winter studies were carried out for the ninth consecutive winter season, and were complemented by surveys carried out during the “shoulder seasons” of fall and spring. Waterfowl and raptors use the Great Egg Harbor River at all seasons; numbers build in fall and the extent and duration of the fall migration in part determines wintering numbers. In addition, many birds, particularly waterfowl (ducks and Brant) linger and remain well into the spring season, and other birds, including shorebirds, stage or concentrate in large numbers as they journey north. Finally, good numbers and a wide variety of breeding birds nest in the Great Egg watershed, and these are partially censused during spring and early fall surveys. Migratory shorebird use was a particular focus of these expanded spring and fall efforts.

While core winter studies remained the major focus, expanded survey efforts in fall and spring were carried out in an effort to document the full extent of avian ecovalues of the Great Egg at all seasons of the year.

**TABLE 1**  
**Great Egg Harbor River**  
**Raptor and Waterbird Survey**  
**November 2011 through May 2012**

	FALL 2011	CORE WINTER PERIOD 2011-2012									SPRING 2012	
DATE	11/11	12/8	12/22	1/2	1/20	2/3	2/22	3/5	3/23	(N = 8)	4/20	5/24
<b>LOONS to CORMORANTS</b>												
Red-throated Loon		10	3	4	11	<b>44</b>	4	21	7		2	
Common Loon	11	14	14	13	12	29	31	17	<b>33</b>		22	
Pied-billed Grebe			2	1	1		<b>4</b>	3	<b>4</b>			
Horned Grebe				1	1	4	4	<b>7</b>	<b>7</b>		2	
Red-necked Grebe								2				
Northern Gannet		1					6	2	<b>7</b>		2	
Dbl-cr Cormorant	68	45	97	60	32	116	<b>223</b>	111	147		427	57
<b>BITTERNS to VULTURES</b>												
Great Blue Heron	5	4	11	8	14	9	16	6	12		6	3
Great Egret				2	1	2	2		31		38	44
Snowy Egret									2		21	46
Tricolored Heron												2
Black-cr Nt-Heron												2
Yellow-cr Nt-Heron											4	1
Heron/Egret (sp.)											100+	100+
Glossy Ibis								1			9	37
Black Vulture	4	7	10		5	3	<b>12</b>	3	4	6	5	
Turkey Vulture	81	80	81	76	90	104	<b>114</b>	86	99	91	65	45
<b>WATERFOWL</b>												
Snow Goose			1	<b>46</b>								
Canada Goose	56	102	56	301	<b>458</b>	313	127	59	80	187	66	53
Brant	440	1030	731	675	864	<b>1560</b>	749	967	762	917	744	3
Mute Swan	65	<b>59</b>	47	44	42	45	21	44	38		24	36
Tundra Swan	6			<b>24</b>		6	2					
Wood Duck	10		1									
Gadwall	4		5		16	4	34	<b>64</b>	24		3	
Eurasian Wigeon							1		1			
American Wigeon	6	3	5		6	208	<b>264</b>	121	6			
Am Black Duck	253	227	331	288	718	<b>1037</b>	510	512	249	484	32	17
Mallard	13	46	85	114	<b>393</b>	306	265	149	35	174	15	23
Blue-winged Teal								1	1		8	
Northern Shoveler							4		<b>14</b>			
Northern Pintail	102	92	21	117	264	760	<b>1205</b>	330	19	351		
Green-winged Teal	37	24	14		127	745	1202	<b>1424</b>	1281	602	124	
Eurasian Green-winged Teal						2	2	2			1	

\* reported by other reliable observers  
on or near the survey date

**TABLE 1**  
**Great Egg Harbor River**  
**Raptor and Waterbird Survey**  
**November 2011 through May 2012**

	FALL 2011	CORE WINTER PERIOD 2011-2012									SPRING 2012	
DATE	11/11	12/8	12/22	1/2	1/20	2/3	2/22	3/5	3/23	(N = 8)	4/20	5/24
Ring-necked Duck							15	2	1			
Greater Scaup			1	11	12							
Lesser Scaup			2		5							
<b>WATERFOWL (continued)</b>												
Scaup (sp.)			50		166	205	600	387				
Common Eider					25	16		22	12			
Surf Scoter	2		2	1					1			
White-winged Scoter		3										
Black Scoter		1				16	20	1				
Scoter (sp.)								15	2			
Long-tailed Duck			16	11	26	48	52	76	36			
Bufflehead	11	83	201	76	208	304	282	253	183			
Com. Goldeneye					1	8	5	14				
Hooded Merganser			44	106	12	180	172	70	57			
Com. Merganser	3				40	27	13	14				
Red-br Merganser		5	32	5	60	70	94	113	44		10	
Ruddy Duck	1		1									
<b>DIURNAL RAPTORS</b>												
Osprey	1								22		73	64
Bald Eagle	9	7	10	11	19	13	13	10	5	11.00	10	10
Northern Harrier	26	21	29	18	27	18	25	13	10	20	5	
Sharp-shinned Hawk	4	1	5	2	1		1			1.25	1	
Cooper's Hawk	5	2	1	1	1	2	1	1	1	1.25	3	1
Red-sh Hawk				1	1					0.25		
Broad-winged Hawk											1	
Red-tailed Hawk	25	37	14	25	28	32	42	22	26	28	29	12
Rough-legged Hawk		1	1		1	2	1	1		0.88		
Golden Eagle					1	1	1			0.38		
American Kestrel	2				1					0.13		
Merlin	1											
Peregrine Falcon	4	4	3	1	3	5	2	1	1	2.50		2
<b>GROUSE to CRANES</b>												
Ring-nk Pheasant		3										
Wild Turkey				16							1	
Clapper Rail			1								20	13
Virginia Rail		1										

\* reported by other reliable observers  
on or near the survey date

**TABLE 1**  
**Great Egg Harbor River**  
**Raptor and Waterbird Survey**  
**November 2011 through May 2012**

	FALL 2011	CORE WINTER PERIOD 2011-2012								(N = 8)	SPRING 2012	
DATE	11/11	12/8	12/22	1/2	1/20	2/3	2/22	3/5	3/23		4/20	5/24
<b>SHOREBIRDS</b>												
Black-bellied Plover	92			5	5						1	10
Piping Plover												2
Killdeer	3			1					2		2	
Am Oystercatcher	105	33	30	22	27	14	37	33	26		17	11
Greater Yellowlegs	70	19	21	11	7	16	16		42		61	2
<b>SHOREBIRDS (continued)</b>												
Lesser Yellowlegs	9								13		15	
Willet											46	39
Spotted Sandpiper												1
Marbled Godwit						3						
Ruddy Turnstone												6
Red Knot												2
Sanderling	65											130
Semipalmated Sdp												1030
Least Sandpiper	1											
White-rumped Sdp	2											
Purple Sandpiper			10									
Dunlin	803	250	42	285	21	90			156		160	
Sh-billed Dowitcher												33
Wilson's Snipe								1	1			
<b>TOTAL SHOREBIRDS</b>	<b>1150</b>										<b>302</b>	<b>1266</b>
<b>JAEGERS to ALCIDS</b>												
Laughing Gull	√								122		√	√
Bonaparte's Gull				7	1							
Ring-billed Gull	√	√	√	√	√	√	√	√	√		√	√
Herring Gull	√	√	√	√	√	√	√	√	√		√	√
Gt BI-backed Gull	√	√	√	√	√	√	√	√	√		√	√
Lesser BI-Backed Gull						1						
Common Tern											2	140
Forster's Tern	14										179	106
Least Tern												54
Black Tern												1
Black Skimmer												310
<b>PIGEONS to WOODPECKERS</b>												
Great Horned Owl					2							

\* reported by other reliable observers  
on or near the survey date

**TABLE 1**  
**Great Egg Harbor River**  
**Raptor and Waterbird Survey**  
**November 2011 through May 2012**

	FALL 2011	CORE WINTER PERIOD 2011-2012									SPRING 2012	
DATE	11/11	12/8	12/22	1/2	1/20	2/3	2/22	3/5	3/23	(N = 8)	4/20	5/24
Short-eared Owl												
Belted Kingfisher	3	2	5	1	1	2	2	2	1			
Red-hd Woodpecker		2	3		2		2	2				

## FINDINGS: WINTER RAPTORS AND WATERBIRDS – CORE WINTER STUDIES

Because the ongoing and long-term winter studies were extensively summarized and discussed at the five-year milestone, (see: *Wintering Raptors and Waterbirds of the Great Egg Harbor River, Atlantic County, NJ – A Summary of the First Five Years of Study, 2003-2008*), and because all previous reports dating back to 2003 are archived on the Great Egg Harbor Watershed Association website ( [www.gehwa.org/newsletter](http://www.gehwa.org/newsletter) ), we will not present an in-depth review of goals and objectives or methodologies here. Methods for core winter studies remained the same in winter 2011-2012 as in the first eight seasons of study. Nine point counts were conducted by Sutton and Dowdell for a period of 45 minutes per site.

In 2011- 2012, eight surveys were conducted between 8 December 2011 and 23 March 2012. The findings of winter 2011-2012 compared highly favorably with the previous eight seasons of study, again confirming and corroborating the known high ecovalues of the Great Egg Harbor River. Red-throated Loons and Common Loons were abundant in the lower estuary, and Great Blue Herons were common throughout the winter. American Oystercatcher and Dunlin wintered on the lower rivers, mudflats, and beaches in good numbers.

Waterfowl numbers, particularly for key Great Egg species such as Brant, American Black Duck, and Green-winged Teal were consistent with recent years, although with the warm fall and well above average winter temperatures, followed by a warm spring, few lingered as late as normally expected – keeping seasonal averages down for many ducks. That said, American Black Duck, Mallard, and N. Pintail (all key species) peak numbers were exceptional during the somewhat brief period they were present.

Winter raptor populations were again significant on the Great Egg Harbor River in 2011-2012. Most species and numbers were either at or near recent averages. The Bald Eagle winter average of 11 birds per survey bested the 2010 - 2011 average, and a peak count of 19 Bald Eagles was tallied on 20 January 2012. Golden Eagles were seen on three survey dates, and included at least two individuals. This was most welcome after recent winter seasons that produced few Golden Eagle sightings.

It was another “non-flight” year for the irruptive Rough-legged Hawk, yet at least three individuals were thought to be present in the Great Egg system. An excellent five Peregrines were counted on 3 February, and Peregrines were consistent throughout the season – recorded on all survey dates. Red-tailed Hawk numbers were well below average, no doubt due to the warm autumn and very warm winter, and reflected an observed region-wide trend. (See discussion below).

Once again, adjunct comparative studies were carried out on the Mullica River in winter 2011-2012. Although scaled back due to time constraints, for the eighth consecutive year counts were undertaken on the Mullica River in order to compare and contrast raptor and waterfowl numbers and thereby gain perspective on Great Egg Harbor River bird populations. Mullica methodology was the same as in previous seasons. The findings for the Mullica River are shown in **Table 2**. (The 2011-2012 Mullica counts were carried out pro bono in order to continue and maintain this important long-term data set).



**TABLE 2**  
**Mullica River**  
**Raptor and Waterbird Survey**  
**Winter 2011-2012**

				<b>WINTER</b>
<b>DATE</b>	12/25/11	1/18/12	2/18/12	<b>AVG.</b>
				<b>(N = 3)</b>
<b>LOONS to CORMORANTS</b>				
Red-throated Loon	1		<b>26</b>	
Common Loon	1		<b>15</b>	
Pied-billed Grebe	1		<b>4</b>	
Horned Grebe			1	
Double-cr Cormorant			3	
<b>HERONS to VULTURES</b>				
American Bittern			1	
Great Blue Heron	10	14	<b>24</b>	
Great Egret		1	1	
Black-cr Nt-Heron			2	
Black Vulture		<b>7</b>	6	4
Turkey Vulture	37	70	<b>103</b>	70
<b>WATERFOWL</b>				
Snow Goose	<b>500</b>	330	200	343
Cackling Goose			1	
Canada Goose	230	308	<b>680</b>	406
Brant	<b>6500</b>	600	2400	3167
Mute Swan	1		4	
Tundra Swan		<b>26</b>		
Gadwall				
Am Black Duck	<b>365</b>	232	167	255
Mallard	42	110	<b>294</b>	149
Northern Pintail		1	20	
Green-winged Teal			25	
Ring-necked Duck	3		2	
Scaup (sp.)	10		60	
Scoter (sp.)			4	
Long-tailed Duck	1		35	
Bufflehead			48	
Hooded Merganser	<b>119</b>	5	28	
Red-br Merganser	6		<b>48</b>	

**TABLE 2**  
**Mullica River**  
**Raptor and Waterbird Survey**  
**Winter 2011-2012**

				<b>WINTER</b>
<b>DATE</b>	12/25/11	1/18/12	2/18/12	<b>AVG.</b>
				<b>(N = 3)</b>
<b>DIURNAL RAPTORS</b>				
Bald Eagle	8	<b>14</b>	5	9
Northern Harrier	17	30	<b>34</b>	27
Sharp-shinned Hawk	1	<b>2</b>	<b>2</b>	1.67
Cooper's Hawk	1	<b>2</b>		1.00
Red-tailed Hawk	10	15	<b>29</b>	18
Rough-leg. Hawk	3	<b>5</b>	<b>5</b>	4.33
Golden Eagle		1	1	0.67
Merlin	1	1		0.67
Peregrine Falcon	1	1	<b>3</b>	1.67
<b>SHOREBIRDS</b>				
Killdeer	2			
Am. Oystercatcher			2	
Greater Yellowlegs	3	1		
Dunlin	250			
<b>GULLS to ALCIDS</b>				
Ring-billed Gull	√	√	√	
Herring Gull	√	√	√	
Gt Bl-backed Gull	√	√	√	
<b>PIGEONS to WOODPECKERS</b>				
Belted Kingfisher	2		2	

**TABLE 3**

**Comparison of Winter Raptor and Waterfowl Totals  
Great Egg Harbor River and Mullica River  
2011 - 2012**

	Great Egg Harbor River		Mullica River	
	PEAK	AVG.	PEAK	AVG.
	(N = 8)		(N = 3)	
<b>WATERFOWL:</b>				
Canada Goose	458	187	680	406
Brant	1,560	917	6,500	3,167
Am. Black Duck	1,037	484	365	255
Mallard	393	174	294	149
Northern Pintail	1,205	351	20	
Green-winged Teal	1,424	602	25	
<b>RAPTORS:</b>				
Black Vulture	12	6	7	4
Turkey Vulture	114	91	103	70
Bald Eagle	19	11	14	9
Northern Harrier	29	20	34	27
Sharp-shinned Hawk	5	1.25	2	1.67
Cooper's Hawk	2	1.25	2	1.00
Red-shouldered Hawk	1	0.25	0	0
Red-tailed Hawk	42	28	29	18
Rough-legged Hawk	2	0.88	5	4.33
Golden Eagle	1	0.38	1	0.67
Am. Kestrel	1	0.13	0	0.00
Merlin	0	0.00	1	0.67
Peregrine Falcon	5	2.50	3	1.67

## FINDINGS: EXPANDED SPRING THROUGH FALL STUDIES

For the fourth fall season and for the third time in spring, expanded seasonal studies sought to document the value of the Great Egg Harbor River Watershed throughout the year. During the spring migration period, the breeding season (which mostly coincides with the spring migration season), and the all-important fall migration for which South Jersey is so aptly known, counts were conducted for all raptor and waterbird species, and data was indeed kept for all birds encountered, including passerines (songbirds).

Table 1, in addition to showing core winter studies findings, also presents the results of these expanded seasonal studies, counts done on 11 November, 2011 20 April, and 24 May 2012.

Even though a full seasonal analysis is planned in 2013 at the conclusion of the planned 2012-2013 field season, it is important to note that the first four years of spring, fall, and breeding season surveys have been extremely successful. As Table 1 attests, waterbirds use the Great Egg Harbor River and estuary at all seasons. Loons are present in good numbers in spring and fall. Wading birds – herons, egrets, and ibis – abound in the warmer months, and findings from 2009 through 2012 have documented major wading bird rookeries in the Ocean City and Longport areas.

Spring 2012 observations confirmed the continued presence of the “beach-nester” colony at the Longport Sod Banks, *aka* Malibu Beach WMA (see previous season report). The tern and skimmer colony on the lower Great Egg Estuary is a major avian ecovalue of the region. It is the largest and most successful Black Skimmer colony in New Jersey. Also in spring 2012, breeding Piping Plover (endangered) were found on the lower Great Egg Estuary – also at Malibu Beach WMA (see mapping).

A total shorebird count of 1150 birds was achieved on 11 November 2011, and 1266 shorebirds were counted on 24 May 2012. While these numbers are substantial and significant, they only hint at the shorebird use of the lower Great Egg due to the fact that the current methodology and point count locations are far from prime low tide mudflats and high tide roost sites. In short, shorebirds are drastically undercounted; access by boat would be required to fully assess shorebird numbers using the Great Egg Harbor estuary.

In summary, Great Egg Harbor River core winter survey results confirmed and corroborated previous study results, and continued to document the Great Egg as a highly important area for raptors, waterfowl, and other waterbirds. Expanded coverage in fall 2011 and spring 2012 amply proved the value of the area to migrating waterbirds, waterfowl, raptors, and shorebirds alike. Both early fall and spring dates overlapped the breeding season, confirming a tern and skimmer nesting colony unique to the entire region. Significant shorebird use has been found in both spring and fall on the Great Egg Harbor estuary.

## DISCUSSION

The entire study period was characterized by temperatures that were well above average. November's average temperature of 51.4 degrees F. at Atlantic City International Airport in Egg Harbor Township was the sixth warmest November on record. Warm temperatures continued in December, and January 2012 was 6.2 degrees F. above normal at Atlantic City International Airport, the fifth warmest January on record ever. Finally, March was the warmest in New Jersey since 1895, when record keeping first began. (All data from the US National Weather Service, Mt. Holly, NJ).

Snowfall was negligible, quite unlike the previous two winter seasons. In many ways, it was the winter that never happened, and for many expected winter bird species and numbers, this was most certainly the case. Many "winter birds" simply did not – nor need to – fly south to our region. The warm fall, and winter and the resultant lack of ice cover on waters throughout the northeast was no doubt a very large factor in the low numbers of diving ducks recorded during our winter season. Although puddle duck averages were down (because ducks either never arrived, stayed so briefly in the region, and/or departed north quite early), it is interesting to note that peaks for Am. Black Ducks, Mallards, N. Pintails and Green-winged Teal were actually quite good.

The lack of snow cover on the ground to our north was a strong factor in low raptor totals in winter 2011-2012, as many birds simply stayed north. Also, the extremely warm fall was a factor too. At Hawk Mountain, Pennsylvania, the autumn 2011 Red-tailed Hawk count was 45% below average, and the lowest count since 1956. (So too, the Red-shouldered Hawk count was 48% below average, and the lowest since 1971). The Cape May Point Red-tailed Hawk count, although yet unpublished, was extremely low as well, the entire fall total count not reaching what had been recorded in a single day in some years past (years with cold Novembers and powerful northwest wind cold fronts). Because fall migration is the largest factor in bringing "winter raptors" to our region, it is no surprise that our winter Red-tailed Hawk average was the second lowest ever recorded in our nine years of study.

This report is a short form presentation of data from the 2011-2012 season only, and makes no effort to assess long-term status and trends. These in-depth analyses will be done in the major comprehensive report planned for the conclusion of the tenth year of studies (in May 2013), following the planned 2012-2013 field season.

Nonetheless, 2011-2012 survey results are another important piece of the ongoing effort that has established the Great Egg Harbor River and Great Egg Harbor Bay to be of high value to waterbirds, waterfowl, raptors and shorebirds in both New Jersey and the entire Mid-Atlantic Region, and at all seasons of the year.

We thank the Great Egg Harbor River Watershed Association for the great opportunity to carry out these important studies. We sincerely thank the many members, supporters, and friends of the Association for allowing us to be a long-term part of the continuing significant work on this great South Jersey river. Thank you for all of your important conservation efforts in Southern New Jersey, and for your ongoing vision of a wild and scenic Great Egg Harbor River. We particularly thank Fred Akers for his vision of what role these long-term studies might play in the protection of these valuable avian resources.

– Clay Sutton

23 bird species listed as Rare, Threatened, Endangered, and of Special Concern were observed and counted during the 2011-2012 Great Egg Harbor field survey. Table 5 lists the highest daily counts and the number of days these species were observed and counted

<b>2011-2012 Bird Survey Endangered, Threatened, Priority, and Special Concern Species Counts</b>				
<b>Listed Bird Species</b>	<b>Breeding Status</b>	<b>Non-breeding Status</b>	<b>High Count</b>	<b>No. Days</b>
American Kestrel ( <i>Falco sparverius</i> )	Special Concern +	Special Concern +	2	2
American Oystercatcher ( <i>Haematopus palliatus</i> )	Special Concern	Special Concern	105	11
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	Endangered	Threatened	19	11
Black-crowned Night-heron ( <i>Nycticorax nycticorax</i> )	Threatened	Special Concern	2	1
Black Skimmer ( <i>Rynchops niger</i> )	Endangered	Threatened	310	1
Broad-winged Hawk ( <i>Buteo platypterus</i> )	Special Concern	Regional Priority	1	1
Cattle Egret ( <i>Bubulcus ibis</i> )	Special Concern +	Special Concern	0	0
Coopers Hawk ( <i>Accipiter cooperii</i> )	Threatened	Threatened	5	11
Glossy Ibis ( <i>Plegadis falcinellus</i> )	Special Concern	Regional Priority	37	2
Great Blue Heron ( <i>Ardea herodias</i> )	Special Concern	Stable	16	11
Least Bittern ( <i>Ixobrychus exilis</i> )	Special Concern	Special Concern	0	0
Least Turn ( <i>Sterna antillarum</i> )	Endangered	Endangered	54	1
Northern Harrier ( <i>Circus cyaneus</i> )	Endangered	Special Concern	29	10
Osprey ( <i>Pandion haliaetus</i> )	Threatened	N/A	73	4
Peregrine Falcon ( <i>Falco peregrinus</i> )	Endangered	Endangered	5	10
Pied-billed Grebe ( <i>Podilymbus podiceps</i> )	Endangered	Special Concern	4	6
Piping Plover	Endangered	N/A	2	1
Red Knot ( <i>Calidris canutus</i> )	Endangered	Special Concern	2	1
Red Headed Woodpecker ( <i>Melanerpes erythrocephalus</i> )	N/A	Threatened	3	5
Red-shouldered Hawk ( <i>Buteo lineatus</i> )	Endangered	Special Concern	1	2
Sanderling ( <i>Calidris alba</i> )	N/A	Special Concern	130	2
Semipalmated Sandpiper ( <i>Calidris pusilla</i> )	N/A	Special Concern	1030	1
Sharp-shinned Hawk ( <i>Accipiter striatus</i> )	Special Concern	Special Concern	5	7
Short-eared Owl	Endangered	N/A	0	0
Spotted Sandpiper ( <i>Actitis macularia</i> )	Special Concern	Regional Priority	0	0
Tricolored Heron ( <i>Egretta tricolor</i> )	Special Concern	Special Concern	2	1
Whimbrel ( <i>Numenius phaeopus</i> )	N/A	Special Concern	0	0
Yellow-crowned Night Heron ( <i>Nyctanassa violaceus</i> )	N/A	Threatened	4	2
Note: + = Recommended Threatened status listing by the Endangered and Nongame Species Advisory Committee				

# **Rare, Threatened, and Endangered Species**

## **Field Mapping**

**2011 – 2012**

The following Ten field maps, created to provide a spatial representation of rare, threatened and endangered species observed during the survey, are marked according to the following key:

**BE = Bald Eagle**  
**Broadwing = Broad-winged Hawk**  
**BLSK = Black Skimmer**  
**GBTE = Gull-billed Tern**  
**CP = Coop = COHA = Cooper's Hawk**  
**COTE = Common Tern**  
**LETE = Least Tern**  
**NH = NOHA = Northern Harrier**  
**PBGR = Pied-billed Grebe**  
**PF = Peregrine Falcon**  
**YCNH = Yellow-crowned Night Heron**  
**a = Adult**  
**i = Immature**



# MAP 1

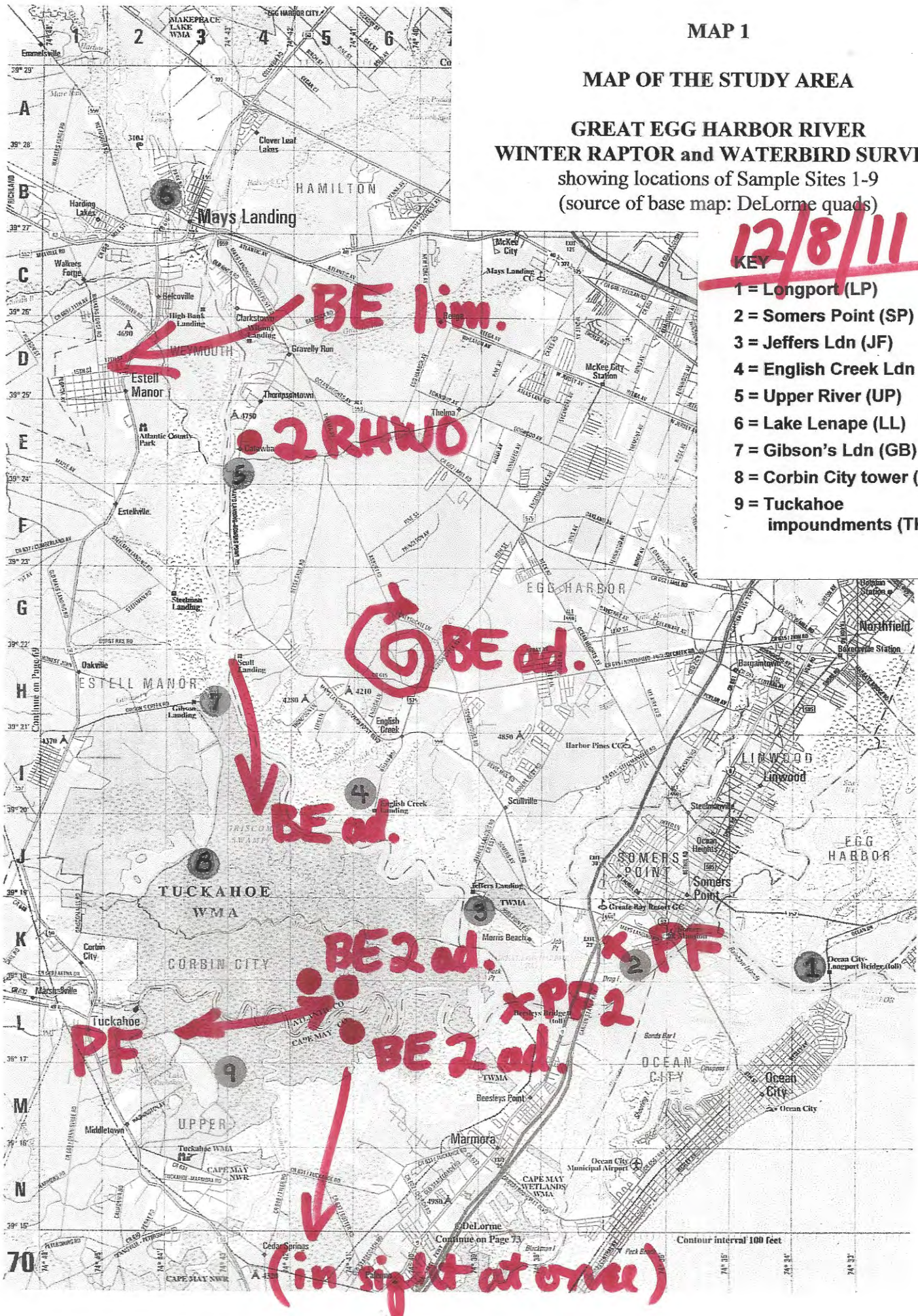
## MAP OF THE STUDY AREA

### GREAT EGG HARBOR RIVER WINTER RAPTOR and WATERBIRD SURVEY

showing locations of Sample Sites 1-9  
(source of base map: DeLorme quads)

#### KEY

- 1 = Longport (LP)
- 2 = Somers Point (SP)
- 3 = Jeffers Ldn (JF)
- 4 = English Creek Ldn (EC)
- 5 = Upper River (UP)
- 6 = Lake Lenape (LL)
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- 8 = Corbin City tower (CC)
- 9 = Tuckahoe impoundments (TK)





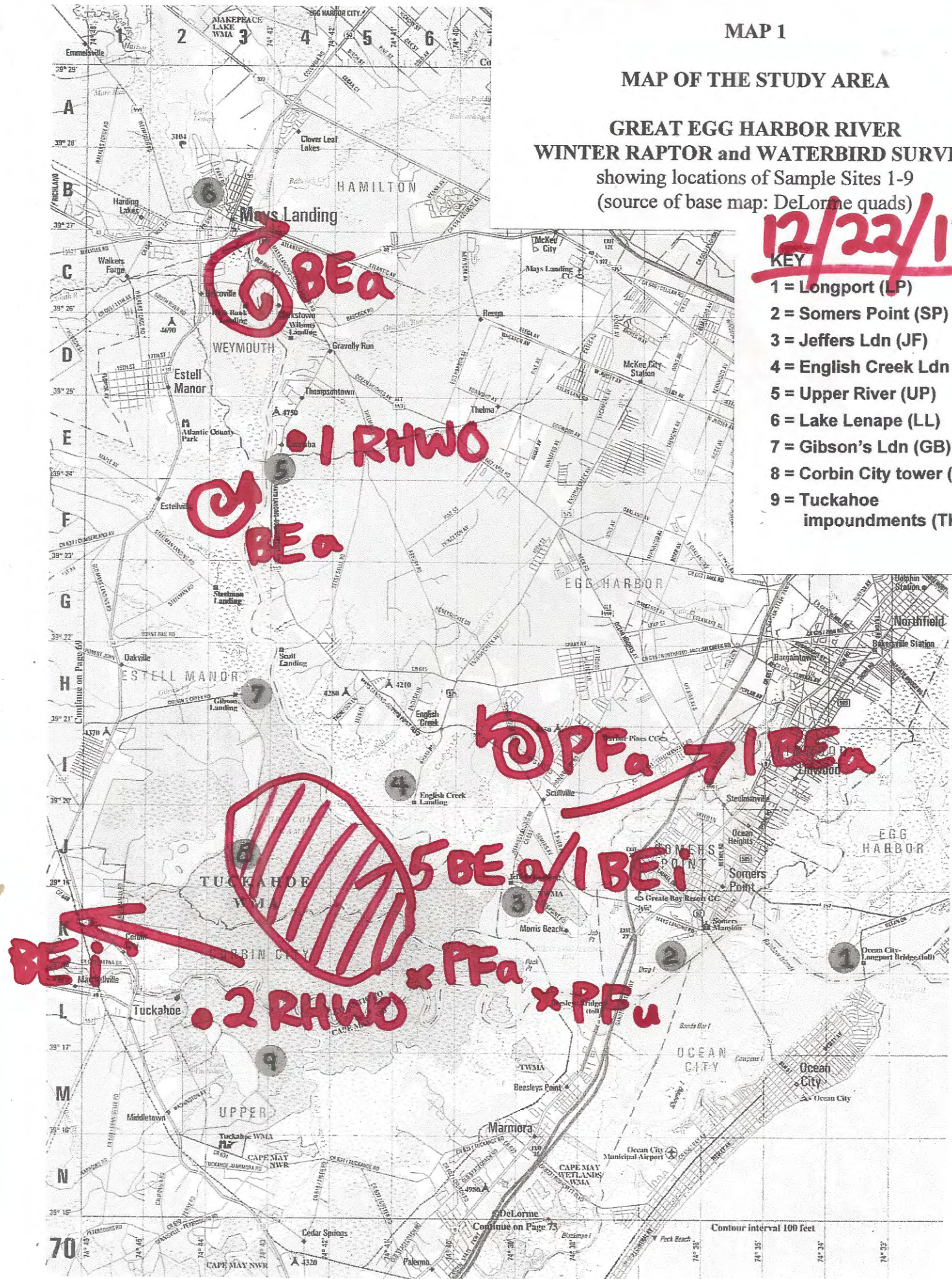
# MAP 1

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**GREAT EGG HARBOR RIVER  
WINTER RAPTOR and WATERBIRD SURVEY**  
showing locations of Sample Sites 1-9  
(source of base map: DeLorme quads)

**12/22/11**  
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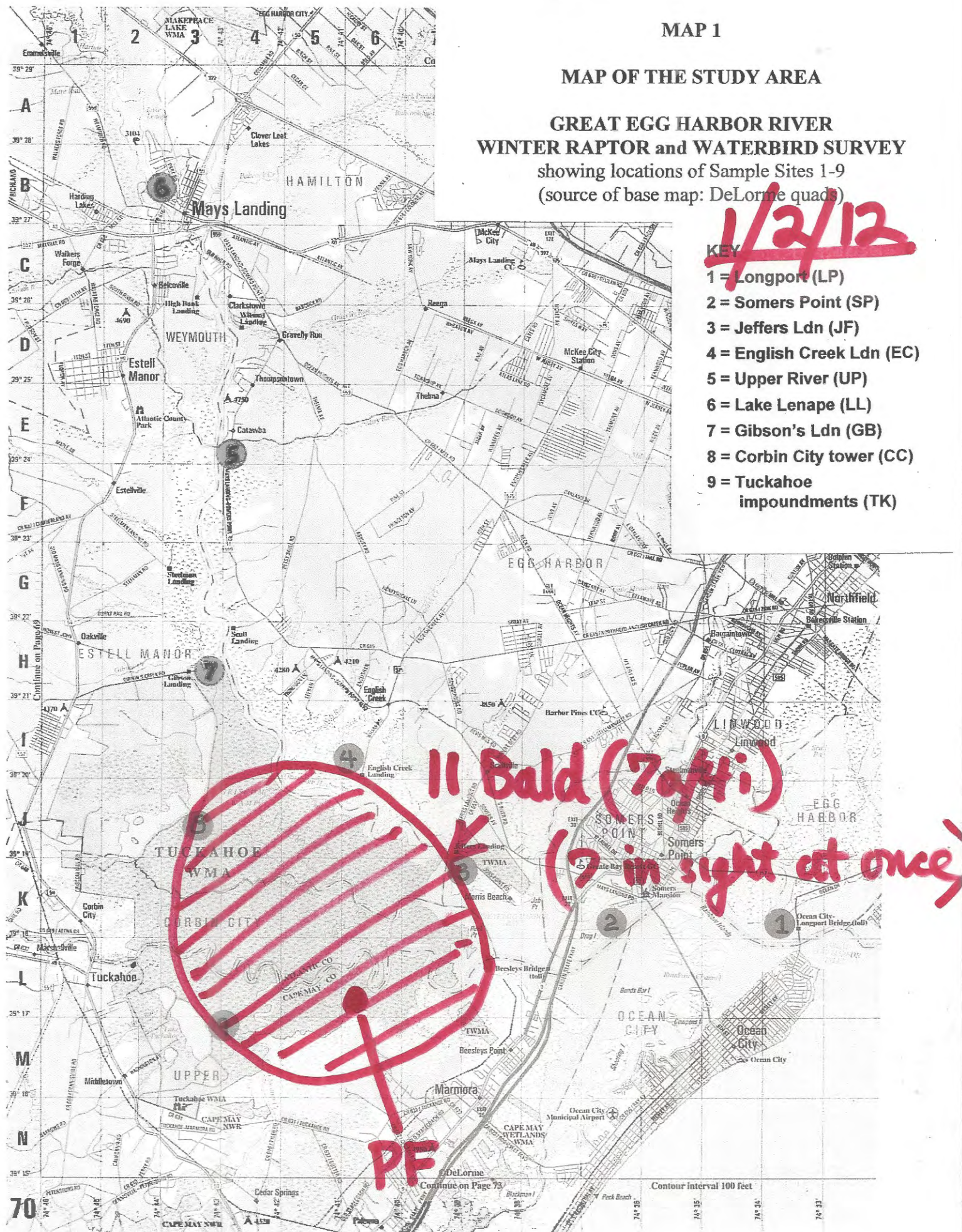
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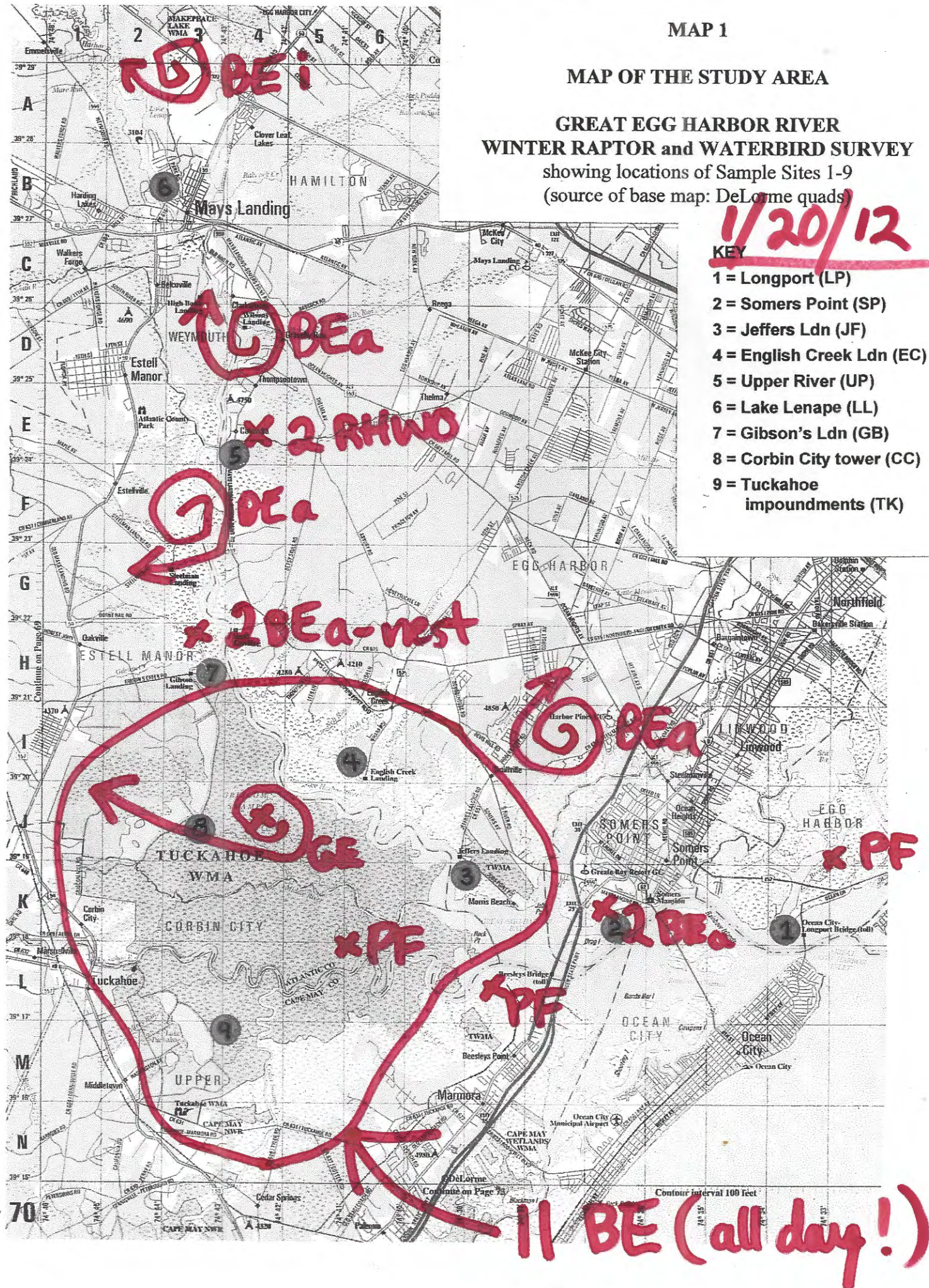


showing locations of Sample Sites 1-9  
(source of base map: DeLorme quads)

1/20/12  
KEY

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MAP OF THE STUDY AREA

**GREAT EGG HARBOR RIVER  
WINTER RAPTOR and WATERBIRD SURVEY**  
showing locations of Sample Sites 1-9  
(source of base map: DeLorme quads)

**2/3/12**

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BE od  
on nest

BE od.

-3 PF

GE-3 yr.

BEI

BE-2 od.

BE 2i

BE od.

BEI

BE 2u

BEI

1 PF



# MAP 1

## MAP OF THE STUDY AREA

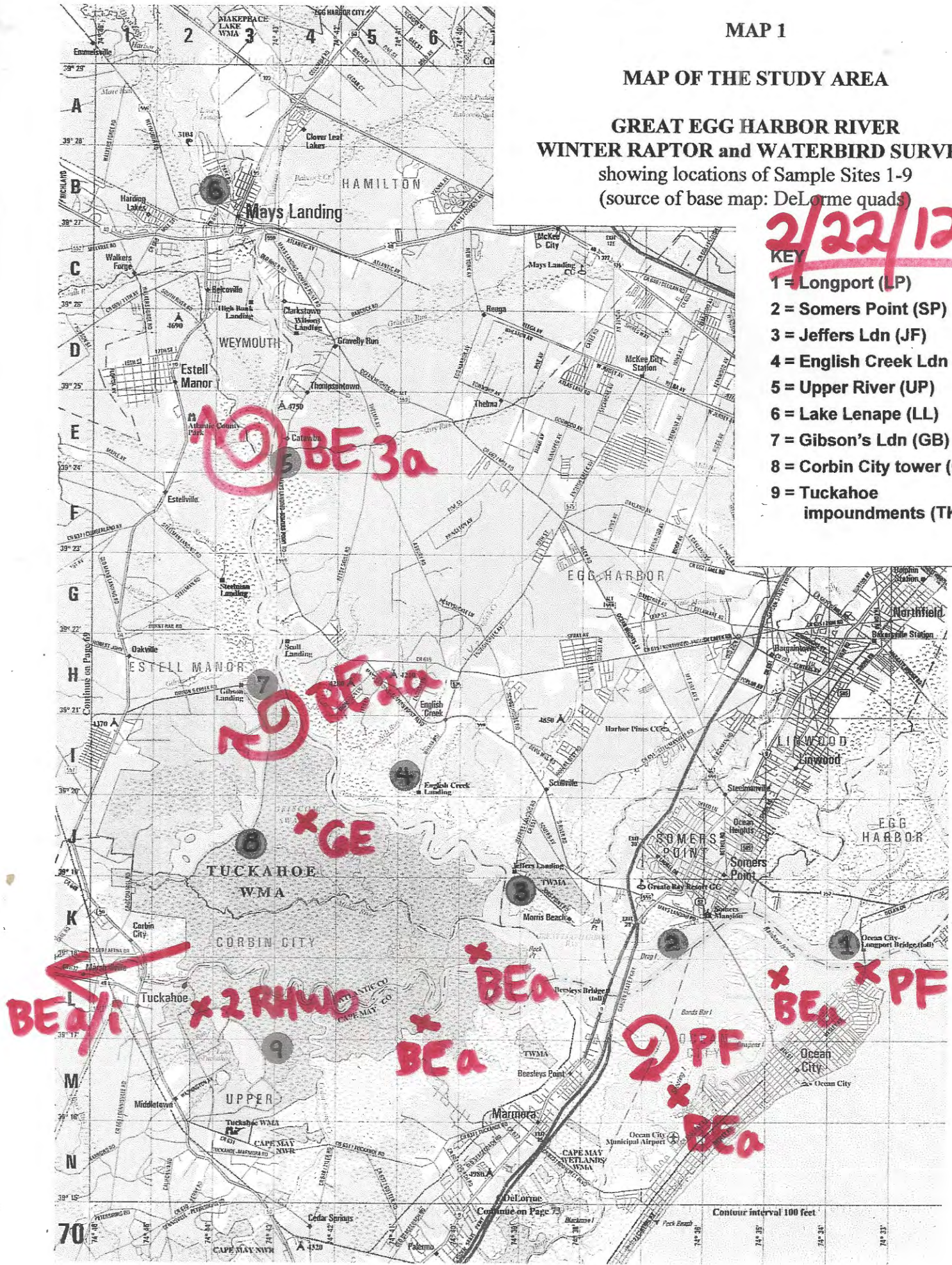
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showing locations of Sample Sites 1-9  
(source of base map: DeLorme quads)

**2/22/12**

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Contour interval 100 feet



# MAP 1

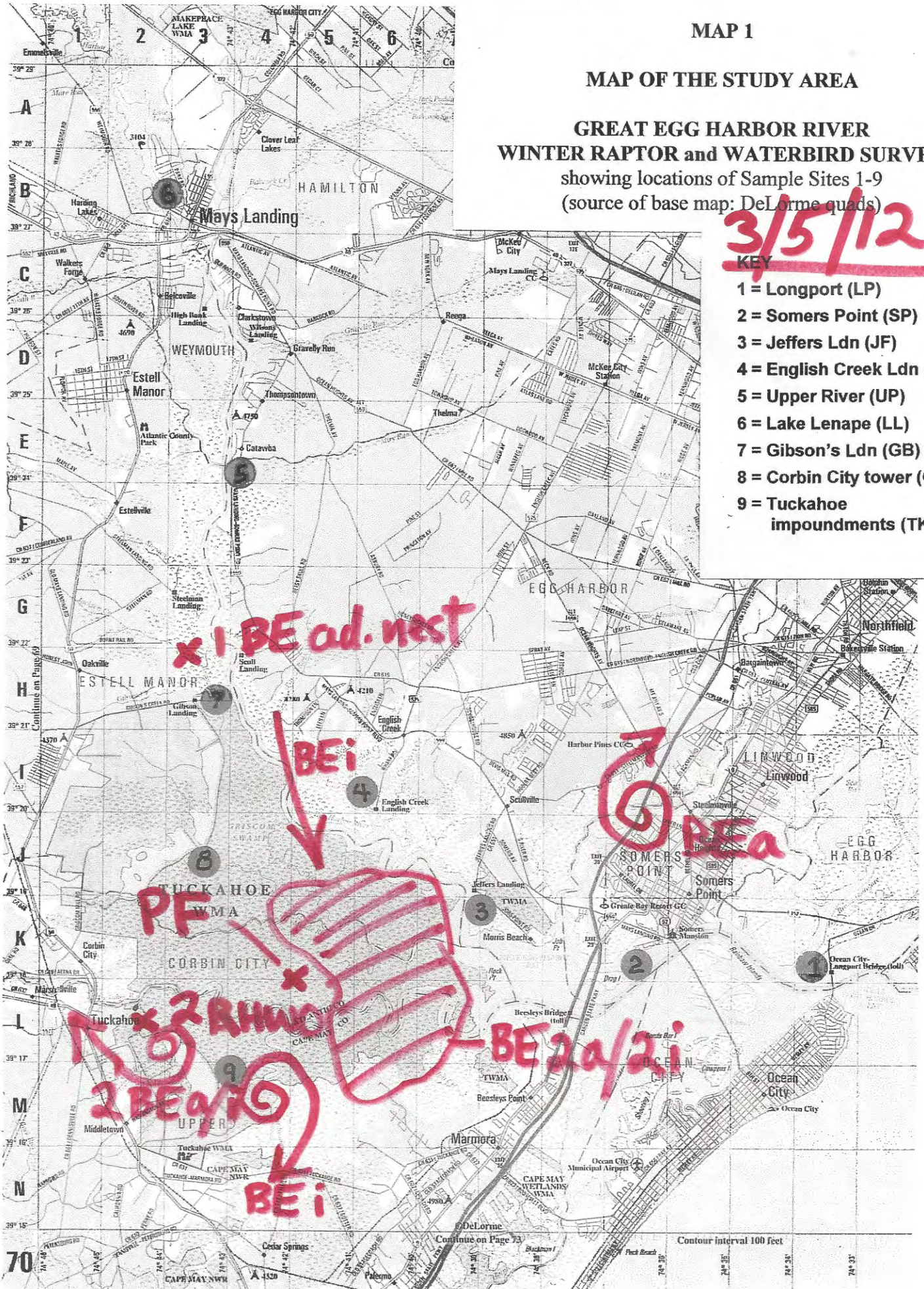
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### GREAT EGG HARBOR RIVER WINTER RAPTOR and WATERBIRD SURVEY

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**3/5/12**  
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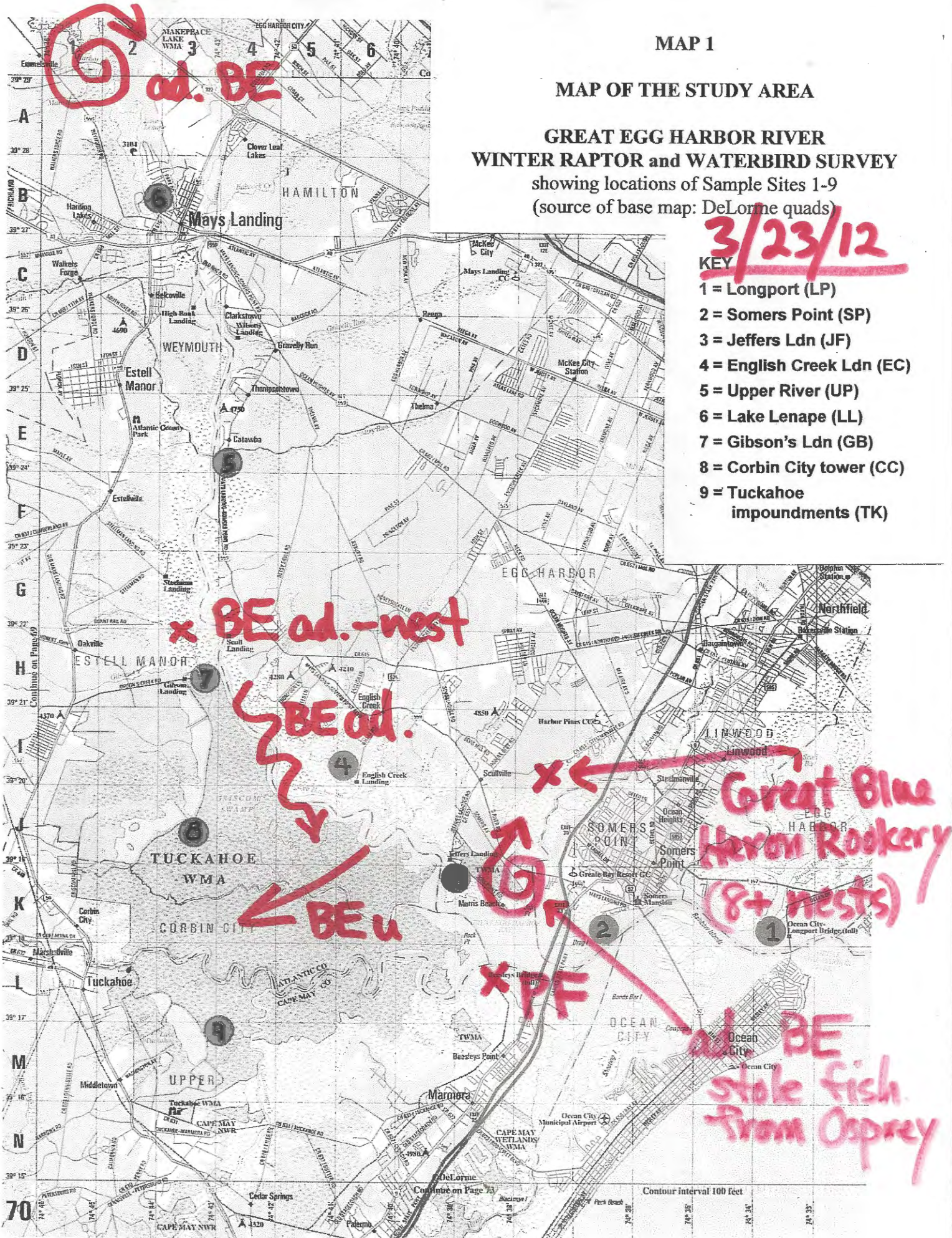
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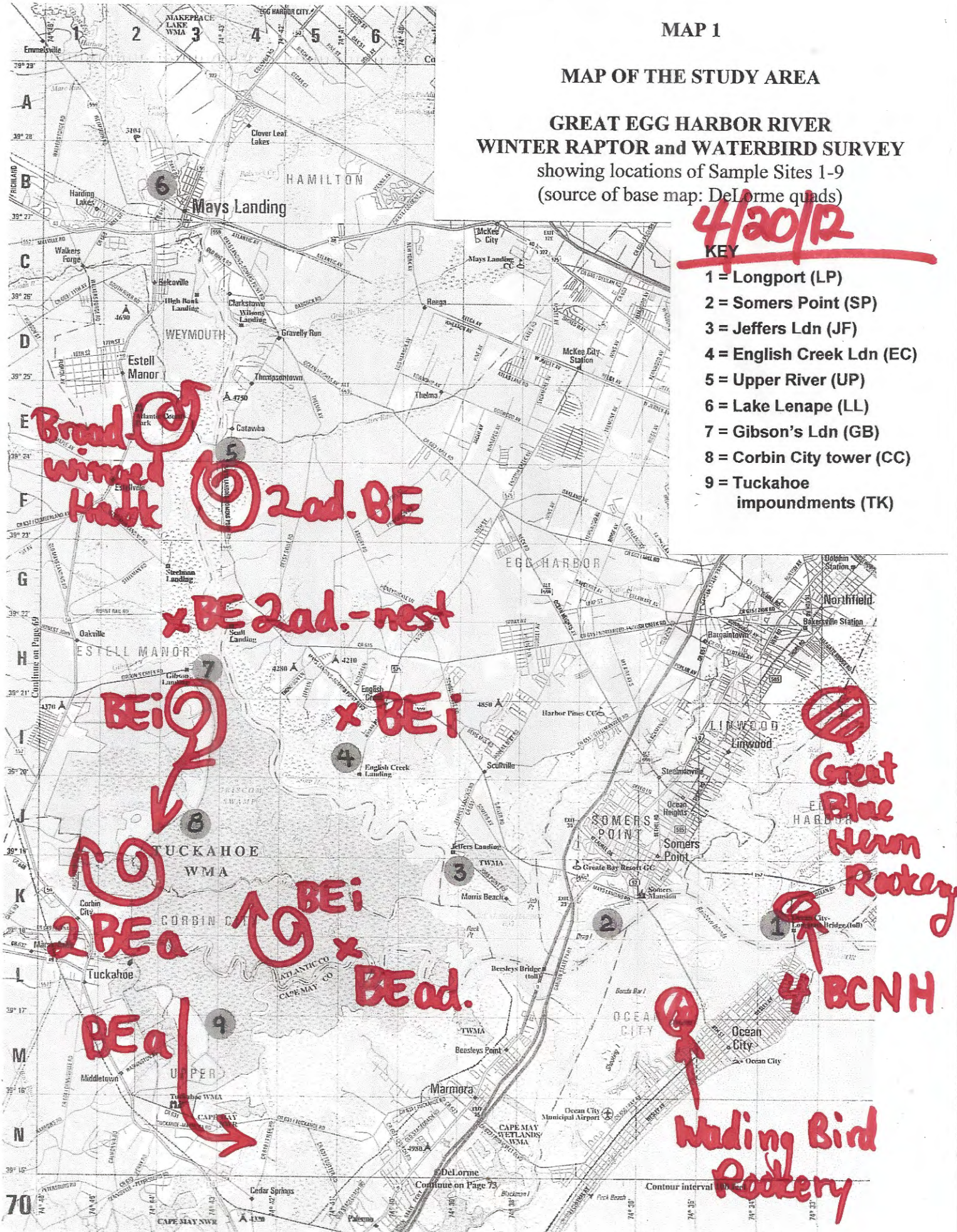
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GREAT EGG HARBOR RIVER  
WINTER RAPTOR and WATERBIRD SURVEY

showing locations of Sample Sites 1-9  
(source of base map: DeLorme quads)

**4/20/12**  
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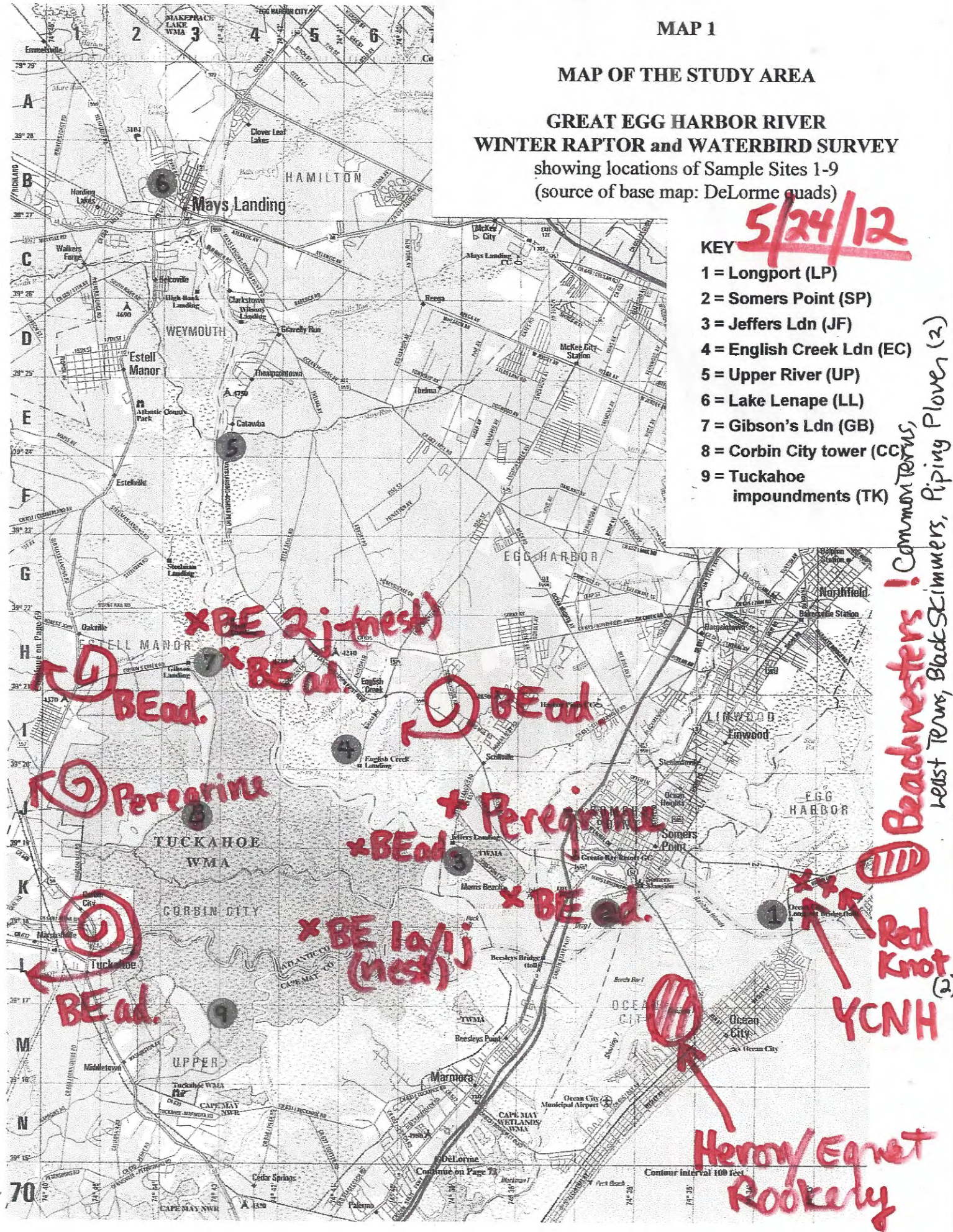
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5/24/12



Beachnesters! Common Terns,  
Least Terns, Black Skimmers, Piping Plover (2)

Herring/Egret  
Rookery



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OF THE GREAT EGG HARBOR  
WATERSHED ASSOCIATION  
WITH THE U.S. DEPARTMENT OF THE  
INTERIOR, NATIONAL PARK SERVICE:**

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