PROGRESS REPORT
PROJECT NAME & DATE
Reporting Period: Month/Day to Month/Day/Year

Please provide a progress report as outlined below either using this form or a separate document. The progress report must summarize: 1) project status, 2) work completed for each work program task during the billing period, and 3) status of deliverables for each task using the table provided.

1. Project Status: briefly summarize the status of the project. (For example, is the project on track to finish on schedule and within budget, or are there issues impacting the overall successful completion of the project?)

The Bolsa Chica Conservancy is on track to complete the project before February 2025. All remaining tasks have been completed this this October 2023-February 2024 season.

2. Work Completed: briefly summarize the work done on each work program task during the billing period for which you are seeking disbursement of funds.

   The Bolsa Chica Conservancy asks for disbursement of funds for staff labor and indirect costs for the following tasks:

   Task 2:

2.3 Bird Monitoring

Monthly bird surveys were conducted from the trail by the Sea and Sage Audubon society and Bolsa Chica Conservancy volunteers. A total of 121 species and 10362 individual birds were observed utilizing Rabbit Island and the surrounding bay. Some notable species observed including 78 Belding's Savannah Sparrow (*Passerculus sandwichensis beldingii,* federally endangered), 37 California Least Terns (*Sternula antillarum brownii*, federally endangered), and 4 California gnatcatchers (*Polioptla californica*, federally threatened) (Table 1).

Task 3:

3.1 Site Monitoring

A survey of rare plant species was conducted on Rabbit Island to assess their distribution and abundance. One of the identified species, *Sueda esteroa* (CNPS 1B.2), was observed to occupy significant portions of Rabbit Island, with a notable preference for locations adjacent to the water's edge. Interestingly, certain patches of *S. esteroa* were found to overlap with areas previously dominated by *Carpobrotus edulis* vegetation (Figure 1). Additionally, *Nemacaulis denudata var. denudata* (CNPS 1B.2) was mapped within areas that had previously been covered by iceplant (Figure 5). Notably, a newly discovered patch of

Nemacaulis denudata var. denudata was identified in the southern end of the island, replacing the once prevalent iceplant cover.

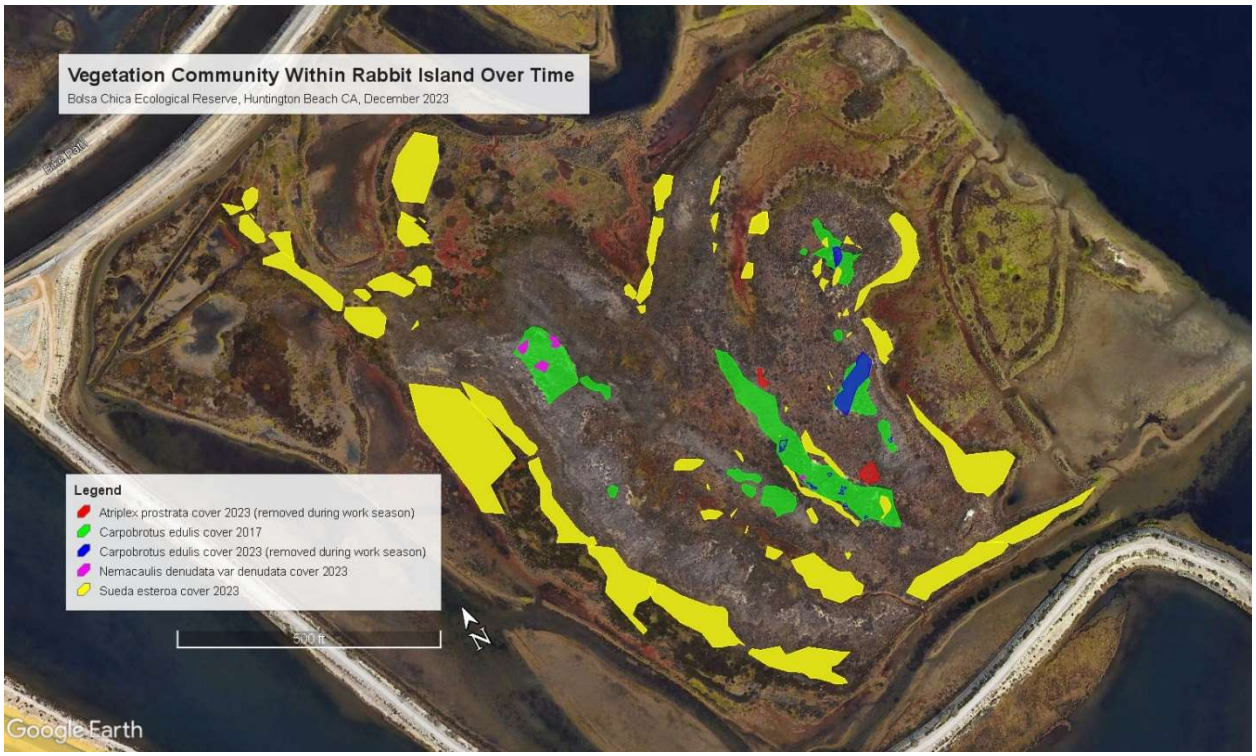

Figure 1: Map of vegetation communities on Rabbit Island over time, Bolsa Chica Ecological Reserve, 2017-Fall 2023.

3.2 Weed Removal

In October 2023 to December 2023, The Bolsa Chica Conservancy (BCC) carried out weed removal at Rabbit Island. With all *Carpobrotus edulis* patches eradicated in the previous season, only spot weeding was required to eliminate any regrowth (Figure 6 and Figure 7). The remaining *C. edulis* specimens were uprooted and consolidated in place, as their stems naturally desiccate in the sun, rendering removal unnecessary. However, there was a noticeable increase in the presence of *Atriplex prostrata* patches this year. *A. prostrata,* along with intermittent *Salsola tragus* patches, were both removed by hand and the seed heads were collected, bagged, and disposed of off-site to prevent further dispersal. Unfortunately, due to access restrictions imposed during Belding's Savannah Sparrow nesting season, BCC is not able to remove *A. prostrata* before it begins to seed.

BCC conducted detailed vegetation surveys to assess the distribution of native and non-native plant species within the project area. A total of twelve 50-meter point-intercept transects were established, with a point taken every meter to measure plant species and soil cover. Due to time constraints and limited low tide availability, two transects intersecting low muddy areas could not be completed as scheduled. Nonetheless, the surveys revealed an impressive 89.5% native plant cover, surpassing the targeted goal of 80% native cover and indicating a remarkable absence of non-native species at 0%.

3.3 Cordgrass planting

The BCC planted native cordgrass (*Spartina foliosa*) in the Pocket Pond marsh to enhance nesting habitat for the endangered LFRR. The BCC chose the Pocket Pond marsh for cordgrass planting due to its proximity to Rabbit Island, and due to presence of LFRR, highlighting the need to expand their habitat. In March of 2022, through collaborative efforts with the National Park Service and Tidal Influence, BCC harvested 1-gallon plugs of *S. foliosa* from the Seal Beach National Wildlife Refuge. These plugs were maintained in the BCC's nursery until planting.

The project site was surveyed for suitable planting locations based on elevation, soil composition, and water flow. To minimize disturbance to wildlife, twenty-four hours before planting, the site was surveyed for bird presence and possible nesting activities. Wooden stakes were then placed to mark project areas to minimize disturbance to existing vegetation.

In December 2023, 117 plugs were strategically planted in areas with minimal to no pre-existing vegetation. Plugs were spaced at a minimum distance of 5 feet apart to allow for optimal growth and expansion. Utilizing shovels and hand-trowels, soil approximately equivalent to 1 ½ times the volume of the gallon pots was carefully removed to create suitable planting pockets for the cordgrass plugs (Figure 9, 10, and 11). Any displaced soil and invertebrates were promptly returned to the original location. Following the planting process, precise GPS points were documented for each plug (Figure 2).

Thirty days after planting, a follow-up survey assessed transplant health and survivability. In January 2024, an evaluation measured growth parameters including stem height, diameter, and vigor rating (Figure 12). Vigor was rated on a scale of 1 to 5 with 1 representing a plug where all stems are green and photosynthesizing; 2 representing over half of stems were green; 3 representing about half of all stems were green while the other half were brown and presumed dead; 4 representing over half of the stems were brown; and 5 representing plugs where most to all stems were brown and presumed dead. The height class of the tallest living stem of each plug was rated on a scale of 1 to 6. A rating of 1 represented a height of 0> to 2in; 2 represented a height of 2-6in; 3 represented a height of 6-12in; 4 represented a height of 12-24in; 5 represented a height of 24-36in; 6 represented a height of 36+ inches. Plugs were marked ‘NA’ if they did not have any living stems.

The results indicated varying levels of survivability and vigor among the planted plugs, with some showing signs of stress, likely due to root disruption during transplantation. Of the 117 plugs planted, 115 were located. The missing two plugs could be attributed to expected initial die-off from stress, or plugs becoming dislodged during abnormally high king tides and storm surges.

Of the plugs located, 15% appeared to be thriving with little to no dead stems, 14% showed over half of stems were alive and green, and 42% showed about half of stems green and alive, and half dead. 17% showed less than half of all stems still green and alive, and 12% showed little to no living stems (Figure 3). All areas showed some degree of stress but will continue to be monitored for site-specific success (Figure 4). Height class measurements showed 46.09% of plugs had a greatest living stem height of 6-12 inches, followed by 23.48% measuring at 2-6inches, and 17.39% measuring at 12-24inches. Only 3.5% of all plugs measured less than 2 inches tall, and 9.3% did not have any living stems present.

It is important to note that cordgrass may experience periods of dormancy during the winter months. Therefore, the BCC remains optimistic about the long-term success of the restoration project and is committed to ongoing monitoring and maintenance to ensure the health and growth of the cordgrass population in the Pocket Pond marsh.

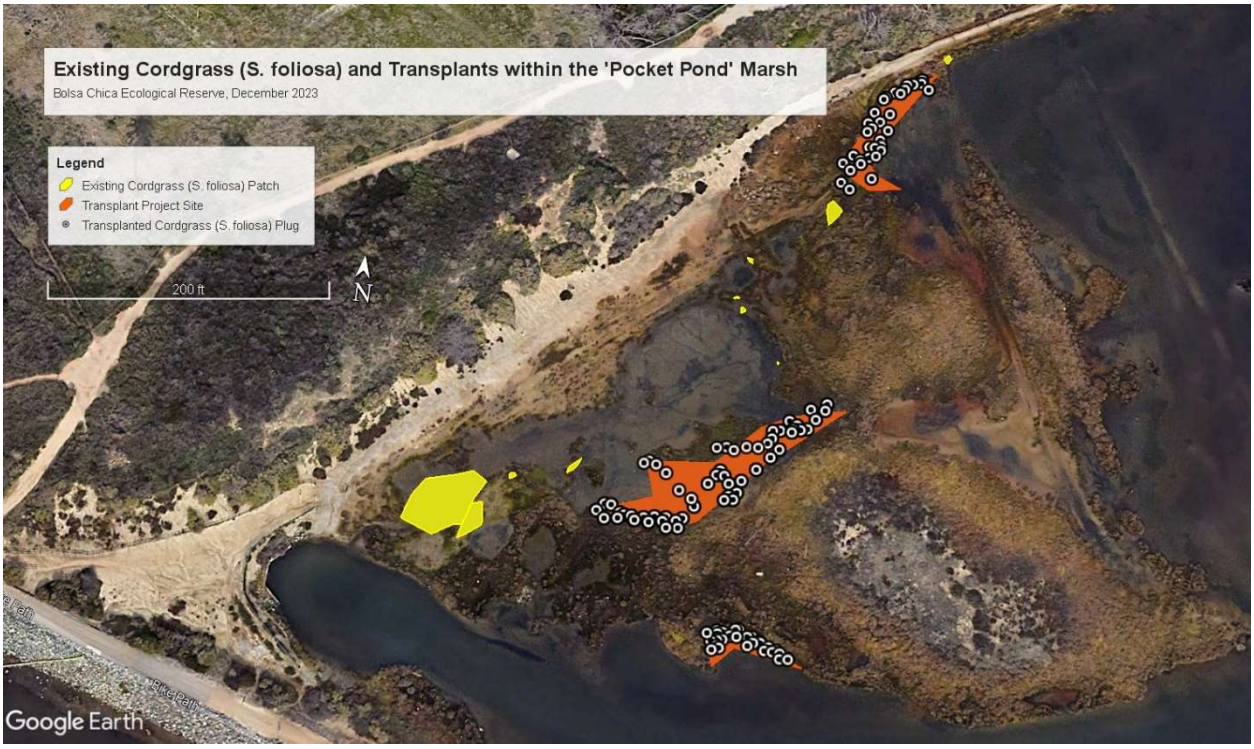

Figure 2: Map of project Areas A, B, and C and Spartina foliosa transplant plugs in relation to existing Spartina foliosa patches. Pocket Pond marsh, Bolsa Chica Ecological Reserve, December 2023.

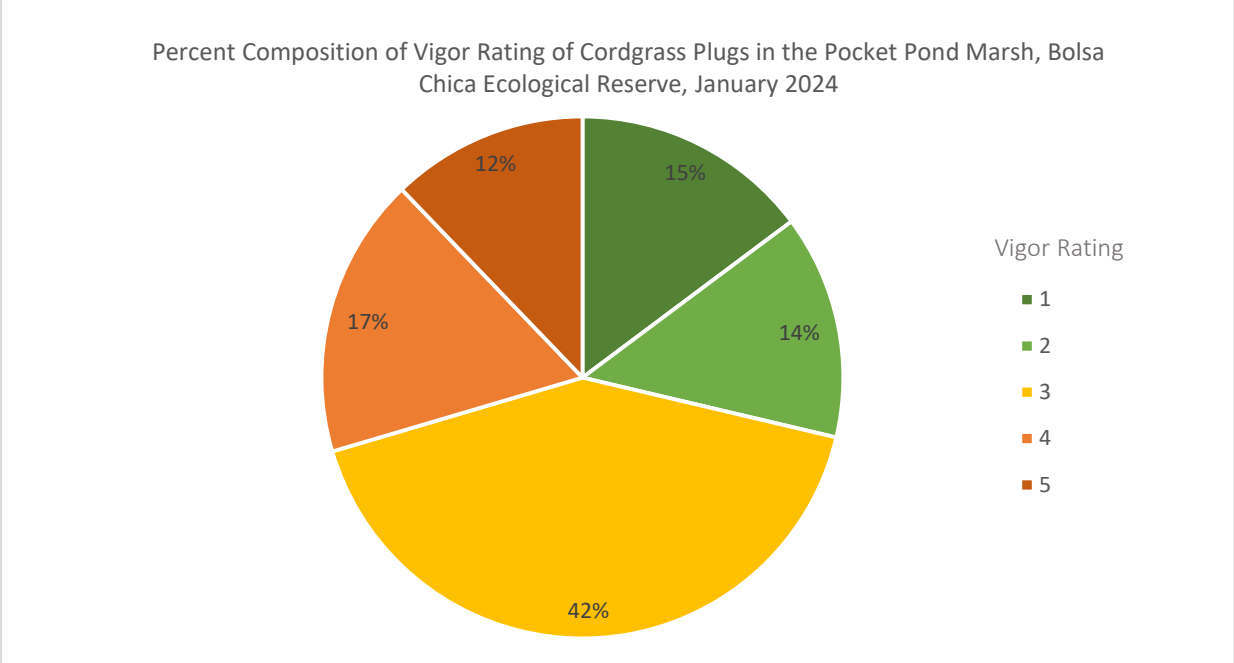

Figure 3: Percent of Vigor rating of Spartina foliosa plugs 30 days after planting. Vigor was rated on a scale of 1 to 5, with 1 being most to all stems healthy and green, and 5 being most to all stems brown and dead. Pocket Pond marsh, Bolsa Chica Ecological Reserve, January 2024.

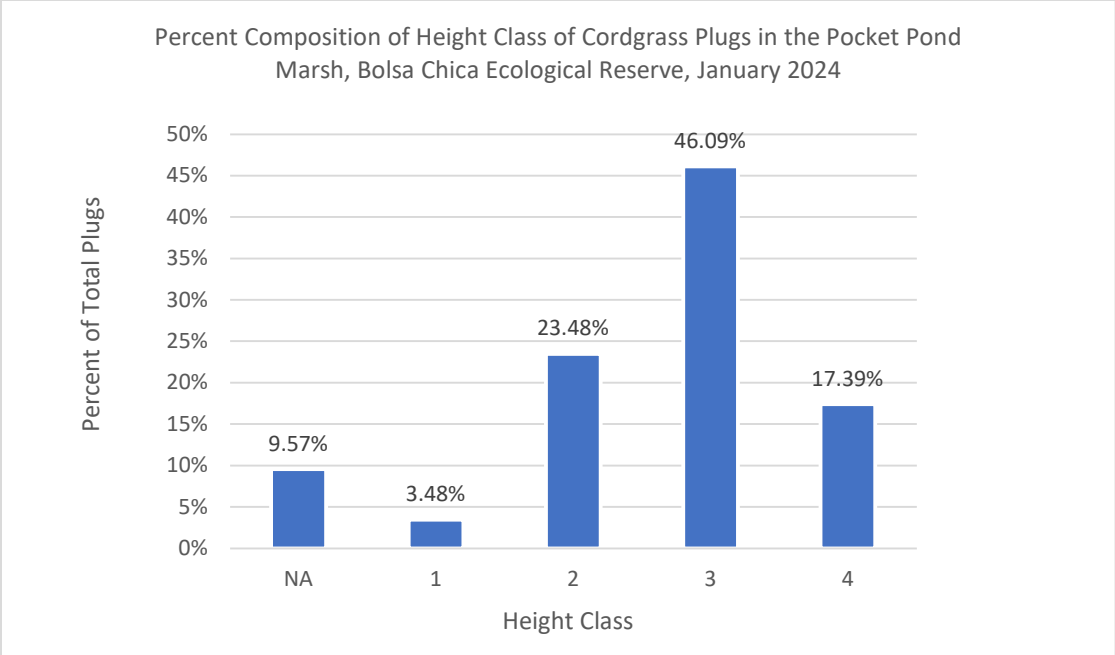

Figure 4: Percent Composition of height class of Spartina foliosa plugs, measured 30 days after planting. Height class was rated on a scale of 1 to 4 with a 1 representing a tallest living stem of 0> to 2in and a 4 representing a highest living stem of 12in to 24 in. Plugs marked as NA did not have any living stems. Pocket Pond marsh, Bolsa Chica Ecological Reserve, January 2024.

Task 4:

4.1 Rail Cameras

In 2021, the Bolsa Chica Conservancy (BCC) undertook the installation of five floating rafts with the specific aim of providing nesting habitat for the federally endangered Light Footed Ridgway's Rail (LFRR) (*Rallus obsoletus var obsoletus*) within the Bolsa Chica Ecological Reserve. During the month of October 2024, BCC retrieved remote cameras to analyze collected data from the rafts. Although no nesting activities were documented, an intriguing observation was made of a male LFRR frequently roosting on Raft 2 over an extended period (Figure 13). The retrieved photos captured instances of the LFRR exhibiting vocalizations and spending prolonged periods perched on the raft. Furthermore, a LFRR was also observed visiting another nearby raft, suggesting a growing comfort level with nesting structures and potential for future nesting.

Additionally, the rafts attracted visits from federally endangered Belding's Savannah Sparrows (*Passerculus sandwichensis beldingi*), although nesting behavior was not observed, their consistent presence signifies a possible benefit to the BSSP as well.

Bolsa Chica Conservancy also performed maintenance on the nesting rafts. Significant deterioration of the palm grass coverings and rusting of metal support wires were noted during the maintenance assessment (Figure 14). As part of the upkeep efforts, staff members promptly replaced the deteriorated palm grass covers and metal wire supports (Figure 15). The Bolsa Chica Conservancy remains committed to providing a conducive habitat for the endangered bird species, fostering their conservation and potential nesting success within the reserve.

3. Deliverables Table:

Below is a sample deliverables table. Fill in the table with the deliverables due for each task in your work program. Indicate whether the deliverable is to be included as part of your progress report or sent to the SCC project manager.

Sample Deliverables Table

Task	Deliverable	Include in Progress Report	Send to SCC Project Manager	Date sent to Project Manager
1	Monthly progress reports	X		Ongoing
1	Monthly/Quarterly RFDs	X		
2	Advisory Panel member list		X	1/7/23
2	Meeting summaries		X	Ongoing
3	Events list and descriptions	X		
3	Summary report	X		
4	Participant surveys and summary		X	

Deliverables sent to project manager should not be included in the progress report.

Task	**Task Title**	**Deliverable**	**Estimated Completion Dates**
1	Project Management and Administration	• Requests for Disbursement • Copies of Subcontracts	• Monthly throughout the contract term
2	Site Assessment and Monitoring	• Vegetation Cover Analysis • Vegetation Maps • Project site photos • Bird Survey Results • Progress Reports	• Completed • Completed • Completed • Completed • Quarterly throughout the contract term
3	Habitat Restoration	• reduce ice plant coverage to < 5%, graph analysis of native vs non-native cover. Before and after photos of weeded area • Increase native plant cover on 16-acres of dune habitat through hand seeding of appropriate native species. • Harvest/Install 100-count of CA cordgrass plugs on within Pocket	• Completed • Completed • Completed

		Pond muted tidal marsh; photos of installation. • Photos of volunteer day with a youth group. • Photos of weed removal	12/13/2023 • Completed • Completed
4	Wildlife Rehabilitation	• Photos of Construction of 5 Nesting Rafts • Photos of Installation of Nesting Rafts • Maps of nesting raft sites • Photos of wildlife through remote cameras	• Completed • Completed • Completed • Ongoing

4. Photos: If you choose to include photos in your progress report, please also send them separately to your project manager. Photos are stored separately from the progress report that is included as part of the Request for Disbursement. Indicate photo credit and permission to use photos in future SCC reports and publications.

Task 2.3: Bird Monitoring

Table 1: Count of bird species and individuals found at Rabbit Island throughout the year. Bolsa Chica Ecologicla Reserve, 2023. Surveys were not conducted in March 2023 due to poor weather.

Table 1: Rabbit Island Bird Counts by Month, Bolsa Chica Ecological Reserve 2023

General Name	Species	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	Grand Total
Geese and Ducks	American Wigeon	35	325	N/A	5						15	102	190	672
	Blue-winged Teal		44	N/A	2						6		4	56
	Brant	310	143	N/A								75		528
	Bufflehead	22	64	N/A	17							12	29	144
	Canada Goose		25	N/A	6	2						12		45
	Canvasback			N/A								1		1
	Common Goldeneye	1	6	N/A										7
	Eurasian Wigeon		1	N/A									1	2
	Gadwall	1	8	N/A	2	6	5		2	9				33
	Greater Scaup	1	2	N/A										3
	Green-winged Teal		78	N/A									15	93

	Lesser Scaup	35	111	N/A	46								8	200
	Mallard		1	N/A	2	6	12	20	10	9				60
	Northern Pintail	4	109	N/A								6	15	134
	Northern Shoveler		25	N/A						6	34	31	36	132
	Red-breasted Merganser	14	20	N/A	3								2	39
	Redhead		2	N/A			2		11		1	25	18	59
	Ruddy Duck		427	N/A	14	2	1				12	35	12	503
	Surf Scoter	28	2	N/A										30
Grebes	Clark's Grebe	1		N/A										1
	Eared Grebe	12	11	N/A								4	3	30
	Grebe sp.	1		N/A										1
	Horned Grebe	9	8	N/A									5	22
	Pied-billed Grebe	4	9	N/A	1						1	3	2	20
	Western Grebe	1		N/A										1
Pigeons & Doves	Mourning Dove	3	6	N/A					2				1	12
	Rock Pigeon (Feral Pigeon)	3	7	N/A										10
Hummingbirds	Allen's Hummingbird		23	N/A				1						24
	Anna's Hummingbird		17	N/A										17
Rails & Coots	American Coot	1	78	N/A							8	172	44	303
Stilts & Avocets	American Avocet		31	N/A	3	5	1		2		1			43
	Black-necked Stilt			N/A	2	4	9	9	30	7	11			72
Plovers	Black-bellied Plover	324	7	N/A		1	2	39	20	21	2			416
	Killdeer		24	N/A		2	3	1		1				31
	Semipalmated Plover	73		N/A	8	4		25						110
	Snowy Plover	27		N/A										27
Sandpipers & Phalaropes	Dowitcher sp.			N/A					70					70
	Dunlin	41		N/A										41
	Greater Yellowlegs	3	5	N/A				2	16	14	5		2	47
	Least Sandpiper	63	133	N/A	6			16	60	4	8	3	1	294
	Lesser Yellowlegs			N/A	1					13	1			15
	Long-billed Curlew	10	1	N/A	2		1	2	3	4	2	2	5	32
	Marbled Godwit	61	124	N/A	25			26	2	9	61	80	140	528
	peep sp.		407	N/A	426			12		8	150	20		1023
	Red Knot			N/A							1			1
	Red-necked Phalarope			N/A					7	120	21			148
	Ruddy Turnstone		4	N/A					1	1				6
	Sanderling	1	13	N/A										14
	Short-billed Dowitcher		91	N/A	7	19		53		7	31	40	12	260
	Spotted Sandpiper			N/A	1						1	1	2	5
	Western Sandpiper	750	772	N/A	50	15		6	3	195	12		1	1804
	Whimbrel		5	N/A		1		3	3	2			2	16

	Willet	70	95	N/A	13	2	36	19	28	29	53	85	78	508
Pipits	American Pipit	1		N/A										1
Gulls, Terns, & Skimmers	Black Skimmer			N/A			1							1
	Bonaparte's Gull			N/A			1							1
	California Gull	8	55	N/A	4	2			3			8	37	117
	Caspian Tern	1	13	N/A	14	3	1	2	5	1			1	41
	Elegant Tern			N/A	2				3					5
	Forster's Tern	1		N/A	12	8	4		2	5	10	1	7	50
	Glaucous-winged Gull			N/A	1								1	2
	gull sp.			N/A							15	20		35
	Herring Gull	1	4	N/A										5
	Least Tern			N/A		10	10	10	7					37
	Ring-billed Gull	9	121	N/A	7	1			5	8	17	8	9	185
	Royal Tern	1		N/A					1					2
	Western Gull	7	81	N/A	19	6	10	5	8	2	5	18	18	179
Loons	Common Loon	1		N/A										1
Cormorants	Double-crested Cormorant	3	144	N/A	3	2	2	5	10	6	9	4	20	208
Pelicans	American White Pelican		36	N/A		17			1		11	7		72
	Brown Pelican	1	25	N/A	1			6			25		5	63
Bitterns and Herons	Black-crowned Night-Heron		5	N/A					5					10
	Great Blue Heron	1	23	N/A		3	2	4	3	1	3	3	3	46
	Great Egret	3	11	N/A			1	1	10	1	3	3	5	38
	Reddish Egret	2	5	N/A	1				2				1	11
	Snowy Egret	1	50	N/A	8	4	5	7	12	4	5	3	9	108
	Yellow-crowned Night-Heron		1	N/A					1					2
Ibises	White-faced Ibis		1	N/A								2	11	14
New World Vultures	Turkey Vulture		1	N/A			1							2
Osprey	Osprey		6	N/A		1					1			8
Kites & Hawks	Cooper's Hawk		3	N/A	1									4
	Northern Harrier	1	2	N/A										3
	Red-tailed Hawk	1	1	N/A										2
	White-tailed Kite			N/A					1				2	3
Kingfishers	Belted Kingfisher	3	4	N/A							2		1	10
Falcons	American Kestrel			N/A									1	1
	Merlin		1	N/A							1			2
	Peregrine Falcon	1	1	N/A	1									3
Tyrant Flycatchers	Black Phoebe		4	N/A			2		1	2	1	2	3	15
	Cassin's Kingbird		7	N/A										7
	Say's Phoebe		1	N/A			1						1	3
Jays and Crows	American Crow	2	6	N/A			1							9

	Common Raven	1		N/A	2		1							4
Larks	Horned Lark	28	1	N/A		2								31
Swallows	Barn Swallow			N/A	3		2	5	5					15
	Cliff Swallow			N/A		13	12	1						26
	Northern Rough-winged Swallow			N/A	10		8	10	2					30
	Tree Swallow		7	N/A							6			13
Bushtits	Bushtit		8	N/A										8
Wrens	House Wren	1	10	N/A										11
Gnatcatchers	California Gnatcatcher		4	N/A										4
Thrushes	Hermit Thrush		1	N/A										1
Starlings	European Starling	2	62	N/A										64
Waxbills	Scaly-breasted Munia		3	N/A										3
Finches	House Finch		158	N/A		2								160
	Lesser Goldfinch		6	N/A										6
Wood-Warblers	Common Yellowthroat		13	N/A	2	1								16
	Orange-crowned Warbler		1	N/A										1
	Yellow-rumped Warbler		11	N/A							1	1		13
	Yellow-rumped Warbler (Audubon's)	1		N/A										1
Emberizids	California Towhee		8	N/A										8
	Dark-eyed Junco		3	N/A										3
	Fox Sparrow (Sooty)		1	N/A										1
	Golden-crowned Sparrow		2	N/A										2
	Lincoln's Sparrow		1	N/A										1
	Savannah Sparrow - Savannah	7	5	N/A										12
	Savannah Sparrow (Belding's)	2	15	N/A	5	13	8	9	1	8	9	6	3	79
	Song Sparrow		28	N/A							1			29
	White-crowned Sparrow		58	N/A									11	69
Blackbirds	Red-winged Blackbird		10	N/A										10
	Western Meadowlark		12	N/A										12
	Monthly Totals	***JAN***	***FEB***	***MAR***	***APR***	***MAY***	***JUN***	***JUL***	***AUG***	***SEP***	***OCT***	***NOV***	***DEC***	***Grand Total***
	Individual Total	2000	4304	N/A	738	157	145	299	358	497	562	795	777	10362
	Species Total	57	91	N/A	40	29	29	27	38	28	40	33	45	121

Task 3.1: Site Monitoring



*Figure 5: Coast Woolley Heads (*Nemacualus denudata var denudata*) at a distance (Left) and close up (Right) in dunes habitat at Rabbit Island, Bolsa Chica Ecological Reserve, January 2024*

Task 3.2: Weed Removal



Figure 6:(Left and Right) Interns remove Carpobrotus edulis *patches from the Rabbit Island project site, Bolsa Chica Ecological Reserve October 2023.*



Figure 7: Rabbit Island dune site before (Let) and after (Right) Carpobrotus edulis *removal, Bolsa Chica Ecological Reserve October - December 2023.*



*Figure 8: Dune habitat at Rabbit Island, with thriving deerweed (*Acmispon glabber*) community, Bolsa Chica Ecological Reserve January 2024.*

Task 3.3: Cordgrass Planting



*Figure 9: Interns plant cordgrass (*Spartina foliosa*) plugs in Area A (Left) and Area B (Right) of project site in Pocket Pond marsh, Bolsa Chica Ecological Reserve, December 2023.*



*Figure 10: Intern plants cordgrass (*Spartina foliosa*) plugs in Area C of the project site at Pocket Pond, Bolsa Chica Ecological Reserve, December 2023.*



*Figure 11: California State Coastal Conservancy Grant Coordinator and Bolsa Chica Conservancy Sr. Restoration and Research Coordinator plant cordgrass (*Spartina foliosa*) plugs in Area B of the project site in the Pocket Pond marsh, Bolsa Chica Ecological Reserve, December 2023.*



*Figure 12: Cordgrass (*Spartina foliosa*) plugs immediately after planting, December 2023 (Left) and at 30-day check-in, January 2024 (Right), in the Pocket Pond marsh, Bolsa Chica Ecological Reserve.*

Task 4.1: Rail Camera Photos



Figure 13: Light Footed Ridgway's Rail (Rallus obsoletus var obsoletus*) visiting Raft 2 from April 2023 to June 2023, Bolsa Chica Ecological Reserve.*

Nest Raft Repair



Figure 14: Nest Raft 4 before (Left) and after (Right) replacement and repair of metal wire and palm grass covers. Rabbit Island, Bolsa Chica Ecological Reserve, January 2024.



Figure 15: Staff and volunteers replace wire and palm grass covers on Nest Raft 3 (Left) and Nest Raft 4 (Right). Bolsa Chica Ecological Reserve, January 2024.