

# ELKHORN SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE

1700 Elkhorn Road • Watsonville, CA 95076 • (831) 728-2822



**Elkhorn Slough  
National Estuarine  
Research Reserve**

May 20, 2021

Jolie Harrison  
Chief, Permits and Conservation Division  
Office of Protected Resources  
National Marine Fisheries Service  
1315 East-West Highway  
Silver Spring, MD 20910

## **Subject: Incidental Harassment Authorization Renewal Request for Phase II of the Elkhorn Slough Tidal Marsh Restoration Project, Monterey County, California**

On behalf of the California Department of Fish and Wildlife (CDFW), we are writing to request a renewal of the Incidental Harassment Authorization (IHA) for Phase II of the Elkhorn Slough Tidal Marsh Restoration Project (project). The Initial IHA was issued by your office on March 9, 2020 and is valid for the period between June 1, 2020 and May 31, 2021.

The activities that will be completed during the renewal period are a subset of the activities covered by the Initial IHA. As described in the Initial IHA application, the project will restore 58 acres of subsided marsh and tidal channels, including 29.4 acres associated with the Minhoto-Hester Restoration Area and 28.6 acres associated with the Seal Bend Restoration Area. To date, the majority of earthwork at the Minhoto-Hester Restoration Area has been completed, including earthwork in subareas M4a, M4b and M5. Work at the Seal Bend Restoration Area has not been initiated and will be the subject of a separate IHA application that will be submitted to National Marine Fisheries Service in the future.

The one year renewal will allow work at the Minhoto-Hester Restoration Area to be completed. The renewal is needed due to construction delays attributed to severe weather in the winter of 2020 which limited the ability for heavy equipment to access and mobilize onsite. Outstanding work at the Minhoto-Hester Restoration Area includes placement of additional fill in subareas M5 and M6 to raise the subsided marsh plain; excavation of tidal channels in all subareas; and rerouting tidal flow from the existing tidal channel adjacent to Yampah Marsh to the new tidal channel that bisects subareas M4b and M5. All of the remaining work is consistent with what was described in the Initial IHA application.

All other aspects of activities covered under the renewal will be identical to those described in the initial request. Specifically:

*The Elkhorn Slough National Estuarine Research Reserve  
is managed by the California Department of Fish and Wildlife in cooperation with the National Oceanic and Atmospheric Administration*



- The total days of construction will remain 180 days. This includes the 115 days of work that occurred between August 2020 and April 2021, and an additional 65 days of work that will occur at the Minhoto-Hester Restoration Area between June 2021 and September 2021, pending renewal of the IHA.
- The same heavy equipment and construction methods will be used to access and complete work at the Minhoto-Hester Restoration Area.
- The timing for work will be the same – i.e., continuous, as site conditions allow.
- All monitoring and mitigation measures required in the Initial IHA will be implemented during the renewal period.
- The renewal will not impact the previous analyses of the effects of take on harbor seals.

The following summarizes the most recent monitoring data from the Phase II work, and provides an updated take estimate for the remaining work at the Minhoto-Hester Restoration Area.

### Summary of Project Monitoring and Revised Take Estimate

As noted above, to date, the construction contractor has worked a total of 115 days at the Minhoto-Hester Restoration Area. Marine mammal monitoring was implemented on 85 of the 115 construction days.<sup>1</sup> Fifteen (15) incidents of Level B harassment of harbor seals (flushing or movement) were recorded by the monitors. Of these, nine (9) incidents representing harassment of 16 individual seals were attributed to construction activities; the remaining six (6) incidents representing harassment of 20 seals were attributed to marine mammal monitoring activities. Using these data, it is estimated that project construction has resulted in the take of 36 seals in 85 monitoring days, or less than 1 (0.42) seal per day. If this estimate of take is applied to the 30 construction days when monitoring did not occur (i.e.,  $0.42 \times 30$ ), an additional 12.6 seals may also have been subject to Level B harassment, for a total take to date of up to 48.6 seals (rounded to 49 seals).

The IHA authorizes Level B harassment of up to 6755 harbor seals over 180 construction days. Using the same take methodology provide in the IHA, it is estimated that up to 2440 seals could be subject to Level B harassment during the remaining 65 days of work at the Minhoto-Hester Restoration Area (i.e.,  $417 \text{ max seals/day} \times 9\% \times 65 \text{ days}$ ). When added to take that has occurred to date (49 seals), the total anticipated take associated with the project would be 2489 harbor seals. This would be less than the total authorized take of 6755 harbor seals provided in the IHA.

A preliminary monitoring report showing the results of the required monitoring to date is attached to this renewal request. As summarized in the report, the monitoring results do not indicate impacts of a scale or nature that was not previously analyzed or authorized in the initial IHA.

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<sup>1</sup> The IHA requires a marine mammal monitor be present ever other day when construction activities occur in water or within the boundaries of the two tidal restoration areas (Condition 4(b)(ii)), or 57 days based on 115 days of construction work to date. Out of an abundance of caution, CDFW required a monitor be present everyday site containment activities were occurring at the Minhoto-Hester Restoration Area, which resulted in a monitor being present 85 of the 115 days of work.

We look forward to working with you through the renewal process.

Best,

*Monique Fountain*

Monique Fountain  
Tidal Wetland Project Director

# Elkhorn Slough Tidal Marsh Restoration Project Phase II

## Preliminary Marine Mammal Monitoring Report

### 5/2021

#### Project Description

Phase II of the Elkhorn Slough Tidal Marsh Restoration project will restore 58 acres of subsided marsh and tidal channels, including 29.4 acres associated with the Minhoto-Hester Restoration Area and 28.6 acres associated with the Seal Bend Restoration Area (Figure 1). To date, the majority of earthwork at the Minhoto-Hester Restoration Area has been completed, including earthwork in subareas M4a, M4b and M5. Outstanding work at the Minhoto-Hester Restoration Area includes placement of additional fill in subareas M5 and M6 to raise the subsided marsh plain; excavation of tidal channels in all subareas; and rerouting tidal flow from the existing tidal channel adjacent to Yampah Marsh to the new tidal channel that bisects subareas M4b and M5.



Figure 1. Regional Setting

## Monitoring Requirements

Marine mammal monitoring was conducted during construction activities in accordance with the following requirements from the Incidental Harassment Agreement (IHA) issued March 9, 2020. See Appendix A for the protocol developed with NMFS staff following these requirements.

- (a) PSOs shall be used to detect, document, and minimize impacts to marine mammals, as well as communicate with and instruct relevant construction crew with regard to the presence of marine mammals and mitigation requirements. Independent PSOs (i.e., not construction personnel) who have no other assigned tasks during monitoring periods must be used.
- (b) The PSOs will have the authority to stop project activities if marine mammals approach or enter the Level B harassment zone, the shutdown zones (described in 4.d. of the IHA), or at any time for the safety of any marine mammals. Work will commence only with approval of the PSOs to ensure that no marine mammals are within the shutdown zones, or in potential harm.
- (c) PSOs will be placed at the best vantage point(s) practicable to monitor for marine mammals within the Level B harassment zone defined above. If multiple construction activities occur simultaneously, enough PSOs must be on duty to monitor all Level B harassment zones.
- (d) Qualifications for PSOs for visual monitoring include:
  - (i) Visual acuity in both eyes ( correction is permissible) sufficient for discernment of harbor seals on land or in the water with ability to estimate target size and distance; use of binoculars may be necessary to correctly identify the target.
  - (ii) Successfully attained a bachelor's degree from an accredited college or university with a major in one of the natural sciences and a minimum of 30 semester hours or equivalent in the biological sciences and at least one undergraduate course in math or statistics. The educational requirements may be waived if the PSO has acquired the relevant skills through alternate experience. Requests for such a waiver must include written justification. Alternate experience that may be considered includes, but is not limited to
    - (1) secondary education and/or experience comparable to PSO duties;
    - (2) previous work experience conducting academic, commercial, or government-sponsored marine mammal surveys; or
    - (3) previous work experience as a PSO; the PSO should demonstrate good standing and consistently good performance of PSO duties.
  - (iii) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).
  - (iv) Experience or training in the field identification of marine mammals, including the identification of behaviors.
  - (v) Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations.

(vi) Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when construction activities were conducted; dates and times when construction activities were suspended to avoid potential incidental injury from construction sound or visual disturbance of marine mammals observed; and marine mammal behavior.

(vii) Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

(e) PSOs must be provided with the equipment necessary to effectively monitor for marine mammals in order to record species, the distance from species' location to the construction activities, behaviors, and responses to construction activities.

(f) The PSO must also conduct biological resources awareness training for construction personnel. The awareness training will be provided to brief construction personnel on identification of marine mammals (including neonates) and the need to avoid and minimize impacts to marine mammals. If new construction personnel are added to the project, the contractor shall ensure that the personnel receive the mandatory training before starting work. Monitoring requirements also include:

(g) Data Collection- Monitoring shall be conducted before, during, and after construction activities (as described below). In addition, PSOs shall record any behavioral reactions in concert with distance from construction activities. PSOs must use standardized data forms, whether hard copy or electronic. We require that, at a minimum, the following information be reported:

(i) PSO names and affiliations

(ii) Time of PSO arrival on site

(iii) Time of the commencement of construction activities

(iv) Pre and post-activity Monitoring- A census of marine mammals in the project area and the area surrounding the project must be conducted at least 30 minutes prior to the beginning of construction on monitoring days, and again 30 minutes after the completion of construction activities. The following data will be collected:

1. Environmental conditions (weather condition, tidal conditions, visibility, cloud cover, air temperature and wind speed).

2. Numbers of each marine mammal species spotted

3. Location of each species spotted, including distance from construction activity

4. Status (in water or hauled out)

5. Behavior

(v) Hourly counts - Conduct hourly counts of animals hauled out and in the water within at least the Level B harassment zone. The following data must be collected:

1. Numbers of each species

2. Location, including whether inside the Level B harassment zone; whether hauled out or in the water; and distance from construction activities (+/- 10 m)

3. Time
4. Tidal conditions
5. Time construction activities start and end
6. Primary construction activities occurring during the past hour
7. Any noise or visual disturbance
8. Number of morn/pup pairs and neonates observed
9. Notable behaviors, including foraging, grooming, resting, aggression, mating activity, and others
10. Notes may include any of the following information to the extent it is feasible to record:
  - Age-class
  - Sex
  - Unusual activity or signs of stress
  - Any other information worth noting

(vi) Construction related reactions - Record reaction observed in relation to construction activities including:

1. Tally of each reaction
2. Time of reaction
3. Concurrent construction activity and the assumed cause (whether related to construction activities or not) shall be noted
4. Disturbance must be recorded according to NMFS' three-point pinniped disturbance scale (see Table 2)
5. Location of animal during initial reaction and distance from the noted disturbance
6. Direction of movement
7. Activity before and after disturbance
8. Status (in water or hauled out) before and after disturbance

(vii) Post-activity Monitoring - At least 30 minutes following the cessation of all construction activities, the PSO(s) must conduct the same observations as listed above, in addition to the following:

1. Time of the cessation of construction activities
2. Time of PSO departure from site

(viii) For observations of all other marine mammals (if observed) the time, distance from construction activities ( $\pm 10$  m), and duration of each animal's presence in the Level B Harassment Zone; the number of animals observed; the behavior of each animal, including any response to construction activities.

(ix) Individuals implementing the monitoring protocol will assess its effectiveness using an adaptive approach. PSOs will use their best professional judgment throughout implementation and seek improvements to these methods when deemed appropriate. Any modifications to protocol will be coordinated between NMFS and the CDFW.

## Preliminary Results

Work at the Minhoto-Hester Restoration Area began in August 2021. Between August 2020 and April 2021 (an approximate 8-month period), the construction contractor worked a total of 115 days. Marine mammal monitoring was required on 57 days and implemented on 85 of the 115 construction days. Additional monitoring days were added for training and when in water work was conducted. Fifteen (15) incidents of Level B harassment of harbor seals (flushing or movement) were recorded by the monitors (Table 1). Of these, 9 incidents representing harassment of 16 individual seals were attributed to construction activities; the remaining 6 incidents representing harassment of 20 seals were attributed to marine mammal monitoring activities. It is estimated that project construction has resulted in the take of 36 seals in 85 monitoring days, or less than 1 (0.42) seal per day. If an estimate of take of 0.42 seals per day is applied to the 30 construction days when monitoring did not occur (i.e.,  $0.42 \times 30$ ), an additional 12.6 seals may also have been subject to Level B harassment, for a total take to date of 48.6 seals (rounded to 49).

Table 1. Elkhorn Slough Tidal Marsh Restoration Project, Phase II Level B Harassment summary

Incident #	Date	Reaction	Trigger	Distance (m)	Total Seals in Vicinity	Total Seals Reacted	Total Seals within 300m*
1	09/15/2020	Flush	Construction (Sound and Visual)	60m	2	1	2
2	09/21/2020	Flush	Construction (Sound and Visual)	60m	4	2	35
3	11/09/2020	Movement	Construction (Sound)	300m	3	1	3
4	03/17/2021	Movement	Construction (Sound)	200m	5	5	5
5	03/24/2021	Flush	Construction (Sound and Visual)	60m	1	1	1
6	03/24/2021	Flush	Construction (Sound and Visual)	60m	1	1	4
7	04/05/2021	Flush	Construction (Sound and Visual)	80m	6	2	8
8	04/05/2021	Flush	Construction (Sound and Visual)	60m	2	1	14
9	04/14/2021	Flush	Construction (Sound and Visual)	80m	2	2	45
			<b>subtotal Construction</b>		<b>26</b>	<b>16</b>	<b>117</b>
10	09/03/2020	Flush	Observer (Visual)	20m	1	1	6
11	09/08/2020	Flush	Observer (Visual)	80m	8	8	8
12	09/16/2020	Flush	Observer (Visual)	100m	1	1	4
13	10/19/2020	Flush	Observer (Visual)	40m	2	2	2
14	12/03/2020	Flush	Observer (Visual)	80m	1	1	1
15	12/16/2020	Flush	Observer (Visual)	60m	7	7	10
			<b>subtotal Observers</b>		<b>20</b>	<b>20</b>	<b>31</b>
<b>Total</b>					<b>46</b>	<b>36</b>	<b>148</b>

\* Based on hourly counts to the nearest hour as seals were unlikely to move entirely out of the observation area.

These monitoring results do not indicate impacts of a scale or nature that was not previously analyzed or authorized in the Initial IHA.

## **APPENDIX A – MONITORING PROTOCOL**

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## **Elkhorn Slough Tidal Marsh Restoration Marine Mammal Monitoring Protocol**

### **Goals**

1. Ensure that marine mammals are not subject to injury under the Marine Mammal Protection Act and the Federal Endangered Species Act.
2. Collect field data about the movement and activity of marine mammals during construction monitoring, which will inform NOAA Fisheries and USFWS on marine mammal sensitivity to disturbance and provide reference for future construction projects.

### **Objectives**

1. Ensure that construction activity is halted when there is a reasonable possibility that marine mammals will enter the exclusion zone (within 15 meters of construction activity) in order to avoid any potential for physical injury.
2. Ensure that presence, distribution, movement and behavior of harbor seals and sea otters within the project area and surrounding vicinity is recorded when there is a reasonable possibility that marine mammals will experience behavioral harassment.

### **Observation locations**

Monitoring during construction will occur from up to three observation areas – Yampah Island, Minhoto Marsh / Seal Bend East, and Seal Best West - depending on the location of active construction work (Figure A-1). Each observation area shall be accessed by foot and would provide a vantage point of the construction area, main channel of Elkhorn slough, the Minhoto Complex, and Parsons Slough. The observation areas include the entire area within which harbor seals and sea otters might reasonably be expected to experience disturbance due to construction activities.

### **Monitoring protocol**

A NOAA Fisheries and USFWS-approved biological monitor will monitor for marine mammal disturbance. Monitoring will occur at all times when work is occurring in tidal waters, or within 100 meters of tidal waters.

The biological monitor will have the authority to stop project activities if marine mammals approach or enter the exclusion zone. Biological monitoring will begin 0.5-hour before work begins and will continue until 0.5-hour after work is completed each day. Work will commence only with approval of the biological monitor to ensure that no marine mammals are present in the exclusion zone. In addition, biological monitors will, to the extent feasible, monitor for fish, including listed species that may occur within the project site.

*Pre and post construction daily censuses* - A census of marine mammals in the project area and the area surrounding the project will be conducted 30 minutes prior to the beginning of construction on monitoring days, and again 30 minutes after the completion of construction activities. Data collected during censuses will include:

- Environmental conditions (weather condition, tidal conditions, visibility, cloud cover, air temperature and wind speed), recorded during pre- and post-construction daily census counts
- Numbers of each species spotted
- Location of each species spotted
- Status (in water or hauled out)
- Behavior

*Hourly counts* - Conduct hourly counts of animals hauled out and in the water.

- Data collected will include:
  - Numbers of each species
  - Location, including zone and whether hauled out or in the water
  - Time
  - Tidal conditions
  - Primary construction activities occurring during the past hour
  - Number of mom/pup pairs and neonates observed
  - Notable behaviors, including foraging, grooming, resting, aggression, mating activity, and others
  - Tag color and tag location (and tag number if possible)—for sea otters, note right or left flipper and location between digits (digits 1 and 2 are inside; digits 4 and 5 are outside)
- Notes may include any of the following information to the extent it is feasible to record:
  - Age-class
  - Sex
  - Unusual activity or signs of stress
  - Any other information worth noting

*Construction related reactions*- Record reaction observed in relation to construction activities including:

- Time of reaction
- Concurrent construction activity
- Location of animal during initial reaction and distance from the noted disturbance.
- Activity before and after disturbance
- Status (in water or hauled out) before and after disturbance

Code reactions:

Level	Type of response	Definition

1	Alert	Head orientation or brief movement in response to disturbance, which may include turning head towards the disturbance, craning head and neck or (in the case of seals) craning head and neck while holding the body rigid in a u-shaped position, changing from a lying to a sitting position, or brief movement of less than twice the animal's body length. Alerts would be recorded, but not counted as a 'take'.
2	Movement	Movements away from the source of disturbance, ranging from short withdrawals at least twice the animal's body length to longer retreats, or if already moving a change of direction of greater than 90 degrees. <b>These movements would be recorded and counted as a 'take'.</b>
3	Flush	<b>All retreats (flushes) to the water. Flushing into the water would be recorded and counted as a 'take'. For sea otters, any change from in-water resting to diving/swimming would also be considered a flush and counted as a 'take.'</b>

### **Steps for shutting down and resuming construction**

1. Alert construction foreman of animal using the red flag and handheld radio (use 1 blow from air horn if needed)
2. Record the construction activity and the time of shutdown
3. Record the reaction and location of the animal
4. Give clearance signal (green flag) and handheld radio for construction activities when animal is seen outside of 10-meter zone and traveling away from the construction area, or when the animal is not spotted for 15 minutes
5. Record the time construction resumes

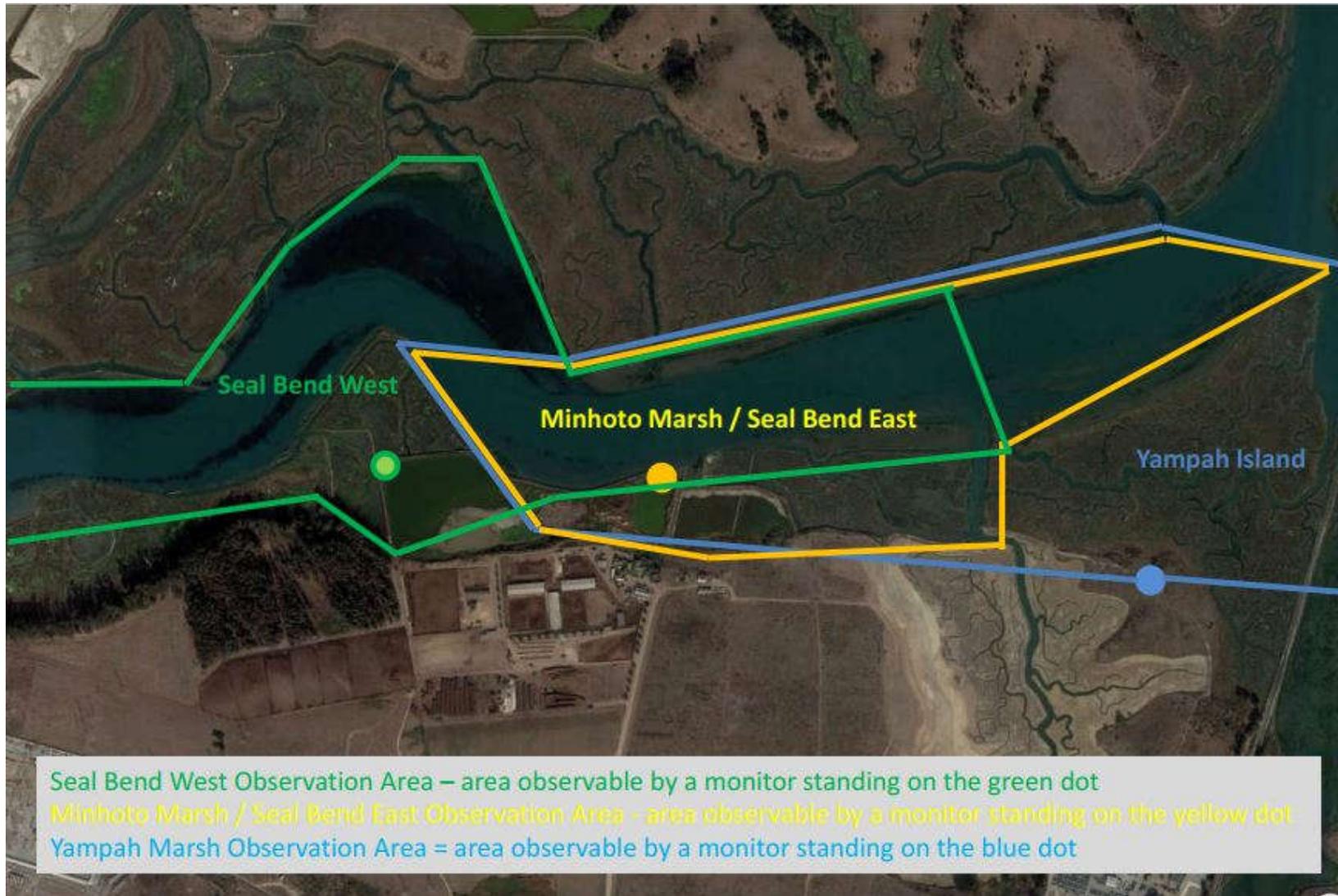


Figure A-1. Observation post and observation area. Note: Some areas within the marshes cannot be seen at low tides.