

Punta Gorda Lighthouse Stabilization Project

Background and Setting

The Punta Gorda Lighthouse (a.k.a. PGL, 40.249435°, -124.350223°) was established as an aid to navigation in 1912. Located 10 km SW of Petrolia, CA (40.325021°, -124.286589°) and 17.7 km south of Cape Mendocino, PGL experienced a relatively short service life when it was decommissioned by the U.S. Coast Guard in 1951. Although located on the mainland, maintaining the station in the remote and rugged location proved to be more difficult than the effort was worth. The PGL once consisted of the lighthouse, oil house, three residences, and numerous other small buildings typical of small military outposts. An overview map is included in Appendix A.

The Bureau of Land Management (BLM) assumed management of the site after the Coast Guard abandoned the site in 1951. The windy ocean environment quickly took a toll on the wooden structures which the BLM later intentionally burned down. After years of problematic squatters and falling further behind on upkeep, the agency decided they would not be able to maintain the structures. The concrete lighthouse and oil house were all that remained by the time the site was listed in the National Registry of Historic Places in 1976. The King Range was the first National Conservation Area in the United States and most of the King Range National Conservation Area (King Range NCA) was designated as Federal wilderness in 2006 including the project location.

The Lost Coast Trail follows the coast and passes by PGL, connecting the Mattole Campground (40.289062°, -124.356455°) at the mouth of the Mattole River to Shelter Cover, CA (40.045051°, -124.079254°) approximately 39.5 trail km south. The Lost Coast is the longest stretch of undeveloped coastline in California and attracts a steady stream of hikers from all over the world. The popularity of the trail began to degrade the solitude of the wilderness experience and a permit system was implemented in 2017. The permit system limits overnight hikers to 30 new hikers per day in the winter and 60 new hikers per day in the summer.

Figure 1. The Punta Gorda Light Station during the operational period. The three houses provided the lighthouse keepers, their families, and military personnel shelter from the frequent harsh winds and rain. The lighthouse and oil house are the only buildings still standing. Notice the rocky shore in front of the residences. The rocky area in the foreground is currently covered with sand.



Punta Gorda circa 1930. The tower can be seen just left of the last keeper's house. USLHS photo.

Marine Mammals at the Project Location

Northern elephant seals (*Mirounga angustirostris*) colonized the site in 2013 and 2014 with individuals from other colonies in California and the colony has grown rapidly. Approximately 165 elephant seal pups were born during the 2020-2021 breeding season, up from 110 the previous year. The highest attendance counted during the 2021 spring molt totaled approximately 700 individuals. Most of the elephant seals are found hauled out on the beach between the intertidal zone and the narrow marine terrace. The elephant seals sometimes make their way on to the marine terrace while hauled out. During breeding season males without harems can be found on the terrace, occasionally laying directly on the Lost Coast Trail. PGL and the oil house are perched on a small hill above the marine terrace providing a small buffer of 10-15 meters from the closest elephant seals haul out location. Table 1 provides the census data collected during surveys from June-October, 2019 and 2020. Originally scheduled for 2021, the proposed construction window was pushed back until June 1-October 1, 2022.

Table 1. Northern elephant seal census data collected during the proposed construction window from the previous two years. The average attendance over two years of census data from the construction period is 69.1 animals

<u>2019</u> <u>Dates</u>	<u>Counts</u>	<u>2020 Dates</u>	<u>Counts</u>
6/8/2019	101	6/4/2020	177
6/15/2019	74	6/11/2020	83
6/23/2019	34	6/14/2020	80
7/7/2019	40	6/24/2020	37
7/14/2019	50	6/27/2020	38
7/21/2019	54	7/4/2020	36
8/3/2019	39	7/12/2020	39
8/21/2019	44	7/16/2020	38
8/31/2019	62	7/24/2020	36
9/15/2019	162	7/30/2020	38
9/27/2019	244	8/6/2020	32
		8/9/2020	28
		8/13/2020	28
		8/20/2020	27
		8/27/2020	33
		8/30/2020	48
		9/5/2020	60
		9/19/2020	133
-	-	9/27/2020	177
AVG 2019:	82.2	AVG 2020:	61.5

The lowest elephant seal attendance of the year occurs in July and August when an average of 42 and 38 animals, respectively, were found on site during the proposed construction window over two years of monitoring. The June surveys had a higher number of animals as the spring molt is winding down. Juveniles and non-breeding females start to appear in September before the pregnant females begin arriving in mid-October. Figures 2 and 3 are maps of the elephant seal colony location.

Figure 2. Northern elephant seal distribution observed on a survey June 27, 2020. The purple polygon represents the densest cluster of animals. The red polygon represented a scattered distribution. The largest purple polygon is 95 meters from the Punta Gorda Lighthouse.

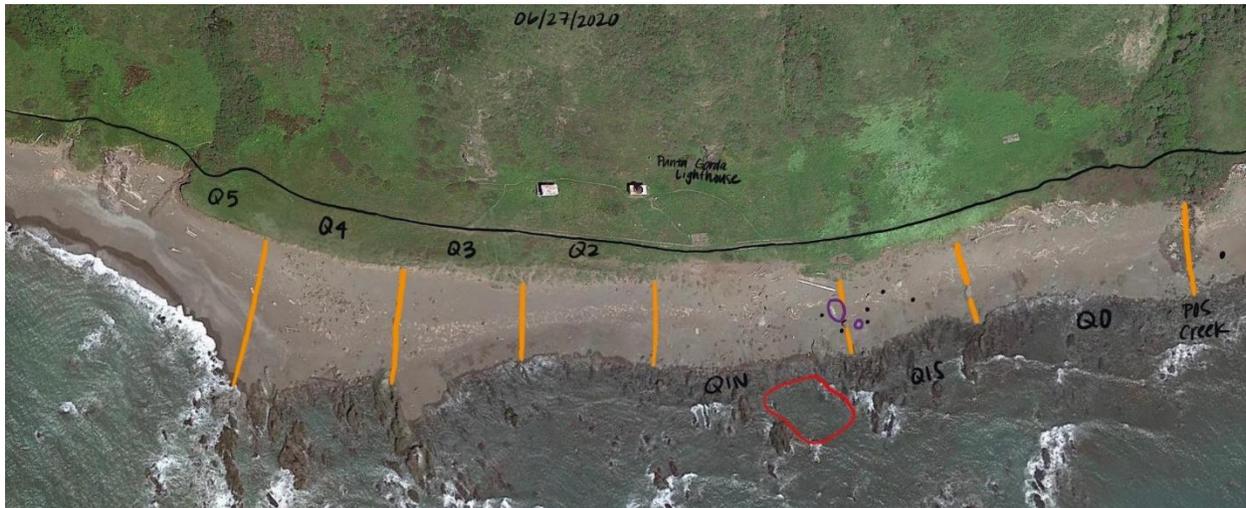
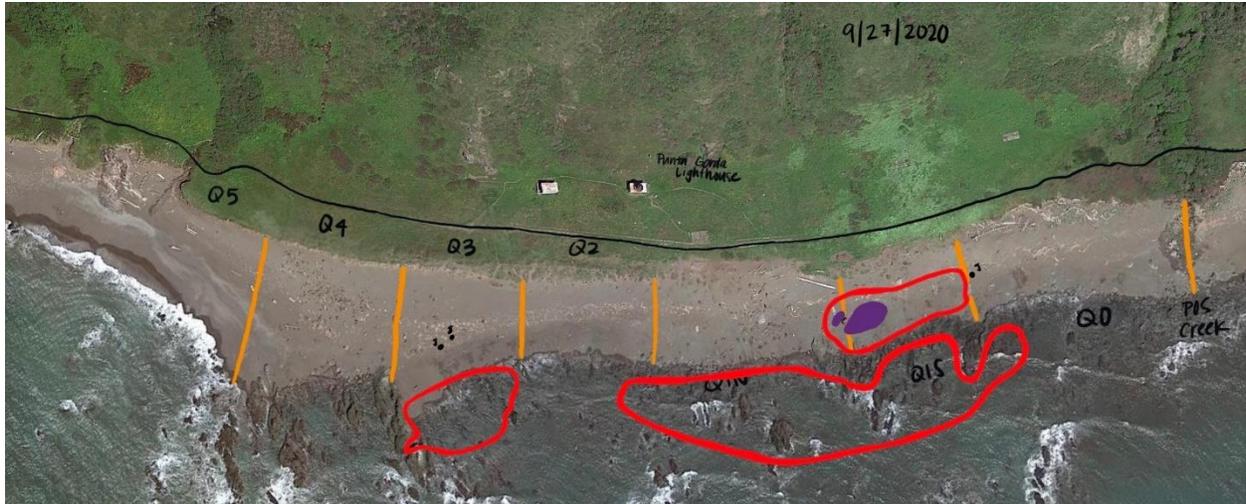


Figure 3. Northern elephant seal distribution observed on a survey September 27, 2020. The purple polygon represents the densest cluster of animals. The red polygon represented a scattered distribution. The closest purple polygon is 105 meters from the Punta Gorda Lighthouse. (Goley et al. 2021)



Harbor seals (*Phoca vitulina*) routinely haul on the beach near the intertidal zone and on the adjacent rocks. The main colony is 120 meters from the oil house, the closest part of the stabilization project. There are two nearby harbor seal haul out sights, Sea Lion Gulch (2.5 km south; 40.239086°, -124.333926°) and the Mattole River Spit (6 km north; 40.298898°, -124.354946°). Harbor seal census data from the 2019 and 2020 proposed construction season are presented in Table 2.

Table 2. Punta Gorda harbor seal census data from June-September surveys in 2019 and 2020.

<u>2019</u>		<u>2020</u>	
<u>Dates</u>	<u>Counts</u>	<u>Dates</u>	<u>Counts</u>
6/8/2019	51	6/14/2020	55
6/15/2019	107	6/27/2020	77
6/23/2019	81	7/12/2020	90
7/7/2019	116	7/24/2020	123
7/14/2019	180	8/9/2020	73
7/21/2019	123	8/30/2020	36
8/3/2019	105	9/5/2020	38
8/21/2019	80	9/19/2020	51
8/31/2019	22	9/27/2020	53
9/15/2019	22		
9/27/2019	28		
AVG:	83.2	AVG:	66.2

California sea lions (*Zalophus californica*) are observed traveling in the coastal waters and hauled out at Sea Lion Gulch. They have not been observed hauled out at the project area. Steller sea lions (*Eumatopias jubata*) are also observed in the water near Punta Gorda and hauled out on offshore rocks near Sea Lion Gulch. Steller sea lions have not been observed at the project area.

Construction Activities

Despite occasional maintenance by BLM staff and lighthouse advocates, the PGL buildings need extensive repairs. Both of the remaining buildings are constructed of reinforced concrete. The lighthouse building has a metal second story that once housed the lens. The concrete has experienced spalling where large chunks of the walls and ceiling break off due to water intrusion followed by expansion of rusty reinforcement steel (re-bar). The northern portion of the oil house foundation has cracked and separated from the rest of the structure. Finally, anything constructed of metal has experienced substantial corrosion. The major metal pieces include the second story of the lighthouse, the second story access stairs, and above ground oil storage tanks. A portion of the marine terrace east of the Lost Coast Trail north would be designated and fenced for support of construction activities: parking vehicles, storing tools and materials, fuel storage and containment etc. A map of the proposed fenced area is included in Appendix A. The fence would be erected in a way that will exclude elephant seals from moving into the work zone. It may be necessary to erect the fence in sections over time if elephant seals are present in the area. The fence would be moved as the elephant seals move out of the work area.

Correcting the deficiencies in the building will require several separate operations. The first stage will consist of lead paint remediation and demolition of the failing concrete and re-bar followed by treating the remaining structure to prevent further corrosion. The roof of the oil house will be completely demolished along with the northwestern corner of the oil house foundation. Numerous other small concrete repairs will also occur simultaneously. The demolition will use gas powered construction saws, various jack hammers, heavy equipment (likely a backhoe or small excavator), saws, and hand tools.

Materials created during the demolition have been proposed for disposal by on site burial, however that detail is not finalized. The alternatives to burial include transport to waste facilities by ground vehicles and/or helicopter lifts.

Figure 4. The Punta Gorda Lighthouse during a 2016 site visit.



Once the concrete demolition is complete, concrete forms will be erected and new concrete poured in place. The new concrete will include corrosion inhibitors and will be formed to mimic the visual characteristics of the existing structures. To further protect against corrosion, a sealing elastomeric (or similar product) paint will be applied once the new concrete has thoroughly dried.

Some of the small metal work on both floors of the lighthouse will be restored off site and re-installed during the project. The second story of the lighthouse will likely need to be repaired and restored on site. In addition to the metal work, the windows of the lighthouse will also be replaced. The new windows will likely be made of some form of plexiglass.

Figure 5. The condition of the oil building at Punta Gorda during a site visit in August 2016.



The public is only allowed to access the site on foot. Due to the substantial construction activities, vehicles will be used to complete the project. Vehicle use for the stabilization project was analyzed in the 2005 King Range National Conservation Area Resource Management Plan. There was no elephant seal colony present when the King Range Conservation Area Management plan was drafted and adopted. The vehicles will include all-terrain vehicles (ATVs), Side by Side ATVs (UTVs), helicopters, and possibly heavy equipment. Helicopters would be used to transport supplies much faster than ground transportation would allow, reducing the duration of disturbance. We do not expect helicopters to land at the site. Helicopters will hover 50-100 feet above ground for a short duration (up to five minutes) while the sling load is disconnected.

Vehicle access to the site is from the north at the Windy Point Trailhead and from the Trailhead at the Mattole Campground. Both access routes present some problems. The access road that leads from the Windy Point Trailhead downhill to the beach on the north side of Four Mile Creek is steep and narrow. The route from the Mattole Campground Trailhead requires traveling across sand and can be limited by high tides. Federally endangered beach layia (*Layia carnosa*) and Menzies' wallflower (*Erysimum menziesii*) both can be found along the beach route, limiting the time of year the route would be available. Both routes require fording Four Mile Creek, the northern boundary of the King Range Wilderness Area. Use of the beach route may require consultation with US Fish and Wildlife Service due to potential impacts on the endangered plants.

The trail to the site from Windy Point Trailhead is moderately steep and narrow which may present problems for certain types of equipment and it may be necessary to improve the trail to allow for passage. It is unlikely trail improvement would result in harassment to marine mammals during the proposed work schedule. During the breeding season male elephant seals that are not defending harems are spaced out widely along the beach and may be found where the trail down from Windy Point meets the Lost Coast Trail on the beach.

Dates, Duration and Specified Areas

Elephant seals and harbor seals can be found at the site all year. The census data researchers at Humboldt State University have been collecting since 2018 have allowed us to identify the time of year the project will have the least impact. While there is no ideal window for work, we have proposed a work period of June 1-October 1, 2022. June through September is when the elephant seal population is lowest and the harbor seal pups are older and less susceptible to abandonment by their mother. We hope to complete the work in one season or two seasons. However, there is a reasonable chance that the project may extend into a second or third year. The BLM will apply for a new incidental harassment authorization if the project extends past October 1, 2022.

We expect the work crew to work 8-10 hours per day, Monday-Friday. However, weekend work may be necessary intermittently to meet work schedule objectives. An area will be fenced to store and secure supplies and equipment. The area designated for storage will be east of the Lost Coast Trail where the seals have not been observed (365106e, 4456365n UTM Zone 10N). A sight plan is included in Appendix A.

Noise from the project is expected to travel beyond 1.0 kilometer from the project area based on the maximum anticipated noise levels of 120 dbl. The maximum sustained dbl levels will occur for short durations with typical 90 dbl more typical. There will be no noise generated in the water so we expect no impacts to at sea marine mammals from ultrasonic noise.

Affected Species and distribution

Two marine mammal species can be found at the project site throughout the year, northern elephant seals and harbor seals. California sea lions and Steller sea lions are observed in the waters near the project area but are not known to haul out at the project site. A northern fur seal (*Callorhinus ursinus*) carcass was recovered from a site approximately 10km south of the project area in 2017 but no live animals have observed in the area. Northern river otters (*Lontra canadensis*) occupy the Mattole River to the northern and larger creeks to the south such as Randle Creek. River otters have not been reported at the project site or Four Mile Creek, immediately north of the project area. Our focus will be on the two species affected by the Punta Gorda Lighthouse Stabilization Project and two species known to occur nearby.

Northern elephant seals use the beach year around for pupping, breeding, molting, and resting. The colony has expanded to 165 pups in 2020/2021 breeding season. Conditions at the site are ideal with pools in the intertidal zone leading to sandy, moderately sloped fine-sanded beaches. Although the colony has expanded rapidly, there is ample space for continued growth.

Northern elephant seals were nearly extinct in 1970. Ranging from Baja, Mexico to southeast Alaska and the Aleutian Islands, they have recovered rapidly and the population was estimated at 179,000 by NOAA

in 2019. The peak counts recorded at the Punta Gorda colony was just over 600 individuals during the 2020 spring molt. However, since not all of the animals arrive and depart at the same time the actual colony numbers are higher, possibly up to 1,500 animals who use the site throughout the year. HSU is currently analyzing their re-sight data and expects to have an estimated population using mark-recapture techniques. In any case, the Punta Gorda colony represents less than one percent of the total northern elephant seal population.

California, Oregon and Washington are estimated to have a minimum of 43,513 harbor seals inhabiting the intertidal areas of the coastline, offshore rocks and islands, and coastal sloughs and estuaries. The population is down from the peak in 2004 but appears stable (NOAA 2015). The highest number of harbor seals observed at Punta Gorda is 180 individuals. Adding correction factor of 1.2 for animals that were not present during the surveys gives a crude population estimate of 216 animals or, 0.005 percent of the West Coast population.

Harbor seals can be found in coastal waters from southern California to the farthest reaches of the Aleutian Islands. They are not known to migrate but may travel up to 500 km foraging and looking for breeding sites (NOAA 2019).

California sea lions range from the West Coast of Mexico and Baja California north to British Columbia. NOAA estimated a minimum 2014 population size at over 233,000 animals and Lowry et al. (2014) estimated the population at 257,606 individuals. The California sea lion population has continued to grow at an average rate of 7% per year and is nearing the estimated carrying capacity.

The eastern distinct population segment population of Steller sea lions was recently delisted as a species protected by the Endangered Species Act (NOAA 2013) as the population had met the recovery criteria. Ranging from Cape Suckling, Alaska to central California, the 2017 eastern stock population of adults and pups was estimated at over 77,000 individuals in 2017 (NOAA 2019) and the population is increasing at an estimated rate of 3-4 percent per year.

Table 3. Summary of the current stock status of marine mammals found at or near the PGL Stabilization Project.

<u>Common Name</u>	<u>Stock</u>	<u>ESA/MMPA Status</u>	<u>Known Spatially/Temporally Important Areas</u>	<u>Stock Abundance</u>	<u>PBR</u>	<u>Annual M/SI</u>	<u>Stock Status Factors (UMEs, spills, etc.)</u>
N. Elephant Seals	1,500	none/protected	California Coast	179,000 (CA)	4,882	13	fishing
Harbor Seals	270	none/protected	West Coast	43,513	1,641	73	fishing, human caused pup abandonment
California Sea Lion	0	none/protected	Southern CA, Baja	257,606	14,011	518	fishing, shooting
Steller Sea Lion	0	none/protected	se AK to Cen Cal	77,149	2,592	112	fishing, ship strikes, shooting, subsistence

Type of Incidental Take

We do not anticipate any direct physical harm resulting from the stabilization project. We do anticipate harassment resulting from the visual and audio disturbance during the project. Northern elephant seals have been shown to acclimate to human activities relatively well compared to harbor seals. The disturbance level required to flush harbor seals into the water is very low. Harbor seals utilize a pack

vigilance where at any given moment some of the individuals are wary of predators such as humans. Harbor seals detect humans from a several hundred meters away and will flush if approached within 50-75 meters. Elephant seals expend no effort on predator searching while on land outside of the pupping season. They tend to spend most of the day sleeping and are quite easily approached without disturbance. They will do a defensive display once they realize a person is too close.

We believe the Punta Gorda Lighthouse Stabilization Project will result in Level 1 and 2 harassment on a frequent basis and likely Level 3 harassment during helicopter operations and certain construction activities. There will be no intentional harm or harassment of the animals and we do not expect direct injury resulting from completion of the project. The most likely risk to harbor seals is workers causing them to panic flush into the water or causing pup abandonment. We believe harbor seal pups will be old enough to travel with their mother during a flushing event and the probability of abandonment is low.

Take Estimates

The activities required to complete the project is likely cause Level 1, 2, and 3 harassment to seals located at the project site. Noise from machinery, tools, vehicles, helicopters, and the presence of personnel will alarm many of the seals and sea lions present during those construction activities. Construction personnel will access the site via UTVs or pickup trucks. If helicopters are used to transport materials there will be fewer than 10 days of helicopter use.

The HSU research has provided us with quality census data from 2019 and 2020 so we can make an accurate but conservative estimate of take likely to occur as a result of the project. A large portion of the elephant seals are uniquely tagged and dye stamped to identify individuals enabling us to verify the seals at the site are the same individuals. The scheduled work window will be after the 2021 spring molt when the elephant seals attendance at the colony at one time may reach up to 1,000 animals. The colony attendance declines rapidly after the May peak. The lowest colony attendance occurs during the summer and early fall when we have scheduled the work to take place.

We anticipate the vast majority of harassment will be repeated on the same individuals although there is turn over throughout the season as animals arrive and depart at different times. To arrive at our take estimate of elephant seals we used the daily average from two years of surveys multiplied by the number of days in the work window. Our Formula is the following: 69.1 animals per day X 122 day work window = 8,431 harassment incidents. We anticipate the actual harassment total will be substantially lower but we believe our estimate is a maximum if all the animals present are harassed on a daily basis. There will be days with little or no harassment but we are unable to foresee the precise schedule of the project and what the actual colony attendance will be during the project. The contract has not been awarded at this time and the final methodology will depend on the contractors selected.

We expect the harbor seals to be highly sensitive to the PGL Stabilization Project. The presence of vehicles, workers and the construction noise will likely cause harbor seals hauled out on the beach and nearby rocks to flush into the water several times per week when the work is taking place. We believe that the harbor seal colony is largely made up of the same individuals who move between Punta Gorda and the other nearby haul out sites but we do not have a tagging program uniquely identifying individuals. It is also likely that after several repeated flushing events some harbor seals may temporarily abandon the site. HSU has provided us with census data from 2019 and 2020 helping us provide a more accurate estimate of take. The Punta Gorda harbor seal population appears to be stable but variable

from year to year. We arrived at our harassment estimate of 9,218 animals using the following formula: 75.55 avg animals X 122 workdays = 9,218.

Similar to the elephant seals, we expect the actual harassment of harbor seals to be much lower than our projection as there will likely be numerous days where most or all of the harbor seals will not be disturbed or will be absent from their resting location.

California and Steller sea lion do not occur in the project area but frequent haul out sites nearby and are observed in the waters near the project site. Should it be necessary to access the project via the Mattole beach access route it is possible that a sea lion could be encountered. Similarly, although neither species of sea lion have been observed at the project site, they are both observed nearby. It is possible that an individual or small group could decide to haul out at or the project area. We request an IHA for the take of up to five individuals of each species per year.

Table 4. Annual take estimates relative to stock abundance.

<u>Species</u>	<u>Level 2 Harassment</u>	<u>Level 3 Harassment</u>	<u>Total Take</u>	<u>Stock Abundance</u>	<u>% of Stock (take / abundance * 100)</u>
N. Elephant Seals	8,431	0	8,431	157000	5.4
Harbor Seals	8,218	1,000	9,218	43513	21.2
CA. Sea Lions	5	0	5	257606	>.01
Steller Sea Lions	5	0	5	77,149	>.01

Anticipated Impact of the Activity

The noise, vehicles, and activity of the project may cause elephant seals on the marine terrace to move away from the construction and relocate to the beach. Our observations during the same period in 2019 and 2020 indicate there will be few individuals on the marine terrace when the construction is taking place. Elephant seals hauled out at this time of year are not as sensitive to disturbance as those that are hauled out during the breeding season. It is likely that disturbance will occur only when the highest level of disturbance is taking place such as helicopter supply drops, demolition with jack hammers, or drilling into the concrete, etc. Regular daily construction activities (forming and pouring concrete, painting, etc.), and transportation will probably have limited impacts on the elephant seals hauled out on the beach.

Harbor seals at Punta Gorda are not habituated to human activity such as vehicles and construction. The project area is located on a remote stretch of coastline where vehicles are not allowed. Hikers are usually the only human interaction these harbor seals have while on land. The noise, vehicles, and daily activity will cause the harbor seals to flush into the water on many occasions. At a minimum, the workers at the site will cause the harbor seals to be vigilant until the workers leave for the day. We are unsure what the response will be after multiple flushing incidents. We suspect that the harbor seals may relocate to nearby haul out sites until construction activity at Punta Gorda is completed.

To quantify the noise disturbance noise levels of the types of equipment proposed for use is provided in Table 5. The readings are measured in close proximity to the equipment and the noise level is reduced

by approximately 6 decibels for every 10 meters. Noise levels at the harbor seals locations will be reduced but probably still high enough to cause them to escape into the water on some days.

Table 5. Decibel levels from the equipment needed for the Punta Gorda Lighthouse Stabilization Project.

<u>Equipment Type</u>	<u>Max Decibel Level</u>
Helicopter	98
Pick Up	84
UTV	77
Backhoe	78
Mini Excavator	81
Jack Hammer	120
Concrete Saw	102
Air Compressor	78
Generator	81
Concrete Mixer	79
Needle Gun	112
Drill	94
Sand Blaster	122
Hammer	140

Data from www.fhwa.dot.gov and www.hearing.health.mil

Anticipated Impact on Subsistence Uses

Elephant seals rarely haul out in Alaska where subsistence hunting is permitted for native peoples. It appears little or no subsistence hunting occurs targeting northern elephant seals. We do not anticipate physical harm to any elephant seal as a result of the PGL Stabilization Project. Harbor seals from the project area are not known to travel to Alaska therefore there are no relevant subsistence uses of marine mammals implicated by this action.

Anticipated Impacts on Habitat

There will be no impacts to the marine environment other than noise transmission from the construction zone. We do not expect to release any materials into the sea. The only place where a release of chemicals could occur is during the crossing at Four-Mile Creek. It may be necessary to bring a fuel storage tank to power generators and heavy equipment. Fuel will be stored behind fencing upland of the beach and the fuel tank will have a secondary containment system in place. In order to minimize the potential for a spill into Four Mile Creek we will attempt to cross the creek as quickly as possible and inspect equipment prior to attempting the crossing. Flows in Four Mile Creek are low during the proposed work window and the crossings should be successful.

During the stabilization project a fence will be erected that will exclude a portion of the marine terrace from use by the elephant seals. The fenced area is usually unoccupied during the construction window so we expect few animals will be displaced from the project area.

Anticipated Effects Of Habitat Impacts

Since the elephant seals and harbor seals do not use the terrestrial vegetation for any purpose, the bare soil is unlikely to impact their use of the area. The visual and auditory disturbance will pervade the marine terrace, beach, and intertidal zone at times during the construction project. It will cause the terrestrial habitat the elephant seals and harbor seals to temporarily become unsuitable and they may leave the area.

Mitigation Measures To Protect Marine Mammals And Impacts

The Bureau of Land Management has partnered with Humboldt State University to conduct a demographic study of the elephant seals at Punta Gorda. Partners at HSU have been making multiple visits to the site every month taking a census, mapping the harems, marking the individuals, tracking productivity etc. Their data has been invaluable in designing mitigation measures to reduce the impacts of the stabilization project on the marine mammals found at Punta Gorda.

The most important step to our mitigation plan is identifying the work window when the elephant seal population is at the lowest number and the harbor seal pups that may be on the site are old enough to be self sufficient should the colony be flushed into the water. There will be no elephant seal pups or wieners present when the construction is underway.

We are working with our engineers to complete the project as efficiently as possible with a minimum of disturbance to the seals. Unfortunately, there is no way to complete the project without vehicles, personnel, and noises typical of this kind of work. We are attempting to route vehicles from the Windy Point Trailhead and across private property before crossing into the wilderness at Four Mile Creek. Our Realty Specialist is currently in negotiations with the private landowner to allow us to cross his property to complete the project. The alternate access is a beach route from Mattole Campground requires driving on the beach or marine terrace for 5 km where intertidal rocks that may occasionally be used by very small numbers of harbor seals to haul out. Harbor seals encountered while driving this route would certainly be flushed into the water. The preferred route from the Windy Point Trailhead requires a beach/marine terrace drive of 1.25 km.

A fence will be erected to exclude elephant seals from entering the construction area to prevent accidental injury from vehicles and debris. Monitors will be present to ensure there are no seals on the vehicle access route. Most locations on the route of travel will have enough room for vehicles to maneuver around the animal. We are developing a protocol to limit the daily number of vehicle trips from the project area to the contractor's off-site camp where the additional tools and supplies will be stored in trailers or storage containers. We are factoring remote site experience in the contractor selection criteria to help us evaluate the contractor's ability to work in an area with sensitive resources and no supply stores available. The nearest available supplies to the project area are located in Fortuna, CA, an approximately 1.5 hour drive each way. We expect the contractors to have all the materials needed for each day with them when they arrive to start work in the morning. We realize that it is not

possible to foresee all of the needed tools and supplies but repeated round trips everyday are not acceptable.

The BLM is encouraging the use of helicopters to deliver the tools, supplies, and storage containers. While helicopter use is a high intensity disturbance event we feel the benefits outweigh the costs. By staging the supplies nearby at Windy Point the helicopter will have a short turn around time and could possibly deliver everything to the site in one or two days. Transporting everything by ground vehicles could take weeks and is somewhat treacherous on the road from Windy Point Trailhead to the beach. The overall disturbance from the helicopter use will be less than delivering everything via ground vehicles.

The BLM will have monitors onsite to observe the seals, prevent and record incidental harassment, and track the progress of the contractors. The monitors will consist of BLM wildlife biologists, BLM biological technicians, BLM interns, and King Range NCA staff. All monitors will be trained by BLM wildlife biologist and Dawn Goley of HSU.

Mitigation Measures to Protect Subsistence Uses

We do not anticipate impacts to subsistence hunting therefore no mitigation measure are in place.

Monitoring and Reporting

The BLM will provide trained monitors each day the construction is underway. Dawn Goley is a professor of marine biology at HSU and oversees the research underway at Punta Gorda. Jesse Irwin is a BLM wildlife biologist with experience working around seals and sea lions at the Farallon Islands and the King Range NCA. The BLM is responsible for recruiting, training, and coordinating the monitors. The BLM is also responsible that all the monitors have standardized methods and consistent data standards.

The BLM will compile the data and submit a report to NOAA Fisheries within 90 days of cessation of the project. We will report the colony attendance, harassment, and any unanticipated events such as an injury to an animal.

Suggested Means of Coordination

The research program at HSU will continue throughout the stabilization project. Data collected by the monitors will also be incorporated into the HSU data set. HSU currently shares data with elephant seal researchers from other colonies in California and will continue to do so for the foreseeable future.

During the course of the project we will be working closely with the engineers and contractors to minimize disturbance that will cause harassment. There may be opportunity to adjust methods or timing of certain parts of the job to alleviate harassment incidents.

We do not believe there are any additional take authorizations issued near the project area. According to the mapping tool at the NOAA website the nearest permitted non-research activity is taking place at the St. George Reef Lighthouse (41.744084, -124.203096), approximately 180 km north of Punta Gorda. (<https://www.fisheries.noaa.gov/resource/map/incidental-take-authorizations-points-map>)

Literature Cited

BLM King Range National Conservation Area Resource Management Plan. 2005. Bureau of Land Management, Arcata, CA.

Goley et al. 2021. Personal Communication. Unpublished Report to the Bureau of Land Management.

Lowry, M.S., S.R. Melin, and J.L. Laake. 2017a. Breeding season distribution and population growth of California sea lions, *Zalophus Californianus*, in the United states during 1964-2014. NOAA Technical Memorandum, NOAA-TM-SWFSC-574. 63 p.

NOAA. 2013. Endangered and Threatened Species; Delisting of the Eastern Distinct Population Segment of Steller Sea Lion Under the Endangered Species Act; Amendment to Special Protection Measures for Endangered Marine Mammals. Federal Register P.66141, November 4, 2013.

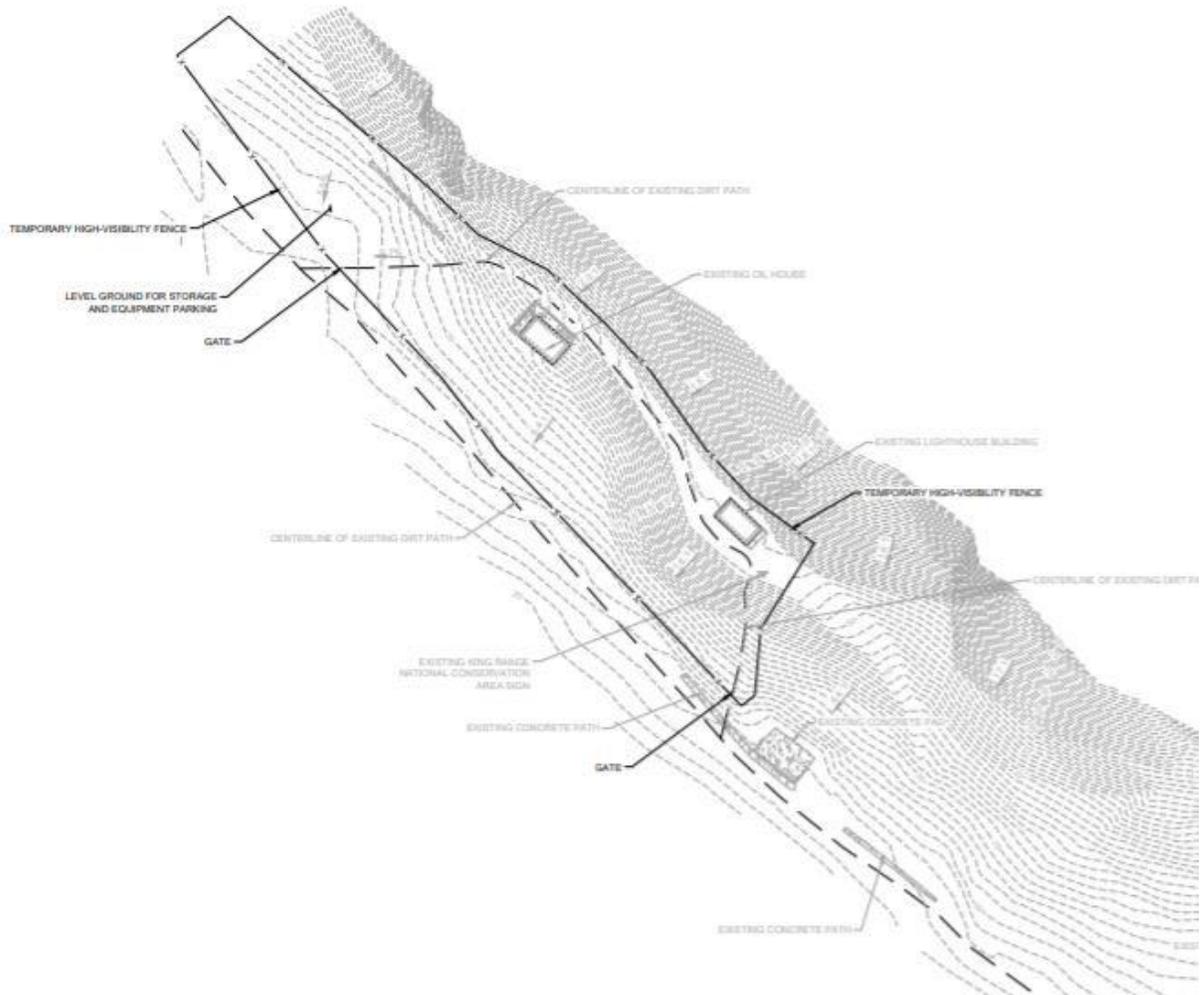
NOAA. 2019. Alaska Marine Mammal Stock Assessments 2019. RE: STELLER SEA LION (*Eumetopias jubatus*): Eastern U.S. Stock P. 18.

NOAA. 2020. Draft U.S. Pacific Marine Mammal Stock Assessments: 2020. Draft report assembled from multiple locations.

NOAA. 2020. https://media.fisheries.noaa.gov/dammigration/2019_sars_summarytable_pacific_508.pdf

Appendix A. Punta Gorda Lighthouse Stabilization Project Maps. Shape Files Sent Separately.

Map 1. Project perimeter. The solid line represents proposed fencing. The dashed line represents the Lost Coast Trail.



Map 2. Aerial photo of the project area with coordinates.



Map 3. The project location is 10 km southwest of Petrolia, CA.

