



THE OCEAN FOUNDATION

Coastal Coordination Program

August 22, 2023

Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: P-15287-000 - Comments on an inadequate application (The Application) for a saltwater pumped storage project (The Project) in California's Fort Ross State Historic Park and the Greater Farallones National Marine Sanctuary.

Dear Ms. Bose:

Thank you for this opportunity to provide comments on the incomplete application by HGE Energy Storage, aka Hydro Green Energy (The Applicant), to study factors involving a poorly-conceived proposed pumped storage facility on the coast of Sonoma County, California, as The Applicant seeks to secure and maintain priority of application for a license for The Project under Part 1 of the Federal Power Act.

The Applicant has failed to duly notify affected parties of interest that will inevitably be impacted by The Project, including but not limited to the County of Sonoma, California, the California State Coastal Commission, The California State Lands Commission, California State Parks, California Department of Fish and Wildlife, California Natural Resources Agency, Ocean Protection Council, California Department of Conservation, affected Tribes, the Pacific Fisheries Management Council, NOAA's Office of National Marine Sanctuaries, the California Coastal National Monument, U.S. Bureau of Land Management, U.S. Coast Guard, UNESCO Golden Gate Biosphere Reserve, commercial fishing organizations, sportfishing businesses, and the local communities of Jenner, Bodega Bay, Fort Ross, Annapolis, Stewart's Point, and Cazadero, California. The Applicant's lack of the required notification of affected parties has unjustifiably curtailed public comment.

Incompleteness of Application: Lack of Public Notice and Inadequate Public Comment Opportunity

We hereby stipulate that The Application for The Project is incomplete, as noted above, and we further request that the application for The Project be denied with cause, as a result of the information deficits noted herein, lack of due notice to affected parties of interest, and the Applicant's submittal of a substantially inaccurate project description, based on a long-outdated topographical map of the area, resulting in a misleading project map which purports to show the location of most project elements but fails to accurately portray their true locations.

Applicant Fails to Meet Protocols of California Energy Commission Land Use Screens

The Applicant has not taken into account the California Energy Commission protocols for land use screens for such projects, see <https://efiling.energy.ca.gov/GetDocument.aspx?tn=251073&DocumentContentId=86012>

(incorporated herein by reference). The Applicant also fails to meet the criteria set forth in a *Just Energy Transition* by targeting substantial cultural resources to be included within The Project footprint.

Inaccurate Economic Model: Cost of Project Construction in California Exceeds Assumed Financial Benefits

The economic feasibility of The Project is called into question since The Applicant fails to consider the relatively higher cost of this type of construction in California relative to other regions, in conjunction with the additional costs associated with such construction due to the remote site location and lack of available transportation links for heavy equipment. See Attachment D, incorporated herein by reference.

The Project Location Irrevocably Impairs the Sole Emergency Evacuation Route for Residents of The Project Region

The Project location is in the upwind portion of a seasonal high-wildfire risk region, where all residents rely on limited access-egress opportunities provided by narrow, often single-lane, roadways transiting unstable slide-prone soils. Even the smallest ignition source can easily, during low humidity conditions, elevated temperatures, and high onshore winds, very quickly spread to engulf multiple thousands of acres of forest, dry chapparal, and rural residences in a rapidly-expanding firestorm. The most recent wildfire example, the 2020 Meyers Fire, was the first recorded instance of a vegetation fire in this area that burned all the way to the ocean. During 1978, the Creighton Ridge Fire, ignited by a small spark from a residential weed mower striking a rock, quickly spread to 11,000 acres, see https://www.fs.usda.gov/psw/publications/documents/psw_gtr258/psw_gtr258_413.pdf (incorporated herein by reference).

Various elements of The Project would directly abut and potentially block the only available vehicular emergency evacuation route for residents of this region. Similarly, project elements would interfere with access by first responders to fight a vegetation wildfire. Wildfire risks derived from The Project's multiplicity of potential ignition sources are not limited to the construction phase of The Project, since several major California wildfires in recent years have had identified ignition sources related to power lines. The Application provides no alternative siting options or proposed mitigation measures that might reasonably be anticipated to address wildfire ignition risks at any phase of The Project.

Fast-moving seasonal vegetation fires at nearby Salt Point State Park in 2016 and in 2018 demonstrated the extreme rapidity with which wind-accelerated wildfires can develop and propagate in this environment.

Necessary Full Indemnification by The Applicant: The Project Must Post a Bond Sufficient to Indemnify All Costs of Accidental or Unanticipated Damages Throughout the Life of the Project

The Applicant would need to post a pre-construction bond sufficient to fully indemnify the State of California, the U.S. Treasury (due to impacts to NOAA resources), the County of Sonoma, affected Tribal Interests, and local residents for the maximum credible damages that could potentially be caused by either natural hazards or accidental impacts associated with The Project. This bond would need to be maintained throughout the life of The Project. Any resulting court costs associated with obtaining a settlement, including fee for counsel of all parties, would be the responsibility of The Applicant.

Geology and Soils: The Application Disregards Well-Known Geohazards and Intractable Site Constraints

The Application, as previously noted, contains an erroneous map that fails to identify affected parcels by AP number, but it is apparent that The Project is being proposed for a uniquely infeasible site. No available mitigation measures can be envisioned for the range of geologic challenges this site presents with respect to The Project. The local geologic setting consists of unstable clay soils prone to liquifaction, unconsolidated gravels, and fractured rock. The Project description provides no potential disposal destination for what appears to be at least one-million-cubic-yards of excavated spoils that would be discarded from tunnel, reservoir, and tailrace construction.

The prospect of a project of this kind being constructed directly on top of the active San Andreas Fault fracture zone where evidence of substantial vertical and horizontal ground displacement remains clearly visible as a result of the 1906 Earthquake, in the midst of a popular California State Historic Park, with seawater intakes and a spent water tailrace being proposed within a National Marine Sanctuary where such activity is banned outright, obviously raises a number of salient questions. A second nearshore fault zone, in the immediate vicinity of The Project's proposed intakes and tailrace feature, clearly exhibits dangerous seafloor instabilities, including a geologic record of seabed landslides and slump zones that appear to be associated with prior seafloor liquefaction. (See Attachments B and C, incorporated herein by reference). The surrounding Cazadero region, where penstocks and a saltwater storage reservoir associated with The Project are being proposed, is also known to be highly geologically unstable, and extremely high annual rainfall levels often approach the category of a rain forest. As mentioned, unstable clay soils and fractured geology therefore result in frequent landslides, mudflows, and slumps affecting the terrain in this region, particularly where disturbed by construction activities. Tsunami inundation maps prepared by the California Department of Conservation also potentially delineate severe seismic sea wave impacts to critical project elements, see <https://www.conservation.ca.gov/cgs/tsunami/maps/sonoma>, incorporated herein by reference.

Cultural Resources: The Application Disregards the Fact that Fort Ross is on the National Register of Historic Places, is a National Historic Landmark, and is also a California Historical Landmark

Fort Ross is a former Russian outpost that served as the hub of the southernmost Russian settlements in North America from 1812 to 1841. Fort Ross is on the National Register of Historic Places, is a National Historic Landmark, and also is a California Historical Landmark. It is part of Fort Ross State Historic Park, the heart of which lies directly in the impact zone of The Project.

Biological Resources: The Application is Incompatible with Federally-Protected Coastal Waters Under the National Marine Sanctuaries Act

The designation document and the regulations of the Greater Farallones National Marine Sanctuary make it clear that any seabed disturbance, discharges of any kind, seawater intakes, and construction activities affecting Sanctuary resources in any way are all permanently precluded. There is no available design for adequate screening of what would be very large seawater intakes in order to prevent damage to salmonid fry, crab larvae, krill, or other important marine organisms. Substantial fish kills associated with pumped storage operations elsewhere have been well-documented, see <https://www.osti.gov/servlets/purl/6736574> and <https://www.osti.gov/biblio/220133> (incorporated herein by reference). Proven mitigation strategies for normal operational adverse effects associated with the impingement of juvenile and adult life stages of finfish and the entrainment of eggs and larval life stages of finfish have not yet been invented. Discharge of seawater for which the temperature and/or oxygen content will inevitably have been altered is strictly prohibited around the subject site by National Marine Sanctuary Regulations. Impacts on ESA-listed species within the sphere of influence of The Project would trigger the need for The Applicant to seek agency permission for Incidental Take. Discharge of spent tailwater into the ocean would introduce invasive biofilms from metallic surfaces within The Project into Sanctuary waters. The inevitable degradation of bio-resistant epoxy coatings commonly applied to metallic elements of The Project to try to control biofouling would introduce fugitive toxicity into the waters of the National Marine Sanctuary. Petrochemical lubricants associated with routine maintenance of the bearings and impellers in the reversible pump-turbines would also introduce petroleum product residues into Sanctuary waters. The Applicant fails to state the fate and effects of any pesticides and herbicides that would be needed to maintain access to equipment and to maintain vehicular clearance along roadways. *Any change* in ambient water or substrate conditions in Sanctuary waters is statutorily prohibited. A full oil spill response plan, certified by the U.S. Coast Guard, would be necessary in the event that maritime construction vessels and heavy equipment were to conduct initial construction or subsequent maintenance work on the seawater intakes and tailrace configuration.

Biological Resources: California Coastal National Monument

The California Coastal National Monument protects marine-dependent wildlife and vegetation on 6 mainland units and more than 20,000 rocks, islands, exposed reefs, and pinnacles along the California coastline. No access to coastal rocks or other features of this National Monument near any element of The Project is permitted under relevant federal regulations, <https://www.blm.gov/programs/national-conservation-lands/california/california-coastal> as incorporated herein by reference.

Biological Resources: The Application is Incompatible with the State of California's Marine Protected Areas Network

The surrounding State of California Marine Protected Area (MPA) network designations near the proposed seawater intake and discharge point have been carefully negotiated to serve as genetic replenishment sites in the event of a future oil spill or other regionwide maritime disaster. These MPA sites are the result of years of careful science-based design and study, and cannot be summarily sacrificed to a project such as that being proposed. A well-documented State Area of Special Biological Significance (ASBS) site located seasonally down-current from the proposed discharges from The Project has been studied for decades by the University of California's Bodega Marine Laboratory and is part of the UNESCO Golden Gate Biosphere Reserve.

Wildlife Disturbance: Sea Lion Islands

There are two island clusters called Sea Lion Islands (38° 31' 0"N, 123° 15' 38"W and 38° 30' 54"N, 123° 15' 42"W) and a separate island slightly to the south (38° 30' 41"N, 123° 15' 31"W) that are haul out sites for two species of sea lions: California sea lions (*Zalophus californianus*) and Steller sea lions (*Eumetopias jubatus*).

The sea lion population has been monitored at haul outs in Fort Ross State Historic Park from 1997-2001 and from 2013-2023. Sea lions are present on these offshore islands throughout the year and both species swim in the water between these islands and the coast to hunt and socialize. Immature and adult sea lions have been seen with cookie cutter shark bites. These haul outs are likely to be important for predator avoidance and recovery from injury. Hazing or other disturbance of these colonies during the construction phase of The Project would be inevitable, with no guarantee the affected marine mammals would return. Even if the impacted marine mammals were to eventually return, altered baseline conditions would exist as a result of the tailrace discharges and associated breakwater. Since all ocean elements of The Project are located within a National Marine Sanctuary, no Incidental Take permitting procedure would be available. (See Attachment A, incorporated herein by reference.)

Threatened and Endangered Species: Cetacean Migration and Feeding Areas Nearshore

During both construction and operational phases, The Project would jeopardize critical habitat for ESA-listed species that rely on nearshore coastal waters in the immediate area. No mitigation is possible for the inevitable impacts. Pre-project site evaluation, construction activities, and operational activities would all be in violation of the Marine Mammal Protection Act (MMPA) and the National Marine Sanctuaries Act (NMSA) as well as the relevant Marine Sanctuary Designation Document and applicable Marine Sanctuary Regulations, also incorporated herein by reference.

Land Use/Public Services/Recreation: The Application Ignores the Socio-Economic Importance of the Proposed Site

The Fort Ross State Historic Park, prior to the advent of the COVID pandemic, attracted 150,000 visitors per year, making it a cornerstone of the regional visitor-serving clean coast economy. Visitor numbers are rebounding and are expected to surpass the prior level of travelers. The Project as envisioned would decimate major portions of Fort Ross State Historic Park, damaging the public interest in substantial ways that cannot be mitigated. Viewsheds integral to maintaining the experiential integrity of Fort Ross State Historic Park would be overwhelmed with industrial installations, including penstocks, powerhouse appurtenances, new project service roads, and power

conversion substations. The upland reservoir location being proposed for The Project would be situated on fractured geology characterized by pervious soils, and surrounding residents are solely dependent upon the underlying local freshwater aquifers for their ranching, vineyard, and residential water supply needs. Seepage recovery and monitoring wells would need to be maintained throughout the life of The Project to keep track of saltwater intrusion into domestic water supplies.

Biological Resources: The Application Fails to Address Environmentally-Sensitive Habitat (ESHA) and Scenic Viewsheds

The Application ignores the fact that The Project lies within the Coastal Zone of the State of California, which is subject to the State of California's Coastal Zone Management Plan (CZMP) and is thereby governed by the State under the auspices of the federal Coastal Zone Management Act (CZMA). Within the Coastal Zone, the most stringently-protected category of ecosystem is known as "Environmentally-Sensitive Habitat Area", or ESHA. Virtually all of the coastal elements of The Project lie within categories of landscape long-delineated as ESHA, and no mitigations are offered or even possible for the inevitable adverse impacts of The Project. The Project would further adversely impact viewsheds from the State of California Reef Campground to the south, northward to the Expanding Universe Peace Obelisk State Park at Timber Cove, interfere with natural views from the adjacent Timber Cove Inn, as well as intrude on ecosystems and viewsheds lying further northward to the Salt Point Pygmy Forest and the Kruse Rhododendron State Natural Reserve. The biological zone of influence from The Project tailrace outfall would extend to Sea Ranch and the Del Mar Landing State Reserve. (Complete text of California's CZMP and CZMA are incorporated herein by reference.)

Legal Framework: Non-Compliance with Applicable State and Federal Laws

The Applicant will also need to ensure that The Project can be brought into full compliance with the federal National Environmental Policy Act (NEPA), the federal Endangered Species Act (ESA), with the California Coastal Act, and with California State Park regulations, since failure to address these requirements only provides further evidence that the application is incomplete as submitted.

Any further consideration of The Project will require full compliance with the California Environmental Quality Act (CEQA) of 1970 [Public Resources Code §§21000-21178] and the 2010 State CEQA Guidelines [California Code of Regulations, Title 14, Chapter 3, §15000-15387]. Pursuant to State CEQA Guidelines §15123, this Executive Summary shall provide a brief overview of the proposed Project and its environmental consequences (State CEQA Guidelines §15123(a)). This section identifies each potentially significant effect of the proposed Project with proposed mitigation program (State CEQA Guidelines §15123 (b)(1)), describes the areas of controversy known to the Lead Agency, issues raised by agencies and the public (State CEQA Guidelines §15123 (b)(2)) and lists the issues to be resolved [the basis for the scope of EIR] including the choice of project alternatives and how to mitigate significant effects (State CEQA Guidelines §15123 (b)(3)).

Pursuant to Public Resources Code §21068, a *significant effect on the environment* is defined as "a substantial, or potentially substantial, adverse change in the environment."

Delineation of a significant effect on the environment will require the following, at a minimum:

1. Potential Environmental Impacts;
2. Level Of Significance;
3. Details of the Mitigation Program (which can be relied upon to avoid, reduce, or offset the potential environmental impact); and
4. Level of Significance after Implementation of the Mitigation Program (residual impact).

The Federal Energy Regulatory Commission (FERC) is the federal lead agency responsible for licensing such pumped storage hydroelectric facilities. As such, FERC would be required to prepare an Environmental Impact

Statement (EIS) under the guidelines of the National Environmental Policy Act (NEPA) [which is independent of CEQA]. NEPA requires Federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions.

As described in State CEQA Guidelines §15121(a), an EIR is an informational document which will inform public agency decision makers and the public generally of the significant environmental effects of a project, identifies possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency. No part of The Project would be eligible for a finding of No Significant Impact (FONSI), in whole or in part.

Failure to Meet Greenhouse Gas Reduction Goals and Objectives: Lack of Available Electrical Infrastructure Near Proposed Project Area

There is no electrical source or grid facility adequate for powering The Project's anticipated five 250 MW pump/turbines within at least a 35-mile radius of the proposed site, although The Application erroneously mentions a hypothetical 0.5 mile power line connecting The Project to the grid. The grid, in the location poorly identified in The Application, consists of a century-old rural power system servicing an area which is comprised of many widely-dispersed voluntarily off-grid private residences and farmsteads. The Project as proposed would not provide generation to meet part of California's peak power requirements, fails to provide ancillary services for management of the transmission grid, and has no capability to enhance spinning reserves, voltage regulation, load following, Black Start, nor protection against over-generation, since it is nowhere near any adequate grid component of commercial importance. The Project would therefore have no impact on greenhouse gas emissions beyond itself contributing substantial new greenhouse gas emissions during its construction phase. The Project would not locate energy generation adjacent to the transmission grid nor would The Project generate hydropower without causing impacts to surface waters and aquatic ecosystems. The Project's inherent waste of power (20 percent or more) and mechanical and hydraulic inefficiencies (80 percent or less of energy input reflected in energy output) makes this proposal ineligible for both state and federal subsidies. Were The Project to be built, new high-KV power lines and associated transmission infrastructure aimed at serving distant inland markets would need to be constructed transiting steep wildfire-prone backcountry not accessible by roads nor by conventional firefighting technologies. Construction of such high-hazard infrastructure in this remote, fire-prone, geologically unstable region would require a separate set of NEPA and CEQA procedures.

Flawed Environmental Analysis: The Application Ignores Damage to Protected Public Trust Timber Resources

Any disturbance, thinning, or logging of the Spyra Memorial Grove of redwoods that lies directly in the path of the penstocks from The Project would appear to be specifically precluded by implied and/or express donative intent accompanying their initial acquisition by the State of California, and would also be in violation of a range of applicable state laws. The original conveyance of this redwood grove to the State of California requires that title be relinquished by the State and returned to Save the Redwoods if removal of these trees is contemplated. Destruction of unique forest resources owned in trust by the people of the State of California emerges as an "Issue of Concern/Area of Controversy" since The Project cannot proceed without substantial removal of forest cover and terrain modification in a geologically-unstable environment. The Application must identify specific parcels of private lands, by AP number, anticipated to be necessary for The Project for acquisition by eminent domain or other real property proceedings.

Cultural Resources: The Application Omits Any Reference to Cultural Resources

The Project's entire physical footprint is well-known to exhibit an extremely high density of culturally-significant archaeological sites. A comprehensive multi-era archaeological survey of the full project area will be required, including pre-contact indigenous sites, followed by the Russian era, Russian-American Company era, Aleut living and work sites, and Kashia sites dating from pre-contact to the present day.

Land Use/Public Services: The Application Fails to Contribute Significantly to New Employment

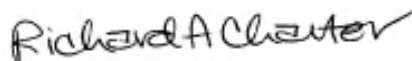
While inevitably adversely impacting the sustainable ranching, vineyard, and visitor-serving economic base of the region, The Project would not contribute any significant long-term employment in the region except at *de minimis* levels during the short-term construction phase.

Noise: Construction and Operational Activities

The Project would rely first on construction activities, and subsequently on operational activities, that each generate noise levels adversely affecting surrounding sensitive receptors. Such noise levels cannot be mitigated.

Thank you for the opportunity to comment on The Application for P-15287-000 and to submit this formal request that The Application be denied due to incompleteness and failure to provide an adequate comment opportunity. If outright permit denial due to an incomplete application or other reason is not exercised by FERC, a “No Project” alternative must be the preferred alternative.

Sincerely,



Richard A. Charter
Director, Coastal Coordination Program
The Ocean Foundation
waterway@monitor.net

cc: Congressman Jared Huffman, U.S. Senator Dianne Feinstein, U.S. Senator Alex Padilla, State Senator Mike McGuire, Assemblymember Jim Wood, Office of the Governor of California, State Attorney General Rob Bonta, County of Sonoma, Board of Supervisors and County Counsel.

Attachments incorporated herein by reference:

Attachment A: incorporated herein by reference:
“Sea Lion Rocks Monitoring Document”.

Attachment B: incorporated herein by reference:
Horizontal Ground Surface Displacement at Fort Ross During the 1906 Earthquake”, sources, USGS and California Earthquake Authority.
<https://www.fortross.org/places/fault#:~:text=In%201906%20the%20land%20at,can%20still%20be%20seen%20to%20day.>

Attachment C: incorporated herein by reference:
“Fort Ross Region: Nearshore Earthquake and Seafloor Slump Map”, sources, USGS and California Earthquake Authority.
https://pubs.usgs.gov/of/2015/1211/ofr20151211_pamphlet.pdf and
https://pubs.usgs.gov/ds/781/OffshoreFortRoss/metadata/Faults_OffshoreFortRoss_metadata_faq.html

Attachment D: All comments, footnotes, references, and all linked PowerPoint presentations in this document are incorporated herein by reference:
“The Mussey Grade Road Alliance Informal Comments on the 202202013 Integrated Resource Plan, Draft Inputs and Assumptions Document and Webinar Slides”, prepared by Tyson Seigle.

Attachment A:

Steller Sea Lions in Fort Ross State Historic Park

Dr. Dione Deaker, Marine Biologist

There are two island clusters called Sea Lion Islands (38° 31' 0"N, 123° 15' 38"W and 38° 30' 54"N, 123° 15' 42"W) and a separate island slightly to the south (38° 30' 41"N, 123° 15' 31"W) that are haul out sites for two species of sea lions: California sea lions (*Zalophus californianus*) and Steller sea lions (*Eumetopias jubatus*).

The sea lion population has been monitored at haul outs in Fort Ross State Historic Park from 1997 – 2001 and from 2013 – 2023. Sea lions are present on these offshore islands throughout the year and both species swim in the water between these islands and the coast to hunt and socialise. Immature and adult sea lions have been seen with cookie cutter shark bites. These haul outs are likely to be important for predator avoidance and recovery from injury.

Steller sea lions

From May 1997 – December 2001, the average (\pm standard error) number of Steller sea lions each month was 13.78 individuals (\pm 1.4, n = 54 months). Over the past 12 months (August 2022 – July 2023), there was a monthly average of 67.1 (\pm 17.5, n = 11 months) sea lions. In 2023 alone, there has been a substantial increase in population size with an average of 90.5 sea lions (\pm 17.6, n = 6 months) and the highest monthly total of 161 individuals counted. During the reproductive season, females were observed nursing pups.

Overall, from the surveys in the late 90s to 2023, there has been a 6.9-fold increase in Steller sea lions. There are only five documented major haul out sites along the West Coast of the USA and a number of sites at Año Nuevo and in the Channel Islands have faced substantial population decline since the 1930s or have been abandoned (Young et al. 2023). With such a large increase in population, Fort Ross is likely to be a critical site for Steller sea lions on the West Coast.

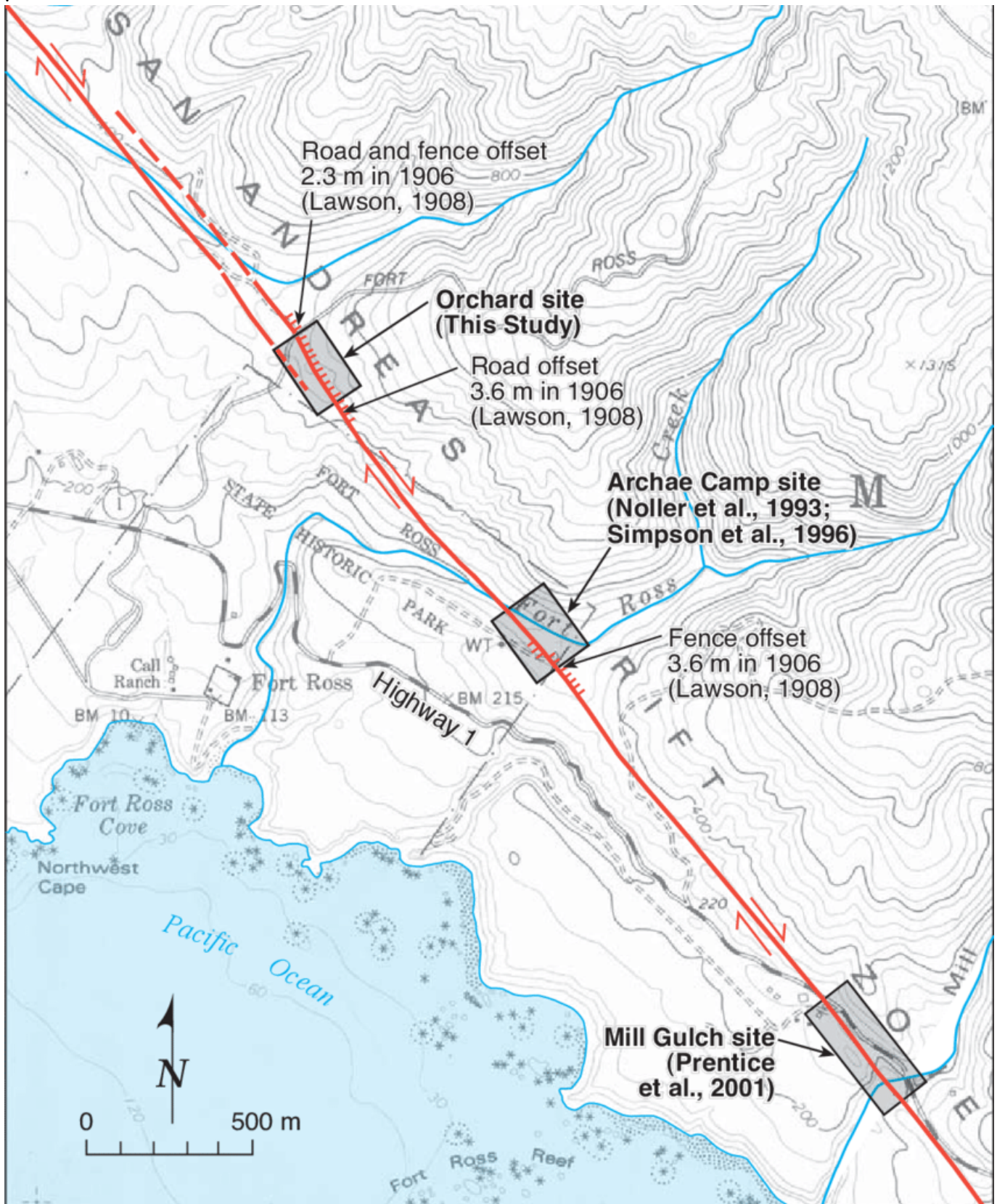
California sea lions

From May 1997 – December 2001, the average (\pm standard error) number of individual Steller sea lions was 24.1 individuals (\pm 6.1, n = 54 months). From January 2022 to July 2023, there was an average of 81.4 (\pm 15.3, n = 18 months) individual sea lions.

References

Young, N. C., Brower, A. A., Muto, M. M., Freed, J. C., Angliss, R. P., Friday, N. A., Boveng, P. L., Brost, B. M., Cameron, M. F., Crance, J. L., Dahle, S. P., Fadely, B. S., Ferguson, M. C., Goetz, K. T., London, Oleson, E. M., J. M., Ream, R. R., Richmond, E. L., Shelden, K. E. W., Sweeney, K. L., Towell, R. G., Wade, P. R., Waite, J. M., and Zerbini, A. N. 2023. Steller sea Lion (*Eumetopias jubatus*): Eastern U.S. Stock in “Alaska marine mammal stock assessments, 2022”. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-AFSC-474, 316, pp 22 - 32.

Attachment B: Horizontal Ground Surface Displacement at Fort Ross During the 1906 Earthquake



Attachment C: Fort Ross Region: Nearshore Earthquake Fault and Seafloor Slump Map

