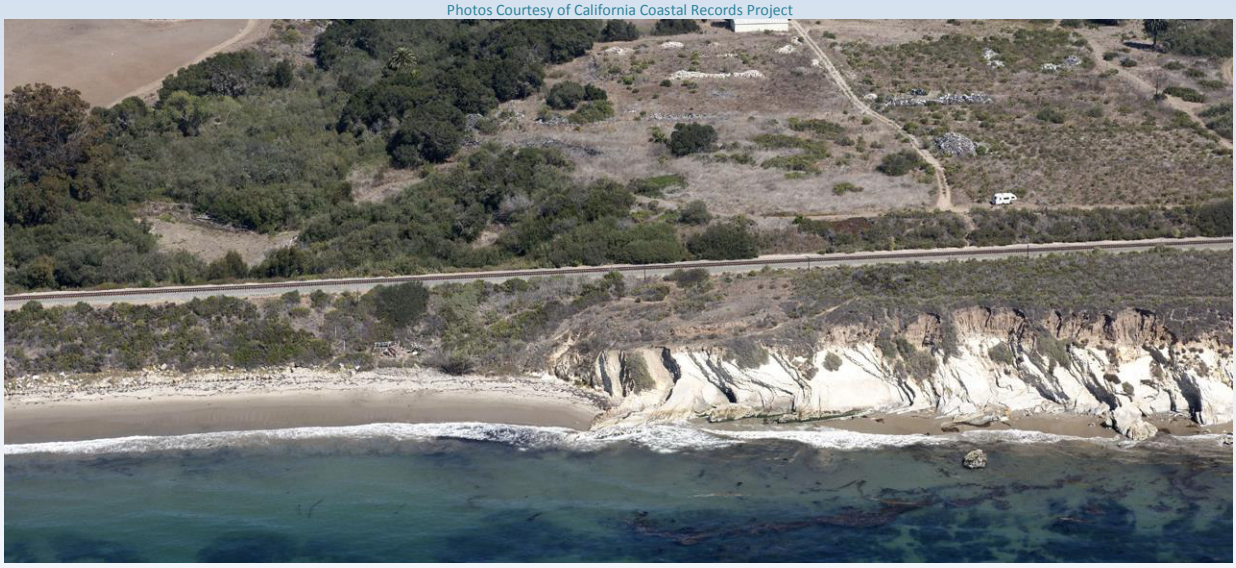
Affects of Tides on Lateral Coastal Access at

Las Varas Ranch

Gaviota, California

Photos Courtesy of California Coastal Records Project



September 18, 2014

SANTA BARBARA COUNTY
Trails Council

As part of a development review County and State policies require provision of public access along the shoreline even at high tide. The Las Varas Ranch development project, as proposed, would eliminate existing informal access along the coastal bluff tops. However, the proposed granting of lateral access along the beach would not guarantee the public's right to passage along the shoreline the majority of the time due to tides. This paper explores the affects of tides on lateral coastal access at Las Varas Ranch.

Introduction: Las Varas Ranch is located on the eastern Gaviota Coast, approximately ½ mile east of El Capitan State Beach Park in southern Santa Barbara County. The eastern Gaviota Coast encompasses approximately 20 miles of shoreline that extends from the City of Goleta west to Gaviota State Park. The Beach Erosion Authority for Clean Oceans and Nourishment (BEACON) notes that Beaches along the Gaviota Coast are characterized by *relatively thin veneers of sand over hard bedrock and are backed by high bluffs and marine terraces*. BEACON also notes that *the numerous pocket beaches that exist are generally narrow and bounded by rocky points or headlands. Some wider sandy beaches do exist at lower relief coastal areas and stream discharge locations* (BEACON, 2009). As a result, many Gaviota Beaches are intertidal, particularly during the winter and spring when sand levels are low. Beaches and coves such as Deadmans, Dos Pueblos, Las Varas, El Capitan, Coral Canyon, Tajiguas, Refugio and Gaviota are often located at creek mouths or "stream discharge locations" where sediment from streams supports wider pocket beaches that can support dry sand beach berms, particularly in summer.

Beaches along Las Varas Ranch are strongly intertidal, with access often restricted along much of the ranch at modest tides of 2-4 feet. High tides and waves often reach the base of the bluffs, particularly west of Edwards Point (background), limiting public access along the shoreline.

Public access to and along this shoreline is limited. Developed public vertical access to the beach exists at only three locations over this 20 mile-long shoreline; El Capitan, Refugio and Gaviota State Beaches. However, 22 major and multiple minor informal access trails cross both state and private lands to provide access to many pocket beaches, including diving, fishing and surf break locations such as Naples, Edwards Point, Tajiguas and Canada de Leon at the Gaviota Marine Terminal (Santa Barbara County Trails Council, 2013). Due to the narrow and often intertidal nature of these beaches, public lateral access along this shoreline is strongly influenced by seasonal sand supply and tidal conditions, with many rocky headlands limiting lateral access, particularly during winter. While the beauty and isolation of these beaches is one of their attractions, difficult and time restricted lateral access limits public use.

Purpose of this Report: This report was prepared by the Santa Barbara County Trails Council (Trails Council) to inform the general public and county and state agency staff and decision-makers regarding existing lateral access conditions along beaches at Las Varas Ranch, particular how access is influenced by tides, seasons and sand supply. Protection and expansion of access to and along the shoreline is a key element of state and county policies as embodied in the State Coastal Act and is an important concern for many California residents and visitors alike. The loss of public access to and along the State's shoreline was a key driver of the enactment by the voters of Proposition 20 in 1972, which led to passage of the Coastal Act and creation of the California Coastal Commission.

The Las Varas Ranch encompasses approximately 2 miles of shoreline or more than 10% of the Gaviota Coast between the City of Goleta and Gaviota State Park. It is largest single privately owned undeveloped shoreline ranch in southern Santa Barbara County south of Point Conception and possibly all of Southern California. As such, public access to and along the shoreline at this location is an important consideration. County and potentially State decisions regarding a pending development project on the Las Varas Ranch will affect existing informal public coastal access, proposed acquisition of and public access to Edwards Point on the Las Varas Ranch, which has been planned by the County and State for over 32 years. This paper examines and analyzes existing lateral beach to understanding of the relationship of such lateral beach access to existing state and county policies and proposals for access to and along the coast included in the Las Varas Ranch Development project.

Many Gaviota area beaches support a thin layer of sand over underlying rocky marine terrace and may not develop a dry sand summer beach berm, limiting lateral public beach access during periods of low sand supply such as spring and winter. During such periods, sand can be largely absent from some beaches as shown in this high tide photo looking west from Dos Pueblos bluff tops toward Las Varas Ranch and Edwards Point to the west.

Methodology: The Trails Council surveyed Las Varas Beaches on four occasions in 2012-2014 during preparation of the Gaviota Coastal Trail and Access Study (Trails Council 2013) and review of the impacts of the proposed Las Varas Ranch development project on public coastal access and recreation. Trails Council staff reviewed Coastal Records Act Aerial photos, surveyed the beaches, recorded tides, photographed sand conditions and evidence of tidal levels and observed public use and access. Access was obtained along the beach from the east and west, generally at low tides due to restrictions on passage along the coast at higher tides. The Trails Council utilized tide data for 2014 from the National Oceanic and Atmospheric Administration (NOAA) to project the effects of tides on lateral access on Las Varas Beaches. The Trails Council also communicated

with and reviewed documents prepared by the California State Lands Commission (CSLC), an agency charged with addressing lateral access issues and assessing the boundary between public and private lands along the shoreline. Additional details on the methodology are provided in various subsections of this report as needed below.

Regulatory Framework Governing Coastal Access: Public access to the shoreline is guaranteed by the California Constitution. The State Coastal Act sets forth six key goals to manage the state's Coastal Zone , including one related too recreation and coastal access which states:

> *"Maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of private property owners."*

Under California's constitution, land lands below the Mean High Tide Line (MHTL) are public property. As a rule of thumb, such lands can be discerned by the ordinary high water mark, which means land regularly subject to submersion. Although not formally surveyed, in practice due to the intertidal nature of many of the beaches along the Las Varas Ranch, this means that public property below the MHTL extends landward close to or at the toe of the coastal bluffs along many of the regions beaches.

In order to help guarantee public access along the shoreline, the County's adopted Local Coastal Plan requires the County to protect and defend the public's right to access to and along the shoreline (Table 1). County policy also requires dedication of lateral access easements to allow for public access along the shoreline and states that *"at a minimum, the dedication easement shall be adequate to allow for lateral access during periods of high tide."* The implication of the policy for the location of lateral access along strongly intertidal Las Varas Ranch beaches requires careful consideration during review of development projects.

Table 1: County Policies that Address Lateral Beach Access

CLUP Policy 7-1: *The County shall take all necessary steps to protect and defend the public's constitutionally guaranteed rights of access to and along the shoreline. At a minimum, County actions shall include:* *(a) Initiating legal action to acquire easements to beaches and access corridors for which prescriptive rights exist consistent with the availability of staff and funds.* *(b) Accepting offers of dedication which will increase opportunities for public access and recreation consistent with the County's ability to assume liability and maintenance costs.* *(c) Actively seeking other public or private agencies to accept offers of dedications, having them assume liability and maintenance responsibilities, and allowing such agencies to initiate legal action to pursue beach access.*	***CLUP Policy 7-3:*** *For all new development between the first public road and the ocean, granting of lateral easements to allow for public access along the shoreline shall be mandatory. In coastal areas, where the bluffs exceed five feet in height, all beach seaward of the base of the bluff shall be dedicated. In coastal areas where the bluffs are less than five feet, the area to be dedicated shall be determined by the County, based on findings reflecting historic use, existing and future public recreational needs, and coastal resource protection. <u>At a minimum, the dedicated easement shall be adequate to allow for lateral access during periods of high tide</u>. In no case shall the dedicated easement be required to be closer than 10 feet to a residential structure. In addition, all fences, no trespassing signs, and other obstructions that may limit public lateral access shall be removed as a condition of development approval.*

Tidal influence on Lateral Access: In order to determine the extent of tidal influence on lateral access at Las Varas Ranch, the Trails Council utilized tide data for 2014 from the National Oceanic and Atmospheric Administration (NOAA). Four months were selected (see Table 2) to represent the tidal variations across the four seasons (i.e., winter, spring, summer, fall). To review conditions on Las Varas Beaches, the Trails Council conducted surveys of the beaches in spring of 2012, spring and summer of 2013 and fall of 2014. Based on observations made during these surveys over the past two years and review of California Coastal Records Project aerial photographs, the Trails Council assumed that all beaches were passable at a negative or minus low tide. Although rocky conditions can make passage difficult in some locations in winter, it is assumed that under these conditions lateral access is provided along the entire 2 mile coastline of Las Varas Ranch. Additionally, based on past observations, the Trails Council assumed that the majority of beaches are passable at less than two foot tides, and that some beaches are passable at a less than four foot tides. However, as the tide rises from negative tides to four foot tides lateral access becomes constricted across the coast line, submerging beaches and creating isolated pocket beaches (e.g., beach at Las Varas Creek).

Trails Council calculated average sunrise and sunset times for typical seasonal months (e.g., January, winter). Trails Council then looked at each low tide value and calculated the percentage of low tides that occurred below one of the above threshold values (e.g., negative tides, less than or equal to two foot tides, less than or equal to four foot tides) within daylight hours. For example of the 120 high and low tide values provided by NOAA for Santa Barbara County, only 16 of these values were negative and occurring within daylight hours. Additionally, only 25 of these 120 tide values were below two feet and occurring within daylight hours. Trails Council used this proxy to estimate the percentage of time that the Las Varas Beaches were laterally accessible to the public.

Table 2: Tidal Influence on Lateral Access at Las Varas Ranch

Season (Month)	Average Sunrise	Average Sunset	All Passable (<0 ft)	Majority Passable (≤ 2 ft)	Some Passable (≤ 4 ft)
Winter (January)	7:03 AM	5:13 PM	13%	21%	27%
Spring (April)	6:27 AM	7:32 PM	5%	28%	43%
Summer (July)	6:00 AM	8:10 PM	2%	16%	42%
Fall (October)	7:06 AM	6:23 PM	4%	14%	22%

It should also be noted that this analysis cannot precisely correlate the typical beach profile at the Las Varas beaches, which also fluctuates on annual and decadal timescales. Heavy wave attack associated with El Niño years may result in a narrower beach profile, further constricting lateral access. For example, 13 percent of the low tides during the winter months are negative and assumed to provide complete lateral access; however, during winters characterized by strong wave action the beach profile may be reduced such that tides must be less than -1 foot to provide complete coastal access. Nevertheless, this data is still valuable as an estimate for lateral access. It is clear that uniform access is rare at the Las Varas Beaches ranging from approximately two percent of the time during the summer to 13 percent of the time during the Winter. The seasonal effects of tides on lateral access are shown in Figures 1, 2, 3 and 4 below.

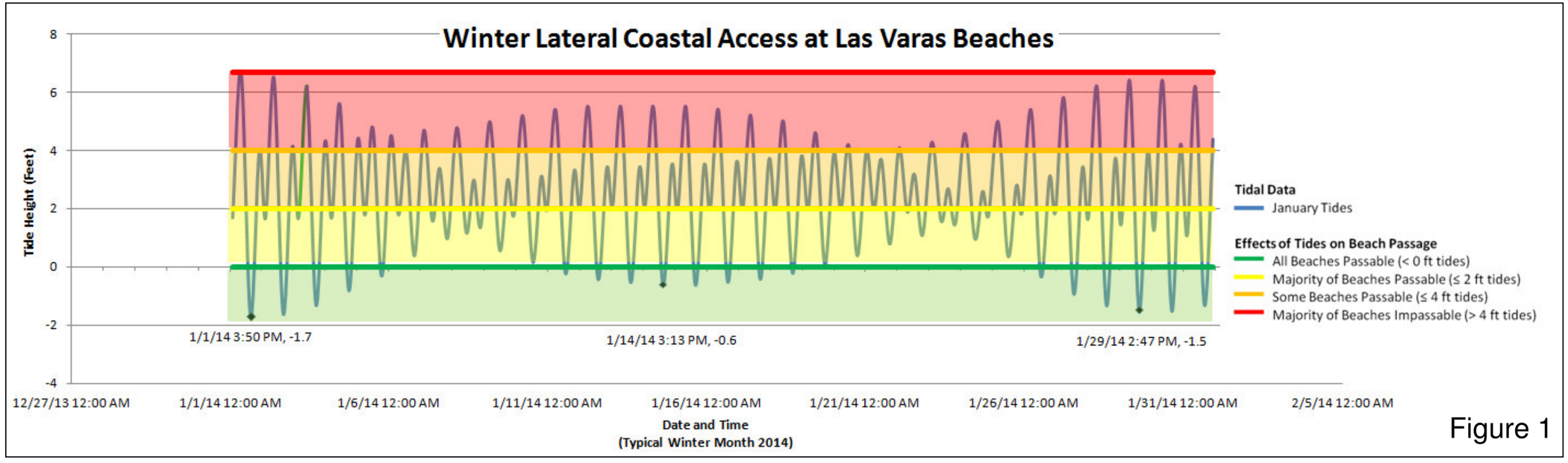


Figure 1

Source: NOAA 2014. Notes: January was selected as the typical winter month as it occurs mid-way through the winter season, and is therefore less likely to pick up transition periods between the seasons.

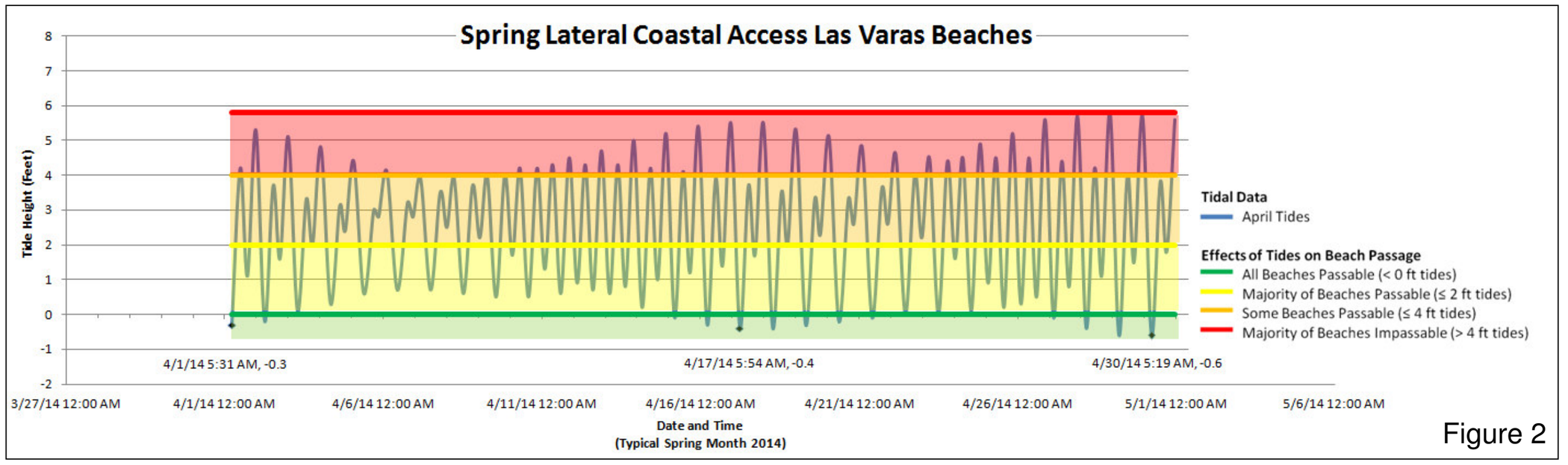


Figure 2

Source: NOAA 2014. Notes: April was selected as the typical spring month as it occurs mid-way through the spring season, and is therefore less likely to pick up transition periods between the seasons.

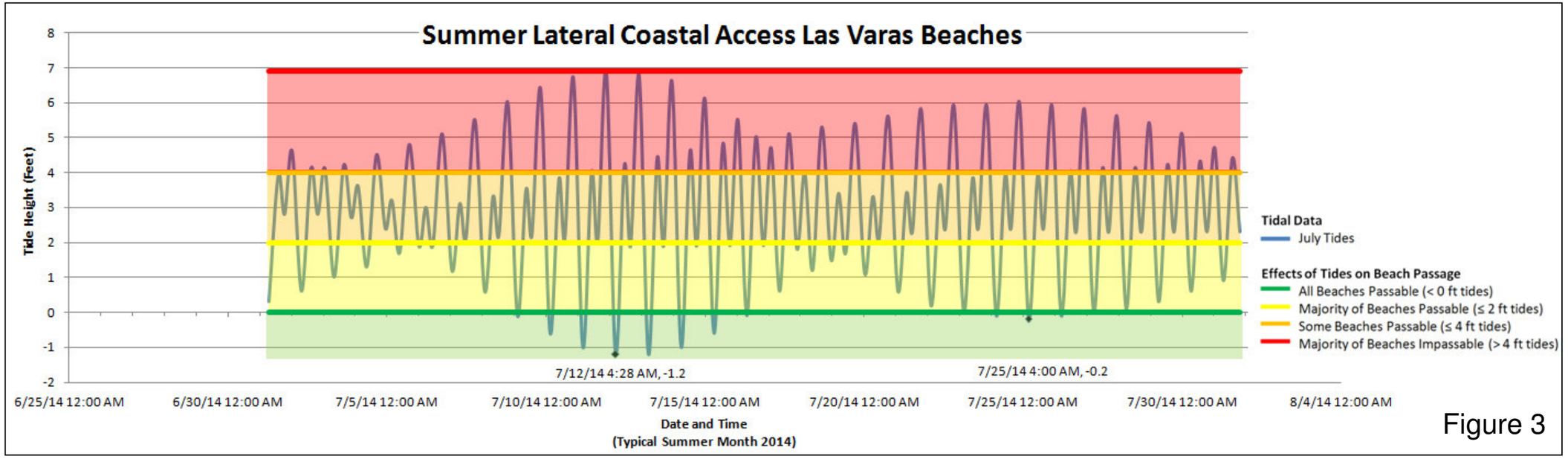


Figure 3

Source: NOAA 2014. Notes: July was selected as the typical summer month as it occurs mid-way through the summer season, and is therefore less likely to pick up transition periods between the seasons.

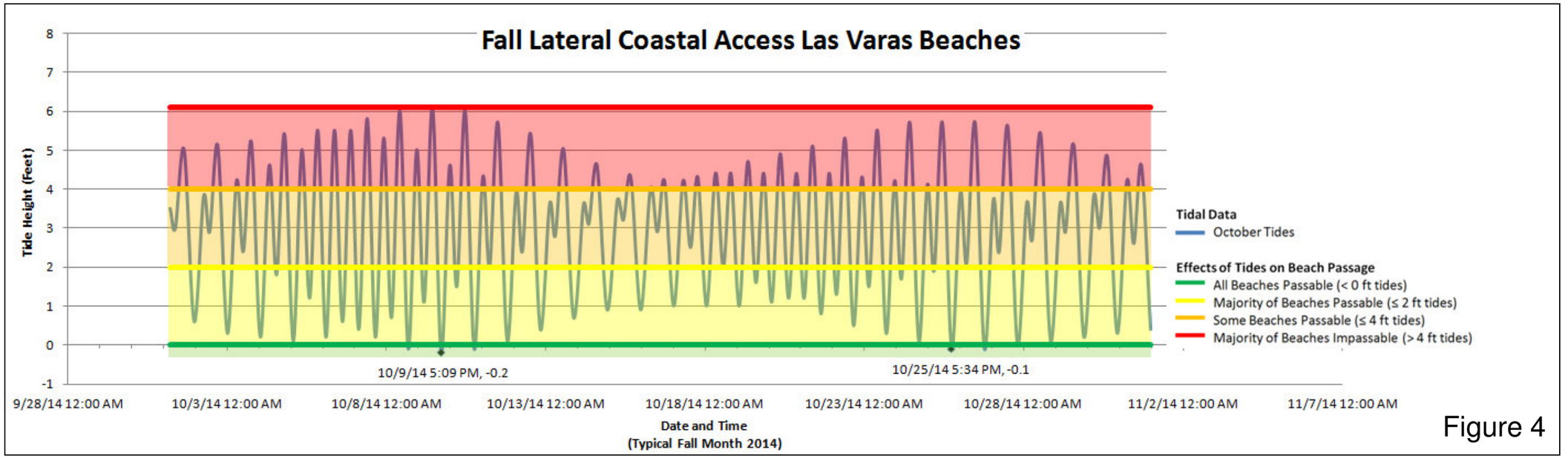


Figure 4

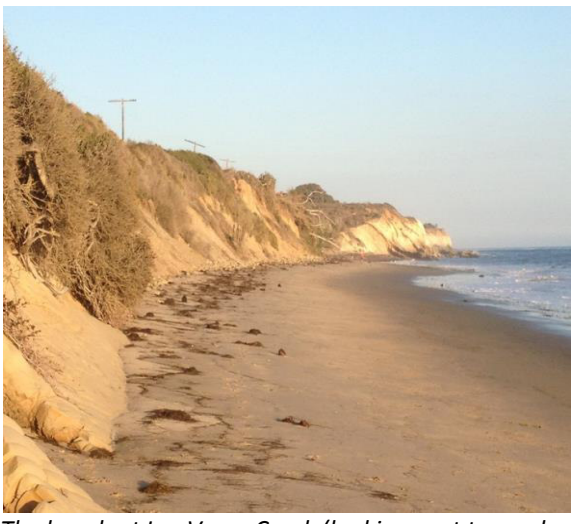
Source: NOAA 2014. Notes: October was selected as the typical fall month as it occurs mid-way through the fall season, and is therefore less likely to pick up transition periods between the seasons.

Availability of Lateral Access on Las Varas Beaches: Beaches along Las Varas Ranch allow for differing levels of public access based upon observed beach profile and width, sand supply and tides. The availability of access varies over multiple years, seasonally and daily based on these factors. Beaches can widen after major storm events, fires and influxes of sand into the system or narrow in responses to loss of sand through major storms of lack of sand input. As discussed below, based on our field surveys, historic aerial photographic research and tidal analysis provided above, in most years, the majority of beaches fronting the Las Varas Ranch would be submerged at tides of above 4 feet (Figure 5).

The Las Varas Ranch has approximately 2 miles of shoreline. The eastern 4,800 feet of shoreline is characterized by a long sandy beach which extends from a rocky point located 300 feet east of Las Varas Creek west to a rocky cobble headland in "Edwards Cove", approximately 1,000 feet east of Edwards Point. This long beach overlies a rocky marine terrace, where in summer and times of abundant sand, a modest dry sand beach berm forms, particularly near Las Varas Creek. However, in winter or periods with low sand supply (i.e., September, 2014), this beach is intertidal, with high tides reaching the base of the bluff and lateral access regularly available at tides below +4 feet. Therefore, even in summer during a low sand year, passage along this beach can be obstructed at modest or high tides due to this sometimes narrow beach being submerged.

The 1,000 feet of beach within the cove east of Edwards Point is more regularly intertidal. Based on field observations, the Trails Council estimates that most of this cove would be submerged at a +3 foot tide, with the narrowest areas of the cove becoming submerged at a 2 foot tide. The increasing presence of cobbles approaching Edwards Point also makes passage difficult and beach goers would be required to scramble over slippery cobbles at higher tides.

The beach at Las Varas Creek (looking west) supported a modest dry sand beach berm in late spring of 2013. However, high tides reach near the base of the bluff limiting the timing and duration of public access (note line of seaweed).



The beach at Las Varas Creek (looking east towards the creek) supported no well-developed dry sand beach berm in September 2014 and high tides reached the base of bluff limiting the timing and duration of public access (note line of seaweed).

Las Varas Ranch

Prepared By Santa Barbara County Trails Council

Generally impassible above 2 ft tide

Generally impassible above 3 ft tide

Generally impassible above 4 ft tide

Edwards Point

Generally Impassible above 4 ft tide due to slippery cobbles

Rocky Outcrop
Generally Impassible above 0.5 ft tide

Based on Santa Barbara County Trails Council Beach Survey – September 2014

NORTH

25 Meters

300 Yards

FIGURE 1 | Affects of Tides on Lateral Beach Access on Las Varas Ranch

Lateral access and beach passage at Edwards Point appears to be available at up to a +4 foot tide. The large cobbles mound up at the Point, allowing access to those willing to scamble the large slipplery cobbles even at high tides.

The cove east of Edwards Point is more strongly intertidal than beaches to the east and appears to be generally submerged above a +3 foot tide. Cobbles and rocky outcrops can make lateral access more challenging here, even at low tide. Edwards Point is in the background.

Rocky points limit lateral access from Dos Pueblos Canyon east to Las Varas Beach (background); at a low tide of +1.7 feet on August 16 of 2014, access west to Las Varas Beach was blocked by waves and rocks. Lateral access was available by scrambling over rocks at a +0.5 tide.

Lateral access on the sandy intertidal beach along the eastern 4,100 feet of Las Varas Ranch is limited by rocky points to the east (right), which prohibit access east to Dos Pueblos creek except very low or minus tides. In years with ample sand, a dry sand beach berm may develop allowing lateral access. However, in winter and low sand supply summers, later access can be impeded along this beach at even moderate tides (note narrow beach berm).

In general, based on field surveys and review of historic aerials from 2002 to 2014, Las Varas beaches west of Edwards Point are the narrowest and most strongly intertidal beaches that front the ranch. These beaches appear to be regularly submerged by relatively modest tides of +2 feet or more. In this area, the public regularly uses the bluff top to access Edwards Point.

Scenic rocky outcrops such as this one west of Edwards Point can present challenges for lateral access.

Las Varas beaches near the west end of the ranch west of Edwards Point is strongly intertidal, with the entire beach often submerged at moderate tides.

Beach along Las Varas Ranch west of Edwards Point appears to be the most strongly intertidal of those fronting the ranch. Here, lateral access along the shoreline is generally restricted to tides below + 2 feet. The bluff top west of Edwards Point is also the area of the ranch that receives the highest level of informal access by the public as beach goers traverse the bluffs to reach Edwards Point; proposed development would block this existing informal access, limiting public access along the coast to low or minus tides.

Conclusions: Based on Trail Council research and field work, key conclusions of this study include:

1. State Coastal Act Section 30211 protects public access to the shoreline that has been acquired through "*use or custom*". Santa Barbara County LCP Policy 7-1 requires that "*The County shall take all necessary steps to protect and defend the public's constitutionally guaranteed rights of access to and along the shoreline".* County LCP Policy 7-3 requires that "*For all new development between the first public road and the ocean, granting of lateral easements to allow for public access along the shoreline shall be mandatory..."* and that *"At a minimum, the dedicated easement shall be adequate to allow for lateral access during periods of high tide."*

Acquiring public access to and along the shoreline at Las Varas Ranch is an important County and State policy goal. However, provision of public vertical access to the often intertidal beach at Las Varas Creek (pictured) would not facilitate public access along the shoreline to Edwards point at moderate and high tides as required by County policy.

2. The public currently accesses the beaches along Las Varas Ranch primarily via informal access along the Union Pacific Railroad and across the bluff top west of Edwards Point, with more limited use of the bluffs east of the Point (Trails Council 9/16/14). The proposed development of Las Varas Ranch would close or substantially interfere with such access. While public access to these beaches does occur along the beach from the east and west and through Las Varas beaches such access is limited to low or at best moderate tides. Access along the shoreline at moderate to high tides inhibits public lateral access much of the time.

3. The proposed dedication of dry sand beach included as part of the proposed Las Varas Ranch development project would not guarantee or allow for public access along the shoreline as required by state and county policy. In particular, the public would not be able to access Edwards Point, the location of existing and planned access, much of the time due to tidal restrictions. Further, while a formal Mean High Tide Line Survey has not been completed, field surveys and review of historic aerial photographs indicate that private lands on the beach along the Las Varas Ranch are likely limited as many of the beaches fronting the reach are strongly intertidal. This limits public benefits associated with dedication of dry sandy beach.

4. If public access along the shoreline is to be guaranteed consistent with state and county policy, dedication of a nearshore coast trail would be required. Such a trail would permit public access between tidally isolated beaches such as that at Las Varas Creek and Edwards Point.