Ranching in Point Reyes National Seashore: Compromise & Coexistence

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Abstract

This thesis discusses ranching in Point Reyes National Seashore as well as the social, economic, and environmental impacts that it has on the surrounding area. This project answered the question; “what is the purpose/goal of Point Reyes National Seashore, and how does agricultures fit into this purpose?” In order to understand this issue one must look at the historical context of the area and the National Park Service in general. This thesis explores the current issues in the Park and offered recommendations based on collected secondary research as well as responses from a survey released in the community. A four-step solution was necessary to combat current issues in the Park; these being the current lawsuit directed at the National Park Service, the Management of the Tule Elk Population, and the current lease agreement upon which the ranchers operate. The 4-step solution consists of 1) community involvement, 2) agro-tourism, 3) a revised General Management Plan, and 4) communication and compromise between all the sectors of the park.

Preface

This thesis, "Ranching in Point Reyes National Seashore: Compromise and Coexistence" is the original intellectual product of myself. It has been written to fulfill the requirements to earn honors in Environmental Studies at the University of Colorado, Boulder. This thesis was initiated in August, 2016 and completed April, 2017. My motivation to write this thesis came from my upbringing. I grew up just outside of the area that this thesis discusses and have worked in the community for the past six years. West Marin is a truly unique and incredibly beautiful area. It's subliminal landscapes and passionate community was my inspiration for this project. This thesis was largely written for the use of the community of West Marin as well as the National Park Service, which operates Point Reyes National Seashore. I would like to thank all of the people who assisted in the completion of this project. Thank you to Dale Miller, Stacey Schulte, and Kelly Simmons for advising me on this thesis and offering your insight and advice. I would also like to express my gratitude to the residents I personally interviewed as well as the survey responders. Thank you to the entire community of West Marin, your passion and involvement was the inspiration for this project, and for that I am grateful.

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Setting the Scene

If you were to drive about an hour north of San Francisco's Golden Gate Bridge, you would find lush, rolling hills, paired with rocky cliffs leading down to an expansive coastline. As your car glides along Sir Francis Drake Boulevard, you break out of the dense bishop pine forest and find yourself looking upon miles of green. The biting pacific wind sends thick fog over the peak of Mt. Vision to meet your zooming car. As the sun sets on Point Reyes Peninsula, you see the outline of cattle dispersed throughout the grasslands below. You slow your car as a family of quail skitters across the road. They run past a patch of California poppies, which begin to close up for the night, preparing for the heavy layer of fog that will soon cover them. Welcome to Point Reyes National Seashore.

Introduction

The United States National Park Service currently operates four-hundred and eleven units in the United States. This includes National Parks, National Monuments, National Lakeshores, National Seashores and more. There are ten National Seashores in the United States and only one on the Western Coast (USNPS, 2004). Point Reyes National Seashore is home to one of the most diverse ecosystems on the West Coast, and is adjacent to an isolated community with a rich culture and history. This 71,000-acre park receives 2.5 million visitors per year and is also one of the few National Parks in the United States allowing agricultural practices within the federally protected lands. Cattle and dairy ranchers have been present on the Point Reyes Peninsula since the early 1800's. When the park was looking to acquire the land for park use, ranchers weren't willing to give up their land or livelihoods, so the National Park Service decided to create a unique system of compromise within the park system. Since the park's creation, there have been issues and disagreements; however, theirs has been a generally symbiotic relationship. Recently, there has been an outcry from the conservationist community regarding the management at Point Reyes National Seashore.

For the purpose of this thesis, I will refer to Point Reyes National Seashore as PRNS and will refer to the seven unincorporated communities in the area (Inverness, Point Reyes, Olema, Stinson Beach, Bolinas, Tomales, and Dillon Beach) as West Marin. I will also refer to the National Park Service as NPS. A full list of acronyms can be found in the appendix. To begin this thesis, I will describe the physical and geographical features of the areas. I will then discuss the historical significance of ranching in the area and will describe the factors and policies that went into the Seashores creation to give a better understanding of the park's intentions at the beginning of this journey. I will then explore how the National Park Service was created in order to examine the purpose of the National Park Service in general, and will also discuss the more philosophical ideals of the Park Service. I will then explain the current issues facing the park. I will look at situations in

the park as a system, exploring the social, environmental and economic effects of ranching in PRNS. This thesis will then discuss the methods used and the results of my survey. Finally, this thesis will come to a conclusion regarding this issue and offer recommendations regarding current instabilities within the park.

The purpose of this thesis is to explore the social, economic, and environmental effects of ranching in this area and discuss how agriculture currently fits into the Seashore. This thesis is different from other, previously completed studies because it will offer a comprehensive look at the issue and represent the many views felt by the stakeholders. This issue is very important, now more than ever, because of current imbalances in the park. This issue affects environmentalists, community members, ranchers, tourists, and the National Park Service alike. PRNS currently has three different uses; these include a wilderness refuge, a recreation destination, as well as a pastoral zone. This thesis will discuss these three uses and offer a solution as to how each interest can compromise and work together to preserve the diverse ecosystem of the area, create a sustainable system of agriculture, while protecting the livelihoods of the ranchers and the rich cultural significance of ranching in West Marin. Finally, I will answer a question that has been on the minds of many involved; what is the mission of Point Reyes National Seashore and how does agriculture fit into that purpose? By answering this question, this thesis will propose recommendations regarding the current issues in the park.

Figure 2 (Red Star Indicates Location of PRNS, Retrieved by Elizon.com)

Background

The following sections will explore the physical description as well as the historical context of the area being discussed. It will then describe the creation of PRNS and the relevant policies. The values and ideals responsible for the creation of the National Park System in general will be explored and finally, the current issues in the PRNS will be explained.

Physical Description

The following information was gathered from personal knowledge, the NPS website's "nature" section (USNPS, 2017), as well as Jules Evans, "Natural History of the Point Reyes Peninsula". The area being described lies north of San Francisco, 30 miles up Highway 1. The Point Reyes peninsula is part of the Salinan Terrane, which lies just west of the San Andreas Fault. The peninsula is on the Pacific Plate while the rest of Marin County lies on the North American Plate. It is located at 38.0178 degrees North and 122.9913 degrees West. The drive to the peninsula passes through Samuel P. Taylor State Park, an area heavily shaded by tall redwood trees on the banks of Lagunitas Creek. The road leads to the top of Sir Francis Drake Boulevard, offering a view of Bear Valley, Olema and Tomales Bay.

Nestled at the bottom of the hill is Point Reyes Station; a small town consisting of a few restaurants, a feed barn, an autobody shop, a thrift store, and the local radio station, KWMR (among other things). On the way out of town, one would drive by the local butcher, Marin Sun Farms. Further down, the road bends right and runs along Tomales Bay, which is the drowned rift valley of the San Andreas Fault. This bay is 15 miles long and averages at 1 mile wide. Its northern end opens out onto Bodega Bay while its southern end contains a wetland and a variety of waterways, which flow from Southern Marin. The road leads through the small town of Inverness, which contains a grocery store, an oyster bar, a postal office, and a Czechoslovakian restaurant called Vladimir's.

Figure 3 (Point Reyes Station, Retrieved by http://mapio.net/a/344637/)

Sir Francis Drake Boulevard follows Tomales Bay until it veers west towards the coast, and enters the National Seashore. The road skirts around the base of Mt. Vision, which goes on to create Inverness Ridge to the south. This ridge is home to Bishop Pine on the north end, which thrives in granitic soil, and Douglas fir trees, which prefer the shale and sandstone mix at the southern end of the ridge. Point Reyes National Seashore is a vast network of hills and valleys leading to the sharp cliffs, which loom above the Pacific coast. According to the NPS, "The Seashore encompasses over 70,000 acres of dunes, sandy and rocky beaches, coastal grasslands, Douglas fir and Bishop Pine forests, wetlands, chaparral, and wilderness lakes" (USNPS, 2017).

Figure 4 (Visitors at the North end of Inverness Ridge in December, taken by Author (2015)

The seashore contains over nine-hundred species of vascular plants, which is 15% of California's flora. Over fifty of these species are listed as rare, endangered, or threatened. The grassland in this area contains patches of the Northern Coastal Prairie, which is the most diverse grassland in North America. This also includes perennial grasses, such as purple needlegrass (*Stipa pulchra*), California fescue (*festuca californica*), and California oatgrass (*Danthonia californica*).

Figure 5 (A visitor at Drakes Beach in December, taken by Author, (2015)

PRNS is part of the California Floristic Province, meaning it contains both Californian and Oregonian marine provinces, resulting in an incredibly diverse ecosystem.

There are eighty species of mammals in the area, including Tule Elk, Gray Whales, Harbor Seals, and the Northern Elephant Seal, which can often be found lounging at Chimney rock. There are twenty-nine species of reptiles and amphibians, including the Californian Red-Legged Frog, which is threatened, and eighty-five species of fish, including the Coho Salmon and Steelhead Trout, which are both endangered. The area is also hotspot for birds, containing up to four hundred and ninety species. Fifty percent of the birds in North America come to this area every year. PRNS easily has the greatest avian diversity of any National Park in the U.S. It is home to the Northern Spotted Owl and the Snowy Plover, which are both threatened, as well as many species of hawks, eagles and falcons.

Figure 6 (Northern Elephant Seals at Chimney Rock, Retrieved by pointreyesoutdoorsblog.com , (2012)

Surrounding the Point Reyes peninsula is the Pacific Ocean, which dramatically affects life onshore. Seasonal upwelling brings nutrient-rich, cold water to the surface, causing a thick layer of fog to descend on the shore most summer evenings. The transport of these nutrients results in high productivity and diversity of species. Large kelp forests form off the coast of the peninsula. This area includes intertidal and sub tidal zones, which are home to mussels, limpets, urchins, barnacles, chitons, snails and crabs. Understanding the vast diversity of this park is essential to understanding what makes this area unique compared to the other 411 units of the National Park System.

Historical Context

In order to completely understand operations in PRNS, it is necessary to examine the historical context of the area. Much of this information was discovered through Dewey Livingston's, "Ranching on the Point Reyes Peninsula", a comprehensive history of agricultural operations in the area. Land use in West Marin has changed drastically over time, however, it dates back thousands of years, to 8,400 BC, when Coastal Miwok lived off and managed the land we now know as Point Reyes National Seashore to reduce fire hazard (Sadin, 2007). "Over the centuries, the Miwoks learned to enhance this harvest through brush control and what historians believe to have been a sort of rudimentary form of range management" (Lane, 2014). In 1579, Sir Francis Drake landed in what is now known as Drakes Estero, later followed by the arrival of Spanish Franciscan missions in the early 1800's, bringing with them the mission's herd of feral cattle to the Point Reyes (Livingston, 1993).

This became the first ranching activity on the Point Reyes Peninsula. Over the next thirty years, others came to own and operate land in the area. In 1857, a Point Reyes rancher, Robert McMillan, was caught up in legal trouble. He hired Shafer, Shafer, Park & Heydenfeldt, a powerful law firm from San Francisco. When these attorneys' won the legal battle for McMillan, McMillan

sold away most of his property to the firm for $84,700, and soon, Oscar and James Shafer found themselves to be the owners of almost the entire Point Reyes Peninsula (Livingston, 1993).

This allowed the two lawyers to develop what would become the largest dairy operation in California at the time. The Peninsula was divided into 33 ranches, occupied by Oscar and James Shafer. Oscar's son-in law, Charles Howard, inherited his father's land. Under Howard's stewardship, the land was divided up and given a letter, A through Z, starting at the tip of Point Reyes (A Ranch). Oscar Shafer received ranches H through N, James Shafer received ranches O through T, and Charles Howard received ranches A through G, and U, W, Y, and Z, arguably the best land on the Peninsula. They leased these ranches to individual operators and also sold 2,200 acres of land to Solomon Peirce. Pierce's ranch was located at the tip of Point Reyes Peninsula. The Pierce Point Ranch was self-contained, with a blacksmith shop, storehouse, schools and homes (Livingston, 1993).

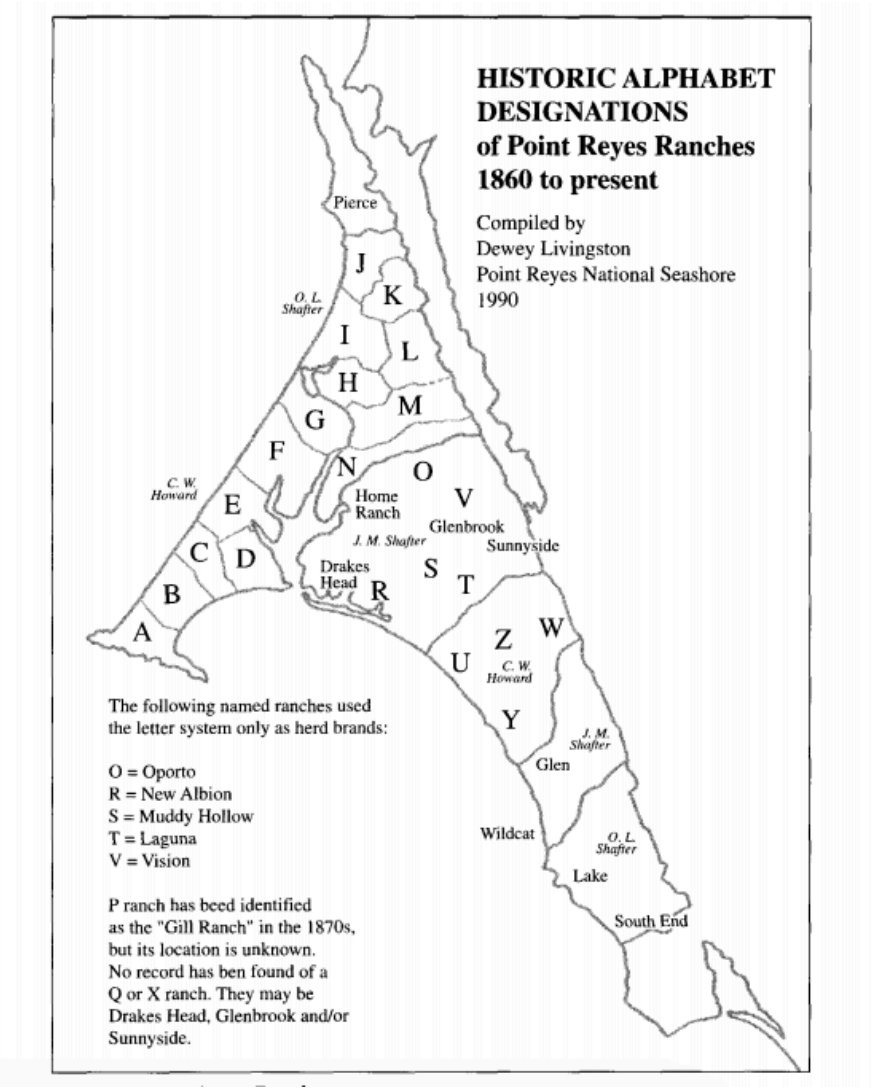


Figure 7 (Historical Alphabet Designations, By Dewey Livingston)

By 1866, Point Reyes dairy products were at high demand in San Francisco. These ranches were the top dairy producers in California. At one point they were considered the largest butter producers in the world (Livingston, 1993). Their products were so coveted, other businesses began printing P.R. (Point Reyes) on their products. In 1872, 4,387,500 pounds of butter were produced in Marin County. It was also around this time, that the government was investigating the land that would soon be converted into a National Seashore.

Point Reyes National Seashore

Much of the following information was collected from Paul Sadin's "Managing a Land in Motion: An Administrative History of Point Reyes National Seashore", which was prepared for the National Park Service. Initial formulations of the National Seashore began in the 1930's with the National Park Service Survey of Point Reyes. The rise of the 1950's environmental movement and threat of commercial and residential development in the area promoted an urgency of conservation. This sparked another NPS Survey of Point Reyes to be released (Sadin, 2007). The idea of a National Seashore was not common in the National Park System, in fact, Point Reyes was one of the first seashores created in the United States. The disappearance of America's shorelines and beaches sparked concern and the American Shore and Beach Association was formed (ASBA) to protect Americans coasts and shores. This action, paralleled with the federal government's efforts to promote outdoor recreation, resulted in seashores, specifically Point Reyes National Seashore, to come into the spotlight.

Another reason this was considered an abnormal situation was that the previously created parks, such as Yellowstone and Yosemite, were created from land that was already within the federal or public domain, meaning that it didn't require funding to acquire them (Sadin, 2007). In fact, funding was the biggest hindrance to creating the seashore. In 1935, Conrad L. Wirth, along with a survey team, produced *Study of a National Seashore Recreation Area, Pt Reyes Peninsula,* which explored the objectives, potential uses, and suggested boundaries for the site. The study

concluded that the rich biological diversity, recreational opportunities, and close proximity to San Francisco made it a desirable location for a National Seashore Recreation Area (Sadin, 2007).

While this was taking place, the conservation movement was finding ground in the Bay Area. The completion of the Golden Gate Bridge in 1937 increased tourism in the Marin County. Prior to the bridge Marin County was isolated, however, increased access for tourism proved a need for conservation in the area. In the 1950's, a realtor named David Adams began to purchase land on the east side of Inverness, signaling the beginning of development on the peninsula. The Sweet Timber Company purchased timber rights on Inverness Ridge, causing the seashore supporters to further push for protection (Sadin, 2007). "In response to these serious threats of commercial/residential development on the Point Reyes Peninsula, and spurred by the NPS national seashore proposal, dedicated segments of the Marin conservation community began to mobilize" (Sadin, 2007).

Dairy and cattle ranchers were not included in the discussion precluding the creation of the National Seashore; however, when it came to purchasing the land, the park service realized that these ranchers wouldn't go without a fight, and purchasing the land from them would be very costly. It was decided that the creation of a pastoral zone, where ranchers could continue their practices under a special agreement, was the best solution (Sadin, 2007). Pastoral ranching is a method of livestock management where cattle are moved from area to area, to ensure that land is not overgrazed. The ranchers didn't like the idea of living and working on public land; why would any rancher improve land, fences, and buildings that didn't belong to him or her? However, the two parties eventually came to an agreement, designed to protect the interests of the ranchers as well as other West Marin residents.

According to the NPS Management Plan:

> Agricultural activities, including demonstration farms, prescribed to meet a park's management objectives, will be allowed if (1) they do not result in unacceptable impacts to park resources, values, or purposes; (2) they conform to activities that occurred during the

> historic period; and (3) they support the park's interpretive themes. Agricultural uses that do not conform to those in practice during a historic period may be allowed if (1) they are authorized by the park's enabling legislation; (2) they are retained as a right subsequent to NPS land acquisition; (3) they contribute to the maintenance of a cultural landscape; or (4) they are carried out as part of a living exhibit or interpretive demonstration (USNPS, 2004).

The features of the agreement stated, “the government would designate at least 20,000 acres as a ranching area or ‘pastoral zone’, which would continue under one of two arrangements with the National Park Service (NPS). Ranchers could either retain a Reservation of Possession (ROP), under which they would pay a percentage of the purchase amount in exchange for the right to continue living and ranching on the land for the next 25 years (NPS, 2006). The agreement also stated “other residents who owned property with improvements that were begun before September 1, 1959, could, upon the selling that property to the government, retain the “right of use and occupancy” (RUO) under one of three sets of terms. They could occupy the land for their lifetime, or for the life of their spouse, or until their youngest child reached the age of 30, whichever allowed the occupancy to last the longest” (Sadin, 2007). Other ranchers had the option to sell immediately and obtain a Special Use Permit (SUP) of five years. Included in the SUP arrangement was a mariculture operation in Drakes Estero (NPS, 2006).

Support from conservationists, the Sierra Club, and politicians, such as President John F Kennedy, led to the Point Reyes Authorization Act to be signed into law in 1962. The authorization signed by Kennedy (Public Law 87-657) stated a spending cap of $14 million. However, from 1966 to 1976 the National Park Service spent over $50 million, acquiring 33,000 acres of land from the 27 ranches existing on the peninsula (Livingston, 1993). The NPS gave out 25-30-year leases to the ranchers, which would allow them to continue their work within the pastoral zones of the new National Park. The idea was to have protected federal lands and ranching work together to create what is now a unique park. PRNS created it’s own vision statement,

> "Point Reyes will be a model of environmental stewardship – a coastal sanctuary where all park staff and the public are actively involved in the common goal of maintaining, protecting, restoring, and preserving the natural and cultural integrity of the Park" (USNPS, 2006).

After creating the National Seashore in 1972, a myriad of committees, commissions, and bureaus were created to resolve issues in the National Park System. This included the Outdoor Recreation Resources Review Commission as well as the Bureau of Outdoor Recreation, however these initiatives fell out of use within a decade. "On a National level, the Park Service would revise it's management policies several more times during the 1970s, each time wrestling with the question of how to manage resources that didn't fit into the traditional idea of a "national park" (Lane, 2014). In 1972, Golden Gate National Recreation Area (GGNRA) was created, protecting 80,002 acres of land surrounding the San Francisco Bay Area. (Lane, 2014).

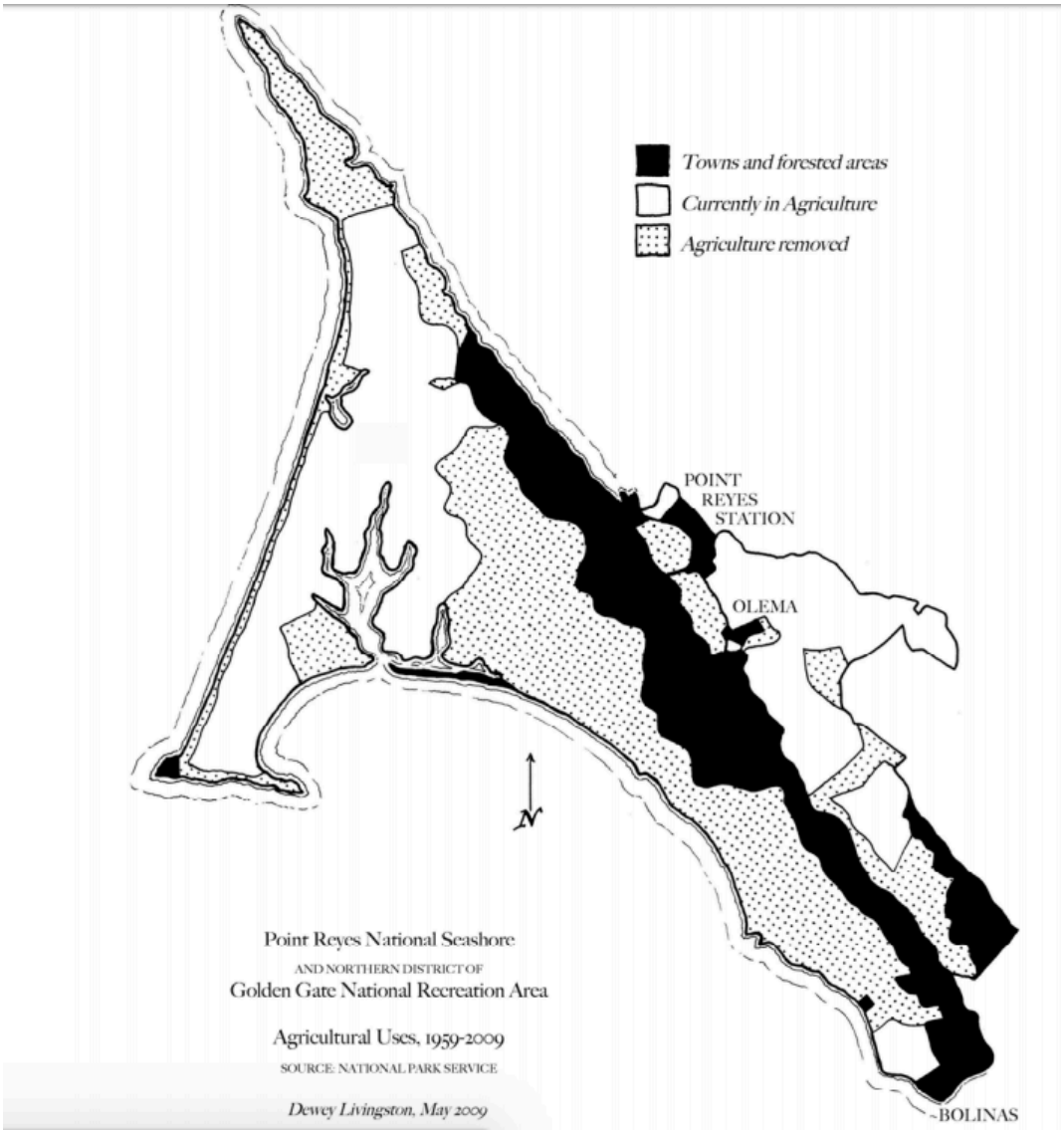


Figure 8 (Map of PRNS Agricultural Uses, by Dewey Livingston)

The pastoral zone was often thought of as a 'hole in the doughnut', meaning it was critical to obtaining the park. "At a key point in the 1961 authorization debate, the Point Reyes proposal had become too expensive for Congress to swallow; but by allowing (not mandating) ranchers to retain title to those 20,000 acres, the price tag on the National Seashore decreased significantly." (Sadin 2007) The government granted reservations of use and occupancy (ROPs) to the ranchers, allowing them and their descendants to work on the land. The founding act, Public Law 87-657 states that the government would not be able to acquire land without the consent of the owner, "so long as it

remains in its natural state, or is used exclusively for ranching and dairying purposes" (GMP, 1980). In other words if a rancher wanted to keep their property they had to continue using traditional agricultural practices. This way, other land uses, apartments, buildings, subdivisions, would not be allowed. In the 1990's those ROPs began to expire, but support for ranching was widespread across the nearby communities and environmental organizations (Sadin, 2007). It was at this time that they made the transition from ROP's to leases, where the ranchers became tenants on their land, with 5-year leases. Special Use Permits (SUPs) were also issued, although these could not be renewed.

In 1978 the first Tule Elk were delivered to the park. The idea of reintroducing the species had been discussed for a few years, however, once the park evicted the ranchers at Pierce Point, there was a perfect habitat for the elk. A once abundant species in California, Tule Elk populations were dwindling, and reintroduction into this area seemed like a viable solution. A fence was built to keep the elk from moving into the rest of the park. In 1985, the Phillip Burton Wilderness Area was created as a Wilderness area, paving the way for Tule Elk reintroduction at Limantour in 1999 (PRNSA, 2013). The 1998 Tule Elk Management Plan and Environmental Assessment stated five objectives for managing the peninsula's elk:

"1) maintain "viable" elk herds on the peninsula, 2) use the least intrusive methods to regulate the population or altering the habitat, 3) establish a free-ranging elk herd by 2005, 4) continue monitoring and researching of elk, and 5) educate visitors and the local communities about the conservation biology underpinning the elk program" (Sadin, 2007).

The elk population has fluctuated since its arrival and in the 2000's the elk herd moved into the pastoral zone. Recent concerns between the elk and ranchers have been brought to attention.

General Management Plan

With the creation of NEPA (National Environmental Policy Act) in 1969, the public became more involved in the seashore management. In 1980, to appease the public, the Park drafted

a General Management Plan, which discussed agriculture in Point Reyes National Seashore (PRNS) and Golden Gate National Recreational Area (GGNRA) (Rilla, 2009). The GMP has two main management objectives; the first being natural resource management. Its goals are to "identify, protect, and perpetuate the diversity of existing ecosystems which are found at Point Reyes National Seashore and are representative of the California Seacoast" (USNPS, 1980). This included:

- The protection of marine mammal as well as other threatened or endangered species
- To increase knowledge of ecosystem management through research
- To preserve and manage wilderness
- To continue research in the Estero de Limantour and the Point Reyes Headlands
- To manage seashore activity in a way that regards the carrying capacity of the area
- To monitor grazing and improve range management
- To monitor and improve maricultural operations (specifically in Drakes Estero)
- To monitor activities occurring on non-federal properties within the national seashore.

The second main management objective is cultural resource preservation. The main goal is to "identify, protect, and preserve the significant historic and cultural resources of Point Reyes" (NPS, 1980). This includes:

- To identify important features and events of Point Reyes history (earthquakes, shipwrecks, land and water uses, the voyage of Sir Francis Drake, and the lighthouse and lifeboat station)
- To enhance knowledge of Miwok culture and history
- To preserve and protect all structures in or nominated to the National Register of Historic Places
- To ensure agricultural and maricultural activities are consistent with historic evaluation of land and water use in Point Reyes

Other objectives include the implementation of interpretive programs to further awareness and appreciation of the seashore's resources, recreational activity, minimal development within the park, and access and circulation well as alternative transportation. Organizing the peninsula landscape into separate management zones reflected the GMP's strong emphasis on natural resource protection.

- Natural zone (41,867.95 acres)
- Environmental protection subzone-reserves (1,300 acres)
    - The Point Reyes Headlands
    - The Estero de Limantour Reserve
- Environmental protection subzone-wilderness (32,730 acres)
    - Wilderness
    - Potential wilderness
- Natural environment subzone (7,837.95 acres)
- Historic zone (157 acres)
- Development zone (85 acres)
- Special use zone (23,271.2 acres)
    - Pastoral lands (19,854 acres)
    - Radio hill station (4 acres)
    - Oyster farm (5 acres)
    - Lands not to be acquired (3,407.97 acres)
- Lands to be acquired (2,303.06 acres)

The updated GMP of 1990, highlights the cultural resources of the area. This included the greater focus on the preservation of Coastal Miwok culture in the area, as well as grazing practices and historic ranching as a cultural resource. The range management within the park has always been a complex issue. It involves natural resource management, cultural resource management, maintenance, interpretation, administration, and community relations. "PRNS administrators and

locals alike began to realize that the so-called natural landscape of Point Reyes could not be meaningfully distinguished from its agricultural component, despite the Park Service's early attempts to do so. Both were common elements of the peninsula environment"(Sadin, 2007). The Park Service began to define and identify agricultural landmarks as significant cultural resources in the park. The Resource Management Plan and Environmental Assessment of 1976 worked to deal with a variety of issued including grassland management, control of exotic plants, fire hazard control, management of exotic deer populations, backcountry use, and the reintroduction of the Tule Elk.

Marin Countywide Plan

The most recent revision of the Marin Countywide Plan, released in 2007, included Policy AG-1.9, which encouraged "continuation of agricultural operations and uses in the pastoral zones of the Point Reyes National Seashore and the Golden Gate National Recreation Area through long-term tenure agreements (leases) with agricultural operators" (Marin County Community Development Agency, 2007). The support for the ranches was numerous, however there are still issues between the Park Service and the ranchers, "ongoing tension between some ranchers and the PRNS staff has resulted in lost opportunities for collaboration whereby ranching tenants are treated as integral partners in the resource management program" (Rilla, 2009).

Ranch Comprehensive Management Plan/ Environmental Assessment

Initiated by the National Park Service in May 2014, The Ranch Comprehensive Management Plan (RCMP) was created to address the issues impacting future grazing in PRNS. Still not released, the RCMP would address the Tule Elk impacts on ranching operations, among other issues. The NPS has stated that "working ranches are a vibrant part of Point Reyes National Seashore and represent an important contribution to the superlative natural and cultural resources of

the NPS lands" and that protection of these resources is "an important responsibility" and that the plan itself is "an opportunity to build on that past, address current issues, and strengthen our shared stewardship of these lands" (NPS, 2014). This assessment has yet to be released.

Oyster Operation

When PRNS was being created, Drakes Estero was home to a commercial shellfish mariculture operation, Johnson's Oyster Farm, which had been operating since 1935 (National Research Council, 2009). In 1972, the federal government bought out the farm and leased it back under an RUP, which would expire in 2012. In 2005 Kevin Lunny, a rancher on the historic G ranch, bought the operation and renamed it Drakes Bay Oyster Company (DBOC). This operation continued until 2012 when the NPS decided to not renew DBOC's lease after concerns grew regarding the impacts of the operation on different ecological factors in the park (National Research Council, 2009).

In 2006, a PRNS staff scientist released an article entitled "Drakes Estero, A Sheltered Wilderness Estuary" released as a Park News "Information Piece" in retaliation to a Point Reyes Light Article which claimed that the operation had little impact on the Estero (Mark, 2012). The NPS piece, written by Dr. Sarah Allen, stated that oyster farm operations were harming surrounding wildlife. In 2007 the NPS removed the article from its website, due to questionable evidence, and issued an Acknowledgment of Corrections and Clarification Statement. "Overall the report gave an interpretation of the science that exaggerated the negative and overlooked potentially beneficial effects of the oyster culture operation." (National Research Council, 2009) In 2007, the superintendent at the time, Don Neubacher, announced that the seashores harbor seal population was being threatened by the Drakes Bay operation, based on observations discussed in the 2006 NPS report (Watt, 2017).

Figure 9 (DBOC Operation Retrieved from Press Democrat)

The article stated that the oyster operation was harming harbor seal populations and eelgrass growth in the area. “Eelgrass, for example, in Estero de Limantour where there is no oyster farming, had higher indicators of standing stock, as measured by the numbers of turions and blades, compared to Drakes Estero (AMS, 2002”). However, the Applied Marine Sciences reported the opposite, that Drakes Estero reported higher counts of eelgrass blades and turions. The report also noted an 80% reduction in the number of observed seals in the springtime (Watt, 2017). In 2007 the County Board of Supervisors unanimously voted to request Senator Diane Feinstein to intervene. Feinstein conducted a meeting between the involved parties, including the NPS and Lunny. Feinstein convinced NPS to remove the report from their website and requested an independent review of NPS science. Dr. Corey Goodman, a member of the National Academy of Science reports scientific misconduct in his piece “A Case of Scientific Fraud: A pattern of intentional misrepresentation of science by the PRNS in its claims of negative impact of the oyster farm on Drakes Estero”.

The California Coastal Commission claimed that the NPS findings about harbor seal pups were based on a map that was altered or incorrect. In 2009 the National Research Council found that the NPS "selectively presented, over interpreted, or misrepresented available scientific information on DBOC operations by exaggerating the negative and overlooking potentially beneficial effects" (NRC, 2009).

In 2014 DBOC took their case to the Supreme Court, "charging the agency with failing to do a full review as required under NEPA (the National Environmental Policy Act) and the Administrative Procedure Act" (Mark, 2012). The court denied DBOC's request and since then the DBOC has shut down and moved out of the Estero.

The purpose of discussing this incident is not to point fingers at who was in the wrong. The allegations against DBOC as well as the NPS ripped a hole through the West Marin Community. The issue divided friends and family and created a level of distrust between the NPS and the community that has yet to be repaired. The partnership between the tenants in the park and the park service have the opportunity to be improved through transparency and trust on both ends. This is important to acknowledge because many residents are concerned that this 'oyster war' may occur again, but this time, with the ranchers.

National Park Service

In order to understand this issue it is crucial to look at the National Park System and with what purpose is was created. This includes examining the very idea of nature, and how it has transformed throughout American history, specifically among white settlers. "By the eighteenth century, this sense of the wilderness as a landscape where the supernatural lay just beneath the surface was expressed in the doctrine of the sublime" (Cronan, 1995). In order for the concept of wilderness to truly become a religious experience, it had to become sacred. It had to instill awe and delight when experienced. It was more than a beautiful landscape, it was sacred ground, created by God, able to heal, teach, and inspire.

In the United States, the sublime was embodied most strikingly in the myth of the frontier. With westward expansion of the United States came many discoveries of these so-called sublime landscapes. Eventually, much of the world had been discovered, making people uneasy. With nothing left to explore, what would inspire movement, growth and discovery? With the disappearance of the frontier, wilderness became to a landscape for experiencing what it means to be an American. "For many Americans wilderness stands as the last remaining place where civilization, that all too human disease, has not fully infected the earth. It is an island in the polluted sea of urban-industrial modernity, the one place we can turn for escape from our own too-muchness" (Cronan, 1995).

This ideology led to the creation of the first National Park in 1980; Yosemite National Park, in Northern California. Theodore Roosevelt was responsible for the creation of the first National Parks. He often wrote of the nostalgia he felt for "western wilderness", looking back on the masculine qualities he connected wilderness. The writings of naturalist John Muir showed the beauty and importance of preservation. The separated areas of land highlighted the difference between the environment and modern society. "Thus the division between nature and society

increasingly came to take a spatial form, with society in and at the centre and nature as the 'other' pushed out to the margins" (Macnaghten, Urry, 1989).

The National Park service was later established in 1916 to manage these preserved lands. David Barna, the NPS Chief of Public Affairs, states "It stands as a collective memory of where we have been, what sacrifices we have made to get here, and who we mean to be. By investing in the preservation, interpretation, and restoration of these symbolic places, we offer hope and optimism to each generation of Americans." In 1964, The Wilderness Act was created to "establish a National Wilderness Preservation System for the permanent good of the whole people and for other purposes". Wilderness is defined as "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain" (Wilderness Act, 1964).

While the National Park System accurately depicts the connection to nature within white settler's culture, there is a very different story for Indigenous Americans. Creating these parks included removing all human activity from the area. Indigenous Americans were forcibly removed and violently displaced from their homes. While white settlers believed the only way to experience nature was to separate it from humans, Indigenous Americans experienced nature by living and coexisting within wilderness. Writer, Karl Jacoby discusses the idea that conservation is often used as a tool of colonialism. "Conservation is basically trying to say that 'we the state and the state bureaucracies, have the appropriate knowledge to manage the environment in the best way," rather than indigenous peoples and other prior inhabitants" (NoiseCat, 2015).

Laura Watt, a professor at Sonoma State University, has written many journal articles regarding the idea of preservation, specifically in Point Reyes National Seashore. As Watt states in "The Paradox of Preservation" preserved lands are not natural, as they require management. "The cultural uses and meanings that produced the landscape are increasingly overlain or replaced by the social dynamic of preservation itself" (p. 32) and goes on to say "these landscapes tend to be seen only as a places of aesthetic wonder, with little or no consideration for how they got that way" (p. 32). The first National Parks highlighted natural beauty in the absence of people, however "by the

time the NPS was created in 1961, that mandate had incorporated recreation and tourism, with services provided by corporate partners rather than locals." (p. 33). National Parks were created with certain ideals of what a national park should look like. Some scientists argue that attempting to look back at this imagined "pristine nature" is unrealistic as the world is constantly changing.

When discussing environmental topics, such as the National Park System one must determine through which lens they are examining the material. One common view is that of John Muir, who was a strong believer in the National Parks System and didnot believe any human should live on these lands. Another view, is that of Aldo Leopold who more often looked at these National Parks as an opportunity for coexistence. He wrote of the importance of "reestablishing a personal and cooperative relationship with the natural world though working the land" (pg 10). Point Reyes is actually often referred to as a 'Leopoldian park'.

Current Issues

Currently, three different issues have been causing instability in the park. The first is a lawsuit filed against the National Park Service for mismanaging the parks natural resources. The management of the Tule Elk population in the park has caused a public uproar, with many fingers pointing at both the National Park Service as well as the ranchers. The last issue is the one/five-year long leases, under which all of the ranchers in the park operate. These three issues have ranchers worried about the future mission of the park and their place in it.

The 2016 Lawsuit

In February 2016, a federal lawsuit was filed against the National Park Service by three environmental groups; the Resource Renewal Institute, The Center for Biological Diversity, and Western Watersheds project. The complaint was filed by Keker and Van Nest LLP, a San Francisco based law firm, as well as Advocates for the West, a public interest and environmental law firm. These two firms act as attorneys for the three Plaintiffs. Each Plaintiff has mission statements,

which are relevant to understanding their motive in this lawsuit. The Resource Renewal Institute of Mill Valley, California states that they are committed to the protection of "parks, nature preserves, wildlife refuges, open spaces, and conservation easements from sale, development and predatory changes in use" (Resource Renewal Institute). The Center for Biological Diversity is a non-profit that works to "secure a future for all species, great and small, hovering on the brink of extinction" (Center for Biological Diversity). The last group, the Western Watersheds Project works to "protect watersheds and wildlife in the American West" (Western Watersheds).

The claims are based on three main allegations: (1) That the Defendants violated the National Park Service Act when they delayed to release a revised GMP. (2) That the Defendants have violated the National Environmental Policy Act and the Administrative Procedure Act by issuing leases six years after the previous leases lapsed, without an updated GMP or environmental assessment. (3) That the defendants violated the National Park Service Act, The Point Reyes Act, and federal by the previously mentioned actions. They request that these decisions be repealed and to award their litigation costs. The Plaintiff's name Cicely Muldoon, the Superintendent of the Point Reyes National Seashore, as the defendant in this case. Muldoons legal defense, the Solicitor of the Department of the Interior, has not yet responded to the Plaintiffs allegations, nor have they discussed what their defense will be when the litigation begins (Resource Renewal Institute vs National Park Service, 2016).

This lawsuit would require the National Park Service to update its park-wide General Management Plan and create an environmental impact statement. The park is currently working on a Ranch Comprehensive Management Plan, which has upset the three environmental groups. They want to see a study of the impacts of climate change, the current drought in California, and the 2.5 million visitors per year, on the park land, before any leases are renewed. (Resource Renewal Institute vs National Park Service, 2016).

"That argument has led to fears among ranchers and their advocates that the lawsuit could bring the downfall of ranching in the park, which has been ongoing for well over a century"

(Kimmey, 2016). Most of these ranchers have one-year leases, making it near impossible to obtain loans from banks. These ranchers gain no equity from making improvements on their farms if it is not ensured that they will have an operating ranch a year later. Without longer leases these ranches are not able to diversify their agricultural options, nor are they able to make improvements to their operations which could make their operation more economically and environmentally sustainable (Kovner).

Senator Diane Feinstein, who has been a longtime supporter of ranching in the park, has expressed concerns about the ability of ranchers to exist without long-term leases. Her concerns also regard the Tule Elk population in the seashore, which has been known to graze in the pastoral zone (Kimmey, 2016). The topic of the management of the Tule Elk population is also brought up in the lawsuit, claiming that the park is not properly managing the population, which were reintroduced to Point Reyes in 1978 and again in 1998. The elk population grazes very close to, and sometimes on, pastoral lands, which is difficult for ranchers and the Park Service alike. (Kimmey, 2016).

The purpose of the lawsuit is to demand that the NPS release a revised GMP, as well as a Environmental Impact Statement of ranching in the park. It is unclear if the three environmental groups are pushing for ranching to be removed from the park. I have attempted to contact these three groups via email. Two group did not wish to comment due to their attorneys recommendation and regarding their pending litigation. Huey Johnson from the Resource Renewal Institute responded with a document titled, “Background and FAQ’s Point Reyes National Seashore Lawsuit”. This document explained the motives behind the lawsuit, including ranching impacts, park service management, and desired outcomes.

Tule Elk Management

Since the species reintroduction into the park, multiple problems have arisen. As any wild animal would do, Tule Elk left their designated area at the northern end of the park and found a new

home in the Pastoral Zone. The Elk are carriers of Johne's disease, which is transmittable to cattle. For this reason, ranchers are concerned about the elks presence in the pastoral zone. The elk population also competes with cattle for forage and water, and have also been known to knock down cattle fences. One reason that this competition is problematic for the ranchers, is that when their pastures are grazed by elk, they need to bring in forage for their own cattle which puts them at risk in incompliance with organic standards. This species doesn't currently have a predator in the park, causing their population to fluctuate. Since 1998, their population has ranged from 350 to 550 animals.

When the park service made the decision to reintroduce this species to PRNS they created a document called the Tule Elk Management Plan and Environmental Assessment. This document assured proper management of the species and promised compensation for any property damage. The management plan stated "the Park Service has a responsibility to be a good neighbor to adjacent and nearby landowners." (PRNS, 1998). The plan also states that "damage to property could occur if Elk move outside the Seashore onto private lands and consume crops or damage fences or other property. . . [the] Seashore will be ready to recapture or destroy problem animals should these situations arise, or establish partnerships with state and county agencies with the necessary skills and personnel to assist with the recapture." The plan also states, "The Seashore should be prepared to provide funding for compensating property damage if necessary. It may be possible for the Seashore to modify parts of the habitat to help prevent such occurrences, or construct barriers to dispersal" (PRNS, 1998). Although the plan clearly state its intentions to create a symbiotic relationship between the herd and the ranches, issues naturally arose between the elk population and the ranchers.

In the early 2000's the elk population migrated into the pastoral zone. Many ranchers asked for improved fencing after elk ate pastoral forage and damaged fences and irrigation systems. "Adult Tule Elk can consume "10 to 15 pounds of forage daily" and "require 3-10 acres of habitat per animal" Lane, 2014). This grazing can have a large impact on ranchers grazing conditions and

pasture rotation schedules. At least 11 ranches have claimed impacts by the Tule Elk herd. "Ironically, the elk herd's consumption of leased pasture grass also puts the ranchers at risk of violating (through no fault of their own) the PRNS grazing standard of 1200lbs of residual dry matter left on pastures prior to the rainy season" (Lane, 2014). The elk population is known to be carriers of Johne's disease, which is transmittable to cattle.

It was discovered the 250 elk died inside the fenced in area, over a two-year period. There are a few theories as to why the elk died. One being water shortage due to the California drought. Another is the idea that the carrying capacity, of 140 (Gogan, 1986), was stressed when populations reached 540, causing this species population to decrease naturally. Laura Watt states that news of dying elk has "been exploited by environmental activists, who have attempted to spin the story politically, using public sympathy for dying "wild animals" to create pressure, ironically, for a policy that would create even more "wildlife." But removing the elk fence from Tomales Point, allowing those animals to roam more freely for food or water, and possibly driving the ranches out of business would not resolve the management conundrum" (Watt, 2015). This is not an issue between the ranches and the Tule Elk population; it is an issue of management (or mismanagement) by the NPS. "Free-ranging or not, these animals live in a cultivated landscape, and pretending that they will ever be free from human intervention only makes clear-headed management more difficult to implement" (Watt, 2015).

Leases

The issue with leases in the park is complex. The agreement with the ranchers has changed since the parks creation. Originally the ranchers were allowed to operate under ROP's and SUP's, however, these expired and the NPS allowed the ranchers to continue ranching under renewable lease agreements of five years. These leases were shortened to one year and currently most of the ranches in the park operate under one or five year leases. These short leases are problematic for a

few reasons. In order for ranchers to make improvements on their properties, they need assurance that they will see pay back. When they don't have security on their leases, it is unlikely that they will obtain a loan. "Substantial capital improvements, such as cross fencing and livestock water developments that cannot be amortized over a five-year period require ranchers to place significant capital at risk while failing to provide any assurance that they will be able to recoup their investments in such improvements" (Rilla, 2009).

According to the Local Coastal Program Unit II, "The problem with special use permit arrangements is that they provide no security to the ranchers. Without a clearer understanding that agriculture will be permitted to continue in the federal parks in the future, the ranchers are reluctant to invest in maintenance and capital improvements" (County of Marin 1980) The situation is contradictory; the lawsuit is calling for greater attention to environmental standards, however, the lawsuit is also calling for shorter leases, both of these requests contradict each other.

These three issues have caused ranchers to worry about the future direction of the park and their place in it. Can the ranchers and elk population reach a solution that allows both to stay? Is this lawsuit directed at the ranchers as much as it is at the National Park Service? Will the NPS continue to renew these ranchers' leases? These questions are on the mind of every rancher in the park, and it is not clear when or if they will be answered.

Methods

In order to determine the effects of ranching in Point Reyes National Seashore, I used two different research methods. I used secondary sources, such as legislation books, the relevant statutes, interviews, scholarly articles, publications from the National Park Service, as well as NGO's. Many of these were studies conducted by the National Park Service, as well as other government departments and agencies. I also conducted semi-structured interviews as well as an online survey in the West Marin community.

I gained Institutional Review Board (IRB) approval to conduct my interviews and survey. In November, I conducted roughly two-hour long interviews with a local historian and two different ranchers. These interviews contained open-ended questions about ranching and different aspects of the Point Reyes community. The information gained in these surveys was strictly for educational purposes. I took their responses and concerns and used them to create a survey, which was then released to the West Marin community using the program Qualtrics (qualtrics.com). Unlike the interviews, this survey was released via an anonymous email link. Because of the current lawsuit and the divisive nature of the subject, anonymity was incredibly important in my methods. Most of the questions were open-ended, meaning the subject could respond in paragraph form. Along with the email, a consent form was included, informing the subject why these questions were being asked, what I intend to do with the responses, and how I would protect their anonymity. A copy of the survey can be found in the appendix.

I found my subjects using snowball sampling. I had about thirty subjects and their emails, which I sent the survey to. I asked these subjects to forward the survey to anyone they thought would be eligible for the survey. I hoped for a 10% response rate. I also went on the local radio station to discuss my project and encourage residents to participate in the survey. I posted the survey to the local community forum, Westmarincommons.org. My survey was also shared via Facebook

by a community account, West Marin Feed. In order to be eligible to for this survey, the subject must live, for at least two months of the year, in one of these communities.

- Inverness
- Point Reyes
- Olema
- Nicasio
- Marshall
- Stinson Beach
- Bolinas
- Tomales
- Dillon Beach

The reason the subject must be from one of these areas is because activities going on in PRNS may be understood by members of outside communities, but I believe that the above nine communities are the most affected stakeholders, and have the most knowledge on the subject.

The data collected consisted of qualitative narratives. I entered these responses into a coding program, called Nvivo, which is a Qualitative Data Analysis Software, produced by QSR International. The analysis was working to seek out common phrases, terms and keywords to help identify common variables pertaining to public opinion of ranching in PRNS. This determined which ideas are more significant in understanding the effects that ranching in PRNS has on the surrounding community as well as the opinions of stakeholders. The purpose of this survey was to get a better idea of the public opinion regarding the issues in PRNS. Many of the questions were repetitive and all got at the same point; do you support ranching in PRNS, why or why not? What would this community look like without ranching in the park? And are some solutions to this issue.

Results/Analysis

Survey responses were collected from January 19th, 2017 to February 13th, 2017. There were 121 total recorded surveys taken, but only 78 partially/completely filled out surveys. Many subjects opened the survey and ended up not taking it, or opened it and saw the consent form and decided to not give consent. The survey response goal was about 40 responses, making 78 responses very exciting. Each subject was asked to choose terms to describe themselves (also had an option to write out another term). Seen in Figure 10 below, the three highest terms chosen were, 'resident', 'belong to an environmental organization', and 'retired'.

Figure 10 ('How Would You Describe Yourself'?)

Word	Count	Percentage % (Weighted)
Resident	52	32.70
Belong to an Environmental Organization	15	9.43
Retired	13	8.18
Related to ranching/farming	7	4.40
Farmer	6	3.77
Researcher	5	3.14
Scientist	5	3.14
Rancher	4	2.52
Student	3	1.89

Another question revealed how long the subject had lived in West Marin and how many months out of the year they lived there. 87.32% of the respondents are residents of West Marin for 12 months

out of the year.

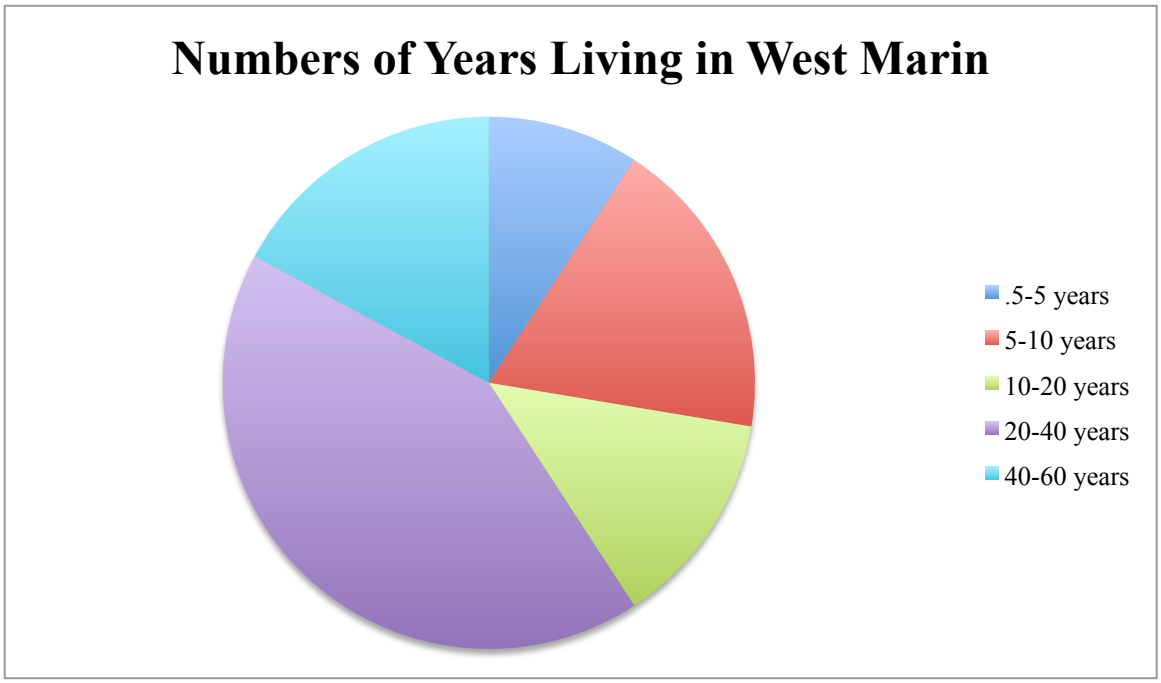


Figure 11 (Number of Years Living in West Marin.)

Another question asked if the three previously mentioned uses in the park (recreation, wilderness, and pastoral) could all remain and work together. Eighty-five percent of the responses said 'yes'.

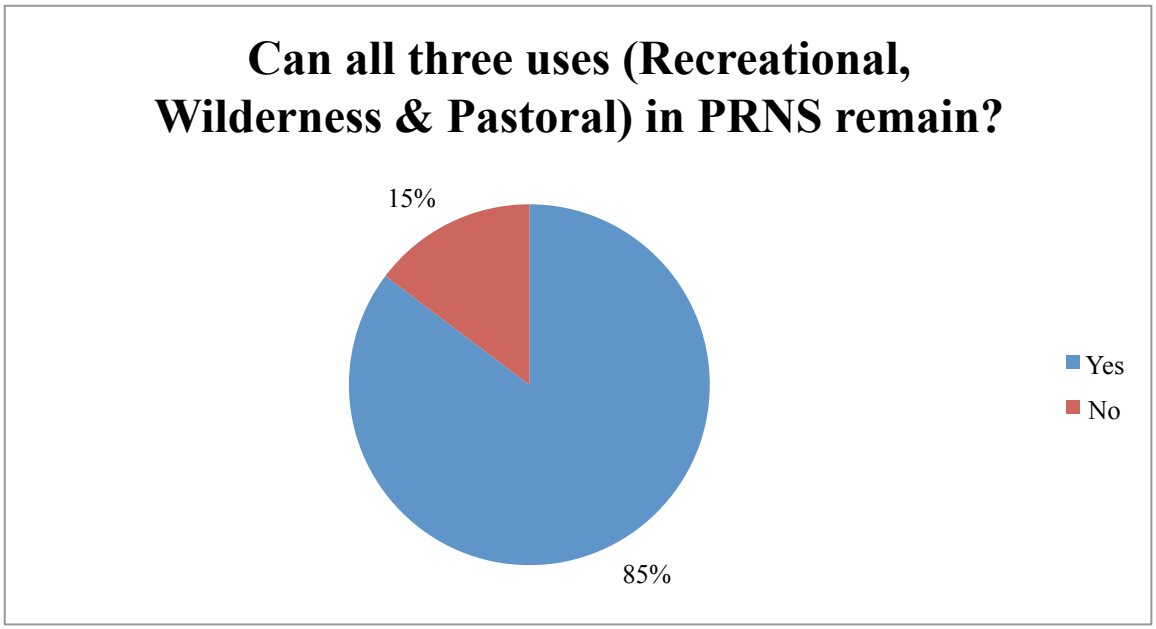
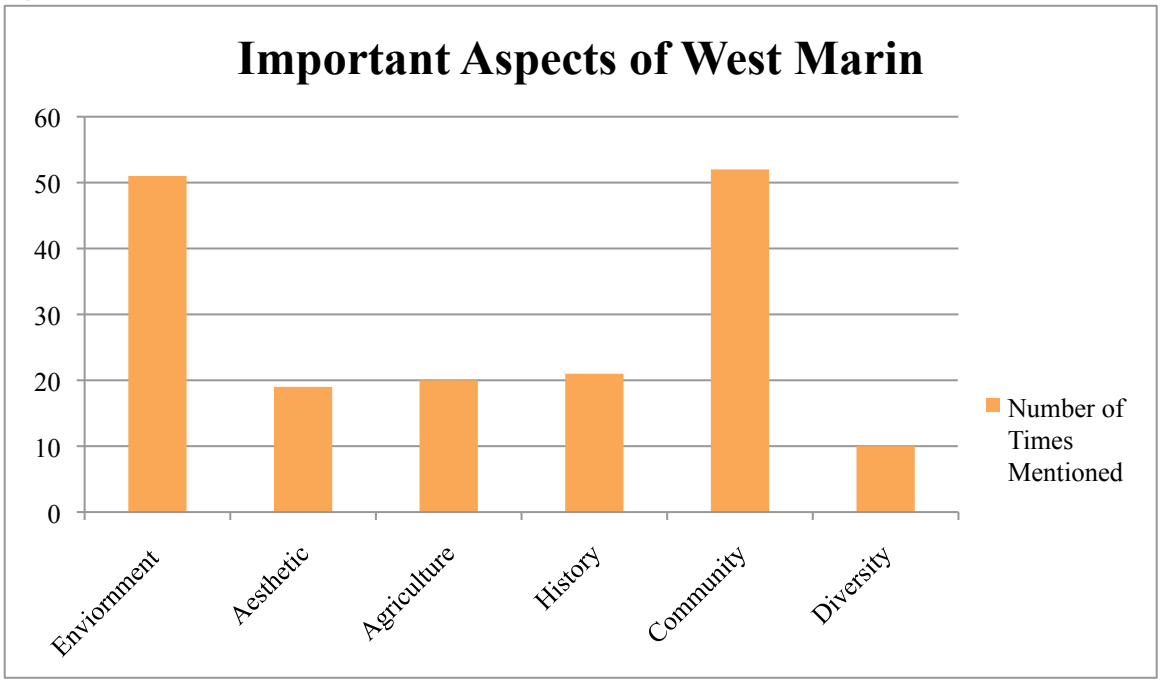


Figure 12 (Can all three uses in PRNS remain?)

One question asked about some important aspects of West Marin. Environment and community were the most used words in this response section.

Figure 13 (Important Aspects of West Marin)



To start out my analysis, I ran a word search query to identify the most used words in the survey. Figure 14 shows these words starting at 100 uses. Relevant words were bolded to highlight their importance. Community was the most used word in the survey, at 648 times. It was obvious that community was an incredibly important concept in this area. Other telling words included elk, local, management, and food.

Figure 14 (Most used words in the survey)

Word	Count
Community	648
Park	567
Ranchers	423
Ranching	371
Elk	303
Land	294
Local	283
People	275
Marin	231
Loss	195

Management	164
Families	162
Food	162
PRNS	155
Ranch	145
Live	144
Areas	141
History	136
Resident	128
Work	124
Years	123
Sustainable	113
Think	108
Wilderness	106
Diversity	105
Working	103
Natural	102
Population	100

Discussion

This section will discuss the social, economic, and environmental effects of ranching in PRNS and will determine the sustainability of ranching in park. Sustainability can be defined in environmental, economic, and social terms. Environmental sustainability can be defined as "the rates of renewable resource harvest, pollution creation, and non-renewable resource depletion that can be continued indefinitely" without affecting future generations. This issue with this definition is that it is inherently anthropocentric. While National Parks have evolved to become a source for human enjoyment, originally they were created to preserve this nations most beautiful landscapes, including all the species within. Economic sustainability is the possibility for sustainable economic development. Social sustainability focuses on community development, social justice, and cultural competence. This research was completed using different NPS documents and other scholarly articles.

Figure 15 (Sustainable Development, Retrieved from http://macaulay.cuny.edu)

Social Effects

Point Reyes National Seashore houses an incredibly involved and passionate community. This may be due to its small size and isolation from nearby cities. This community was built around the arrival of the dairy industry in the 1800's. It represents a way of life upon which the American West was created. One of hard work, family values, and the sustainable reaping of natures benefits. From its beginning, the dairy industry has attracted visitors and eventually helped to create a sustainable population in Point Reyes, which went on to create other agriculture industries, such as beef and aquaculture. The community is relatively self-sustaining and very environmentally aware of their impact on the earth in which they live. A local currency, called the West Marin dollar, works to support local businesses. Many residents who live near PRNS are well aware of its vast beauty and diverse ecosystem and have every intention of protecting that. "West Marin is a perfect model for demonstrating how preserving family farms contributes to social, economic and ecological sustainability at a local, regional and even national level" (Rilla, 2009).

There are four main cultural effects that ranching in PRNS has on the surrounding communities. The first being the producer-to-consumer link that these sustainable agricultural practices provide not only to the immediate community of West Marin, but also to urban areas such as San Francisco and beyond. For example, Point Reyes Blue Cheese is known worldwide. "A combination of land protection, dairy production, and quality foods is a source of at least three additional insights into the development of agricultural alternatives." Each year 2.5 million people visit the area and consume food products that were most likely produced just a few miles from where it was purchased. (Rilla, 2009) A NPS publication once called Point Reyes "a place that can reconnect people to their natural heritage through a richness of wilderness and recreational experiences; and a place that can also reconnect people to the food they eat, the landscapes where it is grown, and the honorable labor of producing it" (Diamant et al, 2007).

Another effect is the significance of the historical ranches, many of which are still in operation. These ranches house a large part of West Marin's historical and cultural heritage. The pastoral landscape is described as, "the physical embodiment of centuries of agricultural history and culture dating all the way back to the earliest native inhabitants, who utilized controlled burns to improve grazing conditions - thus starting a tradition of responsible range management carried on to this day by the seashore ranchers at PRNS" (Lane, 2014). This area would look very different without the ranching and dairy operations. "Place is an important component of the Marin-Sonoma dairy industry, both as a location to which people form ties and in which they build social networks and maintain their lives and as an indicator of quality in food and environment" (Guthey, 2003).

Another notable effect is the influence that innovative agricultural systems, such as the one existing in the seashore, have on food production all around the world. The system in place is small-scale, where the ranchers act as stewards to the land. They are practicing innovative ranching techniques to lessen their impact upon the land in which they earn their livelihood. Pastoral grazing consists of constant rotation of herds across a large area of land so that no one area is overgrazed. In fact, some studies have found that when done correctly, pastoralism can have great positive impacts on the rangeland where it occurs (Wang, 1997). Pastoral Systems are efficient, effective, resilient, and don't require the production of cereals for cattle feed. The United Nations Environment Program called pastoralism, "one of the most sustainable food systems on the planet" (Davies, 2015). The ranches in PRNS were the first in California to become certified organic, making them innovators and trailblazers in the market. *An Island In Time* claims that the first conservationalists in Point Reyes were actually the ranchers. The idea of being a caretaker and steward to the land upon which one works, is not the case in many agricultural operations. These ranches have a chance to inspire change among large-scale conventional operations.

These ranches provide another incredibly important cultural impact; their influence on the community. It's important to imagine what West Marin would be like without these ranches. Since many of the businesses in West Marin are involved with cattle ranching, there would be a decrease

of local businesses. The agricultural community in West Marin does not go unnoticed. It is part of the reason that tourism has grown so rapidly in the area. Artisanal, organic, and locally produced products result in visitors coming from all over the world. Many residents in the local community are struggling to find affordable housing while wealthy families from the Outer Bay area are buying up homes to either use on weekends or to rent out. With a decrease of the local community, West Marin could turn into a tourist town, lacking a local and cultural atmosphere. A decrease of ranches would result in a decrease of children in West Marin Schools, which are already struggling for attendance. Without ranches and rancher families, the diversity of the area would lessen. Many of the ranchers working in PRNS are Hispanic. Most of their children attend local schools, in fact 55.3% (63) of students at West Marin Elementary are Hispanic (StartClass, 2016).

Economic Sustainability

According to Bay Area Economics, PRNS as an entire park unit, generated a total of $71.8 million in 2005 and is responsible for 850 jobs (USNPS, 2006). Agriculture in PRNS reaps vast economic benefits for the local community as well as the urban population of San Francisco. Agriculture within PRNS and GGNRA contributed to 17 percent of Marin County's gross agricultural income in 2005 as seen in Figure 17 (Rilla, 2009). According to the NPS, PRNS contains 2,562 animal units dedicated to beef and organic beef production, and 3,451 units dedicated to dairy production. The agricultural sector in Marin County is valued at $63 million (2011, SAGE), and the total agricultural value in the park is $6.3 million (USNPS, 2006). "Marin County's three dozen dairies, including the park's historic nineteenth-century dairies, provide 20 percent of the milk for the San Francisco Bay area" (Diamant et al, 2007). Bay Area Economics produced a report for the NPS stating, "PRNS also contributes to the regions economic development infrastructure by stimulating understanding of complex ecosystems, promoting habitat restoration in support of fishers and wildlife, and advancing science and environmental education" (USNPS, 2006).

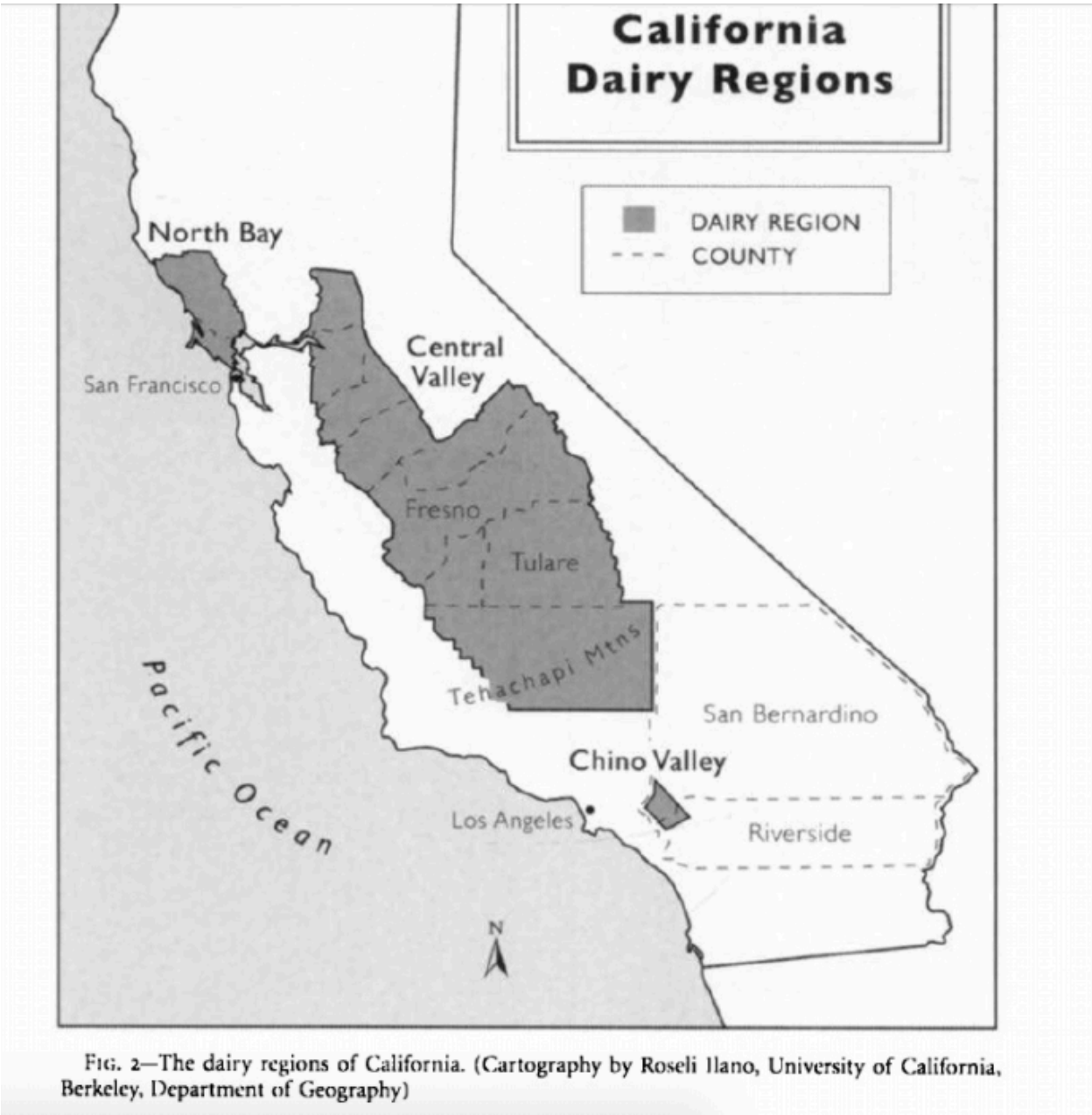


Figure 16 (Dairy Regions of CA, Retrieved from University of California, Berkeley)

The ranches on these lands provided about 100 jobs in 2006 (NPS), and contribute to the livelihood of another 25 family farmers (Rilla, 2009). These farms also have a strong relationship with other businesses in the community, including bankers, accountants, veterinarians, milk testers, equipment retailers, feed mills, and milk haulers. The manufacturing, marketing, and distribution of

products are also variables to consider.

	Marin County Total	PRNS/GGNRA Total	PRNS/GGNRA Percentage
Direct dairy income, milk	$31,255,031	$5,523,440	18%
Direct dairy income, cull cows	$ 3,115,210	$ 360,000	12%
Direct beef income	$ 4,620,469	$ 937,872	20%
Direct aquaculture income	$ 3,264,910	$ 399,450	12%
Total	**$42,255,620**	**$7,220,762**[4]	**17%**

Figure 17 (Direct Agricultural Income from PRNS and GGNRA, 2005, Retrieved from the Marin County Agricultural Commissioner)

Another important factor is the ranches contribution to the school system in West Marin. As previously mentioned, most ranchers or ranch workers send their children to school in Point Reyes and Tomales. These schools are already under-attended and underfunded. If ranching were to diminish, so would attendance at these schools.

Since the dairy and ranching industry's peak in 1959, production in Marin County has fallen by half as seen in Figure 9. These small-scale farms were struggling to compete with large-scale, dry-lot farms. However, instead of ditching their lands, these ranches changed production strategies, switching to small-scale organic farms. “Their goals are to keep farms operating, diminish environmental impacts, and provide future generations with an opportunity to farm” (Diamant et al, 2007). This change to organic agriculture can be explained by “consumer politics and globalization” (Marsden and Arce, 2000). It was also this change from conventional to organic practices that helped to grow West Marin’s economy from the late 50’s to present. “Land conservation can be an important supporting element in the creation of alternative economic networks and the continuation of farming on the urban edge” (Guthey, 2003) The agro-food industry in West Marin has brought in, not only money, but also a steady stream of tourists, in search of the locally grown, artisanal products that West Marin has become known for.

	MARIN COUNTY			SONOMA COUNTY		
YEAR	Number of Farms	Number of Cows	Farm Acreage[a]	Number of Farms	Number of Cows	Farm Acreage[a]
1950	363	27,055	255,180	2,725	37,454	774,125
1959	206	24,163	227,450	1,127	43,070	763,847
1969	91	17,062	175,038	374	38,710	667,158
1978	79	15,415	159,051	240	28,636	573,597
1987	67	15,484	167,590	136	30,293	549,539
1997	45	13,976	149,663	121	32,407	570,804

[a] Total land in farms.

Figure 18 (Dairy Farms in Marin and Sonoma Counties, CA, 1950-1997, Retrieved From the U.S. Department of Agriculture.)

Environmental Sustainability

Ecologically and environmentally, ranching in PRNS has both positive and negative impacts. It is a well-known fact that large-scale cattle operations can often have negative effects on the ecosystem in which it exists. This is mainly seen in large-scale cattle operations, where resources are depleted due to the large number of cattle on a small area of land. Large quantities of methane and CO2 are produced. These operations are closed circuit, meaning that they often don't have a way of recycling waste back through the system. The Food and Agriculture Association of the United Nations (FAO) states that global crop and livestock production is responsible for 16% of human emissions (FAO, 2011). In 1970's the Green Revolution created new technologies and systems, which supported large-scale Concentrated Animal Feeding Operations (CAFO's). However, the majority of the ranches in Point Reyes National Seashore are small-scale, organic operations. Many of the ranchers in the park consider themselves stewards of the land. In their eyes, if they deplete the parks resources, it is them who will also face the consequences. Negative affects arise from poor management, however, each rancher in PRNS is managing their land differently. The main environmental implications of ranching are effects on soil and water quality, erosion, the effects of grazing, and the presence of threatened or endangered species; specifically the Tule Elk population.

Grazing

Even before ranching was introduced to the area, invasive plant species began to drastically change the peninsulas landscape. With most native grazer populations at a low, invasive species were free to run rampant. Livestock grazing became a helpful tool for keeping these invasive species at bay (Rilla, 2009). “Significant acreage has been lost to shrub invasion on PRNS lands in areas where grazing has been removed” (Rilla, 2009). One example of an invasive species in the area is Holcus Lanatus, known as velvet grass. This plant species threatens the native species, Sonoma alopercurus. Several studies had found that grazing on this land reduces the effect that velvet grass has on native plant species.

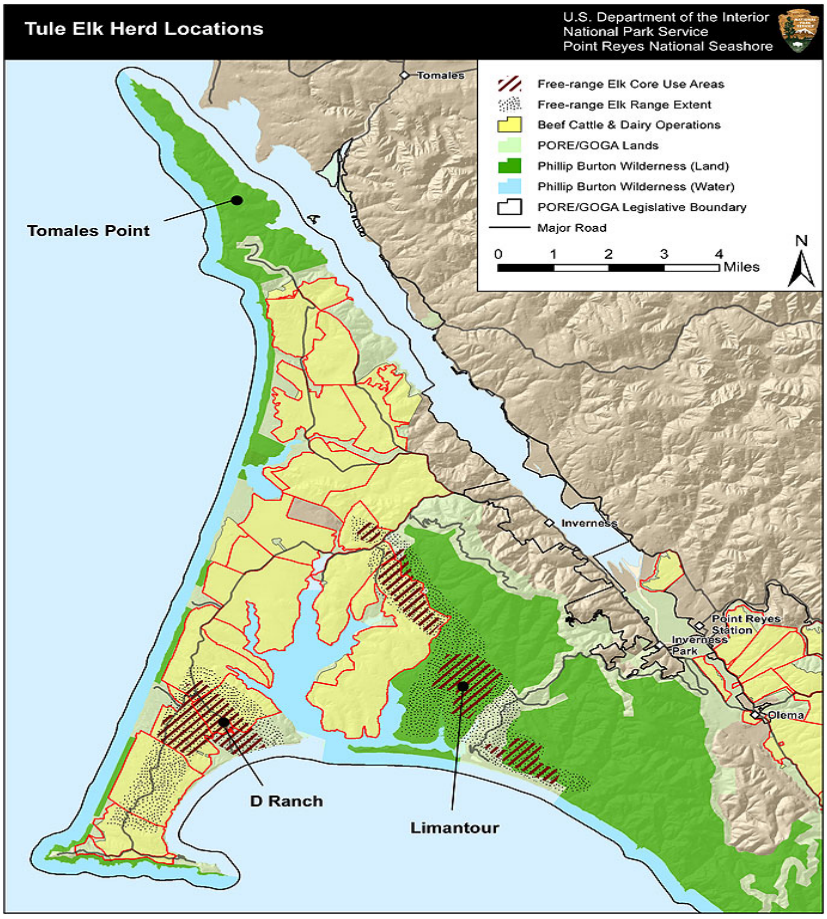
Two studies were completed, examining the effects of grazing on the coastal prairies. One study looked at an area between Mendocino and San Luis Obispo and the other examined areas within PRNS. Both studies determined that grazed areas had a higher abundance of native species (Hayes and Holl 2003, Johnson and Cushman 2007). These surprising benefits of grazing are not always recognized by the NPS, “ ranching is portrayed as something that may provide educational and aesthetic elements, rather than as an integral part of the park ecosystem” (Rilla, 2009).

These positive effects of grazing only exist when land is not being overgrazed. Many of the ranches in PRNS have two-hundred head of cattle, which, in many cases, is not enough cattle to result in overgrazing in relation to the land they are grazing, however, other ranches house more cattle, resulting in more intensive grazing practices.

Endangered Species

There are many endangered and threatened species within the seashore. Among these are the threatened Coho Salmon and Steelhead Trout (USNPS). Ranching near these species habitats can have negative effects on water quality. A study conducted in 2004 found that grazing can have a positive effect on threatened species. Myrtles Silverspot Butterfly and the red-legged-frog, which are both threatened, were found to have gathered in greater abundance in grazed areas (Adams 2004, USNPS).

Tule Elk Population



Tule Elk herds exist in three areas of the Seashore. The first population was fenced in near Tomales Point. In 1998 a number of elk were relocated to a wilderness area near Limantour Beach. This population swam across Drakes Bay, and settled in the pastoral zone, near D Ranch.

Figure 19 (Tule Elk Populations in PRNS, Retrieved from the NPS)

Since their arrival in the park in 1978, the Tule Elk population has fluctuated with the presence of droughts, El Nino, seasonality, vegetation ability and other ecological events (Watt, 2015). During the second year after reintroduction, the elk began to grow deformed antlers due to a microbacterial disease and nutritional deficiencies from overgrazing. The optimal carrying capacity for the Tomales Point enclosure was said to be 140 animals (Gogan, 1986). In 1998 the Tomales Point Wilderness Reserve herd grew to 550 cattle. This 33% increase in population was alarming and resulted in the need to separate the herd and implement fertility control. This also led to the creation of the 1998 Tule Elk Management Plan and Environmental Assessment and the relocation of 28 Elk, to the Phillip Burton Wilderness Area.

The next section will explore the survey responses. My analysis also led me to discover certain themes that appeared regularly in the survey responses. I created Nodes according to each of these themes, with child nodes that more specifically described the theme. This discussion will define these themes, identify subthemes, and provide relevant quotes to give an overview of the survey responses.

Agriculture

The topic of agriculture was brought up many times and in many contexts. Some expressed pro-agriculture opinions while others expressed an anti-agriculture view. Many people stressed importance of the local, organic food that these ranches produce. Other responses offered up solutions and sustainable ranching techniques.

Pro - Agriculture

Anti-Agriculture

Food

Solutions

Notable Quotes:

"It shows the diversity that is the human race and their intersection with animals and nature. I think if you really ponder it, it's an amazing representation of how it can all work together."

"The cowboy theme is cute but i would rather we were known for a more diversified agriculture and arts and crafts community. i think our sociocultural climate would thrive without the cow emphasis."

"The ranchers and the park can and should work together to establish goals that protect both the ranches and the environment, but the ultimate goal should be for both the ranches and the park to remain and prosper, which is entirely possible if it's not perceived as an either/or situation. Ranchers can implement practices which protect waterways, avoid over-grazing, farm organically, etc but sometimes may need additional financial help to achieve these goals."

"The visitors are able to see well-managed pastoral zones and wild nature all in one place. It is a full experience of the land."

"I see visitors stopped on the road all the time to show their kids a cow, much like we stop to see an elephant seal."

Social/Cultural Effects of Reduced Ranching in PRNS

The social effects of reduced ranching in PRNS was the most widely discussed topic of the survey. The word, 'community' was mentioned 648 times in the survey responses. There was a lot of concern that with diminished ranching, West Marin would become a "cultural desert". Many responses discussed the idea that without ranching in the area, the community would turn into a tourist and vacation rental based town. With increasing populations in the Bay Area there was concern of gentrification and a decrease of diversity as many of the workers on the ranches are Hispanic.

Community | Culture | Diversity | History | Values

Notable Quotes:

"West Marin's culture does not come from people who only spend weekends here. It does not come from vacationers, or summer-home owners. It comes from the folks that live, work, play and love this community every day. It comes from people who have worked on the land for generations, and newcomers who have fallen in love with it and the people it holds."

"More wilderness but more white privilege."

"I would miss the ranchers and their culture, which is one of openness, friendliness and mutual cooperation. Furthermore, the ranches provide employment for many Latino families. They too contribute much to the local culture.

"Where are the families to live? Who will be part of the volunteer fire departments, teach in our schools, work for our water districts? It destroys our cultural history and creates a cultural dessert"

"This place will lose it's heritage. It's ancestors. It's place in time."

Economic Effects of Reduced Ranching in PRNS

The topic of economics came up very often in the survey responses. These effects were examined at a local, as well as global scale. While there very differing opinions on how reduced ranching in PRNS would affect the community, there was an overall agreement that it would negatively affect the economic viability of the local community in West Marin. Many commented on the idea that reduced ranching in PRNS would have a cascading effects on ranches outside of the park as well as on other local industries. There were also concerns on the impact on local schools, which are already struggling for attendance and funding.

- Loss of employ-ment at PRNS Ranches
- Loss of Infra-structure support for non-PRNS ranches
- Loss in Ranch Related Businesses
- Impact on Local Economy
- Impact on Schools

Notable Quotes:

"Loss of ranches would result in loss of ranch income, employment, support for the local economy, impacts on schools from loss of students, loss of cultural and ethnic community diversity."

"Jobs would be lost, successful dairies would either have a more difficult time, or go out of business altogether. There have to be enough dairies to be big enough for the Ag services industry here to make it worth the while to keep supplying the ranches and dairies"

"The local working economy would move towards tourism, luxury homes and vacation rentals at an accelerated pace. Working people would continue to be priced out of their homes, and the gentrification of the businesses and resources would be more dramatic. It would become a community more empty of the people that drive it, and a place mostly for wealthy people to retire or relax."

"Huge displacement of workers when there is already no housing available that is adequate for those trying to survive here."

Environmental Effects of Reduced Ranching in PRNS

The term ‘environment’ includes words such as ‘nature’, ‘natural’, ‘landscape’ ,‘wilderness’, ‘open-space’, ‘ocean’, ‘water’. These terms all describe a value that is felt by many residents. This is the value of the natural world. Many respondents mentioned what the environment would look like without ranching, expressing concerns that without the ranchers managing the lands, the area would become overgrown with scrub-brush, increasing fire hazard in the area. Other responses mentioned areas in the park that had become overgrazed and called for a reduction of ranching in those areas.

- Less Overgrazed Areas
- Reduced Ranching resulting in overgrown Scrub brush
- Increased Fire Hazard
- Improved Water/Soil Quality
- Impacts on Endangered Species and Invasive Species

Notable Quotes:

“I could also see drastic rise in invasive plants like scotch broom if grazing were ended.”

“Any significant reduction in grazing would result in dramatic changes to the aesthetic resources of the Seashore. The Seashore is a mosaic of land shapes meeting the ocean and bays and lagoons and ponds, valleys, ridges, hills, forested areas, wetlands, dunes, and large areas of pasture and rangeland that intergrades with coastal scrub.”

“Much of the park would become overgrown with coyote brush if it wasn't being grazed.”

“Fewer cows, better land & weed management.”

“The public will trash the land, the land will fall apart without the trees, brush, fences and grass being maintained and manicured by the ranching families who've lived their whole lives taking care of the land managing the wildlife and ranching simultaneously.”

Point Reyes National Seashore

As the survey discussed ranching in PRNS, the National Park Service and Seashore management came up quite often. Some responses were critical of the NPS's management, others were hopeful that the NPS had solutions to these issues. One topic that was pretty unanimously agreed upon was that much of the tourism in the PRNS was having detrimental effects on not only the community but also the environment. Many responses discussed the idea of the 'unaware tourist'.

Management

Tourism

Wilderness

Notable Quotes:

"The park was originally conceived and approved on the premise that such a balance would be insured and provide a win-win for all involved. The diversity and health of our local community and economy depends on both the park and local agriculture to thrive and survive."

"To me, reduced ranching in PRNS would represent the failure of NPS stewardship, which would be personally disappointing to me. I have a deep love for the national park idea and for many units in the national park system that I've spent time in."

"The tourists are so numerous now that they are also damaging the park--throwing trash (including toilet paper), approaching wild animals, taking dogs to restricted areas, traffic. We're getting a different kind of visitor now--a less aware kind."

"Wilderness, as defined by the wilderness act "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." is self-explanatory."

"Tourists need to be better informed. More signs? More regulation."

Tule Elk

One question in the survey asked about the Tule Elk population, and if it was possible for Elk, recreation and agriculture to coexist. There was a wide range of answers with some respondents in support of removing ranching to make way for the Elk population, and other responses stating the opposite. Many respondents strongly believed that the two could coexist with the proper management.

In favor of Elk	In Favor of Ranching	Co-existence	NPS Manage-ment	Fencing, Hunting, and Culling as viable solutions

Notable Quotes:

"The Park MUST take responsibility for them, and at the very least, comply with their own guidelines. The Park Service needs to be better than to operate under the false pretenses that those elk are "wild". They are managed, because they exist in a managed environment, and the Park needs to take an active role in that management."

"This is a national park. The elk should stay, and the ranchers should figure out how to work around them."

"Elk are far less import than ranchers and farmers. They are part of a romantic notion that this Park is a wilderness and as such needs to be restored to an earlier time- an arbitrary date in the past. With good management elk and farms should coexist."

Solutions

The last question in the survey asked 'what would you like to see happen in PRNS?' Many respondents offered up a wide variety of solutions to the current issues in the park. Most of these responses were quite positive and mentioned some sort of compromise between the three uses in the park.

- Comp-romise
- Longer Leases
- Agro-tourism
- Community Involve-ment
- More funding for the NPS

Notable Quotes:

"The park needs to be managed with a recognition of the surrounding communities and the farming/ranching communities. More community involvement, less top-down direction."

"Ranchers are traditionally conservative while environmentalists are traditionally liberal. We need this diversity. We need to learn to all work together."

"We locals see ourselves as stewards of these lands. We want to preserve it but also use it and manage it. I think the park service has bitten off more then they can chew and properly maintain. They need to partner with our local communities so that the natural systems stay healthy."

"The park is a potential space for sustainable innovation, community development and environmentalist-agriculture cooperation. When the interest of visitors looking to recreate and then leave is prioritized, people who live on/near and interact with the land every day are alienated from those spaces."

I would love to see the Seashore reinvest in the agricultural operations, give long term leases, help the operators improve their stewardship practices, including implementing climate beneficial practices, and educate the general public about the importance of agriculture."

Recommendations

As this issue is multi-dimensional and spans environmental, social, and economic factors, a four-step solution is proposed, including (1) community involvement, (2) agro-tourism, (3) a revised General Management Plan, and (4) compromise and coexistence within the three uses in the park.

The first step is (1) **community involvement**. With the new administration in office, National Parks, which are already struggling, are likely going to lose large amounts of funding which is necessary for proper management. As troubling as this is, it may be an opportunity for innovative thinking and uncommon management practices. PRNS lies just a few miles from an incredibly unique community. West Marin has its own currency, which support small businesses and donates proceeds from coin purchases to local nonprofits. Volunteer community members run the local fire department. Monday nights include a Ping Pong competition at the Dance Palace. Saturday nights are spent at the local bar, The Western Saloon, which will be jam-packed with people dancing to the tunes of the Haggard's, a band created specifically to play at the Western. The people here are friendly, open-minded and interested in current events. My point is that West Marin houses an incredibly passionate community that wishes to be involved in the management of its surrounding natural resources. The vast interest in the survey released to the community reveals this passion. I received many emails and messages from community members wanting to learn more about this project. It is quite clear that this community cares deeply for the National Seashore as well as the natural and cultural resources within.

> "The continued presence of the ranches at PRNS alludes to the strength of such a broader approach, one based in community collaboration, with implications for how we humans might better understand natures role in a human-built world." (Watt, 2017, pg 4)

Because this National Park lies adjacent to a community that wishes to be involved, why not partner with community members to solve these issues. Part of this reliance can already be seen within the pastoral zone. The ranchers manage the land through grazing practices, which reduce brush overgrowth and fire hazard. These ranchers work closely with the land and are usually among the first to notice when something has gone wrong in the ecosystem. It is possible that without the grazing practices of these ranchers, the NPS would not have the capacity or staff to manage the land to the extent that would reduce fire hazard, which is a large problem in this ecosystem. "A significant increase in communications between ranch operators and resource management of the pastoral lands can be achieved. At present, resource management personnel know very little about the operation of the respective ranches" (Sugnet and Bartolome, 1983). Their involvement in the National Seashore should be celebrated, not hidden. This is where the second solution comes into play. The NPS could use these ranches as an educational tool.

(2) **Agro-tourism** can be used to create a stronger partnership between ranchers and the NPS. Ranches that wish to participate could lead tours of their property, educating the public on sustainable agricultural operations, while also showing the unique partnership of wilderness and agriculture. A survey response stated, "I see visitors stopped on the road all the time to show their kids a cow, much like we stop to see an elephant seal." Agro-tourism can enlighten tourists on the unique system of agriculture in this area. Many people don't realize that much of their meat comes from cattle in CAFO's (concentrated cattle feeding operations), which are unsustainable and unethical. Agro-tourism sheds a light on a different type of agricultural operation, one in which the environmental is not being degraded and the cattle are being treated in a more humane manner. Agro-tourism has the ability to educate tourists on the working landscape in the park, while strengthening the relationship between the ranchers and the NPS.

The next solution is the (3) **release of a revised General Management Plan**, which would discuss issues such as grazing in the park and the management of the Tule Elk, and leases. This document would look at the impact that each ranch has on its surrounding environment and

determine carrying capacity of the ecosystem upon which these ranches exist. Ranches that have a greater negative impact on their land should be given a choice, comply with park environmental standards, or shut down. The ranchers in the park must show their willingness to cooperate and meet environmental standards. The GMP will determine what level of environmental standards the park wished to see. Some practices ranchers can implement to comply with the standards is:

- Increasing agricultural biodiversity, such as small-scale row crop farming
- Utilizing a buffer zone between ranches and waterways
- Mitigate soil erosion by increasing rotational grazing
- Take part in the Marin Carbon Project, which practices sequestering carbon from the soil to enhance the land

This is a National Park, the ranchers here are lucky to work on this land and reap its benefits at a discounted price. The diverse ecosystem must be protected, however these changes cannot be made overnight. The NPS should give the ranchers adequate time to make these improvements. One action that is necessary for this change to occur is longer leases, as the ranchers need these to obtain the loans from banks that would allow them to implement these sustainable ranching practices. Ranchers that show their willingness to increase their environmental sustainability can be given longer leases, acting as an incentive to improve their agricultural operations.

The last step to this four-part solution is (4) **communication and compromise** within the three uses in the park. The survey responses strongly commented on this idea. “It is hoped that regular monitoring following established procedures will once again be used to evaluate ranching and that monitoring results will be shared openly with ranchers so that solutions to any noted problems can be resolved in a timely manner” (Rilla, 2009). This park was created with three interests in mind; wilderness, recreation, and pastoral. Without each of these parts, the park most likely wouldn’t have been created. For the past forty-five years, these three uses have been enjoyed, critiqued, and most importantly, successful. One response from the survey read,

> "At it's heart, it is a profoundly cultural or human landscape, whether it is the pastoral zone, or the heavily managed "wilderness areas" or the spaces in between. Every choice that the park service makes strikes some balance between those three interests that you mentioned, and I think the park needs to be more intentional about these decisions, or at the very least, more transparent. The park is a potential space for sustainable innovation, community development and environmentalist-agriculture cooperation" (Survey Response)

While this partnership has had its ups and downs, it is truly a unique and inspiring embodiment of compromise between multiple interests at multiple levels.

Conclusion

When examining PRNS I decided to view the issue through a social ecologists lens; one in which human societies are not all the same, and National Parks are not all seen as a vast wilderness devoid of human presence. Environmental thinking that seeks to separate humans from nature can often be ineffective. National Parks were originally created to separate wilderness from humans, however, as we distance ourselves from nature, we lose sight of what it is to be a human in a highly-developed world. This thesis examined a working landscape within a wilderness area, it is contradictory, but important.

> "The continuing presence of cattle ranches on Point Reyes' rolling grasslands offers a vision of how working landscapes-places characterized by an 'intricate combination of cultivation and habitat,' maintaining a balance of human uses and natural forces-should be recognized as part of both natural and cultural heritage worth protecting" (Watt, 2017 pg 4)

PRNS is a complicated system, one that includes a diverse flora and fauna, a government agency, as well as an involved and passionate community. The relationships within PRNS are unique as well as complicated, meaning they require unique and complicated management strategies.

As I looked through the numerous responses to the survey, there was one short quote that resonated with me. It is simple, but powerful, and exemplifies my final thoughts on ranching in PRNS. "It shows the diversity that is the human race and their intersection with animals and nature. I think if you really ponder it, it's an amazing representation of how it can all work together." The seashores purpose is to provide the public with an inspiring example of wilderness and human interaction while protecting the natural resources within. Agriculture is just another essential piece of this ecosystem. Aldo Leopold advocated for these types of systems, where "the wild and pastoral are not in competition but are complementary, thriving side by side" (Watt, 2017, pg. 10). Leopold once stated "conservation is a state of harmony between men and land" (Leopold, 1938). Point

Reyes National Seashore would not have been created without the arrangement between ranchers and the park service. It has been forty-five years since the seashores creation, and this coexistence and compromise remains essential in the parks success.

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Appendix

Survey Questions

Q1 How long have you been a resident of West Marin?

Q2 How many months out of the year do you reside in West Marin?

Q3 How would you describe yourself? (Choose all that apply)

- Resident
- Rancher
- Retired
- Farmer
- Student
- Related to ranching/farming
- Involved in an environmental organization
- Scientist/researcher
- Other

Q4 What are some important aspects of West Marin? (community, history ect...)

Q5 These parks lands serve as a recreation destination, a wilderness refuge, as well as pastoral zone…do you think it's possible for these three uses to work in synchronicity?

- Yes
- No

Q6 If yes, How?

Q7 If no, which use(s) should be removed?

Q8 What would you expect to happen if ranching were to diminish in PRNS?

Q9 What would you suggest to the Park Service to improve management?

Q10 What changes can ranchers implement to make ranching more environmentally sustainable?

Q11 In what ways would diminished agricultural production in the park affect you, your family, or this community?

Q12 How would diminished ranching in PRNS affect West Marin economically?

Q13 How would diminished ranching in PRNS affect West Marin's sociocultural climate?

Q14 There have been many questions raised regarding the Tule Elk population in PRNS. Do you think both elk and ranchers can remain on the land? What sort of actions need to be taken in this situation?

Q15 What would YOU like to see happen in Point Reyes National Seashore?

Abbreviations

- PRNS: Point Reyes National Seashore
- NPS: National Park Service
- NEPA: National Environmental Policy Act
- EPA: Environmental Protection Agency
- RCMP: Ranch Comprehensive Management Plan
- GMP: General Management Plan
- PRNSA: Point Reyes National Seashore Association
- PRSRA: Point Reyes Seashore Ranchers Association