HUMANS + HABITAT

Reconciling Recreation with Wildlife Preservation in Discovery Park

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ABSTRACT

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Reconciling Recreation with Wildlife Preservation in Discovery Park

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This thesis proposes to develop new ways of preserving and enhancing existing habitats in Discovery Park, while creating a loosely structured visitor experience, which provides a deeper understanding of the different habitats and leads to their improved protection. The design approach emphasizes existing park features through the addition of sensitive, site specific architectural interventions. Each intervention guides visitors to specific areas along existing circulation routes, where they are able to engage and understand the surrounding landscape and wildlife in a new way. By directing and composing a sequence of experiences which attract visitors, adjacent habitats remain protected and preserved.



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all graphics are created by the author and all images are taken by the author over numerous site visits, except the historical photographs on page 14

fig. 1 spring blossom



ONE

introduction

Since 1960, over 900 military bases have been closed by the United States government.[1] The obsolescence of many sites prompted the repurposing of many military bases for alternative programs. Some transitioning military sites are heavily impacted from chemical manufacturing, ammunitions test, and troop maneuvers, while other areas are left relatively unused and in a more naturalistic state, typically along the perimeter regions. When time came to repurpose the former military bases, support for open space and wildlife preservation often outweighed commercialization or private development. Additionally, remediation of heavily degraded military bases to a residential or commercial level was often expensive and unfeasible, but remediation to a standard considered safe for wildlife was much more manageable to achieve.

In this thesis, I focus on one particular site of transformation from former military base to public park and its present-day integration of recreation and habitat restoration. Guarding the entrance into the heart of the Puget Sound waterway are a series of former coastal fortifications. They were once a key part of a defense system designed to prevent a hostile fleet from reaching the Bremerton Navy Yard and the heart of the Pacific Northwest. As advances in technology rendered the forts obsolete, the bases were closed and troops moved out.[2] One of the sites, Discovery Park, formerly known as Fort Lawton, is the focus of this thesis.

All abandoned forts required varying degrees of cleanup. Discovery Park did not have scattered explosives or hazardous chemicals. Unlike many of these sites, it is not characterized by mounds of leachate, an empty quarry, off-gassing, differential settlement, or a lid of plastic and soil. This park is among the range of bases that were less impacted by military activities, the most harmful activities being intense use during peak war time. As a site used predominantly as an embarkation point for soldiers, prisoner of war camp, and home to 500 stabled horses, it differs from other abandoned forts as it never needed any sort of decontamination - yet it still needed restoration. Restoration is based on the idea that by erasing prior human impacts a better, more natural condition can take place within a site or ecosystem. In these cases of transformation, military practices and environmental conservation can be viewed as compatible activities. Without the decades of military command and ownership by federal agencies, these areas would undoubtedly look much like their surrounding cities or farmland rather than parks or wildlife refuges.

This thesis demonstrates how architecture can create a loosely structured visitor experience to develop new ways of preserving and enhancing existing habitats in Discovery Park, leading to their improved protection. It proposes a series of site specific interventions along existing pathways in the park, which encourage visitors to pause and experience the landscape and wildlife in new ways.

fig. 2 tree branch



TWO

preservation + accessibility

Often the purpose of preservation is to make whatever is preserved available to the public - historic buildings or old manuscripts for example. They are preserved so the public can be informed. At the same time, access threatens the survival of the preserved object. Thus, preservation becomes an advocate for both openness and control.

When it comes to public lands the issue is widespread, from ancient burial sites to National Parks to Seattle's Discovery Park. All recreation and tourism comes with impacts. As people use and visit these unique sites, little by little they degrade what regulations are trying to save, threatening their survival.

Similarly, Discovery Park is at odds with itself as a park that both wants visitors to come and enjoy it, while at the same time hoping to give its flora and fauna the best chance to flourish. The park is a mix of conflicting uses: wildlife, people and the existing structures from its prior history. Which of these is most important and how can they coexist?

The park has actively tried to combat the effects of overuse through regulations that allow only minimal impact recreational activities. Yet, activities such as bird-watching and hiking can negatively affect the environment too. According to a 2015, article in The New York Times, "In 2008 Sarah Reed, an associate conservation scientist at the Wildlife Conservation Society, and her colleagues found fivefold declines in detections of bobcats, coyotes and other midsize carnivores in protected areas in California that allowed quiet recreation activities like hiking, compared with protected areas that prohibited those activities."[1]

Access to Discovery Park provides an essential connection to the outdoors and the life-enhancing benefits of nature for people of all ages. Without preservation, each generation will take the altered, degraded condition of their natural environment as normal, leaving each ensuing generation an increasingly lessened condition as their normal experience, a condition known as environmental generational amnesia.[2] A careful balance between recreation and conservation is hard to achieve, but is absolutely necessary for the health of both humans and habitats of this area in the future.

fig. 3 stem of wheat



fig. 4 berries

THREE

a layered history

Discovery Park today has not always been a haven for wildlife. The site's former life as a US Army Fort still shows in a variety of ways, mixed and blended within the many trails throughout the park - Savanah Sparrows soaring overhead, a chapel with a crisp coat of white paint, series of small ponds and swamp habitat, the hum of an active radar tower, the hoot of a barred owl at dusk, rows of officer housing proudly positioned overlooking the grassy parade grounds and surrounding majestic mountain ranges beyond.

This chapter summarizes some of the more influential human and non-human forces which have impacted the physical state of Discovery Park on Magnolia Bluff. First, a discussion of the geologic processes which shaped the terrain and the ways in which Native Americans and later the U.S. military brought distinctive forms of order to the site. Then, the historical Masterplans of the park are analyzed to understand how the park of today came to be.

A NATURAL AND BUILT HISTORY OF DISCOVERY PARK

Ice Age

The present character of Discovery Park has been formed by overlapping and intertwining histories of natural geologic process and man-made intervention. The natural history of Discovery Park began during the Ice Ages. The last Ice Age 17,400 years ago brought a 3,000-foot-thick sheet of ice called the Puget Lobe or Cordilleran Ice Sheet across North America carving out much of the Seattle region before retreating and melting back to the north. No place in all of Seattle is better to see the glacial deposits of the Puget Lobe than the South Bluff of Discovery Park. The deposits are comprised of four different layers Olympia beds, Lawton Clay, Esperance Sand, and Vashon Till. The Olympia beds are the brownish layered rocks at the bottom of the bluff. Directly on top of these beds lay the Lawton Clay, which consists of a very fine grained, dark gray clay and light gray silt. At the park, the clay is 82 feet deep, but reaching 100 feet deep in other locations. The Esperance Sand is made up of gravel, sand, and silt and is up to 200ft thick. The sand is a lighter color than the clay and was deposited by way of river and streams as the glacier was melting. The Vashon till consists of the ground-up deposits in the landscape like silt, sand, cobbles, pebbles, rocks, and boulders. It reaches up to 30 feet deep and can be found on most of Seattle's hilltops. However, it is not found everywhere, including not all places in Discovery Park.

OLD GROWTH FOREST

Discovery Park was once in the early stages of becoming an old-growth forest like much of the rest of Seattle. Archaeological digs shows an abundance of woody tree fossils including Douglas fir, western red cedar, red alder, and western hemlock. Other plants include hazelnut, bitter cherry, and mock orange.

fig. 5 old growth forest

A key geological feature of Discovery Park are landslides, created by the difference between the Lawton Clay and Esperance Sand. When it rains, water drains through the porous layer of sand until it reaches the impermeable layer of clay. The water flows on top of the clay layer, following gravity downhill. This process weakens the contact between the sand and clay, making the slope susceptible to sliding. The bluff at Discovery Park is retreating nearly 80 feet per century because of this process. This is not due entirely to landslides, but also from wave erosion. The constant motion and impact of the waves undercuts the base of the bluff. Waves primarily arrive from the north, but the Southern bluff accepts a greater wave energy, which has resulted in an extensive sandy beach at low tide.[1]

2000 BC

People first visited the rocky shores of the West Point of Seattle 4,000 years ago, long before European settlement. Records indicate that their established village was situated on the north side of Salmon Bay, near today's Ballard Locks. This specific group of people were the xa'ɪcoabc who lived on Lake Washington, Lake Union, and Lake Sammamish as descendants of the Marpole and Salish tribes. They used the Magnolia Bluff area for hunting and gathering. They gathered plants like camas and bracken, animals such as mussels and periwinkles, and hunted larger mammals further inland like elk, deer, and seals. 3,000 years ago, landslides created sandier beaches, shifting diets towards different shellfish like clams.

930

The large earthquake 1,100 years ago caused a tsunami to hit the shores of Discovery Park. As a result, much of the topography and shoreline was changed. The beach receded 3 feet and was covered in silt and sand, making the habitable area much smaller. Despite the dramatic change, natives returned and made use of the changed landforms.

When white settlers arrived, though densely forested, the area could hardly be considered wilderness after the thousands of years of environmental alteration for human habitation by the xa'ɪcoabc. Despite the common belief that natives lived spontaneously off the land with what they could find, they practiced planned burning in order to yield more camas and bracken for consumption and destroy competing plant species. This form of plant cultivation maintained an abundant food supply in addition to creating a more variable regional forest ecology.[2]

1850

In 1850, the passage of the Donation Land Law brought increasing numbers of homesteaders to stake their claims throughout the Oregon and Washington territories including the coastal regions of Puget Sound via the Oregon Trail. The specifics of the Donation Land Law stated settlers could stake a claim on 320 acres of unsurveyed land or 640 acres if married. After four years of residence and cultivation, they could earn a final title. The densely forested Magnolia Bluff was parceled, sold, and logged to make room for homes and roads. Anticipating the amounts of waterborne traffic from transporting lumber, the US Lighthouse board recommended a Lighthouse be built at West Point. Congress approved the project in 1881 and the West Point Lighthouse was built soon after.

The need for defense in the Pacific Northwest grew slowly as the region gradually increased in population and importance. San Francisco, San Diego, and the mouth of the Columbia River were identified as three defensive sites for immediate construction. The Puget Sound however was not a priority at that time. The lack of settlements in the areas, as compared to elsewhere in the nation, and the distance across waterway entrances was simply too great for the power of firearms at that time. Therefore, harbors were considered more important than a commanding bluff.

1888

Continuing pleas from the military, population growth from the transcontinental rail road and gold rush, and more concern from the federal government about defenses in the Northwest finally achieved some direct action in 1888. It took 60 years after the first recorded observations were made concerning the military potential of Puget Sound for the federal government to take action in the Pacific Northwest.

As the white settlements increased, the local Indians felt mounting pressure. They were being forced to give up their lands and their way of life. There were acts of violence by both natives and whites in the Puget Sound. Cabins were burned, cattle driven off, travelers ambushed, and even a pig was shot. However, the force of Native American attack was not as serious as it was elsewhere in the country, so strong defensive structures to protect against hostile natives and foreign enemies did not make sense. Rather, Northwestern forts of the second half of the nineteenth century intended to reflect the most popular architectural style of that time. Colonial Revival style is in particular evidence in forts around the Puget Sound. Fort Lawton of Seattle and Fort Worden at Port Townsend are excellent examples.[3]

The Civil War's influence on the nature of arms produced some of the most drastic technical changes in the history of warfare. These changes directly affected the coastal fortifications system. Nearly overnight, the large, masonry forts of the pre-civil War period, consisting of huge vertical walls and high density of heavy armament were obsolete. The invention of the cannon led to the end of vertical walled fortification in land warfare. It became obvious to military leaders and designers that masonry could never be expected to resist the fire of heavy of land based guns. Yet, seacoast fortifications continued to be built this way out of brick and stone because cannons on ships could not provide the same accuracy or damage as a canon on land, set to repeatedly hit the same target.

1891

In 1891 congress established a Navy Yard in Bremerton along the Puget sound. Seattle actively sought an army post to boost its economy. The War Department also desired an army presence

FORT LAWTON

As part of the 3rd line of defense to protect Naval Base Bremerton, Fort Lawton was largely inactive until WW2. The post was the 2nd largest point of embarkation on the west coast and a prisoner of war camp. In its peak it had over 500 buildings and could stable up to 500 horses.

fig. 6 Fort Lawton plan

and encouraged the City to provide free land. Similar to present day weapons systems, war can be avoided with the right military hardware. Coastal defense was the technical achievement of its time that could provide the nation with security. It was non-aggressive in appearance and yet would preserve the peace by its presence alone. The West Point was identified as a strategic location for defense. In 1896 the Secretary of War officially selected the area as a fort site. Seattle then turned over 703 acres to the US Army for military base Fort Lawton and construction began in 1898. The new post was named in honor of General Henry Lawton who was killed in the Philippines in 1899.

The arrangement of forts along the waterway of the Puget sound designated four lines of defense to protect Bremerton Navy Yard. All forts followed a basic blueprint developed by the Corps of Engineers, yet unique site conditions led to varying layouts at each location. Three land extensions at the entrance of the waterway formed a natural triangle that became the cornerstone of the Puget sound coastal defense. This was called the triangle of fire and was the first line of defense. Fort Lawton finally opened in 1900 and was part of the third line of defense resulting in the lack of bunker and rifle modifications apparent at the site as compared to Fort Casey on Whidbey Island. Seattle expected it to be a major installation, but it remained a small post.[4]

1914

Technological developments during WWI began to present a serious challenge to all existing harbor defenses. Foreign, as well as American. New techniques in fire-control and battleship turret designs now enabled some foreign ships to outrange any harbor defense weapons within the United States, some by a substantial margin. Equally important in wartime advancement was the introduction of the airplane. The control of air space marked a radical turning point in the effectiveness of American coastal fortifications. If an enemy were to control the air above the coastal defense forts, they could be rendered totally useless very quickly. By 1917, when American entered WWI, fortifications like those found in the Puget Sound were becoming obsolete.

1939

After decades of inactivity, WWII brought Fort Lawton new life. The fort was revived as an embarkation point for many soldiers headed overseas. During this time, the Fort also held a prisoner-of-war camp that held over 1000 German prisoners. During the Korean War of 1950-53, the Fort enjoyed another bustle of activity. Nike (line-of-site) anti-aircraft missile batteries were installed at Fort Lawton, and elsewhere in the Puget Sound area. A hardened missile control center that coordinated all the local batteries was located at the Fort, but within a few years those weapons were obsolete. Later, the idea was proposed for Fort Lawton to become a launch site for inter-continental ballistic missiles, but that plan never came to fruition.[5]

When the site was established as the military base, much of the forest and plant life was cleared.[6] Though the base never saw chemical spills or any need for decontamination, it was fully transformed and militarized. Hundreds of acres were cleared for parade grounds, housing, roads, and open pasture for horses. There were 500 stabled horses on the grounds by 1910 and during its peak of operation there were over 500 buildings.

1964

The land remained in the US Army's possession through both world wars, until it was no longer needed in 1964 and declared surplus by the U.S. Secretary of Defense. During that time, a 12' diameter sewage tunnel was added, which brought untreated wastewater from central Seattle to an outfall off West Point.[7] During this time, the treatment plant was small. However in 1966 there was a proposal for a larger treatment plant. People fought the initiative and the decision came down to a vote within the Shoreline Management Committee. The vote tied, meaning it could go forward. The treatment plant was greatly expanded and resulted in the size of the plant we have today. That area was dedicated as the Municipality of Metropolitan Seattle's (then Metro) West Point Wastewater Treatment Plant in 1966. During an archaeological dig before the sewage facility was constructed, woody tree fossils were discovered and gave an indication to what the area looked like before military occupation.

More recently the West Point Wastewater Treatment Plant made the news after a disastrous flood crippled the treatment plant and left the sewage and wastewater from 1.7 million people (235 million gallons of untreated wastewater, including 30 million gallons raw sewage and partially treated solids) dumping into the Puget Sound. On the night of February 9th, 2017 after days of heavy rain, the plant was surging as high-volume flows came in from all over the city. A small flicker in the power caused four pumps in the facility to stop working. Water began pouring into the plant as two crew-workers tried to restart the pumps. Soon, water was pouring down stairwells, through hallways, out of every air space, slamming doors, submerging millions of dollars in equipment, and resulting in waist-deep wastewater throughout the plant. It was apparent to the workers that if the flood occurred during the day when they were roaming the tunnels, they would have been trapped and not survived. A contractor hired to investigate the flood revealed Seattle's treatment plant is ill-equipped in meeting the needs of a quickly growing Seattle. Many problems were identified including the size and lack of capacity of the plant, inadequate employee training, and faulty equipment. Since then a second power supply has been added, cheap float switches which previously jammed have been replaced, there is now better training for employees, more specialized technicians have been hired, and more staff will be present walking the halls of the facility during wet-weather events watching for flooding and improperly working equipment. The plant has been fully functioning since May 2, 2017. [8]

1970

Returning back to 1970 when the land was declared surplus, many other claims for the land arose besides a wastewater treatment plant. In 1970 the United Indians of all Tribes made a claim for the surplus land. After all, they were the first inhabitants of the area. After some negotiation, they were

given 17 acres for lease as an Indian Cultural Center on the periphery of the park. In 1972 a Master Plan for a Fort Lawton (Discovery) Park was submitted. It was later revised in 1974, and consisted of 534 acres of the former military base. The Masterplan of Discovery park was conceived by the architect and theorist Dan Kiley with the help of Peter Ker Walker and indirectly imposed beliefs of Ian McHarg. It was the long military occupancy that made the park possible, as the area otherwise would have likely become suburban housing.

1988

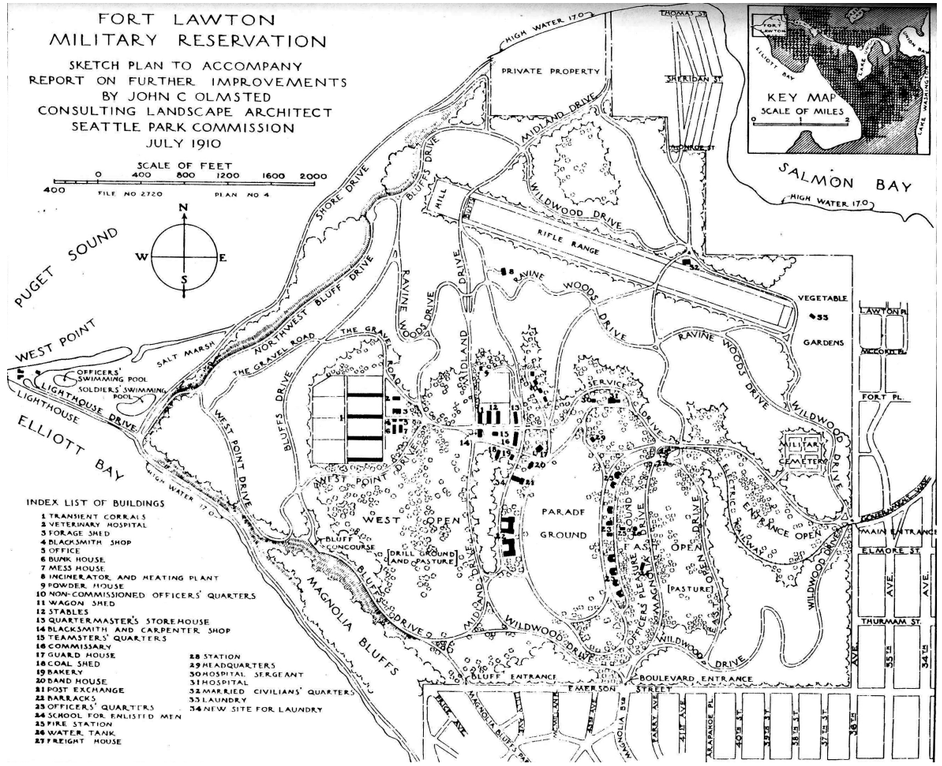
In 1988 the best-preserved structures of the Fort Lawton buildings were declared a landmark district. Today, much of the military complexes from the former Fort Lawton has been removed. Only twenty-five structures still remain. Some are vacant, while others are now private residences.

The landmark district celebrates the military history of Fort Lawton by designating 8 of the remaining buildings as weather protected "Silent Sentinels." At one time, there were over 500 buildings. The decision to keep a few buildings as a testament to the fort's history means the buildings are not meant to be used, but simply to reflect the history of the park. They warrant no further design action besides the occasional paint job. Although the remaining buildings and parade ground are but fragments of the Army Post's past, they are vital in an appreciation of the history of Magnolia Bluff and truly understanding the layered histories of the site and how it exists today. Every transformed military base has a different narrative to tell.

MASTERPLANS

There have been two distinct Masterplans that influenced the creation of Discovery Park from its military origins. As early as 1903 the Olmsted Brothers proposed that Fort Lawton could become an integral part of the city's open space and park system. The Olmsted brothers inherited the nation's first landscape architecture firm from their father, Frederick Olmsted, designer of New York's Central Park. They were hired in by the Seattle City Council to survey and develop a park plan for Seattle. At this time in Seattle's history, money from the Klondike Gold Rush had made Seattle a wealthy city, and residents were ready to acquire more land and develop their city with a beautiful and elaborate park systems. Senior partner John Charles Olmsted was most responsible for the plans of Seattle's Parks. John C. Olmsted and his assistant Percy Jones set out to survey Seattle on April 30th, 1903. They travelled all over Seattle, by horse, boat, trolley, and foot. They sent their formal report to Seattle in July.

The survey resulted in a comprehensive system of parks and parkways conceptually located not more than a mile and a half away from any home within Seattle.[9] The masterplan linked large parks with smaller parks and boulevards over 20 continuous miles. The greenbelt rose from the shores of Lake Washington to the University of Washington campus, stretched down Ravenna Park and continued



on to Greenlake and Woodland Park. From there the proposed greenspaces rounded Queen Anne hill and moved through Interbay towards Magnolia Bluff, concluding at Fort Lawton. There were various other linkages throughout Seattle, some stemming from Volunteer Park and others from Lake Washington. Olmsted realized the opportunity within the changing real estate market for the city to swiftly capitalize on available land as quickly as possible, especially land in close proximity to water. He wrote, "primary aim should be to secure and preserve for the use of the people as much as possible of these advantages of water and mountain views and of woodlands, well distributed and conveniently located."[10] On November 16, 1903, the plan was approved by City Council.

Surrounded by such large swathes of water, Fort Lawton was an integral part of the design and intentions of the park system plan. The fort was intended to be final point of the "continuous pleasure drive" commencing from Bailey Peninsula of Lake Washington. Fort Lawton added 2.5 miles to the route. Olmsted called for broad strips of forest to run at various areas through the park and along most of the perimeter of property, maintaining the steep bluff structure and privacy between park visitors and neighboring residences. The beach is broad and sandy, and one of the only few like it in Seattle, as most other are covered in rocks. He advocated for a means where people could visit

fig. 7 Olmsted brother's masterplan, 1903

and experience the beach through a floating barge with a bath house, refreshment pavilion, shelter, and dressing rooms. There were to be roads along both the north and south beach, the north with a clear view towards the water, and the south shaded by trees. Various other pleasure drives were to be incorporated through the property. Olmsted wanted many people to experience the rare, sandy Seattle beach and be able to drive through and see the scenic vistas as part of a comprehensive pleasure drive through the greenbelt of Seattle.

By 1970's the population of Seattle had more than doubled what it was during 1910. There were new wants, needs, and pressures on the land of Seattle, as anticipated by John C. Olmsted. During this time Landscape architect Dan Kiley, with the help of Peter Ker Walker, were hired to create a policy document to be used in the decision making for the immediate and long-term development of the park. The first draft of the policy document was completed in 1972, then revisions were made in 1974 and 1986. The plan is incredibly thoughtful and passionate. It pleads for the seemingly infinite well-being of the park, that the park be developed with deliberation, to beautify the approaches to the park, not to add any more roads within the park, the Wastewater Treatment plant should not be expanded any more than it already is, the removal of many buildings that are inappropriate to the park, and much more.

The primary function and central purpose of this park plan is: "to provide an open space of quiet and tranquility for the citizens of this city a sanctuary where they might escape the turmoil of the city and enjoy the rejuvenation which quiet and solitude and an intimate contact with nature can bring" [11] The plan even urges less dense development around the park edges to protect it.

In order to meet these goals, the primary means of transportation in the park is by foot and bicycle. No cars are permitted unless they are licensed vehicles. Dogs are permitted but only if kept on leashes as to not disturb the wildlife. The plan makes it clear that the single most important quality about the site is its natural beauty. Any improvement or structure which detracts from the beauty of the park must be hidden or screened from view to have the least adverse effect to the site. "The aim of design for all structures shall be to be compatible with the site and subordinate to the natural environment."[11] The policy plan acknowledges that it will not be able to satisfy all recreation needs of the citizens within Seattle and only complements the other elements in the park system.

The vision for the land of Fort Lawton was much different than the proposal given by Olmsted in 1910 with less emphasis on visitors and sources of recreation, but rather a more controlled experience with greater importance placed on the land of "unparalleled magnificence". "The master plan, we believe, lays down guidelines which, if followed faithfully, cannot fail to create on this site a park which will be one of the great urban parks of the world and a joy to this city forever."[12]



Dan Kiley warned of future pressures. "In the years to come there will be almost irresistible pressure to carve out areas of the park in order to provide sites for various civic structures or space for special activities. There will in the future be structures and activities without number for which, it will be contended, this park can provide an "ideal site" at no cost. The pressures for those sites may constitute the greatest single threat to the park. They must be resisted with resolution. If they are not, the park will be so fragmented that it can no longer serve its central purpose. Only those activities and only those structures should be accepted which are in harmony with the overall theme, character and objective of the park. There must be a deep commitment to the belief that there is no more valuable use of this site than as an open space."[11]

fig. 8 Dan Kiley masterplan, 1972





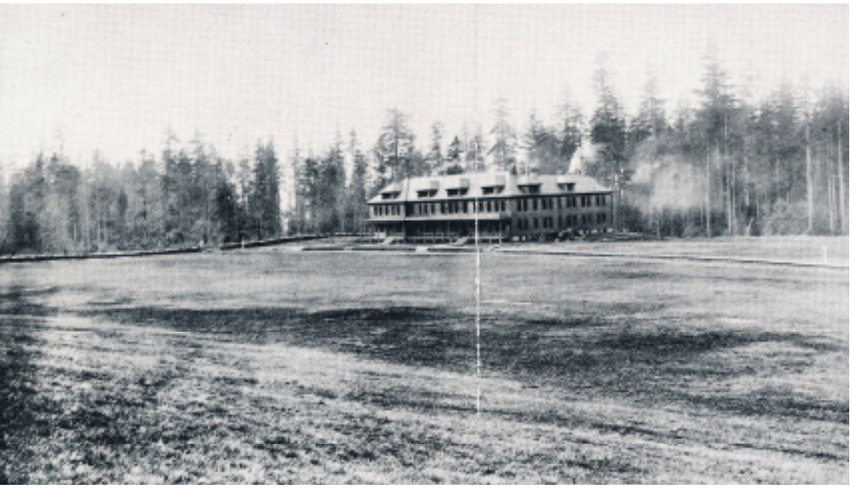
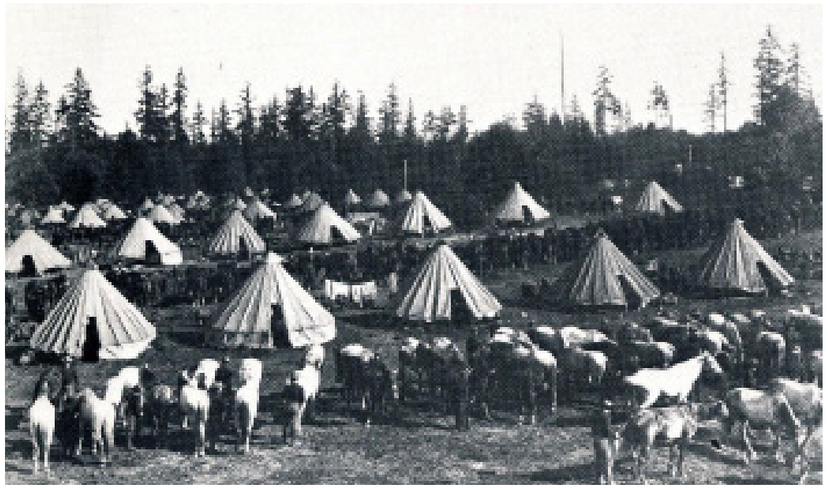








fig. 9 collection of historical Fort Lawton

fig. 10 collection of present-day Discovery Park photographs



fig. 11 deciduous trees

FOUR

Discovery Park of today

Through the analysis of the park history, it is apparent that this place holds a rich and layered identity through the accumulation of time, infrastructure, and topography. The different masterplans have provided a clear theme and direction for the future park development. Many structures, proposed by Kiley were not fully realized due to lack of funding.[1,2] Yet, the Masterplan is the single factor that has preserved the parks existence and fought for the unique type of open space park that it is today despite the constant pressures of development and fragmentation.

This chapter describes the park today before investigating the ecological conditions of the past and present. The chapter concludes with an analysis of a typical visitor's experience. Technical maps and specific examples are used throughout to illustrate key points.

A GENERAL OVERVIEW

Once a military fort, today the park is confluence of nature and human activity. Its former use prevented the site from being developed into residential housing like its surroundings. The abusive nature of military program on the landscape and intense use of the site during WW2 formed many different habitats and ecological conditions in the park, which was once entirely the beginning stages of an old growth forest.

The most recent addition of habitat within the park is Gary Oak Prairie habitat. In a deal to secure 23 acres of former military housing for the endangered habitat, Mayor Greg Nickels paid $9 million and gave other city-owned property to a private developer named American Eagle. The deal allowed American Eagle to parcel and privatize the former officer housing surrounding the parade grounds.[3] This marked the end of any active military presence within the park since its inception. Each of the officer's homes are now fully occupied with families.

There are several other projects currently taking place at the park. Pickleball courts are being added adjacent to the existing tennis courts as part of Seattle's pickleball pilot project. Tennis court sites were selected around the city based on certain criteria such as accessibility, existing conditions, and demand. The Discovery Park Playground is also being updated and improved. The play area is located on the southeastern side of the park near the tennis courts and Environmental Learning Center.[4]

DISCOVERY PARK OF TODAY

Today the site is a public park with nine different habitats and over nine miles of footpaths. It is the largest park in Seattle and a critical part of habitat corridor within the urban setting.

coastal

intertidal zone

beach

bluff

wetlands

fresh water ponds

meadow

gary oak prairie

forest

fig. 12 Discovery Park of today

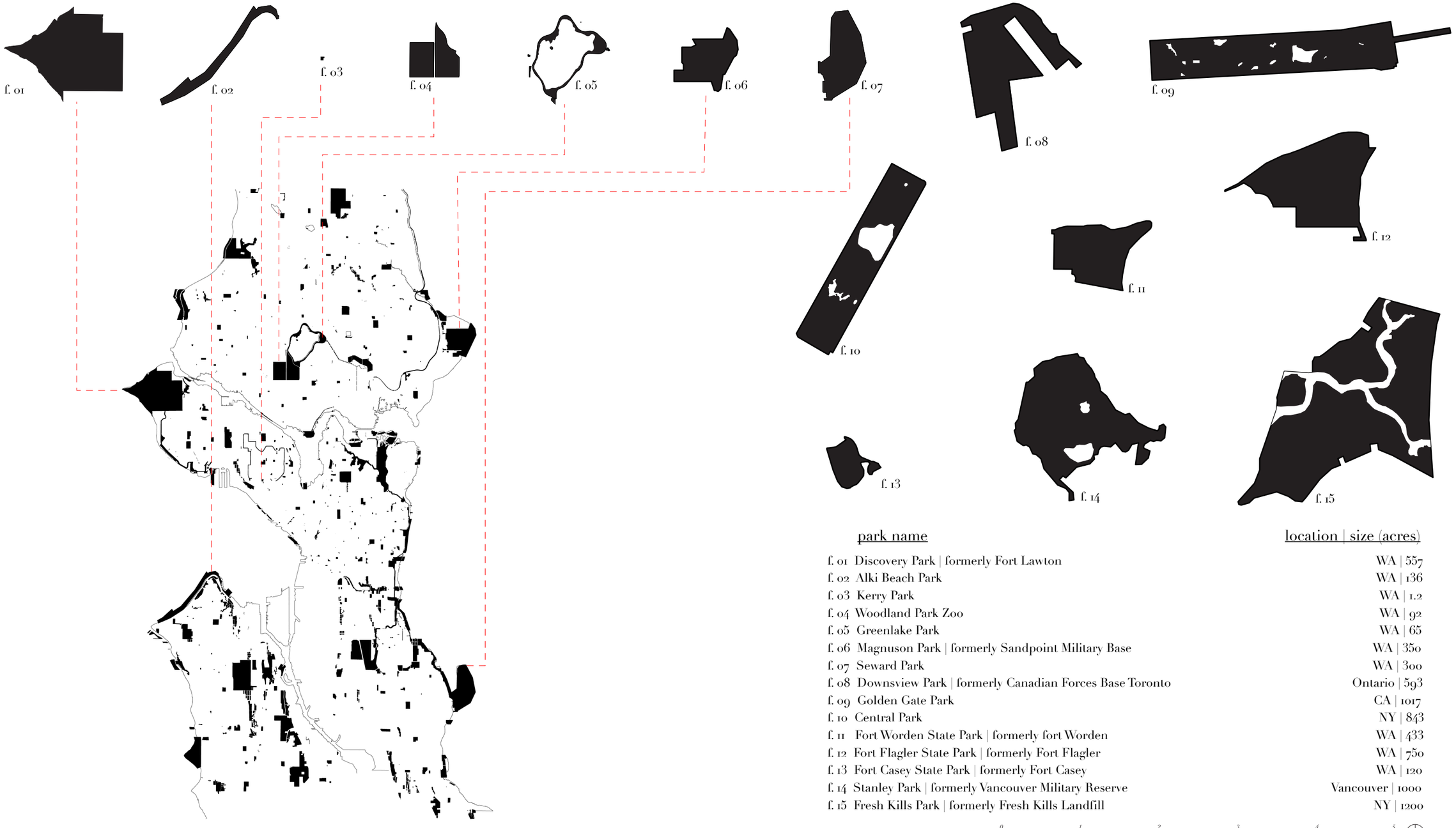


fig. 13 scale comparison of Discovery Park

It is the largest park of the Seattle Park System and representations about a fourth of the city's natural open spaces. The compact shape allows interior habitat to grow and its size gives an unmatched opportunity to provide "a taste of wilderness" inside city limits.

	park name	location | size (acres)
f. 01	Discovery Park | formerly Fort Lawton	WA | 557
f. 02	Alki Beach Park	WA | 136
f. 03	Kerry Park	WA | 1.2
f. 04	Woodland Park Zoo	WA | 92
f. 05	Greenlake Park	WA | 65
f. 06	Magnuson Park | formerly Sandpoint Military Base	WA | 350
f. 07	Seward Park	WA | 300
f. 08	Downsview Park | formerly Canadian Forces Base Toronto	Ontario | 593
f. 09	Golden Gate Park	CA | 1017
f. 10	Central Park	NY | 843
f. 11	Fort Worden State Park | formerly fort Worden	WA | 433
f. 12	Fort Flagler State Park | formerly Fort Flagler	WA | 750
f. 13	Fort Casey State Park | formerly Fort Casey	WA | 120
f. 14	Stanley Park | formerly Vancouver Military Reserve	Vancouver | 1000
f. 15	Fresh Kills Park | formerly Fresh Kills Landfill	NY | 1200



ADJACENCIES

Discovery Park is located six miles north of downtown Seattle and just south of the Ballard neighborhood. The park occupies 557 acres at the westernmost point of the Seattle. The park takes the form of a peninsula, surrounded mostly by water. Salmon Bay Waterway, also commonly known as Lake Union Ship Canal separates the park from Ballard across the northeast. Shilshole Bay lies to the northwest and Elliot Bay borders the south. All feed into a larger body of water, the Puget Sound. Suburban residential areas border the remaining eastern and southern boundaries of the park.

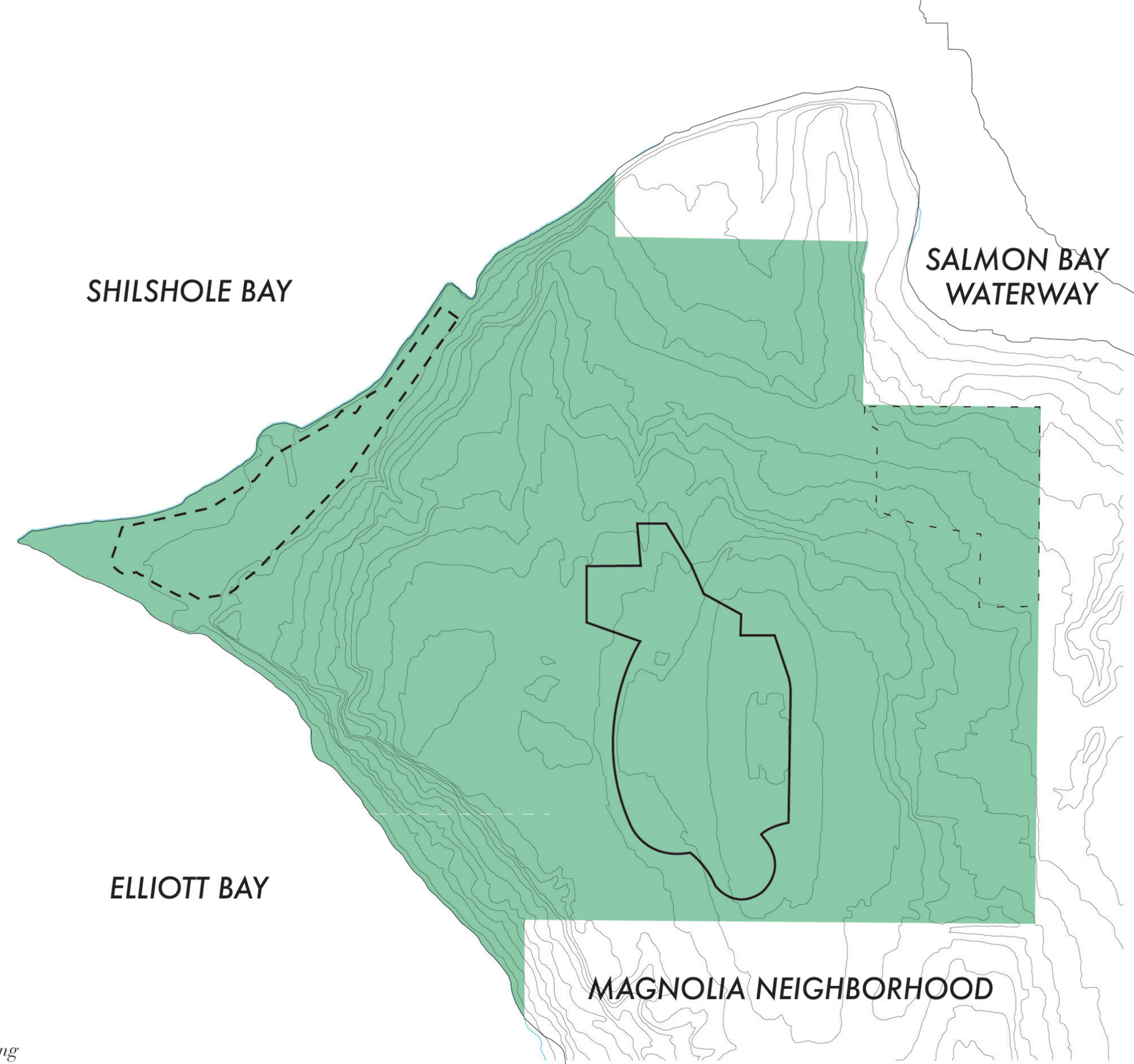


fig. 14 adjacencies

PARK PARCELS

The different programs the site has facilitated over the years has shaped a landscape comprised of many different parcels. However, the landscape seems to break down these boundaries and conceal the fact that it is quite fragmented with different owners and stakeholders. In the future, the park may see more changes and fragmentation as the former Puget Sound Health Center and Finance Administrative Services land is slated for construction of market-rate housing.

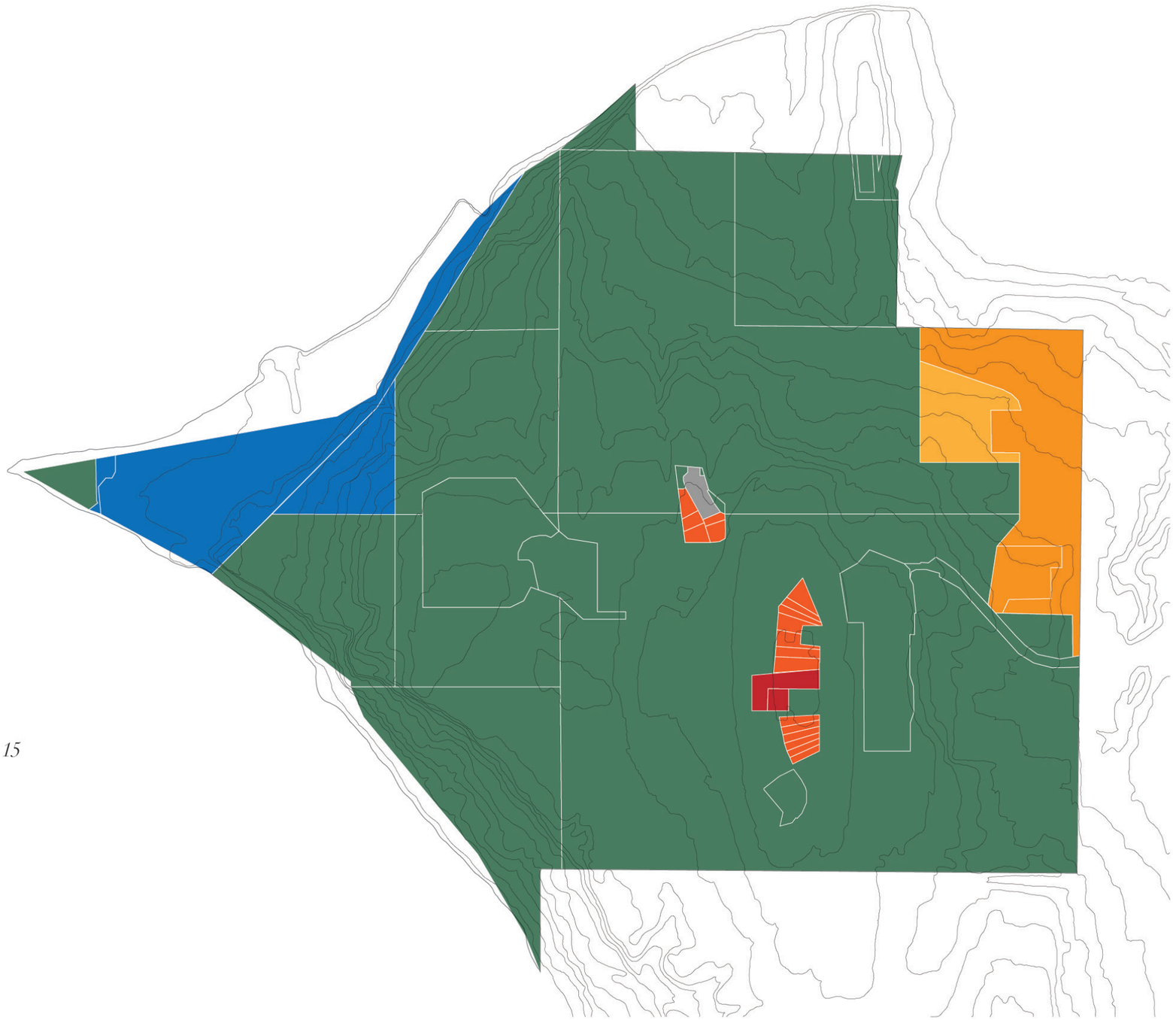


fig. 15 park parcels plan

PUBLIC + PRIVATE OWNERSHIP

The multitude of parcels dividing up the park has led to both public and private areas within park boundaries. Any parcel not owned by the Department of Parks and Recreation is restricted access. The most noticeable restricted areas include the former officer housing, now private residences at the center of the park and the West Point Wastewater Treatment Facility on the edge of the peninsula.

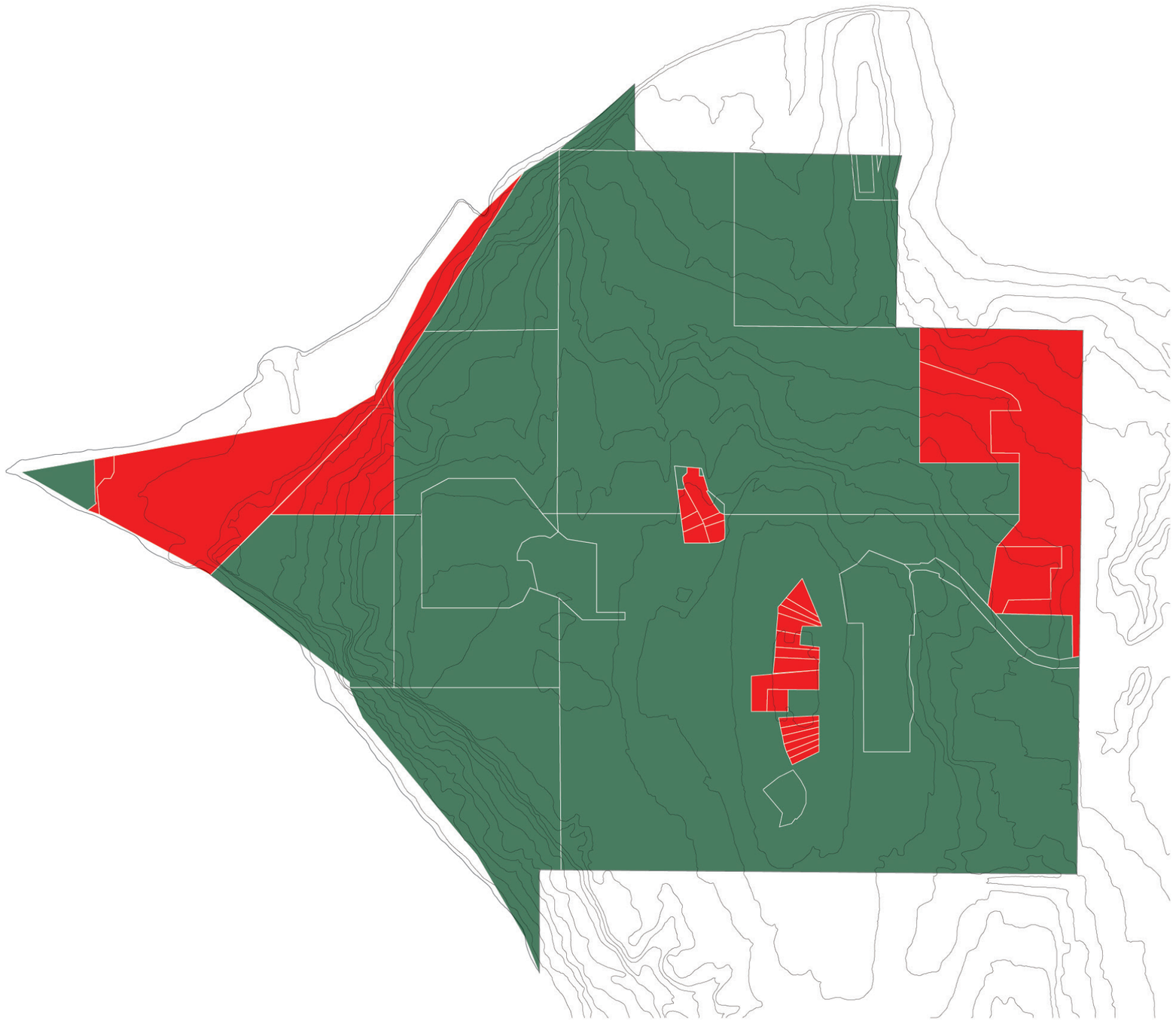


fig. 16 public and private plan

CIRCULATION

In order to reduce the effects of heavy traffic and motorized vehicles within this site, Dan Kiley implemented certain regulations in his Masterplan, which promote only travelling by foot and soft recreation within the open space park. As a result, there are over nine miles of footpaths throughout the site.



trail

trail loop

sidewalk

paved road (closed to motor vehicles)

public access roads

private

fig. 17 circulation plan

INFRASTRUCTURE

Within the park borders lies Seattle owned park land, the Fort Lawton Historic District, privately owned military housing, an active Radar Tower, a cemetery, and a Lighthouse. The Municipality of Metropolitan Seattle (Metro) Sewerage Facility resides within 32 acres along the northwestern edge of Magnolia Bluff, encircled by park land. The Daybreak Star Indian Cultural Center occupies 17 acres on the northern side of the park. Park facilities include an Environmental Learning Center, bathrooms, a north and south parking lot, children's playground, basketball, tennis, and volleyball courts. All modern amenities such as the Environmental Learning Center, cemetery, basketball courts, and Daybreak Cultural Center are located on the periphery of the park. Their locations were a conscious decision to put on outskirts, not in the middle. Keeping amenities towards the outside preserves as much land as possible, leaving the center to remain whole and intact.



fig. 18 infrastructure plan

TOPOGRAPHY

The park terrain is incredibly diverse. Steep 200' cliffs define the northwestern and southwestern sides of the park. The highest point in the park sits at 370' above sea level and provides encompassing views of the Sound and mountain ranges, including the Cascades and Olympics. The waning tides reveal sandy beaches at the base of the cliffs. Extreme low tides expose hundreds of feet of sandy shores and tide pools rich with wildlife. This varying topography and the different man-made interventions within the park has led to nine different habitats in the park: coastal, intertidal zone, beach, wetlands, freshwater ponds, meadow, Gary oak prairie, and forest.



fig. 19 topography plan, 2ft contours

FLORA AND FAUNA | ECOLOGICAL SYSTEMS

Though expansive and wild as compared to most parks, today it is an entirely reconstructed landscape, much different from the forest it once was. It is not a pristine, remote, rural setting, but rather a large park dedicated as open space for the public, within the limits of a rapidly growing city. Though once within park limits, the city seems to fade away within the expanses of meadows and forest, except for the occasional glimpse of the skyline and neighboring residences between the trees or at the shorelines edge. Forest habitat, largely from reforestation and replanting efforts, now covers much of Discovery Park. There are also several large open areas covered with low brush, wild grasses, and groomed lawns.

The earliest plant life on site was found through archeological digs performed as part of the initial steps of the wastewater treatment center installation. The results showed an abundance of woody tree fossils including Douglas fir, western red cedar, red alder, and western hemlock. Other plants include hazelnut, bitter cherry, and mock orange. All of these species found in the archaeological digs still grow in the park today. The presence of Western Hemlock and Western Red Cedar were the key indicators that the area was beginning to take on the characteristics of an older growth forest, as those are typical climax forest species.[5]



coastal | intertidal | beach | bluff | wetland | pond | meadow | gary oak prairie | forest

fig. 20 habitat strips

When the area was transformed into a military base, much of the land was cleared and native species removed. Only ornamental shade trees remained. In the 1970's, maple and alder trees, and non-native invasive plants moved into much of the areas disturbed by military occupation. Deciduous trees now dominate the park, unlike the large conifers of before. What was once a predominantly tall, green forest year-round has turned into a landscape of continuously changing color and form.

Invasive species, such as blackberry bushes and Scot's broom have prompted many volunteer efforts over the last few decades. To counteract the non-native species and stabilize different habitats within the park, many native species have been reintroduced to the park after their removal when the Army occupied the site. These efforts total over fifty different projects and have seen the reappearance of some long unseen animals to the park.

Numerous plant and animal species have been identified within Discovery Park. Seventy-four vertebrate species are active breeders within the park and 12 others have been sighted in the park.[6] Park lands are home to various amphibians, reptiles, and mammals like rabbits, squirrels, mice and voles, raccoons, weasels, and mountain beavers. Marine mammals have been spotted from the park such as endangered orca whales. The park is now widely known for its bird population. It attracts more than 270 species like barn owls, sparrows, and kingfishers. The peninsular location attracts many migratory birds. The bluffs prove to be an advantageous location for birds of prey. The diversity of birds is because of the variety of natural conditions the site offers, such as the saltwater beaches, wetlands, forest, and meadow.

The greatest threat to the wildlife is the loss of their habitat. Any suitable habitat for native animals is limited to the confines of the park, which is under constant pressures of parceling and development. The growing development that encompassing the park has brought more houses, streets, and traffic, and the loss of most natural habitats.

A WALK IN THE PARK

A typical weekend visitor to the park is likely visiting to walk the loop trail or head down to the beach. Any path will lead to dramatic views and through drastic changes in topography. The trip is enhanced by the varying habitats, wildlife, and unique features encountered along the way. However, without a knowledgeable guide, many features will go unnoticed such as the five remaining dogwood trees, the migrating varied thrush, the nesting Savannah Sparrow, and the lone deer in the newly planted Gary Oak Prairie.

DISCOVERY PARK HABITATS

A variety of different habitats are laid across the park. Forest wraps most of the perimeter and steep bluffs. Meadow and new Gary Oak Prairie habitat lay across the center. A series of freshwater ponds rest along the north. Wetland areas are scattered throughout the park, with many ravines and seeps following the contours of the bluff, pooling at the base.

coastal

intertidal zone

beach

bluff

wetlands

fresh water ponds

meadow

gary oak prairie

forest

fig. 21 Discovery Park habitats

habitat: OCEAN

This habitat stretches from the lowest point of the tide to the continental shelf. The convergence of wind and waves creates a confluence of biodiversity. The health of this habitat is very important as it's health has a ripple effect on adjacent habitats like the beach and intertidal zones.

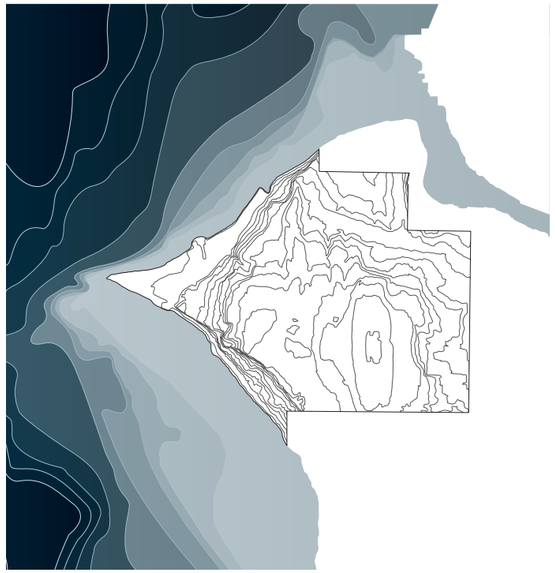




fig. 22 ocean plan
fig. 23 ocean collage

habitat: INTERTIDAL ZONE

Close to shore, this habitat lies between the high and low tide. It is constantly being covered and exposed by the changing tide. It can be submerged almost year-round, or uncovered daily. A large array of wildlife can be found here, especially in the lush eel grass beds.





fig. 24 intertidal plan
fig. 25 intertidal collage

habitat: BEACH

The north and south beaches have very conditions. Waves primarily arrive from the north east, but as they turn the corner of the peninsula, the southern shoreline receives a greater wave energy, causing an extensively longer and shallow beach.

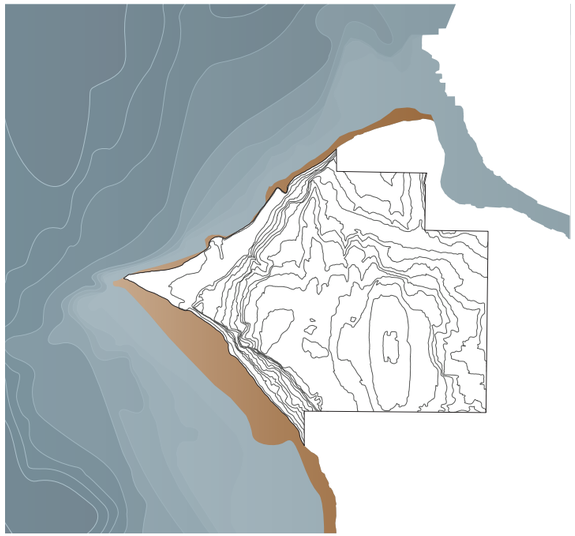




fig. 26 beach plan
fig. 27 beach collage

habitat: BLUFF

Steep 300' bluffs surround the western side of the park. The bluff is eroding into the ocean at about 20' per decade. Tree roots and dense bushes hold the bluff together creating homes for many cliffside nesting birds.





fig. 28 bluff plan
fig. 29 bluff collage

habitat: WETLANDS

Many wetland areas are scattered throughout the park in depressed upland areas and in transitional areas along the bluff as water flows downhill. The water seeps towards pools at the base of the bluffs before it soaks into the ground and out towards the ocean.

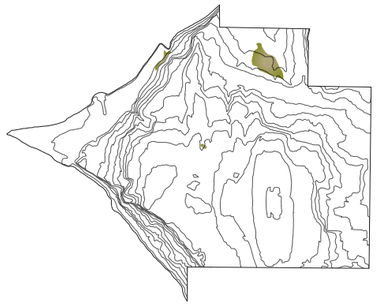




fig. 30 wetland plan
fig. 31 wetland collage

habitat: FRESHWATER POND

Different from wetlands because they retain water year-round, three freshwater ponds are located along the Wolf Tree Nature Trail. They appear surprisingly bright green with vibrant vegetation surrounded by tall birch trees.

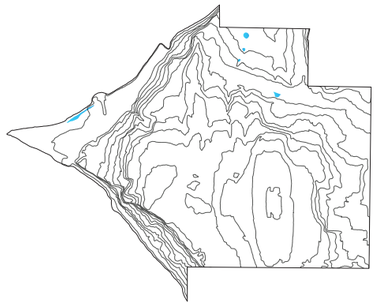




fig. 32 pond plan
fig. 33 pond collage

habitat: MEADOW

The main meadow area is located at the top of the bluff with smaller grassy areas spread throughout the park. It is a very open area made up of 3' tall grass and thicketS.

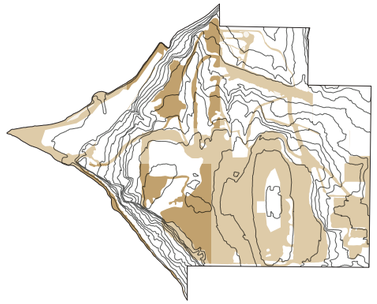




fig. 34 meadow plan
fig. 35 meadow collage

habitat: GARY OAK PRAIRE (rare)

Newly introduced habitat to the park, Gary Oak Prairie is highly endangered and only found in a few spots long the Puget Sound. A fully mature habitat consists of different grasses, flowering vegetation, and large Gary Oaks.





fig. 36 Gary oak prairie plan
fig. 37 Gary oak prairie collage

habitat: FOREST

Forest areas surround the perimeter of the park, acting as a buffer between the park interior and the neighboring residential development. It used to be full of coniferous trees, but is not mostly deciduous, filling the park with vibrant colors and creating dramatic seasonal changes.

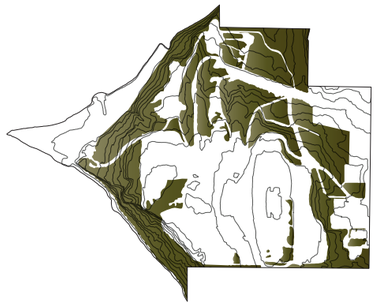


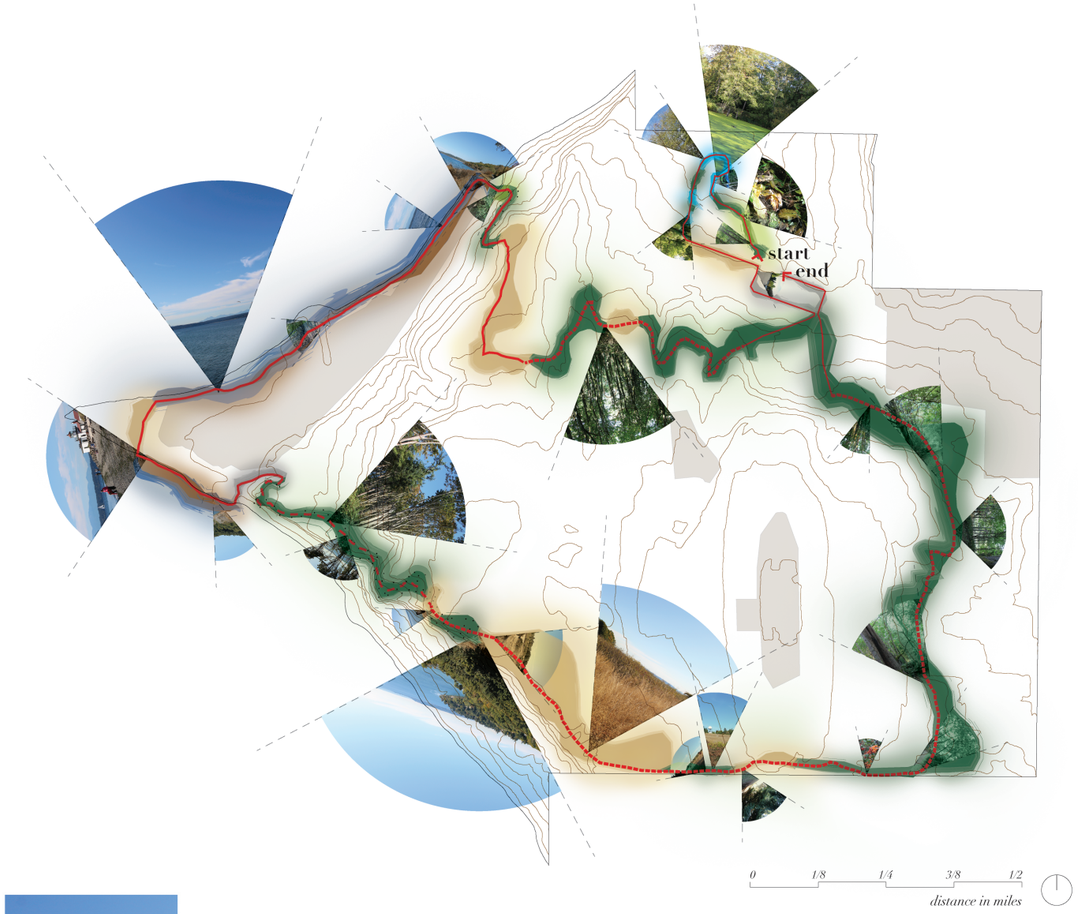


fig. 38 forest plan
fig. 39 forest collage

A WALK IN THE PARK

The classic weekend visitor to the park will experience many different habitats that exist in few other places in the greater Seattle area. A trail starting from the north parking lot and continuing through some of the most commonly used trails reveals the diverse landscape. This graphic combines the four different trails into one continuous path and expresses the qualitative experience of the visitor and the views they have during the different habitats they walk through. The topography of the path is expressed in section with photographic strips expressing how expansive or enclosed the space feels.





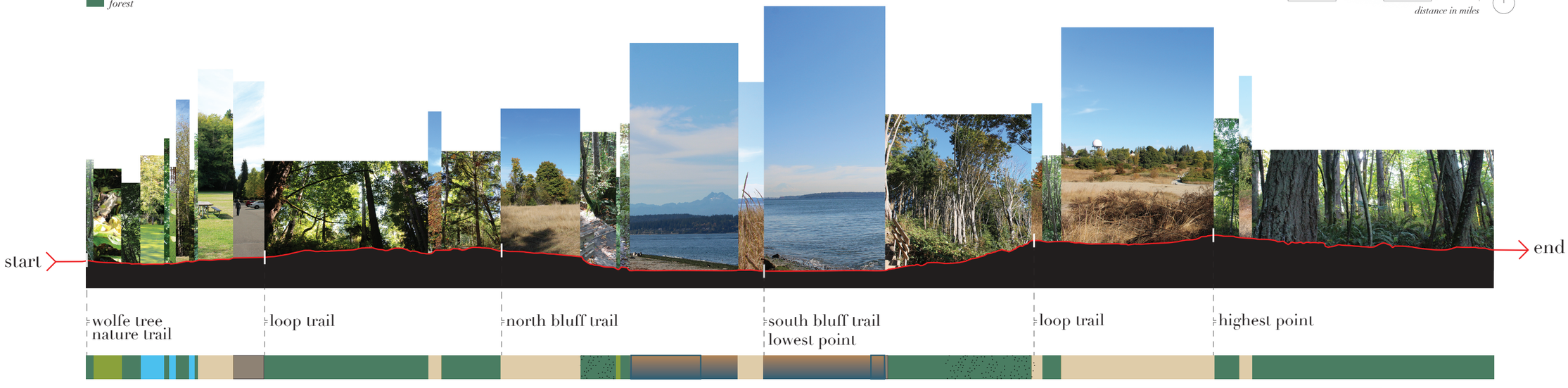


fig. 40 a walk in the park







FIVE

design proposal

Many questions were asked throughout the design process. What is the role of architecture in the landscape? Will the presence or creation of human interventions in the park bring more people and turn a recovering landscape into one of trampled ferns and a scarcity of animal life? Will the interventions destroy what they seek to preserve? How can we create interactive points which will enhance knowledge about the park with minimal impact on the landscape? What does minimal impact even mean? What is the long-term purpose of preserving different habitats in Seattle? How can architecture allow people to learn and care more about the surrounding landscape?

Trying to answer these initial questions guided my design approach and resulted in a final design direction: to create a loosely structured visitor experience that will guide visitors through certain areas of the park, while providing greater protection to other areas of habitat to promote their preservation.

The design proposal focuses on three main areas: the meadow and bluff, the forest and wetlands, and the beach and ocean. Each has a different purpose and engages landscape in a different, yet highly specific way. By leveraging existing natural features in the park as the basis for each intervention, it is hoped that the designs will better preserve, protect, and enhance the scenic natural beauty and wilderness character of each habitat.

The designs are intentionally located on existing pathways where wildlife has already become accustomed to human presence. The interventions can be experienced in one continuous route, as if a choreographed sequence, or discovered individually as people move throughout the park. In either case their intention is to keep visitors on the designated pathways and allow the wildlife and their habitats around them to flourish.

fig. 41 habitats of focus

BEACH | OCEAN
the barnacles

FOREST | WETLANDS
the crown
the stream crossing
the wastewater overlook

BLUFF | MEADOW
the framed views
the screens
the crows nest

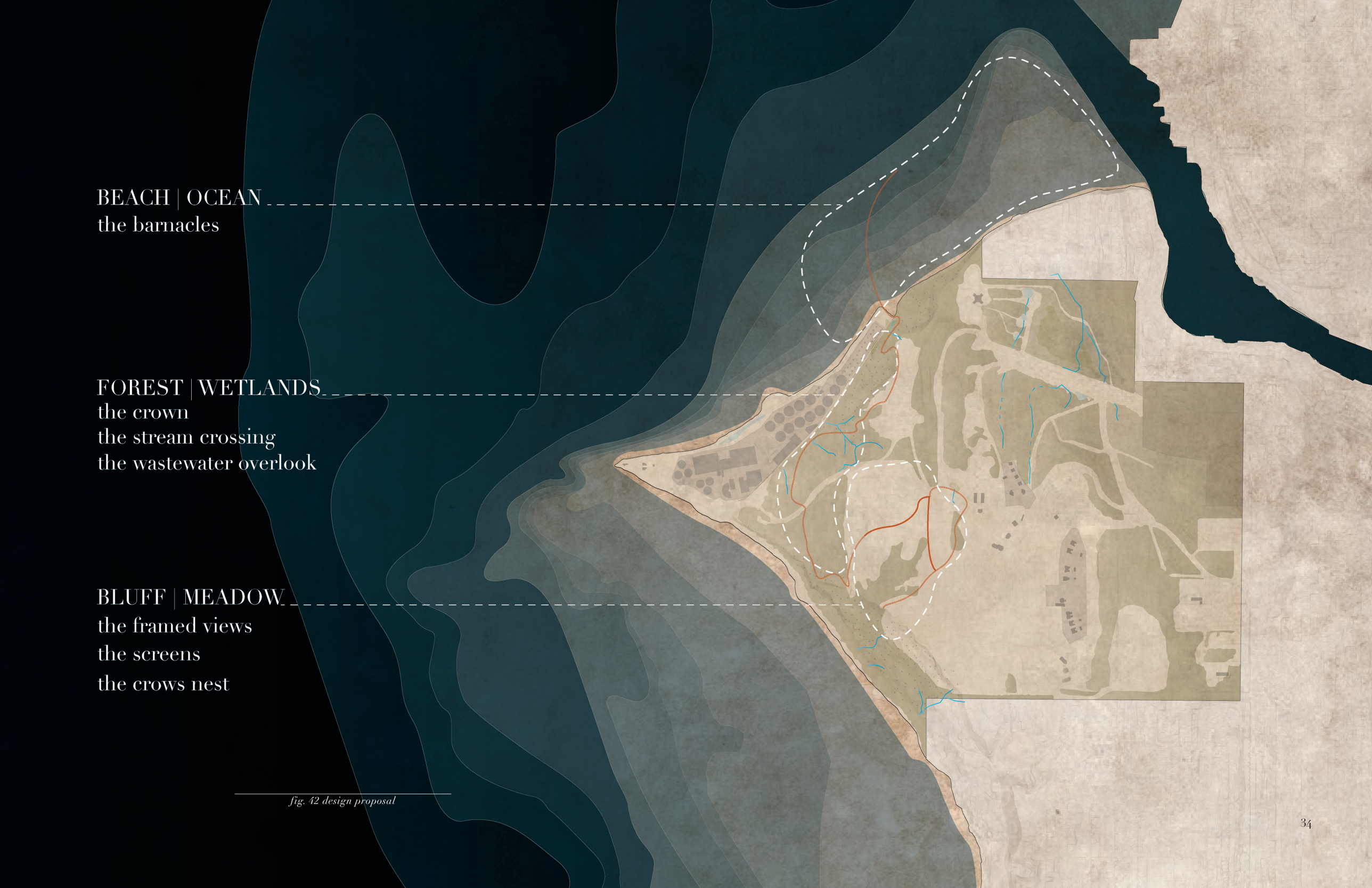


fig. 42 design proposal



MEADOW | BLUFF

How can we preserve the meadow and bluff habitats while making them more accessible to people at the same time?

The meadow and bluff designs focus on the human scale compared to the surrounding wildlife and landscape. Different design actions such as confine, shield, and expose engage the visitor and landscape relationship in different ways. There are three main design proposals for the meadow and bluff area: The Framed Views along a low boardwalk, the Screens, and the Crows Nest.

Gary Oak Prairie | Reforestation of Capehart + Prairie Passage

Seven years ago, Discovery Park added 23 more acres to the heart of the park, land which was previously paved with 66 military houses belonging to members of the Everett military base. It remained navy housing until 2006 so the soil is very compact making prairie habitat one of the few habitats that will grow in this area. An extensive reforestation effort has taken place to bring native species back to the park and introduce critically endangered Gary Oak Prairie habitat. Elements of this project include trail siting, trail fencing, signage, utility pole removal, signage with educational information, and planting over 50,000 plants including deciduous and coniferous trees, shrubs, and ground cover. Future efforts will be focused on watering, weeding out invasive species, and thinning out deciduous trees to allow the conifers a chance to grow.

Just five years in the making, Capehart is already becoming the home of many birds, butterflies, and bee species. David Hutchinson, naturalist and volunteer, had this to say about the reforestation, "We felt it would be good to start a new coniferous old-growth native forest, some place where a Marbled Murrelet would be happy to nest in about 500 years."[1]

The parcel is currently fenced off to allow the flora and fauna a chance to establish themselves. However, the fencing will likely be removed in the next couple of years because of the cost. Two trails have been carved through this area as a compromise to try and keep people away from the new plants when the fences come down

Instead of a path, where one wrong step can lead to the survival of new plants, a low elevated boardwalk would give the plants the best chances of taking root in this difficult soil. The boardwalk includes a series of framed views directing gazes towards different groupings of willow, conifers, and Gary oak prairie habitat. Each framed view is approached head-on and changes material from wood slats to weathered steel. When approaching, the view is framed, yet once standing in the frame, the projected view falls a full 180 degrees. The final viewing frame looks out across the highly endangered Gary oak prairie habitat and on a clear day, the elevation is high enough to see out to the Puget Sound.

fig. 43 meadow | bluff

bald eagle
pigeon guillemot
rough-winged swallow
savannah sparrow
rabbit
grasshopper
coast mole
red-winged blackbird
butterfly
black-tailed deer
california quail
honey bee
ring-necked pheasant
cooper's hawk
deer mouse

bluff
sand dunes
forest edge
meadow
wetland
gary oak prairie
meadow

section cut along bird alley and prairie passage paths

the prairie passage
the framed view
the screen
the crows nest

0 18 14
distance in miles

fig. 44 animals of the meadow + bluff
fig. 45 aerial view and section of meadow + bluff
attracting over 270 bird species, the park is an important stop along the Pacific flyway for many migrating birds



The boardwalk falls 18" above the ground and rises slightly at each of the viewing areas. The height allows small creatures to pass under the boardwalk unobstructed, as not to divide the area. The wood planks are spaced 1" apart to allow sunlight to cascade through each gap and encourage daring pieces of grass to reach up through the slits. If allowed to grow, California Quail, Ring-necked Pheasants, and even larger animals can be expected to return to the park, once there is enough vegetation and coverage for the babies to survive the rainy Washington winters.

Meadow | Bird Alley

Discovery Park is widely known for the 270 bird species it attracts. It is an important part of the Pacific flyway and many birders visit the path known as 'Bird Alley' which ends at a prominent viewing point at the sand dunes on top of the bluff.

When visiting the park, birds are often heard, but take a lot more time and dedication to be seen. The design proposal along bird alley is all about interacting with the wildlife through sound. By scanning a QR code on the side of a weathered steel screen, visitors are instantly connected and engaged with the landscape through their hand-held device. QR codes located in other areas in the park creates a network informational nodes. GPS then allows site specific information to pop up on the Discovery Park App as visitors move throughout the park. The App contains information from different data collection devices, unique facts, and what to be on the lookout for as people move along existing trails.

At the specific screens along Bird Alley, the concave shape of the screen projects birdsong as a way to interact and engage with the wildlife. This creates sonic landmarks throughout the park as certain spots have moments of amplified sound.

fig. 46 prairie passage elevation

Visitors first scan the code, lay their phone on the horizontal platform, and let the birdsong play. The screen shields visitors from the rain and camouflages viewers from the nearby wildlife, with small openings at all heights for people of all ages and larger openings for binoculars and cameras. The pattern of perforations is pulled from the natural patterns created by surrounding vegetation. A lip along the top edge of the screen allows dirt and seeds to accumulate, softening both the sound of the rain and appearance of the steel against the natural landscape as plants begin to grow along the top and hang over the edge.

Bluff | Crows Nest

The bluff's sole purpose of existence is to erode and be swept away by the rhythmic waves at its base. It is not bad, it is natural. However, one of the most prominent viewpoints within the park is along the bluff where sand dunes have accumulated along the southern edge. Many people stop here to take in the view. As they try to get to the best viewing point, they inevitably erode the hillside, causing the bluff to slump in this area at a dramatic rate compared to the rest of the cliffside.

The Crows Nest reconciles the necessity to preserve the bluff and simultaneously allow it to be occupied. It aims to allow only natural erosion and preserve the bluff habitat, which is home to many cliffside nesting birds, and bring people where they want to be at this great viewpoint. The walkway of the Crows Nest projects horizontally from the datum of the meadow, keeping people off the eroding bluff yet out over the prominent view point above the tree canopy.







fig. 47 the framed view
fig. 48 prairie passage
fig. 49 prairie passage + 100 years

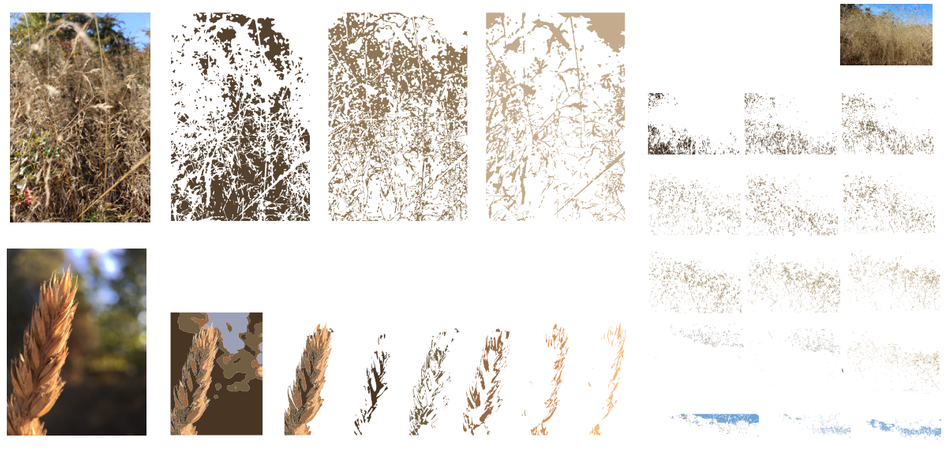


fig. 50 screen pattern exploration

Wooden planks spaced 1" apart reveals glimpses of the plunging cliffside below. The design of the circular platform allows visitors to view out atop the canopy towards the sound or look back at the eroding bluff. It is supported by large weathered steel columns, which rest on a concrete foundation. Over time the bluff will continue to naturally erode. A series of prefabricated steps can be laid onto the existing Crows Nest structure to account for the receding edge. Dates stamped into the wooden planks give visitors an idea of just how fast erosion is occurring. For instance, in 2055 visitors will see planks with the year imprinted from each interval of installation 2017, 2028, 2041, and 2053, demonstrating the horizontal rate of erosion. The rate of vertical erosion can be measured by the appearance of exposed concrete piles below. Prefabricated parts are stored at the visitor's center for future use.

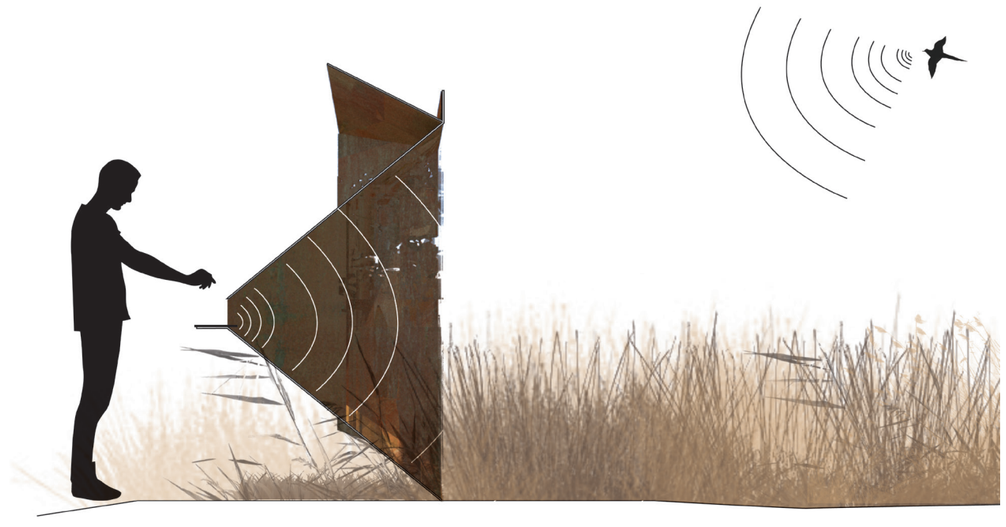


fig. 51 SOUNDSCAPE diagram



fig. 52 the screen axons



fig. 53 the screen



fig. 54 the crows nest section and diagram



FOREST | WETLANDS

How can we preserve the forest and wetland habitats, while making them more accessible to people at the same time?

The forest and wetland designs focus on bringing visitors into the height of the canopy. Many features in the tree canopy go unnoticed as it is often too distant to see from the ground. Occupying the canopy reveals the wonders of the forest and makes ravines and seeps more accessible to cross. There are three main features in the forest and wetland area: the Crown, the Stream Crossing, and the Wastewater Overlook.

Forest | The Crown

The Crown is circular in form and surrounds a prominent Red-Leaf Maple tree along the Hidden Valley Trail. A walkway constructed of wooden panels with 1" gaps lead toward a 360-degree view around the crown of the Maple tree. The series of structural steel columns relates to the structure of the Crows Nest, but at a smaller scale. Three cylindrical columns angle to meet a singular point at the base, resembling a tree-like structure.

Forest | The Stream Crossing

The Stream Crossing projects across the wettest area with the highest frequency of seeps and ravines, often deep with mud during the rainier seasons. The structure is similar to the Crown, but rather than circular it form it unfolded into a straight path. The structure is made of similar columns grouped in a series of three which resemble the surrounding trees.

Forest | The Wastewater Overlook

The Wastewater Overlook includes four round platforms which rest on the ground and overlook the West Point Treatment plant which treats all wastewater in Seattle. It treats as much as 440 million gallons on a rainy day, making it the largest wet weather treatment plant on the West Coast. The round shape of the platforms is inspired by the cylindrical treatment plant infrastructure they overlook. Weathered steel panels on each platform provides information about the different stages in treating wastewater. Each of the four platforms focuses on one of the four major processes: screening room, primary tanks, secondary treatment (biological process involving microorganisms), then disinfected and dechlorinated before it is sent out of an outfall pipe in Puget Sound. What is leftover is dried and sent to Eastern Washington by truck to be used as fertilizer for farm fields.

fig. 55 forest | wetlands

fig. 56 the crown

path of focus

sanitation

oxygen generation

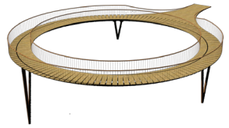
secondary clarifiers

primary treatment

solid treatment

digesters

outfall pipe



the crown



the stream crossing



the wastewater overlook

reclaimed water

secondary clarifiers (water visible)

buildings

streams

wetlands

fresh water seeps and ponds

Utah wetlands

0 1/8 1/4 3/8 1/2

distance in miles

fig. 57 wastewater reclamation plan





fig. 58 dried Utah wetlands, summer 2017
fig. 59 animals of the forest + wetlands

Wetland | Wastewater Reclamation

The design also proposes to engage the wastewater treatment center by reclaiming treated water and redirecting it to dried wetland areas as needed. During the summer of 2017, a walk through the park with 4th generation Magnolia resident towards the Utah wetlands revealed a completely dried basin where the wetland once was. This was the first time the Magnolia resident, Garrett Esperum, has ever seen the wetland area completely dry in his entire life, and he has been visiting the park since he was born. Redirecting treated water to wetlands as needed will sustain these unique wetland areas and the corresponding wildlife for generations to come.

fig. 60 the stream crossing



BEACH | OCEAN

How can we preserve the beach and ocean habitats while making them more accessible at the same time?

The idea behind these marine structures is to occupy and understand the intertidal zone, regardless of if the tide is in or out. The intertidal zone is easy to miss, especially if unaware of the lush eel grass beds hidden just inches below the surface.

Beach and Ocean | Barnacles

The form of the Barnacles is inspired by a seashell and includes a steel structure, platform for docking kayaks and standup paddleboards, steps which lead to an underwater viewing area, a mushroom anchor, a transmitter which emits ocean sounds like whale calls from receivers out in the Puget Sound, and three weighted points of contact for stabilization. The buoyancy created by the saltwater makes installation as simple as lowering them into the water and deploying the anchor. When the tide is up, the barnacles float. As the tide goes out, the barnacles rest on the sandy shore. Visitors can paddle to them when the tide is in, walk when the tide is out, or wade toward them and climb the ladder when the tide is somewhere in between. A small boathouse with public canoes near the entrance of the North Bluff trail allows visitors to reach any of the platforms at any given time. The shape of the Barnacles allow visitors to walk around the entire structure and underneath the wooden docking platform when it rests on the beach at low tide in order to see and experience the accumulation of organisms up-close.

The location of the three Barnacles was determined by the presence of several erratics along the north and south shorelines. As the largest structures on the beach, it was important that the scale and location of the Barnacles was complimentary to the existing erratics. Each Barnacle is located at a different distance away from shore meaning they will be exposed to different levels of water during every changing tide. The experience at each structure will be highly unique and different from the other two. Like man-made erratics, the varying water levels will attract and accrue different levels and densities of sea-life, a process known as biofouling. The Barnacles closer to shore will rest on the sand more often and have lower levels of accumulated sediment. The deeper Barnacles will often be experienced floating and accumulate large amounts of microorganisms, plants, and algae. The large viewing porthole on the Barnacles in deeper water will provide opportunities to see much larger marine animals like seals compared to crawlers like crabs and starfish visible at the Barnacles closer to shore. The farthest Barnacle from the Discovery Park shoreline is located closest to the Shilshole Bay Marina, a common launching point for kayakers and stand up paddle boarders. The Barnacles have regional implications. As part of a broader conversation of recreation, education, and accessibility. These Barnacles can be relocated to other locations along the West coast to give more people a new perspective of their marine environment and reflect on the status of the habitats surrounding them.

fig. 61 beach | ocean

fig. 62 the floating barnacle

intertidal zone

NW | SE section
north beach



0 1/8 1/4 3/8 1/2

distance in miles
height doubled for visual understanding

intertidal zone

720 ft *360* *240* *120* *60* *30* *15* *10* *5*

SW | NE section
south beach



0 1/8 1/4 3/8 1/2

distance in miles
height doubled for visual understanding

fig. 63 section comparison of north and south beach

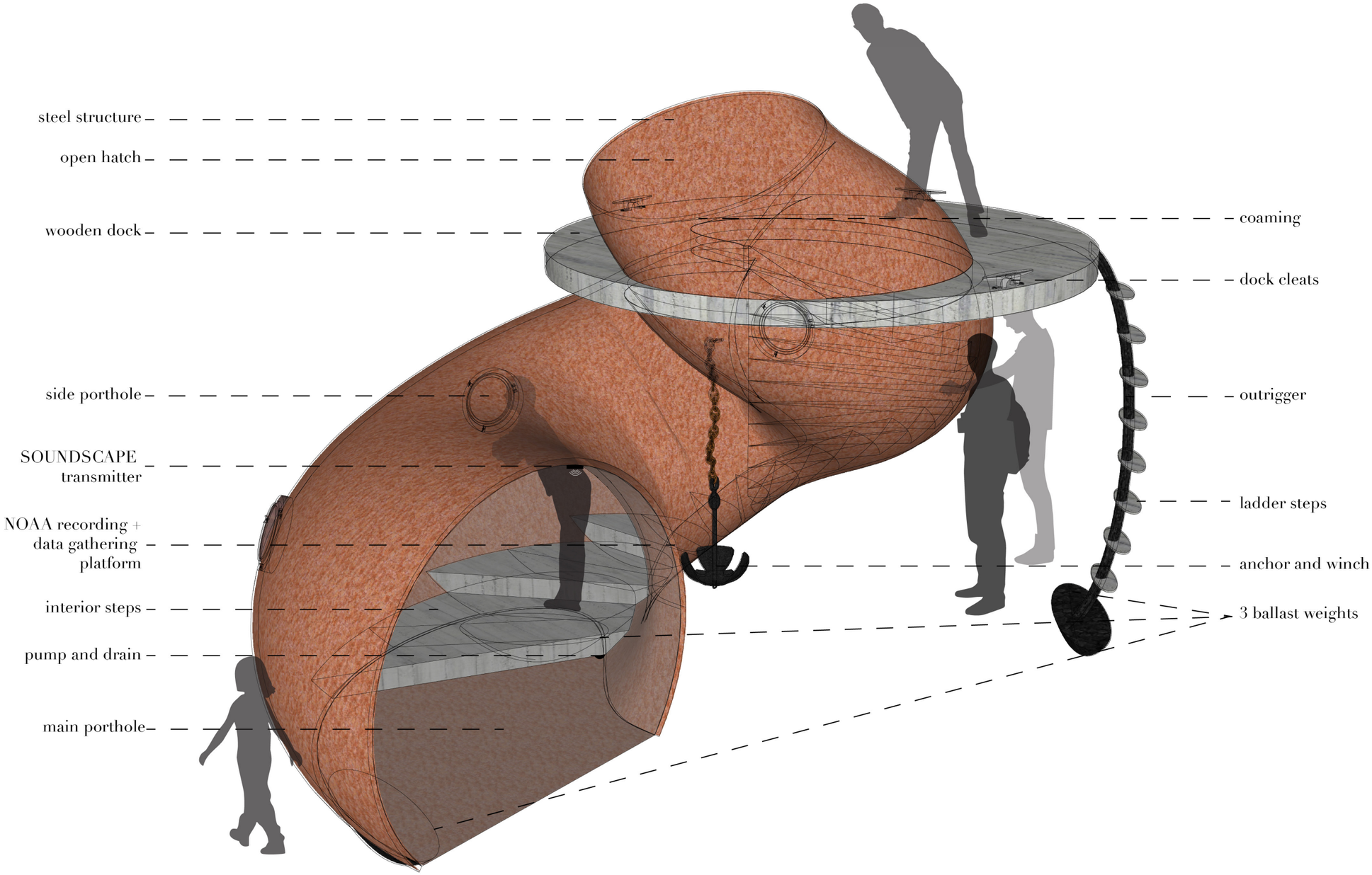
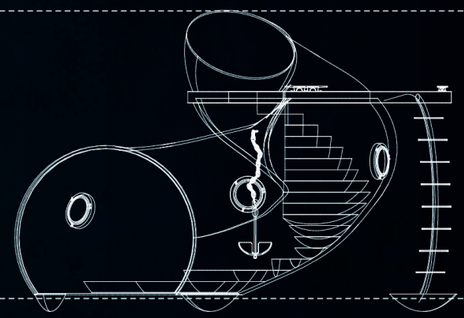


fig. 64 the barnacle diagram

15’4”

12’10”



0’

720 ft 360 240 120 60 30

0 1/8 1/4 3/8 1/2

distance in miles

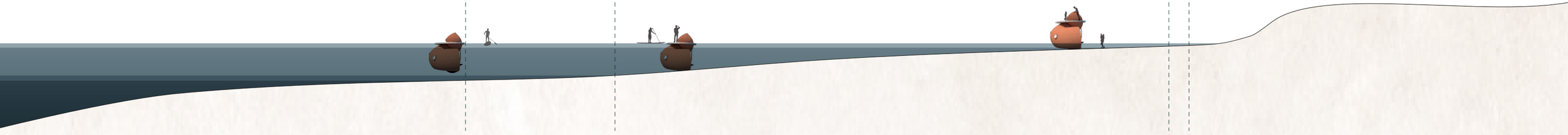
fig. 65 the barnacle and erratic locations + scale comparison

MLLW | 0

MLW | 2.83

MHW | 10.49

MHHW | 11.36



2
days | year

60
days | year

322
days | year



seal

sea otter

salmon

kelp

bottomfish

mussel

limpet

barnacle

gull

sea snail

sea star

crab

blue heron

moon snail

fig. 66 idealized shoreline section
fig. 67 animals of the intertidal zone

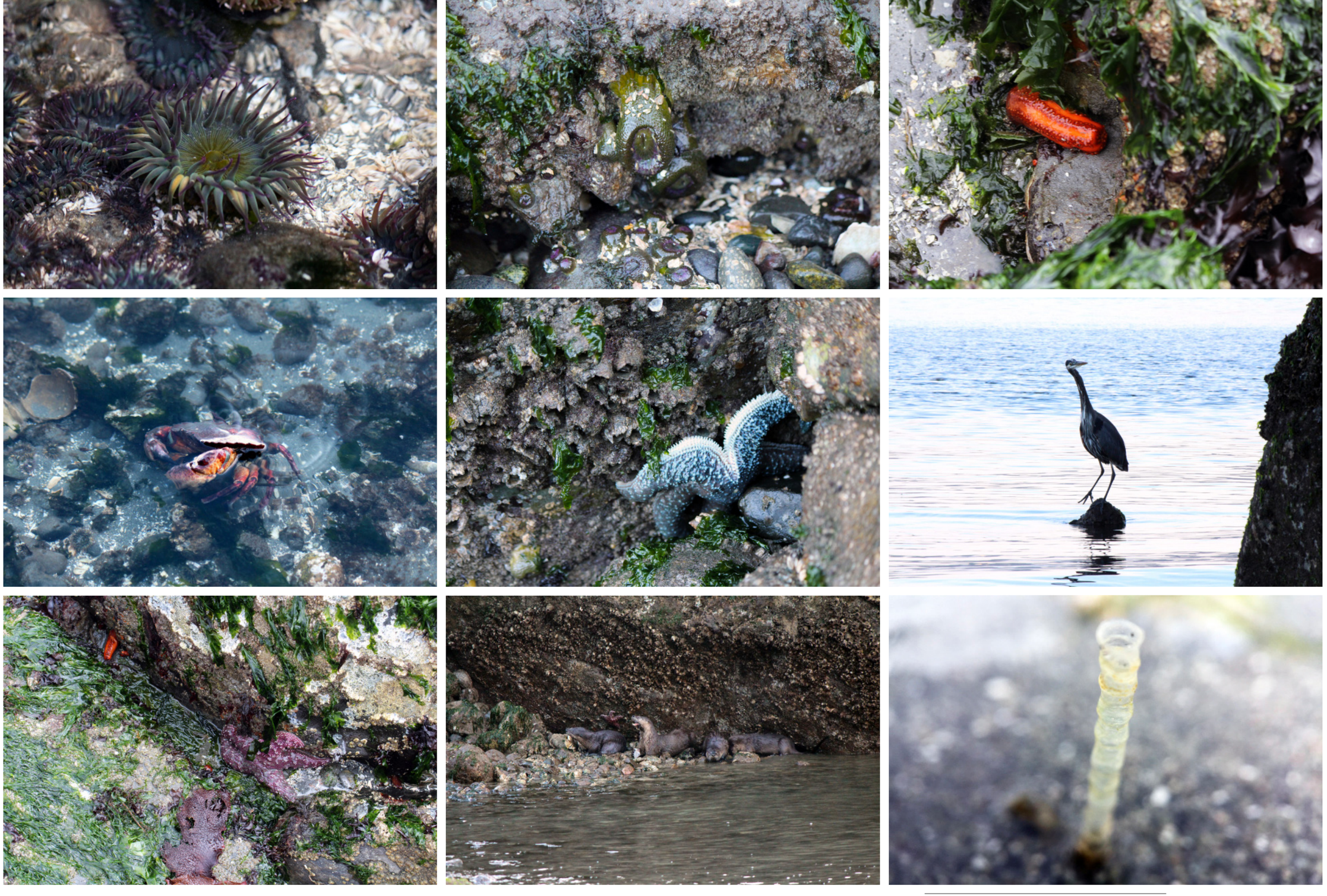
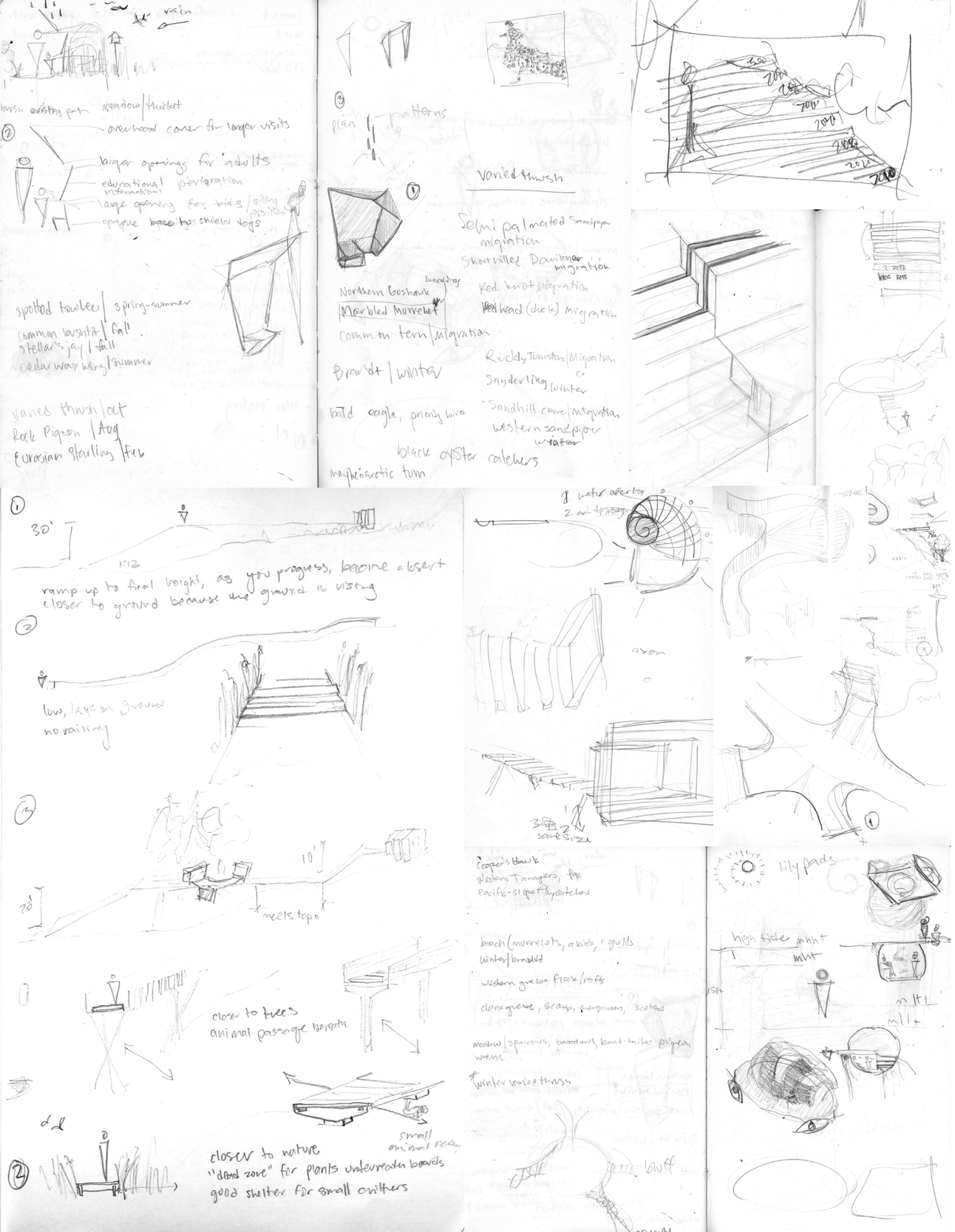


fig. 68 collection of marine animal photographs



fig. 69 the resting barnacle



SIX

conclusion

This thesis began with a love for the outdoors and deep appreciation for my military roots. As a Whidbey Island native, I watched eagles soar over the bluff in front of my house. I sat on my front porch with binoculars searching for orcas as they passed through the Strait of Juan de Fuca. I woke up to deer asleep in my front yard and fell asleep to the sound of frogs in the night.

Though my education is in architecture, a thesis about the landscape seemed like an obvious conclusion to it. I focused my attention on the largest local natural landscape, Discovery Park, which seemed at odds with itself as both a people's park and a critical part of the habitat corridor within Seattle. I felt that a balance needed to be struck in order to sustain the existence of the nine different habitats in the park for the enjoyment of future generations.

This thesis proposes a design approach which enhances existing park habitats with the addition of sensitive, site specific interventions. Each intervention guides visitors to specific areas along existing circulation routes where they are able to engage and understand the surrounding landscape and wildlife in a new way. By directing and composing a sequence of experiences which attract visitors, adjacent habitats remain protected and preserved. HUMANS + HABITAT is not a comprehensive solution, but rather an exploration which adds to a broader conversation about the relationship between protecting and providing access to recovering natural habitats like Discovery Park.

fig. 70 the process

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NOTES

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all graphics are created by the author and all images are taken by the author over numerous site visits, except the historical photographs on page 14

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Thank you for reading!