What can nature teach us? The adjustment of moving to California led me outside into the unfamiliar terrain; I acted as a naturalist, studying native and invasive species. I also wanted to discover whether or not nature could take away the selfishness that inherently comes with being human. My work explores the boundaries of the natural world and how being in a new environment can completely alter a one's state of mind in a positive way. Understanding the geological and environmental history of a special place provides insight into the foundation that all plants, animals, and humans are built from. I tapped into this state of connected history when I began my art-making process.

I studied seven unique plants in the Bay Area and made traditional products from them. First, I painted abstract botanical illustrations, and then created an item out of each plant. For example, Oak acorns were originally used by Native Americans in Napa to be eaten as a soup for breakfast. I harvested acorns, removed the tannins, ground the nuts, and cooked them into a soup. I repeated this experimental processes until I had a salve created from yarrow, a syrup from horehound, an infused oil from Eucalyptus, a tea from Manzanita, a medicinal oil from Bay Laurel, and a tea from Chicory. I then mounted the illustrations and the liquids onto branches to create a coherent installation.

The installation highlights the importance of plants and the environment itself. I created a display that shows the significance of the natural world—the connection between nature in its purest form and nature in its utilitarian form. The viewer may view the product and the plant as separate entities, but together they make up the history of the earth.

Bailey

“I only went out for a walk and finally concluded to stay out till sundown, for going out, I found, was really going in.” -John Muir, *The Unpublished Journals*

When I was a kid I pretended I was a wild thing, a scientist, an explorer. I ran around the “jungle” behind my home, looking through the humid, tropical town of West Palm Beach, Florida. I bounded up trees in my own secret playground. I built my shelter with palm fronds and decorated with pretty little hibiscus flowers, delicately plucked from the bush. I foraged for food and fought off mad creatures. I was a hunter, I was a warrior, and I watched enough survivor-type TV shows with my dad to believe that I was invincible. I threw coconuts onto the sidewalk and let them crack and bleed sweet milk into the dirt. I poked and prodded until they finally opened, letting me taste the fresh flesh contrasting to the dark hairy rind. When my mom called me in for dinner I grudgingly obeyed, walking into the house splattered with mud and sweat.

When I left Florida and came to California, the change of landscape was a big shock to my system in a very positive way. Every piece of the environment was fresh. The breezy tropical air I grew up with was now dry and cool in the morning. I did not have to worry about sharks and alligators but suddenly bears and snakes and cougars. I realized I wanted to learn about and explore every creek and corner of the environment I was in while I had the chance to live in it. Exploring this new amazing landscape gave me the sense of freedom and learning I felt as a kid. Immersing someone in nature and observing the natural world can help eliminate the idea of human superiority. Henry David Thoreau once wrote in his journal, “Shall I not have intelligence with the earth? Am I not partly leaves and vegetable mould myself?” Every creature shares the chemicals and cell structures. We are all made up of each other, from the beginning of the Universe and today. Behaving like a sponge willing to soak up information allows humans to focus on other species, not far apart from us, and become mindful in their actions and thoughts. What can nature teach us? I began to study the natural world looking for the answer.

Changing human selfishness can be achieved by observing the intelligence and evolution of other species. Other organisms are brilliant and unique and should be treated as such. They are continuing to evolve and find new ways to survive, and are very smart in the ways that they complete this evolution.

Michael Pollan states in the TED Talk: A Plant’s Eye View, “Looking at the world through another species’ point of view is a cure for the disease of human self-importance.” When a person decides to think about another creature in an intellectual way, they can understand the significant role that creature plays in the environment. This lets them see all creatures in a respectful way, learning about the creature’s intelligence that it has possessed since it evolved into that particular creature. In the book *Botany of Desire*, Pollan discusses the phenomenon of a bee extracting nectar from an apple blossom. The bee thinks it is choosing the apple blossom and it has a choice in which flowers it drinks from. But, the bee has no choice. The apple blossom has evolved over many years to appeal to the bee: using symmetry, scent, and color to attract it for pollination. Humans are bees when it comes to agriculture and choosing plants. The potato has evolved over many years to become attractive to humans. It has tricked us into planting it over and over for thousands of years and we still believe we are choosing to let the species continue to thrive. “Agriculture is not a human evolution, but a shared evolution,” Pollan says. This act of observation corrects our perception by giving us crucial information about the species. When we learn about the unique details that give the plant its intelligent traits, we can think about another creature that differs from us in a higher way.

Just because another species does not have a consciousness similar to ours does not mean it does not have intelligence and importance. Looking into a forest, I sense billions of years of evolution and growth in every single organism around me. The hundred-foot-tall oak beside me has a root system that reaches a hundred feet below my feet. It is the oldest tree in the forest. Its roots are covered in fungi and bacteria, giving it a complex and living brain. Pollan writes in his article, *The Intelligent Plant* about a study conducted by Suzanne Simard, a forest ecologist at the University of British Columbia. “They injected fir trees with radioactive carbon isotopes, then followed the spread of the isotopes through the forest community using a variety of sensing methods, including a Geiger counter. Within a few days, stores of radioactive carbon had been routed from tree to tree. Every tree in a plot thirty metres square was connected to the network; the oldest trees functioned as hubs, some with as many as forty-seven connections.” This amazing tree expands its connections across the entire forest, beneath the soil. Most people walk by and notice its large structure. This tree possibly fascinates some. But most people have no idea what genetic intellect went into creating this oak. Coevolution is the idea of every species evolving at once. In coevolution, the two parties react to each other to advance their individual interests. They then eventually trade “favors.” The bee receives food, and the apple genes are transported. Humans receive food, and the potato genes are transported. One species has evolved to be conscious of what it desires, but this fact does not change the other species intellect. Humans can comprehend why we wish to grow certain crops. The crops themselves continue to thrive, and even though they have no official “brain,” they still are smart because they made us plant them. I feel these plants are acceptable to be called smart not only due to their extreme genetic evolutionary capabilities, but also because of the traits that allow them to be special and unique. “Plants are able to sense and optimally respond to so many environmental variables—light, water, gravity, temperature, soil structure, nutrients, toxins, microbes, herbivores, chemical signals from other plants—that there may exist some brain-like information-processing system to integrate the data and coordinate a plant’s behavioral response.” Pollan states in “The Intelligent Plant.” This description of how plants thrive in their environment should be recognized by everyone as proof of the awe-inspiring ways the creatures we step on daily live their incredible lives. At first, I went into nature to observe specific plants. But, as evidenced by the mother tree being connected to the whole forest, I soon learned I could not study one plant without exploring the environment as a whole.

How can knowledge be gained through exploration? Exploration is the tool for discovering a new place and all of the amazing flora and fauna that thrive in an environment. John Muir, an explorer and botanist who explored much of Western America had similar ideas to Michael Pollan, such as the idea of nature existing as a connected force instead of individual species. Muir once wrote, “There is not a "fragment" in all nature, for every relative fragment of one thing is a full harmonious unit in itself.” While I believe, if they lived in the same century, he and Pollan would have agreed with each other’s ways of learning from nature, Muir also used his exploration as research and utilized nature as a learning tool. Muir once wrote, “the Creator has made Homo Sapiens. From the same material, he has made every other creature, however noxious and insignificant to us. They are our earth-born companions and our fellow mortals.” His ideas on walking and exploring gave hope for many other naturalists after him, and he helped form the Sierra Club, and organization that formed many of the U.S.’s National Parks.

Muir’s ideas encouraged to create my own observations about a new environment. The change in scenery to California gave me a new sense of place that I longed to discover more deeply. I started to walk and form my own thoughts about nature and what I can learn from it.

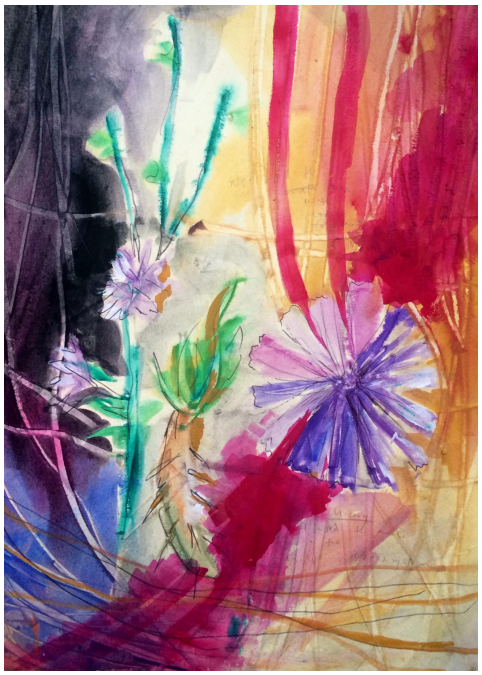
Exploration is the best method for learning and gaining information about a particular place. This is because I can roam free, gathering small details about the plants and the rock formations I find intriguing. In the classroom, teachers force me to read from textbooks about creatures in nature I will never be allowed to see in the wild, and never be able to grasp. But, in the natural world, I feel, I hold, I touch, I smell, and I learn. As I hiked in an unfamiliar environment, I followed Muir and the other great explorers and researched as I went. I found plants that were interesting to me in some way, and drew them in my journal. I then studied their history and other intriguing facts about the plant. First, I learned about the Bay Laurel Tree. It is an evergreen native to California, and thriving well. Upon researching further, I discovered that made into oil, it is used to calm muscle pains when rubbed onto the skin. This gave me insight about the unique uses for native plants, and inspired me to research more interesting plants. I started to talk to experts about native and non-native plants that are used in a fascinating way. I went to a class at the Carolyn Parr Nature Center taught by Charlie Toledo, where I learned to make traditional mush from acorns like the Wappo Tribe native to Napa Valley. I reflected on each of these experiences and I modeled my journaling and reflections after the journals of real naturalists. Being an explorer and acting as one gave me more insights than I would have ever expected. I became more present as I walked. Noticing every detail of my environment distracted me from thinking about myself. I thought of Muir and Pollan and how being in nature away from egotistical human desires counteracts selfishness. The answer to the question "How can knowledge be gained from exploration?" I found is about being mindful while walking and letting the knowledge come through. Gaining knowledge does not always have to be a conscious effort. Plants learn new information without having a specific consciousness, and humans can learn this way too. When distraction from human thoughts ceases to be present, pure education occurs, and it is one that cannot simply be taught by another person. The act of being surrounded by a new environment and not thinking about human desires lets this process happen. Learning can only be done when distraction is gone. When I was no longer dwelling on my own needs, I was freed through the process of learning.

How does nature give clues about its history? The natural world communicates through clues about its past. In the book *Forest Forensics: A Field Guide to Reading the Forested Landscape*, Tom Wessels describes each type of forest and how it came to be the way it is. An agriculturally derived forest is one that has been previously used for growing crops and raising livestock. Pillows and cradles are formations that occur when a tree falls or is blown down. The roots leave behind a hole, known as a cradle. The dirt and stones that clung to the roots remain a pile, known as the pillow. When the tree decomposes over many years, the contours in the Earth remain. Pillows and cradles, stone walls and piles, troughs and terraces produced by annual plowing, and wire fencing is evident in an agriculturally derived forest. A forest that is very old and has wind damage shows signs of coarse bark and deformed canopies, live-snapped trees, wind tipped trees, and the orientation of downed trees or pillows and cradles. Basically, the wind blows and shifts many of the trees in this type of forest. A forest that has logging and fire damage was used for lumber in the past and suffers from forest fires. This type of forest has stumps without an associated downed trunk, multiple-trunked trees that retain their original dead trunk, and the presence of charcoal. Each scar or stone or log tells a story about the forest's rich history and the life cycle that goes behind it.

Researching again as an explorer, I used the information from the book to discover the history of the environment I explored. The landscape I first explored was in Pinnacles National Park. The forest had no signs of agriculture, I concluded, because it exists in California, and

agriculture-related forests usually occur in the Eastern United States. I soon saw many fallen and snapped trees. This is an example of an old growth and wind-damaged forest. I saw the fungi decomposing the dead tree, and thought about how plants do not mind death, because when they go back to the soil, they help others live. This life cycle is the most important occurrence for this forest and the entire natural world. I kept walking and stumbled across a fallen tree with no fungi decomposing it. There was not enough water to let the tree go back to the earth in a chemical way. So, it crumbled away into the earth, its wooden pieces littering the soil. I realized this was a sign of a long going drought, one that most likely caused many fires in these woods. Charcoal would likely be nearby. I discovered that all landscapes are combinations of the different types of forests. This makes each environment have a different history and tell a different story. Each tree has a sign of the whole environment's past. One tree may be snapped, and the tree opposing it may have burn scars. The life of the forest is shown through these little markings. Since each forest is unique, each forest has a unique difference that should be appreciated and respected. Thinking about the history of a forest is useful to the explorer because it allows them to fully understand why the landscape appears the way it does.

I took field notes and captured drawings about the specific plants I studied along my hikes. I then created a series of abstracted botanical illustrations, highlighting the remarkable qualities of the plants with bright colors and mark making. These images are a selection of the series. The plants shown are the eucalyptus tree, chicory, the bay laurel tree and the Manzanita tree.



“You only need sit still long enough in some attractive spot in the woods that all its inhabitants may exhibit themselves to you by turns.”, Henry David Thoreau once wrote in *Walden.* When I came to California and spent time in the woods, my thoughts and feelings towards nature changed. I always had a connection to the natural world. But, being in the same environment for my whole life made me lose touch to my wild, exploratory self that existed in me as a child learning for the first time up close and outside. I was so thrilled to behave like a kid again when I roamed around the valley, hiking through Westwood Hills and Skyline Park feeling free. I was finally learning the way I wanted to learn, like the way traditional explorers learned. I looked at the landscape and I felt like I had never seen any sight so bewildering and fascinating. I assumed the explorers and Native People who observed the area before me felt the same as I did. As I behaved like a naturalist, I found I was most interested in plants and their exceptional understanding. Studying certain plants in depth gave me a personal relationship with them because I cared about their extraordinary intellect and evolutionary traits. And, because forests are infinitely connected by all species, I became connected to the whole environment. This made me observe the history of the forest and understand why it came to be so unique. This entire process of learning should be used by everyone as a way to aid themselves as well as the natural world. When we are connected to nature, we care deeply about what forces act on it. A person who appreciates a strong, living tree will be more willing to protect an entire forest. I understand why a person loses the touch they once felt with the environment, because I felt that way for some time. But, if someone wants to feel the childlike joy of learning, it can easily be accomplished. The selfish act of staying indoors and accepting humanity as the one true intelligent force can be counteracted by simply going for a walk. Breathing out the toxic forces of mankind and breathing in oxygen produced by the tree next to us changes us. It makes us aware, awake, and alive, just like the little plant learning about the world, growing next to our feet in the soil.

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