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DISCOVERING THE PATH TO INDIAN USES OF NATIVE
CALIFORNIA PLANTS: A FAMILY ACTIVITY GUIDE
FOR THE NATIVE PLANT GARDEN AT THE
SAN BERNARDINO COUNTY MUSEUM

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education:
Environmental Education

by
Lauren Anne Trish Holman

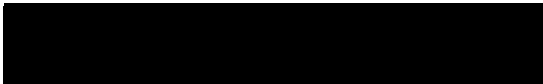
June 2005

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Presented to the
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by
Lauren Anne Trish Holman
June 2005

Approved by:



Dr. Darleen Stoner, First Reader



Jolene Redvale, Second Reader

June 2, 2005
Date

ABSTRACT

Discovering the Path to Indian Uses of Native California Plants: A Family Activity Guide For The Native Plant Garden at The San Bernardino County Museum is a project designed to support family education through the study of the native California plant garden located adjacent to the San Bernardino County Museum. By using this activity guide, families can learn how to identify native plants as well as discover distinctive cultural uses of these plants.

This family activity guide is intended for use while walking along the native plant trail at the museum and for further use at home. The guide features 18 different plants that are located in the garden. Each page highlights one particular plant. This page includes a picture of the plant, a meet-the-plant segment, Indian uses of the plant, and an activity to do while on the trail.

The project was designed to increase environmental and cultural sensitivity as well as inform readers about Indian perspectives on the environment and environmental education. Through this project, individuals can acquire the opportunity to become aware of and gain knowledge about the natural and local environment and its cultural history.

ACKNOWLEDGMENTS

This family activity guide could not have been completed without the help of Jolene Redvale. Her guidance and knowledge helped make this project possible.

I would also like to express my thanks to the McCarthy family. Their kindness and willingness to lend a hand has truly inspired me.

I would also like to express my thanks to Dr. Darleen Stoner. Her direction led me on the path to discovering, not only native plants, but also the opportunity to achieve the perseverance and skills necessary to embark on the journey encompassing environmental education. Through this experience I have acquired, not only knowledge, but also the realization that I have the confidence as well as the motivation and direction to constructively transform the world for the future.

I would also like to thank Keith Muller and my family. Without their encouragement, I would have given up long ago. I would also like to express my thanks to God; with him all things are possible.

DEDICATION

This is dedicated to my mom. Without her love, support, and faith, I could never be where I am today.

Thank you.

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CHAPTER ONE

INTRODUCTION

Knowledge of plants and their landscapes is too often taken to be a territory of specialists. Yet, such knowledge has been...a wonderfully intimate and common information, shared with families and villages, and as such often is strikingly detailed and accurate. (Barbour, Pavlik, Drysdale, & Lindstrom, 1993, p. 1)

Native California plants continue to be defining elements in Californian culture as well as vital resources to the environment. These plants assist in the beautification and protection of the California landscape. Native California plants provide food and shelter for animals, keep soil rich, prevent erosion, counteract the negative effects of carbon monoxide in the air, and keep California attractive and unique. However, these vital components continue to diminish because of the common misconception that native plant protection belongs to specialized scientists (Barbour et al., 1993, p. 2). Because of this and other factors, approximately 857 native California plant species have become rare or endangered and another 34 have become extinct in the past

200 years (Barbour et al., 1993, p. 4). By becoming aware of the importance of native plants and gaining knowledge about plant identification, individuals have the capability to protect these plants for future environmental and human benefits.

Recent research has shown that families are interested in learning more about native plants and the cultural uses of them (J. Redvale, personal communication, April 21, 2005). Therefore, by presenting readers with information about native plants and their need for protection as well as their Indian uses, people can become aware of the cultural aspects that surround their local environment. By understanding the cultural characteristics of their local plants, people can gain an awareness of and respect for the plants and the people that utilized them.

The objective of this project is to develop an activity guide for the California native plant trail located adjacent to the San Bernardino County Museum that allows families to discover native California plants while increasing environmental and cultural sensitivity. By participating in the activities in the guide while learning about California native plants and peoples, families will have the opportunity to develop a sense of awareness towards the environment and its previous

inhabitants. As stated by Cornell, "If we want to develop an attitude of reverence for life, we need to begin with awareness, which in turn can lead to loving empathy" (1989, p. 14). By becoming aware of the local environment through engaging in this activity guide on the native plant trail, families can become connected to the natural world around them, which can progress to a respectful attitude towards the environment and its native people. Cornell expressed, "When we...can provide an atmosphere of sensitive discovery and direct experience, nature is able to change people's lives spontaneously, in wonderful ways" (1989, p. 13).

CHAPTER TWO

REVIEW OF THE LITERATURE

Introduction

This review of literature discusses the history of environmental education; the definition, goals, and objectives of environmental education; environmental sensitivity; Indian views about California's landscape; and Indian perspectives on environmental education. Each of these topics provides the basis for proper instruction about environmental as well as cultural issues.

The History of Environmental Education

I went to the woods because I wished to live deliberately, to [know] only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived. (Thoreau, 1845, p. 75)

Henry David Thoreau is considered the first person to grasp the significance of environmental education. His life was dedicated to experiencing his natural surroundings and realizing their significance in this world. However, the concept of environmental education did not arise until a century after Thoreau's writings.

Matthew Brennan first coined the term environmental education in 1964 (Disinger, 2001, p. 18). William Stapp later defined the term environmental education in 1969. In his words environmental education was, "aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution" (Stapp et al., 2001, p. 34). However, this definition did not fully engulf the essence of environmental education. Thus, the definition for and goals of environmental education were expanded at the Tbilisi Conference in 1977.

Understanding Environmental Education: Definition, Goals, and Objectives

The Tbilisi Declaration was the first intergovernmental conference on environmental education and had a substantial impact on the process of teaching environmental education. The central goals, objectives, and definitions of environmental education were created and defined at this conference. The Tbilisi Declaration declared that environmental education was

a process aimed at developing a world population that is aware of and concerned about the total environment and its associated problems; which

has the knowledge, skills, motivation, commitment, and attitudes to independently and collectively work towards the solution of current problems and the prevention of new ones.

(2001, p. 14)

The primary objectives of environmental education, as stated in The Tbilisi Declaration, are: enhanced awareness, increased knowledge, distinctive attitudes, essential skills, and participation in environmental issues (2001, p. 16). All of these objectives aid in the development of responsible environmental citizens. The first objective is awareness, which "helps social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems" (The Tbilisi Declaration, 2001, p. 15). The second objective, knowledge of environmental education, "allows social groups and individuals gain a variety of experiences in, and acquire a basic understanding of, the environment and its associated problems" (The Tbilisi Declaration, 2001, p. 15). Attitudes about environmental education are essential in that they, "facilitate social groups and individual groups acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and

protection" (The Tbilisi Declaration, 2001, p. 15). Skills in environmental education "help social groups and individuals acquire the skills for identifying and solving environmental problems" (The Tbilisi Declaration, 2001, p. 15). The last objective of environmental education is participation. "Participation provides social groups and individuals with an opportunity to be actively involved at all levels in working toward the resolution of environmental problems" (The Tbilisi Declaration, 2001, p. 15).

Several principles in The Tbilisi Declaration are essential to fulfilling the goals of environmental education. These principles have a substantial effect on the proper teaching of environmental education and also reflect the complexity of environmental education. The first significant principle conveys that environmental education "is a continuous lifelong process, beginning at the preschool level and continuing through all formal and non-formal stages" (The Tbilisi Declaration, 2001, p. 15). This main principle allows young as well as mature generations to realize that they have the power to make a positive change in the natural environment at all times. Another essential principle in The Tbilisi Declaration explains, "interdisciplinary approaches, drawing on the

specific content of each discipline in making possible a holistic and balanced perspective, are critical to learning about the environment" (The Tbilisi Declaration, 2001, p. 16). Environmental education is a part of everyday life and can relate to any subject matter. Thus, environmental education should not be studied as its own entity but should be integrated into numerous disciplines so individuals can connect with the natural world on various levels. A further principle, as stated in The Tbilisi Declaration is, "utilizing diverse learning environments and a broad array of educational approaches to teaching/learning about and from the environment with due stress on practical activities and first-hand experience" (The Tbilisi Declaration, 2001, p. 16). Not only should individuals learn in different ways and at numerous locations, but they should also immerse themselves in hands-on activities. Consequently, they come to know the natural environment in various perspectives, thus, have a better opportunity to grasp environmental issues. A final principle that is essential in the process of learning about the environment is, "relating environmental sensitivity, knowledge, problem-solving skills, and values clarification to every age, but with special emphasis on environmental sensitivity to the

learner's own community in early years" (The Tbilisi Declaration, 2001, p. 16). When individuals initially relate to their own surroundings, this allows them to increase awareness, knowledge, and skills to comprehend local environmental issues. It also provides them the opportunity to expand their environmental comprehension to a global scale. These principles help individuals learn and grow with the environment as opposed to growing further disconnected to the natural world. By following these principles, individuals can learn to respect the environment and manage environmental issues in a constructive manner. Each of these goals, objectives, definitions, and principles ultimately affect the primary purpose of environmental education, which is responsible environmental citizenry (Culen, 2001, p. 39).

Understanding Environmental Sensitivity

Environmental sensitivity has been difficult to define, as it is essentially an emotion or reverence for the environment that forms due to an interaction with the natural environment (Sward & Marcinowski, 2001). Environmental sensitivity correlates with the first objective of environmental education: awareness. The Tbilisi Declaration stated that this objective is provided

to "help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems" (2001, p. 15). Awareness allows individuals to increase sensitivity towards their immediate natural surroundings. By becoming aware, individuals recognize that their actions affect their surroundings, thus, realizing that positive actions can make positive changes.

The initial path to environmental sensitivity is developing a relationship with the local environment. Local natural areas may exert a powerful influence on the development of environmental sensitivity (Sward & Marcinowski, 2001). Studies have shown that, "subjects felt remorse or a sense of loss for an area they were familiar with or frequented while growing up. However, subjects felt no sense of loss for the destruction of areas with which they had no prior contact" (Sward & Marcinowski, 2001, p. 285). Through this process of becoming aware through experiencing local natural areas, individuals can develop a sense of respect for these areas and feel remorse when they are destroyed. Thus, they might be more willing to take an active stance on an environmental issue if they have familiarized themselves with natural surroundings because they have gained a

direct connection with the local environment through awareness. Environmental sensitivity is an important precursor to an environmentally literate and responsible citizenry. When individuals become environmentally responsible, they make sound decisions for the future of the environment. As David Orr stated, "We are not likely to save what we do not love" (1994, p. 46).

Environmental sensitivity can be acquired in association with environmental activities. Sward and Marcinowski stated that, "Sensitivity will, in part, result from environmental education activities themselves. In particular, judiciously developed instructional programs in ecological foundations and conceptual awareness should measurably assist in the sensitization process" (2001, p. 283). Consequently, when individuals become aware of their surroundings, they are more likely to increase their sensitivity towards the environment.

Sensitivity to the environment can also develop as a result of outdoor experiences, favorable human interactions, and knowledge about the natural environment (Sward & Marcinowski, 2001). Environmental sensitivity continues to grow and strengthen throughout an individual's lifetime if continued experiences in natural settings occur (Sward & Marcinowski, 2001). If an

individual is familiarized with environmental issues at a young age and continues to have similar experiences growing up, then this person's sensitization towards the environment will most likely continue to grow. Research supports that the outdoor experiences that have the most impact on environmental sensitivity include activities such as exploring and playing as a child, which often occurred in a family setting (Sward & Marcinowski, 2001). These experiences are more difficult to achieve in a classroom setting as many children lack an opportunity to experience the outdoors and thus feel little emotional connectedness with the environment. To enhance environmental sensitivity it is ideal to spend quality time with family or friends in natural settings.

There are numerous advantages to learning in natural and outdoor settings. Outdoor education allows children as well as adults to experience the environment first hand. Hammerman stated that, "real understanding comes through doing, or experiencing" (1994, p. 15). These experiences stay in the memory longer than if the same experience was read in a book or seen on television (Knapp, 1996). When people learn outdoors, they use not only their verbal skills as in the classroom or work setting, but they also stimulate all of their other senses, such as their sense

of smell, hearing, sight, sound, even taste (Knapp, 1996). Outdoor education provides opportunities for greater understanding, deeper insight, and clearer meaning (Hammerman, 1994). Hammerman explained, "Learning activities in the outdoors are designed to develop greater insight and understanding of ecological relationships and appreciation of humankind's responsibility for the quality of the environment" (1994, p. 19). By learning outdoors and experiencing nature firsthand, children as well as adults can broaden their horizons and become more perceptive to the natural environment around them.

Indian Views About California's Landscape

Two tribes of California Indians that used the native plants located in the San Bernardino native plant garden are the Cahuilla and Serrano. The Cahuilla people lived in the south central area of California. Their territory went as far north as the top of the San Bernardino Mountains to as far south as Borrego Springs. It went west to the modern town of Claremont and as far east as the Colorado Desert (Null, 1992, p. 26). The Serrano people lived in a vast area comprising most of the San Bernardino Mountains. Their terrain stretched west to the San Gabriel Mountains and Mount Baldy, south to the San Bernardino Valley, and

east to 29 Palms. These tribes' land consisted of a plethora of diverse landscapes including tall mountains, deep valleys, rocky canyons, passes, and arid desert land (Bean & Bourgeault, 1989, p. 14). The environment comprising this land contained several climate zones. With such a difference in land elevation, there were opportunities to gather food from these various zones. This was essential as the supply of food in each zone was unstable from season to season.

Because the Cahuilla and Serrano lived in close proximity, which contained the same climate zones, both tribes used native plants in similar manners. The Cahuilla and Serrano came to know the land in such detail that they survived and prospered for over 3,000 years (Boule, 1992, p. 4). These Indians did more than just gather plants; they managed the land (Dozier, 1998, p. 63). This was a highly difficult task to master as it took numerous years to know when plants would be safe or poisonous to eat (Brumgardt & Bowles, 1981, p. 61). Because of this intimate connection with and dependence on the land, these Indian tribes became very close to nature. They shared in the concept that one should never destroy a plant, tree, rock, or anything on the earth (Brumgardt & Bowles, 1981, p. 9).

The Indians gained respect for the land not only through its availability of resources, but also because of the land's powerful and unexpected natural phenomena. Fire, flood, earthquake, drought, and other natural occurrences presented persistent challenges to the Indians (Brumgardt & Bowles, 1981, p. 7). Brumgardt and Bowles stated, "From the skies came life giving rain, food, and water... But also from the skies came the relentless heat.. as well as the showers, which turned gentle creeks into raging torrents. Nature, therefore, was both friend and foe" (1981, p. 7). Indians viewed themselves as, "part of a cooperative system in which all elements, from men to animals to plants, existed and interacted for the greater good" (Brumgardt & Bowles, 1981, p. 9). These tribes had no goal of domination over the earth but instead felt as though they needed to protect the plants and animals and were careful not to waste or destroy the earth's natural resources (Brumgardt & Bowles, 1981). Because of this, Indian views of nature developed very differently than that of modern American society.

Indian Perspectives on Environmental Education

Education is, at its essence, learning about life through participation and relationship in

community, including, not only people, but plants, animals, and the whole of nature.

(Cajete, 1994, p. 26)

Indian culture has described education in a vastly different context than that which current American society understands. Cajete stated that, "American education continues to emphasize objective content and experience detached from primary sources and community" (1994, p. 26). American society focuses on material wealth, economic prosperity, and excelled technology (Orr, 1994). This current form of education does not place much emphasis on the sustainability of the earth. Therefore, American society might want to create alternate forms of education, which provide the insight on how to retain and conserve the environment for future generations.

Past Indian beliefs about the world and the natural environment vary greatly from that of current American society. Daudi expressed that, "Native American culture is indigenous to the land and is rich in philosophies about living in harmony with nature. Native American lifestyles integrate, rather than conflict with the natural order of nature" (1996a, p. 1). This interconnectedness with nature is what contributed to their ability to live and prosper

for thousands of years without creating alarm for possible collapse of the environment.

Current American society can grasp some of these historical perspectives about the environment that allow for the creation of a more sustainable future. Daudi expressed that, "Since the long term goal of environmental education is to change behaviors so that waste of natural resources can be prevented, it is important to... learn from the teachings of these indigenous cultures, namely Native Americans" (1996a, p. 1). By implementing past Indian customs and attitudes about the environment into American education, individuals can grow more environmentally as well as culturally sensitive. This sensitivity can lead to a sense of respect and reverence towards the environment. Daudi explained that, "Knowing about Native American perspectives on learning promotes developing a contemporary and culturally based approach to teaching of environmental education" (1996b, p. 1). This approach to environmental education might be the key to promoting respectful attitudes about the environment and providing skills and knowledge to participate in creating a sustainable environment. Hughes stated that, "The value of Indian environmental perspectives [lies in] helping to develop a new style of life that incorporates care and

reverence for nature and understands the limits that must be placed on human actions affecting the natural environment..." (1983, p. 143).

CHAPTER THREE
DESIGN OF PROJECT

Discovering the Path to Indian Uses of Native California Plants: A Family Activity Guide For The Native Plant Garden at The San Bernardino County Museum contains information about the native plants located adjacent to the San Bernardino County Museum and is designed for use while walking through the trail in the native plant garden. This activity guide is intended for use by the visitors of the museum.

The beginning of the guide includes a brief introduction to native California plants. The activity guide pictures one native plant on each page, with a total of 18 native plants. Each page contains the following five sections:

1. The scientific as well as the common name of the plant. The scientific name of the plant is in Latin and provides a universal language for all scientists to understand that specific plant.
2. A basic description of the plant. With this information, readers can learn more about the plant and how to recognize it.

3. A short history of how Indians once used the plant. This information allows families to obtain a sense of respect for the plant and reverence for the people who creatively used it for a means of survival.
4. A fun, yet brief, activity for the entire family to do together while on the trail. This allows families to come together to strengthen their relationship while learning an environmental concept.
5. A picture of the native plant that can be colored. This allows adults as well as children to utilize their observation skills while coloring the picture of the native plant.

There are also several sections in the back of the guide that allow families to extend their understanding of native plants. These include:

1. Where to get more information to create a native plant garden at home.
2. Outdoor activities for the entire family.
3. Recipes that the family can make incorporating native plants.
4. A brief historical account of the Cahuilla and Serrano Indians and their uses of native plants.

5. Information on the importance of Cahuilla Indian basketry.
6. A board game based on creating Cahuilla baskets.

APPENDIX

DISCOVERING THE PATH TO NATIVE PLANTS: A FAMILY
ACTIVITY GUIDE FOR THE NATIVE PLANT GARDEN
AT THE SAN BERNARDINO COUNTY MUSEUM

**Discovering the Path to
Indian Uses of Native
California Plants:**

**A Family Activity Guide for the Native Plant
Garden at the San Bernardino County Museum**

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About the Activity Guide

Discovering the Path to Indian Uses of Native California Plants contains information about the native plants located adjacent to the San Bernardino County Museum and is designed for use while walking through the trail in the native plant garden. The native plant trail is marked with 18 different posts. Each post has a number, which corresponds to the 18 plant pages in this activity guide.

Each plant page contains the following:

1. Common and Scientific name. The scientific name of the plant is in Latin and provides a universal language for all scientists to understand that specific plant.
2. Meet-the-plant. This basic information allows you to get acquainted with the plant and learn how to recognize it.
3. Indian Uses. You can learn how native California Indians used this plant for survival.
4. Fun activity. The entire family may choose to do these together while on the trail.
5. Picture of the native plant. Coloring this plant will help you remember how to recognize it.

Following the Posts



Swallowtail, the butterfly, will appear throughout the activity guide to give you an interesting fact that may be helpful along your native plant discovery path.

Remember to walk through the trail slowly and take time to smell the flowers, look and listen for birds and insects, and use all of your senses to experience this native plant garden. Keep in mind that these plants are delicate so please keep the touching to a minimum and do not harm the plants in any way. Also, please leave everything where you found it and remember to have fun!

BE CAREFUL! Some of the plants have spines that can hurt so please DO NOT TOUCH THESE PLANTS!

Before Getting Started

Here are a few questions and answers that will help you along your native plant path to discovery.

What are native California plants?

Native plants are plants that adapted especially to California's climate and soils and are the plants that Indians depended on for survival. The native plants in California have evolved along with animals to create a complex system of interactions that make California unique. The plants that we are studying today are plants that are native to Southern California.

In what typical habitats can the native plants located in the garden be found?

These native plants can be found in desert and chaparral areas. They have adapted to the drier climate in Southern California, which has mildly wet winters and hot, dry summers. A desert area usually consists of a very dry climate, with little or no rainfall. Deserts get less than 10 inches of rainfall a year. A chaparral area is an open shrubland adapted to rocky slopes with hot and dry summers.

Why are these native plants important?

Native California plants are best suited to California's unique environment. These plants can survive most readily in this area because they have adapted to the landscape and climate of California. Native California plants can grow in dry climates and can flourish even with little rain. Today, with the high demands of water use, native plants help preserve water because they do not need as much water as other plants to survive.

How are native plants beneficial?

Native plants can provide food and shelter for animals and humans, keep the soil rich, prevent erosion, provide oxygen, keep California beautiful and unique, and so much more.

What is ethnobotany?

Ethnobotany is the study of how people of a particular culture and region make use of native plants. Ethnobotany is a specialized study of plants, known as botany. In this activity guide, you will discover how the Indians of Inland Southern California used the native plants in this garden.

1. California Sagebrush

(*Artemisia californica*)

California Sagebrush is not the same as sage, an entirely different species!



Meet the Plant
 California sagebrush grows to be about four feet tall. It has many tiny grayish branches. If you look closely, the leaves almost seem like they are soft and hairy. The sagebrush has small yellow flowers that bloom from August to December. Quail, the California state bird, loves this plant. It is very common in Southern California and the seeds of the sagebrush germinate after wildfires.

Indian Uses
 The Seeds of the California sagebrush were ground into flour to prepare a mush. The leaves were also made into a medicinal tea to treat cold and other illnesses. However, the tea was not very pleasant to drink.



The tiny flowers are yellow and the plant is a grayish green. Are you going to draw little hairs on the leaves?

S A G E B R U S H E W S S F Y
 H I Y T L T R R D H J L O P Y
 W F C V A G A V E Z T E U O H
 D S H I D R H Y B R Q X C L I
 B E E L D E R B E R R Y E T M
 L A U R E L R U A S A I L M E
 R I H G R Y R D V I D R I E S
 W H Y W P D E E R G R A S S Q
 L A U R O E N R H O L I Q I U
 A N N E D T R T I S H B U D I
 K E I T O B O A Y C E M I C T
 U L L E R G O I I W E A X T E
 O N T B A R R E L C A C T U S

Across: AGAVE, BARREL, DEERGRASS, ELDERBERRY, LAUREL, SAGEBRUSH
Down: BLADDERPOD, BEAVERTAIL, MESQUITE

2. Bladderpod

(*Isomeris arborea*)

Great for erosion control and bird gardens!

Stand near the bladderpod and take a big whiff. Smell that? Would you like to go near the bladderpod if you were a bug?



Meet the Plant

The bladderpod is a very hardy, smelly, drought-resistant plant. It can often be seen in desert and scrub communities and usually grows in desert washes. The plant can grow to be 2 to 6 feet high. The flowers are about 1 inch, bright yellow, and bloom in clusters year round. Bag-like, one-inch seedpods are found dangling on the branches the same time the flowers are in bloom. Butterflies love the bright flowers of the bladderpod!

Indian Uses

The seedpods of this plant were once a source of food. The seedpods were roasted in a pit with hot stones for eating or stored for eating later. The flowers of the plant were eaten after being boiled several times to remove the bitter taste.

Word Scramble

Match the words of the birds that you might see near the bladderpod. Draw an arrow from the scrambled word to the right bird.

SLEALN MMGHBUDIRNI

HCIFN SEHUO

IRBD EULB SNRETWE

ICMAANER NIBOBR

YAJ UBSRC

LICAFONAR LIQAU

NAANS MUNIHGIRBDM

Answers

CALIFORNIA QUAIL

ANNA'S HUMMINGBIRD

ALLEN'S HUMMINGBIRD

HOUSE FINCH

WESTERN BLUE BIRD

AMERICAN ROBBIN

SCRUB JAY

Can you draw the bladderpod on your own? Make sure you take a good look! The pods are bright green, the leaves are dark green and the butterfly-attracting flowers are bright yellow. Will you draw a hummingbird too?

3. Elderberry

(Sambucus mexicana)

Great for erosion control and bird gardens!

Elderberries actually contain higher amounts of vitamins A, B, and C than many other berries!

Meet the Plant

The elderberry is a deciduous tree, meaning its leaves fall off in the winter. The tree contains small white flowers and red or blue berries covered in a white, powdery substance. Many birds like to eat the elderberries off the tree. The berries can be cooked and made into a delicious jam or succulent wine. Elderberry is a suitable landscaping plant and can grow into either a bush or tree.

Indian Uses

The flowers of the elderberry tree were often used to make tea and help speed the recovery from a cold or flu. They also provided relief from headaches. The berries were also squeezed to make purple or black dye for basket designs. Indians used the wood of the elderberry to carve flutes, arrow shafts, fire-making sticks, and clapper sticks, a type of musical instrument.



Don't forget! The leaves of the elderberry are dark green, its bark is brown, and its berries are red. Have fun!

Berry Scramble

Who can unscramble the names of the berries the fastest?
Hint: They all end in berry

leub__berry	anrc__berry
rpsa__berry	ldeer__berry
wstra__berry	seoybn__berry

More to do at home!
There's a great recipe for elderberry jam on pg 50

4. California Laurel

(*Umbellularia californica*)

Meet the Plant

The California Laurel tree is also known as the California Bay and can grow up to 80 feet tall! The Laurel is evergreen, which means it has leaves on it all year long. It has brown, thin bark. The California Laurel is considered one of the best woods for novelties because of its natural beauty and is also one of the most expensive. The fruit of the tree is greenish to purple and looks like an olive. However, it is not edible.

Bay leaves used for cooking are not the same leaves as that of the California Bay. Those spices come from a tree native to the Mediterranean

Indian Uses

The leaves of the California Laurel were used as an aromatic to cure headaches. A quick way that Indians cured headaches with the laurel was by rubbing their thumbs between the leaves and breathing deeply. Another way they cured headaches and provide relief from colds was by boil the leaves of the laurel and inhaling the steam.



The leaves are bright green on top and grayish below. What color will you make your fruit? Greenish? Purplish? Or a little of both?

Nature Poems

Write a poem in the lines provided that expresses what you see, feel, smell, and experience on the trail.

5. Barrel Cactus

(Ferocactus cylindraceus)

Some Indians used the needles of the barrel cactus for tattooing! Ouch!

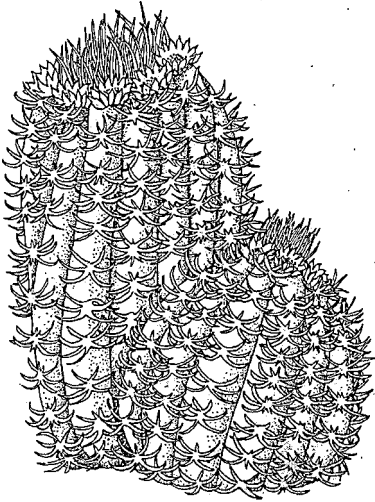


Meet the Plant

The barrel cactus is a single, barrel-shaped stem that grows to a height of about one foot off of the ground. This cactus has large spines, so **BE CAREFUL!** The flowers of the barrel cactus grow in a crown on the top of the cactus. They are yellow or orange with red tips and do not have any spines. The barrel cactus usually grows along desert washes, gravelly slopes, and beneath canyon walls in all of the hot deserts in North America.

Indian Uses

The barrel cactus provided both food and water for the Indians. The buds of this cactus as well as the flowers can be eaten fresh, but, taste quite bitter. The buds were boiled first to remove the bitterness. After cooking, the taste resembles asparagus.



The cactus is a greenish and the spines are usually a pale gray but are sometimes brightly colored. The flowers are yellow or orange and don't forget to color the tips of the flower red.

Cactus Designs

There are many different shapes of a cactus. When you leave the museum, check out the different shapes of cactus in the cactus garden in the front. See if you can find a barrel cactus, a prickly pear cactus, and a beavertail cactus just by looking at the shapes!

More at home!

Look for a recipe on how to make cactus candy! It's on page 50.

6. Beavertail Cactus

(Opuntia basilaris)

Surprisingly, the fruit of the beavertail cactus is very sweet

Meet the Plant

The beavertail cactus has many clumps of flat grayish-green jointed pads. It grows to be about 6-12 inches high and up to 6 feet wide. The stickers on this cactus are very small, yet are very hard to remove and can be very painful, so please **DO NOT TOUCH!** The flowers on the beavertail cactus are bright pink and grow at the top end of the pads.

Indian Uses

Beavertail cactus was in bloom between March and June and was often considered the most desirable of foods. The blossoms, fruit, and pads can all be eaten. The buds were broken off with a stick and collected in baskets. The stickers were brushed off the pads with grass or twigs and cooked with hot stones. The large seeds of the beavertail fruit were also ground into an edible mush, like jelly.



Have you heard of nopales? Nopales are made from cactus. There's a recipe using nopales on page 49.

Now it's your turn to draw the plant. First, examine the plant very closely (but not too closely because you don't want to hurt yourself on the spines). Now, draw the pads, starting with one where you can see the whole pad. Next draw the pads that surround that pad. Keep drawing until you have all of the pads drawn. Now draw in the pink flowers and don't forget to draw the tiny stickers. And don't forget to color your very own drawing of the beavertail cactus.

7. Agave (Agave deserti)

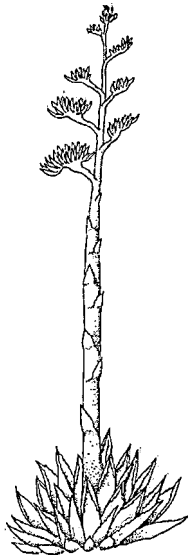
The agave leaves and roots were used as a type of soap.

Meet the Plant

The agave, after many years of growth, suddenly blossoms, creating a very tall flower stalk, which can grow up to 14 feet. The flowers are found on the top of the flower stalk and are very small and bright yellow. The leaves of the agave are grayish and very long and sharp, so please **DO NOT TOUCH!**

Indian Uses

The agave was a staple food for the Cahuilla because it was available for harvesting for many months. The flowers, leaves, and stalk are all edible. The leaves of the agave are full of sap. They were gathered from the plant and then roasted in a pit for several days. Fiber from the leaves provided rope for nets and the flower stalks were used as a construction material.



The agave is easy to color. The leaves are grayish and the stalk is green. The flowers on the very top are bright yellow.

Guess Who?

Clues will be given of two different plants that you have seen so far on the trail. See if you can guess who is who in the native plant garden!

1.
I live in the hot desert.
I have large spines.
I taste bitter if eaten.
After cooking I taste like asparagus.

I am _____

2.
Birds love to eat my fruit.
I am deciduous.
My fruit has lots of vitamins.
My berries can be made into jam or wine.

I am _____

8. Yucca Whipplei

(yucca whipplei)

Meet the Plant

The yucca whipplei is also known as Our Lord's Candle. The flower stalk of the plant has many white, round flowers growing from it. The flower stalk can grow up to six feet high. When the flowers bloom, the entire plant dies. The leaves of the yucca whipplei are green and sharp, almost blade-like, have a pointed tip, and can grow up to three feet long.

Indian Uses

The leaves of the agave were used for fiber to make sandals and carrying nets. The flowers and the pods of the yucca can be eaten. The roots could be pounded to make a type of soap.

Decode

Each number corresponds to a letter below. Fill in the matching letters below to the numbers in the sentence to decode the saying!

6 1 10 4 11 3

7 5 1 6 10 9

6 3 3 2

5 3 9 9

12 1 10 3 8 !

A D E I L N P R S T V W
1 2 3 4 5 6 7 8 9 10 11 12

How good are your observation skills? Try to sketch the Yucca exactly how you see it on the trail.

9. Sage

(Salvia sp.)

You can make your own
sage incense!
Instructions are on
page 47.

Meet the Plant

There are many different species of sage. The leaves are gray and are very fragrant. The flowers range from pale blue to white. Sage can be found in deserts as well as chaparral areas, depending on the species.

Indian Uses

The Indians used the leaves of the sage to treat headaches and stomach aches. Leaves were cooked and eaten and sometimes smoked to relieve colds.



There are many different shades of sage. Can you mix the right colors of green and gray to find the one you looked at?

Tic Tac Toe

Make an x when you see the creature in the native plant garden. Try to make a row across, down, or diagonal!

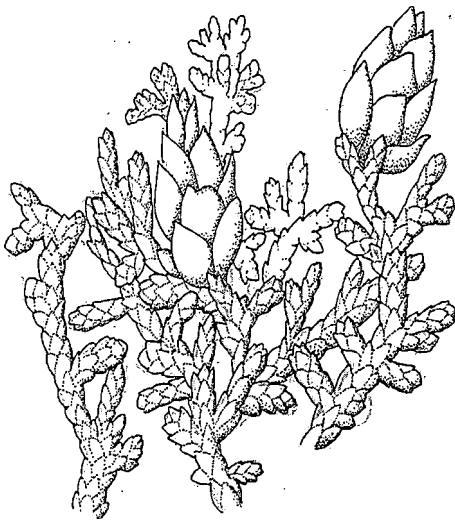
Humming bird	Yellow flower	Squirrel
Fly	Bee	Butterfly
Ants	Any creature you see	Spider

10. Juniper

(*Juniperus californica*)
Great for bird gardens!

Meet the Plant

The California Juniper is the only plant in this guide that has cones instead of flowers. The berries on the tree are small and bluish. The Juniper can grow up to 20 feet. The leaves are short, round, dark green, and are usually seen in bunches.



The leaves are dark green, the bark is brown and the berries are blue.

The trunks of the Juniper have peeling bark and when the wood is cut it smells just like cedar. But please do not pull the bark off of the tree!



Indian Uses

Cahuilla tribes boiled the blue berries of the Juniper and made them into a tea for colds. The berries were also taken for high blood pressure! The berries were also ground into a mush, which was then made into small cakes and could be stored for long periods of time in case a famine approached. The wood of the Juniper was also used for bows and beams for their homes

Hiding Birds

Can you spot any birds in the garden? Draw what you see and then compare your drawing to the birds located in the museum!

11. Manzanita

(Arctostaphylos glauca)

Manzanita means "little apple" in Spanish. The Spanish named it this because the fruit of the Manzanita looks just like a little red apple

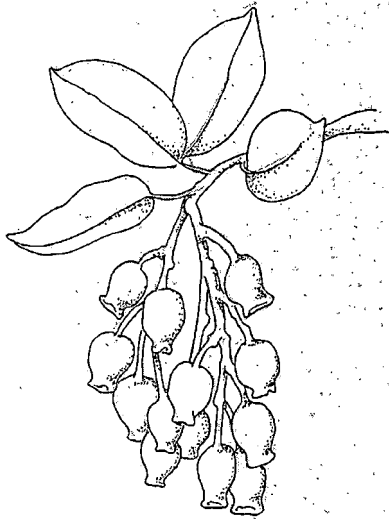
Meet the Plant

The Manzanita can grow to be 20 feet tall and 15 feet across. It has many branches growing outward from the bottom of the twisted trunk. Touch the deep red bark. It is very smooth. The fruit of the Manzanita is small and red, resembling an apple. The flowers are white or light pink and droop down in clusters. The leaves are evergreen, oval, and brittle.

Indian Uses

The berries of the Manzanita were eaten fresh or used to make a beverage. They were sometimes mashed and cooked to make a type of jam.

Many species of Manzanita are endangered because people like to use its smooth wood for art projects. Please keep the Manzanita alive by respecting it and leaving it in nature.



The bark of the Manzanita is a dark reddish brown and very smooth. The fruit is red, and the flowers are white or light pink. Have fun coloring!

Sketch for Fun

Do you think that you have ever seen a Manzanita in the wild? What did it look like? Try to draw it from memory. If you never saw one before today, try to sketch the Manzanita in the garden.

12. Desert Willow

(*Chilopsis linearis*)

Great for bird gardens and erosion control!

Hummingbirds are often seen fluttering near the desert willow in the summer

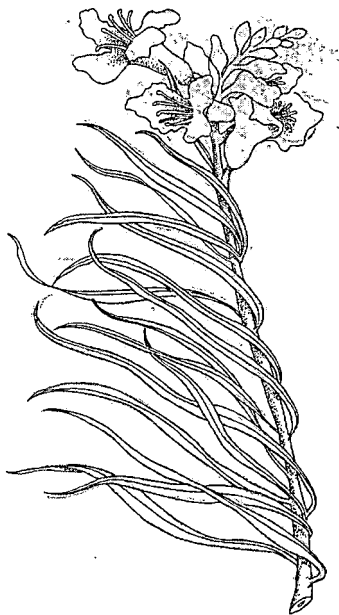


Meet the Plant

The desert willow can grow to be 20 feet. Feel the leaves. Are they a bit sticky and hairy? The bark of the tree is light brown. The long, slender leaves are light green. The flowers look like tiny trumpets and are light pink to lavender with yellow ridges and purple lines inside. The flowers smell wonderful. The desert willow is deciduous. The tree provides shade in the summer and lets light in during the winter. The desert willow looks beautiful planted near the home.

Indian Uses

The blossoms of the desert willow are edible but were not considered a major food source. The branches were useful materials for the construction of houses and weapons, especially bows. Sometimes, the flowers and seed pods were dried to make tea.



Reread "Meet the Plant" if you need help remembering how to color the Desert Willow!

Flower Sketch

Can you see a flower on the desert willow? If you can, try to sketch it. If you can't go back and read what the flowers look like and try to draw a desert willow flower.

13. Black Oak

(*Quercus kelloggii*)
Great for bird gardens!

Meet the Plant

The California Black Oak can grow to be 70 feet tall. The leaves of the tree are shiny green above and yellowish below. This tree is deciduous, so in the fall, the leaves change to become a bright yellow, orange, or red before falling off. The bark of the tree is dark brown and the wood can be made into hot coals for cooking.

Indian Uses

Acorns of the Black Oak were one of the most important food sources of the California tribes. The Black Oak has outstanding flavor. The acorns were ground up for flour to make mush and meal cakes.

Indians traveled great distances to obtain the acorns from the Black Oak or to trade with their neighbors for this essential material. Local

Indians could actually recognize certain black oaks that belonged to individual families.



The trunk of the big Black Oak is dark brown. What time of year is it? If it is spring or summer, color the leaves green. If it is fall or winter, color the leaves yellow, orange, or red.

Leaf Over

Find a leaf on the ground nearby. Place the leaf under this blank space and lightly shade in the whole area with a pencil. You should end up with the outline of your leaf!

14. California Buckwheat (*Eriogonum fasciculatum*)

Great for bird gardens!

Buckwheat can be spotted along the side of a highway and often has butterflies hovering around it!

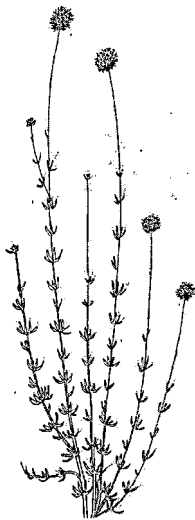


Meet the Plant

Buckwheat grows to be between 1 and 4 feet tall. It is a low, spreading shrub with many very tiny flowers on the end of each stem. When in season, the flowers are white or pinkish. However, when the flowers mature, they turn a rusty red color. The leaves grow in clusters up the slender branches. Bees as well as butterflies love California Buckwheat.

Indian Uses

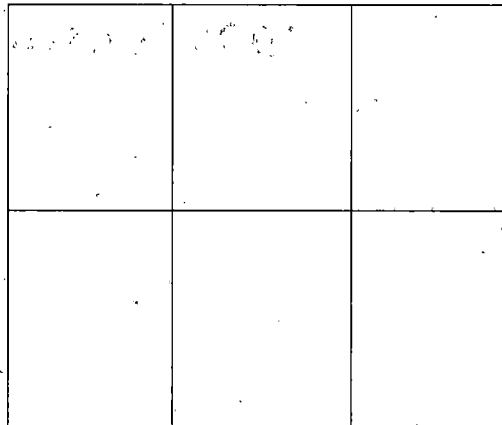
Buckwheat was used extensively as a bee plant. This is not the plant that is used to make buckwheat flour, however, there is still a recipe for buckwheat pancakes on page 49.



The flowers of buckwheat are a rust, or dark reddish orange color. However, if you are lucky enough to see it in bloom, or can just imagine how beautiful it looks, color the flowers pink!

Comic Strip

Make your own comic strip about Buckwheat



15. Brittlebush

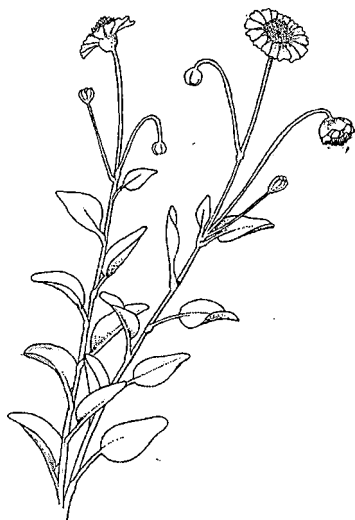
(Encelia farinose)

Meet the Plant

The brittlebush has many leafy branched stems with flowers at the end of each stalk. The flowers are about 5 inches and have yellow tips around orange-yellow or purple-brown centers when in bloom. The leaves are silvery gray. The brittlebush is a member of the sunflower family.

Indian Uses

The brittlebush was often used to offer relief from toothaches among the Serrano and Cahuilla Indians. The Indians would chew the leaves, helping ease the pain in the mouth.



Use your imagination to color the flowers of the brittlebush. Remember to use purple and browns in the middle of your bright yellow flower!

Share your favorite plant that you've seen so far with someone on the trail and write it below.

16. Deer Grass

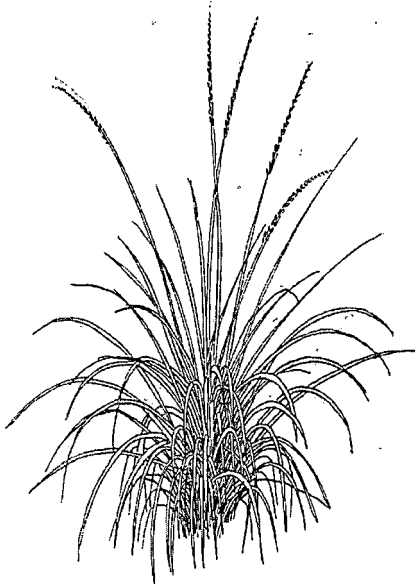
(Muhlenbergia rigens)

Meet the Plant

Deergrass is a plant with long, soft leaves. The stems of deergrass grow to be about 3 to 4 feet in length. The seeds are very tiny and thousands are produced by each plant every year.

Indian Uses

The stem of deergrass was and continues to be widely used in basketmaking by Southern California Indian tribes. The stem is used as a foundation for coiled basketry. Cahuilla basketweavers each had private sections where only they could collect the plant. If the Cahuilla found a location with deergrass, they would often keep it a secret because it was so valuable. Deergrass is still very important to the Cahuilla; however, it is very difficult to find an area where this plant can be picked.



Write your own observations of the color of the deergrass below:

Deer grass Paths

Indians made beautiful baskets out of deergrass. Create a story about a Cahuilla woman and her struggles to make a basket. If you need help read Cahuilla coiled basketry on page 53.

17. Toyon

(*Heteromeles arbutifolia*)
Great for bird gardens!

Smell the bark of the California Holly. What does it smell like?

Meet the Plant

Toyon is also known as California Holly. It can grow to be 15 feet tall. The leaves are shiny. The tree is an evergreen. The bark of the tree is gray and smooth and the twigs are dark red. The flowers are tiny and white and come in clusters. Birds love to feast on the red berries of the Toyon.

Indian Uses

The Toyon was not regarded that highly as a food source. However, a few Indian tribes in California sometimes cooked the berries by roasting them in the fire. This removed the bitter taste of the berries. The leaves of the holly were also used as a wash to clean infected wounds.



There are many different shades of green. Can you color all of the different shades of green when you color the Toyon?

Can you name at least three plants that are in your neighborhood? Are they native to Southern California? Are any of them the plants that you have experienced today?

- 1.
- 2.
- 3.

Know any more?

- 4.
- 5.

18. California Lilac

(Ceanothus sp.)

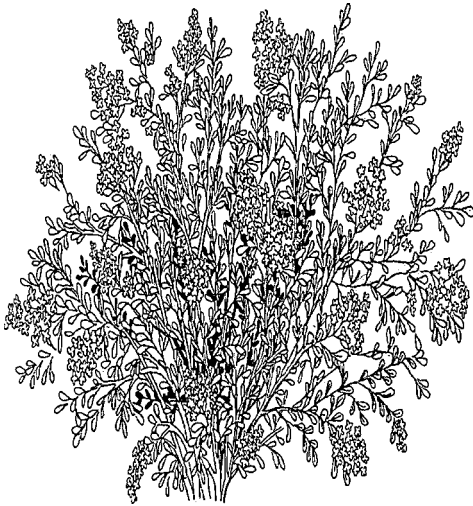
Great for erosion control!

Meet the Plant

The California lilac can grow to be 20 feet. Do you notice a shine on the leaves? The tree is evergreen which means that it has green leaves throughout the year. The bark of the lilac is often white. The flowers are very small and are deep to pale blue when in bloom.

Indian Uses

The lilac was used mainly as firewood. Awls, which were small tools used for poking holes, and other wooden tools were often made from the lilac bark.



The bark of the California lilac is reddish brown, the flowers are blue, and the leaves are green.

Did you get to experience everything on the trail?

Did you smell the flowers? Did you look for birds and butterflies? Did you find any insects? If you missed anything, go back and experience it again and then share your experiences about this little nature trail with your group. Remember that you are a friend of the earth and you have the power to help keep the environment clean and healthy.

Information on Creating your Own Native Plant Garden

A native plant garden is not only beneficial to the environment, but you can profit from it in many ways too. Native plants help provide food and shelter for the native animals in Southern California. With the rapid pace of urbanization, many natural habitats where native plants once grew have disappeared. By planting native plants, you are providing more habitats for many different kinds of plants and animals. You are also saving water, a precious resource. Since native plants do not require as much water, your family water bill will decrease, saving money. These plants are also beautiful and attract many native birds and butterflies that you will enjoy observing. So growing native plants is very beneficial to you and the environment.

For more information about native plants and how to grow them, check your local library under the gardening section. You'll find books on how to grow native plants, including how much sun each plant needs, how often it should be watered, and where best to plant it. You can also look online by searching under Southern California native plants or native plant gardens. The California Native Plant Society website is filled with great information. Don't forget to check the bibliography at the back of this book for specific books and websites used in this activity guide.

At Home Activities

Roots of a Tree	Discover Colors in Nature
Lie face upward under a tree and pretend that you are the roots. What can you see? What does it feel like? What actions are happening above you?	Find paint patterns from the paint store and see if you can find all of the same colors around a natural area.
Sensory Tree	Take a Look
First grab a partner and a blindfold. Now, blindfold your partner and lead them to a tree. Have them feel it and try to remember it. Find familiar smells and textures. Now lead your partner back to where you started and see if they can pick out the tree that they felt.	Before you go out, decorate two toilet paper rolls and tape them together to make "binoculars." Now go outside and look for different colors, plants, and animals up close and at a distance. If you like, you can even find a real pair of binoculars and do the same.
Bird Feeder	Wet Nose
What you will need: An old milk carton, birdseed, scissors, and string. Procedure: Cut a hole in the lower half of the milk carton, but don't cut the bottom off. Place birdseed in the carton. Cut a hole in the top and hang your new bird feeder in a native tree!	Go out into a natural area or anywhere where different plants are around. Smell each plant. Now go back and wet the underside of your nose. This increases your sense of smell, just as it does in dogs and rabbits. Now go back to the same location and smell the same things. Do they smell stronger?
Rainy Day	Make Incense with Sage
On a rainy day go out and peek into puddles and listen for different animal calls. Feel and sense how much activity goes on in nature even when the weather is different.	Grow sage in your yard and then pick some bunches. Wrap it in bundles with string and leave it to out to dry for a few days. When it is dry, place it in your home and enjoy the smell!

Remember! In the natural environment everything works together to create the natural beauty that surrounds us. Please walk lightly on the earth and do not harm any of the plants or creatures that live in or on it.

**Here are a few quick ideas to expand on that
you can do with your family**

Go out and take pictures of plants and flowers
Create a leaf mobile with different shaped leaves
Look for insects underneath rocks and inside trees
Press some leaves and flowers and make greeting cards
Read children's books or poems about nature
Make a wind chime
Make potpourri
Listen for birds
Watch the moonrise
Create a compost pile
Start a rock collection
Look for animal tracks
Build a kite and then go test it
Plant a tree or even some seeds
Start a scrapbook of tree leaves
Count the rings on a tree stump
Create a rainbow with water from a garden hose

Keep in Mind!

You can come up with millions of crafts from items lying around your home. You can reuse shoeboxes, baskets, plastic bottles and cans, food containers, junk mail, magazines, envelopes, egg cartons, cardboard boxes and so much more. These items can be used to create picture frames, bird feeders, collages, greeting cards; the possibilities are endless. Just let your imagination run wild!

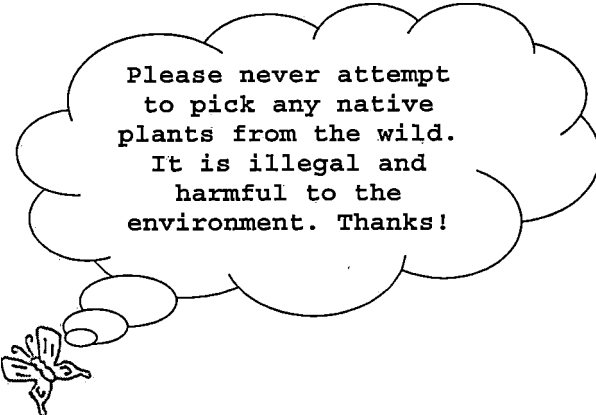
Recipes Using Native Plants

Buckwheat Pancakes

The buckwheat used to make these pancakes is not the same buckwheat as the Cahuilla used, but it can be purchased at the local market and will still taste great.

What you will need:

1 large egg
1 ¼ cup of buttermilk
3 tbsp. melted butter
½ cup of flour
½ cup of buckwheat flour
¾ tsp. baking soda
¼ tsp. salt



Please never attempt
to pick any native
plants from the wild.
It is illegal and
harmful to the
environment. Thanks!

How to make it:

First, whisk the egg, buttermilk, and butter until they are well blended. Then combine the buckwheat and regular flour, the soda, and the salt. Add that to the egg mixture. Place three tablespoons of mix on a skillet to make one pancake. Wait until the pancake bubbles before flipping it. Makes a dozen pancakes

Nopales with Pork Chops

Nopales are slices of cactus and are used in several recipes. They can be bought at your local grocery store. You can also make this recipe with scrambled eggs.

What you will need:

6-8 prickly pear cactus pads with the spines removed
water
6-8 pork chops
1 onion
3 chopped jalapeno peppers

How to make it:

Take a sharp knife and carefully remove all of the spines off the cactus. Cut the cactus pads in bite-size pieces. Put them in a pan and cover them with water. Cook the cactus pieces until tender, about 45 minutes. Pat the cactus dry and set aside.

Chop the pork chops into small pieces and fry them in a large skillet. Chop the onion and peppers and fry with the pork chops. Add the cactus. Mix well and serve hot.

Cactus Candy

This recipe can be made with prickly pear cactus fruit. The fruit of this cactus can be purchased at many specialty markets.

What you will need:

Prickly pear cactus fruit
1 cup of water
2 tablespoons of sugar
1 tablespoon of orange juice
1 teaspoon of orange peel

How to make it:

First, take the fruit of the cactus and slice it into one-inch strips. Soak these overnight. The next morning, drain the fruit and slice into one-inch cubes. Cook those in boiling water until they are tender.

For the syrup:

Mix all of the ingredients, except the cactus fruit, over low heat until everything dissolves. Now add the fruit and cool slowly until all of the syrup is absorbed into the fruit. Roll the pieces in powdered sugar and enjoy!

Elderberry Jam

This tasty jam is great with vanilla ice cream and can be bought at most health food stores.

What you will need:

2 quarts of crushed elderberries
6 cups of sugar
¼ cup of vinegar

How to make it:

Combine the berries, sugar, and vinegar in a pot. Slowly bring to a boil, stirring occasionally until the sugar dissolves. Turn the heat up and cook rapidly until the mixture is thick. As the mix thickens, stir it frequently to prevent sticking. When the mix is thick like jam, place it in jars and leave in the refrigerator overnight.

All of these recipes were obtained from www.cooks.com

Indians of Inland Southern California

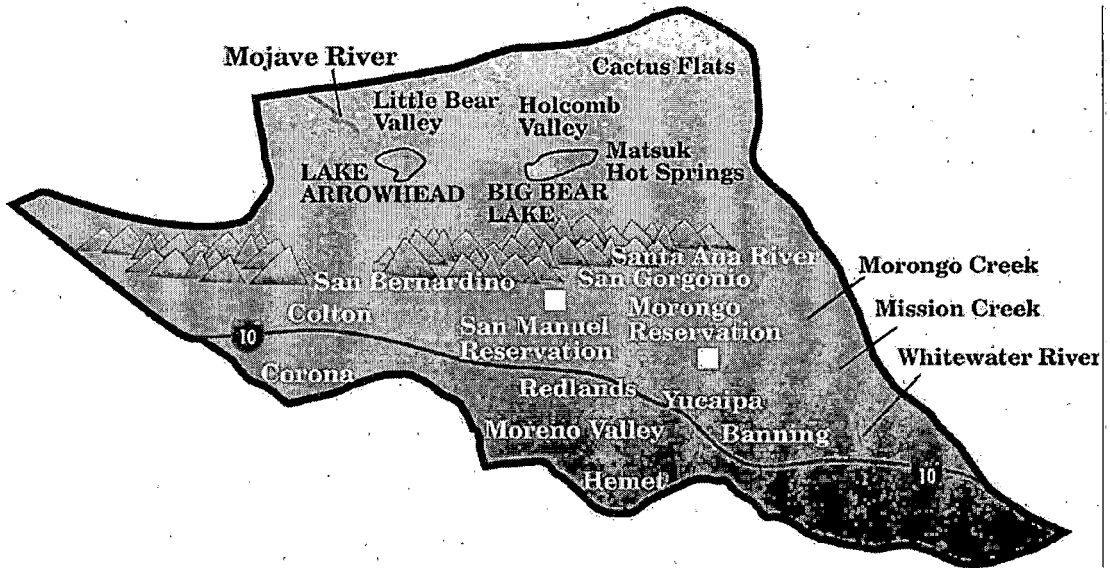
Two main Indian nations have used the native plants in this garden. The Cahuilla people lived in the South Eastern part of California. Their territory stretched as far north as the San Bernardino Mountains to as far south as Borrego Springs. It went west to the Riverside Area and as far east as the Colorado Desert.

The Serrano people lived in a vast area comprising the San Bernardino Mountains and much of the surrounding area. Their terrain stretched west to the San Gabriel Mountains and Mount Baldy, south to the San Bernardino Valley, and east to 29 Palms. The Cahuilla and Serrano lived in areas with vast altitude changes and different climate zones. Desert areas contained different plants than chaparral and mountain areas and these people found ways to use most of these plants throughout these zones. Today, it seems like there could never be enough food to survive in this area, but the Cahuilla and Serrano adapted to their environment and learned how to benefit from all of the plants in this region.

These people survived for thousands of years by learning how to obtain and make food, medicine, shelter, and clothing from the environment. They knew about each plant, what it could be used for, and how to prepare it for use. For example, the Cahuilla and Serrano had to discover what plants were only edible when they were ripe and what time of the year they would ripen. If they were mistaken, someone could be poisoned. They also had to know specific details such as how to take the spines off of the cacti without getting hurt. Learning this information about native plants took years to master. That is why children as young as five and six would begin to learn about native plants such as when to collect them, how to prepare them, how to store them, and which parts of a plant were useful. There were over 300 edible plant sources throughout the Cahuilla and Serrano territory.

With the arrival of the Europeans, the Indian lifestyle changed along with the landscape. Development has altered the land and many habitats with native plants have been lost. The Cahuilla and Serrano way of life is much different than it once was. Their traditional culture is vanishing, but you can help keep it alive! By becoming informed about native plants and their importance to Indians as well as to all of us, you have the opportunity to protect native plants as well as the opportunity to allow the Cahuilla and Serrano to carry on some of their traditions.

Map of Indian Territory



Cahuilla Coiled Basketry

Cahuilla basketry is a fine art that takes years to master. There are very few Cahuilla that can still make these elaborate baskets because it is so difficult and time consuming. However, the baskets that are created are beautiful works of art. Cahuilla women were the primary basket weavers and made beautifully designed coiled baskets for to give as gifts and for everyday use. They also used these baskets for everyday use such as cooking, gathering water, storage, and serving foods.

When the Europeans came, they brought pots and pans made of tin and the Cahuilla switched from using baskets to using tins. It was not until the early 1900s that there was a revival in basketry among the Cahuilla when art collectors started purchasing these baskets. During this time, Cahuilla baskets became a form of self-expression for women and were no longer used for utility purposes.

The Cahuilla Indians used three main plant materials to weave a coiled basket. The foundation of the basket consisted of a bundle of deergrass and yucca around which juncus, a marsh grass, or sumac a low tree or shrub, were wrapped. Designs were often used which reflected the Cahuilla's natural surroundings. Some examples of basket designs include, rattlesnakes, eagles, stars, flowers, and lizards. The Cahuilla also dyed the materials used to make the baskets to enhance the decorations. They made these dyes out of different plant material such as elderberry.

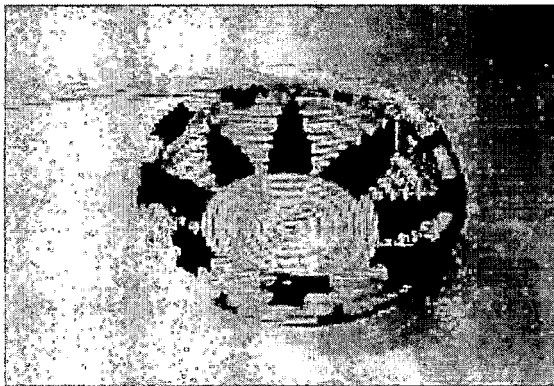
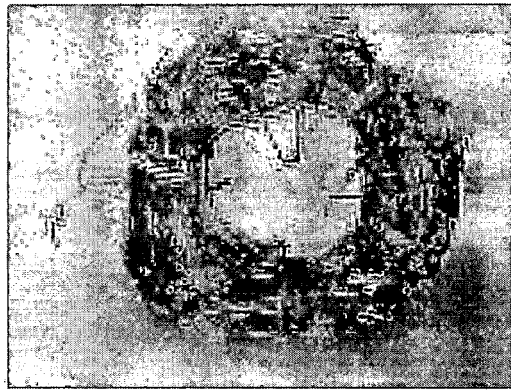
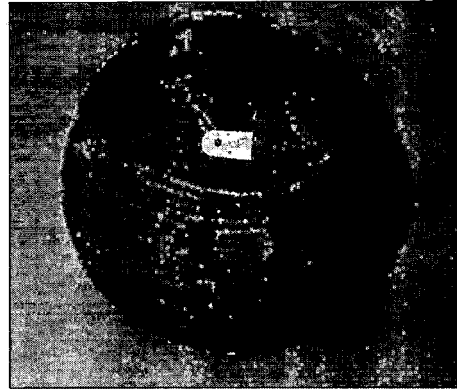
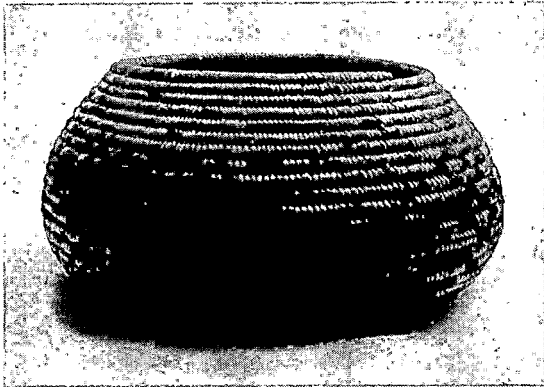
These baskets took years to create. Cahuilla women first had to determine what kind of basket they were going to make and what type of design that was going to be woven into the basket. The complexity of the design and shape adds to the difficulty in preparation. Gathering the material in itself was extremely time consuming. The Cahuilla woman might have to gather each of her materials from different locations at different times of the year. This is because not all of the plants would be located in the same region and they might not be in season at the same time. The women had to know the environment very closely to know when to find specific plant material.

After the material was gathered, the women then had to prepare it. For example, the juncus had to be split into three equal sections and then dried and smoothed. The

elderberry had to be crushed and made into dye and each piece, or withe, of juncus had to be dyed individually. After this, the basket had to be coiled together. This process was the most difficult and took years to master.

Basket making earned Cahuilla women high prestige because it was such a complex craft. Cahuilla women needed to possess intelligence, artistic abilities, skill, appreciation of color and form, and especially respect for the environment to create a basket. Coiled basket making is a true art form. The Cahuilla people had much respect for the women who made these baskets as well as respect for the environment and its resources.

Cahuilla Baskets



Cahuilla Path to Basket Making Game

This game can be played with 2-4 players or can be played with teams of two and can be played with up to 8 players.

Before beginning:

- First, cut out the spinning wheel and the arrow.
- Next, find a push-pin or anything that allows the arrow to turn. Place that item through the marked dot located on the center of the wheel and the marked dot in the center of the arrow to create your spinning wheel.
- Next, cut out the four cards. Each card has a different type of basket made by the Cahuilla Indians.
- Pass out one card to each player or teams of players. This is the type of basket that this player or players will be creating in the game.
- Finally, find rocks or twigs nearby to be used as game pieces.

To play:

Each player or teams of players places their game pieces at Start.

Spin the wheel to see who goes first. If you spin the highest number, then you go first.

Spin the wheel again and move your game piece as many places as you spun on the wheel. Whatever item you land on, place a check next to the item that you collected. If that item is not needed to complete your basket, still write it down on the back of the card because it can be traded at a later time.

The next player spins the wheel, and tries to collect all of the items on the card to complete the basket. Remember, every item collected should be written down on the card or a separate piece of paper. There will be several chances to collect all of the needed items.

There is no going backwards if an item is passed up. If you get to the center of the basket without all of the needed items, you must barter with the other players by asking someone if they would like to trade items needed.

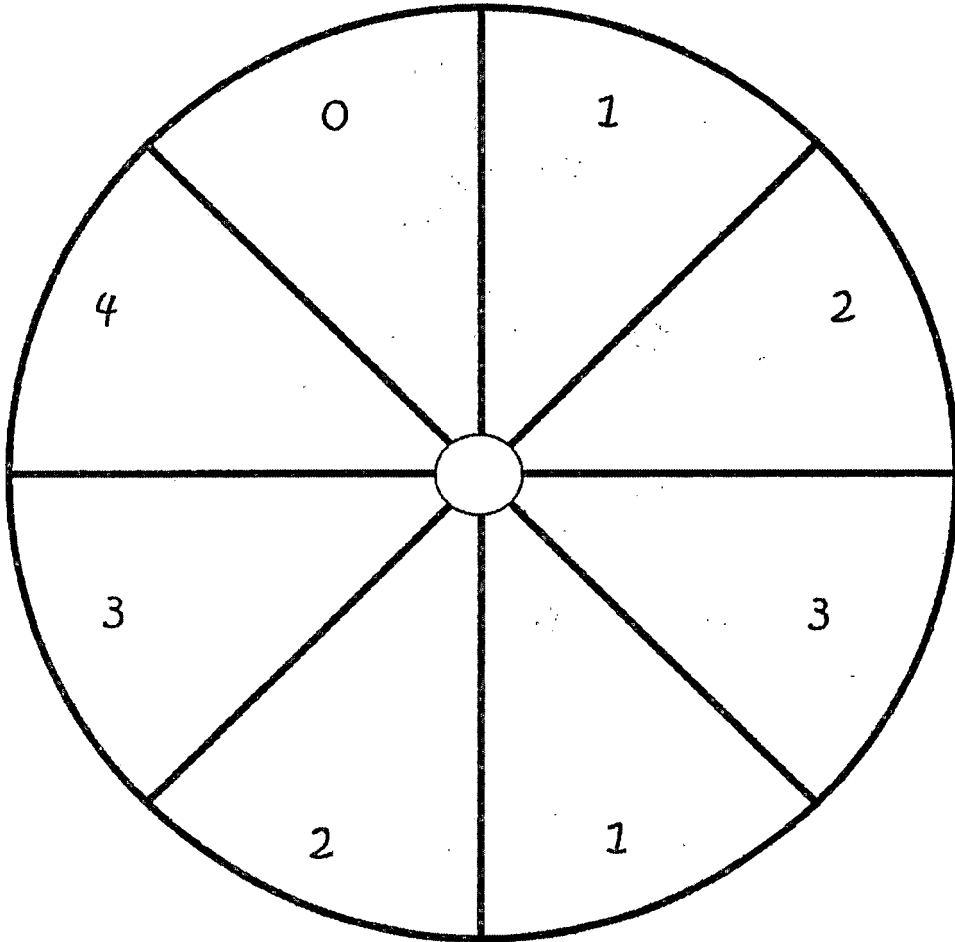
If no player has the item needed or does not want to trade, then your basket is not complete and you must start at the beginning until you get the item or items needed to complete your basket. Once you get the item(s) then your basket is complete.

If players complete their basket before everyone else, they can start from the beginning and collect items to trade with others so that everyone can complete their basket. You can trade one item per turn with another player until everyone's basket is complete.

The goal is to have everyone's basket complete!

<p style="text-align: center;">SE-KWA-VEL-EM</p> <p>The largest of the Cahuilla baskets, it is used for food storage.</p> <p>Items needed to build the basket:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Deergrass <input type="checkbox"/> Juncus <input type="checkbox"/> Sumac <p>This basket is designed with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Rectangles <input type="checkbox"/> Circles <p>The color of this basket is:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Black <input type="checkbox"/> Golden brown <input type="checkbox"/> Olive <p>One item of native food must be collected to store in the basket.</p> <p>Choose from:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Elderberry <input type="checkbox"/> Beavertail cactus <input type="checkbox"/> Buckwheat 	<p style="text-align: center;">KA-PUT-MAL</p> <p>Smaller than the Se-kwa-vel-em, it is used for food storage.</p> <p>Items needed to build the basket:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Deergrass <input type="checkbox"/> Juncus <input type="checkbox"/> Sumac <p>This basket is designed with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Lizards <input type="checkbox"/> Circles <p>The color of this basket is:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Black <input type="checkbox"/> Reddish-orange <input type="checkbox"/> Golden-brown <p>One item of native food must be collected to store in the basket.</p> <p>Choose from:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Elderberry <input type="checkbox"/> Beavertail cactus <input type="checkbox"/> Buckwheat
<p>YU-MAL-WAL</p> <p>The smallest of the Cahuilla baskets, it is used as a water dipper or mixing pan.</p> <p>Items needed to build the basket:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Deergrass <input type="checkbox"/> Juncus <input type="checkbox"/> Sumac <p>This basket is designed with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Flowers <input type="checkbox"/> Cacti <p>The color of this basket is:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Olive <input type="checkbox"/> Golden-brown <input type="checkbox"/> Water must be collected to put in the basket 	<p>TE-VIN-GE-MAL</p> <p>A gift basket used by the Cahuilla Indians.</p> <p>Items needed to build the basket:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Deergrass <input type="checkbox"/> Juncus <input type="checkbox"/> Sumac <p>This basket is designed with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Lizards <input type="checkbox"/> Flowers <p>The color of this basket is:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Black <input type="checkbox"/> Golden-brown <p>One item must be collected to put in this basket as a gift.</p> <p>Choose from:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Elderberry <input type="checkbox"/> Beavertail cactus <input type="checkbox"/> Buckwheat

Spinning Wheel



Read More About

Native Plants and Gardening

Alden, P., & Heath, F. (1998). National audubon society field guide to California. Alfred A. Knopf, Inc.

Barbour, M., Pavlik, B., Drysdale, F., & Lindstrom, S. (1993). California's changing landscapes. Sacramento, CA: California Native Plant Society.

California Native Plant Society. What is a native plant? Retrieved on January 27, 2005, from <http://www.cnps.org/activities/natives.htm>

Desert Plants in Southern California. Retrieved on December 28, 2004, from <http://www.desertusa.com>

Keator, G. (1994). Complete garden guide to the native shrubs of California. San Francisco, CA: Chronicle Books.

Lowry, J. (1999). Gardening with a wild heart. Berkeley: University of California Press.

Stark, M. (2000). A flower-watcher's guide to wildflowers of the western Mojave Desert. Lancaster, CA: Milk Stark.

Indians and Basketry

Bean, L. J. (1972). Mukat's people: The Cahuilla Indians of southern California. Berkeley, CA: University of California Press.

Bean, L. J., & Bourgeault, L. (1989). The Cahuilla. New York: Chelsea House Publishers.

Boule, M. N. (1992). Cahuilla tribe. Vashon, WA: Merryant Publishing.

Cultural History of Agua Caliente Band of Cahuilla Indians. Retrieved on January 19, 2005, from www.aguaclaiante.org

Dozier, D. (1998). The heart is fire. Berkeley, CA: Heydey Books.

- Hedges, K. (1997). Fibers and forms: Native American basketry of the west. San Diego, CA: Vanguard Lithographers, Inc.
- James, G. W. (1972). Indian basketry. New York: Dover Publications.
- Porter, F. (Ed.). (1990). The art of native American basketry. New York: Greenwood Press.
- Turnbaugh, W., & Turnbaugh, S. (Eds.). (1999). Basket tales of the grandmothers. Peace Dale, RI: Thornbrook Publishing.

Environmental Activities

- Cornell, J. (1979). Sharing nature with children. Nevada City, CA: Ananda Publishing.
- Cornell, J. (1989). Sharing the joy of nature. Nevada City, CA: Dawn Publications.
- Milord, S. (1989). The kid's nature book. Charlotte, VT: Williamson Publishing.
- Nature Activities for children. Retrieved on December 8, 2004, from <http://www.naturepark.com/act.htm>
- Terwilliger, E. (1979). Sights and sounds of the season. Tiburon, CA: Elizabeth Terwilliger Nature Education Foundation.

REFERENCES

- Barbour, M., Pavlik, B., Drysdale, F., & Lindstrom, S. (1993). California's changing landscapes. Sacramento, CA: California Native Plant Society.
- Bean, L. J., & Bourgeault, L. (1989). The Cahuilla. New York: Chelsea House Publishers.
- Boule, M. N. (1992). Cahuilla tribe. Vashon, WA: Merryant Publishing.
- Brumgardt, J. R., & Bowles, L. (1981). People of the magic waters. Palm Springs, CA: ETC Publications.
- Cajete, G. (1994). Look to the mountain: An ecology of indigenous education. Durango, CO: Kiviki Press.
- Cornell, J. (1989). Sharing the joy of nature. Nevada City, CA: Dawn Publications.
- Culen, G. (2001). The status of environmental education with respect to the goal of responsible citizenship behavior. In H. R. Hungerford, W. J. Bluhm, T. L. Volk, & J. M. Ramsey (Eds.), Essential readings in environmental education (2nd ed.) (pp. 37-45). Champaign, IL: Stipes Publishing L.L.C.
- Daudi, S. (1996a). Approaches to environmental education by Indigenous cultures in North America. Environmental Education and Training Partnership, (3) 1-3. Retrieved February 22, 2005, from <http://eelink.net /eetap/info3.pdf>
- Daudi, S. (1996b). The philosophical approaches to understanding the Native American culture through environmental education. Environmental Education and Training Partnership, (4), 1-3. Retrieved February 22, 2005, from <http://eelink.net /eetap/info4.pdf>
- Disinger, J. F. (2001). Environmental education's definitional problem. In H. R. Hungerford, W. J. Bluhm, T. L. Volk, & J. M. Ramsey (Eds.), Essential readings in environmental education (2nd ed., pp. 17-31). Champaign, IL: Stipes Publishing L.L.C.
- Dozier, D. (1998). The heart is fire. Berkeley, CA: Heydey Books.

- Hammerman, D. R. (1994). Teaching in the outdoors. Danville, IL: Interstate Publishers.
- Hughes, D. (1983). American Indian ecology. El Paso, TX: Texas Western Press.
- Knapp, C. (1996). Just beyond the classroom. Charleston, WV: Appalachia Educational Laboratory, Inc.
- Krech, S. (1999). The ecological Indian. New York: W.W. Norton and Company.
- Orr, D. (1994). Earth in mind. Washington, DC: Island Press.
- Sward, L., & Marcinkowski, T. (2001). Environmental sensitivity: A review of the research. In H. R. Hungerford, W. J. Bluhm, T. L. Volk, & J. M. Ramsey (Eds.), Essential readings in environmental education (2nd ed.) (pp. 277-288). Champaign, IL: Stipes Publishing L.L.C.
- The Tbilisi Declaration. (2001). In H. R. Hungerford, W. J. Bluhm, T. L. Volk, & J. M. Ramsey (Eds.), Essential readings in environmental education (2nd ed.) (pp. 13-16). Champaign, IL: Stipes Publishing L.L.C.