ELA Common Core Content Standards:
Reading Standards Informational Text 4, 5, 7, 8
Reading Standards: Foundational Skills 1, 2, 3
Writing Standards 2, 3, 8
Speaking and Listening Standards 2, 4

Estimated duration: One 2 hour session; an additional 2 hour session for addendum materials as needed

Goal: Students will learn identification, nutritional values, harvest and preservation techniques, and naming conventions of Native healing foods plants. They will learn the connection between physical health and the incorporation of Native foods into the diet.

Teacher Background: The Klamath Basin is one of the most ecologically diverse ecosystems in the western United States, yet our tribal communities are neither physically nor economically healthy. Once replete with an abundance of healthy traditional foods and medicines traded up and down the river, the Klamath Basin now home to a poverty-stricken population riddled with diet-related diseases such as diabetes and heart disease. Climate change, denied access to traditional foods and medicines, the prevalence of commodity foods and prescription drugs, high unemployment, and limited availability and affordability of fresh, healthy foods have resulted in high rates of food insecurity, diabetes, obesity and depression.

There are manifold reasons to explain the current situation: Our People's intimate and deep relationship to the landscape has been violently disrupted due to colonization and globalization. Land appropriation, the ban on traditional land management practices – especially on cultural burning, and forced assimilation into Western culture has driven many Native people from their traditional homelands. Even those who remain do not have access to traditional foods and medicines. Additionally, the marginalization of Native cultures and the generations lost to the traditional forms of tribal education through the Indian Boarding School Era have led to what is widely known as intergenerational trauma. And finally, the current threats posed by increasing frequency and scale of wildfire, continued drought conditions, pest and disease infestation have highly and negatively impacted access to Native foods, fibers and medicinal plants.

Despite the growing health crisis in Indian country, the traditional ecological knowledge (TEK) of Native cultures is gaining wide recognition. The revitalization of Native food, fiber and medicinal health systems with the help of traditional land management practices is a goal currently sought by federal, state, tribal and local governmental agencies, as well as non-profit and grass-roots organizations. Learning about the healing properties of plants was – and still is – an important responsibility for Native people. By balancing western-science based botany with Native-science

based TEK, Native and non-Natives alike can help contribute to the revitalization of one of the most ecologically diverse ecosystems in the country.

Four species of healthy Native foods are highlighted in this lesson: Sugar pine nuts, elderberries, wild rye, and the deer potato. Each one was a mainstay in the diet of the Karuk in times past. Nowadays, they are less frequently harvested due to many of the reasons mentioned above. In the booklet, we have added the Karuk, common, and Latin names for each species; however, we do not address the address of taxonomy in this lesson as that will be dealt with in more detail in Lesson 3 for this sixth grade level. We have, however, included nutritional, medicinal as well as cultural use detail to account for their healing properties. The concept of "ownership" as it affects gathering sites is also briefly mentioned, which was the focus of Lesson 5 in the fifth grade level of the *Nanu'ávaha* Curriculum.

The booklet is conceptualized to be used as a personal herbarium. There is a page dedicated to pressed plant specimens, and students will be encouraged to collect leaves and/or flowers for pressing in plant presses, which can be checked out from the Karuk Department of Natural Resources. Ideally, the students will have collected for their ***Pírish*: Medicinal Plant Field Guide** booklet as part of grade level 5, Lesson 4. These plant specimens should be dried and ready to mount for the plant voucher mounting activity that in this lesson; however, if this is not the case for your class, we have added the most pertinent texts, PowerPoint, and vocabulary worksheets to this lesson as an addendum for your convenience.

Theme/Big Idea:	Food nourishes us; we take care of our food resources
Big Questions:	Which plants are good for us, where do they grow, how do we harvest them, how do we preserve them, and how do we use them?
Vocabulary:	corm, tuber, omnivorous, adhesive, perennial, habitat, cultural burning, tree plantation, traditional ecological knowledge, potent, pithy, vertical

Materials:

***pahûut úus kun'áxxanvutih*: How They Bite Sugar-pine Nuts**, "Ethnographic Texts" dictated to J. P. Harrington by Phoebe Maddux in Washington, D. C., October-May, 1928-9, transcribed and edited by James Ferrara in 2004, adapted for this lesson with permission from the editor

***Piith papírish*: Four Native Healing Plant Foods** booklet, interactive media (included)

Vocabulary Worksheet: Native Healing Foods (included)

Collecting and Mounting Plants for the Karuk Herbarium PowerPoint (included)

Addendum Materials: *from Nanu'ávaha Curriculum, Grade level 5 – Lessons 4 and 5*

Gathering Ethics: excerpt from After the First Full Moon in April, by Josephine Peters (included)

Plant Specimen Collection: Tips for Botanical Field Work PowerPoint (included)

Learning about Your Herbaria: Karuk Tribe's Special Plant Collections, Megan Mucioki, Ph.D. (included)

Preparation: Review lesson texts, booklet, and PowerPoint. You may also want to review the texts and supplementary materials in the addendum if you have not already taught them. Print out copies of all materials needed for your students, and load a computer with projector to view the PowerPoint. Prepare the booklets for students by folding and stapling. If you would like help in having students mount their specimens, arrange for a visit from staff of the Karuk Department of Natural Resources.

Discussion Circle: Tell the class that today they will be learning about four different Native plants whose edible parts have high nutritional and healing qualities. The four plants featured are just a few of the hundreds of plants that Karuk people use to make up the complete and nutritious meals in a traditional diet. The ones they will learn about come from different food categories: seeds, fruit and underground stems. Write seeds and fruit up on the board. Ask them if they know of any Native plants in these groups that are eaten. List these under their respective categories.

When they finish brainstorming, tell them that they will also learn about an important Native food that is known as a corm. Ask them if they know what a corm is. (*Answer: the small round underground part of some plants, from which the new plant grows every year*) Tell them they are like tubers and bulbs, which also serve the same purpose, but they are each a little different. A tuber, like a potato, has lots of eyes from which new plants will emerge. Ask them if they have seen an old potato that has sprouted. A bulb grows in layers, like an onion or a tulip. A corm, on the other hand, looks like a bulb on the outside: it also has a protective covering like an onion, but does not grow in layers.

Tell students that the four types of food they are going to learn about are: blue rye grass, pine nuts, elderberries, and Indian deer potatoes. Ask them to name which category each food belongs in. (Careful: although pine nuts are commonly believed to be nuts, they are actually seeds!)

Preparing to read: Tell students that they will be reading an account told in the late 1920s by Karuk elder Phoebe Maddux about harvesting pine nuts. Tell them that the original text was in Karuk, and that they second line is an adapted translation of the original Karuk words. Ask them if they remember what translation and adaptation mean. You may have to remind them that a translation is a word or words that have been changed from one language, like Spanish or Karuk, into a different language, like English. Tell them that often original text have to be not only translated, but adapted, so that the listener can understand the context of the story and that some pieces of information that the speaker does not mention might need to be explained. Explain to them that most translations are also adaptations, because most languages are a little different in the way they express human thought. An example is the word “medicine”: I n Karuk, that can mean not only something that is prescribed by a doctor, it can also mean good thoughts that make good things happen.

Tell them that while this text is simply an account of how, when, and why Karuk people did certain things to harvest pine nuts, there are other types of stories that feature food, but that the time for telling these traditional stories is when snow can be seen on the mountains in the high country. Tell them that you can *talk about* stories, however, or *refer to them*, as they do in one of the texts in the booklet they will read later in the lesson, and still respect the rules of the Karuk oral traditions. Tell them the following two short funny stories about the foods they will learn about:

The first one is about pine nuts: A Karuk story tells of a turtle who went to a pine-nut gathering party, which used to be one of the widely practiced social events that place harvesting food for families and villages at its center. Turtle started in July, about two months ahead of the traditional harvesting time, in order to arrive at a pine nut gathering site. Nonetheless, he traveled so slowly that he did not arrive until the nuts had all been picked up. For this reason, he was told: "As long as you live, you'll always be too late." It is traditional to tell anyone who is slow or lazy to be called "Turtle."

The other is about Indian potatoes: Ground squirrels were digging the Indian potato corms (*tayiith*[1]) one day. When they looked uphill, they saw a person who was dancing down towards them. When he got close, they watched him dance. They liked watching him, so they sat there until all of a sudden, he broke wind right in front of their noses. The little ground squirrels fainted, and this fellow – a type of skunk – stole all their potatoes.

So the next day they had to go back and dig up more corms. They dug a lot, but then they saw the person dancing down the hill toward them again. One of them said, "Say, this time let's jab him with a digging stick when he dances around here in front of us." And so he when he got close to them, dancing back and forth in front of them, they waited until he had his buttocks facing them, and then they jabbed him with a digging stick. Wham! Then they packed up their potatoes and ran home.

Read Aloud: Have students take turns reading the English translations of the ***pahûut úus kun'áxxanvutih:*** **How They Bite Sugar-pine Nuts** text.

Drawing Conclusions/Making Judgments: Ask students what kinds of information are given in this text. Answer can be: lessons about gender roles; harvesting, processing, storage, and consumption practices; types of tools and baskets needed for traditional harvesting; idiomatic phrases and beliefs of the Karuk people, and a reference to a traditional story about Old Man Turtle. Ask them if they can imagine doing this, and whether the informant explained the process well. Ask them if they have ever eaten pine nuts and if they like them.

Vocabulary: Pass out the **Vocabulary Worksheet: Native Healing Foods** for students to complete.

Read Aloud: Have students take turns reading the texts in the ***Piith papírish*****: Four Native Healing Plant Foods** booklet.

Research Activity: Have students look up photographs and any needed additional information on the four Native healing food plants discussed in preparation for a field trip to collect specimens. Then, ask groups of students to research one of the research questions below. If they are unable to find an answer to their question, have them write an email to the Director of the Karuk Department of Natural Resources or the Tribal Historic Information Officer for clarification. They may call the Karuk Tribe's receptionist to ask for the most current email addresses.

- Why isn't sugar pine (and red cedar) wood used by the priest in Pikyávish (World Renewal Ceremony) for firewood?

[1] Pronounced tay-iith, with the "th" sound mixed with a little "s" sound, explaining why some ethnographers write "tayiish". Sound file located at http://linguistics.berkeley.edu/~karuk/audio-words/MP3/tayiith_VS.mp3

- Why would a ban on cultural burning result in the loss of rye grass habitat?
- Why do the U.S. government establish tree plantations in our region, and why does this affect the natural habitat?
- What kind of elderberry is poisonous? How can you tell the difference between these and the varieties edible to humans?
- How can you make a flute out of wood?
- What is the best way to increase the quantity and quality of Indian deer potatoes, and what other varieties of Indian potatoes are there?

Preparing to View PowerPoint: Ask students if they remember why some may think it is important to collect specimens, and if they know what an herbarium is. If needed, have them read the **Learning about Your Herbaria: Karuk Tribe's Special Plant** Collections text included in the addendum.

PowerPoint: Show students the **Collecting and Mounting Plants for the Karuk Herbarium** PowerPoint, referring to the notes in the presenter's box at the bottom of the PowerPoint to help guide your presentation. If your students have not already had Grade 5, Lessons 4 and 5, you may wish preface this presentation with the texts and supplementary materials listed.

Activity: Students will take a field trip to help them find the specimens needed to complete their booklets. It may prove difficult to get all the plants needed on one field trip, and the Sugar Pine will be the most difficult to find. You may opt to have students simply search for pictures to glue into some fields. Teacher should bring along the researched materials to act as a field guide.

Optional Activity: Invite a representative from the Karuk Department of Natural Resources to help students mount specimens they have collected, pressed and dried for their personal herbaria, or for a school herbarium.

Invite a Karuk speaker and/or a Cultural Practitioner to repeat the ***pahûut úus kun'áxxanvutih*: How They Bite Sugar-pine Nuts** text in Karuk and/or talk about traditional plant harvest techniques.

Resources: Differences between bulb, corm, rhizome, root, and tuber.
http://healthyhomegardening.com/Blog.php?pid=105

Blue Wildrye: http://plants.usda.gov/plantguide/pdf/pg_elgl.pdf

Indian Potato: http://plants.usda.gov/plantguide/pdf/cs_brco3.pdf

Sugar Pine: https://en.wikipedia.org/wiki/Pinus_lambertiana

Blue Elderberries: http://plants.usda.gov/plantguide/pdf/cs_sanic5.pdf

pahûut úus kun'áxxanvuti[2]

Adapted Excerpt from Phoebe Maddox' explanation on
"How They Bite Sugar-pine Nuts"

1. ***chôora úus nu'áxxanvi***[3]

"Let's go bite some sugar-pine nuts."

2. ***cháem hôoy pavôoraanar*.**

"All right, where's the hook?"

3. ***xás pa'ávansa vaa kích tó okváatsip pavôoraanar, káru pataxvukríppananich*.**
All that the man packs on his shoulder is the hook and a small hook.

4. ***káru uum pa'asiktávaan áttimnam kích tu'áttiv kár(u) imváram, káru pa'usikxúhar, pamukun'ámkiinv(a) u'áttivutih.***
The woman is packing a pack-basket, an openwork plate basket, a mashing club, and their lunch.

5. ***áavkam u'áhootih, íffuth nu'íruunaatih*.**
He's walking ahead, while we (women) walk behind on the trail.

6. ***xás pa'ávansa tó opiip: vaa xásik vúra nivôoruraavish súva íikar.***
Then the man says: "I'll climb that loaded tree."

7. ***pakáakum itahanamáhich kunpíkchussahinaatih.***
Some limbs have ten cones in a bunch.

8. ***axmáy ík uppêesh: máva. chí âapun chími núkyav peekveeshríhraam.***
All at once he says: "Look. Let's sit down and make a camping ground."

9. ***tá kunpíkyar vaa káan xás kunikvêeshriihti pa'ishaháttiim*.**
They make a campground by the river.

10. ***kári xás tó opiip: chími kanvôoruraa.***
Then he says: "Now let me climb up."

11. ***xás pamutaxvúkkar atráax tó omtháttataanka patatrîihvara mûuk.***
He lashes the small-hook to his forearm with twine.

12. ***kári xás tó oksáppish pamuvurâanar*.**
Then he leans the climbing hook against the tree.

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[2] "Ethnographic Texts" dictated to J. P. Harrington by Phoebe Maddux in Washington, D. C., October-May, 1928-9, transcribed and edited by James Ferrara in 2004 and adapted for this lesson.

[3] In a story, Old Man Turtle bit sugar pine cone twigs to cut them, and this old expression is used of cutting off the cones.

13. ***kári xás tó opiip: chôora chímmi. chími kanvôoruraa.***
Then he says: "All right, let's go. I'm going to climb up."

14. ***kuhyêevish ík vúra kuhyûunisheeshik asaxvuhpíhniich.***
"You children and women must holler to Old Man Turtle to bite off the sugar pine nuts."

15. ***maník.***
"All right," (they reply).

16. ***méekva tuvôoruraa. méekva tá kuníhyiv: asaxvuhpihniich ikxíitshun*.**
He climbs up. They holler: "Old Man Turtle, bite it off!"

18. ***tá kunxus tó okxíitshur*.**
They think he bites the cones off the tree.

19. ***yátik uríkkikha pa'âapun tó okyívish.***
It makes a big noise when they hit the ground.

20. ***méekva tá kun'íffikvanaa papiríshriik, káru poonavúnniihva, káru pooxuvúraan.***[4]
They pick them up in the brush, even on the side hills and in gulches.

21. ***vaa kôokaninay tá kun'íffikvanaa. vúra pu'áffishtihara pá'uus pa'ávansa.***
They pick them up all over there, but the man never touches the cones.

22. ***káan tupikrîish pa'usip'áffiv.***
He is just sitting down under the sugar pine tree,

23. ***tupihêer pamu'uhramxárah.***
smoking his big pipe.

24. ***pa'asiktávaan uum kêech pamu'áttimnam, kúna payeenipaxvúhichas uumkun tûupichasich pamukun'áttimnam.***
The woman puts them in her big pack-baskets, and the little girls have little pack-baskets.

25. ***pa'avansáxxiitichas uumkun áttimnam pu'áttivutihap, thuxrivtunvêechas kích kuntháthvutih, axyárava pá'uus, thuxrivkêemichas kích kunxúti xáy uxváha.***[5]
The boys just pack little net sacks full of sugar pine nuts - old bags, because they thought they get ruined with pitch.

[4] **pooxuumkúrihva**: where there are hollows. **pooxuvúraan**: where the gulches run up. **pooxuvúnniihva**: where the gulches run down. **pooxumpíithva**, where there are lots of gulches running every which way.
[5] The boys' network sacks are of a special small size, smaller than those carried by men.

26. ***patá kun'iffíkfip xás túr kúnish tá kuníkyav pá'uus, xás tá kunturíshriihva káan peekveeshríhraam*.**
When they finish picking them up, they stack them like a heaped load in their baskets. Then they carry the loads to the camping ground and empty them onto the ground.

27. ***xás tá kuntámxuh*.**
Then they burn the pitch off.

28. ***táyaan vúra ikxáram xás tá kun'íffithvanaa.***
Often they roast them at night, and then they shell them.

31.***vúra pu'ishkáxishrihtihap.***
They never rest when they are working.

33. ***kunxútih: xáy úmsip. xáy usákriivha pó oxisíppahaak.***
They think: "The cone might get cold if we wait, and then they are hard to shell."

34. ***vúra kun'aapúnmuti pakóo kunikyâavish yíthth(a) ikxáram****.*
They know how many they can handle in one night.

35. **páttaayhaak, vaa vúra káan káakum âapun sú' tá kun'íshshunva vaa uum pu'ivaxráheeshara, imáankam.**
If there too many to roast and shell in one night, they bury them under the ground so they won't be dry the next day.

37. ***hâari vúra sú' tá kun'íitshur itrôo(p) pasúppaah, xás tá kuntámxuh.***[6]
Sometimes they leave them in the ground up to five days, and then roast them.

38. ***vaa uum pu'ivaxrâahtihara.***
That way they do not get dry.

39. ***xás imáankam pá tusúppaaha tá kunpávyiihship pamukun'ikrívraam, tá kunpatíshshiip pá'uus.***
When they finally leave, they go in the morning taking the sugar pine nuts home.

40. ***kári xás patá kunpávyiihma pamukun'ikrívraam, xás tá kunthívrav, asippáraxak tá kunthívrav.***
When they get home they steam them in a big bowl basket.

[6] When they are roasting the cones over the fires, they put sticks in some way over the fires and rest the cones on top of the fire against these sticks. Then they keep turning the cones steadily over and over with sticks. When warmed all through they can just tear the cones apart tenderly with their hands and pull the nuts out with their fingers, holding the cone over an ***imváram*** (basket tray) to catch the seeds. Nowadays, some young Indians try to chop the seeds out with an axe. When a cone gets cold again, all gets hard and one cannot extricate the seeds. They are always afraid a cone will get hard. Then they steam the shelled sugar pine nuts in an ***ássip***. They put finely torn up wild grape leaves and hedge nettle (a kind of fine green, thin leaved bushes that grow by the river)—just wet these, do not put water, just wet it, and put hot rocks in, and also the plants gave them flavor.

41. ***tá kun'íyshar ayíppan káru sah'usiyxáhar patá kunthívrav.***
They mix them with grape vine leaves and steam them with nettles.

42. ***innaam va'áraaras uumkun u'iysháanti páhiip.***
The Clear Creek people mix their sugar pine nuts with pepperwood leaves.

43. ***vaa uum ikpíhan pamukún'uus*.**
Their sugar pine nuts taste strong.

44. ***vaa uum chêeech ár(a) uyâavahitih.***
That way, a person gets full quickly.

45. ***kári xás tá kunsuváxrah. âapun váasak tá kunthiv.***
Then they dry them. They spread them on a blanket on the ground.

46. ***patuthivrávahitihaak vaa yáv ukupeevaxráhahitih.***
When they have been steamed, they dry nicely.

47. ***kári xás sipnúukan tá kuniyváayramnih*.**
Then they put them inside a storage basket.

48. ***pachími kun'áveeshahaak, kári tá kunpíktaanva*.**
When they get ready to eat some, they take some out.

49. ***kári xás ássish tá kuníkyav.***
Then they dish them out onto openwork plate baskets.

50. ***xás tá kunpatnáknakvaraa.***[7]
Then they crack them in their mouths when they eat them.

51. **vúra pu'áxxak, yíchchaach patnáaktihap, ichâamahich vúra pakunpatnakváraatih.**
They do not crack two at a time: just one at a time.

52. ***páttaay yíchchaach umûutkarahaak, múvuh upichrôosheesh, vaa kunipítti pa'áraar*.**
If someone puts lots in his mouth at a time, people say his teeth will be crowded.

53. ***payêem vúra tá chîimich pakun'aapúnmuti pá'uus kunkupeekyâahitih.***
Nowadays there are only a few who know how to work the sugar pine nuts.

[7] ***uus upátnaaktih**:* he is eating sugar-pine nuts, literally, "He is cracking them in his mouth." They do not say ***u'áamtih***, but use this other verb of eating nuts.

Name _____

Vocabulary Worksheet: Native Healing Foods

corm, tuber, omnivorous, adhesive, perennial, habitat, cultural burning, tree plantation, traditional ecological knowledge, potent, pithy, vertical

Choose a word from the vocabulary bank that best completes each sentence and write it on the line. Be careful: you may need to change the word number (singular or plural). These are more or less definitions the related vocabulary in your Pírish: Medicinal Plants Field Guide.

1. An _____ is something that sticks one thing to another.
2. When something is positioned from top to bottom, it is _____.
3. A small round underground plant part that looks like a bulb, but isn't, and from which new plants grow, is called a _____.
4. If something or someone eats both other animals and plants, they can be described as _____.
5. When a plant stem has a soft, spongy central core, it is often described as _____.
6. A _____, is a plant type whose reproductive organ is underground and has "eyes" from which new plants can grow.
7. _____ is a type of knowledge passed down through generations that teaches about the environment through oral traditions and through experiential learning, which means learning through experience.
8. Group of trees or plants are called _____.
9. _____ is a form of traditional land management in which low-intensity fire is used to burn off unwanted species, improve habitat, and to complete religious responsibilities.
10. When something is _____, it has a lot of power, or is otherwise very strong.
11. Plants that do not have to be reseeded, but grow year after year, are called _____.
12. An animal's or plant's _____ is the type of environment and conditions in which it lives.

Gathering Ethics

Excerpt from "After the First Full Moon in April" by Josephine Peters & Beverly Ortiz

General Guidelines:

- Only gather what you will use.
- Take good care of what you do gather.
- Share with people who need it and can't get out to gather the plants themselves.
- Gather from areas that are more difficult to access so Elders can gather from places that are easier to get to.
- When gathering leaves or flowers, cut branches from several individual plants rather than pulling the plant up by the roots, which would kill the plant.
- Gather plants from large populations.
  - Take small amounts from several different places to minimize your impact on plant populations…….take a little bit from here, a little bit from there.
- Only gather common plants.
  - Be certain of plant identification before you harvest. Some common plants have rare relatives that resemble them closely.
- Avoid gathering frequently from the same place
  - Slow growing plants can easily be overharvested, especially if the root is the part used.
- Bring wild plants into your garden.
  - Gather seeds or cuttings to grow in your garden so that you don't have to keep finding new places to gather from in the wild.
- Gather only from healthy plants.

Learning about Your Herbarium: the Karuk Tribe's Special Plant Collections

Megan Mucioki, Ph.D.

A herbarium is a collection of pressed and dried plants. The flowers, leaves, stems, fruits, and sometimes seeds of each plant are called voucher specimens. These plant specimens are usually mounted on rigid paper and filed in cabinets to protect the plants from further deterioration. Herbaria can be found at universities, museums, and botanical gardens and usually comprise plants from all over the world. Some of the largest collections contain over 6 million voucher specimens.

Karuk Herbaria

The Karuk Tribe has two herbaria. One is located in Happy Camp at the People's Center and the other in Orleans at the Department of Natural Resources. These collections of pressed plants are very special because they only include plants found on Karuk Ancestral Territory and homelands and used by Karuk people for food, medicine, baskets, bows, nets, regalia, ceremony, and other traditional uses.

Each plant specimen is accompanied by information about the plant's habitat, where it was found, who collected the specimen, and what date it was collected. The voucher specimens in the tribal herbaria may include other information, for example what the plant is used for by Karuk people or references to stories in which the plant is featured.

Using western science and traditional ecological knowledge

While other herbaria have been developed and maintained through western science based methods, the Karuk Herbaria are established and maintained through the integration of western science and traditional ecological knowledge (TEK).

Western science methods of plant collection, pressing, mounting, and long-term preservation were used to establish the Karuk Herbaria. For example, western science has established guidelines for preventing pests from invading collections, and developed a type of glue that will not destroy the

plant when it is mounted on paper. In addition to Karuk names and common English names, the plant naming system established by western science is also included on each specimen to identify the plant. This naming system uses two words to identify each plant: first, the genus, which refers to the plant's class or kind; and second, the plant's species, which refers to its particular kind. This naming system is known as the botanical nomenclature and is used by scientists all over the world.

The traditional botany of the Karuk people has been developed over centuries. This TEK is essential to finding plants in the field, identifying these plants, and understanding their uses. Frequently, Karuk words or word parts describing plant habitat and use are imbedded in the Karuk name of a plant. These names are therefore doubly important in their function to classify plants in the Karuk Herbaria. Additionally, tribal codes that are founded on Karuk TEK govern where and how plants are collected for the herbaria. These rules ensure that plant populations are maintained sustainably.

Why are the Karuk Herbaria important?

The Karuk Herbaria are one resource that can be used to exercise the Tribe's inherent authority over their land, resources, food, and knowledge. Because properly stored pressed plants last hundreds of years, and future generations of Karuk people will be able to access, learn from and use these collections. Collecting multiple specimens of the same plant species over time can provide information about how climate change is effecting the distribution of plants. Also collecting an inventory of plants from an area before and after cultural burns as well as after wildfires can demonstrate the ecological benefits of fire on the landscape. Lastly, the tribal herbaria can be used as a teaching tool for youth and adults and facilitate knowledge transfer about traditional foods and medicines.

You can make a herbarium

Anyone can collect and press plants. It is a great way to interact with and learn about traditional foods and medicines and enjoy a day outside. The Karuk Department of Natural Resources has plant presses to loan to local schools and youth with their guardians.