

EDIBLE WILD PLANTS: CATALYST AND CONTENT AREA FOR WILDERNESS EDUCATION

By John Kallas, Ph.D. © 1997

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Abstract

Wilderness education can be achieved at many levels. The most intimate, and memorable levels engage the knowledge and behavior required of humans when we were part of wilderness ecosystems. Wilderness can be the source of such fundamentally meaningful things like sustenance, protection from the elements, and warmth. Wild Foods are an excellent way to engage those primal connections as a content area, or as a motivational device for teaching other areas like botany, ecology, environmental education, wilderness foodways, and survival. Few motivational tools involve humans so intimately as those used for oral stimulation, sustenance, and/or survival. The purpose of this paper is to revisit wild foods as a wilderness education topic and to show how wild foods relate to specific elements of the WEA curriculum.

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Summary

In my experience, in the right context, wild foods provide an exciting content and motivational topic for persons in wilderness education. They provide an allure, an intrigue, a connection with our more earthly selves, a chance to play at or be a more confident and competent provider/survivor, a way to develop one more kind of self-sufficiency, and a means to supplement our conventional food sources. This paper is intended to provide a common sense discussion of the potential for using edible wild plants as a topic in wilderness education. But before we go over the possibilities, let's discuss the definition of edible wild plants.

Edible Wild Plants Defined

Edible wild plants are wild plants endowed with one or more parts that can be used for food if gathered at the appropriate stage of growth and properly prepared. (Kallas, 1996a)

Let's divide this definition into its component parts and discuss the significance of each.

“One or more parts”: The term “Edible wild plant” can be misleading. At face value this means you can eat the plant. But this interpretation is dangerous. Some edible plants also contain poisonous parts. All but the ripe fruit of the tomato plant is poisonous! All but the flowers and the ripe fruit of blue elderberry (*Sambucus canadensis* [eastern] & *Sambucus cerulea* [western]) is deadly poisonous with cyanide! Both tomato and elderberry are considered edible plants and poisonous plants. One key to the successful and safe use of wild plants for food is to focus on the part or parts known to be edible. Generalizing and improvising by eating unspecified parts of plants can be deadly.

Examples — Elderberry & Rhubarb

“Gathered at the appropriate stage of growth”: Some plant parts become poisonous with age. Common milkweed (*Asclepias syriaca*) produces a pod containing seeds. When it’s young and tender, before its seeds develop, the pod is an excellent cooked vegetable. Once the seeds reach maturity, the pod is poisonous — and that poison cannot be cooked out. If you wish to consume a plant part, gather it at its edible-stage. Not paying attention to growth stage can lead to a deadly conclusion.

Examples — Milkweed & Elderberry

“Properly prepared”: Many “edible” plant parts do not become truly edible or palatable unless they are processed in some way. Processing could involve, among other things, physically removing certain parts of the plant (like seeds from a fruit or the rind of a root), leaching water soluble substances out of a plant part, or heating to a certain temperature. Let’s go back to the common milkweed. Even the edible parts, in the raw form, carry substances called cardiac glycosides that affect the heart. These are water soluble substances that can be easily removed by boiling — where you discard the water. Once leached, the appropriate plant parts are safe to eat.

Slides — Milkweed & May Apple

So, the biggest and most dangerous mistakes that individuals or educators make when using wild foods is that they improvise and generalize regarding edibility of plant parts. Educators must always take care to, not only make a proper identification, but to verify that only the proper parts are collected, at the appropriate stages of growth, and properly prepared.

How Wild Foods Fit into Wilderness Education

Wild foods provide an intrinsic connection between learners and nature, a content area, food for multidisciplinary programs, more reasons for the preservation of natural resources, and they fit into the WEA curriculum.

A. Wild Foods Intrinsically Connect Learners with Nature

While the study of wild foods can help students learn content areas like botany, wild edibles are a wonderful content area in and of themselves. Here are three non-exclusive reasons that wild foods seem to make a personal/motivational connection with learners: The wonder of nature, a primal connection with the Earth, and the romance of adventurous survival.

1. The Wonder of Nature

I cannot tell you how many times I’ve heard my students, of all ages, say in sincere enthusiastic outbursts; “Wow!”, “Neat!”, “Cool!”, “Bitchin!” when first discovering actual edible plants. They are genuinely excited when a connection is made with a plant. Aside from the primal connection mentioned below, the wonder seems to be food where its “not supposed to be”. It’s sitting right there in from of them. They didn’t have to plant it, buy it, manufacture it, or get it from their parents. All they have to do is reach out, grab it, and eat it. I cannot say too strongly how this affects some people — particularly people who live a mostly isolated life from nature. Individuals have paid me hundreds of dollars to learn this stuff. Novices have gone from totally unconscious regarding plants to insatiable students of nature. Food is one of the most important necessities in human existence. It stands to reason that something so free and easy for the picking creates such a big perspective shift to wonderment.

Slides — Marshmallows & Stinging nettle

2. A Primal Connection with the Earth

In the wilderness you must rely on your own knowledge, skills, and ingenuity to survive. Most conventional life support systems are not there to protect you from nature’s realities. You can , or course, pack your food in — but you can also gather it yourself during your wilderness experience.

In today’s world people are dependent on supermarket foods. Many young children have no direct connection to the earth and its products, and hence do not really know where foods come from. The supermarket is “the” source of sustenance. We are dependent on it and the money it takes to buy its products. Good or bad, this is the practical and psychological reality.

Wild foods provide a respite from the impersonalness of food from an institution to food gathered by your hand directly from its source in nature. You’re transported out of a complex societal treadmill and into the simple primal world of a gatherer. For a time you are in control and deeply engaged in the present. The more you learn, the more in control, confident, and self-sufficient you become. These are strong motivating factors for many of my students. Its can be very much like the spiritual training you get in martial arts. You may never have to use those fighting skills, but even if you don’t, you now walk with confidence. You may never “have” to eat wild foods, but if you ever needed to, you walk with confidence that you could.

Examples — Chestnuts & Wild Spinach

3. Romance & High Adventure Enhancement

There is no question that much of my personal motivation to learn wild foods was the romance of it all. Imagine a Native American, a Jeremiah Johnson, an Indiana Jones, a MacGyver, a Shaolin Priest or you — casually gathering sustenance while embarking on some great adventure. Imagine being stuck in a real survival situation and you are providing the frightened and tired group with copious amounts of unanticipated food. This is immediate gratification. There is no need to wait for traps to be made, for bait to be found, or for game to walk into your lap. There is no need to go with the discomfort of hunger during the other uncertainties that exist while hoping to be rescued.

Examples — Broad Leaf Dock (Kung Fu) & Amaranth (Captain Scott O'Grady, Bosnia, 1995)

B. Wild Foods as a Content Area

Wilderness ecology involves the relationship between living organisms and their environment. The most intimate wilderness experience for humans, therefore, would have them reprise their role as part of the natural environment — where food, shelter, clothing, tools, and lifestyle would be defined by what they could derive from nature. Each of these areas is a legitimate experiential component of wilderness education. Each of these areas would contribute to a student's knowledge of plants, animals, ecology, natural history, early cultures, cooperation, patience, tolerance, and humor. This visceral experience would effectively demonstrate how we are directly connected with wilderness, not just how wilderness is intrinsically and/or abstractly important.

The study of edible plants and other forageables requires knowledge of botany, ecology, nutrition, microbiology, food processing, food ways of early cultures, environmentally sound gathering practices, the carrying capacity of the land, and gathering law. This is an area rich with learning potential.

C. Wild Foods in Multidisciplinary Programs

The intrinsic connections outlined earlier show how wild foods can be an important content area in itself as well as a motivational tool to learning related disciplines. Here are some examples where edible plants can stimulate learning in traditional disciplines and encourage multidisciplinary approaches.

1. Environmental Education: Just think how more relevant environmental education would be if all of nature was viewed as, among other things, an edible garden. Every time trees are cut from open areas and streams, the nature of plants and other forageables change dramatically. Every time someone sprayed for pests, that would be pesticides poisoning your huckleberries. Every time motor oil spilled from a motorboat, that would be petroleum in and on your wapato and fish. Every time someone over picks edibles they threaten the sustaining power of that food source. The more you relate to nature as a provider of food, the more it hits home that you must take care of it.

Examples — Minor's Lettuce & Camas

In the pursuit of edible wild plants, the need for locating plants in their habitats, the need for proper identification, the necessity of knowing specific parts of plants, and gathering them at the appropriate stages of growth are essential. These needs develop a motivated interest in ecosystems, life cycles, plant reproduction, plant identification, natural history, and plant development.

2. Botany: When studying plant morphology, you may be trying to learn the difference between two simple but meaningless (to you) leaf arrangements. It's all too academic. Then you learn that the one arrangement is found on all mint plants which you can immediately smell and taste. Its leaf arrangement becomes instantly memorable. You make some tea and now it's with you forever.

Examples — Wild Mint & Wild Mustard

3. Anthropology: If you want to understand a Native American culture, you need to understand how their lives revolved around food sources. Wild foods helped determine where they traveled, where they camped, when they fought, how they socialized, their views of territory, and many spiritual matters. Finding, gathering, processing, preparing, and eating Native American wild foods, like they did, would tell you so much more about their culture than reading most history books.

Examples — Wapato & Acorns

4. Survival Training: One of the greatest obstacles to survival, be it unplanned wilderness survival, recreational survival, urban or rural survival, is an attitude and psychology of helplessness. This helplessness is exacerbated when food is scarce or unavailable. Food, while not as immediately necessary as shelter and water, is one of the most comforting things available to people in survival situations. And, as mentioned before, these foods are there for the picking — there is no time delay or hunting skill required. There is some research indicating that consuming wild plants provides a more successful strategy for survival than hunting and trapping animals (Källman, 1988).

Examples — Cattails

D. Promoting Wilderness Preservation Efforts and Fostering a Land Ethic

Efforts to preserve land will only succeed when the voting public and legislators can find compelling reasons to protect the land under consideration. People will only support protection for something they value. The more you know about something, the more reasons you have to value it, the more you are likely to protect it. Some things people value include natural/scenic beauty, biodiversity, recreational potential, watershed integrity, and historic/cultural significance. The more individuals know about wild foods, the more ways they can relate to and want to protect wilderness. A greater knowledge of plants lends to a more informed discussion of natural resources. A greater knowledge of Native American cultural foodways related to plants, provides an appreciation for plants and habitats that enabled those foodways. This knowledge and appreciation can be used as tools to help convince the public of the value of the land and to encourage users to be more responsible stewards of the environment.

E. How Wild Foods Fit into the WEA Curriculum

Wild foods, as a content area, fit into four of the eighteen WEA curriculum elements: Specialized Adventure Activity, Natural and Cultural History, Nutrition and Ration Planning, and Environmental Ethics.

1. Specialized Travel/Adventure Activity. Participants could be taught special skills in identifying, collecting, processing, and preparing wild foods. Plants covered would be determined by what was available in that area, season of availability, abundance, and other environmental concerns.

2. Natural & Cultural History. Participants could be taught about flora and fauna as they relate to their use by early cultures. The ecological integrity of an area as well as the way natural sources of foods helped define early cultures would be covered. See "Anthropology" above for more detail.

3. Nutrition and Ration Planning. Through instruction and practice, each participant could be taught to adequately plan, package, and cook his or her own rations for a two-week experience incorporating available wild foods. Wild foods could be the basis for a diet or merely supplementary. Advantages would include regular immediate access to food, no additional pack weight, expanded dietary variety, and expanded food sources during emergencies.

4. Environmental Ethics. Students will learn the practical and philosophical underpinnings of utilizing wild foods with minimal impact. This area will be introduced and integrated with other curriculum elements such as Wild food Adventure Activities, Natural and Cultural History, Camping Skills, Collecting Processing and Preparing Wild Foods, Equipment, Health and Sanitation. More on sustainable use of wild foods in the next section.

Overcoming Obstacles to Using Wild Foods as Wilderness Education Tools

The three major obstacles to using wild foods in experiential education programs are a lack of truly knowledgeable educators, possible liability associated with wild foods, and a concern for harming a fragile environment. Let's discuss each one of these individually.

A Lack of Truly Knowledgeable Educators: So who trains the trainers? There, currently, is no such thing as a school certified to train instructors on the topic of edible wild plants. Few people have the botanical, biochemical, human physiology, and food processing knowledge necessary to teach a wide spectrum of plants and their safe use by humans. Books and other resource materials on wild edibles and plant identification are mixed in quality. There are only a few genuine "experts" in North America and each of them has their own specialty and background. Most experts are willing to conduct in-depth training anywhere in North America, but that costs money that is usually not allocated for these kinds of purposes. The reasonable alternative is for teaching staff to learn a few really exciting plants (see George, 1995, Kallas, 1995 & Kallas, 1984, p. 48), that can be used over and over again for different student populations. State universities often have ethnobotanical reports, found in their libraries, of edible wild plants used by Native Americans in your area. Exciting plants can be chosen from these culturally-linked foods. Local botanists can help you make positive identifications of plants and point out poisonous look-a-likes. Staff educators would learn these plants in great detail from in-services where information would be shared. In lieu of edible plant experts, you can supplement library research with academic consultants in botany, anthropology, nutrition, history, and human physiology. All these resources can be used together to get a program off the ground. In the future there will be resources that will simplify much of this process (see Footnote 1). In the mean time, just do your homework and enjoy the plants that you learn.

Instructor Liability: I have been teaching about edible wild plants for over 18 years and have not been sued. There are several reasons for this. First and foremost, I do my homework (see Kallas, 1984 p. 51). I positively identify a plant, am familiar with its look-a-likes, know the plant parts that can be used, the appropriate stage of growth to use it, and what preparation is necessary to make it edible. I also assume that every plant and plant part I do not know is potentially poisonous. The knowledge basic to these concepts is not that daunting if you don't isolate yourself. Get help — work with others! Your local agriculture extension service, which can be found at every state university, can answer some questions and pass you on to others when they're at a loss.

It is also imperative to sample new plants yourself on several different occasions before introducing it to students. Ideally, students should also sample a plant several times before attempting to eat it in the wilderness where they will be outside of immediate medical help. Permission slips should be signed by everyone warning them of the following things: While it is rare, ordinarily safe plants in the wild may have some unique chemical attribute, or the soil could be contaminated causing some negative reaction; A particular student might have a unique physiology that makes them sensitive to certain foods that everyone else can eat. If you act responsibly, problems you have no control over are rare. And of course, students with a history of food sensitivities should participate only on the advice of a physician. Most persons with food sensitivities know when to count themselves out. Some foods have more allergic potential than others (see Kallas, 1984, p. 49). Always monitor students so they don't accidentally pick the wrong plant or plant part. And avoid gathering from roadsides and other obviously contaminated places.

Examples — Right-of-way: Man Spraying & Wilderness Power lines.

Examples — Gibbons

Environmental Concerns & Modern Gathering Etiquette: This is an important issue for all reasonable and responsible persons in the outdoors. Our civilization has destroyed so much of nature that we are hesitant to really partake from it anymore. Important to using edible wild plants are the concepts of sustainability and aesthetics. These are the foundation for modern gathering etiquette (Kallas, 1996b, p. 3). Sustainability, and aesthetics should always be associated with wild foods, by instructors. A sustainable approach to wild foods allows gathering in such a way that plant populations continue to flourish. So how does one do this?

1. Sustainability is not a problem with edible weeds. Pick as many as you wish from gardens, yards, and u-pick farms. Wild gourmet garden vegetables (see Kallas, 1995-6), as I call them, will grow back relentlessly, so worry not. Edible weeds are great for developing curricula in schools, urban, and rural settings in preparation for wilderness experiences. All the principles of collecting and using wilderness edibles can be applied to wild garden vegetables.
2. Never pick threatened or endangered species. Your local Sierra Club, Native Plant Society, Nature Conservancy, or Cooperative Extension Service should have the latest list of protected species.
3. Obtain permission before venturing onto any land — be it public or private. Each piece of land has its own rules of use. And getting permission may help prevent you from being shot.
4. Always observe the 1 in 20 rule. That rule states that if you do not see at least 20 of something in plain sight, don't pick one. For example, if you don't find twenty licorice ferns, don't uproot one. If you find a lone tree in fruit, leave at least 20 fruits for predation and propagation. Once over 20 plants are found, try not to gather over 20% of any population.
5. When plants are abundant and you can pick to your heart's content, never clear-cut. Always gather in a dispersed, 'thinning' fashion so that more plants grow back stronger the next time.
6. Never gather more than you need.
7. Teach your students to follow these same principles

The aesthetic part of gathering is simple. Assuming you are gathering sustainably, leave the resource in a condition that is visibly and functionally non-impacted. Try not to trample plants surrounding the ones you are gathering. Try to stay on trails or established walkways whenever possible. Treat the land with respect. Many Native Americans gave offerings to the land when food was taken. Our offering can be to return the soil and the ground cover to its original condition.

Summary:

Edible wild plants are a wilderness education topic whose time has come, again. Wild foods can serve as a stand alone topic, or as a motivational tool within multidisciplinary programs that link wilderness education with botany, anthropology, environmental education, and survival. As a content area, wild foods can stimulate a wonder of nature, self-sufficiency, romance, high adventure enhancement and an intimate appreciation of nature. The definition for edible wild plants is emphasized because it focuses on plant parts, stage of growth, and proper preparation. This focus helps the learner keep safe from potentially harmful mistakes. Wild Foods fit into the WEA curriculum in these areas: Specialized Adventure Activity, Natural and Cultural History, Nutrition and Ration Planning, and Environmental Ethics. There are three, overcomable, obstacles to using wild edibles in wilderness education programs. They are a lack of genuine experts, potential liability, and a concern for the destruction of the environment.

Footnotes

1. Two works are in process by the author that will eventually be available through mail order: 1) A textbook on edible wild plants.
2. A comprehensive source bibliography on edible wild plants and ethnobotany of North America.

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Biography

Dr. Kallas is the director of Wild Food Adventures and publisher of the *Wild Food Adventurer*. He has a Ph.D. in nutrition, a Masters in education, and an undergraduate in the biological sciences. He's a trained botanist, nature photographer, writer, researcher, and teacher. John has researched edible wild plants since 1970 and taught in colleges, universities, and to the general public since 1978. He started Wild Food Adventures, a wild food research, consulting, and educational institution, in the Spring of 1993. He began publishing the *Wild Food Adventurer*, a wild food newsletter, in the Spring of 1996.

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