

The Wild Wisdom of Weeds: 13 Essential Plants for Human Survival, by Katrina Blair [358 pp. and many color photos; published in September, 2014 by Chelsea Green Books - \$29.95 softcover]

Reviewed by Russ Cohen

Allow me to preface this review by revealing that some of my favorite plants are weeds. Dandelion flower buds, for example, are among my favorite vegetables, wild or cultivated; their flavor is like a cross between corn, spinach, artichokes and Brussels sprouts. So I found much to like in Katrina Blair's provocative book, a spirited defense of weeds: thirteen species and their relatives in particular. *The Wild Wisdom of Weeds* is a deeply personal account of both Blair's longtime relationship with and fondness for these and other plants in her hometown of Durango and the surrounding mountainous landscape of southwestern Colorado and her interactions with and lessons learned about them elsewhere in her travels. Although I have been picking and eating most of these thirteen species for over four decades, I still learned quite a lot of new things about these plants from Katrina's book. The numerous color photos added to the book's utility and visual appeal.

That said, Blair's statements tend to be a bit broad, simplistic, sometimes misleading and occasionally outright inaccurate when taken in the context of the global audience she is trying to reach. The misapplication of this information could result in harm to wild plants and/or to people relying upon them for food. The book's flaws are covered in considerable detail in the course of this review.

In the meantime: apparently I am not alone in appreciating Blair's book, as attested by the large number (thirteen - not a coincidence for sure) of "advance praise" blurbs taking up the book's first few pages, representing respected experts in foraging, cooking with or growing plants, such as "Wildman" Steve Brill, Deborah Madison, and Michael Phillips. The book begins with an eloquent Foreword contributed by fermentation guru Sandor Ellix Katz, which reads in part: "In our contemporary society, most people grow up with minimal connection to the natural world around us. Most can identify many more corporate logos than plants. Yet plants are incredibly important and without them we would not exist. They are essential parts of our biological context. This disassociation leaves a void within us and around us, and there exists a widespread hunger to reclaim our knowledge

of and connection to plants, from growing and harvesting, to cooking and fermenting, to foraging and wildcrafting. We crave a greater sense of connection and interconnection, a more balanced life, in tune with nature and sensitive to our environment and resources." Katz further writes that "These thirteen common plants that thrive especially in human-disturbance zones are tough and resilient survivors. We need their tenacity to adapt, and their proximity and plenty make them more relevant than rare elixirs, superfoods, and remedies."

The thirteen plants that Blair chose to focus on in her book are

Amaranth (*Amaranthus retroflexus*)

Chickweed (*Stellaria media*)

Clover (*Trifolium pretense*) [typo - should be *pratense*]

Dandelion (*Taraxacum officinale*)

Dock (*Rumex crispus*)

Grass (*Poa annua*)

Knotweed (*Polygonum aviculare*)

Lambsquarter (*Chenopodium album*)

Mallow (*Malva neglecta*)

Mustard (*Brassica juncea*)

Plantain (*Plantago major*)

Purslane (*Portulaca oleracea*)

Thistle (*Carduus nutans*)

Blair notes, "I am including one common genus name and one common species name in this list, although in most cases the entire genus (including all the species) is interchangeable in edible and medicinal values." Her intent was to select species found growing all across the globe where humans have settled, are typically available in abundance, and can be eaten in a fresh or easily processed state soon after gathering, to gain the full benefit of their vitality and potency. The bulk of Blair's book (over 200 pages) are devoted to extolling the comestible and other virtues of these plants, including detailed descriptions, recipes and photographs. My review comments on ten of those thirteen chapters.

Before getting to that, though, I wanted to comment on the first part of the book, where, in her vociferous advocacy on weeds' behalf, Blair makes many good points, along

with some potentially contentious points, particularly her objection to the utilization of herbicides, even for ecological purposes, and to what she considers to be a flawed policy of seeking the control and/or eradication of plant species deemed to be "non-native."

In the first third of the book, Blair devotes over a hundred pages to a passionate defense of weeds in general, and her thirteen selected species in particular, with which she hopes "to shift the perspective that views [the thirteen plants] as the bane of society - thereby justifying their eradication". She contends weeds are not deserving of the pejorative terms often given to them, such as "invasive," "non-native," "aliens," "noxious," and "aggressive invader species." While I have certainly heard these and other epithets hurled at many of these thirteen species, I don't think all thirteen are held in equal disfavor; I have never heard anyone call for the eradication of plantain, mallow or chickweed, for example.

Blair's ambitious goal is to transform attitudes about weeds from hate to love, or at least tolerance. Her mission is complicated somewhat by the varying definition of the word "weed", and its overlap or confusion with other terms, such as the descriptors in the previous paragraph. Just what, exactly, is a "weed"? One telling answer to that question was inscribed on a wooden plaque (photo, p. 30) that hung in the house where Blair grew up. The quotation attributed to Ralph Waldo Emerson read "what is a weed? a plant whose virtues have not as yet been discovered." In contrast, Merriam Webster offers this definition of "weed": "a plant that is not valued where it is growing and is usually of vigorous growth; *especially*, one that tends to overgrow or choke out more desirable plants" (emphasis in original). Wikipedia's more thorough, and nuanced, definition (see <http://en.wikipedia.org/wiki/Weed>) notes that "Taxonomically, the term "weed" has no botanical significance, because a plant that is a weed in one context is not a weed when growing in a situation where it is in fact wanted".

The need for some clarity in the definition of "weed" becomes apparent in her first chapter in the section titled "The Flawed Concept of Invasive" (beginning on p. 17). Here Blair calls into question the use of herbicides to control plants deemed to be undesirable. She downplays the difference between plants labeled "native" and "non-native." Because birds, winds, waves and ancient peoples dispersed seed around the globe long before modern humans carried them, thus native plant designations are often simply an

"arbitrary decision of timing as to when to close the door on nature's geographical distribution of species."

Blair then poses a provocative question: "Are we altering the delicate ecosystem even more by assaulting it with herbicides and pesticides in our attempts to eradicate [newly-arrived, non-native species]"? In other words: could we be causing more harm to ecosystems by our efforts to control what are deemed to be non-native species with herbicides, than the harm these non-native plants are allegedly wreaking on our landscapes? Blair strongly disapproves of any use of herbicides, whether to control weeds, non-native species, or other unwanted plants. Many ecologists could certainly find fault with this viewpoint, arguing (with ample justification) that there is a role for judicious, targeted herbicide use, particularly at the early stages of an invasive plant's arrival into an otherwise intact native plant community.

I understand and largely share Blair's aversion to herbicides. It is true that "we" (speaking broadly of the U.S., not the ELA community) are using herbicides way more than necessary, particularly for cosmetic purposes (weed killers applied to lawns, for example). That said, there is a legitimate rationale for limited, strategic, ecologically-driven deployment of herbicides, particularly where other control methods have been shown to be ineffective. Blair's book, however, does not make this acknowledgment. Furthermore, the book tends to paint all herbicides with a broad, "always bad" brush; there's no recognition that some herbicides (vinegar, citrus oil, etc.) are less potentially problematic than others (e.g., glyphosate, and/or the surfactants often paired with it).

From an ecological perspective, I'd like to offer my own definitions of the terms "weed" and "invasive" that I hope will help distinguish, within this larger group of assertive, opportunistic plants, the species that don't pose an ecological threat (dandelions, for example) and for which herbicide application is largely (if not completely) unwarranted; versus those that can cause ecological harm (such as Japanese Knotweed) for which herbicide use may be a necessary control option. First, though, I'd like to differentiate a vernacular usage of the word "invasive" from its meaning in an ecological context.

Perhaps, like me, you have heard non-ecologists use the term "invasive" to describe a patch of "invasive" garden mint expanding beyond their herb garden into the vegetable garden, or "invasive" sumac spreading into an old field to their dismay, or "invasive" wild

grape vines climbing up trees where they are not wanted. Though they may raise concerns and cause consternation in some people, such "invasions" rarely if ever cause ecological degradation. In the case of the garden mint, its spread isn't displacing native species or encroaching into natural habitat. In the case of the sumac or wild grapes, while they might affect natural habitats and plant communities, these are nevertheless native species acting naturally, doing what they do as pioneer species at an early stage of ecological succession.

The word "invasive," in an ecological context should, in my opinion, be reserved for exotic (aka non-indigenous) species introduced into a new location by (or as a result of) human activity where they have the ability to grow and reproduce quickly without any natural checks on population growth, thus out-competing native organisms and where they encroach into and disrupt minimally-managed natural habitats. It is the last part of this definition that, in my view, provides the key differentiating characteristic between truly invasive species and mere weeds. I define a "weed" as an opportunistic, usually (but not always) non-native species, encountered primarily (but not exclusively) in areas of human disturbance for example, in or along current or former farm fields; in yards, gardens, vacant lots, or the "shaggy" (i.e., unmanicured) portions of developed lots; along the edges of roadways, parking lots, bike paths, school ballfields, and other mowed areas; and similar places. If a non-native plant tends to stray beyond these human-created landscapes into minimally-managed natural habitats, then I think it also may be properly characterized as an invasive species.

Examples of invasive species as defined above include Japanese knotweed (*Fallopia japonica*), Asiatic bittersweet (*Celastrus orbiculatus*), and Black swallowwort (*Cynanchum louiseae*). Plants that, in my opinion, fall into the "just a weed, not an invasive" category include chicory (*Cichorium intybus*) and burdock (*Arctium* spp.), as well as dandelion (*Taraxacum* spp.) and most, but perhaps not all, of the other thirteen weeds and related species featured in Blair's book. For example, some non-native species of thistle and grass (two of Blair's thirteen featured plants) might be properly characterized as invasive, if they aggressively encroach into minimally-managed natural habitats. [See, The Nature Conservancy's fact sheet on Canada thistle (*Cirsium arvense*) <http://www.invasive.org/gist/esadocs/documnts/cirsarv.pdf>, a species covered in Blair's book.]

My intention in the past four paragraphs was to offer support to both sides of this debate: agreeing with Blair's stance against the use of herbicides to control plants that fall into the "just a weed, not an invasive" category, while acknowledging that herbicides carefully applied, for example to the individual cut stems or stumps of invasive plants, might be an unavoidable option for effectively protecting the ecological integrity and functionality of a minimally-managed natural habitat threatened with degradation by invasive species.

Here is a real-life example of where I sought to apply this philosophy. As you may know, entities called "Cooperative Weed Management Areas" (CWMAs) have been set up in various areas of the U.S. CWMAs are described (at <http://www.weedcenter.org/cwma>) as "a partnership of federal, state, and local government agencies, tribes, individuals, and various interested groups that manage invasive species (or weeds) within a defined area." About a decade ago, a discussion began, amongst representatives of several environmental organizations, municipal, state, and federal agencies and others concerned about invasive plant species, about setting up a CWMA for the [Sudbury-Assabet-Concord Rivers Watershed](#) (SuAsCo), a 377 sq. mi. suburban region located about 25 miles west/northwest of Boston. I took part in this discussion, and when it came time to select a name for the group, I spoke strongly against calling it a Cooperative Weed Management Area, making the point that it was not mere garden weeds we were concerned about, but the adverse impact of invasive species encroaching on and degrading natural habitats in the SuAsCo watershed. I suggested that we call it a Cooperative Invasive Species Management Area (CISMA) instead, to help make clear that we weren't mobilizing to take on non-invasive weeds, just invasive species. Otherwise, people might get a mistaken impression that we support herbicide use for purely cosmetic purposes, like applying weed killer to lawns, an unfortunately common practice in the watershed. Fortunately, others shared my viewpoint, and the area was subsequently named the [Sudbury Assabet Concord Cooperative Invasive Species Management Area](#) (aka SuAsCo CISMA).

[I hope you will pardon me for having taken you on a bit of a side trip away from the contents of *The Wild Wisdom of Weeds*. I hope you found my ruminations on "mere weeds" versus "truly invasive" species to be worthwhile. I will now return to a detailed examination of Blair's book.]

In the book's **Introduction, Welcome to the Wild Thirteen**, Blair defends her selection of 13 particular weed species with worldwide distribution as the focal point of her book. While other widespread species with edible and medicinal values, like burdock, chicory or nettle (*Urtica dioica*), arguably deserved inclusion in this book, Blair chose to limit her list to just thirteen plants, ascribing "magical" significance to the number 13. Her rationale for this gets a bit strained sometimes (e.g., her claim that there are just 13 principal river systems in the world). Nevertheless, as the number 13 otherwise gets an undeservedly bad rep, and even has spawned its own psychological disorder ("Triskaidekaphobia" - fear of the number 13), this maligned numeral might benefit from the favorable treatment it gets from Katrina's book.

Blair claims here (and elsewhere) that by knowing, gathering and eating weeds we acquire some of their traits, like resiliency (which ostensibly, we would not get from non-weedy edible plants that can be gathered from the wild, like blueberries or cranberries). She adds, "This is a book about remembering our identity, rooted in the wisdom of our indigenous ancestors." It is certainly true that indigenous peoples knew about and ate wild-gathered foods (and many still do). That said, at least several of the 13 weeds that are the focus of Blair's book did not achieve widespread worldwide distribution until relatively recently (the 17th century or later), so they could not have played a significant role in the indigenous diet in the places where the species had yet to arrive. For example: in the 1600s, tribes occupying what is now the northeast U.S. gave plantain (*Plantago major*) the name of "White Man's (or Englishman's) Footprint" because the only places they encountered this species, with its foot-shaped leaves, are those where the white men had been and tracked the seeds in. Most indigenous peoples are likely to have relied more on native plant species for sustenance than on weeds: oaks (acorns) for tribes in California; wild rice for tribes in the upper Midwest; shadbush (*Amelanchier* spp.) and other native berries, etc.

Two points Katrina makes in weeds' favor (pp.5-6) I am in full agreement with: they require minimal resources to produce and due to their fecundity, abundance, and persistence in the landscape, weeds offer sustainable foraging opportunities (i.e. they can withstand a lot of people picking them). However, while Blair further notes (with admiration) weeds' ability to grow in tough environments, like cracks in a sidewalk, she neglects to mention a possible inferiority in the flavor and wholesomeness of weeds

encountered and gathered from such compromised places, compared to those growing in more healthful locations, such as in the fertile soil of an organic farm or garden. In my view, the sheer ubiquity of weeds enables gatherers to be "picky" in their choice of where to collect the plants. I recommended that people, when they can, should avoid gathering edible plants or plant parts (seeds, berries, etc.) from areas that are, or are suspected to be, exposed to pollution from cars, dogs, herbicides, or other contaminants and should seek to harvest from cleaner locations instead.

While Katrina seems to imply that the cosmopolitan distribution (worldwide presence) of her chosen thirteen species of weeds is a good thing, others may not share her viewpoint. Even setting aside the ecological impact, consider the experiential one: some may feel that, by encountering the same plants the world over an aspect of the distinctiveness of a place is lost. In other words, the widespread distribution of weeds and other opportunistic plants has a homogenizing effect on landscapes, making a place you travel to feel less different from home. That said, I suppose that just as some travelers abroad might be comforted by seeing a familiar business (Starbucks, for example), other travelers might find similar comfort in spotting familiar plants such as dandelions, purslane, or others of Blair's 13 weeds.]

In Chapter 1, **My Wild and Weedy Past**, Blair shares some interesting personal details about her childhood and how various outdoor experiences, with her parents and on her own, helped to shape, inform, and nurture her relationship with and affection for wild plants. Of particular note Blair recounts (beginning on p.33) the successful campaign to save sixty acres of wetland near her home and the formation of Turtle Lake Refuge that was subsequently established on the property. As part of that campaign, "Some friends and I began serving locally grown, wild and living food lunches twice a week with the intention of raising money and awareness to protect this land from a potential development project." While, ultimately, a neighbor stepped in with the necessary funding to prevent the land from being developed, Katrina feels that her advocacy helped make the deal happen.

Blair describes the Refuge's mission: "to celebrate the connection between personal health and wild lands." The Refuge acts as a "hub of inspiration for sustainable living practices." Blair adds that, in addition to the Refuge itself, "We have a location in town that functions as a year-round education center and includes a two-story grow room for

microgreens and sprouts, a communal kitchen, and a wild foods café. We have now been serving lunch for over fifteen years. On the other days of the week we create homemade, wild-harvested treats for the local stores”.

One aspect of this otherwise good news tale I found to be of potential concern was Blair’s disclosure that, through the Refuge and Café, wild plants are being converted into cash, at least in the form of selling wild food lunches and treats made from wild plants. This echoes a disturbing trend I have also seen elsewhere: the burgeoning popularity of wild foods is creating a market for them, driven primarily by chefs, produce markets and their customers. I have seen wild plant populations and their sensitive habitats harmed through irresponsible over-collecting to meet this demand. (Refer to a posting on [Project Native](http://www.projectnative.org)’s web page to read a case in point, regarding the native species *Allium tricoccum* (aka Ramps or Wild Leeks - http://www.projectnative.org/uploads/Russ_Cohen_on_Ramps.pdf.)

It is possible that all of the wild plants utilized by Turtle Lake in the products they sell are weeds, or other very abundant plants with relatively low ecological significance that are being harvested in a sustainable manner. If that is true, then their harvest and sale is unlikely to result in adverse impacts. Nevertheless, even if Blair and her colleagues at Turtle Refuge and Café are confining their wild-gathered ingredients to weeds and other abundant plants, other less scrupulous folks, seeing there’s money to be made in picking and selling wild edibles, may target other wild plants, including sensitive or otherwise vulnerable native species whose populations are unable to withstand sustained, commercial-scale harvesting. Unfortunately, nowhere in the text does Blair show any awareness of the potential harm the precedent of Turtle Lake’s sale of wild plant products may be establishing, if others get the idea from it to “cash in” on the growing popularity of wild foods in an irresponsible way.

On the other hand, there is another aspect of Turtle Lake’s work that I enjoyed hearing about. Blair describes , “people are becoming increasingly hungry for the primal knowledge of how to live off the land, what to eat and how to prepare it.... I began teaching Alive and Wild food classes when Turtle Lake Refuge was founded in 1998. This series of classes often consisted of a group of us heading outside to learn about and gather the wild foods in season. We would return to the kitchen to collectively prepare a wild foods meal and feast in celebration of our local abundance.” (p.36) Assuming that folks

participating in these classes are being taught how to forage in an environmentally-responsible way, I think these classes provide a good opportunity for enhancing peoples' respect and affection for the land and nature by connecting them via their taste buds.

Even those of you not inclined to gather and eat weeds yourselves may nevertheless enjoy Blair's stirring retelling (pp. 37-43) of her successful political campaign to get her home town of Durango, CO to manage city open space land organically and give up the fight to control Dandelions and other weeds with herbicides. Blair claims that her feeding dandelions and other weeds to the townspeople helped to soften their negative attitudes towards the plants. Those of you engaged in or contemplating similar initiatives to reduce unnecessary herbicide use may be inspired by her example.

In Chapter 2 of the book, **Symbiotic Relationships: How Weeds Support Our Local Economic Security**, Blair continues her effort to proselytize readers to her belief in the worthiness of weeds, this time from a utilitarian perspective. Blair begins the chapter by articulating how weeds and humans interact in a mutually-beneficial symbiosis. I can certainly agree that humans are the primary creator of weed-friendly habitats, and that many of those weeds provide benefits to humans in the form of food, medicine, and so on. That said, even keeping Emerson's quote in mind, there are a number of weed species I have yet to discover virtues for. For example, I have been unable to identify any benefit ragweed (*Ambrosia* spp.) provides to humans (except, perhaps, to the bank accounts of allergy doctors and hay fever medicine providers).

Blair then provides "several local examples of sustainable economic opportunities that are directly derived from the utilization of wild local foods and particularly weeds." Of these, I particularly liked what she wrote (pp. 46-49) about the "gifting economy", and the potential role of weeds and other wild foods in that economy. "The gifting of food to others creates an experience of gratitude from the receiver that naturally inspires additional tokens of appreciation in return". [I can personally attest to the warm feeling that can flow from freely sharing wild food, which I have gathered and processed myself. One of the things I really like about foraging is that it need not involve a financial transaction of any kind: it's just you, out in the fields, woods, etc. encountering wild edibles and nibbling on them, or gathering for later use on your own, or for sharing with friends and family.]

A few pages later, (pp.51-3), Blair writes about her/Turtle Lake's experience of incorporating wild plants into a "community-supported agriculture" (CSA) program. For those of you that aren't familiar with the concept, CSAs are typically established by individual (usually organic) farms, and are intended to help spread and offset the financial risk of farming. Customers pay up-front (usually several months before the start of the growing season) and, in return, receive a share of what the farm produces. If the farm has a good season, then the CSA shareholders receive groaning bags filled with the farm's produce. On the other hand, if one or more of the crops at the farm have a poor year, the CSA shareholders' shares reflect that as well.

In 2012, as part of a permaculture design course focused on the Turtle Lake Farm, an idea emerged to start a wild plant CSA program there. Blair writes (pp.52-3): "The wild CSA program is a worthwhile concept because it acknowledges that *every* plant growing on the farm has important value (emphasis in original). By having an opportunity to highlight these unusual varieties of food and share them with the community, it completes a circle of resources on the farm. The wild plants growing before or alongside the cultivated ones are harvested just as any other plant. Rather than dispose of the weeds as a problem, the wild CSA program celebrates the weeds as the guest of honor and as a valuable commodity. Not only does this make sense economically, but it works toward the goal of seeing the farm as a whole ecosystem."

Turtle Lake Community Farm's wild CSA program, begun later that year, was established to achieve "three main purposes: (1) to share the full diversity of what we have growing on the farm; (2) to educate our community about the values of the wild foods of our region; and (3) to empower each of us with the confidence and trust that we are surrounded by abundant local resources. Bringing together another source of income into the farm supported us to hire people to help with the harvest and processing of all the wild foods." A sample list of the CSA's wild produce and products incorporating wild ingredients (including food and non-food items, like shampoo and candles) is provided on p. 51.

I think the CSA financing mechanism is a fine idea as customarily applied: providing "seed" money to farms and underwriting the production costs of agricultural (cultivated) crops. I can also accept, to some degree, an extension of the CSA concept to a "wild CSA" paired with a farm, such as that established at Turtle Lake Community Farm, if it is

confined to weeds and other plants gathered at the farm itself. As weeds are reliably abundant, their inclusion enhances the chance of CSA shareholders having full bags even if one or more of the farm's regular crops aren't doing well.

That said, I am quite concerned about the potential harm to wild plants and their habitats were a "wild CSA" to be extended beyond farm weeds to include wild plants in general. As I see it, the increasing trendiness of wild food in recent years has manifested itself in two primary directions: an increase in the number of people who want to learn how to identify and gather edible wild plants for their own use (this I am not worried about); and an increasing number of people who, while they don't have the time and/or the interest in learning how to forage themselves, are happy to pay to have someone do it for them.

I worry that "wild CSAs" will spring up to meet that demand, where people pay cash up-front and receive wild edibles in return. I fear this will lead folks employed by the wild CSA to head off to the countryside, not to commune with nature, but to find enough wild edibles to fill the pre-paid bags of the wild CSA customers. I could see this activity easily drifting beyond weeds and invasive species (i.e., abundant species that can tolerate lots of picking) to native species, some of which may serve important ecological functions, (e.g., plants with edible berries that are also relied upon by songbirds to fuel their migrations), and/or sensitive or otherwise vulnerable native species whose populations are unable to withstand any level of commercially-driven harvesting. I can easily visualize wild CSA employees, eager to please their customers, deliberately seeking out unusual, uncommon, even rare species, many of which could be harmed by over-collecting.

Here I must draw a (perhaps obvious) distinction between cultivated and wild food. If a cultivated food becomes popular, and a demand for it increases, then farmers can simply produce more of it. The supply can (usually) be easily scaled up to meet the demand. [You may have heard, in the case of heirloom vegetables and other heirloom foods, this catchy slogan employed on their behalf: "the best way to save them is to eat more of them" (i.e., more people asking for them will induce more farmers to produce them).] This is not the case with most wild plants, however, particularly native species that are slow-growing, not easily cultivatable, and/or have specialized and/or demanding habitat preferences.

[Remember what the "A" stands for in "CSA" (Agriculture); applying the concept to non-cultivated or non-cultivatable plants is not only a contradiction in terms; it can, unless

strictly confined to abundant weeds and invasive species, harm wild plants, their habitats, and/or the animals which rely upon them.]

I understand Blair's point — that weeds and other wild plants can have monetary value — is just one of many she puts forward in her book's effort to get us (individually and collectively) to appreciate weeds instead of scorning them. I also understand the unfortunate reality that, for some people in both the public and private sectors, the only argument they really give credence to is the economic one. Nevertheless, I reiterate my concern about possible adverse impacts to sensitive native species and their habitats were these plants to become articles of commerce. While Katrina, her Turtle Lake colleagues, and the wild CSA shareholders may be well-informed and capable of discerning the difference between weeds and invasive species, either of which can usually be gathered in large quantities with little likelihood of causing ecological harm, versus sensitive native species that should only be gathered sparingly, if at all, I am afraid that others without such knowledge, or scruples, may act inappropriately.

The remainder of this section of the book highlights the nutritional and medicinal benefits of weeds, as well as recipes and various methods of preparing the plants for drinks, lotions and other internal and external uses. She prefaces this section with an important point: when possible, consuming these plants raw, shortly after picking, may offer the most beneficial and unadulterated way to "take your vitamins", certainly more so than supplement pills bought at the store or ordered online. That said, the health benefits of eating fermented foods is now well established (thanks in large part to practitioners and advocates like Sandor Ellix Katz), and Blair mentions that many weeds make good fermentation fodder.

Next Blair goes into considerable detail on how to transform each of her thirteen weeds into "green powder" (pp. 63-67), which she feels is a great way to capture weeds in their prime, converting them into a highly portable, storable form, particularly ideal in the winter months when the fresh plants aren't available. I have never made "green powder" myself, from weeds or any other plant, so I look forward to trying this. The chapter finishes with a good-sized section on sprouting, which, while interesting, isn't really about weeds or wild plants.

In **Chapter 3: Nature's Permaculture Plants: Reminding Us to Embody Deep Ecology**, Blair discusses the compatibility of weeds with permaculture principles. Katrina devotes most of **Chapter 4: Wild Intelligence** to extolling the virtues of eating weeds and other foods in their raw (i.e., uncooked) form. If you are already on the raw food bandwagon, you will like this section; otherwise, I don't think you will be convinced that raw food is always better. Even in the case of her thirteen weeds, the texture and/or toothsome-ness of some of them is (in my opinion) greatly improved by cooking. I do, however, agree with a point she makes on page 98, which is that the act of going out into nature to gather wild food nourishes the soul as well as the body, something that merely purchasing wild food, collected by others, at a produce market, restaurant, etc., does not accomplish.

✕ ✕ ✕

The remainder of this review consists of my comments on ten of Blair's thirteen "weed write-ups". As these chapters are presented alphabetically (by common name) in Blair's book, I've retained that order in my comments as well.

I learned a couple new things from Blair's chapter on **Amaranth** (pp. 106-122). I already knew that amaranth (aka pigweed, *Amaranthus retroflexus*) is a wild cousin of the cultivated beet, and that amaranth greens are higher in vitamins than their cultivated counterpart. I also knew from personal experience that while steamed young amaranth greens are relatively bland and uninteresting eaten on their own, they combine well with other more strongly-flavored ingredients. What I did not know, though, until reading Blair's book, is that *A. retroflexus*'s relatively scrawny roots are also edible. (They do share conventional beets' reddish-pink color.) I also learned for the first time that Amaranth's small black seeds can be heated in a dry, cast-iron skillet until they pop open, resembling miniature popcorn kernels (a photo on p. 116 attests to this). I look forward to trying both these new foods (new to me, at least).

The book's chapter on **Dandelion** (pp.147-166) epitomizes the core message of Blair's book: instead of despising weeds, we (collectively, as well as individually) would be a lot better off if we recognized the gifts they offer in terms of nourishing and healing our landscapes and ourselves. She then describes how dandelions can serve as the catalyst for effecting this change: "As a way to promote weed appreciation within our community [Durango, CO] in early May, Turtle Lake Refuge hosts a fun celebration called the

Dandelion Festival". For this annual fête, preparers and participants incorporate dandelions into various savory dishes, ice cream, and "Dandelion Saison" beer, accompanied by tunes played on flutes made from the hollow flower stems of the taller dandelion plants.

Blair goes on to note that hers is just one of over a dozen similar dandelion-focused festivals the world over. "The numerous annual festivals celebrate and highlight the dandelion by creating all varieties of foods and beverages made from the whole plants. A common theme that runs throughout most of these events worldwide is the support of organic land stewardship practices and the desire to change the toxic herbicide spraying in parks and wildland maintenance programs." While, admittedly, this message might be a tough sell in some locales, where the pursuit of the weed-free, "perfect" lawn remains well-entrenched, dandelion festivals nevertheless offer a playful and ingenious means for subverting that dominant paradigm.

The chapter's sections on the history and usage of dandelions is well-done, and here Blair shares some experiences with the plants that I am eager to try out for myself. For example, she states, "[Dandelion] roots make a fabulous staple food that far surpasses the flavor and nutrition of a potato. They become particularly sweet with the onset of cold frosts...From late fall through the early spring season...the dandelion roots are especially delicious and are perfect for simply digging up and eating on the spot." She also says the roots are good for making pickles and sauerkraut. I look forward to seeing if she's right. Blair neglects to mention, though, what I consider to be the tastiest part of the dandelion plant: the unopened flower buds, particularly when they remain tucked into the basal rosette of the plant.

Blair documents the nutritional values of dandelion, which are exceptionally high. This section, however, includes an unfortunate typo the book's editors failed to catch: "[Dandelion] roots are a storehouse of an easily digestible sugar, *insulin*" (emphasis added). This statement is wrong for two reasons. First, it is not "insulin" (a hormone produced by the pancreas) but "inulin" that she intended to take note of. Second, inulin, a complex carbohydrate, due to its molecular structure, is actually not easily metabolized by the human body. Ironically, though, it is this characteristic of inulin that results in a beneficial effect on most people's digestive systems, particularly for diabetics, as it provides soluble fiber without elevating blood sugar levels, which the hormone insulin

regulates.

While the book states that Dock (curly dock or *Rumex crispus*) is "best gathered in spring when the leaves are young and tender," I have had a different experience in my region (Northeastern U.S.). While it is true that the plant offers a good foraging opportunity in the spring, the leaves turn tough and bitter as summer approaches and turn brown and wither as the plants set seed in late summer. Once the cool weather of fall arrives, however, these perennial plants often produce a fresh set of leaves, and I have found the fall curly dock leaves to be even more tender, tasty, and abundant than what is available in the spring. On page 174, Blair describes how she harvests and processes mature dock seeds, which she then adds to her breakfast cereal. While I myself have yet to take this on, being deterred by the laborious winnowing process (separating the seeds from their extensive chaff), I have read of others going to the effort, claiming that dock's buckwheat-like seeds are worth the trouble, so perhaps I might try it someday. *R. crispus's* medicinal values include preparations made from its yellow taproot. Blair mentions dock may be taken internally to help the body assimilate iron better; she does not mention that its fresh leaves applied topically relieve the pain of nettle stings.

I found the chapter on **Grass** (183-202) among the least edifying sections of the book, at least in terms of providing useful information about eating wild grasses. Part of the challenge is the vast number of grasses and grass-like plant species, many of which (at least to me, and I suspect many others) are hard to tell apart, and Katrina offers few distinguishing features. Also, in a book with very few (perhaps too few) qualifying statements, Blair makes them here: "*Generally*, grass seeds have the *potential* of being edible" (emphasis added). This does not inspire me to collect and eat wild grass with confidence.

But perhaps most troubling is the book's failure to mention a potentially dangerous risk from eating the seeds of wild plants in the Grass family (Poaceae): the possibility that they may be infected with the toxic fungus ergot (*Claviceps purpurea*). Ergot poisoning can cause either convulsive central nervous system effects or gangrenous symptoms caused by vasoconstriction effects. (Yikes!) While another recently-published book, *The Quick Guide to Wild Edible Plants: Easy to Pick, Easy to Prepare*, by Lytton John

Musselman and Harold J. Wiggins (here's a link to my review of that book: <http://users.rcn.com/eatwild/quickguide1.htm>) includes useful information on identifying, collecting, and eating several species of wild grasses, it nevertheless includes this warning about ergot: "Be sure to examine very carefully any wild grasses you plan to eat so you can avoid this dangerous fungus." Perhaps ergot does not infect wild grasses in Blair's region of southwest Colorado, but as it does occur in many regions of the world where readers of this book may be foraging, this is a significant, and unfortunate, omission.

One potential source of confusion regarding the book's **Knotweed** chapter (pp. 203-217) is the title itself. While in my region (Northeastern U.S.), and I suspect elsewhere, the word "knotweed" is common shorthand for Japanese knotweed (*Fallopia japonica*, formerly *Polygonum cuspidatum*), the main focus of this chapter is on an entirely different species: prostrate knotweed (*Polygonum aviculare*). [While Katrina's book gives Japanese knotweed a brief mention, primarily for the medicinal value of the high resveratrol content in its rhizomes, the plant's young shoots are yummy raw or cooked, with a tart flavor similar to rhubarb (a related species). I devote an entire chapter to Japanese knotweed in my book, *Wild Plants I Have Known...and Eaten*, where you will find a recipe for Strawberry-Knotweed Pie. (Several more of my recipes utilizing Japanese Knotweed are posted at this link: <http://www.newfs.org/article-depository/specific-invasive-plants/japanese-knotweed-recipes.html>.) But I certainly understand why a book focusing on mere "weeds" would choose not to highlight Japanese knotweed, because, per my earlier discussion, the species' rogue behavior goes beyond mere "weediness" to true invasiveness, Japanese knotweed would be near (if not at) the top of that ecological blacklist.]

In this chapter, Blair recounts her experience with the *P. aviculare* plant, including harvesting the whole plant, drying it, and then grinding it all up to make a green, high-protein staple food to add to recipes. "The whole dried ground plant makes a great addition to flour for making bread, to cereals for breakfast...the taste is lightly nutty and quite mellow and delicious." This all sounds good. As I have no experience with prostrate knotweed, I look forward to giving this a try.

Two sections of the Knotweed chapter raise concerns on my part. On page 205, Blair states, "[Prostrate] Knotweed can grow in very inhospitable soils, including those that have been contaminated by petroleum products and mine tailings. It can grow in soils high

in salts and metal contamination." While I can understand Blair's admiring the toughness and tenacity of a species that can grow in such challenging conditions, I would have cautioned readers about the potential health risks of eating plants growing in contaminated soil. Sometimes plants growing in contaminated areas will take in, if not hyperaccumulate, heavy metals and other toxins, making the plants potentially harmful to eat. As this chapter offers no assurance that *P. aviculare* does not take up contaminants in the soil, I personally would stick to gathering it from clean areas only.

My other concern arises from a story (pp 207-8), in which Blair shares a "huge lesson" she learned from Alpine Bistort (*Polygonum viviparum*), a native, non-weedy cousin of prostrate knotweed. The story recounts how, in 2008, while on a solo "walkabout" through the mountains (something she has done each year for over two decades), equipped with apples and avocados for sustenance, she discovered, around the margins of an alpine lake, "a huge patch of Alpine Bistort. The plants were all in seed, perfectly ready to drop and fall into my hands....I ate them raw right off the plant by pulling the seeds free with my teeth....It was the high alpine knotweed that taught me there is so much nutrition in the wild woods to nourish my journeys, and from then on I took a leap mentally and realized I did not need to bring any additional food on my walkabouts."

My first problem with this story is Blair's failure to acknowledge that while Alpine Bistort might be common enough in the mountains of southwest Colorado for her or anyone so inclined to pick its seeds without harming it — or the alpine animals depending on it for food (marmots, for example) — this native species is decidedly less common elsewhere. In fact, *P. viviparum* is on the threatened or endangered species list for at least two New England states (NH and ME), and is categorized as "extirpated" (no longer present) in VT and non-existent in CT, MA, and RI. Obviously, no part of this plant should be gathered from the wild in regions where this plant has protected status, or is otherwise not abundant.

Secondly, I am concerned that readers of the book will be inspired by Blair's "nature will provide" lesson and emulate her example, heading off for extended trips into the "wild woods" without taking any food with them and counting on wild food alone to fill their bellies. While some may indeed be fortunate to encounter patches of blueberries, blackberries, or other abundant wild plants to feast upon, others not so lucky may find themselves without enough to eat. Hunger is a powerful motivating factor and could very

well induce a person to harvest more from a patch of plants than would be ecologically responsible. And what if the weather gets ugly, or you twist an ankle (or worse) and can't get to the wild food, even if there is enough to stave off starvation?

In contrast, I offer this advice to people contemplating an excursion into the backcountry: "Take plenty of food with you!" This enables you to forage in a carefree and joyful way, instead of what otherwise could end up as a grim, hunger-driven chore. Then, any wild food you encounter on your hike can be (should you choose) a wonderful compliment, or even substitute, for the food you have brought. On the other hand, if the weather turns crummy and you'd rather stay holed up in a tent, reading a book, you can, because you brought plenty of food with you. In a "best case" scenario, you may have found and eaten so much wild food on your "walkabout" that you have to pack out much, if not most, of the food you packed in, but that would still be well worth the peace of mind having brought it gave you.

The book's extensive chapter on **Mallow** (pp.239-260) focuses on common mallow (*Malva neglecta*), a farm and garden weed. Katrina notes that "one fun characteristic of [common] mallow is when the whole plant [roots and all] is diced and placed in water for several hours, the water turns into the consistency of egg whites" and that this "mallow water" may be substituted for egg white in vegan recipes. Perhaps the most fun part of *Malva neglecta* plants are the round seed pods, called "cheeses," as they strongly resemble miniature green wheels of cheese. They are edible raw (for example in salads) or cooked (in soup they add body in a similar manner to okra).

The genus *Malva*, and the Malvaceae as a whole, contain many edible, medicinal, and otherwise useful plants, including the aforementioned okra, cotton, hibiscus, and marsh mallow (*Althaea officinalis*). Ever wonder why those white squishy confections are called "marshmallows"? Because they used to be made with a gooey substance obtained from marsh mallow plants. While nowadays, standard, store-bought, manufactured marshmallows are held together with gelatin, Blair says, "...we make a wild marshmallow using *Malva neglecta* ...to make a tasty treat similar to the white commercial variety, but our local recipe is green rather than white..." Fortunately, her relatively simple recipe is included in her book (on p. 255), and I look forward to trying it. [John Kallas' 2010 book *Edible Wild Plants: Wild Foods from Dirt to Plate*, includes (pp. 122-128) a more detailed,

and complicated, recipe for marshmallows (which he calls "mallowmallows") that utilizes *Malva neglecta* "cheeses".]

The mucilaginous and demulcent (soothing) qualities of common mallow also lend itself well to cosmetic and medicinal preparations. Blair devotes several pages to this topic in the book, and notes, for those who may be so inclined, "Both mallow water and juice make an effective enema rinse and colon implant".

The most interesting factoid I learned from the **Mustard** chapter (pp. 261-279) was regarding neither the plant family's comestible uses (which are considerable - all mustards and fellow members of the Brassicaceae family are edible), nor cosmetic uses, but that placing crushed mustard seeds in water prevents mosquito larvae from developing. If that is true, then such a practice might be a good alternative to the chemical biocides (such as [sumithrin](#), a synthetic pyrethroid with the trade name [Anvil](#)[®]) sprayed down storm drains and implicated in the killing of lobster larvae. (Read this ecoRI news article for more on this issue - <http://www.ecori.org/connecticut-news/2014/7/29/spraying-for-mosquitoes-a-risky-proposition.html>.)

Plantain (*Plantago spp.*, pp.281-295, low-growing herbs unrelated to the banana-like Plantain of the tropics) is a genus whose medicinal uses are at least as valuable as the culinary ones, and Blair covers both in detail. I have personally eaten the young leaves of *Plantago major* after boiling them for a few minutes and found them to be quite palatable. But Blair also enjoys eating *Plantago* seeds, both unripe (green) and ripe (brown), reporting that "the brown *Plantago* seeds when chewed turned into a gelatinous mash with a slimy texture. Be prepared, though, for a possible side effect: "The brown seeds, because of their gelatinous nature, offer a gentle support to elimination". (In other words, eating ripe Plantain seeds can induce a bowel movement; indeed, *Plantago psyllium* seed husks are the active ingredient in Metamucil[®] and several other commercial laxatives.) Blair adds, "Plantain seeds make a valuable base for thickening soups in recipes, for binding crackers, and firming up desserts." The recipe section includes one for porridge in which finely-ground plantain seeds are combined with oats. (I would like to give that a try.) She also describes the medicinal properties of the leaves when applied to cuts and other skin irritations; chewing the leaves briefly first and mixing with saliva (which also has therapeutic properties) will enhance their healing value.

In her chapter on **Purslane** (pp. 297-309), Blair extols this humble garden weed's underappreciated role as a nutritional superstar. She indicates, "Purslane is documented as being one of the most nutritious plants on the earth....It is high in vitamins A, B, C and E; B complex including riboflavin, niacin, folate and pyridoxine; iron, beta-carotene and lithium." Blair further notes, "Purslane also has more omega -3 fatty acids than any other known plant on earth," even more than fish (by weight). Purslane is edible raw or cooked (its species name, *oleracea*, is roughly translated as "good enough to be a garden vegetable". If purslane's mucilaginous texture puts you off, you might nevertheless enjoy purslane mixed into Gazpacho, following her recipe (p. 308), or purslane leaves simply tossed into a store-bought Gazpacho.

The last chapter of the book, covering **Thistle**, is somewhat challenged by the fact that plants including the word "thistle" as part of their common names fall into several different genera, and the various species can differ considerably in appearance and growing habit. For example, while the chapter covers busk thistle (*Carduus nutans*) and bull thistle (*Cirsium vulgare*), two biennial species, and Canada thistle (*Cirsium arvense*), a perennial species, all of which have the classic "shaving brush" masses of tiny pink-purple-petaled flowers, it also covers the yellow-flowered sow thistle (*Sonchus oleraceus*), an annual species. [As it also lacks true spines, and has a slender hollow stalk, sow thistle arguably bears a stronger resemblance to its cousin dandelion than a thistle.

Interestingly, though, the chapter does not include yellow star-thistle (*Centaurea solstitialis*), a variety of knapweed, and not a true thistle despite the name. This is just as well, as that species is on the invasive plant and/or noxious weed list in many western states.]

While I can attest to the fact that bull thistle's young flowering stems, peeled and boiled for a few minutes, are very similar in flavor to artichoke hearts (in fact, the globe artichoke is merely a cultivated form of thistle), Blair adds that thistle "flowers are sweet and delicious and can be eaten as chewing gum." She also eats thistle roots raw fresh out of the ground, after washing, saying they "are crisp and tender and the taste is mild and enlivening." Katrina also eats peeled thistle stems raw, saying they "taste like a sweeter version of celery." While she admits that peeling the spiny thistle stalks takes patience, she says the effort is worth it.

In this chapter, Blair gets into a bit of detail regarding her disagreement with her county's rules that require property owners to control thistle, including on her 2-acre property. Interestingly, the argument she makes in defense of her position is an economic one: snacks made from the thistle plants "have become popular items at the farmers market and regularly sell out and therefore [she] was not willing to completely eradicate this species from [her] gardens." Such an economic argument might indeed work with county officials, as it is their adverse economic impact that is a (if not the) primary driver of plant species being placed on the noxious weed list in the first place. Nevertheless, I can see how her stance might also lend credibility to a concern I've heard voiced by a few ecologists. They wince when they hear mention of the edible (or, indeed, any positive) attributes of species they deem to be invasive, because they worry that efforts to control such species will lose momentum and support if the public has any reason to think they aren't so bad after all.

The **Closing Thoughts** section of Blair's book (pp. 331-2) begins with the sentence, "When we reconnect with the land, exactly as it is today, we find there is so much value and available abundance around us." I myself largely share this "Zen" approach to the outdoors: appreciating (and happily nibbling on) whatever edible wild plants I encounter, native or non-native, weedy or invasive, without passing judgment on whether or not each species' presence is deemed to be worthy or an unworthy component in the landscape. She notes, "Intimately knowing these wild plants and their benefits helps us to reawaken our wild instincts to live in greater harmony with all other species on the planet." She continues on to say that just as weeds are well-equipped to cope with change, like climate change, so are we. We can acquire resiliency from the weeds: familiarizing ourselves about them and eating them helps us "learn their wisdom". A philosophy that might be bit "far out" for some folks, but perhaps not for you. At the very least though, readers of *The Wild Wisdom of Weeds* should come away with a deeper understanding, if not appreciation, of these tenacious plants.

✕ ✕ ✕

Until his retirement in June of 2015, Russ Cohen's "day job" was serving as the Rivers Advocate for the Massachusetts Department of Fish and Game's Division of Ecological Restoration. Apart from that, Russ' passionate avocation for over four decades has been connecting to nature by nibbling on it. Russ is an expert forager and the author of the

book *Wild Plants I Have Known... and Eaten*, published in 2004 by the Essex County Greenbelt Association, and now in its sixth printing. He has been teaching foraging since 1974, and gives over three dozen foraging walks and talks each year at a wide variety of venues throughout the Northeast. More about Russ and his foraging programs is available at this link: <http://users.rcn.com/eatwild/sched.htm>. Now that he is no longer encumbered by his desk job, Russ has stepped up his effort to partner with land trusts, municipalities, state and federal agencies and other owners/managers of conservation and other lands to enhance the plant diversity on suitable sites, particularly by adding native edible species. This fall, he is collecting the seeds and nuts of native edible species (like Shagbark Hickory, *Carya ovata*), and is passing them along to propagators and others for growing out and planting in suitable locations. Russ can be reached at eatwild@rcn.com.