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Ostrich Fern Fiddleheads

Non-Timber Forest Products: Goods from the Maine Woods

Matteuccia struthiopteris

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Part of Maine's heritage

Fiddleheads from ostrich ferns are an iconic spring edible in Maine. Native Americans were the first to eat them, and their popularity continues to this day. Fiddleheads are so named because of the similarity in shape to the curled scroll of a violin. Fiddleheads are also known as crosiers or croziers, after the crook-shaped pastoral staff of a bishop. In the Passamaquoddy and Maliseet languages, the word for fiddlehead is "mahsus"; in Penobscot they are "máhsosi."

Fiddleheads are important to Maine's economy, with pickers, retailers, and woodland owners earning extra income from them each spring. Fiddleheads are also an important part of Maine's culture and heritage. The double-curve motif that Wabanaki people sometimes use to decorate artwork bears strong resemblance to a fiddlehead. Generations of Maine people have made fiddlehead harvesting a rite of spring. It's important to know which fern fiddlehead to pick and how much to pick so that this valuable resource can be enjoyed for generations to come.

Ostrich fern biology

Ostrich ferns are a perennial that grow in a clump called a crown. Ostrich ferns can produce two kinds of fronds:

- sterile fronds, which are produced from the fiddlehead and grow up to five feet in height, and
- shorter, fertile (spore-producing) fronds that emerge several weeks after fiddleheads, growing to only about 12–20 inches in height.

The ferns that emerge from fiddleheads in the spring die back to the ground each fall. Fertile fronds, which are not present on all crowns, emerge green, turn brown as the season progresses, and can remain standing for a year after emerging.

Ostrich ferns can be found in shady areas near streams and rivers. Photo by David Fuller.

Fiddleheads can be established by spores, but grow more
quickly from underground stems called rhizomes. In a favorable site, ostrich ferns can spread to cover acres of ground. Ostrich ferns grow primarily along stream and river floodplains in part shade, under the canopy of trees such as red and silver maples and brown ash.

Ostrich fern identification

It is important to properly identify ostrich ferns. Bracken ferns, for example, have been shown to cause cancer in rats under laboratory conditions[1], and can cause other problems in livestock. Not enough is known about other ferns to recommend eating them.

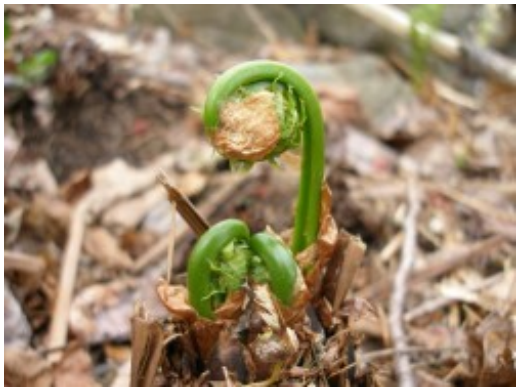
There are three ways to identify ostrich fern fiddleheads in the spring:

1. There is a deep, ”U”-shaped groove on the inside of the smooth stem.
2. There are thin, brown, paper-like scales covering the newly emerging fiddleheads. The scales fall off as the fiddlehead grows and elongates.
3. The fertile, spore-bearing frond is distinctive in shape, and also has a groove on the inside of the stem. When present during harvest time, the previous year’s fertile frond will be dark brown in color. Not all ostrich fern crowns will have fertile fronds.

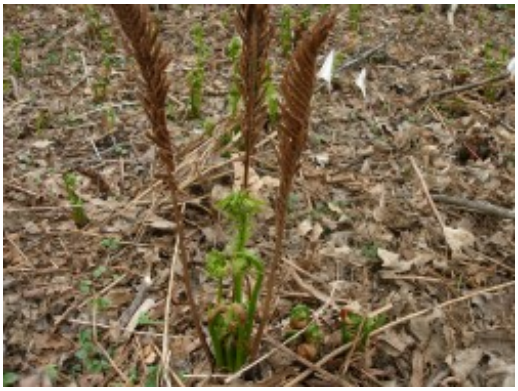
In contrast, bracken fern fiddleheads are fuzzy, and lack the brown paper-like covering and U-shaped groove on the inside of the stem.

Later in the season, fully grown ostrich ferns have other identifying features. With the help of a field guide, you can then identify ostrich ferns for a future harvest.

Identifying Ostrich Fern Fiddleheads
Click on the images to view enlargements.



Look for a deep, “U”-shaped groove on the inside of the fiddlehead stem, as well as brown, papery scales covering newly emerging fiddleheads. Photo by David Fuller.



The previous year’s dark brown, spore-bearing fronds will have a distinctive shape resembling a feather and a groove on the inside of each stem. Photo by David Fuller.

The fiddlehead season

Fiddleheads emerge in the spring, starting in late April in southern Maine, and appearing in mid to late May in far northern Maine. They grow rapidly, up to several inches a day under optimum conditions, so the season in a given location is quite short.

Sustainable harvest guidelines

Before harvesting fiddleheads, make sure that you have the permission of the landowner. If you are not sure who owns the property, check with the town office where the property is located to get the owner's name. Consider offering to pay the landowner an agreed-upon price per pound for the fiddleheads you pick, or some cleaned fiddleheads in exchange for the privilege of picking. Picking without owner permission has led to land being closed to the harvesting of fiddleheads. Compensating the owner, on the other hand, helps to reinforce the value of the fiddlehead resource, and acknowledges the property taxes paid by the landowner.

Fiddleheads are harvested in the spring as they emerge from the fern crown. They are best harvested at about two to six inches tall, when a portion of the tasty stem can be harvested, but while the fiddlehead is still tightly curled.

Fiddleheads should only be harvested from healthy crowns that can sustain picking. Such crowns will have at least four fiddleheads, rather than one or two. The presence of only one or two fiddleheads in a crown indicates low fern vigor or a newly established fern.

Harvest fiddleheads by snapping them off by hand or cutting them off with a knife. When cutting fiddleheads, take care not to damage the remaining fiddleheads. The fiddleheads that remain to grow into fern fronds will be making food for the next year's picking.

Research conducted by the University of Maine suggests that picking all of the emerged fiddleheads on a crown every year over a series of years results in the decline and often death of the fern.

The four-year harvest study compared the effects of harvesting fiddleheads from three groups of ostrich ferns. One group had all of the emerged fiddleheads in each crown removed, the second group had one-half of the emerged fiddleheads removed, and the control group had no fiddleheads removed. The control group and the half-harvested ferns were able to keep producing nearly the same amounts of fiddleheads in subsequent years, while the all-harvested crowns produced very few or no fiddleheads after four years.

Picking no more than one half of the emerged fiddleheads from each crown, with no follow-up harvest of later-emerging fiddleheads in the same season, appears to be sustainable.

Safe fiddlehead handling tips

When picking fiddleheads, make sure to harvest them into clean containers. Use potable water when cleaning the fiddleheads, not water from streams or rivers. Refrigerate your harvest as soon as possible to maintain freshness. For more information on cooking fiddleheads, please refer to UMaine Extension's fact sheet, *Facts on Fiddleheads*.

Market considerations

Fresh fiddleheads can be marketed in many ways, including farmers markets, restaurants, roadside stands, supermarkets, and shipping by mail. Better prices can be charged for fiddleheads that have been cleaned to remove their papery coverings. Consider including cooking directions when marketing directly to the consumer.

The papery covering on fiddleheads is most easily removed when dry. Small amounts of fiddleheads can be cleaned by rubbing the covering loose. Larger amounts can be rubbed, then winnowed in front of a fan outdoors, which helps blow the papery covering off.

The Centers for Disease Control (CDC) has investigated a number of outbreaks of food-borne illness associated with fiddleheads. The implicated ferns were eaten either raw or lightly cooked (sautéed, parboiled, or

microwaved), which was what caused a food-borne illness outbreak in British Columbia in 1990. Although a toxin has not been identified in the fiddleheads of the ostrich fern, the findings of this investigation suggest that ***you should cook fiddleheads thoroughly before eating (boil them for at least 15 minutes).***

[1] P.M. Newberne, "Biologic Effects of Plant Toxins and Aflatoxins in Rats," *Journal of the National Cancer Institute* 56, no. 3 (1976): 551–5.

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