

## BLOSSOMING TREASURES OF BIODIVERSITY: 2. North American Wild Rice (*Zizania* species) - a wild epicurean crop

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**The plants:** Wild Rice is the most common native cereal crop in North America. The Wild Rice group includes four species of wetland or aquatic grasses that grow from 0.5 to 2 m high. Common Rice (*Oryza sativa*), upon which much of the world's human population is wholly dependent, differs in its shorter and thicker white grains; Wild Rice grains are longer and brown or black.

**Geography and Ecology:** Three species occur in North America. Wild Rice (*Z. palustris*) of the temperate and boreal areas of eastern and midwestern North America is commercially important and harvested from shallow lakes, slow rivers, and paddies. Southern Wild Rice (*Z. aquatica*) of temperate eastern North America has a short, thin seed and has attracted less commercial interest. The perennial Texas Wild Rice (*Z. texana*) is endemic to the San Marcos River in Texas. Manchurian Wild Rice (*Z. latifolia*) occurs in eastern Asia and has been used as a vegetable and for forage production there.

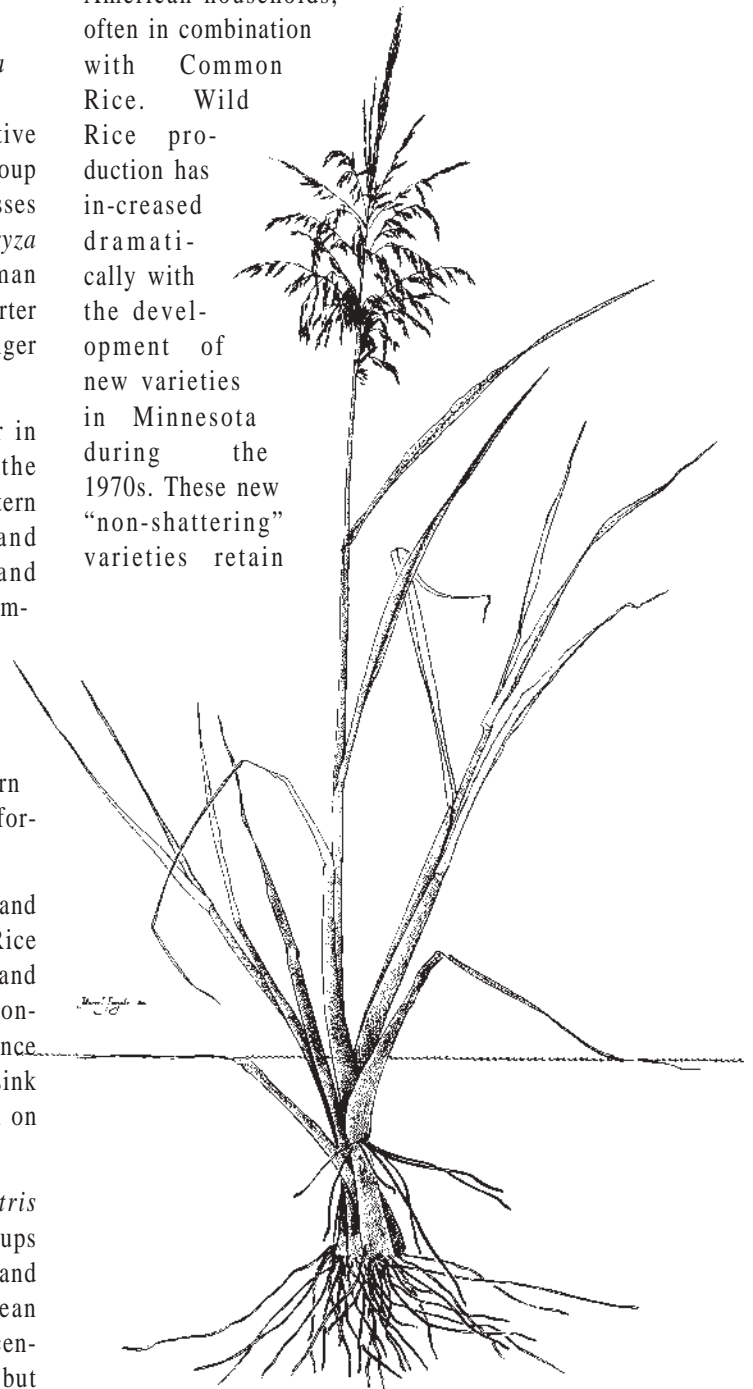
Because they dominate some wetland ecosystems and provide food for waterfowl, the species of Wild Rice are significant in the biodiversity of wetlands and are often managed in conservation programs. Considerable seed is lost in harvesting wild plants, since the seeds mature and fall at different times and sink rapidly. The fallen seed is available to waterfowl on the lake bottom in spring and fall.

**History:** The commercially important *Z. palustris* has been a staple food in the diet of certain groups of North American native people for millennia, and was also an essential food of the early European explorers and fur traders. For much of the 20<sup>th</sup> century it was still a locally important wild food but

also a gourmet supermarket item. Over the past few decades, with the trend toward increasing interest in natural foods, it has found a place in most North American households,

often in combination with Common Rice. Wild

Rice production has increased dramatically with the development of new varieties in Minnesota during the 1970s. These new "non-shattering" varieties retain



Wild Rice,  
*Zizania palustris*

much of the seed for long periods of time, making harvesting much more efficient. In Sacramento Valley of California many growers have switched from the traditional Common Rice to Wild Rice. These growers can produce two crops in one year. Production began in California in 1978, and by 1985 the state took the lead, replacing Minnesota, which had led with prepared wetland (paddy) cultivation since the 1970s. In Canada, where wild rice is not cultivated in paddies but harvested from both introduced and natural stands, there have also been dramatic increases. Saskatchewan, now the main Canadian producer, began its industry with introductions in the 1980s.

**Economic Value:** North American Wild Rice is of equivalent nutritional value to Common Rice, and some studies have indicated that it ranks above all of the cultivated cereals introduced to North America. Its potential for greater exploitation is enormous. World production has expanded by a factor of ten since 1975 and the value of the crop has increased from about 1 million to 20 million dollars. This economic blossoming has been attributed to several factors: (1) wide recognition of wild rice as a gourmet food, in high demand, and receiving a premium price; (2) champions willing to invest in production and marketing; (3) organized growers providing research funding; (4) the production of non-shattering varieties. California produces 65%, Minnesota 31%, and Canada 5%. In Canada, where the crop is valued at roughly 2 million dollars, the province of Saskatchewan produces 70%, Manitoba 21%, and the remainder comes from Ontario. Wild Rice has been recently reviewed favourably as a potential new crop for parts of northern Europe. The Canadian lake- and river-grown Wild Rice has been promoted for its natural origin, free of agrochemical residues.

**Biodiversity Conservation:** Over the widespread eastern North American range of Wild Rice, a number of variants have been well documented, indicating extensive genetic variation. Much more study of this variability is necessary. River populations are particularly susceptible to loss



*Zizania palustris*, processed seeds.

through pollution. Reestablishment following decline of some lake populations has proven difficult. Southern Wild Rice has declined and been replaced by Cattail in parts of the lower Great Lakes. Since Wild Rice is a community dominant and an increasingly important crop, its protection is essential.

**Believe it or not:**

- After gentle heating (parching) to expand the grains, native people “danced” on top of the grains to separate the kernels from the surrounding chaff (hulls). Then as the mixture was dropped through the air, the heavy kernels would fall straight down and the light chaff would blow away (the process of winnowing) completing the separation.
- American Indians popped wild rice, like popcorn, and sometimes served it with maple sugar as a special treat. Men sometimes carried the popped rice when they were out hunting or fishing.
- An Ojibway legend indicates that a man returned from an unsuccessful hunt to find a duck on his boiling pot. The duck promptly flew away but left seeds of Wild Rice floating in the boiling water. The hunter ate the seeds for supper and was well satisfied. He then followed in the direction that the duck had flown and discovered a lake full of Wild Rice. Thus began the use of Wild Rice by native people.
- Between 45 and 90 kg of Wild Rice can be collected in one day by the traditional method of beating into a canoe.
- The base of the stems of Manchurian wild rice (*Zizania latifolia*) is often infected by a fungus that causes the shoots to swell and become tender. These swollen stems are prized as a vegetable in Asia.
- It has been calculated that human-made Wild Rice paddies in Minnesota provide 3,200 duck-use days/hectare (a duck-use day means the equivalent of one duck using one hectare for one day - e.g. 24 ducks using one hectare for one hour each).

**Key information:**

Aiken, S.G., P.F. Lee, D. Punter and J.M. Stewart. 1988. Wild Rice in Canada. Agriculture Canada Publication 1830, Ottawa. 130pp.  
 Vennum, T. Jr. 1988. Wild Rice and the Ojibway people. Minnesota Historical Society Press, St. Paul. 357 pp.

<http://www.hort.purdue.edu/newcrop/proceedings1993/v2-235.html>  
<http://www.hort.purdue.edu/newcrop/afcm/wildrice.html>