

State of Minnesota

Senate

Natural Resources and Environment Committee, Senate.

Report

A Tour of Central Minnesota's Wild Rice Growing Areas,

Albion and Itasca Counties, August 11, 1971.

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I. Nature of the Tour.

The Senate Committee on Natural Resources and Environment was invited to participate in a tour of central Minnesota's wild rice growing areas, Aitkin and Itasca counties, August 11, 1971, sponsored by the Onanogozie Resource Conservation and Development Association, in cooperation with the Agricultural Extension Service, University of Minnesota, and Soil Conservation Service, United States Department of Agriculture. Senators Clifford Ukkelberg and Norman Hanson attended, along with Peter Wattson of the committee staff.

The tour began at the Aitkin High School cafeteria at 9 A.M., August 11, with registration, coffee, and a welcome from Merlyn Knudson, president of the Onanogozie Resource Conservation and Development Association.

Shortly after 9:30, the group formed a caravan of over 20 automobiles and drove through rural Catkin County to the first stop, a wild rice paddy owned and operated by the Kosbau brothers. There George Moriarity, District Conservationist for Aitkin with the U.S. Soil Conservation Service, gave a talk on land development, and Bruce Hummerickhouse, Assistant Regional Forester from the division of Lands and Forestry, gave a talk on land and water rights.

The group then viewed another paddy development and made its second stop at a relatively large group of paddies, over 200 acres, owned by the Menomen Development Corporation. There Herbert W. Johnson, Professor of Agronomy and Plant Genetics at the University of Minnesota gave a talk on wild rice breeding.

The group viewed another group of paddies on its way to the paddies of Vance Johnson, when George Moriarity discussed new paddy development and David M. Noetzel, Extension Entomologist of the University of Minnesota, discussed insect pests.

The lunch stop was at Quadna Mountain Lodge. Floyd W. Jorgensen, Extension Agent at the Red Lake Indian Reservation, spoke on Wild Rice and The Indian; William F. Hueg, Jr., Professor of Agronomy and Director of the University of Minnesota Agricultural Experiment Station, spoke on wild rice research; and Rajaram Upadhyaya, Wild Rice Research Director for the Menomen Development Corporation, spoke on variety development.

The group then traveled to the North Central Experiment Station in Grand Rapids for the final stop on the tour. Milton F. Kernkamp, Head of the Department of Plant Pathology at the University of Minnesota, discussed wild rice diseases; Ken Lundberg and Pat Trihey of the Science Department at Bemidji State College discussed Water Quality; and Sarah Tufford of the division of Waters, Soils and Minerals discussed state water use permits.

II. Information Gathered.

A. Natural wild rice.

Wild rice is a native Minnesota crop and is unrelated to common rice. It is found in lakes or near stream banks, generally where the water is six inches to five feet deep.

In Minnesota, all surface and underground waters that are capable of substantial beneficial public use are considered to be public waters, regardless of who owns the land surrounding the waters. Most of the wild rice produced in Minnesota comes from those public waters and is therefore public property. Within the original boundaries of certain Indian reservations the wild rice in public waters may be harvested only by Indians and other residents of the reservations, but nowhere outside or inside a reservation can an individual claim any particular stand of wild rice in public waters as his own.

Harvesting of wild rice in public waters must be done by the traditional canoe and flail method, at times set by the Commissioner of Natural Resources.

The amount of wild rice produced varies substantially from year to year, apparently because of fluctuations in lake and river water levels due to variations in rainfall and the use of waters for navigation, flood control, irrigation, and industry.

In spite of the restrictions on ownership and harvesting, and the vicissitudes of nature, Minnesota leads the world in wild rice acreage and production. We were given no information on its relative importance to the Minnesota economy.

B. Paddy wild rice.

Since 1965, and especially since 1968, attempts have been made to grow wild rice commercially in Minnesota. In order to gain ownership of the crop it has been necessary to grow the wild rice in waters that are not public waters. Ownership makes an investment in cultivating and harvesting equipment economically feasible, since the grower is assured that the crop he plants will be his to harvest and sell. Growing the crop in private waters also makes the use of modern growing and harvesting methods legal, since current restrictions apply only to wild rice grown in public waters.

The technique used to obtain a body of water large enough to grow a commercially adequate crop of wild rice and still not classified as public water has been to construct large paddies that are flooded during the growing season and drained for harvesting.

1. Land.

The first requisite for a wild rice paddy is adequate land. The land must be relatively flat. It should have a layer of impervious soil beneath it so it will hold water and provide solid footing for the heavy harvesting and tilling machinery. The soil may be anything from peat to clay. There apparently is an abundance of this type of land in north central Minnesota, especially in Aitkin county. Much of the land is now idle, and some is also trust fund land that could not be sold because it was not useful for growing anything.

2. Water.

The total amount of water available is perhaps the factor that most limits the potential production of wild rice in northern Minnesota. Any site must be near some water supply since a total of up to 36 inches of water will be necessary during the six week growing season, depending upon the amount of rainfall. Water may come from a river, lake, or well, but in any case a permit must be obtained from the Commissioner of Natural Resources. Common law apparently requires that an applicant own lands that border on the water to be used. Common law also says that each riparian owner has an equal right to all the water, so each must be prepared to share use of the water. So far there has almost always been enough water available for all who seek a permit, but the department fears the day may come when rationing may be necessary. The department does not yet have a plan for determining how much water each user would get.

The quality of water may be important, since the incoming water must have an alkalinity within a certain range in order for wild rice to grow. The effect on the water of using it to irrigate a wild rice paddy is not yet known, but research on the subject is being done at Bemidji State College.

3. Diseases, pests.

Wild rice is often destroyed by Helminthosporium leaf blight, which may attack an entire crop in a single growing season and completely wipe it out. Paddy wild rice is particularly susceptible to this disease. Helminthosporium is more common where the crop is thick, and paddy wild rice is so prolific that it gets thicker and thicker each succeeding year. Harvest losses provide enough seed to produce more than a full crop the following year, and the excess seed is difficult to remove or destroy, since it lies dormant in the ground until spring when it germinates. Attempts to develop a variety more resistant to leaf blight or less prolific have been hampered by the peculiar biology of wild rice, which has its female flowers above the male flowers, making selective breeding difficult.

The wild rice worm is a pest that causes serious wild rice yield losses. No adequate pesticide safe for use has yet been found.

The appropriation to the University of Minnesota made by Laws 1971, Chapter 966, Section 11, Subdivision 2(a) includes \$150,000 in the coming biennium for wild rice research to try to solve some of these disease and pest problems. The growers hope that this appropriation will be a continuing one. They have also discussed the possibility of a wild rice production tax to be used for such research.

4. Harvesting.

Harvesting begins after the paddy has been drained and has been allowed to dry out for two to three weeks in order to accommodate the harvesting machines. Wild rice doesn't mature evenly and the grains fall from the head as they ripen. So fields must be harvested about four times at intervals of about three days as the rice matures. This uneven maturing also requires that the plants not be cut off during the harvesting operation. Several growers have built their own harvesters and a commercially manufactured machine is now available.

5. Marketing.

Marketing of much of the wild rice grown commercially in Aitkin county is through a marketing cooperative. The Green Giant Company is also interested in growing and marketing wild rice.

6. Effect on Indians.

Commercial growers of wild rice contend that paddy wild rice production is not having an adverse effect on the Minnesota Indian population. In fact, although individual members of the Red Lake band, for example, continue to harvest for personal profit in public waters using the required traditional method, the band itself has begun paddy production for commercial sale with profits to be retained by the band as a whole for common purposes. Their success compared with other commercial growers is not known, but the growers of Aitkin and Itasca counties hope that a rising tide of wild rice production will raise all wild rice boats.