

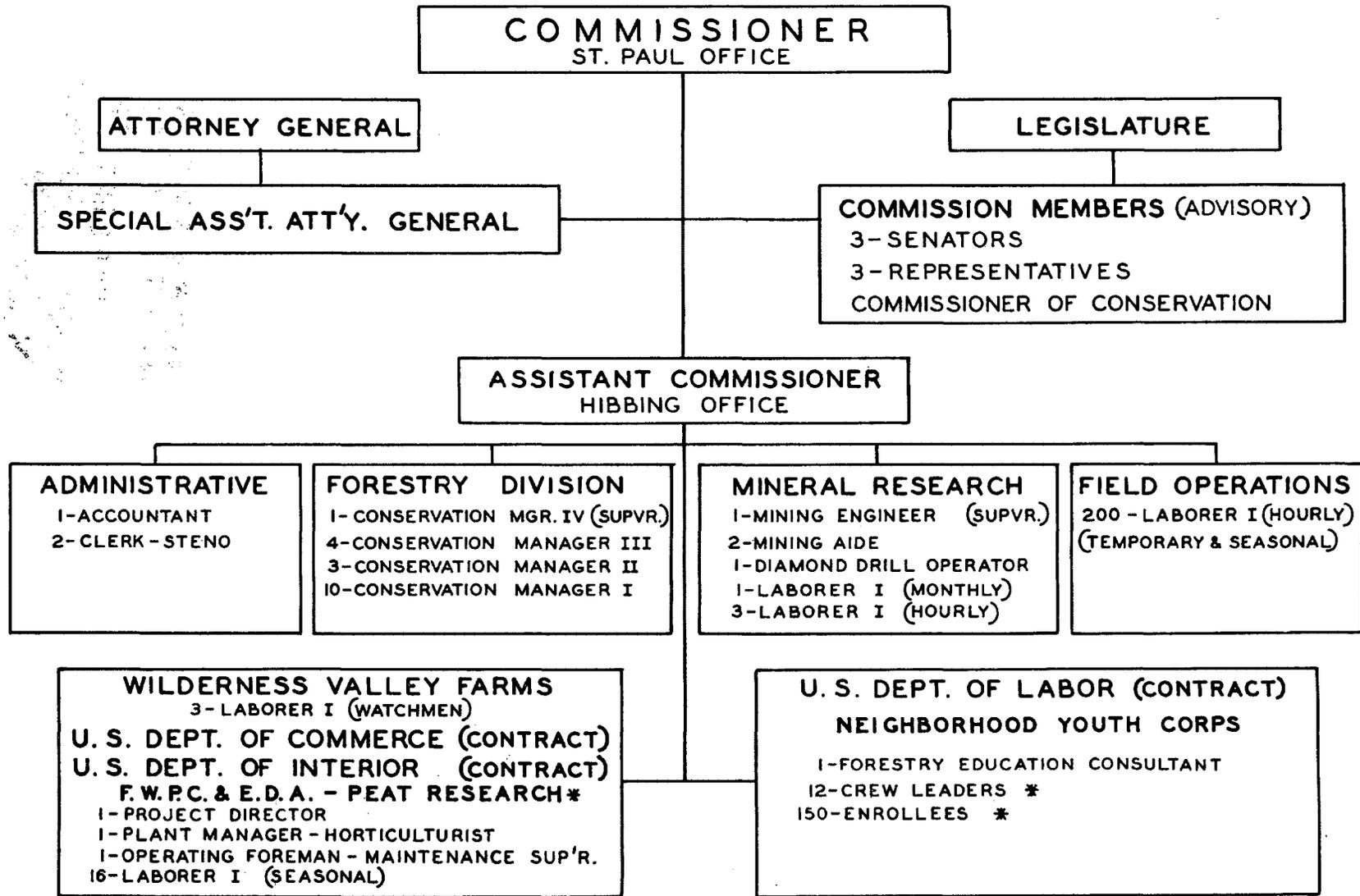
Department of Iron Range Resources and Rehabilitation

STATE OF MINNESOTA



BIENNIAL REPORT 1966 - 1968

ORGANIZATION CHART 1966-1968
DEPARTMENT OF IRON RANGE RESOURCES & REHABILITATION
 MINNESOTA STATUTES, SECTION 298.22



* REIMBURSED BY FEDERAL GOVERNMENT

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DEPARTMENT OF IRON RANGE RESOURCES AND REHABILITATION

Room 49, State Office Building, St. Paul, Minnesota 55101
St. Louis County Court House, Hibbing, Minnesota 55746
A. M. DeYOANNES, Commissioner
Virginia, Minnesota

IRR&R COMMISSION MEMBERS

Rep. Duane Rappana, Chairman Duluth, Minnesota	Sen. Arne C. Wanvick Duluth, Minnesota
Rep. Howard E. Smith, Vice Chairman Crosby, Minnesota	Rep. Arthur H. Frick, Sr. Grand Rapids, Minnesota
Sen. Donald O. Wright, Secretary Minneapolis, Minnesota	Jarle Leirfallom, Commissioner Conservation Department
Sen. Robert O. Ashbach St. Paul, Minnesota	Laurence A. Anderson, Special Assistant Attorney General

IRR&R COMMISSIONERS

Herbert J. Miller, Mpls.*.....	July 1, 1941 to June 30, 1942
Robert E. Wilson, Mpls.....	July 1, 1942 to May 1, 1949
Ben P. Constantine, Eveleth.....	May 1, 1949 to November 20, 1950
Edward G. Bayuk, Eveleth.....	November 21, 1950 to April 30, 1955
Kaarlo J. Otava, Mountain Iron.....	May 1, 1955 to January 4, 1961
Hyrom S. Sorenson, Bagley**.....	January 5, 1961 to February 2, 1961
A. M. DeYoannes, Virginia.....	February 3, 1961 to June 30, 1969

*Director from July 1, 1941 to April 18, 1942
**Acting Commissioner

IRR&R COMMISSION MEMBERS

Senator Robert O. Ashbach, St. Paul.....	July 1, 1967 to June 30, 1969
Senator C. A. Dahle, Duluth.....	May 1, 1943 to August, 1949
Senator M. J. Galvin, Winona.....	May 1, 1943 to February 4, 1947
Senator K. F. Grittner, St. Paul.....	April 21, 1955 to April 21, 1959
Senator Leo J. Lauerman, Olivia.....	July 1, 1959 to January 30, 1963
Senator Michael E. McGuire, Montgomery.....	January 30, 1963 to June 30, 1965
Senator George O'Brien, Grand Rapids.....	May 1, 1943 to July, 1959
Senator Benjamin Patterson, Deer River.....	January 30, 1963 to June 30, 1967
Senator Elmer Peterson, Hibbing.....	April 19, 1951 to January 30, 1963
Senator Herbert Rogers, Duluth.....	April 19, 1951 to July 1, 1959
Senator Chas. W. Root, Minneapolis.....	July 1, 1959 to June 8, 1961
Senator Thos. D. Vukelich, Gilbert.....	April 19, 1945 to April 19, 1951
Senator Arne Wanvick, Duluth.....	July 1, 1965 to June 30, 1969
Senator Donald O. Wright, Minneapolis.....	June 8, 1961 to June 30, 1969
Representative Elmer E. Berglund, Bemidji.....	April 21, 1959 to April 17, 1961
Representative Luke F. Burns, Virginia.....	May 1, 1943 to April 19, 1945
Representative Joseph J. Daun, St. Peter.....	May 1, 1943 to January, 1949
Representative Emil C. Ernst, Lester Prairie.....	April 21, 1949 to April 21, 1955
Representative Alfred France, Duluth.....	January 29, 1963 to June 30, 1965
Representative Art Frick, Sr., Grand Rapids.....	January 29, 1963 to June 30, 1969
Representative Peter X. Fugina, Virginia.....	April 21, 1955 to April 17, 1961
Representative Charles L. Halsted, Brainerd.....	April 21, 1955 to April 21, 1959 April 17, 1961 to June 30, 1967
Representative Warren S. Moore, Duluth.....	April 19, 1951 to April 21, 1955
Representative Willard M. Munger, Duluth.....	April 21, 1959 to April 17, 1961
Representative Duane Rappana, Duluth.....	July 1, 1965 to June 30, 1969
Representative Chas. W. Root, Minneapolis.....	April 24, 1947 to April 19, 1951
Representative Loren S. Rutter, Kinney.....	April 17, 1961 to January 29, 1963
Representative Howard E. Smith, Crosby.....	July 1, 1967 to June 30, 1969
Representative Fred Schwanke, Deerwood.....	May 1, 1943 to April, 1955
Representative Arne C. Wanvick, Duluth.....	April 17, 1961 to January 29, 1963
Commissioner Robert L. Herbst, Conservation*.....	July 20, 1966 to January 20, 1967
Commissioner Jarle Leirfallom, Conservation.....	January 20, 1967 to February 15, 1971
Commissioner Wayne Olson, Conservation.....	July 1, 1963 to July 19, 1966
Commissioner Clarence Prout, Conservation.....	January 4, 1961 to June 30, 1963
Commissioner George A. Selke, Conservation.....	May 1, 1955 to January 4, 1961
Commissioner Chester S. Wilson, Conservation.....	March 15, 1943 to May 1, 1955

*Acting Commissioner



STATE OF MINNESOTA
DEPARTMENT OF
IRON RANGE RESOURCES AND REHABILITATION
49 STATE OFFICE BUILDING
SAINT PAUL, MINNESOTA 55101

To the Governor and the Legislature
of the State of Minnesota:

It is my pleasure to submit the Thirteenth Biennial Report of the Department of Iron Range Resources and Rehabilitation in compliance with Minnesota Statutes 1961, Section 298.22, Subd. 2.

This is the report for the Sixty-sixth Legislature of the State of Minnesota, including the fiscal years ending June 30, 1967, and June 30, 1968.

Copies of this report are available for members of the State Legislature and all State departments, as well as Federal, County and local agencies interested. Schools and libraries may obtain copies upon request. A limited supply will be available to the general public.

Respectfully submitted,

A. M. DeYOANNES, Commissioner

FOREWORD

The Iron Range Resources and Rehabilitation Commission was created by the 1941 Legislature to combat high unemployment and general economic distress in the Iron Range area.

Generally it was charged with rehabilitating business, industry and the unemployed.

The record shows that the Department of Iron Range Resources and Rehabilitation has responded well to this challenge and fulfilled its charge for the past 27 years.

The financial base of the department rested on the iron ore occupation tax (a tax based on natural iron ore mined). The department, by law, receives 10 per cent of that half of the occupation tax which goes into the state general revenue fund but this source of funds is dwindling, because of the change in mining operations on the Iron Range.

The department receives no funds from taxes on taconite. It receives less than the normal share on the occupation tax on concentrates other than taconite, because of certain tax credits not applicable to natural ores.

Unless there is a change in the present taconite tax structure, the IRR&R gradually will be phased out of existence. Receipts from direct shipments of ore decline in proportion to the increase in taconite production.

Thus the department faces progressively decreasing budgets.

Despite the taconite boom, northeastern Minnesota still has serious economic problems, especially with the shift of the tax load from industry to the home owner.

The Range area is still plagued by inadequate employment, population migration and a lack of industrial diversity that is aggravated by new methods used in the mining and timber industries.

The taconite industry is highly automated and requires considerably less manpower to operate than the mining and direct shipment methods for high-grade natural iron ores.

Similarly, changes in the timber industry have also affected the type and number of employees needed for operation.

As a result there is a definite need to develop other resources. Economic conditions for new industries and job opportunities for the many displaced mine and timber employees are imperative to the economic health of Northeastern Minnesota.

Money for recent operation of the department in addition to the iron ore occupation tax came from a revolving fund created from rents, royalties and the sale of buildings and equipment, and participating federal funds for research and economic opportunity programs.

This report shows that the department, despite its dwindling financial base, is continuing operations according to the intent of the law.

However, with its limited budget, any legislative fund transfers would seriously affect the department's present programs. It would eliminate the possibility of helping private industry or establishing new industries for diversification at a time when the need to provide employment and to improve the economy is more important to the area than it was when the department was established in 1941.

Commissioner
Iron Range Resources and Rehabilitation
January, 1969

HISTORY, PURPOSE AND GOALS

Why Was the IRR&R Created?

The Iron Range area was in serious economic distress in 1941.

More than 10,000 were unemployed in St. Louis and Itasca counties.

Twelve per cent of the people in St. Louis County were receiving some kind of public assistance or relief.

Employment in the iron mines had decreased to 4,500—a drop of 7,500 employees over a 20-year period.

Generally, the exploitation of timber resources, unwise methods of farming, introduction of machinery in the mining of iron ore and other factors contributed to unemployment and other economic problems in the area.

Furthermore, mining officials indicated that the State's reserve of high-grade iron ore was being depleted and that state laws on taxation and mineral reservations was forcing them to reduce their Minnesota operations in favor of foreign ores.

Prior to the 1941 session a legislative interim commission was investigating unusually high ad valorem property taxes on the range (most of them paid by mining firms). On the basis of this commission's recommendations a per capita limit on these taxes was greatly reduced.

When this reduction was suggested, Governor Harold Stassen recommended a simultaneous increase of the iron ore occupation tax (since it was on ore actually mined and not on unproductive property). Stassen further recommended that part

of the occupation tax (5 per cent of the total) be used to develop a Northeastern Minnesota rehabilitation program.

This was the financial base for the creation of a Commissioner of Iron Range Resources and Rehabilitation by the 1941 Legislature.

The IRR&R Commission Is Created

The 1941 Legislature responded to Governor Stassen's proposal and set up the office of the IRR&R Commissioner and financed his operations with the rehabilitation share of the occupation tax.

The charge to the new commissioner was manifold:

- To develop low grade iron ore
- To develop peat and other remaining natural resources
- To promote vocational training
- To expand tourist facilities and attractions
- To promote long range forestry programs in the 16 "cutover" counties.
- To develop farming
- To promote processing of wood products
- To establish paper mills
- And, generally, to develop a program of rehabilitating the unemployed and underemployed of the area.

In the next legislative session (1943) the law to create the commission was enacted. The commission consists of three Senators, three Representatives and the Commissioner of Conservation.

The Department's Areas of Service

The Iron Range Resources and Rehabilitation Department has entered into many areas that have directly or indirectly resulted in boosting employment and the general economy of north-eastern Minnesota.

Many millions of dollars and much work has been spent in these areas:

- Iron Ore research
- Research and development in the timber industry
- Geological surveys and mapping
- Research and development connected with taconite, peat, copper and nickel and other mineral bearing ores.

- Wild rice research and development projects
- Agricultural research and development
- Industrial loans designed to create opportunities for employment and uses of natural resources of the Range area.

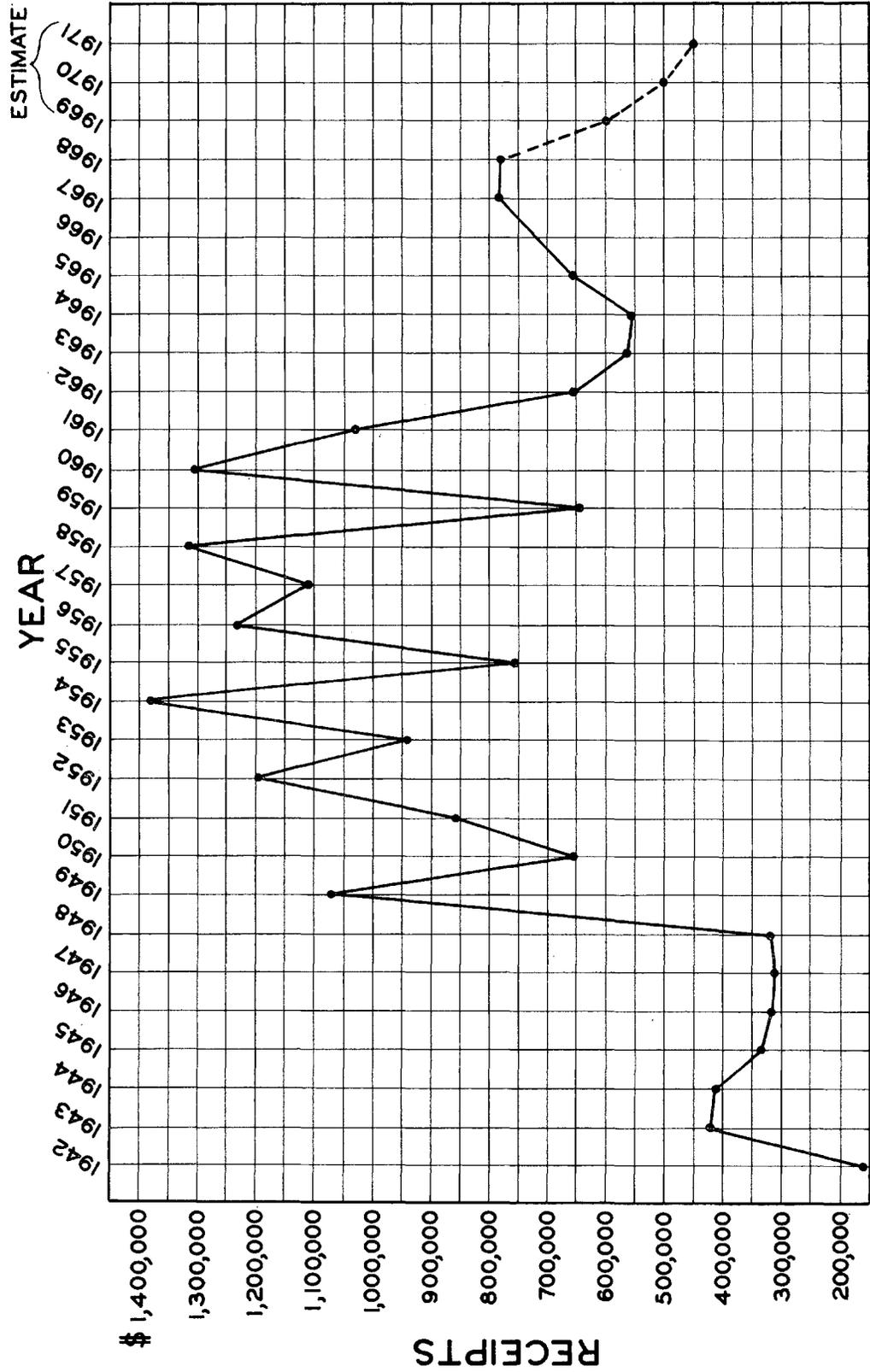
The following table explains the first item above, showing that \$2,587,000 has been appropriated for one iron ore research project from 1941-1968, financial aid for operation of the Mines Experiment Station of the University of Minnesota, Institute of Technology.

In addition to this IRR&R has appropriated \$530,000 for other iron ore research projects, making a total of \$3,117,000 invested in this phase of the department's program.

Occupational Tax Receipts and Funds Transferred to University of Minnesota

Fiscal Year	Occupational Tax Receipts	University of Minnesota, Legislative Transfer to Mines Experiment Station
1941-42	\$ 159,680.50	—
1942-43	419,981.34	\$ 22,000
1943-44	411,622.60	22,000
1944-45	335,490.76	50,000
1945-46	316,799.53	50,000
1946-47	313,723.85	60,000
1947-48	318,620.65	60,000
1948-49	1,071,179.89	75,000
1949-50	651,873.36	75,000
1950-51	855,568.32	80,000
1951-52	1,199,834.72	80,000
1952-53	942,199.88	83,050
1953-54	1,379,095.05	83,050
1954-55	750,611.40	87,500
1955-56	1,233,214.65	87,500
1956-57	1,106,298.85	100,000
1957-58	1,314,442.06	100,000
1958-59	648,369.29	150,000
1959-60	1,300,865.62	150,000
1960-61	1,032,719.16	159,000
1961-62	652,548.38	165,000
1962-63	563,883.99	190,298
1963-64	555,749.37	197,686
1964-65	654,807.68	80,000
1965-66	784,015.37	80,000
1966-67	783,982.82	150,000
1967-68	635,287.30	150,000
1968-69 Estimate	600,000.00	—
1969-70 Estimate	500,000.00	—
1970-71 Estimate	450,000.00	—
Totals	<u>\$21,942,466.39</u>	<u>\$2,587,084</u>

IRON ORE OCCUPATION TAX RECEIPTS



Taconite Brings Changes

The taconite industry is booming in Minnesota.

The revival of the mining industry however has not solved the Range area's unemployment problems. There is no allowance in the taconite tax structure for funds that could be used to rehabilitate the jobless residents of the area.

Investment in new taconite plant facilities was extremely cautious for years for fear that the heavy tax burden imposed on direct shipment of ores might be applied to taconite.

Minnesota did have a realistic taconite tax law on the books. But mining companies wanted assurances that this law wouldn't be changed before making heavy investments in taconite production.

The passage of the Taconite Tax amendment in the 1966 election by an overwhelming 7 to 1 margin gave this assurance. It led to a full rebirth of the ailing mining industry in northeastern Minnesota.

At about the same time another great mineral potential in Minnesota came into the forefront—the great copper and nickel deposits in the Duluth Gabbro complex in Cook, Lake and St. Louis counties. Mining companies have received adequate tax assurances on the mining of these minerals.

Much exploration is being done to tap this resource. But indications are that much of the potential for copper and nickel mining is still dormant. Nevertheless, experts in the field are convinced that it is only a matter of time before the Duluth Gabbro complex ores will be tapped on a profitable basis.

But the taconite boom and the copper-nickel potential does not solve all the Range area's economic problems.

Manpower used in the highly automated taconite industry is low and the skills needed in this field are not the same as were needed for traditional mining.

POTENTIALS CURRENTLY EXPLORED BY IRR&R

The Iron Range Resources and Rehabilitation Department is involved in a number of programs that are either producing or have the potential of

producing jobs and utilization of unused natural resources.

One major project is peat research.

Peat has great economic potential for Minnesota. The state is extremely rich in peat. It is an important and marketable product. It has even greater market potential that could be released by research and private investment.

Minnesota wild rice research sponsored by the department could well lead to making wild rice a much more important part of northern Minnesota's economy. Furthermore, development of this product can help solve one of Minnesota's major problems — the impoverished economy of the state's Indians.

The IRR&R has a continuing program in forestry designed to squeeze the greatest economic potential from Minnesota's vast timber resources. It is bringing desirable results year after year.

Another important continuing program is the department's industrial loan program. Loans are made available through the purchase of buildings and equipment on a lease-purchase contract. This has resulted in several very successful industrial operations in the area (most notably, the multi-million dollar Chun King Corp. of Duluth which employs 750 people. It was helped along in its infancy with a \$200,000 IRR&R industrial loan).

This program also has its failures. But even the failures produce data useful to the department and private investors for future reference.

These and a number of miscellaneous IRR&R projects will be discussed in detail later in this report.

Peat—A Great Opportunity for Minnesota

Peat may not be a glamorous product. However, Minnesota has billions of tons of it for an ever increasing market and has the potential of becoming a major money and job producing resource for the state.

As a starter, a ton of peat is worth more than a ton of taconite, and Minnesota has nearly 7 billion tons of peat reserves available for commercial development.

A map of peat distribution is on Page 12. Koochiching, Aitkin, Beltrami and St. Louis counties each have more than a million acres of peat. One bog, Red Lake bog in Beltrami county, has a production potential of a million bales of commer-

cial peat a year. Despite these vast resources Minnesota peat is being produced by only five Minnesota companies in Aitkin, Becker, Carlton, Itasca, Otter Tail and St. Louis counties.

Although Minnesota has more than half the peat reserves in the United States, the state produces only about 3 per cent of the national market. Michigan, on the other hand, has about one-seventh of Minnesota's peat potential, but produces 38 per cent of the national market.

In an attempt to unlock this treasure for the benefit of the state economy, the Iron Range Resources and Rehabilitation Department conducted a study on the "Feasibility of Reducing Production and Distribution Costs of Minnesota Peat to a Competitive Level."

This study was financed by a \$115,400 grant by the Economic Development Administration and was scheduled for publication in October 1968.

The study documents the fact that Minnesota could easily increase its peat marketing by 7 to 9 times. This would barely scratch the surface of peat possibilities, but would make peat production a \$1.5 million a year industry.

The key to further peat research in Minnesota is the availability of private investors willing to get on the ground floor of a high potential industry—and soon.

There is little point for IRR&R to pursue research projects without the opportunity of testing results in the competitive market.

Summary of Peat Study Report

The study details a number of technical suggestions on drying, packaging and marketing which will undoubtedly be of great help to producers. Among more general findings specified or implied in the report are:

- Minnesota has nearly 7 billion tons of peat reserves on about 7½ million acres of land.
- Minnesota can compete favorably for the peat market in 19 states and state producers could sell 176,000 tons a year by 1970. Further research is almost certain to increase peat marketing potential dramatically.
- Peat is used primarily for horticultural and agricultural purposes.
- Demand for peat is increasing by the processors of vegetables for the canning industry and

for use as sod for golf courses and general landscaping.

Copies of the research report have been distributed by the U.S. Department of Commerce to all government agencies and persons in private industry interested in the production and marketing of peat.

The Upper Great Lakes Regional Commission has been asked to implement the results of this study. A conference has been called to get Minnesota, Wisconsin and Michigan peat interests together with a view toward establishing a committee that can suggest economically fruitful strategy for the production and marketing of peat.

The report implies that the key to developing the Minnesota peat market is private investment, since the industry's growth depends on a coordinated strategy involving production, marketing, research, advertising and promotion.

Other Peat Research

The Peat Bog Inventory Program—This is a continuing cooperative effort between IRR&R and the Department of Soil Science at the University of Minnesota.

Much information is gathered on peat analysis and classification as well as on roots, layers, water flow and formation of peat.

This program has proven valuable in the determination of commercially valuable peat lands involved in land sales and exchanges. Minnesota state law protects commercial peat land. Sale of such land is prohibited. Leasing for development is permitted. Thus the industry takes on greater importance as taconite plants and other industries expand in northeastern Minnesota.

Published inventories and results are distributed to state and federal agencies, county officials and interested parties in private industry.

The three reports published to date include:

Report of Inventory No. 1—W. Central Lakes Bog, St. Louis County, Minn.

Report of Inventory No. 2—Cook Bog, St. Louis County, Minn.

Report of Inventory No. 3—Red Lake Bog, Beltrami County, Minn.

A table of bogs sampled under this program since the last biennial report follows:

BOGS SAMPLED SINCE THE LAST BIENNIAL REPORT*

	Samples	Acres
1. South Cromwell—Carlton County	122	1,920
2. Prairie Lake—St. Louis County	276	3,760
3. Sturgeon—St. Louis County	559	5,520
4. Cook SE—St. Louis County	239	2,800
5. Lost Lake—St. Louis County	341	3,120
6. Toivola South—St. Louis County	233	2,080
7. Floodwood East—St. Louis County	166	1,680
8. Toivola—St. Louis County (Incomp.)	59	960
9. Arlberg—St. Louis County	1,006	6,760
10. Jacobson West—Aitkin County	104	2,080
Total	3,105	30,680

*Previous bog samples are listed in the biennial reports of 1960-1966.

Waste Stabilization Study—This was a two-year study aimed at producing evidence that sewage or industrial waste filtered through peat bogs could be stabilized, thus establishing peat as an important anti-water pollution tool.

The study was done on a cooperative basis by the IRR&R and the University of Minnesota Department of Soil Science with a grant from the U. S. Department of Interior's Water Pollution Control Administration. A total of \$185,825 of federal funds was available for this three-year project.

Some of the work was conducted at the IRR&R Wilderness Valley Farms research center at Zim, some by Ruble and Kaple, Inc. of Duluth and some at the St. Paul laboratories of the Department of Soil Science, University of Minnesota.

The results showed some promise of the goal, but not sufficient promise to persuade the Federal Water Pollution Control Administration to further finance the project at this time. The grant for the third year was delayed pending further research that would persuade the anti-pollution agency that some concrete results could be obtained by continuing the study.

Further Peat Research Potential

Commercial peat is still in the toddler stage and much research can and should be done to bring out its full commercial potential.

On the harvesting and processing end items that would be highly useful include:

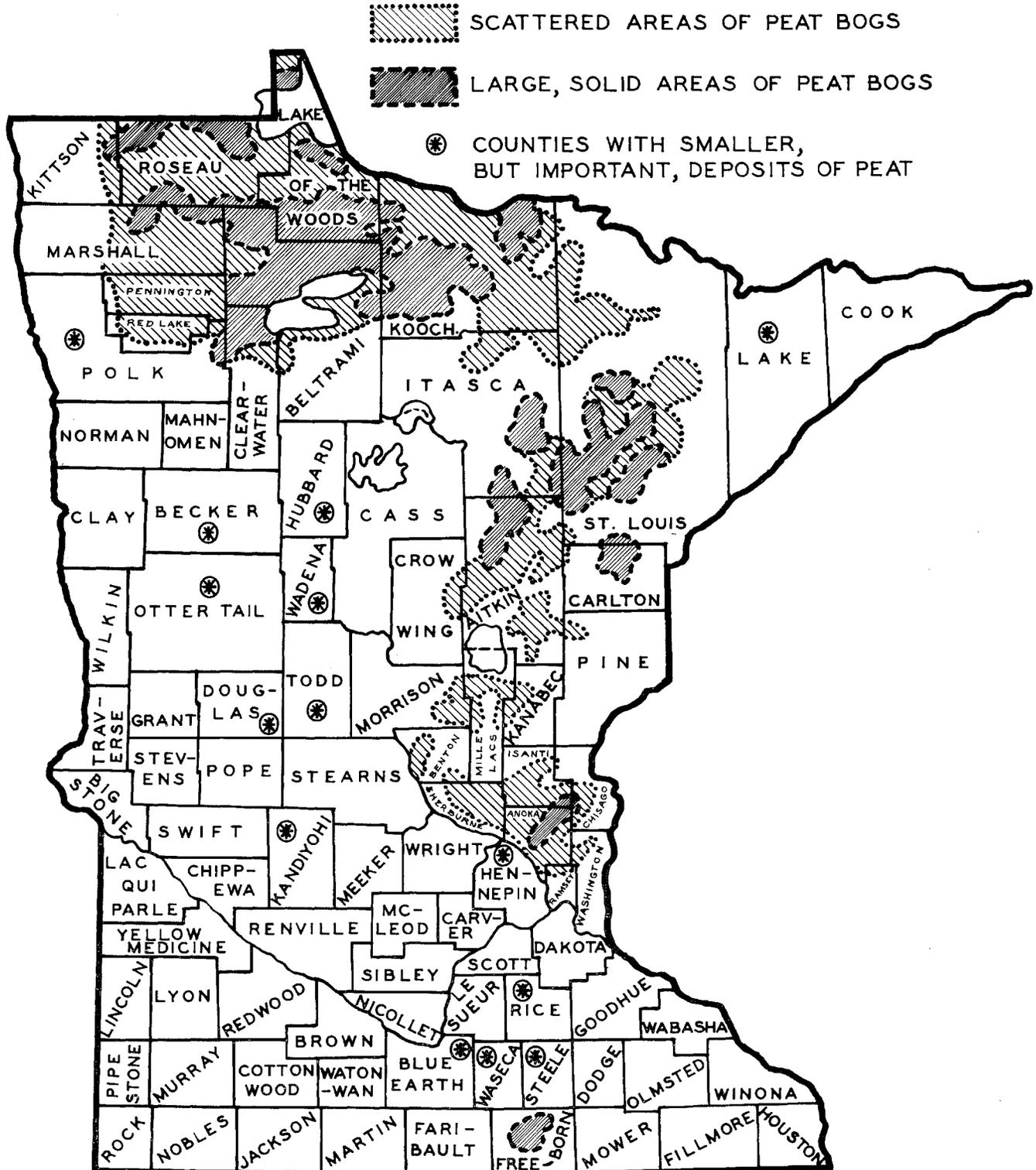
- Techniques and machines for field drying.
- Machinery that can harvest a high quality, rot-free product.
- Elimination of heating problems in the storage of raw peat.

—A new products laboratory that could develop formulas for special soils, peat growing containers, aggregated peat, mulches, "enriched" fertilizer peat and other commercially valuable innovations.

Another needed and potentially profitable area of research would involve investigations into the uses and values of Minnesota peat, resulting in publishable data showing consumers the advantages of using peat for farming, gardening, golf courses etc.

Furthermore, continued research should be done on the possibility and feasibility of extracting cellulose, waxes, resins, humic acids and gasses from peat.

LOCATION OF PEAT DEPOSITS IN MINNESOTA



TAKEN FROM THE GOPHER HISTORIAN, WINTER 1966-67

What About Peat?

There is little doubt among experts that peat research will lead to the growing economic importance of the product.

And there is no doubt that Minnesota has vast natural resources of this product.

Just as 1 and 1 makes 2, these factors will give Minnesota a very important marketable product.

The only question is when and where this development will take place.

If private investors show an interest soon, Minnesota will continue in the vanguard of peat research and commercial peat producers in Minnesota will be in on the ground floor of an increasingly important commercial peat market.

Failure to interest private investment will hamper and retard research efforts and could result in Minnesota's vast peat resources continuing to play second fiddle to producers in less generously endowed states.



One of Minnesota's rich peat deposit bogs. This particular bog is the West Central Lakes area, St. Louis County, the center of which is the base operation of Mesabi Grow Co., and Power-O-Peat Co. operated with machinery financed by IRR&R.

MINING AND MINERALS

Copper and Nickel Exploration

Iron mining has recovered in Minnesota with the taconite boom.

But yet another mining giant may awaken soon—copper and nickel.

In 1943 a report by the Minnesota Geological Survey revealed copper associated with nickel in the Gabbro Duluth complex. This didn't cause much of a stir.

Five years later a sharp-eyed prospector found a copper stain in a rock in the Arrowhead country.

As a result the Geological Survey went back for mapping and sampling. A little later the American subsidiary of International Nickel Co. of Canada began explorations on the complex.

This led to the revelation of large reserves of potentially mineable copper-sulfides in the Duluth Gabbro complex. But these deposits were still uneconomical for competitive production and marketing.

For one thing, United States needs were being readily met by imports; secondly, a technological lag made Minnesota copper-nickel mining economically unfeasible; and thirdly, the Minnesota tax structure did not lend itself to high cost exploration and mining operations.

But the market changed. The price of world copper and nickel went up. Progress was made in the technology of separating nickel from low grade iron. Furthermore, the inclusion of copper and nickel in the Taconite amendment and a new and more favorable copper-nickel tax passed by the 1967 Legislature again stimulated exploration.

Explorations are now going on on thousands of acres leased by the state to mining industries, although the state bidding procedure for leases was not ideal for attracting bidders for leases.

Mainly, the problem in this area was that only 30 days were allowed between the announcements and the bids. Thus only limited field examination was possible and decisions had to be based on published materials.

This situation was mitigated substantially by the Iron Range Resources and Rehabilitation Department with the publication and sending out to prospective bidders of Geological Survey maps and texts. Thus 146,000 acres were leased out to mining firms for exploration in Koochiching, Itasca, Lake of the Woods and St. Louis counties.

Since 1961 the Minnesota Geological Survey has had an active geologic mapping program in Minnesota, with IRR&R participating by paying for publications. The program is supported mainly during the current biennium by an appropriation of \$140,000, through the Minnesota Resources Commission. This program should continue through 1973, to complete a state geologic map.

Published geologic maps resulting from this program have contributed directly to the current high level of exploration for deposits of copper and nickel and related metals, and they have provided a basis for the state lease sales.

Approximately \$350,000 in rental fees and bid deposits have accrued to the state to date as a result of existing mineral leases. Although substantial, this amount is negligible when compared to the royalty income prospect if an operation is developed.

It is quite apparent that a major copper-nickel boom in Minnesota is not yet in sight.

But on the other hand, many experts feel that it is only a matter of time before the copper-nickel age hits Minnesota.

Indications are that Minnesota's deposits are marginal at today's prices and today's technology.

But further exploration, technological developments, changing market conditions and favorable state policies will most assuredly eventually result in Minnesota becoming a leading producer of copper and nickel.

IRR&R is considering continuation of this service for the next biennium. The Commissioner had been asked by the Division of Waters, Soils, and Minerals to finance a \$150,000 three-year program, in co-operation with the Minnesota Geological Survey, for acceleration of geologic mapping, which is considered a most urgent and critical need.

Geologic mapping will provide the department with information needed to lease additional state-owned lands for exploration and mining of copper, nickel and related minerals, and to classify state-owned lands as to mineral potential. Availability of such maps will also stimulate exploration by industry since they are basic to the search for mineral deposits and provide industry with target areas for exploration.

International Nickel Company finished the sinking of an 1,100-foot preliminary development

shaft near Ely, Minnesota in the Spring of 1968. Engineering studies are being carried out to assess whether production from this large, but low-grade, copper-nickel sulphide deposit is economically feasible with today's known mining and processing technology.

The company confirmed the existence of large tonnages of copper-nickel mineralization, but that the metal content of the samples was lower than initial tests had indicated. Instead of one per cent, it ran closer to 0.6 per cent.

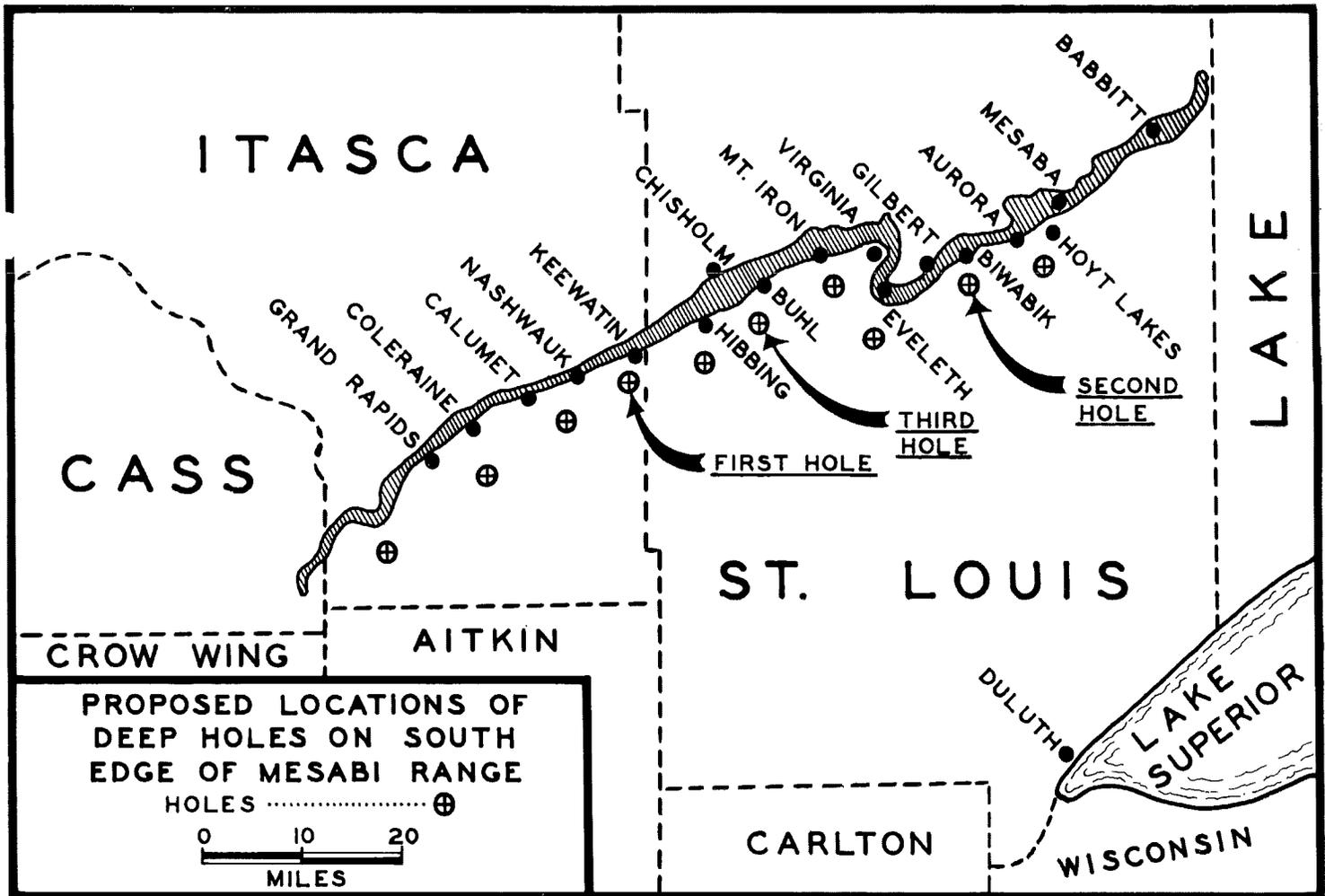
INCO has shipped samples to pilot plants in Canada for metallurgical treatment and testing. While the extensive metallurgical process investigations are being conducted, INCO will continue its work in Minnesota. This will consist, primarily, of further diamond drilling in the Ely area. In this program to date, the company has completed more than 100,000 feet of drilling in more than 200 holes.

Among other well-known firms involved in copper-nickel investigation programs, in addition to INCO and Bear Creek Mining, are the Hanna Mining company, Cleveland-Cliffs Iron company (with leases on its own as well as with Warren S. Moore, of Duluth), United States Steel Corp., Phelps Dodge Corp., Newmont Exploration Ltd., and New Jersey Zinc Co. Sales scheduled for August and December, 1968 were expected to bring other firms into the program.

Iron Ore and Taconite

Minnesota produced \$561.2 million of minerals in 1968, a seven per cent increase over the 1967 production.

More than 90 per cent of this mineral value was in iron ore — and taconite accounted for 57 per cent of this value. This is the first time in Minnesota history more than half the state's iron ore shipments were in taconite pellets.



INDEX MAP, MESABI DISTRICT

STATE MINERAL LEASE SALES



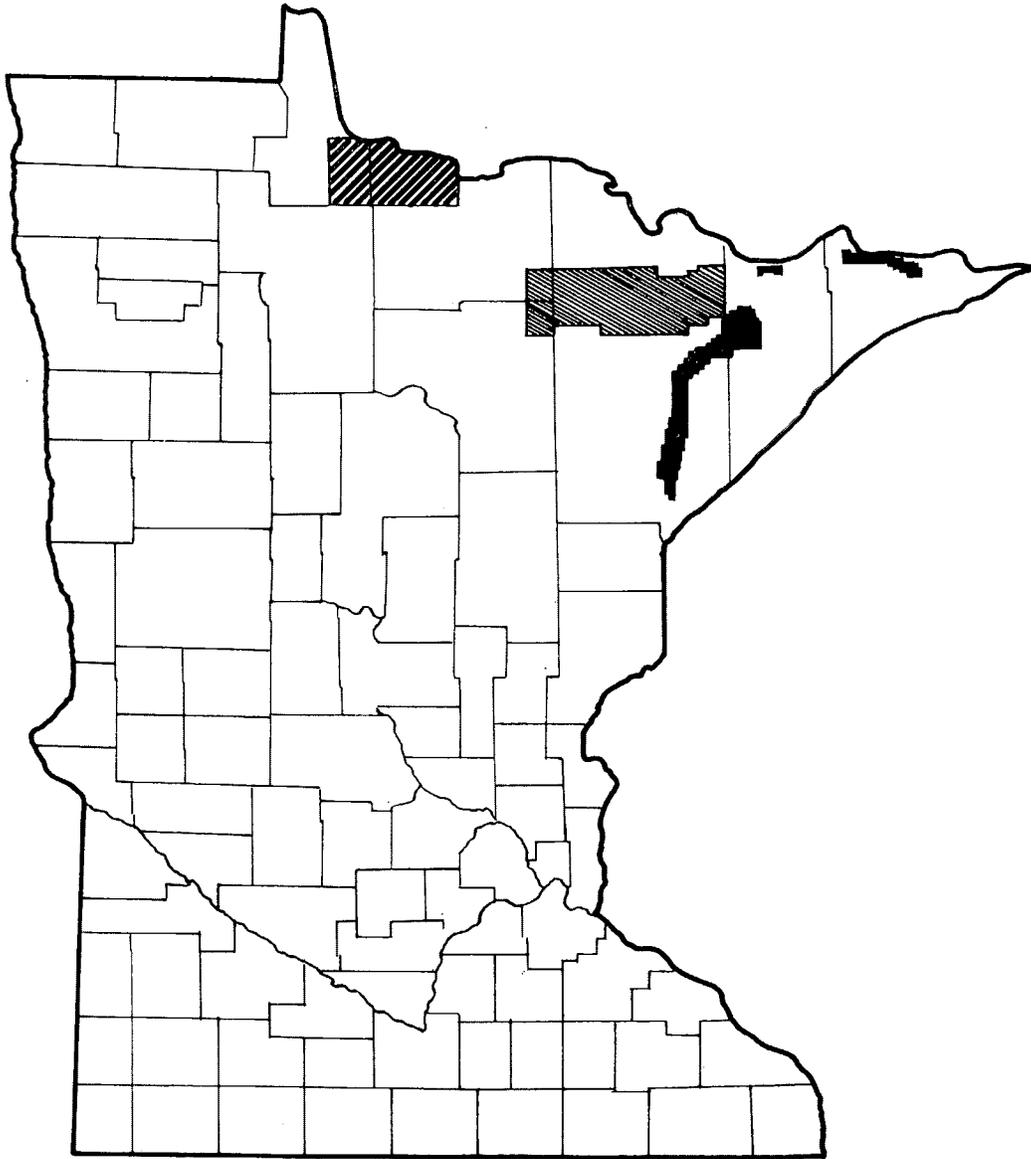
AREA OF 1966 COPPER-NICKEL SALE IN THE DULUTH GABBRO COMPLEX



AREA OF AUGUST 15, 1968 SALE IN THE GREENSTONE BELTS



AREA OF DECEMBER 11, 1968 SALE IN THE GREENSTONE BELTS



Courtesy Waters, Soils & Minerals Div., Conservation Dept., State of Minn.

Almost all the taconite came from the Mesabi Range. Iron ore was also produced on the Cuyuna Range and in the Spring Valley district.

Two historical notes on the change from standard mining to taconite were the closing of Inland Steel's Armour No. 2 mine on the Cuyuna Range in Crow Wing County and the closing of United States Steel's Pioneer underground mine at Ely. The Pioneer produced about 41 million tons since it opened in 1888 and was the last remaining active mine on the Vermillion Range.

The IRR&R continued its role as the major financing agent for iron ore research conducted by the University of Minnesota Mines Experiment Station and other firms and agencies.

At the request of the Minnesota Outdoor Resources and Recreation Commission, IRR&R did a study of state-owned mining properties and mines and mine activity on the Cuyuna Range. Lists of exhausted, active and inactive mines were prepared and recommendations made as to the development of areas for recreational purposes.

IRR&R Financed Mineral Research

Taconite Drilling — The University's Mines Experiment Station, the University's School of Mineral and Metallurgical Engineering and the Minnesota Geological Survey continued their deep drilling project along the southern edge of the Mesabi Range near Keewatin and Taconite in Itasca county and near Buhl and Biwabik in St. Louis county.

The drilling was financed by a \$110,000 grant by the IRR&R.

Results indicate an extension of taconite reserves.

Taconite Research — The University of Minnesota Mines Experiment Station continued research on the concentration of semitaconites and oxidized taconite at the pilot plant level. High intensity magnetic separation was used followed by flotation concentration. Research on magnetic taconite included magnetic separations, hydrosizer investigations, cyclone classification and pelleting.

The Bureau of Mines at its Twin Cities Metallurgy Research Center did research on the utilization of Minnesota iron ores.

The Bureau also began work on a demonstration plant near Keewatin. It will demonstrate the commercial feasibility of magnetically roasting non-magnetic taconites, semitaconites and off grade iron ores using scrap iron as deductant.

Manganese — Further investigation into the utilization of Cuyuna Range manganese has been recommended by Henry H. Wade, retired director of the University of Minnesota Mines Experiment Station.

Wade states that with suitable preparation, either brown manganiferous or black manganiferous ore could be marketed as a source of manganese units for the blast furnace.

He said: "Certain cost items, for example, transportation, may be favorable in the chemical recovery of manganese from Cuyuna ores rather than from imported ores." But, he added that the Cuyuna ores cannot be competitive for this type of treatment unless the contained iron units can be utilized.

FORESTRY

The Forestry division of the Iron Range Resources and Rehabilitation Department has for 20-some-years carried out the charge by the Legislature to promote long range forestry programs and the processing of wood products.

In doing this the division works with county, state and federal agencies as well as with private timber operators.

Its major responsibility is land and forest management in millions of acres of tax-forfeited lands in the northern counties.

Counties covered under this program are Aitkin, Becker, Beltrami, Carlton, Cass, Clearwater, Crow Wing, Hubbard, Itasca, Koochiching, Lake, Mahnomen, Pine, St. Louis and Wadena.

IRR&R foresters have a number of important responsibilities in the area of timber management and development:

—Gather data so a county can place tax forfeited lands up for sale and they prepare maps, sales lists etc. for the same purpose.

—Cruise the land to inventory timber stands.

—Set up timber sales.

—Mark timber and scale cut products.

—Inspect cutting operations to insure compliance with state and county regulations.

—Work on timber stand improvement by selecting areas for planting, diskings, non-commercial thinning and aerial spraying.

—Supervise all phases of tree planting programs.

The foresters are also involved in a number of miscellaneous activities such as fire control and weed spraying.

Tax-Forfeited Lands

There are more than 3½ million acres of tax-forfeited lands in the counties in which IRR&R conducts its forestry programs.

The programs have been instrumental in a 20 per cent decrease of such lands in the past 20 years. Much of this land has been sold to private owners through IRR&R help and is producing jobs and tax revenues.

The increase in tax revenues to the taxing districts involved in this change is more than a

million dollars. This shows the effectiveness of land management, the major thrust of the IRR&R forestry division program.

Besides the substantial increase of tax income, the counties under land management programs have also provided fish and wildlife areas for sportsmen, nature trails, public access and campgrounds and similar public facilities.

Most of the northeastern area counties have established land departments to help satisfy an increasing need and demand for raw materials and public services. IRR&R staff works closely with established county land departments.

Forest Surveying and Aerial Photography

Expansion of the wood industry depends on detailed wood supply information — the type gathered in forest surveys and published in recent years by the IRR&R.

Between 1946 and 1955 the entire state was covered by aerial photo and field examination at a cost of \$700,000.

A number of reports on the survey were prepared and published by IRR&R and the Lake States Forest Experiment Station.

Largely as a result of these reports the supply for Minnesota pulpmills increased from 569,000 cords to 912,000 cords.

Another forest survey is on the way.

The IRR&R and the Forest Experiment Station have looked into the aerial photography situation for the survey and have found:

—That the Agricultural Stabilization and Conservation Service plans to refly and photograph Pine, Aitkin, Crow Wing and Wadena counties in 1969.

—That the Chippewa and Superior National Forests plan to refly their areas in 1969.

—That the remaining area that needs to be photographed is 19,177 square miles in Beltrami, Carlton, Cass, Clearwater, Cook, Hubbard, Koochiching, Lake, Lake of the Woods, St. Louis and Mahnomen counties.

—That this can be done for approximately \$76,700.

It should be noted that a number of northern counties in the past let contracts for aerial photography and have sold prints to recoup their in-

vestment. Some of these counties have expressed willingness to contribute directly to the cost of new photography or to buy new prints when such are available.

Furthermore, it should be noted that Minnesota has been undertaking an increased amount of planning for natural resources development, particularly in the northern counties.

Thus it seems logical that Minnesota should organize coverage of aerial photography for various inventory and planning agencies. The State could act as a clearing house for aerial photography needs, determine the urgency and compatibility of needs of different agencies and provide for funding through appropriations or through a revolving fund based partly on the sale of prints.

Inventory of Proposed Memorial Forest

At the request of the St. Louis County Land Department the IRR&R Forestry division did a timber inventory of tax-forfeited land for a proposed memorial forest in the northwestern part of that county.

A memorial forest is a specific tract of land set aside by the county board with the approval of the State Commissioner of Conservation for the purpose of growing trees. It has a number of advantages for financing and development over forest land not so designated.

The survey was completed in February 1968 and the report was issued in March.

Information was gathered as to size, density, volumes, species, heights and age of each timber type. Recommendations were also made on management. Timber type maps were made showing the gathered data as well as usable roads and trails, section corners and public land ownership.

Camp Sites and Public Accesses

One of the important land management functions of IRR&R is the development of camp sites and public accesses for tourist recreation.

IRR&R's Forestry division has been instrumental in the development of 37 camp sites and 79 public accesses in Aitkin, Beltrami, Carlton, Clearwater, Crow Wing, Hubbard, Itasca, Koochiching, St. Louis and Wadena counties.

Tree Planting

The Forestry division of the Iron Range Resources and Rehabilitation Department is fully involved in a continuing tree planting program.

The foresters select planting sites and secure men, materials and planting stock.

The IRR&R has been instrumental in planting nearly 37 million trees in the 15 counties with land management programs. The number of trees planted range from about 700,000 in Carlton County to nearly 10 million in Itasca county.

Section Corner Post Relocation

The IRR&R has been instrumental in a section corner post relocation program in Itasca, St. Louis, Koochiching, Cook, Lake, Aitkin, Becker, Crow Wing and Wadena counties.

This program is important to private industry as well as the county and the State Conservation Department. It is valuable to all land-holders, particularly, when the sale or exchange of public land is involved in the relocation of industrial plants.

Section corner posts are equivalent to street signs in the cities. In northeastern Minnesota many of the section corner posts were installed years ago in the depths of wilderness resulting in many inaccuracies.

The object of the project is to correct, improve and update the posts with reliable and durable markers.

Table of Appropriations by Counties

Aitkin	\$ 8,205.75
Becker	956.92
Cook	9,980.32
Crow Wing	602.50
Itasca	233,227.33
Koochiching	32,047.57
Lake	7,050.16
St. Louis	229,317.95
Wadena	29.50
Total through June 30, 1968.	<u>\$521,418.00</u>

MINNESOTA WILD RICE

Wild rice has great economic potential in Minnesota.

Minnesota produces 60%, Canada, 35%, and Wisconsin 5% of the wild rice crop in North America.

The state has thousands of acres of natural wild rice beds and thousands more acres of adjacent lands suitable for wild rice production.

The present supply has never been adequate to permit the kind of advertising and promotion needed for economic growth and expansion.

If the Minnesota Indian is to become self-supporting, it is criminal neglect to let him waste his heritage and make no effort to better the one natural resource that is uniquely his.

Research, technological improvements and adjustment in production, marketing and processing techniques could make ricing a stable industry for the Indians and a good source of supply for the consumer.

Indian rice paddies need:

1. Stand control (thinning and supplementary seeding).
2. Weed control.
3. Bird and Insect controls.
4. Discovery of the nutritive needs of wild rice.
5. Improved harvesting techniques and machinery.
6. Development of shatter resistant strains.
7. Water management controls such as dams and levees.
8. Improved marketing and processing techniques.

There is great need in the Indian communities for the development of rice corporations paying harvest wages and hiring year-around help. It seems that as long as the lion's share of the crop's value is taken by others, ricing time for the Indians will continue to serve as an excuse for an annual spending spree.

A serious business needs stability of purpose and opportunity for sustaining employment. Wild rice can do this for Minnesota's largest majority. And IRR&R research can help achieve this goal.

Wild rice can also play a part in the rest of Minnesota's economy.

Surveys should be undertaken to determine which beds can be added to Indian lands and which could be developed for public use or private leasing. Costs for development of public ricing lands could be borne by fees paid by harvesters and processors.

Studies should also determine:

—Rice areas once productive and now unproductive and the reasons and corrections for this.

—Water bodies that could support wild rice crops.

—Which county and state owned lands could be converted to rice lakes and recommendations for lease to private interests or development of public rice lakes for fees.

Wild Rice Research and Development

The IRR&R is involved in a number of wild rice research projects. These include:

Wilderness Farms — This is a 520 acre complex of farm land, peat harvesting areas, wild rice and cultured sod that was given to IRR&R by Chun King Corp. late in 1964 after five years of Chun King wild rice research failed to make a significant breakthrough that could be applied commercially.

But the Chun King project made some headway and left a base for IRR&R to build upon.

It developed an excellent wild rice library; made some discoveries about ideal growing conditions and water supply; developed some pest control methods; and tested some harvesting machinery.

Wilderness farm can fit into further wild rice research and management programs in the following ways:

1. Availability of cross-dyked paddies for use in pest and shatter control experiments, floating bog studies, fertilizer and lime trials and testing of new equipment.
2. Availability of small research plots for problems better solved in small, easily controllable areas.
3. Availability of a complex of concrete buildings for packaging, pre-cooking and processing experiments.



New strains of non-shattering wild rice are shown by H. J. Aase, left, to the Commissioner.



Area of wild rice as commercial crop. Minnesota produces 60%; Canada 35%; Wisconsin 5%. (Courtesy of Manitoba Dept. of Commerce & Industry)

Aase Farms — The IRR&R sponsored wild rice research program at the Aase Evergreen Farm near Gilbert is achieving results.

The research has already shown that rice can be grown on upland fields in artificially made paddies.

Current research by H. J. Aase, a retired county agent, and Dr. Paul Yagyu, formerly with the University on wild rice projects, involves the breeding and growing of non-shattering wild rice at the Aase farm and the growing of wild rice on peat soil without flooding at the Wilderness Farm.

Results on the non-shattering rice project are very satisfactory and Mr. Aase concludes that "in a matter of only a few years we are going to see a supply of excellent wild rice seed that will have a great impact on the economy of our wild rice crop in northern Minnesota."

Dr. Yagyu states that the goal is a 100 per cent non-shedding line with no commercially adverse characteristics.

Aase was encouraged on the results of rice in peat experiment with the development of a small stand of rice four foot high. Seed was collected from these plants and will be replanted on peat soil this year.

Experiments are also being done on the growing of mint in peat soils.

Upper Rice Lake — The IRR&R appropriated \$49,000 to the State Conservation department for a dam and water channel project on this lake in Clearwater county.

The project involves a formerly good wild rice lake which has played out because of adverse water conditions. Completion of the project will permit the growing of 500 acres of rice in Upper Rice Lake.

Taking into account high water years when no rice can be produced, the project will produce an average of \$50,000 worth of wild rice a year at today's prices.

In addition the project will produce benefits to waterfowl production and hunting and the possibility of a site for rearing and winter rescue of northern pike for stocking purposes.

Nett Lake — The IRR&R has made application for \$172,240 in federal funds for a wild rice pilot project on the Nett Lake Reservation in St. Louis county.

The project intends to demonstrate development of now unproductive lands to a high level production of wild rice under controlled conditions in an engineered paddy area.

The application was turned over to the Upper Great Lakes Regional Commission and has high priority in funding. It was submitted in cooperation with the U.S. Bureau of Indian Affairs, the U.S. Soil Conservation Service, the U.S. Fish and Wildlife Service, the State Conservation Department, the Minnesota Chippewa tribe and the Nett Lake Indian Band.

Indications are that the controlled production project could triple the yield of wild rice in the pilot project area. The project will also provide training opportunity for development, operation and management of wild rice paddies among the Indians; will improve the economy at Nett Lake and will assist wild rice users in establishing a stable and dependable supply of wild rice.

To disseminate the information gathered on this project an education center will be developed.

The University of Wisconsin has also applied for a wild rice research grant that would include a proposal to do some processing and marketing work at the new Nett Lake processing plant.

Investigation will also be done on the possibility of developing a dual economy by also using the lake as a pike spawning area for stocking purposes. It might be noted that in the Fall of 1967 the Indian Council at Red Lake realized more than \$7 million from the sale of pike for restocking.

**Harvester and Dealer Licenses and Supply of
Green Rice in Minnesota, 1939 to 1967**

Year	Harvester Licenses No. Sold	Amount (\$)	Boat Tags \$5.00 No. Sold	Amount (\$)	Dealer Licenses No. Sold	Amount (\$)	Number Pounds Wild Rice Harvested
1939	2,514	1,257			55	275	
1940	2,389	1,195			52	260	1,586,000
1941	652	326			25	125	20,000
1942	1,071	535					337,000
1943	292	146					34,000
1944	734	367					400,000
1945	1,461	1,461					240,000
1946	2,222	2,222					400,000
1947	1,666	1,666	807	4,035		2,750	540,175
1948	1,834	1,834	893	4,465		2,650	1,038,355
1949	888	888	338	2,690		2,550	683,508
1950	1,383	1,383	792	3,960		3,150	552,775
1951	2,299	2,299				3,175	532,308
1952	2,274	2,274			114	2,725	445,875
1953	2,384	2,381				2,395	1,340,297
1954	4,487	4,485			182	4,715	3,109,858
1955	4,996	4,693			211	5,175	1,235,103
1956	6,842	6,456			274	6,880	3,941,669
1957	7,500	5,752			218	7,350	1,036,749
1958	9,702	9,198			333	8,315	3,224,100
1959	9,322	26,439			256	11,975	2,067,018
1960	10,486	29,671			285	11,150	2,300,685
1961	14,183	39,890			284	11,620	2,771,585
1962	9,832	27,849			210	8,135	1,324,346
1963	11,874	33,403			259	11,030	3,215,674
1964	9,192	25,742			241	9,850	1,285,082
1965	9,855	27,472			251	7,950	1,086,710
1966	8,947	24,959			200	6,215	924,000
1967	15,750				362		2,628,700

Source: Department of Conservation, State of Minnesota.

IRR&R DRILLING

The IRR&R was asked for help in drilling for water in three instances over the past biennium, probably based on the favorable results achieved earlier in Aurora, Chisholm and Gilbert.

The Village of McKinley and Jones and Laughlin Steel Corp. asked for aid in locating a new source of water.

Eleven areas were checked and pumping tests were made to determine quantity and quality. Several areas indicated sufficient quantity, but the quality was unacceptable.

The last area tested indicated sufficient water of good quality. Jones and Laughlin is checking this area further with a much larger hole.

A drill crew went into Aitkin county to search for water for the development of parks and camp sites — money for development of which was

available through federal funds. A number of holes were dug. But no water bearing materials were encountered and the project was terminated.

A search for better quality water was conducted at the FFA-FHA camp north of Virginia. No results were achieved and the drilling was terminated. The camp is continuing to use the old well with improvements recommended by IRR&R drillers.

Clay Drilling — At the request of Frank McCorison of Duluth on the basis of a favorable report on bentonite clay in the Meadowlands area, the IRR&R sent a drill team out for exploration. Samples were sent out for analysis. It was determined that this was not bentonite clay.

The investigation was prompted by the importance of bentonite as a binder in the pelletizing of taconite.

LAND OWNERSHIP MAPS

This is a very popular program. These maps are printed in color and show state, county, federal and private land holdings. Demands for these maps are heavy and some are already in their third printing.

Mahnomen county maps were completed over

the biennium and Kittson, Marshall, Cass, Wadena and Roseau county maps are scheduled.

The map on Page 25 shows the current status of the program as to counties covered. Table below also shows counties covered and number of printings of maps.

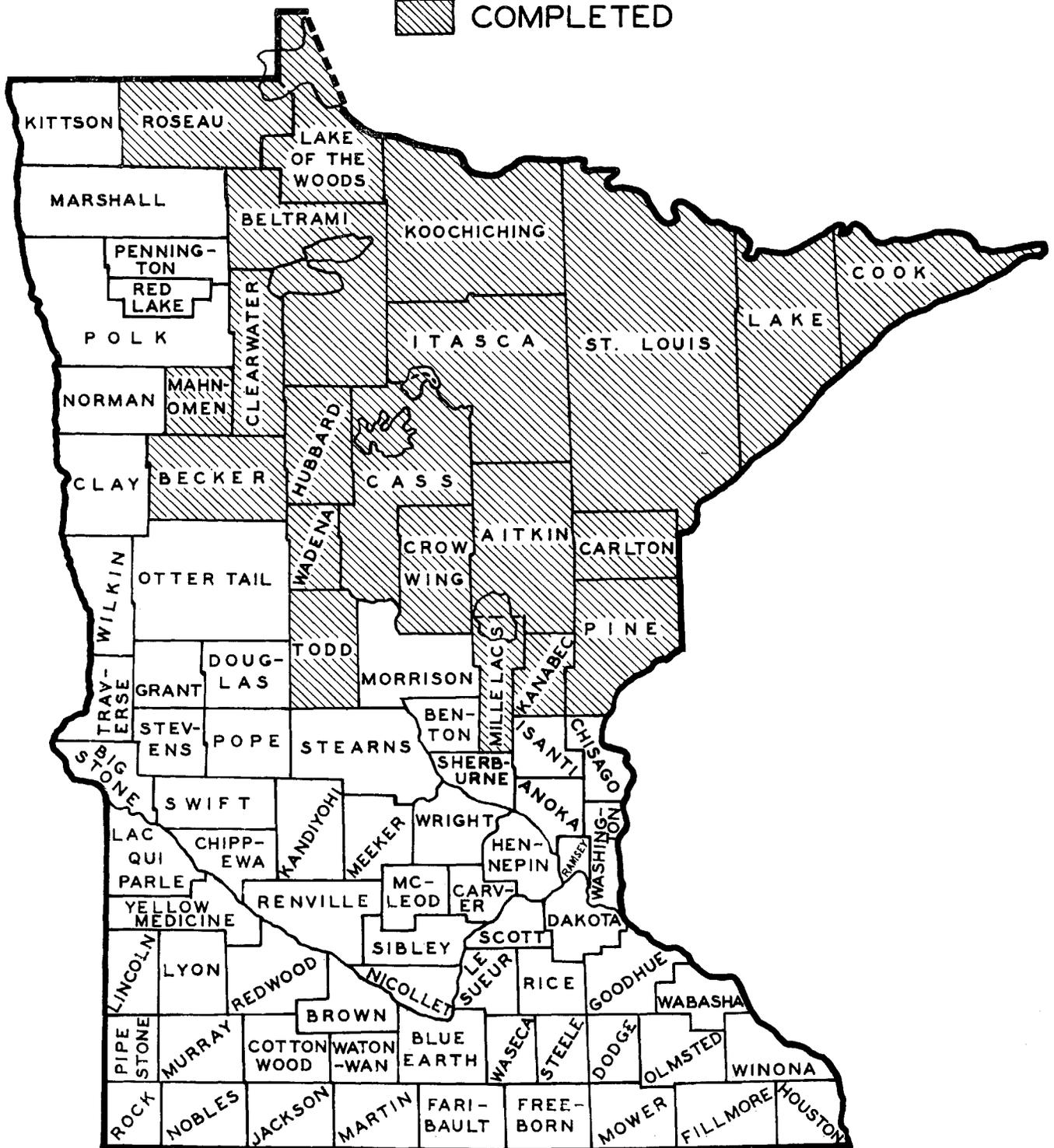
Land Ownership Maps Printed

County	1st Printing	2nd Printing	3rd Printing
Aitkin	1963		
Becker	1964		
Beltrami	1963		
Carlton	1964	1969	
Cass	1963	1966	
Clearwater	1964	1968	
Cook	1963	1967	
Crow Wing	1963	1967	
Hubbard	1965		
Itasca	1962	1964	1967
Kanabec	1966		
Koochiching	1963	1966	
Lake	1964	1965	1968
Lake of the Woods.....	1966		
Mahnomen	1967		
Mille Lacs	1966		
Pine	1964		
Roseau	1967		
St. Louis	1963	1966	1967
Todd	1966		
Wadena	1964	1966	

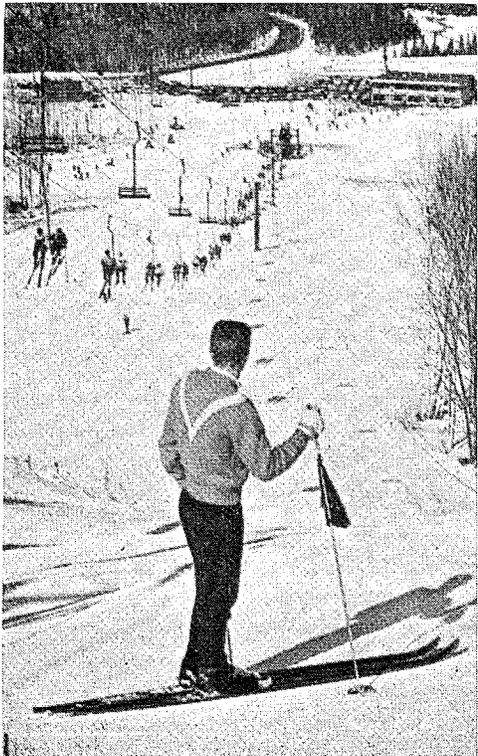
OWNERSHIP MAPS PROGRESS

1966-68

 COMPLETED



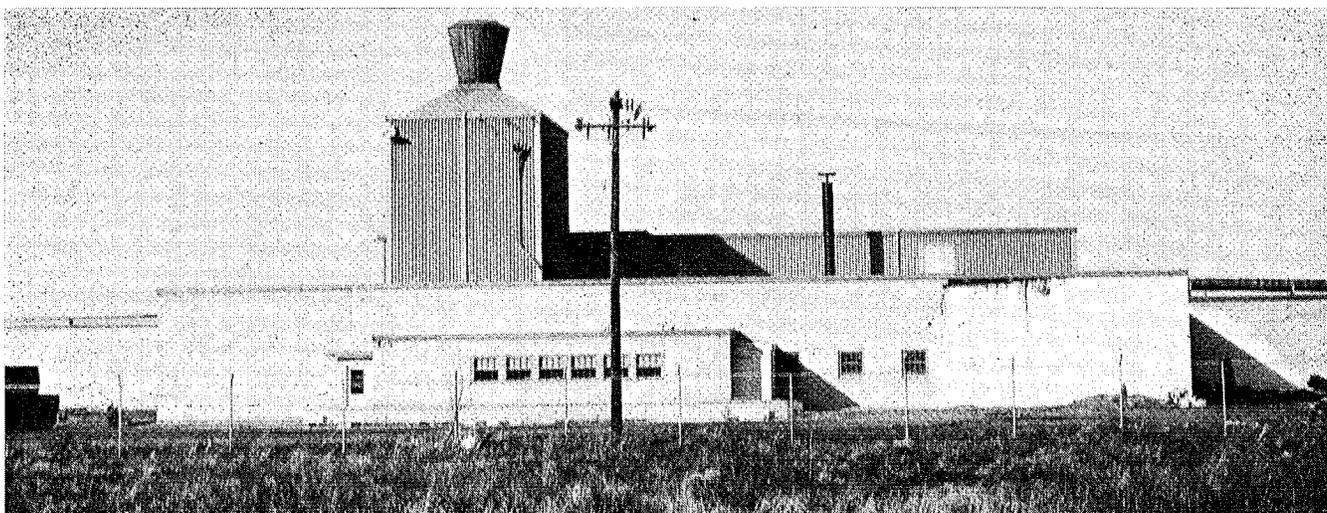
COOPERATIVE PROJECTS WITH PRIVATE INDUSTRY



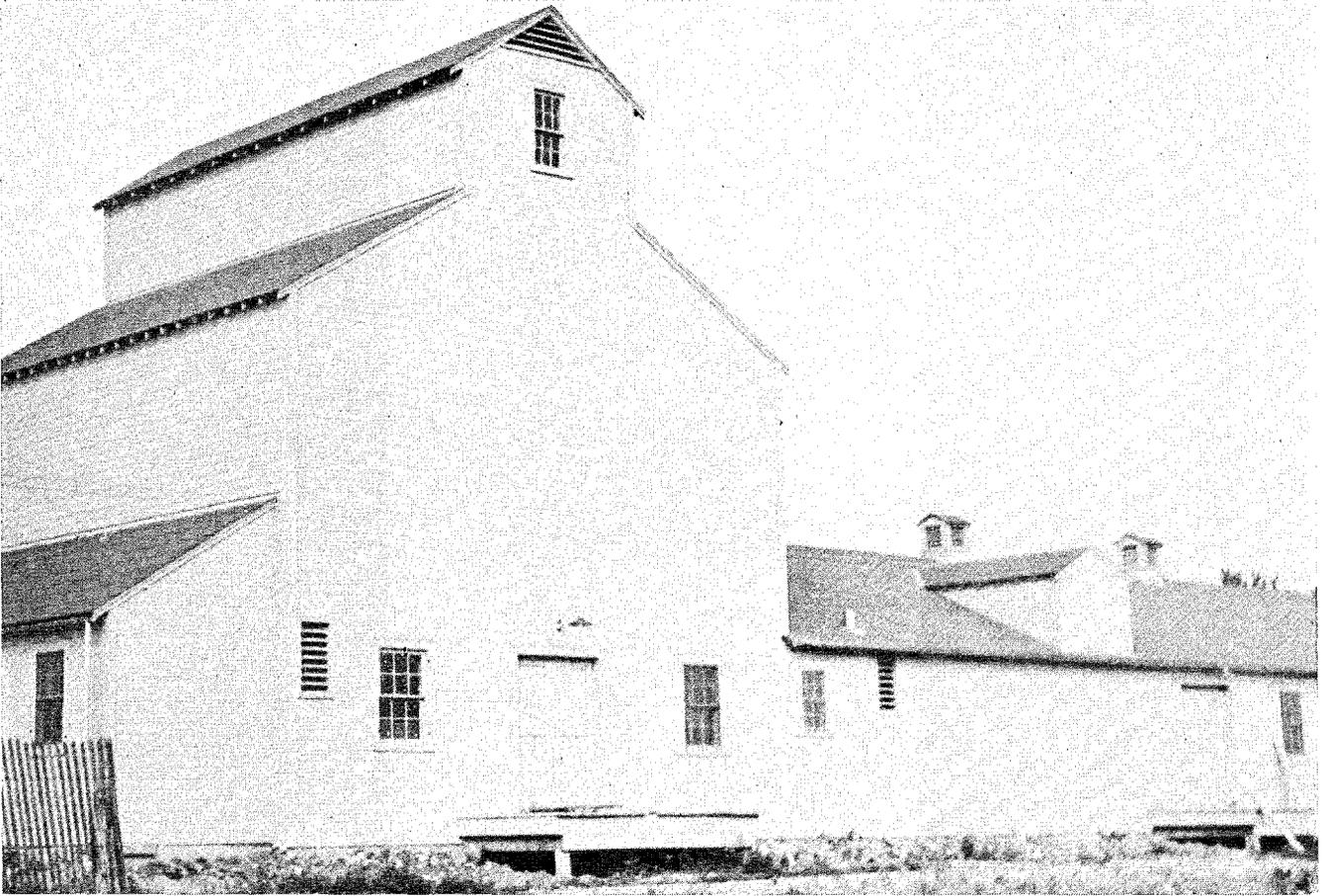
Lookout Mountain ski area, Virginia, Minnesota, was started with IRR&R funds in 1958. The first of a series of ski areas assisted with public funds which have developed in Northeastern Minnesota in the past ten years.



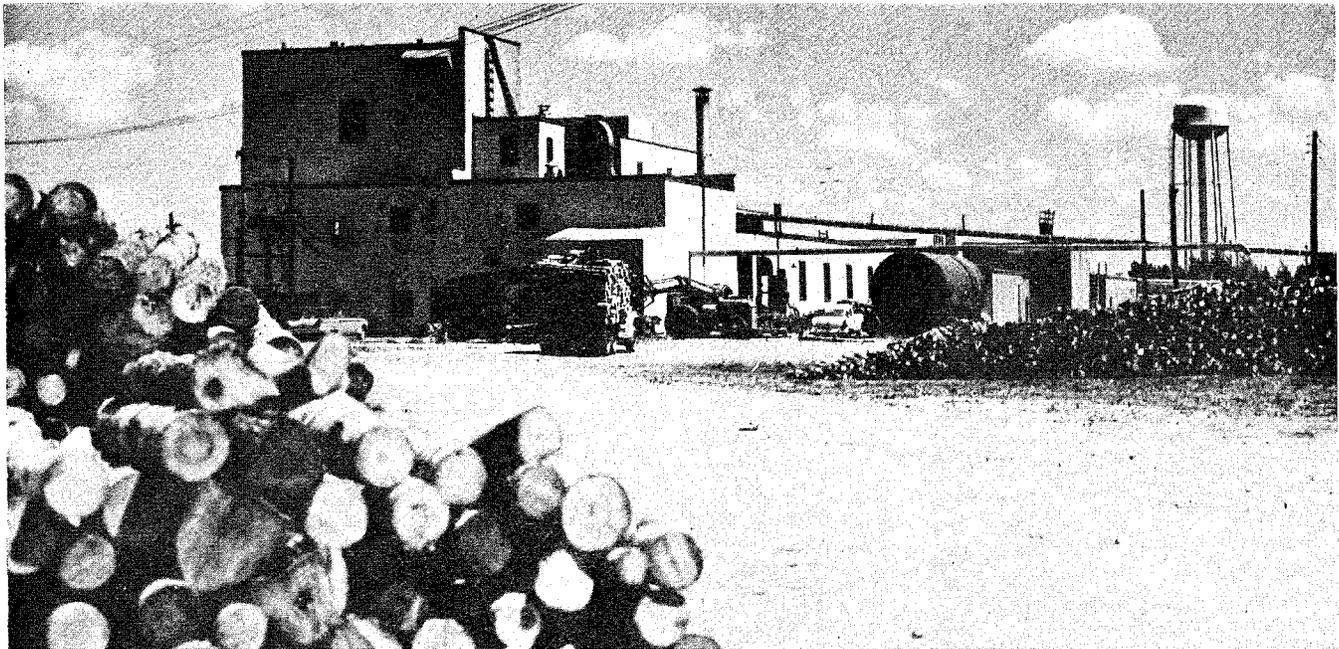
IRR&R's most successful industrial project was participating in Chun King Sales, Inc. Jeno F. Paulucci, internationally known merchant philanthropist, is shown with a display of his products with former Governor Elmer Andersen, left. In appreciation for IRR&R financial assistance Mr. Paulucci donated the 520 acre Wilderness Valley Farm complex at Fens, Minnesota in 1964.



Cladwood Company of Minnesota, a branch of a successful Oregon firm, is expected to take over operation of the Multiplant in Virginia, Minnesota. The plant had been idle for several years because of marketing problems with the original product produced.



Arrowhead Seed Growers Coop. of Cook reimbursed the State for its total investment of \$27,654 when the plant was purchased from IRR&R in 1967.



Nu-Ply Corp. of Bemidji reimbursed the State for its total investment of \$332,700 when the plant was purchased from IRR&R in 1967.

The Iron Range Resources and Rehabilitation Commission's industrial loan program has over the years resulted in a number of new businesses and about 1,500 new jobs in northeastern Minnesota.

The essence of the program is the purchase of buildings and machinery by IRR&R and then giving them to private firms on a lease-purchase contract.

This program has several distinct advantages.

First of all, the buildings and machinery are owned by IRR&R until paid for. Thus if a firm fails, the building or equipment can be leased to another firm or sold. In case of success, the firm eventually pays off the contract.

Another major advantage is the flexibility of the IRR&R in making such loans. Appropriations can be made at any time, and often are the only way to satisfy a federal loan program on the state's share.

This program has had many successes and many failures. But even the failures have provided valuable information to the IRR&R, businessmen and state and federal loan agencies.

The most dramatic success story is Jeno Paullucci's Chun King Corp. which was helped with a \$200,000 IRR&R appropriation in 1951. The State was paid back in 1957, and the firm was sold for \$63,000,000 in 1966. This firm provides about 750 jobs.

The biennial progress report on the program follows:

Jet Ski Corp., Grand Rapids — This firm has a lease purchase agreement on a high frequency generator. It employs 41 people at a payroll of \$100,000 a year. Sales over the past year increased from \$225,000 to \$400,000 and major expansion is in the cards.

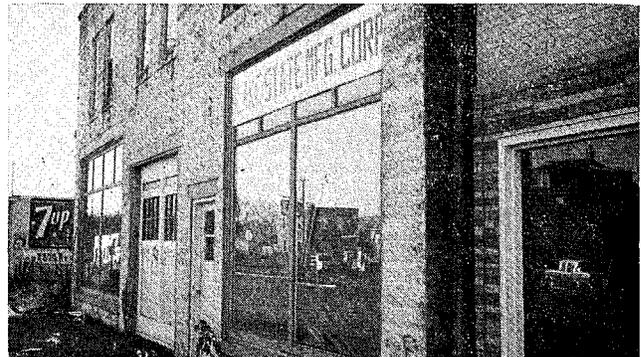
Below is the interior and IRR&R machinery in the Samco Co. plant at Crosby. The firm moved



Samco — Crosby

into the National Guard Armory at the invitation of the community which had taken the building over in hopes of attracting new industry and creating employment in an area faced with serious unemployment because of the complete shutdown of mining activity. The firm makes snowmobile garments and employs about 25 people on an annual payroll of about \$130,000.

Below is the machinery inside the Lake State Manufacturing Corp. building in Crosby. This firm with the IRR&R machinery has a contract to make slings for rifles for the Army. The firm employs about five people at present. But employment potential is about 40 persons.



Lake States Mfg., Crosby

Underneath is some of the \$58,000 worth of machinery leased from IRR&R by Onamia Garment Co. in Onamia. The firm produces car coats and employs about 50 part-time employees on a payroll of about \$110,000 a year. Expansion of the plant and an increase in employment is expected on the basis of some long-term civilian contracts.



Onamia Garment

A fire at the Duluth Filter Co. resulted in the IRR&R re-financing the firm for a new location in West Duluth with about \$26,000 worth of machinery—some of which is shown below. The new location and product improvement indicates a bright future for a firm that has had some

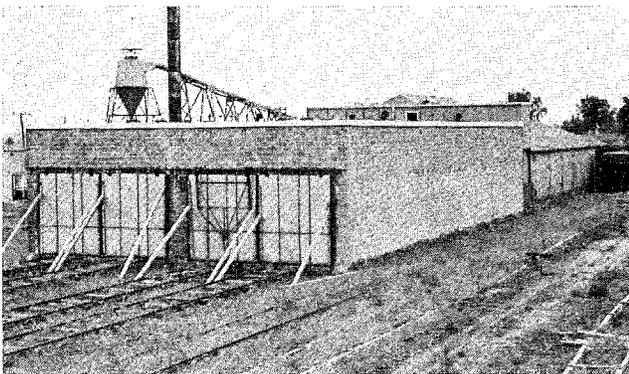
troubles. The firm now employs 11 persons on a \$75,000 a year payroll.



Duluth Filter

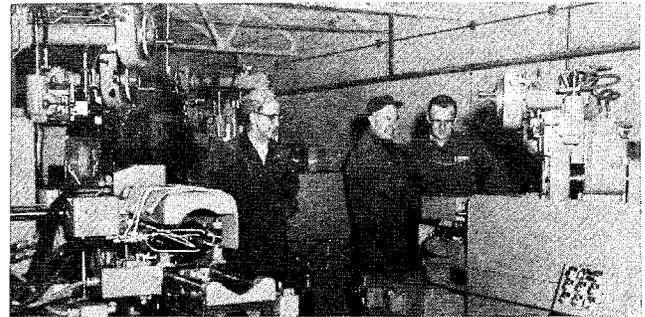
Zen-Ely Corp., Ely—IRR&R in cooperation with the federal government and the Ely Redevelopment Agency set up this firm, a manufacturer of animal bedding for laboratory animals and poultry. IRR&R has about \$15,000 in machinery in this plant and provided consulting services for site selection, plant design and engineering. Debentures were bought by Ely residents to help the plant open. Production goals would be achieved with a work force of 12 and a \$100,000 a year payroll.

Rajala Timber Co., Big Fork—This firm is setting up a woodchipping complex with a \$390,000 Economic Development Administration loan, a \$50,000 state loan and \$70,000 in leased machinery from IRR&R. Employment will include 20 in-plant jobs and 35 timber supply jobs. This firm operated by Jack Rajala may merge with Great River Veneer Co., Deer River, another IRR&R operation, operated by Jack Rajala's brother, Ben.



Dry kiln at the State-owned plant at Deer River which may become a part of the new Rajala Timber Company's project being financed by Federal and State funds. The Rajala firm expects to include the IRR&R operation at Deer River in its expanded timber industry complex.

Mesabi Drill and Tool Co. of Chisholm is located in the old building complex seen on page 33. This is an old mining building that was revamped in 1963 for use by D. W. Onan and Sons Co. of Minneapolis. After Onan's abandoned the plant in October 1965, it was leased by the Chisholm Development Corp. to the Mesabi firm to make twist drills for aircraft and autos. Second photo shows the plant interior with \$120,000 of IRR&R machinery, the third photo shows some of the women employes at work. The firm now employs 40 people on a payroll of more than \$100,000. An EDA loan is being negotiated that will result in a full two-shift work schedule and an employment roll of 150 people.

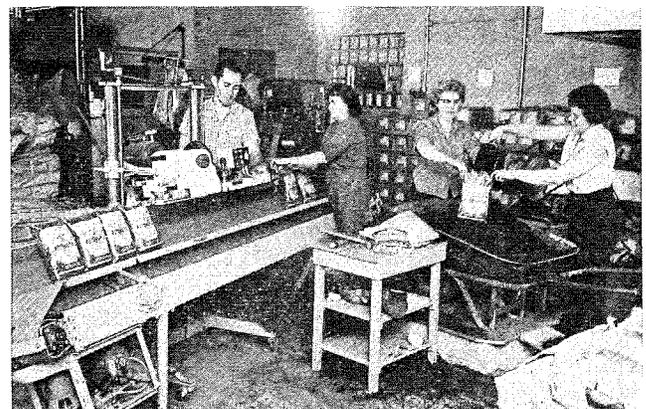


Mesabi Drill Employees

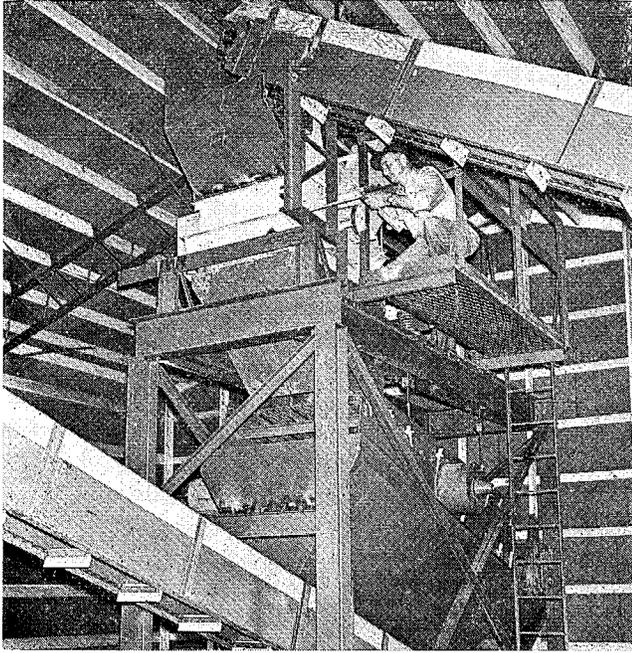
Rustic Fence Inc., Northome—Negotiations are under way to use this plant to make shipment carts and frames for snowmobiles. The firm involved is Wisconsin Box Co., Wausau, Wis.

Minnesota P&O Mfg. Co. Inc., Virginia—Some of this plant's machinery has been transferred to the Zen-Ely Co. in Ely and some is up for sale.

Mesabi Grow Inc., Central Lakes—This firm is under new ownership and uses 20 seasonal employes at a payroll of more than \$20,000 a year. The firm is now negotiating for a peat sale shipment to Mexico.



Part of the Crew Employed in Packaging Peat as Potting Soil by Mesabi Grow Co.



Machinery purchased with IRR&R funds used by Power-O-Peat for packaging a product shipped to many states in South and Southwest U.S.A. Firm was negotiating for sale of 30 carloads of peat to Mexico scheduled for shipment in the 1969 season.

Mills Cash Sales Inc., Grand Rapids—This firm is using the former IRR&R rutabaga warehouse for storage. It employs two to four persons and is current on repayment of its IRR&R contract.

Kimball's Inc., Hill City—This firm is now out of business. The building is being leased to Edward J. Rassier for the maintenance and repair of buses.

Lewis Manufacturing Co., Hinckley—This firm has leased machinery formerly used by H.C. Hill & Sons Inc. of Cook from IRR&R. It employs 10 to 12 persons at a payroll of \$125,000 and makes pellets and other wood products.

Multiply of Virginia Inc., Virginia—The contract with IRR&R was terminated in May 1968. Negotiations for a takeover are under way with Cladwood Corp., a Corvallis, Oregon, firm.

Arrowhead Seed Growers Co-Operative, Cook—This firm has bought out its lease-purchase contract and is now on its own. The total state investment of \$27,654 was reimbursed through a sale in 1967.

Nu-Ply Corporation, Bemidji—This firm is a major IRR&R success story. The IRR&R's original investment of \$332,700 has been paid back. Nu-Ply is the largest employer in Bemidji. It employs an average of 75 persons at a payroll of nearly a half million dollars. Sales average out at about \$2 million a year — \$1.7 million outside the

state of Minnesota. The firm also uses about 50 pulpwood cutters, haulers and other servicing employees not directly on its payroll.

Lookout Mountain Ski Lodge, Virginia—This firm went bankrupt and defaulted on a Small Business Administration loan. But the IRR&R equipment—a sno-cat, six ski tows and a pickup truck—are on the site and being used by and paid for by the new operator.

PARTICIPATING AGENCY PROJECTS

Most Iron Range Resources and Rehabilitation projects are operated and financed in conjunction with federal, state or local agencies.

Thus IRR&R has attracted more than a million dollars in federal research and development money into the state over the past three years. Furthermore, IRR&R often furnishes some or all of the local share for new industry projects financed by the federal Economic Development Administration or the Small Business Administration.

IRR&R transferred \$40,000 to the State Department of Economic Development to provide the state's share of financing required for a federal multi-county agency in Northeastern Minnesota, the Arrowhead Economic Development District, Inc., with headquarters in Duluth. These funds made the state eligible for federal funds totaling approximately \$160,000 for the program for a two-year period. Counties included are Carlton, Cook, Koochiching, Itasca, Lake, and St. Louis.

The IRR&R has also worked with the U.S. Geological Survey in an Iron Range water study and publication of nickel and copper maps; with the Duluth Board of Education in farm management



Maple Syrup Plant at Mineral Springs, Minnesota, which the IRR&R Commission decided to turn over to the Bureau of Indian Affairs.

programs; with the University of Minnesota Soil Science Department in peat research; with the State Department of Conservation in the Upper Rice Lake wild rice project and the Shannon River dam; with the Upper Great Lakes Regional Commission in financing the Coho Salmon project and the Nett Lake Reservation wild rice production demonstration project; and with the Department of Labor in the Neighborhood Youth Corps.

This section of the report will deal briefly with these projects not dealt with in other sections of this report.

Neighborhood Youth Corps With the U.S. Department of Labor

Pictured here are youths between 16 and 21 years of age working in northeastern Minnesota



Hubbard Co. NYC project picnic grounds.



Hubbard Co. NYC project pouring cement into fireplace ring form.

under the Labor Department's Neighborhood Youth Corps program.

The IRR&R is sponsoring this forestry oriented program in northeastern Minnesota. The program operated in Aitkin, Becker, Beltrami, Clearwater, Crow Wing, Hubbard, Itasca, Koochiching, Mahanomen, St. Louis and Wadena counties. Specific projects are dealt with in the section of the report on service to counties.

Farm Management Program With The Duluth Board of Education

The IRR&R has cooperated in this program since 1956. The program involves records and analysis—an important aspect of modern farming.

The 1966 records printed in 1967 showed 165 cooperating farmers in 14 counties and the participation of 16 vocational-agricultural instructors and three county agents. The 1967 record printed in 1968 involved 123 farmers, 10 voc-ag instructors and two county agents.

Over the past four years analysis work has been done by electronic data processing with the Agricultural Records Cooperative in Madison, Wisconsin, assuming the work. This has added speed and accuracy to the project.

Because a large number of cooperating farmers live in the Staples area it has been found desirable to hire clerical help at the Staples Area Vocational School to supplement the work done in Duluth.

Each year top farm families are honored by the Duluth Chamber of Commerce Agriculture com-



One of several log cabins constructed by IRR&R work crews during the summers of 1966-1967. Log cabins have been built at the FFA Camp at Britt and 4-H Camp at Lake Eshquagama in cooperation with OEO employees.

mittee on the basis of their record books and a visit to the farm.

The winners for the past two record years were:

1966—L.R. Johnson and Son, Meadowlands.

1967—Helmstetter Brothers, Baudette.

Shannon River Dam With the State Conservation Department

This project involved the construction of a dam where the Shannon and Sturgeon Rivers join in St. Louis County. It is a conservation project that will help control water as well as serve as a spawning and brooding ground for Northern Pike and water birds.

This area is easily accessible by road.

IRR&R contributed \$10,000 for the project; the Game and Fish Division of the Conservation Department added \$15,000; and \$20,000 was added by the Conservation Department from its federal lands and water account.

U.S. Geological Water Survey

The IRR&R contributed \$5,000 on a 50-50 basis for the continuation of the Iron Range water study by the Geological Survey.

The Grand Rapids area was completed and ended the individual municipal investigation phase of the project. Information gathered indicate where large quantities of water may be obtained.

The Survey information is widely used by iron companies and municipalities in developing sources of industrial and mining water supply.

Coho Salmon Project With the Upper Great Lakes Regional Commission

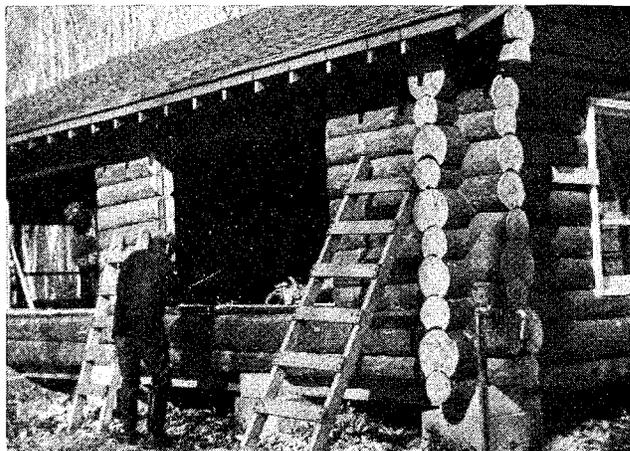
The IRR&R contributed \$9,600 toward Minnesota's share of a project to establish a Coho Salmon fishery at French River on Lake Superior.

This is a \$48,000 project under the Anadromous Fisheries Program of the U.S. Bureau of Fisheries. The state's share of the program is \$24,000. The Upper Great Lakes Regional Commission picked up three fifths of this share and IRR&R the rest.

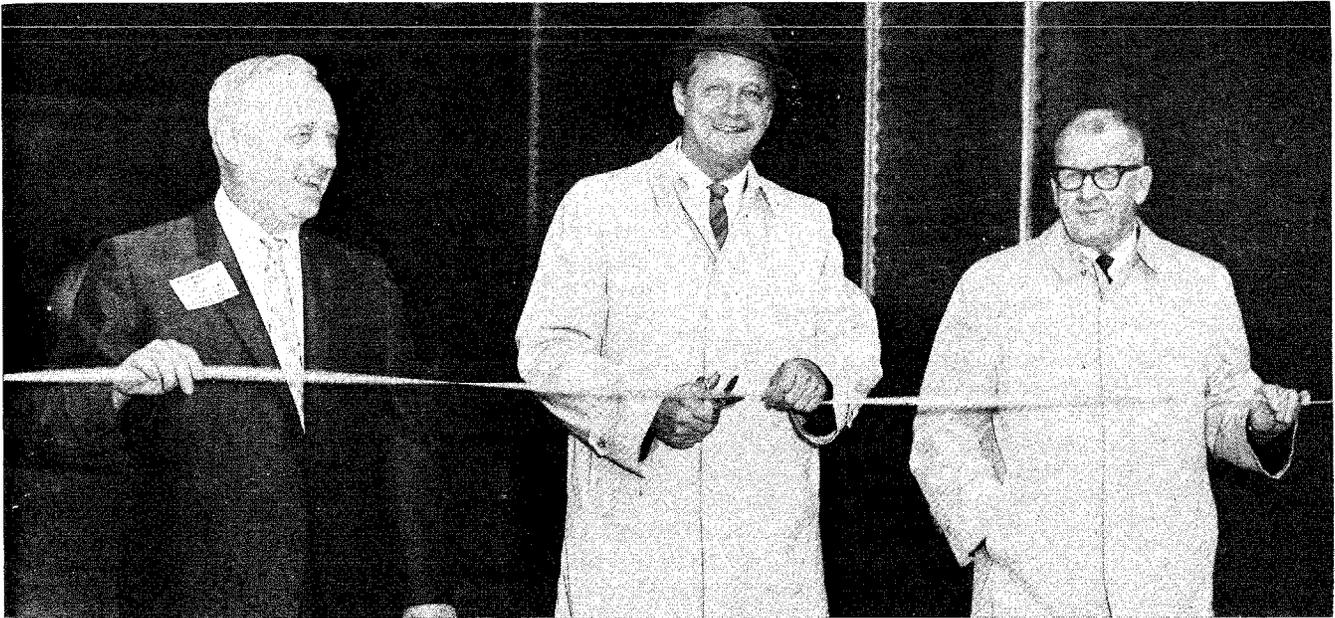
While Coho salmon apparently will not reach tremendous size in Lake Superior, it has been demonstrated that the fish can grow to sizes of 2½ to 4 pounds in this lake.

Coho salmon fishing should help the North Shore communities. It is estimated that salmon fishing operations will produce an annual North Shore tourist revenue of about \$300,000.

Stock from the French River facility will also be planted in five suitable inland lakes.



State Vocational Education Camp, Britt, Minnesota.



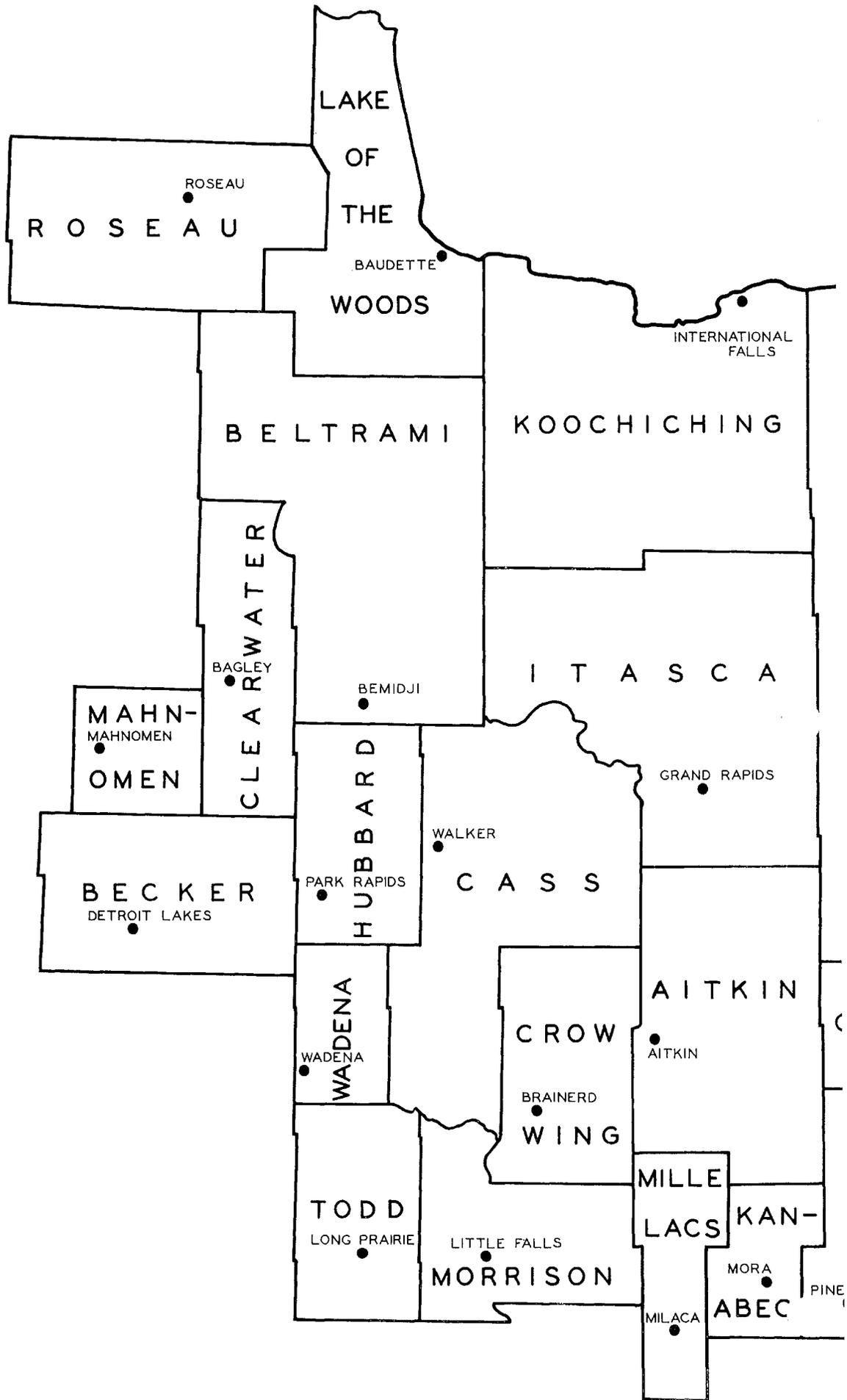
GOVERNOR HAROLD LE VANDER was represented by Wallace R. Hoaglund, Administrative Assistant to the Governor at the ribbon cutting ceremonies of Mesabi Drill and Tool, Chisholm, on Oct. 26, 1967. Ivan Gill, left, is president of the firm and Mayor Jay Woodward, right.



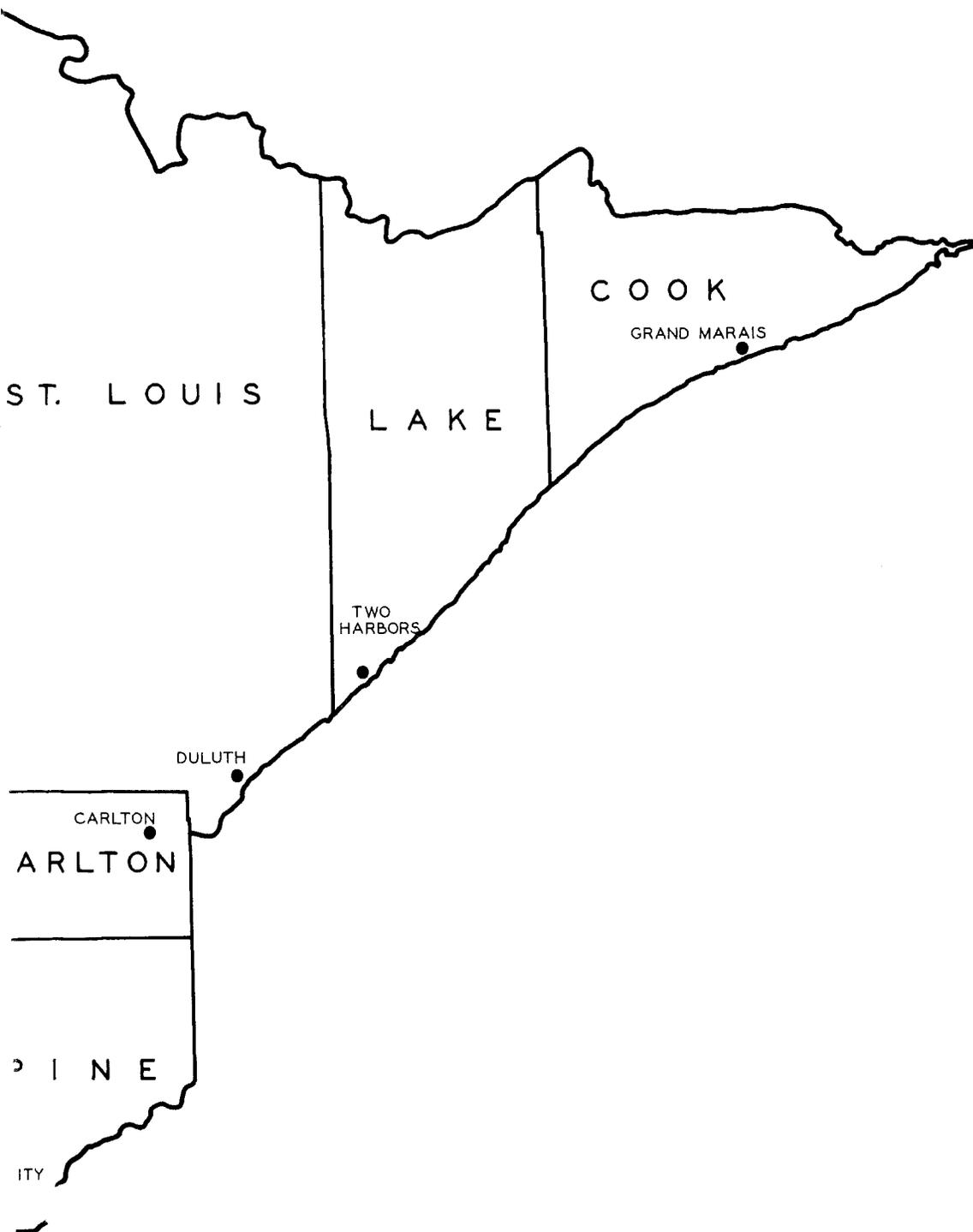
Women Employees at Mesabi Drill & Tool Co. Plant



Mesabi Drill & Tool Co. Building Complex at Chisholm, Minn.



**COUNTIES SERVED BY IRON RANGE
RESOURCES AND REHABILITATION
PROGRAMS AND PERSONNEL**



SERVICES BY COUNTY

The purpose of Iron Range Resources and Rehabilitation is to bring benefits to the northern Minnesota residents, communities and counties.

The continuing forestry program for instance, aids a large number of northern counties with developing their large timber holdings. Benefits accrue to the counties and the rest of the state in the form of taxes, employment, recreational development and development of natural resources.

Likewise, programs to start new industry, research on natural resources and the attraction of federal funds or private investment benefits the communities, counties, individuals, and the state as a whole.

The following breakdown of services to counties should provide an idea of the wide range of IRR&R programs. A detailed table of county services by the IRR&R forestry division is on the back cover of the report.

Aitkin County

Aitkin County has a full time IRR&R forester. He directed the establishment of the Snake River Recreation Park and the Long Lake Conservation Center. The IRR&R appropriated \$11,240 for the Long Lake Center. The forester made a comprehensive recreational report and plan to establish eligibility for federal land and water conservation funds. He also was an instructor at the Long Lake Center and completed a management report for the county's 234,000 acres of tax-forfeited lands.

Neighborhood Youth Corps projects in Aitkin County included tree planting; improvement of the Snake River campground; improvement of the Aitkin boat access and picnic ground; and improvement of Jacobson River Park; the McGregor wayside; Twin River Springs Recreation area and Libby boat access and campground; also establishment of Mississippi River facilities, campsites, access and map.

This county also has major peat deposits and would gain from a major breakthrough by IRR&R sponsored research on this resource; a \$28,000 sulfide drilling project was financed by IRR&R, in cooperation with the U.S. Department of the Interior.

The county land ownership map printed by the IRR&R is in its third printing.

An IRR&R crew drilled for water in connection with an application for federal camp site development funds. A section corner post relocation project is financed on a matching basis with IRR&R funds.

A \$25,202 Tamarack flax program was conducted by Northwest Flax Industries, Inc. of Winona, to develop and experiment with machinery that would clean and decorticate flax. McGregor Manufacturing Corporation, a water ski manufacturing plant, was awarded a \$43,500 appropriation.

Becker County

This county shares an IRR&R forester with Clearwater, Hubbard, and Wadena counties. Plans are to inventory the 80,000 acres of tax-forfeited lands.

The Neighborhood Youth Corps in this county brushed township roads; cleaned up fairgrounds; planted trees; painted the Osage Town Hall; improved access to Blueberry, Little Long, Shipment and Height of Land lakes; and improved the recreational facilities at Chilton Park.

Three farmers participated in the IRR&R farm management program in 1966 and 1967.

The IRR&R land ownership map was completed and printed in 1964.

This county has small but significant peat deposits and can gain from research on peat conducted by IRR&R. A section corner post relocation project was financed on a matching basis with IRR&R funds.

Beltrami County

This county has a full time IRR&R forester. He served as county land commissioner for two years. The county now has a commissioner and the forester will assist him. The IRR&R forester has also set up land and timber sales, has conducted tree planting programs and has supervised the sale of 123,000 yards of gravel from tax-forfeited lands. He also supervised construction of a five mile fire break.

This county has more than a million acres of peat reserves and would be a major beneficiary in a commercial breakthrough by Minnesota peat.

The biggest employer in Bemidji is Nu-Ply Corporation, a firm that over the last biennium paid

back a \$350,000 IRR&R loan. The firm employs 75 persons and contracts for about 50 more pulpwood cutters, haulers, etc. The company payroll is about half a million dollars. It is a heavy user of Minnesota timber resources and sells about \$2 million worth of products a year — 85 per cent of them outside the state.

Neighborhood Youth Corps projects in this county include tree planting; improvement of tax-forfeited lots in Bemidji; cutting of cedar for deer feed; improvement work on Star Island lots; help in the county garage and courthouse and cutting of fire breaks.

Cass County

Cass County has a full time IRR&R forester. He has been working on photo interpretation of 270,000 acres of tax-forfeited lands. He has also supervised the building of access roads and trails, has taught county employees forestry procedure and water impoundment and has helped the county land commissioner.

Eleven farmers participated in the farm management program in 1966 and seven in 1967.

Between 30 and 35 Cass County youth were employed in IRR&R-NYC conservation projects.

Clearwater County

This county shares a forester with Becker, Hubbard and Wadena counties. In Clearwater county he helped in site preparation for tree planting, platting of lakeshore property and did field work in land and timber sales.

Neighborhood Youth Corps crews did tree planting; worked in the county hospital; cleared roads; thinned Jackpine and Norway pine stands; improved lots in Gonvick and Clearbrook; and improved public access at Johnson, Long and Falk Lakes. They also built a county garage.

The IRR&R financed a \$49,000 damming project on Upper Rice Lake in this county which will result in an annual wild rice product of \$50,000 and improved conditions for game and fish.

This county also has major peat deposits and would benefit from a breakthrough in IRR&R sponsored research for this resource.

The land ownership map for this county was completed in 1964, with a second printing in 1968.

IRR&R provided trained personnel to assist in platting lakeshore building sites which were sold as such by the county.

Twenty county farmers participated in the farm management program in 1966 and thirty in 1967.

Crow Wing County

This county has a full time IRR&R forester, entering the 21st year of service. He handled field work on land and timber sales and aided the county land commissioner in conducting tree planting programs.

The Neighborhood Youth Corps cleaned Perry Lake town hall; did maintenance on the Norwood skating rink; did maintenance and repair work on the French Rapids ski hill, which was enlarged by IRR&R crews; did maintenance and cleanup work in Deerwood and Crosby-Ironton; improved access to Town Lake and Fawn Lake recreation areas, Fawn Lake was developed with IRR&R personnel and funds, as well as the French Rapids campsite; aided at Brainerd State Hospital and School; and did work in the Brainerd Courthouse and city hall. A total of 120 youth were employed on IRR&R-NYC program in 1967.

The land ownership map was printed in 1963 by IRR&R, with a second printing in 1967.

Two farmers participated in the farm management program in 1966.

Two IRR&R financed firms — Lake State Manufacturing Company and Samco Sportswear, Inc. are operating in Crosby and employ from 40 to 60 persons, a total appropriation of \$35,000 of IRR&R funds made this possible.

This Cuyuna Range county would also benefit from a breakthrough in the Cuyuna manganese research financed by IRR&R.

\$10,000 was appropriated for the Range Area Technical Vocational Training School; \$5,000 was appropriated for Electronic Machine Control, Inc.; and \$1,500 was appropriated for the Crow Wing Charcoal Co. project.

\$73,500 was appropriated to Zontelli Brothers for a Krupp Renn direct reduction process from samples of lean ores from the Cuyuna and Mesabi ranges; and \$15,000 was appropriated to Cuyuna Range Minerals Research, Inc. for participation in an Economic Development Administration iron ore research program concentrated on the Cuyuna Range.

Hubbard County

Hubbard County shares an IRR&R forester with Becker, Clearwater and Wadena counties. He aided the one-man county land department and supervised the construction of three miles of snowmobile trail.

Neighborhood Youth Corps projects include tree planting; building of a bridge; planting at a

nursing home in Park Rapids; cutting deer browse; clearing trails; and improvement of Lake Twenty access. A total of 61 NYC youth were employed in 1967, with 8 girls at the Hubbard County Nursing Home in 1968.

The farm management program included five county farmers in 1966 and four in 1967.

The IRR&R land ownership maps for this county were printed in 1965.

Hubbard County has small but important deposits of peat and is a potential beneficiary of IRR&R sponsored research in this area.

Itasca County

Two full time IRR&R foresters are assigned to this county. One handles timber sales and the supervision of logging operations and the other is involved in land sales and Neighborhood Youth Corps project supervision.

NYC projects in this county included tree planting, cleanup of the county fairgrounds, and improvement of the Hartly, Sherry, Shoal and Scotty lake trails. A high of 65 youths were employed at one time.

IRR&R financed taconite drilling was conducted near Keewatin and Taconite in Itasca County and a U. S. Geological Survey water study was done in the Grand Rapids area.

Land ownership maps went through three printings — in 1962, 1964, and 1966.

Itasca County has major peat and copper-nickel deposits and will benefit from development of these resources for commercial sale by IRR&R.

IRR&R financed private business in this county includes Rajala Timber Company, Big Fork, and Jet-Ski Company, Inc., Grand Rapids. The two firms at peak will employ ninety some persons at a payroll of more than \$250,000. Both firms are heavy users of northern Minnesota timber supply.

Other IRR&R financed projects in Itasca County and the money included are: \$375,000 for the Deer River Wood Processing Plant which is now under contract with Great River Veneer Company of Grand Rapids; \$243,000 for a section corner post relocation project with matching funds; \$209,000 for Arrowhead Canning Company now under lease to Mills Cash Sales, Inc.; \$38,000 for Kimball's Inc. now under lease to E. J. Rassier, succeeding Lemco Company; \$15,000 for construction of a land clearing machine; \$15,000 for McLeod, Inc., a furniture manufacturing plant; \$10,000 for the Range Area Technical Vocational Training School; \$10,000 for a student summer

conservation work program with 30 youths employed each summer.

Koochiching County

This county has a full time IRR&R forester. He has devoted much of his time to inventory cruising but soon will be working on timber stand improvement. He has completed an inventory of the 302,000 acres of tax-forfeited land in the county and has worked on drainage and tree planting programs.

Neighborhood Youth Corps projects in this county include tree planting; building a hockey rink; reparation of the Border School and Frontier Community hall; mosquito control in Little Fork; repair of the Ranier Municipal dock and repair and painting of the Williams town hall; building of picnic tables; cleanup of Ranier Park and the Little Falls airport; demolition of condemned buildings on tax-forfeited land in International Falls; helping survey crews in laying out access roads; working in the county garage and welfare office; and improving Jameson playground; Rat Root Park, Morrison Road picnic ground, Manitou Rapids wayside area and the South International Falls Recreation Center.

This county has major peat and copper-nickel deposits and will benefit from IRR&R research in these areas.

The land ownership maps went through two printings — in 1963 and 1966.

\$10,168 was appropriated to Typha Products, Inc. of Bemidji for a pilot plant operation to manufacture, distribute, and market a product made from typha "fluff".

A student summer conservation work program provided employment for 22 youths on an airport improvement program.

\$55,000 appropriation to Cedar Fence Manufacturing Plant, Northome, with negotiations now underway for a new operation to manufacture shipment carts for snowmobiles.

\$35,500 of matching funds was appropriated for a section corner post relocation program in Koochiching County.

Land ownership maps went through two printings — in 1963 and 1966.

Lake County

This county has a full time IRR&R forester. He has worked as acting land commissioner most of the time. He has also started an inventory, established a cutting program and has worked with

the county auditor and county board in setting up land sale programs. Additional personnel have been assigned periodically from other counties and the Hibbing office.

IRR&R land ownership maps for this county had three printings — 1964, 1965, and 1968.

Lake County is in the Duluth Gabbro complex and has large nickel and copper reserves and will benefit from IRR&R work in this area. It also has small but significant peat deposits and stands to gain from research on this resource.

\$7,050 of matching funds were appropriated for a section corner post relocation project.

Lake of the Woods County

This county participated in the farm management program. Six farmers participated in 1966 and eight in 1967.

Lake of the Woods has major peat deposits and thus stands much to gain if Minnesota peat becomes an important factor in the national market.

IRR&R land ownership maps were printed in 1966.

Mahnomen County

IRR&R has assisted the county with their tree planting program and provided help to plant.

Neighborhood Youth Corps projects in this county included cleanup of the Naytawush grounds; cleaning of culverts on county roads, repairing Marsh Creek, Gregory and Pembina town halls; and improving Sargent and Bass Lake camp grounds. A high of 25 youth were employed on NYC projects.

IRR&R land ownership maps were completed and printed over the last biennium.

One farmer participated in the farm management program.

Mille Lacs County

A lease-purchase agreement between IRR&R and Onamia Garments, Inc., Onamia, is in effect, at a total investment of \$85,000 of IRR&R funds. The firm produces car coats and employs about 50 persons, part-time, on an annual payroll of \$110,000. Expansion is pending.

IRR&R land ownership maps for this county were printed in 1966.

Mille Lacs county has substantial peat deposits and stands to benefit from IRR&R peat research.

Ottertail County

Nine farmers participated in the IRR&R farm management program in 1966 and six in 1967.

Ottertail County has small but important peat deposits and is a potential beneficiary of IRR&R peat research.

Pine County

IRR&R personnel assisted in a Federal ARA-SBA \$75,000 charcoal-sawmill project at Sturgeon Lake Industries, Inc.

The D. L. Lewis Manufacturing Company has leased machinery from IRR&R for its operations at Hinckley. The firm employs 12 persons at a payroll of about \$125,000.

Four Pine County farmers participated in the IRR&R farm management program in 1966 and four in 1967.

Land ownership map for this county was printed in 1964 by IRR&R.

A crew of six IRR&R foresters is assisting the State Department of Conservation in a 25,000 acre land sale; assistance has been provided, beginning in 1951, whenever requested.

St. Louis County

This county is, of course, a major beneficiary of all iron ore, nickel-copper, peat and wild rice research projects conducted by IRR&R since it is rich in all these natural resources.

The St. Louis County forester works full time in Duluth aiding the land administrator in managing more than a million acres of tax-forfeited lands.

Aided by IRR&R in sale of tax forfeited lands to private owners, tax exempt property in this county went down from a value of \$105,000,000 in 1962 to \$42 million in 1968.

Forestry division projects included the gathering of 120 bushels of jackpine cones for direct seeding in 1969; experimental planting at Wilderness Valley Farm to study the growth of different species of trees on peat; and completion of the inventory on tax-forfeited land in the northwestern part of the county for a proposed memorial forest.

Neighborhood Youth Corps programs included a total of more than 500 youths in one season with work being done at the following places: Ely — Improvement of Eagle Nest and Five Mile lakes access; Duluth — Brushing on Carrol, Alden and Sucker river trails, improving the old North-eastern Railroad grade, and brush clearing and

dam construction at Hartley Field; Floodwood — cleanup of village park, tree planting, brushing of Hull Junction and Spider Crook trails; Hibbing — Erecting and removing snow fences, cleanup and maintenance at Hibbing fairgrounds and Hibbing Memorial building; Virginia — Tree planting and site preparation and work on Lookout Mountain ski hill.

Land ownership maps were published in 1963, 1966, and 1967.

St. Louis County derived direct benefits from a number of projects. Part of the peat waste stabilization study was done by Ruble and Kaple, Inc. in Duluth. The Wilderness Valley Farm and Aase Evergreen Farm research projects are conducted in this county. The Nett Lake Reservation project is scheduled for this county. Taconite drilling was done near Buhl and Biwabik in this county. IRR&R water drilling was done in McKinley and Virginia. The Coho salmon project which IRR&R helped finance is at French River in this county.

St. Louis County also has a number of IRR&R financed private firms. Chun King Corp., now a major Duluth employer, was helped with an IRR&R loan. Firms now operating and providing employment, payrolls and tax dollars in the county are Duluth Filter Co., Duluth; Mesabi Drill & Tool, Inc., Chisholm; Zen-Ely, Inc., Ely; Lookout Mountain Ski Lodge, Virginia; Arrowhead Seed Growers Cooperative, Cook, has successfully paid back its \$27,654 IRR&R loan and is now on its own, and Superwood Corporation of Duluth was financed with IRR&R funds.

St. Louis County, from where most of the occupational tax is derived, has obviously received the greatest share of financial aid for development of industrial projects as well as the regular department programs. Following is a list of appropriations the IRR&R has invested in private industry in St. Louis County.

- \$600,000 — Multiply Plant, Virginia; negotiating for lease with Oregon firm to continue operation of the plant
- 280,000 — Peat Processing Plant, Floodwood, now operated as Form Fiber Products
- 367,500 — Superwood Corporation, Duluth, now employs 250 persons
- 200,000 — Chun King Corporation, Duluth, now employs 750 persons
- 120,000 — Mesabi Drill & Tool, Inc., Chisholm, now employs 45 persons
- 75,000 — Minnesota P & O Manufacturing Co., Virginia; contract terminated, equipment sold to other projects in the area
- 51,800 — W. S. Moore Co., Gilbert, iron ore briquetting project in cooperation with

- U. S. Dept. of Commerce in research experiment
- 45,750 — Mesabi Grow, Cotton, peat processing plant, now operated by Power-O-Peat, nationwide marketing agency
- 30,000 — Port Authority of Duluth
- 33,590 — Lookout Mountain Ski Lodge, Virginia
- 25,000 — Duluth Filter Co., Duluth, now employs 11 persons
- 12,000 — Zen-Ely, Inc., in cooperation with U. S. Dept. of Commerce, rental of equipment and use of IRR&R personnel and machinery

The following appropriations were made to other State agencies and divisions of St. Louis County:

- \$240,000 — Corner post relocation on a matching basis contract
- 83,500 — Student summer conservation work program
- 55,200 — Minnesota Arrowhead Association, tourist survey studies
- 35,000 — FFA Camp, Britt; 4-H Camp, Lake Eshquagama, labor, supplies, etc.
- 25,000 — Warehouses, Lakeland and Embarrass
- 22,253 — Vocational training funds for Arrow Shirt factories, Eveleth and Virginia.
- 10,000 — Eveleth Vocational Training School
- 10,000 — Hibbing Vocational Training School
- 10,000 — Shannon River project in cooperation with State Conservation Dept.
- 6,000 — Carey Lake project in cooperation with Federal and local agencies

Todd County

Todd County farmers are very active in the IRR&R supported farm management program. Eighty-seven farmers participated in 1966 and forty-five in 1967.

This county has small but significant peat deposits and stands to gain from the IRR&R peat research project.

Land ownership map for this county was printed in 1966.

Wadena County

This county shares a forester with Becker, Clearwater, and Hubbard counties.

Neighborhood Youth Corps projects in this county included experimental thinning of Norway pine stands and timber stand improvements.

This county has small but significant peat deposits and is a potential beneficiary of the IRR&R peat research program.

Land ownership maps for this county were prepared and published by IRR&R in 1964 and 1966.

FINANCIAL REPORT

RECEIPTS, TRANSFERS, AND EXPENDITURES

RECEIPTS:	1966-1967	1967-1968
Balance brought forward July 1.....	\$1,003,202.70	\$1,082,853.88
Receipts from IRR&R Revolving Fund.....	172,828.08	27,643.79
Misc. refunds from prior years' expenditures.....	146.46	395.32
Reimbursements from Federal Government:		
Dept. of Commerce, ARA-EDA (Peat Research Project).....	22,000.00	29,920.00
Dept. of Labor, Neighborhood Youth Corps.....	204,985.00	176,105.00
Dept. of the Interior, FWPCA (Peat Bog Waste Stabilization).....	15,158.00	60,977.00
Total Receipts	<u>\$1,418,320.24</u>	<u>\$1,377,894.99</u>
EXPENDITURES:		
Transfers Out (Legislative Action):		
University of Minnesota (Beneficiation of low-grade ores).....	80,000.00	150,000.00
Commission on Taxation & Production of Iron Ore.....	—	25,000.00
Dept. of Administration (Utilities)	333.11	278.01
Dept. of Taxation (Refund on 1965 Occup. Tax).....	—	236.64
Total Transfers Out.....	\$ 80,333.11	\$ 175,514.65
Projects:		
Administration	64,549.14	64,218.18
Agriculture-Farm Management N.E. Minn.....	4,500.00	4,000.00
Electronic Machine Control, Inc.....	—	5,000.00
Forestry Development	168,229.73	209,750.94
Long Lake Conservation Center.....	3,610.00	5,130.00
Maple Syrup Plant.....	1.00	1.00
Mesabi Drill & Tool Co.....	89,557.22	—
Mineral Research	46,623.51	55,245.75
Misc. Conservation-type Work Projects.....	58,142.61	60,720.94
Multiply Plant	—	3,457.31
Onamia Garment, Inc.....	70,206.85	14,600.00
St. Louis County Summer Conservation Work Program.....	22,888.97	40,624.94
Section Corner Post Relocation.....	43,653.41	45,869.65
U. S. Geological Survey-Water Survey.....	1,484.02	4,973.82
University of Minnesota:		
Manganese Iron Study.....	3,000.00	—
Mesabi Deep Drilling for Taconite.....	110,275.52	9.66
Peat Research	4,159.51	6,908.98
Wild Rice (Aase's Research).....	3,657.23	3,462.63
Wilderness Valley Farms.....	6,422.80	6,834.98
Federal-State Contracts:		
Dept. of Commerce, ARA-EDA (Peat Research).....	28,002.91	28,151.79
Dept. of Labor, Neighborhood Youth Corps	227,887.21	163,499.74
Dept. of Labor, Neighborhood Youth Corps IRR&R funds.....	17,729.75	13,538.09
Dept. of the Interior, FWPCA, Peat Bog Waste Stab.....	15,534.68	80,025.11
Transfers to State Departments:		
Dept. of Conservation-Game & Fish Div. (Upper Rice Lake—Wild Rice Production)..	49,000.00	—
Dept. of Conservation-Game & Fish Div. (St. Louis County Dam Site).....	—	10,000.00
Dept. of Economic Dev. (Arrowhead Economic Dev. Dist.).....	—	20,000.00
Total Project Expenditures.....	<u>\$1,039,116.07</u>	<u>\$ 846,023.51</u>
Total Transfers Out & Project Expenditures.....	<u>\$1,119,449.18</u>	<u>\$1,021,538.16</u>
Balance June 30.....	298,871.06	356,356.83
	<u>\$1,418,320.24</u>	<u>\$1,377,894.99</u>
Receipts from 10% of Occup. Tax on Iron Ore, June 30.....	783,982.82	635,287.30
Unexpended balance June 30.....	298,871.06	356,356.83
Brought forward July 1.....	<u>\$1,082,853.88</u>	<u>991,644.13</u>
Transfer Out to Univ. of Minn. for year 1968-69.....		(150,000.00)
Transfer Out to Dept. of Admin. for year 1968-69.....		(255.59)
Transfer Out to Dept. of Economic Dev. for AEDD.....		(20,000.00)
Transfer Out to Upper Great Lakes Comm. for Co-ho Salmon.....		(9,600.00)
Transfer Out to Dept. of Conservation, Div. of Waters, Soils & Min.....		(50,000.00)
Customized Iron Ore Pellet Project.....		(100,000.00)
Total Available for expenditure for year 1968-69.....		<u>\$ 661,788.54</u>

DATA BY COUNTIES

Average Annual Income, Last 5 Years	**** Aitkin	Becker	Beltrami	Carlton	Cass	Clear- water	Crow Wing	Hubbard	Itasca	Koochi- ching	Lake	Mahno- men	Pine	St. Louis	***** Wadena	TOTAL
TIMBER.....	\$33,049	\$ 5,419 *****	\$29,660	Not Available	\$17,945	\$16,450	Not Available	\$26,633	\$ 62,672	\$ 78,746	\$7,377	\$2,638	Not Available	\$ 68,844	\$5,000	\$ 354,433
TOTAL.....	\$60,835	\$26,158	\$55,134	\$25,472	\$70,520	\$32,449	\$56,694	\$47,622	\$299,153	\$101,056	\$9,283	\$7,131	\$56,067	\$333,578	\$6,000	\$1,187,152
Tax Forf. Acreage.....	237,912	89,240	160,000	157,688	281,014	115,285	105,000	144,563	510,816	295,000	159,000	30,000	310,258°	1,012,537	11,000	3,619,313
Park Commission.....	Yes	No	No	Yes	No	No	Yes	No	No	No	No	No	No	No	Yes	4-Yes 11-No
Acres in County Parks.....	10,000	205.63	2,950	60	0	14	50	0	0	0	None	0	0	0	20	13,299.63
No. of County Developed Public Accesses.....	3	12	1	2	0	5	8	3	20	8	None	0	0	5	12	79
No. of County Developed Campsites.....	3	0	1	2	0	1	2	0	14	0	None	0	0	2	12	37
No. of Trees Planted to Date*.....	2,188,000	907,600	2,606,000	700,000	3,500,000	960,000	1,591,000	1,700,000	9,721,000	4,250,000	170,000	278,000	200,000	6,167,000	1,645,000	36,583,600
Acres in Memorial Forest.....	116,058	60,000	24,001	1,640	160,000	14,800	8,300	30,305	210,805	0	30,320	989	0	524,329	5,600	1,187,147
Average Annual Drain, Last 5 Years**.....	12,000 Cords	6,200 Cords	15,786 Cords	5,000 Cords	6,000 Cords	6,200 Cords	Not Available	12,345 Cords	26,000 Cords	41,705 Cords	4,500 Cords	Not Available	0	43,439 Cords	1,200	180,375 Cords
Average No. of Active Timber Permits Carried.....	180	46	230	35	60	78	40	130	230	300	36	12	0	400	4	1,781
Miles of Access Roads Constructed...	45	3	0	0	25	12	0	0	50	11	None	0	0	6	None	152
Financial Aid***				Not Available												
ACP.....	\$13,501	\$10,220	\$17,001	\$10,000	\$6,010	\$3,158	\$15,000	0	\$ 8,471	\$23	\$8,398	0	\$ 15,000	\$22,500	\$129,282	
Title IV.....	\$14,185	0	0	0	\$5,300	0	0	\$19,846	\$22,682	0	0	0	\$ 96,618	0	\$158,631	
IRR&R.....	\$ 5,974	\$ 1,025	0	0	0	0	0	\$210,805	\$29,552	\$2,367	0	0	\$229,318	0	\$479,041	
No. of County Employees in Land Department.....	5	1 & 1 Pt. Tm.	3	2	2	2¼	2	1½	5	7	0	0	0	16	0	47
No. of IRR&R Personnel Assigned to County.....	1 \$8,664	1 Pt. Tm. \$2,343	1 \$8,664	0 —	1 \$8,664	1 Pt. Tm. \$2,343	1 \$8,004	0 —	2 \$8,328 \$8,664	1 \$8,328	1 \$8,004	0 —	0 —	2 \$8,664 \$8,328	1 Pt. Tm. \$2,343	11 \$91,341

*To nearest thousand trees.
 **All volume converted to cords.
 ***To January 1, 1968.
 ****Operate Long Lake Conservation Center, yearly budget of \$13,000.
 *****Gross income does not include monies for leases.
 *****Approximate figures.
 °Includes land on 50-50 basis with State.