Wisconsin Academy review: New mining era comes to Wisconsin. Volume 28, Number 1 December 1981

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WISCONSIN ACADEMY REVIEW

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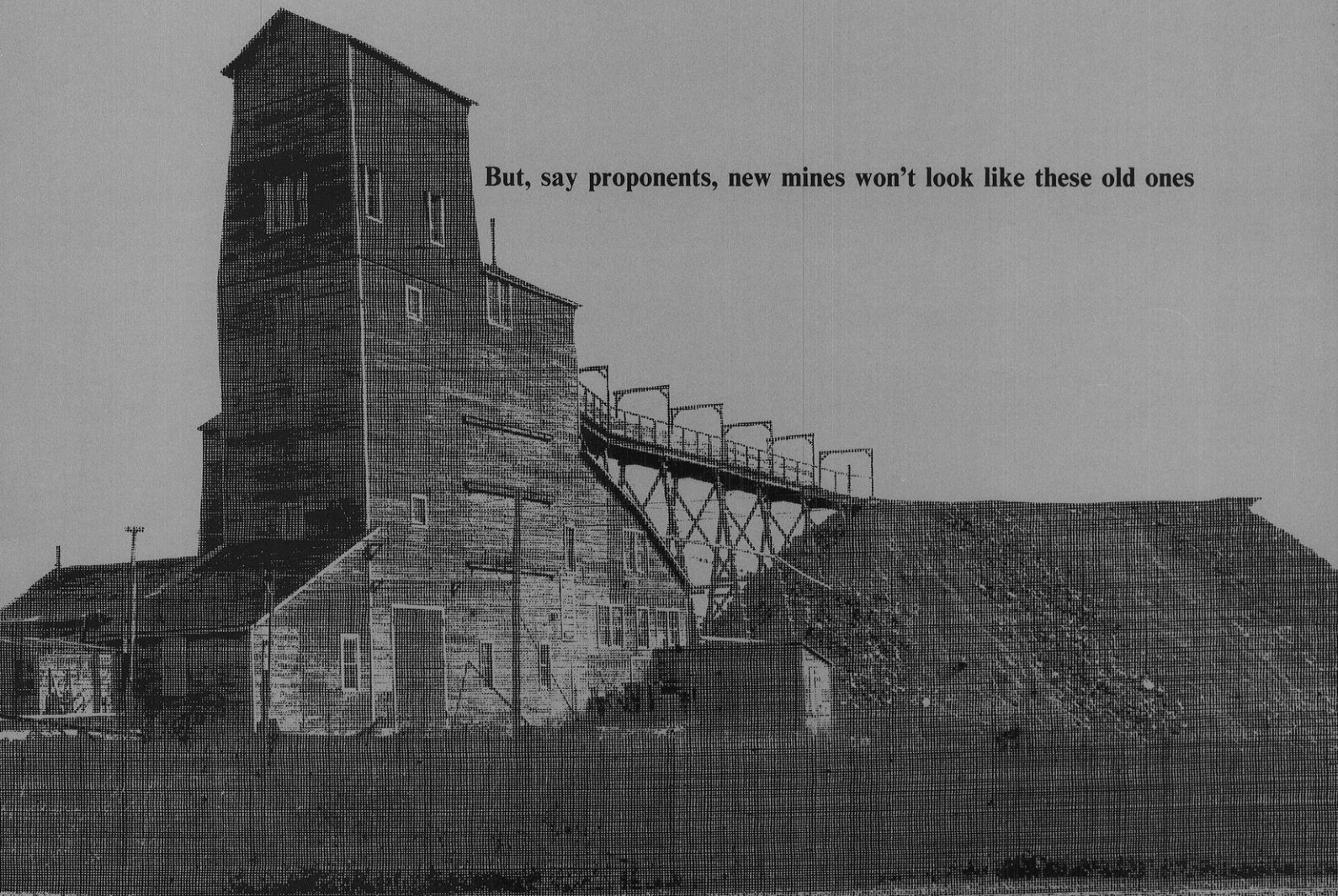
December 1981

New Mining Era Comes to Wisconsin

But, say proponents, new mines won't look like these old ones



Headframe of a southwestern Wisconsin zinc-lead mine about 1930

Editorial: From idea to ink

At a WASAL Publications Committee meeting one day last summer, chairman Thompson Webb suggested that the *Review* do a public policy issue on mining in Wisconsin. "What an excellent idea!" I thought and rushed back to my office to plan the special issue. Immediately I was confronted with the vacuum in my mind where information ought to be—I knew so little about mining I didn't even know where to get information.

However, WASAL members are always excellent human resources, and when I approached Buzz Ostrom, director of the Geological and Natural History Survey, he set up an appointment that same afternoon with the survey's mineral specialist Tom Evans. Tom gave me a fascinating crash course in everything I'd ever wanted to know about Wisconsin mining—the issues, the people involved, the current state of affairs. He provided names, addresses, and phone numbers of the people most closely connected with mining and mining regulation in Wisconsin. He even promised to write the introduction to the issue himself. Since then he has calmly answered my frequent frantic phone calls, supplied diagrams and illustrations, and kept me up to date as problems were resolved in fall hearings. Without his help this issue might never have been more than a good idea.

But not only to Tom but to all the authors who have contributed to this issue do I want to express my gratitude. Each one has taken time from a busy schedule to provide *Review* readers with a unique perspective on this highly complicated and technical question of how mining can be accomplished with the least damage to the environment. As the fall *Review* deadlines grew near, so too did the frequent hearings that our authors had to attend and at which they had to make presentations. Fall in Wisconsin has been a whirlwind of activity in mining regulation. While that makes a deadline even more an arbitrary cutoff point in time, we do believe that most of the important issues have been resolved and all have been addressed. Changes will still occur, but the stage is set for new metal mining in Wisconsin. The administrative rules developed here may well serve as a model for the nation.

—Patricia Powell

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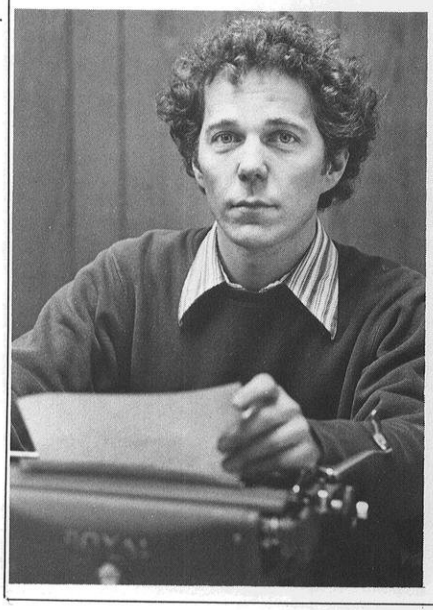
Authors

Thomas J. Evans is head of the Mineral Resources Section of the Geological and Natural History Survey. Since coming to Wisconsin in 1978 from a five-year stint with the Texas state geological survey and two years of teaching at Ohio Wesleyan University, he has been a sometimes participant and sometimes observer of the efforts to incorporate modern metallic and nonmetallic mining activities into the framework of the state's regulatory apparatus. Tom has served on the Reclamation of Nonmetallic Mining subcommittee and the subcommittee on Uranium Exploration Safety, both of the Legislative Council Mining Committee.

Mr. Evans has recently started a Ph.D. program in land resources in the Institute of Environmental Studies, UW-Madison. Current research interests include minerals availability on public lands, public policy aspects of peat resource development, and the relationships between underground metallic mining and groundwater resources in southwest Wisconsin.

Elizabeth Kohl is the executive secretary of the Mining Investment and Local Impact Fund Board. Elizabeth has a B.A. in natural resources and is currently finishing her Master's degree in landscape architecture, with an emphasis in land-use planning. In her leisure time, Elizabeth is an avid flower gardener and motorcycle enthusiast.

Don Behm's articles on mineral exploration in our state's northern highlands have been published in *City Lights,* the *Ocooch Mountain News, Akwasasne Notes,* and a host of other weekly and monthly newsmagazines from New York to California.



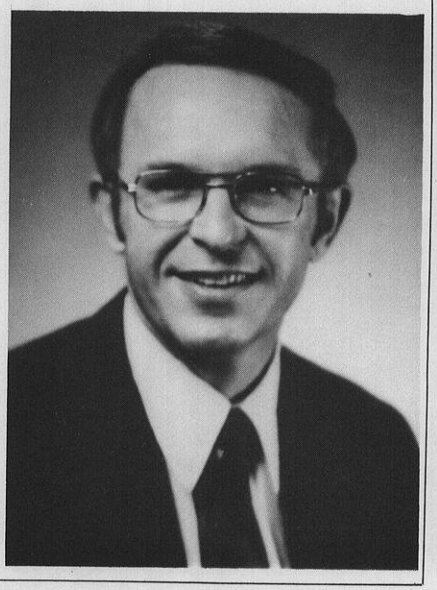
For two years, he has attended meetings in northern Wisconsin and the upper peninsula of Michigan in an attempt to contact residents of those areas who were stepping forward to express their concerns about a new mining industry—long-time residents who were willing to be identified as environmental stewards. He will continue his travels, whether to attend a public hearing held by state legislative committees, or educational meetings in town halls or county courthouses, or conferences held at small, rural colleges in Wisconsin or Michigan. His eventual goal is the publication of an oral interview-based review of the citizen response to the potential new era of mining in the Upper Great Lakes.

Don is currently associate editor of *City Lights,* a biweekly newsmagazine in Madison. He is a lifelong resident of Wisconsin; his family now lives in the Eagle River area.

Meridith E. Ostrom was born in Rock Island, Illinois in 1930. He received his B.A. from Augustana College in Rock Island in 1952 and his M.A. (1954) and Ph.D. (1959) from the University of Illinois in Urbana. His major study areas were geology, chemistry, and biology.

Dr. Ostrom began his professional career with the Illinois State Geological Survey in 1953 where he worked with subsurface mineral resource problems, oil and gas records, coal resources and mining, and nonmetallic mineral resources. In 1959 he joined the Wisconsin Geological and Natural History Survey as assistant state geologist in charge of both mineral and water resources investigations. In 1972 he was appointed state geologist, the position he now holds.

In addition to directing activities of the Survey, Dr. Ostrom also participates on approximately 50 state agency, university, and national committees. He is president-elect of the Association of American State Geologists. For five years he has served on their Liaison Committee which maintains close contact with the programs, activities, and budgeting of federal agencies and Congressional committees. Other committees closely related to minerals and mining on which he has served are the Metal Mine Reclamation Council, the Special Committee on Mineral Taxation, the Mineral Resource Policy Group of the State Economic Development Coordinating Committee, the Technical Science Advisory Committee on Mine Reclamation for the Argonne National Laboratory, and the Mineral Lands Assessment Program review team for the U.S. Bureau of Mines.



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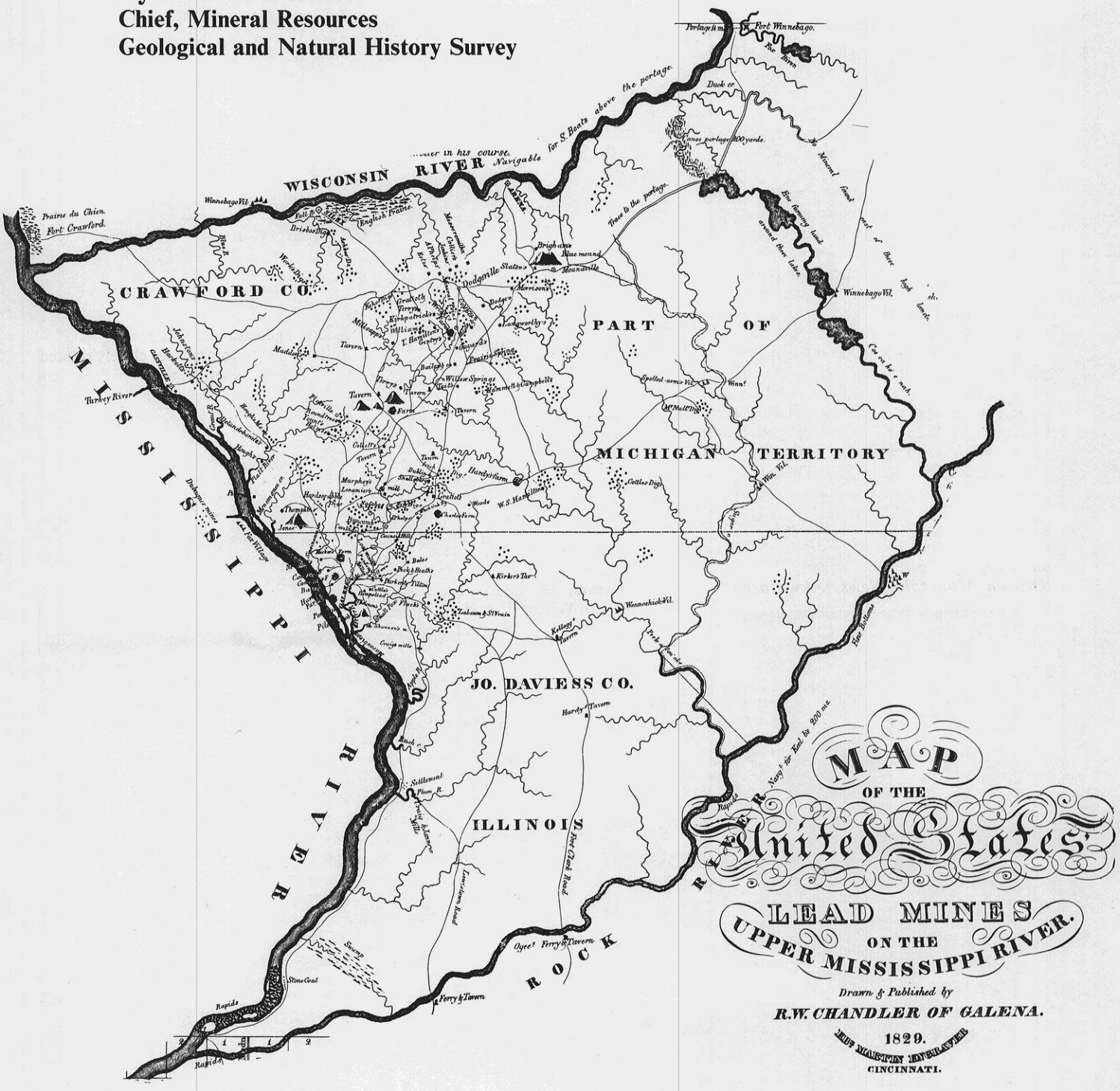
Mining in Wisconsin

Where we've been; where we're going

By Thomas J. Evans
Chief, Mineral Resources
Geological and Natural History Survey



Mining—the very word seems to evoke strong emotions, positive and negative, supportive and otherwise. The last 10 to 15 years in Wisconsin have seen the struggle to balance what appears to be our legacy of natural beauty and enjoyable environment with the promise of new jobs and expanded economies coming with a new era of mining. But this struggle to balance cannot be so simplistically stated. It is much more than "friend and foe." The struggle to balance is the struggle of stewardship—the wise use of our resources in the context of protecting what we already have. This issue of the *Review* is largely dedicated to that struggle of stewardship. The articles that follow outline some of the principal viewpoints that are a part of the debate concerning modern metal mining in Wisconsin. In the paragraphs that follow, the stage is set for these viewpoints.

How have we come to be where we are today? The debates on mining in an environmentally acceptable way—the give-and-take on new legislation, revising legislation, and administrative rules—have roots that stretch far back, back into the 1600s. . .

The historical perspective

The exploration and settlement of Wisconsin is in large part the result of French interest in the lead region of Iowa, Illinois, and Wisconsin. The Indians in the region used lead on a small scale before the French, in 1865, established a trading post for lead on the Mississippi River in the region of modern-day East Dubuque, Illinois. The trading post run by Nicholas Perrot marked the beginning of actual mining and smelting of lead ore. Permanent white settlement in the lead region was first attempted by Julien Dubuque who reached an agreement with the Indians at a council held in Prairie du Chien. Dubuque, employing Indian laborers, worked the mines and smelted the ore from 1788 until his death in 1810. The Indians, by now familiar with lead mining, continued the lead trade with French and Americans entering the region. Discovery of new lead deposits continued throughout these times.

In 1824, permanent white settlements in the Wisconsin lead region were established at Hazel Green and New Diggings. Rapid expansion of the white population ensued with some 200 settlers in the entire lead region in 1825 ballooning in numbers to 10,000 in 1828. Southwestern Wisconsin—accounting for about two-thirds of the area in what is now known as the Upper Mississippi Valley Lead-Zinc District (Fig. 1)—had become the birthplace of the state of Wisconsin and the principal lead producer for the young United States of America and its territories.

The mineral resources of southwestern Wisconsin included extensive deposits of zinc ores in association with ores of lead. In the 1870s, production of zinc ores began to outstrip lead production. As lead faded in importance, zinc grew and along with it grew the district. Lead production peaked in the mid-1840s and zinc production climaxed in 1917 during World War I and again in the 1950s (Fig. 2). Southwestern Wisconsin, besides its lead and zinc, also produced copper, iron sulfide, barite, and iron. Until the closing of the large Blackstone-Hayden-Kittoe complex near Shullsburg, Wisconsin, in October 1979, southwestern Wisconsin was the oldest continuously producing zinc-lead district in the nation.

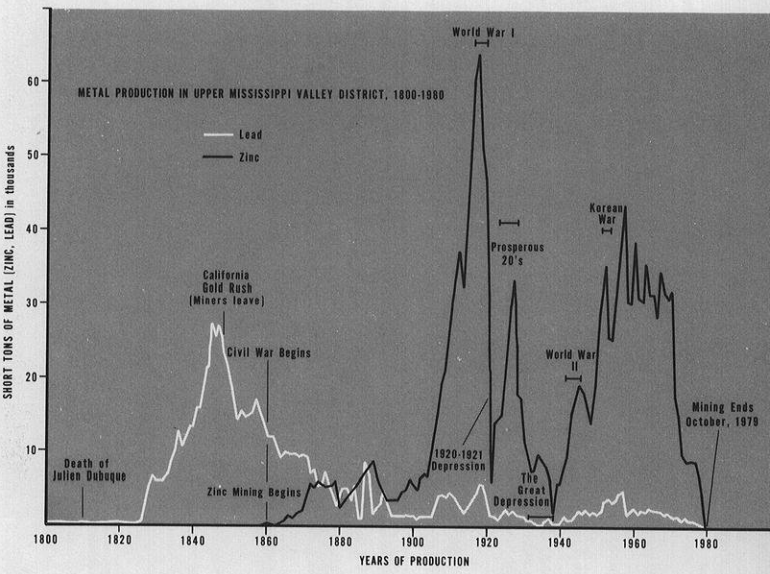


Fig. 2. Courtesy Geological and Natural History Survey

But the mining heritage of our state is not solely the story of southwest Wisconsin. Northern Wisconsin adds to the role mining played in the settlement and growth of Wisconsin. The underground mining of rich iron ores in the Gogebic Range began in 1885 at Hurley and the boom that resulted is almost classic in its proportions. Iron production grew, fed by a growing nation's need for iron and steel and the ready access to the Great Lakes shipping lanes. Though soon dwarfed by the more abundant Minnesota ores, northern Wisconsin along the Hurley-Montreal axis in Iron and Ashland Counties generally thrived, attracting miners from a wide range of European backgrounds—Italian, Slavic, Finnish, Swedish, and Scot. Eventually the economic decline of the Great Depression and the emergence of technology capable of exploiting enormous reserves of low-grade (taconite) ores in Minnesota dealt the deathblow to the north's iron industry. In 1965, the last mine, the Cary Mine, closed. Waste dumps (Fig. 3) and subsiding land areas over old, shallow mine stopes remain as part of the north's mining heritage and the numerous small towns and cities in the area, now responding to a growing tourist industry, are another part of that same heritage.

Mining in Wisconsin is more than a sequence of discovery, exploitation, and abandonment; it is also the opening of a territory, the settlement of a frontier, and the growth of a region. The bittersweet aspects of mining are never more concisely exemplified than in the southwest, where agriculture has long since taken over as the mainstay of the area's economy, and in the north, where tourism and recreation offer the means to economic revival. In both areas of the state, today's opportunities were born on the mining industry of the past.

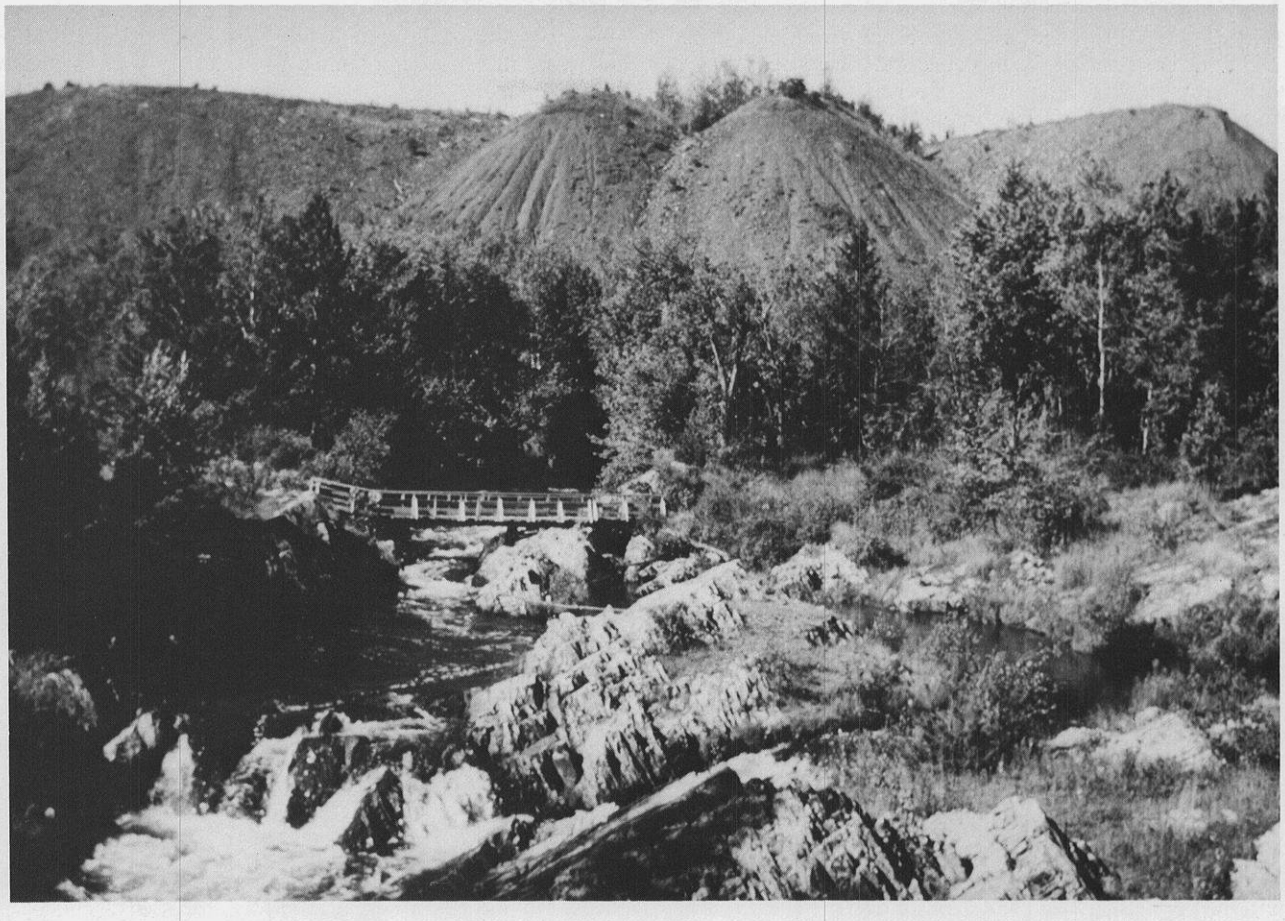


Fig. 3. Waste dumps remain a part of northern Wisconsin's mining heritage.

Courtesy Geological and Natural History Survey

The recent history

Metal mining in the past 10 to 15 years has focused on four deposits, only one of which has been brought into production (Fig. 4). These more recent events overlap in time with the decline of iron mining in the north and zinc mining in the southwest. They suggest a future for metallic mining in Wisconsin that appears limited only by the wishes of the people to have mining once again.

Black River Falls deposit—Jackson County Iron Company (JCIC), a subsidiary of Inland Steel Company, opened its mine-mill facilities east of Black River Falls for the production of taconite (low-grade iron) pellets in 1969. Production start-up followed some eight years of active drilling, bulk-sampling, mine-mill design, and construction. Inland Steel had initially acquired the property in 1939 with preliminary exploration starting the following year.

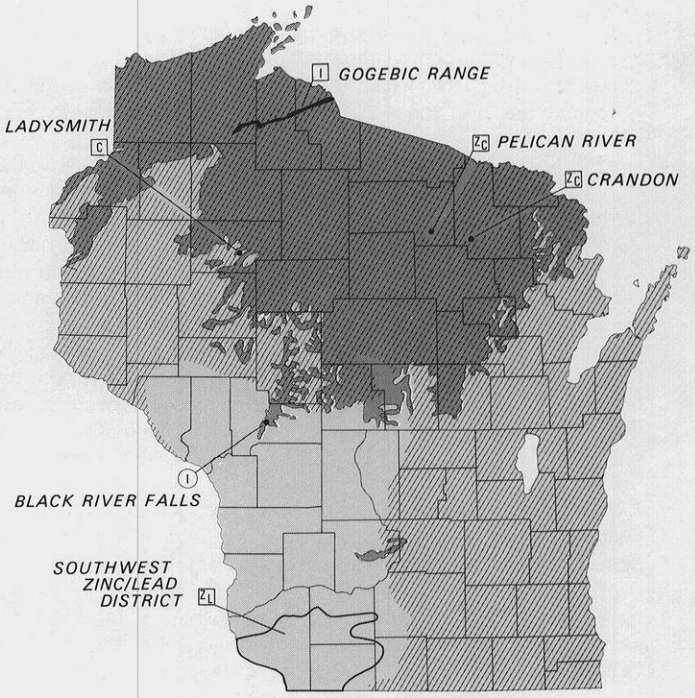


Fig. 4. General geology and principal mineral deposits in Wisconsin. The light shading represents areas of Paleozoic Age bedrock; the dark shading represents areas of Precambrian bedrock; the diagonal lines represent glacial deposits on top of older bedrock. ZL indicates zinc-lead mines, ZC zinc-copper, C copper, and I indicates iron (taconite).

Courtesy Department of Natural Resources

Fig. 5. Open-pit taconite mine near Black River Falls

The JCIC mine is an open-pit mine producing 23,000 tons of material per day of which 7,000 tons is iron ore (Fig. 5). The pit encompasses 140 acres and will eventually be 730 feet deep. Tailings from the ore-processing mill are disposed of in a 320-acre tailings basin. The operation will produce an average of 855,000 long tons of taconite pellets per year over the remaining nine-year life of the mine. More than 200 people are employed at the mine and mill.

The JCIC mine permit and reclamation plan were given final approval by Department of Natural Resources in spring 1981 after several years of delays caused primarily by new legislation and rule development at the state level. The mine's reserves will be depleted by 1990 with the years 1991 to 1995 scheduled for the completion of the site reclamation already underway (Fig. 6).

Flambeau deposit.—Kennecott Copper Corporation initiated geologic investigations in the Ladysmith area of Rusk County in the 1950s. In the mid-1960s, exploration intensified using modern geophysical equipment to aid in the identification of possible metal concentrations in the bedrock hidden beneath the drift left by the glaciers. In 1968 an exploratory drillhole intersected copper mineralization, and Kennecott initiated an expanded program of land acquisition and drilling evaluation. By late 1970, after some 110 drillholes were constructed, the discovery of the Flambeau massive-sulfide copper orebody was formally announced. Now began the work of mine design and mining permit acquisition for this 6-million ton, 4 percent copper orebody.

Over the next several years, in accordance with the state's environmental assessment programs, information was developed on the general Ladysmith area, the orebody, the proposed mine with its 55-acre open-pit design, and the impacts of mining pyrite-rich massive-sulfide ores and disposing of the mill's wastes. In June 1976 the environmental impact statement was determined to be adequate, opening the way for the mine permit hearing—the next step towards mine development. During the November 1976 mine permit hearing, the Rusk County Board of Supervisors, desiring a more equitable return to local governments of state mining tax revenues, voted to deny zoning approval for the mine. The permit hearing was suspended. Subsequently the permit application was dismissed.

Today, Kennecott appears ready once again to initiate mine development. The decision to proceed depends on the ultimate disposition of taxation, environmental laws, and administrative rules.

Pelican River deposit.—A massive-sulfide zinc-copper orebody in Oneida County was discovered by Noranda Exploration in 1974 and formally announced in 1975. This orebody averages 4.5 percent zinc and 1 percent copper, but is small at only 2.3 million tons. Noranda's plans for this deposit have been postponed pending the discovery of sufficient nearby metal reserves to warrant the investment in mine development and the resolution of legal challenges to the state's geologic disclosure law.

Crandon deposit.—In May 1976 Exxon Minerals Company, U.S.A. announced the discovery of a large massive-sulfide zinc-copper orebody south of Crandon in Forest County. As development drilling, encompassing over 200 drillholes, progressed over the next few years, the deposit defined by this drilling emerged as one of the largest such orebodies in North America, with reserves over 83 million tons. Exxon soon began its mine feasibility evaluation and submitted preliminary project descriptions to the Department of Natural Resources in 1980.

The orebody trends generally east-west for about 5000 feet, averages 125 feet wide, and extends nearly vertically into the earth for over 2000 feet, narrowing with depth. It averages 5 percent zinc, 1.1 percent copper, and 0.4 percent lead.

In 1977 the decision was made to develop this large orebody using underground mining techniques. Surface facilities at the mine-site will be the mill for ore-processing, the head frame for worker access and ore extraction, and other support offices and buildings. The most extensive surface feature will be the tailings basin(s) designed to accommodate 4,300 tons of tailings per day. Another 4,300 tons of waste material per day will be prepared and reintroduced into the workings as backfill for ground support and below-surface disposal. The design of the mill and all surface facilities are not final pending the continuing evaluation by the company and review of plans and options with

Fig. 6. Site reclamation at JCIC operation in Black River Falls has been initiated.

the Department of Natural Resources. The ultimate configuration of the tailings basin(s) also remains under evaluation and study.

Three concentrates—copper, zinc, lead—will be produced at the mill. Pyrite (iron sulfide) is the most extensive nonore mineral associated with the ore. The pyrite poses one of the more sensitive environmental concerns for the company and the state. The decision to separate pyrite from mill tailings to make a separate, pyrite-rich waste material is currently under review. The three concentrates, totaling about 14 percent of the mill production will be shipped out of Wisconsin for smelting and refining into metal products.

The proposed mine-mill complex will require approximately 900 workers at full production capacity. The socio-economic impact of the Crandon development has been the subject of investigation by Exxon, the communities, and regional planning groups in the area. As these studies progress, so do the project evaluations of the technical aspects of the project. The initial environmental impact report, submitted to the Department of Natural Resources, is expected by mid-1982.

The legislative response to mining

The prospect of a revitalized metallic mining industry in Wisconsin evoked a mixed response from state government during the 1970s. Hopes were raised for an economic boom in the northern part of the state and for a nearby source of metal to supply the numerous metal fabrication industries in the Milwaukee area. Yet these hopes seemed to run counter to a swelling environmental conciousness that stressed cautious development and championed other resources of the state such as its clean air, water, and extensive forests.

In 1967 the state legislature passed a tax for low-grade iron ores that attracted Inland Steel Company's investment in the Black River Falls taconite deposit. This legislation dropped the state's tax on iron concentrates by one-third, from $0.37 per ton to $0.25 per ton.

Following the reduction of iron taxes came Kennecott's exploration and discovery of the Flambeau deposit south of Ladysmith which coincided with the passage of the National Environmental Policy Act (NEPA) in 1969 and the Wisconsin Environmental Policy Act (WEPA) in 1971 (as amended in 1973). The 1973 legislature, having no tax on copper and faced with predictions of many more massive-sulfide deposits awaiting discovery in the north, responded with two bills: Chapter 283, providing for a 1.5 percent gross receipts tax on copper, and Chapter 318, a comprehensive metal-mine reclamation law that also authorized administrative rule to flesh out a regulatory framework to protect Wisconsin's environment from the impacts of metallic mining. Both of these statutes also provided the mandate for continuing legislative action in the areas of taxation and environmental protection.

The 1975 legislature wrestled with some tax proposals but did not pass any legislation in the metallic mining area. The 1977 legislature, however, fairly burst with mining legislation as it passed eight bills dealing with metallic mining. Recounting the legislative history of all of these bills is beyond the scope of this overview, but some further comments are appropriate.

The legislation in 1977 and 1978 revolved around the environment (Chapters 377 and 421), taxation (Chapters 31, 185, and 423), and mining company operations (Chapters 253, 420, and 422). The major actions included Chapter 31, which called for a net proceeds occupation tax on all metal mining to replace the previous gross receipts tax on copper. This revolutionary tax package imposed a steeply graduated tax structure on the proceeds accruing to a metal mining company, following the deductions of certain costs of operation.

Environmental protection was the focus of Chapters 421 and 377. Chapter 421 virtually rewrote the metallic mine reclamation bill passed just five years earlier. New rules were necessary as a result of this extensive revision. Thus, the regulatory framework for metal mining underwent wide-ranging change even before one operation had been fully reviewed under the previous framework. Chapter 377 concentrated on solid waste disposal and declared that mine wastes are to be treated as solid wastes, but because of their distinctive nature, they are to be treated differently, requiring separate administrative rules for their management.

Chapter 253 imposed a time limit on mineral exploration leases, provided for a 10-day cooling off period after signing a lease to allow a landowner to change his or her mind, and provided for full, public recordation of any conveyance of mineral rights. Another operation or activity of the mining company was regulated by Chapter 422 which provided for disclosure of selected geologic information acquired in metallic mineral exploration. This statute is currently being challenged in the courts on constitutional grounds.

The 1979 legislature was less active with respect to mining-related bills, but Chapter 353, Laws of 1979 established a new approach to the recovery of personal damages from injury stemming from mining or prospecting (bulk sampling) activities. Chapter 353 established the principle of strict liability for metallic mining operations, thus lowering the claimant's burden of showing negligence by the mining company. The statute also established a damage fund managed by the state from which persons can claim monetary damages (under conditions less rigorous than normally available in the courts) by using administrative procedures that are currently under development.

The passage of so many pieces of legislation in such a short period of time is testimony to the importance metallic mining holds for Wisconsin. Much of this legislation is the product of *consensus*—a process of bill drafting that encompasses the major parties from all points of view that are interested in the particular piece of legislation. (See article by James Derouin for full discussion of consenus.) Thus, bills drafted as a result of consensus strive to create laws and regulations that meet the objectives of most parties and carry a stamp of acceptance that smooths legislative review. The net proceeds tax (Chapter 31, Laws of 1977) is not a product of consensus and is today the central target for mining statutes revision.

The Wisconsin regulatory framework for metallic mining must be regarded as extensive and pervasive. Virtually all aspects of a company's operations are subject to state and federal regulation. At the core of state regulation is the zoning power of local government. Without local zoning approval *no* metallic mining operation can be granted a permit to proceed. Local zoning remains the "ultimate regulation," reflecting the importance the state of Wisconsin places on local initiative and control. In the midst of "much ado" about state regulation, it is important to remember that it is the local authority, the local citizenry, that has the final say on the future of any mining enterprise in Wisconsin.

The current issues

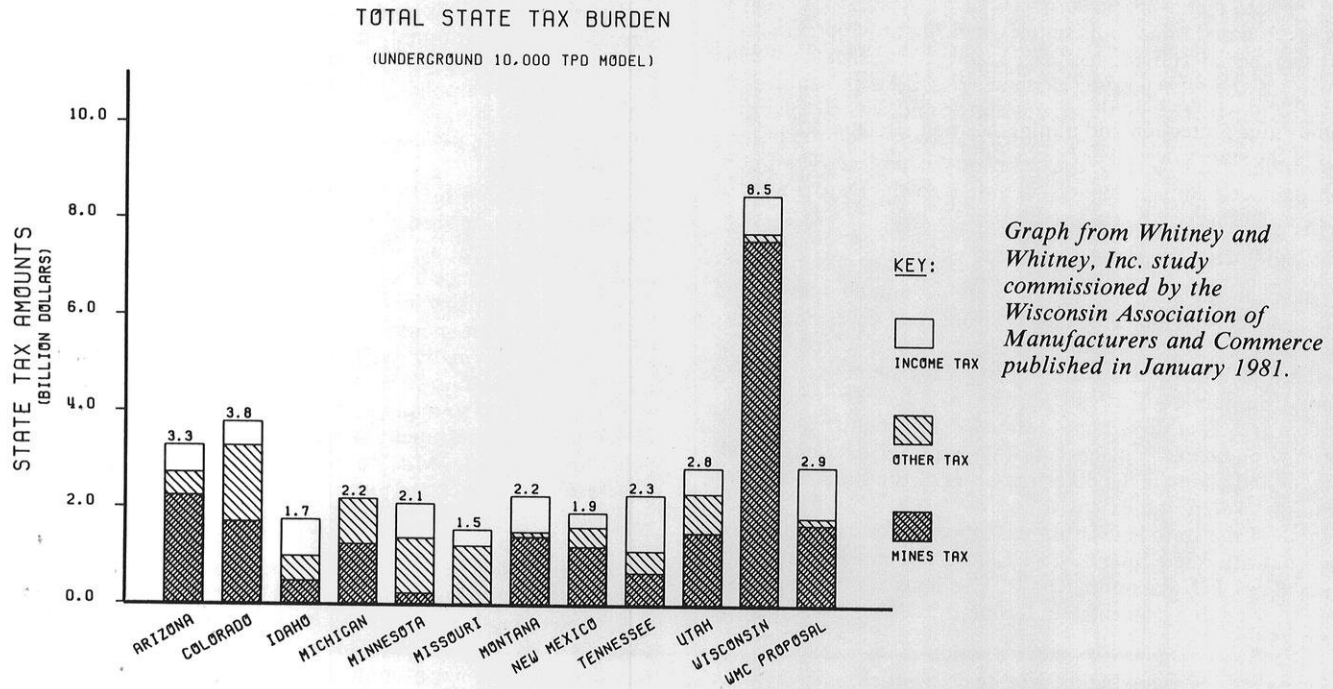
The regulatory framework is essentially in place for mining in Wisconsin. Important metallic mineral deposits are identified and development plans are in varying stages of preparation. Yet, important issues remain unsettled and the future of Wisconsin's metallic mining industry and the state's ability to accommodate mining in the context of today's environmental conciousness rests on the resolution of these issues. The two major issues are taxation of metallic mining operations and protection of the groundwater resource. Two minor issues that, in my opinion, still await resolution include mineral rights registration (or severed mineral rights) and radioactivity/uranium concerns as they apply both to waste management and mineral exploration.

Taxation.—Wisconsin's existing net proceeds occupation tax on metallic mining was not born out of a consensus process. Indeed, the development of Chapter 31, Laws of 1977 was marked by angry, even bitter feelings. A multitude of concerns—local return of tax revenues, equitable taxation of an activity which depletes a nonrenewable resource, avoidance of a wasteful practice of mineral extraction known as "high grading," planning assistance for communities impacted by mineral development, encouragement of smaller mining operations, and others—were incorporated into a tax package that was strongly opposed by mining interests for being excessive and even punitive.

In November 1980 the Wisconsin Association of Manufacturers and Commerce (WMC) proposed changing the existing tax. Their suggested modifications, formally published in January 1981 and now under review in the 1981 legislature, would (1) eliminate combined taxation of all mines owned by a single company, (2) use actual gross proceeds as a basis from which to determine tax liability instead of published prices in industry's trade journals, (3) expand allowable deductions in determining net proceeds from gross proceeds, (4) make several minor changes in wording and reference to dates, and (5) extensively revise the tax rates and income brackets. According to WMC, these changes would drop Wisconsin's total state taxes from the highest in the nation ($8.5 billion for a 10,000 ton per day underground metal mine similar to Exxon's Crandon project as compared to an average $2.4 billion for a similar mine in the other mining states examined) to third highest, following Arizona and Colorado (Fig. 7).

Opponents of tax revision at this time suggest (1) it's too soon to modify the tax because only about $9,000 has been collected under the tax since 1977 (Jackson County Iron Company's 1980 tax liability) and therefore the tax has not been shown to be burdensome, (2) economic viability of a mine is much more sensitive to market prices for metals than on total state tax liability, and (3) changes proposed will alter philosophical positions adopted by the legislature in 1977: for example, combined reporting and taxation should encourage several companies to mine deposits as opposed to mines being operated by only a few companies.

Fig. 7. Wisconsin taxation of metallic mining is compared to 10 major mining states. The WMC proposal has been introduced as Senate Bill 284 and Assembly Bill 268.



Graph from Whitney and Whitney, Inc. study commissioned by the Wisconsin Association of Manufacturers and Commerce published in January 1981.

It is likely that tax revisions will be made in 1981 or 1982. Wisconsin's total state tax burden on a metal mining operation is high, though how high is still a point of contention. Further, metal mining is treated differently than other Wisconsin corporations by the state's tax laws. Adjustments in the net proceeds tax that would lower potential tax liabilities would probably be viewed as a signal to mining companies that, although wanting mining on the state's own terms, Wisconsin does indeed want more mining operations within its boundaries. Just how strong such a signal needs to be may be an underlying, virtually unmentioned facet of the mining tax debate.

Groundwater protection.—Probably the "last frontier" remaining for environmental safeguards with respect to mining is the issue of groundwater protection. Mine waste disposal will be regulated in Wisconsin principally under NR 182, a chapter of the Wisconsin Administrative Code. These proposed administrative rules include a section on groundwater protection. Initial structuring of that provision by the Department of Natural Resources was based on the department's concept of "no detrimental effect." However, mining companies and major environmental interests both sought more definitive wording, standards, and enforcement procedures on this sensitive issue. Companies desired to know exactly what groundwater quality standards they must meet, and environmental interests desired to have specific measures by which compliance could be determined.

A version of NR 182 proposed in late 1980 by the DNR attempted to deal more explicitly with this issue by creating NR 105, an administrative rule detailing the department's policy with respect to groundwater quality standards for all activities (including mining) regulated by the department. This rule was not broadly accepted and revision of NR 105 is underway. In the meantime, an alternative groundwater protection provision specific to mining is included as part of another proposed NR 182. This provision and the rest of the proposed rule has been the subject of hearings this fall.

Though details of the new proposed policy are not finalized as of this writing, the DNR's approach to groundwater protection and mine waste disposal will likely more closely follow the provisions supported by mining companies, major environmental groups, and other interests that have been participating in a "consensus" effort to outline a mutually acceptable approach. The DNR, as the agency charged with the obligation to "protect, maintain and improve the quality of the waters of the state, ground and surface, public and private" (sec. 144.025, *Wisconsin Statutes*), will be the vehicle through which whatever groundwater protection rules are finally adopted will be administered. The way in which Wisconsin resolves the issue of groundwater protection and mining has now become the major focus of the state's overall environmental regulatory framework.

Mineral rights.—Severed mineral rights (mineral interests in a land parcel that have been separately conveyed from the surface thus creating two separate "estates" in a single parcel of land) have previously been addressed by the legislature. However, a 1973 law mandating registration of mineral rights, imposing a registration fee, and providing for reversion of severed mineral rights to the surface owner upon a failure to register the severed mineral interest was declared unconstitutional in November 1977 by the state Supreme Court. A subsequent law (Chapter 253, Laws of 1977) did provide for recordation of all mineral conveyances after April 25, 1978, but did not attempt to deal with registration of already existing severed mineral rights.

The Legislative Council Mining Committee has in the last two years examined means by which registration of severed mineral rights and the penalty of loss of these rights upon a failure to register could be incorporated into Wisconsin law. In the bill drafts prepared to date, reversion of severed mineral rights to the surface owner has not been included, following in part the reasoning in the Supreme Court's decisions on the previous law. Thus, the issue of severed mineral rights remains unresolved in the view of some legislators and their constituents. Future legislation on this is probable.

Uranium exploration.—Exploration (drilling, by legal definition in Wisconsin, is exploration) for uranium mineral deposits has occurred in Wisconsin during the last few years. Concern has been expressed regarding safety of such activity for persons engaged in drilling and for members of the public near the sites being explored. A Legislative Council Mining Committee subcommittee on uranium exploration safety was created in April 1980 to investigate the issues raised about uranium exploration. The subcommittee has not reached any final conclusions but did mandate an intensive monitoring program on uranium drillholes in southern Florence County. Preliminary results of the monitoring program show that no radioactivity releases beyond natural background levels were observed, but no uranium of any apparent significance was encountered in the course of the drilling on the two sites monitored.

Little general information on uranium exploration and radioactivity releases exists, but what information is available fails to indicate definitively any problem. However, questions remain in the minds of several concerned legislators and individuals, and the resolution of these questions is still forthcoming. No uranium exploration is underway in Wisconsin at the present time (fall 1981).

In addition to uranium exploration, radioactive materials in mine wastes from any metallic mining in Wisconsin is currently the subject of rule development underway in the Department of Natural Resources. These rules are being coordinated with the Department of Health and Social Services and the Radiation Protection Council, which has the statutory authority to deal with radioactivity issues in the state.

Summary

Wisconsin has a long history of metal mining. This mining heritage has played a major role in the settlement of the state but today continues with only one active metal mine—the open-pit taconite mine near Black River Falls. The recent discoveries of massive-sulfide metal deposits in northern Wisconsin suggest that the state once again faces the prospect of a significant metal mining industry—an industry that can be an important contributor both to local economies and to the state's general economic well-being.

In accordance with Wisconsin's long tradition of environmental awareness and a commitment to preserve the high quality of the natural environment in which its citizens live, work, and play, the state of Wisconsin has constructed an extensive regulatory framework to accommodate the impacts an expanded mining industry portends. Yet, several issues remain to be resolved, namely the manner in which groundwater quality can be protected and preserved and the manner in which the state, through its taxation of metallic mining operations, can provide for the full enjoyment of the benefits of mining and the minimization of any adverse impacts.

The struggle to balance the interests of all the citizens of the state is truly the "struggle of stewardship." The issues that have been addressed over the last years and the issues that remain comprise the means by which Wisconsin will determine how it can best manage the state's endowment of natural resources.

Editors's note: Assembly substitute amendment 2 to AB 800, sometimes called the omnibus mining bill, passed the Wisconsin Assembly on October 27 on a vote of 95 to 2 and the Wisconsin Senate on October 30 on a vote of 30 to 3. This was essentially the environmental package put together by the consensus group with some minor changes together with a tax revision measure which was a compromise between the Wisconsin Association of Manufacturers and Commerce proposal and the existing tax rate structure. This bill did not cover mineral rights or uranium exploration. Govenor Dreyfus is expected to sign the bill into law.□

Editor's Note

In this December *Review* we planned to take a controversial issue and hear all sides of the debate. We invited the most qualified spokesmen for each perspective to contribute an article and gave them two instructions: act as an advocate for the position you represent rather than attempting a balanced or objective presentation, and assume the reader is discerning, intelligent, and capable of drawing conclusions when given adequate information. Those persons we invited last May to contribute articles graciously consented. The puzzle pieces were intricate and each was necessary.

Robert Russell, manager of Exxon Mineral Company's Crandon Project (the state's largest mining venture) agreed to present the industry perspective. He submitted a 17-page manuscript offering a candid view of the preliminary details of Exxon's project. Shortly after this manuscript came in, Mr. Russell withdrew it and supplied a document revised by reviewers from Exxon Mineral's management. On November 4, less than two weeks before our deadline for going to press, Mr. Russell again telephoned: higher echelons of Exxon management had demanded that the manuscript be withdrawn because "it did not accord with their image of the corporation." Even at that late date, Mr. Russell expressed hope that their public relations department in New York could draft a document acceptable to management which would fulfill his commitment to defend and explain Exxon's policies to the people of Wisconsin who would be affected by it. Two more deadlines were set and missed by Wiley Bragg, manager of public affairs for Exxon Minerals Company; he finally announced, with apologies, that the company public relations staff could not produce a manuscript outlining the Crandon Project which was acceptable to the management of Exxon Oil Corporation before the *Review* went to press.

It was a great disappointment to us that we were not permitted to publish Mr. Russell's original document, which was in style, tone, and information the perfect piece to complete the puzzle. The only alternative left to us by Exxon's announcement one week before press deadline was to piece together from public documents an account of the current status of mining by Exxon Minerals Company, Jackson County Iron Company, Kennecott Corporation, and Noranda Exploration, Inc. While this is not the industry perspective we had hoped to have, it should provide the factual basis of new metal mining in Wisconsin, so that our readers can see what the controversy is all about.

—Patricia Powell

Exxon Minerals Company: Crandon Deposit

In the course of exploration for base metal deposits in northern Wisconsin, an aerial electromagnetic anomaly was found near Crandon in Forest County during 1974. Exxon began drilling this anomaly in the summer of 1975. The first diamond drill hole returned significant mineralization containing zinc and copper. From 1975 until 1978, about 200 diamond drill holes were completed, some as deep as 760 meters (2500 feet). The east-west striking deposit occurs in Section 25, Township 35 North, Range 12 East, and in Section 30, Township 35 North, Range 13 East.

The deposit is about 1520 meters (5,000 feet) long, dips approximately 80 degrees north to vertical, and averages about 38 meters (125 feet) wide and 720 meters (2,330 feet) beneath the surface. Current estimates of the probable tonnage and grade of the deposit are 75 million metric tons (83 million tons) that average 5.0 percent zinc, 1.1 percent copper, 0.4 percent lead, 38 grams per ton of silver (1.1 ounces per ton), and 1 gram of gold per ton (0.03 ounces per ton). This estimate, based on 200 drill holes, is subject to future updating as new geological data become available.

Current tonnage estimates indicate that the orebody can sustain a 30-year plus mine operation at an annual production rate of 3.2 million metric tons (3.5 million tons). Mine construction and initial production will add another four to six years to the anticipated total life of the operation. Ore would be mined underground and hoisted to the surface at a daily rate of approximately 14,000 tons five days a week. Processing of the ore will occur in the mill with a capacity of 10,000 tons per day. The mill would maintain a 24-hour, seven day a week schedule. Zinc, copper, and lead concentrates will be produced and shipped for smelting and refining.

The mining method will be sublevel blasthole open stoping with delayed backfilling, utilizing mill tailings as the backfill material. This method involves the simultaneous development and operation of several vertical stope blocks of ore between mine levels. The ore will be blasted using large diameter blastholes 150 millimeter (6 inch), such that the broken rock can be extracted from openings at the base of each stope. Ore-handling vehicles will transport the blasted rock to strategically located ore passes, feeding a common electric rail haulage network. The electric rail haulage system will be utilized to collect ore for delivery to coarse ore bins. The ore will be directly fed from these bins into a gyratory crusher, and following crushing, the ore will be hoisted to the surface.

The mine/mill surface facilities include those required on the surface for support of the underground mine; those for handling, storing, and crushing the ores on the surface; and the concentrator where the minerals will be separated from the ores to produce concentrates. All of the surface and ancillary facilities, with exception of the railroad spur and the access road will require an area of about 100 acres. About one third of this area will be covered by buildings, roadways, parking lots, and other installations.

A concentrator is a facility in which ore is separated into concentrates and tailings. Concentrates are the valuable minerals found in the ore, and tailings are the materials rejected after the valuable minerals have been recovered. In order to produce concentrates, it is necessary to liberate the various minerals from the host rock and from each other and to separate and recover these valuable minerals. Liberation will be achieved by crushing and grinding the ore to a size at which the valuable minerals will be discrete particles which can be separated from each other.

The sulfide mineral particles will be separated from the ore slurry by a selective flotation process, in which specific sulfide mineral particles can be made to adhere to air bubbles, or to float to the

Aerial view of Exxon's drill sites at Crandon

Wisconsin's Principal Metal Deposits

(As Described In Public Documents and Announcements from the Companies)

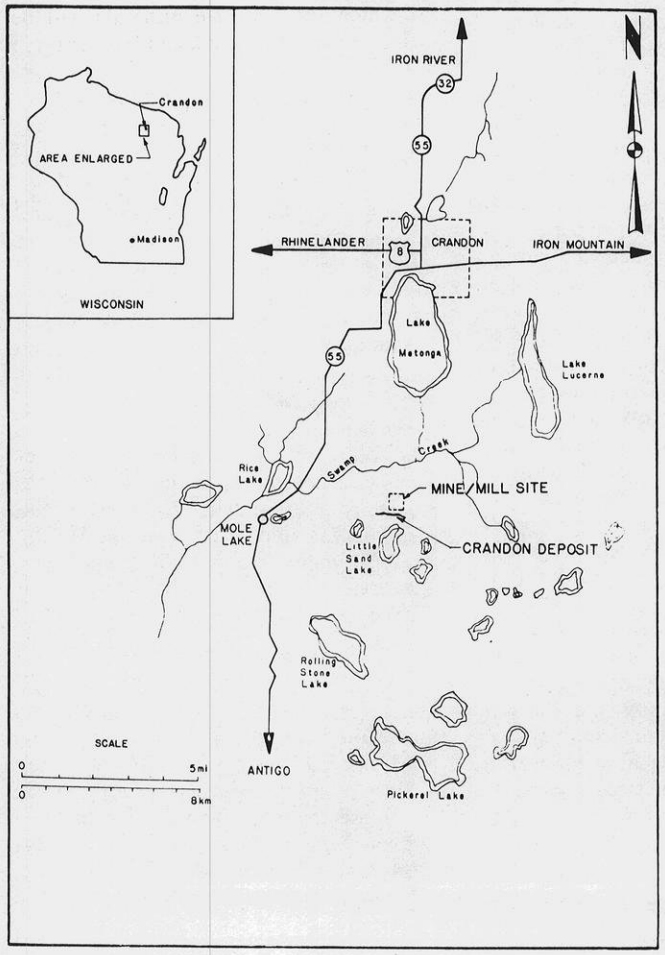
surface of the slurry and form a froth which collects on top of the water, or to remain in the slurry. By the use of various reagents, the mineral may be made either to adhere to an air bubble or to remain in the water. The use of these chemical reagents permits the separation and recovery of the zinc, copper, and lead sulfides from the gangue (worthless) minerals.

In addition to the three metal concentrates, the concentrator produces mine backfill and tailings. The general distribution of materials overall is 14 percent concentrates, 43 percent backfill sands, and 43 percent tailings. With regard to backfill and tailings there are two options. One is to separate pyrite by flotation and to optimize the amount of pyrite returned to backfill, while at the same time providing separate tailings disposal for sulfide and nonsulfide tailings. Also considered is simple tailings disposal, that is, disposal of sulfide and nonsulfide minus 30-micron material in the same facility.

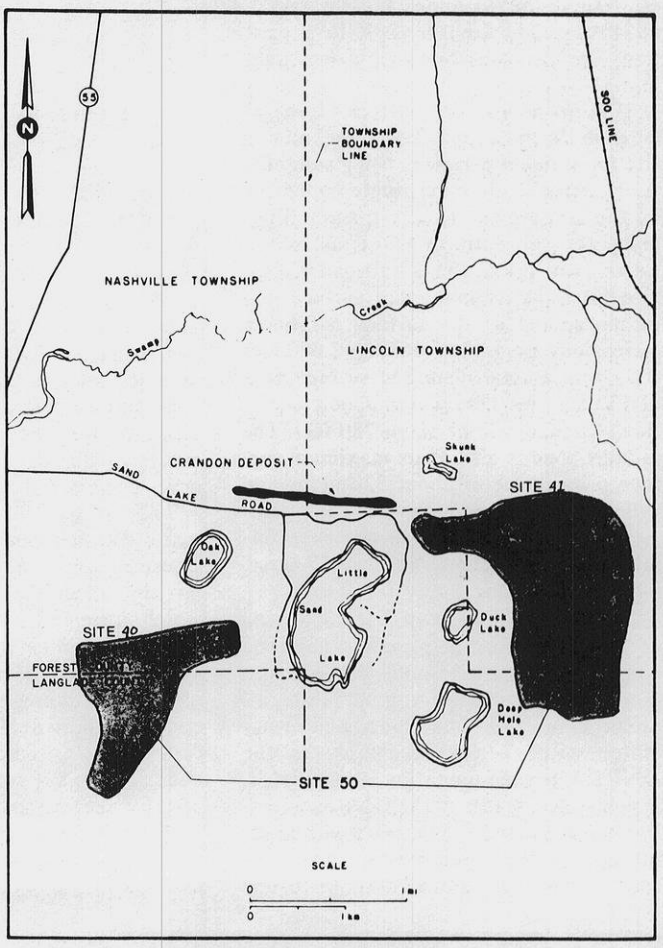
The primary function of the waste disposal facilities will be to provide an area for safe surface disposal of the waste materials generated directly from the mining and processing of the ore and for the treatment of water. The waste disposal facilities will also serve as a water retention, reclaim, and recycle system. As a result of siting studies, three potential disposal sites were identified for further detailed study and evaluation. The waste disposal facilities will be a complex system of contiguous ponds which will allow for separate disposal of the various materials generated by the mine, mill, and water treatment plant.

—Information excerpted from *Preliminary Project Description: Crandon Project* (October 1980); *Skillings' Mining Review*, July 4, 1981, article by Robert L. Russell; and ore grade values from "Geology Study and Study Methods," a draft report submitted by Exxon to the Wisconsin Department of Natural Resources.

Geographic location of the Crandon Project and ore deposit.



A map of the area around the Crandon ore deposit showing the general location of three waste disposal sites being considered. Site 50 incorporates in large part the other two sites being considered.



Jackson County Iron Company: Black River Falls Mine

(Editor's Note: the following description of this mine, Wisconsin's only active metal mine, is taken from the Environmental Impact Assessment Screening Worksheet prepared by Gordon H. Reinke, chief of the Mine Reclamation Branch, Wisconsin Department of Natural Resources in November 1980. The mine started taconite production in 1969. Jackson County Iron Company is a wholly owned subsidiary of Inland Steel Co.)

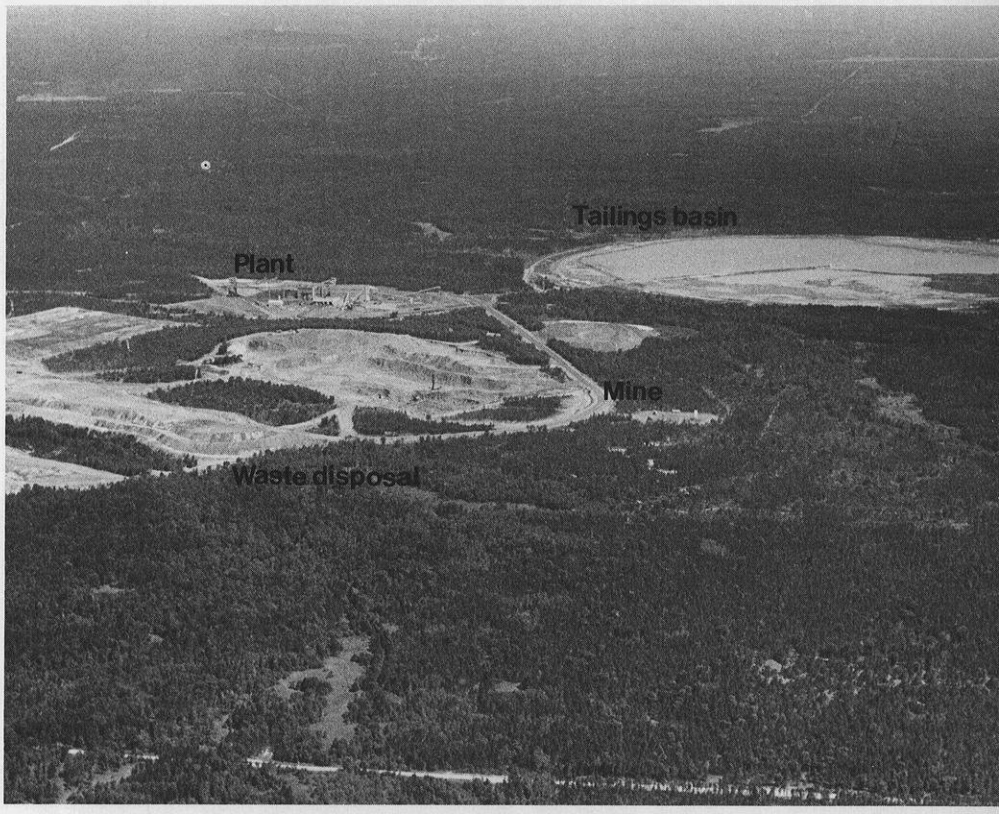
The Black River Falls Mine comprises an open pit taconite (low grade iron ore) mine which produces about 6,850 tons of ore and 16,650 tons of waste per day and an adjacent magnetic concentrator which processes the ore into taconite pellets (of about 65 percent iron) and finely ground waste (tailings). The concentrator produces about 2,400 tons of taconite pellets per day which are shipped daily by rail from the concentrator site to the Inland Steel Company's (JCIC's parent company) blast furnaces at their Indiana Harbor Works, East Chicago, Indiana, usually 28-32 cars daily. Estimated crude ore reserves at the mine as of January 1, 1981, are 22,884,000 tons. JCIC projections are that this ore should last until mid-1990.

JCIC owns and/or controls 12,868.65 acres in the mine area. The actual mining site for which a permit is being sought is 1,235 acres. Major existing components on the site are the open pit, the tailings pond, the concentrator plant and office, waste rock piles, and a railroad siding. The pit is at its maximum surface disturbance, and at the surface maximum dimensions are 4,000 feet long, 2,000 feet wide with a total disturbed surface area of 139.5 acres. Total depth upon completion of mining will be about 730 feet. The tailings pond is also at its maximum surface disturbance of about 320 acres and will be about 62 feet high when completed. Acreage of the waste rock pile is as follows: No. 1 = 81 acres, No. 2 = 257 acres, No. 3 = 49 acres.

The reclamation plan accompanying the permit application proposes that upon completion of mining, and to the extent possible during the mining operation, all disturbed areas will be graded and revegetated with species acceptable to the DNR. When the operation is completed, if no use acceptable to the DNR is found, the buildings and foundations will be removed, and the building site, roads, railroad right-of-way, and all other disturbed areas will be revegetated. All settling and seepage ponds will be filled with waste rock, graded, and revegetated. Revegetation of the waste rock piles and tailings pound, which is ongoing, will be completed. Unconsolidated upper portions of the pit walls will be graded and revegetated, and the pit itself will be allowed to fill with water. Ultimate use of the area, as long as it remains under JCIC ownership, is for wildlife habitat and light recreational use, with the pit lake completely fenced and access to it denied. However, the pit will be reclaimed in such a manner that future recreational use by other owners will not be precluded.

The pit will fill to a point approximately 60 feet below the general ground surface. Water quality of the pit will largely reflect that of the groundwater which in general is of higher quality than the surface waters because it has not been affected by the decaying organic matter of the surrounding swampy area. The east end of the pit will be graded so that some future owner would be able to provide boat access if it was desired to use the lake for recreational purposes.

In 1981, the company will employ 319 workers with an annual payroll of $8,000,000 plus $3,000,000 fringe benefits.



Aerial photograph of Black River Falls Mine and related facilities, Jackson County, Wisconsin.

Kennecott Copper Corporation: Flambeau Deposit

(Editor's Note: This deposit was discovered in 1968 just south of Ladysmith, Rusk County, Wisconsin. Averaging about 4 percent copper over reserves estimated at 6 million tons, this deposit was proposed for development in the mid-1970s. The hearing on the mining permit application in November 1976 was suspended and eventually all permit applications were dropped. Plans to develop the Flambeau deposit are still pending, however. The following fact summary of the previously proposed mine development is taken from *Volume 1, Preliminary Environmental Impact Report for Mining the Flambeau Copper Deposit, Rusk County, Wisconsin*, p. II-2 and II-3, 1974.)

Fact Summary

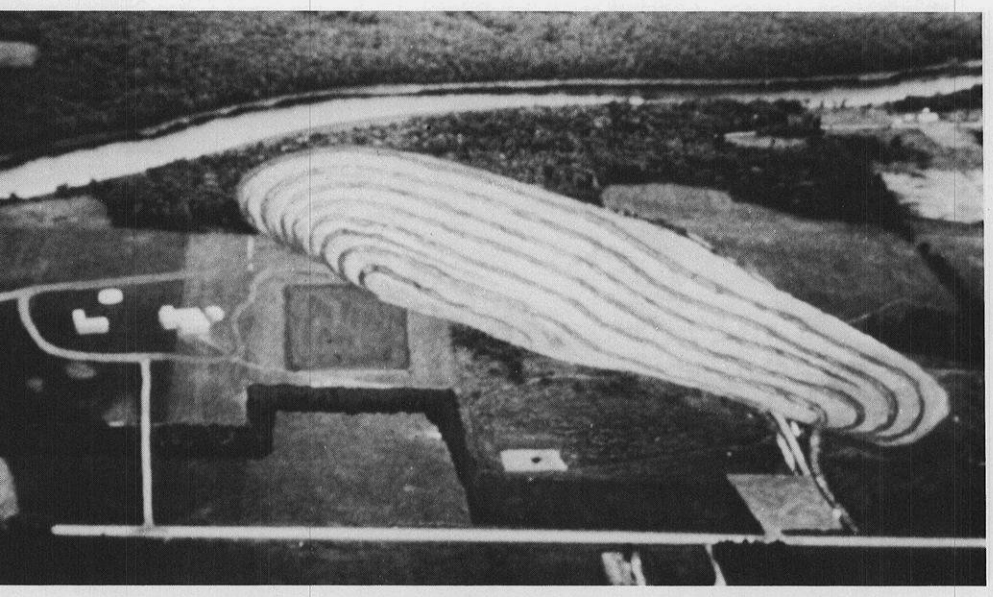
These are the essentials of the mining operation being considered:

- Mining method: Open pit followed possibly by an underground operation.
- Deposit description: A steeply inclined massive/semimassive sulfide deposit, averaging 50 feet wide, 2,400 feet long, bottoming at 800 feet below surface.

- Nominal open pit size: Area of opening at surface: 55 acres. Depth: 285 feet. Pit wall slope angle: 35 degrees. (Economic and rock structural conditions could positively or negatively affect the area, depth, and shape of the open pit.)
- Open pit location: 1.6 miles south of the junction of U.S. Highway 8 and State Highway 27 on State Highway 27, thence west 0.3 miles on a private gravel road to the geographic center of the open pit; west edge is 300 feet east of the Flambeau River; east edge is 400 feet west of State Highway 27.
- Concentrating processes: Crushing, grinding, flotation, and dewatering.
- Average Production rate:
  Ore: 1,000 tons per day (tpd) taken from open pit.
  Waste rock: 4,120 tons per day (tpd) taken from open pit and trucked to waste containment area.
- Ore becomes:
  Concentrate (average daily production): 160 tpd (average) shipped out of state for smelting.
  Tailings:
  Amount: 840 dry tpd (average) piped as a slurry to waste containment area.
  Note: Eleven years will generate 2,617,000 tons (dry weight) of tailings. Composition: Approximate proportions would be 50 percent to 70 percent quartz, mica, and clays, and 30 percent to 50 percent iron sulfide (pyrite).
- Copper recovery from ore: 86 to 89 percent depending on ore type.
- Waste containment area:
  Size of area: 186 acres including dike.
  Location: Adjacent to and south of County Highway P west of State Highway 27.
  Dike dimensions: 56 feet high, 80 feet wide at top, 363 feet wide at bottom.
- Land use: The mining venture will require the acquisition of 2,603 acres, used as follows:

	Acres
Mining	
Open pit copper mine	55
Gravel from Rusk County pit	10
Gravel from new pit (contingent)	30
Plant	3
Haulage facilities	
Haul road and pipeline	16
Rail siding and spurline	13
Waste containment area including dikes	186
Soil stockpile	36
Total Industrial	349
Visual and noise screens	2,254
TOTAL	2,603

- Life of operation: Open pit: 11 years; followed possibly by underground for an additional 11 years.
- Work force:
  Construction phase: Average 102 men; peak 220 men.
  Production phase: 28 salaried employees; 50 hourly rated employees.



Kennecott artist's conception of the open pit mine at the Flambeau deposit, superimposed on the aerial photograph of the area showing Flambeau River at top.

Noranda Exploration, Inc.: Pelican River Deposit

(Editor's Note: The following statement was submitted by C.H. Brehaut, manager for Mine Evaluation and Development, Noranda Exploration Company, Limited to the Joint Survey Committee on Tax Exemptions (Wisconsin Legislature) on April 6, 1977. This statement is believed to be still applicable today to the Pelican River deposit. Noranda has continued its exploration efforts in this and nearby areas since this 1977 status report. This deposit is located in Section 29, Township 36 North, Range 10 East, which is about seven miles southeast of Rhinelander in Oneida County.)

"Noranda Exploration, Inc., with its headquarters in Denver, Colorado, is a wholly owned exploration subsidiary of Noranda Mines Limited of Toronto, Ontario, Canada. We have in the past six years maintained a district office in Wisconsin; first in Wausau and later in Rhinelander. In 1972, we entered into an exploration agreement with Consolidated Papers, of Wisconsin Rapids, Wisconsin, to explore their properties for possible mineral deposits. In addition to exploration on Consolidated Papers' grounds, we have exploration agreements with numerous private individuals in several counties. To the end of this year, Noranda will have expended in excess of $3.5 million on exploration in your state.

"In 1974 we announced the discovery of a small zinc/copper mineral deposit on the Pelican River, east of Rhinelander, in Oneida County on land held by Consolidated Papers. The total deposit consists of 2.2 million tons at an average grade of 1 percent copper and 4.5 percent zinc. Work on this program started with an airborne survey in 1973 followed by the drilling of 68 diamond drill holes to define the deposit beginning in 1974. The cost of the complete program to date has been $660,000.

A study conducted in 1975 indicated that the Pelican deposit did not appear to be economically feasible. In this analysis, only the zinc zone containing 1.3 million tons was considered, as the low grade and low metal recoveries in the 900,000 ton copper zone indicated that this material could not even pay for its operating costs. Technical studies were continued in 1976 with the result that better metal recoveries have been shown to be possible and a higher grade section of 385,000 tons in the copper zone can be mined at an operating profit. This has now improved the profit position, but it is still not good enough to justify a concentrated effort to try to get the deposit into production." □

Mining and the Environment
An Appeal for Perspective

Meredith E. Ostrom
Director
Wisconsin Geological and Natural History Survey

"Very strong emphasis should be given to adoption of policies which will assure the nation the fulfillment of its priority requirements."

Mining is the process of extracting useful and valuable minerals from the earth. Each of us requires on the average over 40,000 pounds of mineral material each year to satisfy our needs. In response to technology and population increase, the overall requirements and consumption per capita will increase. The unavoidable environmental implication is that there will be more mining.

Before discussing the kinds of environmental impacts that are associated with mining, however, it is appropriate to devote at least a few comments to the role of minerals in our lives. Mineral resources are essential to the security, economic health, and social welfare of our nation. We are heavily dependent on a continuing and increasing supply of minerals. It should be noted that our nation is not self-sufficient in producing the minerals it requires. Of the approximately 95 mineral commodities we require, there are very limited to no domestic sources for 11, and we import over one half of our requirements for more than 25. In 1978 the United States imported the following percentages of some of the more familiar minerals: 42 percent of petroleum requirements (over 50 percent in 1979); 98 percent of manganese; 97 percent of cobalt; 93 percent of aluminum; 92 percent of chromium; 91 percent of platinum; 84 percent of asbestos; 81 percent of tin; 77 percent of nickel; 62 percent of zinc; 57 percent of mercury; 54 percent of gold; and 50 percent of tungsten.

In the past 15 years our national consumption of a group of key metals including aluminum, chromium, copper, manganese, nickel, zinc, titanium, tungsten, vanadium, and several others has steadily increased while our production has remained static. Demand for these materials over this period has increased from 3.5 times the amount of domestic production to 6.5 times domestic production. The difference in the amount produced and the amount consumed is provided from foreign sources. The marked increase in foreign dependence is clear indication that our nation has sacrificed domestic production, processing, and fabricating facilities, technology, jobs, and tax base to foreign competitors and we have seriously and adversely affected our balance of payment deficit. Anyone who doubts the significance of being dependent on foreign markets for mineral supplies has only to be reminded of the impact of recently decreased foreign petroleum supplies on our economy.

For some mineral commodities we have no or only limited domestic access and, thus, must rely on foreign sources. However, for others our nation has or may have adequate domestic resources. I say may have because in many cases we do not allow access to potential mineral-bearing lands for purposes of exploration and mineral extraction. In addition, we lack the processing capacity to convert ore into metal in quantities sufficient to satisfy our demand. A major reason given for limiting access to land and for developing adequate processing capability is environmental concern. Thus, it should be apparent that a principal challenge to our nation is the adoption of policies which will provide for a healthy domestic mineral industry consistent with reasonable environmental goals to the exclusion of neither.

Mining and other human activities which involve resource use and removal tend to disrupt the environment. However, in contrast to other natural resources the natural characteristics of mineral deposits tend to impose more constraining limitations on the location, extent, and character of mining and mining-related activities. Thus, environmental

impacts from mining tend to be more localized and fewer in number than impacts caused by other uses such as agriculture, construction siting, and utility routing.

For example, the amount of Wisconsin land disturbed for mining purposes in all time previous to July 1, 1977, was 85,500 acres which is 0.24 percent of the state's total land area. Of this amount approximately one third is either reclaimed or is in process of being mined. However, in any one year at the current level of mining activity the amount of land used for mining purposes is estimated at 0.0048 percent. By way of contrast the environmental impact from agricultural cultivation is the annual plowing of 16 percent of the state's land surface or over 5.5 million acres from which we lose on the average over 4 tons of soil per acre to adjacent lands, streams, lakes, and wetlands. In addition, the amount of Wisconsin's land surface committed to roadways plus municipalities is 4.0 percent. Thus, mining activity has affected a comparatively small proportion of Wisconsin's land surface.

In order to gain a perspective on mining in relationship to the environment, it is important to understand mineral deposits. A mineral deposit is a naturally occurring concentration of useful minerals which can be mined, processed, and sold at a reasonable profit under existing technological, economic, social, environmental, and political conditions. They are a nonrenewable resource, thus, once removed they cannot be replaced.

Mineral deposits as a group tend to vary in size, shape, and ore grade and in the character and composition of associated rocks. Natural characteristics of mineral deposits provide insight to the location, extent, and kind of mining activity, to the future potential for mining, and, thus, to the potential for environmental conflict. These characteristics are:

1) Rarity
2) Fixed location
3) Fixed size and shape
4) Fixed grade of ore
5) Amount and composition of associated rocks.

Rarity. Mineral deposits are extremely rare and are difficult to locate, due to the geologic factors responsible for their formation. It is likely that less than one percent of the land surface is underlain by mineral deposits. Thus, it can be expected that the potential for environmental impact will be of the same order of magnitude.

Fixed Location. The location of mineral deposits is fixed by geologic events of the past. Thus, minerals must be mined where they occur. The environmental implication is that the location of a mineral deposit may coincide with the location of some other natural resource such as a wetland or a prime agricultural area or even a city. The coincidence of two or more desirable natural resources can lead directly to conflict over land use which requires that a decision be made on the basis or ranking of priorities such as, for example, national importance.

Fixed Size and Shape. The size and shape of each mineral deposit is also fixed by past geologic events. Size and shape tend to dictate the size of the mine, the amount of ore and of waste, and the methods used for mining. Thus, size and shape of a mineral deposit, and the mining method, directly affect the extent of environmental disturbance at the minesite.

Fixed Grade of Ore. Individual mineral deposits have a fixed ore grade which is determined from an overall average of the deposit. The decision of whether to mine and what to mine is a function of profitability, i.e., as costs rise profits tend to decrease unless there is a corresponding increase in prices. Thus, as costs rise with little or no increase in price, or with uncertain prices as determined in the international market, the miner is forced to mine only the higher grade ores, i.e., those ores which he is certain will yield a profit. The effect of increasing mining costs is to reduce the amount of mineable ore in a deposit which is referred to as "high grading."

Often useful but marginal ore is left behind and never recovered because it is unprofitable and because of the high cost for restarting. The net effect is that the marginal ore is either permanently lost to use or it is left to be extracted during a future mining episode and a second environmental disturbance. Typical costs which affect decisions on whether or not to mine relate to environmental protection, land purchase and rental, royalties, taxes, wages, equipment purchase and maintenance, and others.

Amount and Composition of Associated Rocks. The amount of and composition of rocks associated with mineral deposits, i.e., rocks which occur in the ore but are considered waste as well as rocks not a part of the ore body, commonly vary for individual deposits and between different deposits. The amount of waste can range from less than 5 percent to as high as 90 percent.

In addition, depending on its mineralogical composition, the waste may pose chemical problems to the environment. Thus, the environmental implications are that provisions must be made for handling waste in an environmentally acceptable manner.

What should be obvious from the foregoing brief comments is that:

—Mining is essential to provide our society the mineral materials it requires to assure the national security and to maintain our economic health and general welfare.
—We have no options other than mining minerals where they occur.
—Therefore, conflicts will occur over land and resource use: there *will be* environmental conflict.

It should be equally obvious that we must set our priorities based on a reasonable assessment from a reasonable perspective. A reasonable assessment is that mineral resources are key to the security, economic health, and general welfare of our nation. When we play the priority-setting game it is implicit that it be done from a reasonable perspective of national needs. For example, one could use environment, prime agricultural lands, wetlands, mineral resources, or any of several other resources. In setting priorities between these resources, we are faced with making choices or trade-offs based on information available to us and on our perspective of values. The value and, thus, the priority ranking of these resources depends on how we measure value, for by whatever measure we use, value and priority are established on the basis of comparison. In the national interest such comparison should yield a priority rating which reflects our perception of national importance.

I am concerned that as we proceed with the setting of resource and environmental priorities, as we have done for example with the passage of legislation to protect the environment and to preserve prime agricultural lands and a pending bill to protect wetlands, that we consider these actions in the full light of an evaluation process built on a perspective of material needs, national security, economic health, environmental awareness, and social benefit. This is not to say that mining should proceed without concern for other resource and environmental factors. It is to say rather that very strong emphasis should be given to adoption of policies which will assure the nation the fulfillment of its priority requirements: policies that will provide our national mineral requirements as well as satisfy our other resource, environmental, economic, social, and security goals in proportion to their national importance.

Statement to Mining Conference sponsored by Wisconsin Manufacturers & Commerce, December 3, 1979, Stevens Point, WI. Printed in UIR/RESEARCH NEWSLETTER, Vol. 14, No. 2, Spring 1980.

What is consensus? A negotiating process by which people reach solutions to mutual problems, the democratic legislative system the way it was meant to work.

The Wisconsin Model

A Consensus Approach to the Resolution of Environmental Issues

By James G. Derouin
Environmental Consultant
Wisconsin Association of Manufacturers and Commerce

The political and legal process of "consensus" for resolving major environmental policy issues in Wisconsin is rather unusual. This process has been used successfully during the past several years to negotiate mining related legislation and rules among industry, local units of government, and various environmental groups. This process is not unique to mining. However, because mining is so publicized, the process by which diverse parties have resolved their environmental differences in Wisconsin on these issues has drawn considerable attention—both state and national—particularly because of the complex and oftentimes emotional nature of the issues involved.

Before talking specifically about mining issues, I should point out that the consensus process is not a revolutionary idea. In Wisconsin, in fact, it is traditional—even if not always diligently followed. For example, since unemployment compensation was enacted in Wisconsin, and we were the first state to enact such legislation more than four decades ago, only once has there been an amendment to that law that was not an "agreed" bill between business and labor. Another example of consensus is the charge of the University of Wisconsin to "sift and winnow" from among competing and alternative opinions to arrive at the best solution to a given problem. In the environmental era, there has been no environmental law enacted in Wisconsin since 1973 that has not been the result of negotiations and that has not been "agreed" legislation, between business, environmental groups, and the Department of Natural Resources. The results of this process include:

- the creation of the Wisconsin Clean Water Act in 1973 and its rewrite in 1980;
- the creation of the Wisconsin Solid Waste Recycling Authority in 1975;
- the enactment of the Polychlorinated Biphenyl Act in 1976;
- the rewriting of the Metallic Mining Reclamation Act and companion environmental legislation in 1978;
- the rewriting of the Solid Waste Act in 1978; and
- the rewriting of the Clean Air Act in 1979 and 1980.

The significant fact about the above legislation is that it has been excellent environmental legislation, but it is also balanced, generally understandable—at least by lawyers' standards, and livable legislation.

Where did the impetus for the consensus movement with respect to environmental legislation in the 1970s come from? I can only speak for the business community because, when I worked on all of this legislation, I was under instructions from two clients—the Wisconsin Association of Manufacturers and Commerce (the trade association for business and industry in Wisconsin) and the Wisconsin Paper Council (the trade association for the pulp and paper industry in Wisconsin)—to seek livable legislation. The mandate was not to block legislation unless balanced and fair legislation could not be obtained. Lest one think that this legislation was inconsequential to Wisconsin industry, I should note that the investment required for the pulp and paper industry alone in Wisconsin as a result of this legislation has to date exceeded $400 million. This investment, however, significantly improved air and water quality throughout "paper country." As a result of this attitude on the part of the business community in Wisconsin, the legislature and the environmental movement reciprocated with a

reasoned approach to environmental issues. Further, the leadership of a few select legislators was indispensable—people who viewed environmental protection as a group venture rather than as a negative adversarial or partisan process.

The consensus process—some observations

What is consensus? I define it as a negotiating process by which people reach solutions to mutual problems. It's the democratic legislative system the way it was meant to work. Is it worth, however, being involved in this process and, if so, why? As a lawyer, if I acted only in my self-interest, I would say that I didn't care. As the ad on TV says: "You can pay me now or pay me later." You can pay counsel now to practice preventive law and attempt to resolve conflicts ahead of time or you can pay counsel later when the case gets litigated or fought out to the bitter end in the legislature because there was no willingness to negotiate along the way.

Simply put, he who thinks that litigation or a bitter fight in the legislature is cheaper and quicker and will produce a better result is badly misleading himself. The attorney who thinks that the only role he should play is to demean, befuddle, confuse, and confound the person sitting on the opposite side of the table is not serving his client well whether he represents a company, a local unit of government, an environmental group, or some other third party. An attorney, by education and training, is taught to be an advocate for a position rather than a mediator. Tradition teaches that an attorney is not supposed to be objective, he is supposed to be a militant advocate for whomever he represents. Yet militant advocacy is not conducive to conflict resolution through negotiation, even though this is what attorneys have been educated and trained to do.

It is interesting to hear what others think about this subject. Paul Hassett, president of the Wisconsin Association of Manufacturers and Commerce, in a newsletter last year to his membership, commented:

> . . . [I]n the past few years the most significant achievement for WMC is that we achieved compromise agreements through the "consensus approach." This is a great change from the "confrontation politics" that has existed in the past. WMC has a common interest in all those worthwhile attributes of honest government—creating jobs and an environment for business and industrial growth, participation in local, state, federal, and social programs of interest to society.

A *Business Week* (June 30, 1980) article entitled "Creating a New Sense of Teamwork" has this report:

> The most urgent piece of business facing the nation is to reverse the economic and social attitudes that have generated its industrial decline. It is a task that must involve all elements of society: business, labor, government, minorities, and public interest groups. It requires nothing less than a new social consensus, a remodeling of what the 18th century philosopher Jean Jacques Rousseau terms the "social contract" that brings individuals together to form a society. . . .[T]o start the . . . process, however, a consensus has to exist among labor, management, and other major interest groups. The climate is right for a coalition approach. If America is to be successful in meeting the challenges posed by our competitors in international and domestic markets, there is a great need to build a consensus on economic and trade policy. . . .The challenge, of course, is to develop a consensus-forming framework under which government, business, labor, and other major interest groups—without compromising their traditional roles—can agree on tradeoffs that would both strengthen the economy and, in the end, prove beneficial to all.

We also have the following by Henry Grunwald, editor-in-chief of *Time*, in his February 23, 1981, essay:

> The founding fathers recognized and denounced the "spirit of faction." That spirit has always existed in our highly contentious nation; the broad consensus that supposedly prevailed in earlier days is largely a nostalgic illusion. We will never turn into a republic of virtue, animated by perfect brotherhood. We are too large, too varied, too free, and too human for that. But in the past at least we usually managed to rule ourselves through rough accommodation, based on the recognition that while I may subdue my neighbor on one issue today, he may subdue me on another tomorrow. The founders thought of this as civic virtue, as self-interest rightly understood. That is what we must retrieve.

I cite these other examples discussing the consensus approach because not all persons believe in this method of proceeding. There are always some who prefer to see the world in brilliant blacks and whites. Witness the statement by Charles Morgan, former southern regional director of the American Civil Liberties Union, who, on January 16, 1981, said at the third Annual Public Affairs Conference of the National Association of Manufacturers and Commerce: "Compromise ought to be used when you have no other option." As the consensus process in Wisconsin is achieving its greatest success, it is interesting that a coalition of environmental extremists in Wisconsin are engendering new rhetoric that supports Mr. Morgan's philosophy and that is intended to destroy any meaningful relationship between the business community and the environmental movement. They argue that business representatives should not even be allowed to participate in the process, and they question the loyalty of the state environmentalist leaders who have accomplished so much for them in the last decade. Their extreme positions remind one of the old "litmus test/loyalty oath" days of partisan politics. In fact, the very heart of the legislative process is the give-and-take involved in the seeking of middle ground and compromise. Without compromise we will degenerate into factionalism that benefits neither the individual parties nor the body politic as a whole.

The result of the consensus process in Wisconsin has been the development of an entire mining regulatory package negotiated by the business community on one side and, at various times on the other, local units of government, Wisconsin's Environmental Decade, the Public Intervenor, the Natural Resources Defense Council, Native American communities, the Wisconsin Center for Public Representation, and the Wisconsin Department of Natural Resources.

Some perspectives from the private sector

Having provided the above background, I will add some observations as an attorney in the private sector representing business interests with respect to the subject of this edition of the *Wisconsin Academy Review.*

- In order to have consensus and a negotiated solution, more than one party must be interested in resolution of the issues.
- The interested parties must frequently share their concerns.
- The interested parties must prioritize their needs and concerns and establish and communicate their legitimate "bottom lines." After all, parties to the process are involved because of their own perceptions of their self-interests, and they will remain involved only as long as it appears that their legitimate "bottom lines" can be accommodated. Experience dictates that, if rationally drawn, most of the "bottom lines" of the participating parties can be accommodated. They typically are not mutually exclusive *if* the parties get down to details rather than philosophy. As a result, the definition of legitimate "bottom lines" should be encouraged, rather than discouraged, even though some people may interpret this process as establishing ultimatums. But these "bottom lines" must be limited, necessary, reasonable, and rational.

- Enough necessary parties of interest must be involved so that the negotiating group is truly representative. No one should be turned away who legitimately has an interest and legitimately wants to participate. On the other hand, one of the guises under which some groups seek to undercut the negotiation process is to demand arbitrarily that all interested parties, no matter how nominal the interest and no matter how broad the negotiating group itself is, be included in the negotiations. This is neither a political, legal, nor ethical necessity.
- All parties of interest can and should reserve their right ultimately to fight for their position in the absence of a complete agreement. There is nothing wrong with the reservation of such a right and, in fact, realizing ahead of time that such a right can be reserved induces many otherwise cautious parties to participate.
- Counsel for each party must have the willingness to moderate his or her advocacy for the client while still representing the client and his position.
- Participating parties must choose counsel who wish to resolve conflict and are result oriented.
- The consensus process is often the result of personalities and fortuitous circumstances rather than of a preexisting structure or system. Interested parties, therefore, must be able to recognize the proper circumstances and personalities and be able to take advantage of them when and where they exist.
- Corporate counsel, without unduly restricting the innovativeness and creativity of outside counsel, should be actively aware of, if not involved in, the negotiating process. Outside counsel needs to be made aware that time, to a business operation, is money and that various alternative resolutions exist that the company will consider to be "success."
- Outside counsel, within the confines of ethics and law, must represent the positions of opposing parties fairly to the client as well as to represent the client accurately to the opposition. If a client is not hostile to the opposition, hostility should not be communicated.
- Outside counsel needs to spend an adequate amount of time physically out among the opposition. To be most helpful, however, he or she needs to be, minimally, respected by the opposition and, ideally, accepted by the opposition.
- Outside counsel needs to understand business so that he or she can explain its motives and thinking processes; but he or she also needs to understand the opposition so that its motives and thinking processes can, likewise, be communicated back to the client.
- The necessary ingredients for a successfully negotiated settlement add to a complex situation the right intentions on the part of all participating parties; the right circumstances at the time of the negotiations; the choice of right counsel by both parties; the right attitude on the part of both parties; the right corporate support for outside counsel; the right personalities; and good luck.

Counsel representing the business community has to appreciate the good that the free enterprise system and the private sector have contributed to America while also appreciating that the "little person"—his welfare, protections, dedication, work ethic, and confidence in the "establishment"—is what America is all about. Rural Americans in particular can tell when people are dealing fairly with them. They will make decisions when they have to, not when it is convenient for us or our clients to have them make decisions. They use common sense. They are tough negotiators, but their points are basic and typically represent a fairly rational statement of what they feel is an adequate price to compensate them for cooperation with proposed projects.

I realize that detractors from either extreme of the political spectrum can look upon the defense of consensus as mere pabulum. I am positive that the new environmental extremists in Wisconsin will. As far as I'm concerned, that's fine because that is what the First Amendment is all about.

As a matter of personal philosophy, I prefer to resolve matters by negotiation rather than litigation, because it is more beneficial to the client. There is always the danger when negotiating, however, that some will believe you are being "soft" on the opposition—much like people were perceived as being "soft on communism" in the early 1950s. That's an occupational hazard that attorneys experience in representing their clients. However, my responsibility is to represent clients to the best of my ability at the lowest possible cost, always keeping their best interests in mind. Typically, a resolution short of litigation is in that client's best interest.

In my experience more problems exist with government attorneys in resolving conflicts than with private sector intervenor-type attorneys. I realize that this experience may vary from state to state or may differ on the national level. On the other hand, government attorneys with enforcement responsibilities have, in my opinion, shown a particular lack of understanding of the private sector, have a particularly poor value system by which to choose which cases are important and which are not, and have shown a particular disregard for the time delays and legal costs which they impose upon private parties. To those attorneys and to people like Mr. Morgan from the American Civil Liberties Union, my response is that if we have to, we will fight. Further, we will typically win, although going to court is costly in legal fees and in time. It is more practical for a client to practice preventive law, that is, to resolve problems by the consensus method.

This then, brings us full circle, back to the ad on TV: "You can pay me now or you can pay me later." An attorney in private practice gets paid regardless of how a project proceeds.

My opinion, however, is that, under proper circumstances, we have to get out of courtrooms and into negotiating rooms in order to get our system functional once again. We graduate tens of thousands of new attorneys annually. We train these young, crafty minds to be advocates, teaching them that it is honorable (which it is) to fight. However, over the course of the last several decades, we have created a society that is growing ever more complex and unmanageable as we promote fighting among all elements of society with the greatest winners being attorneys in the private sector. This is no particular skin off of my nose, because the more people disagree, the more money private-sector attorneys make. Yet as attorneys we have an overriding responsibility to society as a whole, and someplace, sometime, we have to establish procedures and structures that are result oriented and that allow society to proceed without the legal system extracting excessive tribute the way it currently does. In short, as attorneys, we have been trained to promote the "spirit of faction" referred to by Mr. Grunwald. But at some point society, as he points out, must draw the line between an appropriate and inappropriate level of such "spirit of faction." In Wisconsin, at least during the 1970s, I think that we have largely drawn that line for the benefit of the state as a whole—including industry and the various interested environmental groups. Whether that same spirit will continue in Wisconsin in the years ahead remains to be seen. Will the true no-growth advocates, the "neo-isolationists" of our time who don't participate in the consensus process, succeed in "purifying" the state environmental movement by seizing control over it—instead of controlling little pieces as represented by various acronym-titled cell groups—and force the movement to withdraw from all participation? That would be an unfortunate occurrence, but it may well happen. Regardless, it is certainly reassuring to see that a group as prestigious as the Wisconsin Academy of Sciences, Arts, and Letters is interested in the topic because maybe, at last, we are talking about a topic whose time has come. Let us hope that the process is not already on the wane.□

Northern Environmental Stewards Oppose Consensus Trade-offs

By Don Behm
Associate Editor
City Lights

"Wisconsin has world-class mining potential," claimed James Klauser, attorney and consultant to the Wisconsin Manufacturers and Commerce Association. Pointing to Exxon's proposed underground zinc and copper mine near Crandon in Forest County, Klauser stated it "would be as large as any in the world. It's really hard to appreciate the 'mammothness' and the potential impact of this industry." Klauser was speaking to a gathering of Dane County Democrats in mid-June of this year.

Peter Peshek, a public intervenor with the state attorney general's office, later told the audience: "The state is preparing itself for a new era of copper and zinc mining in northern Wisconsin."

Perhaps, many of the Madison area residents in attendance that evening had not yet committed the time necessary to understand the impacts of a mining boom across northern Wisconsin. However, there are citizens in the northern counties who have been watching the mineral exploration efforts of nearly three dozen corporations since the early 1970s. They have made an effort to understand the potential impacts—harmful or beneficial—of mining on their communities.

For several years they have attended informational meetings and public hearings on topics ranging from mineral resource taxation, to 'boom-town' conditions, mining waste disposal, and protection of the groundwater. When these residents of northern Wisconsin come together at public hearings, they do not speak in one voice.

Some would agree with John Taylor, a Crandon area building contractor. His primary concern is with the local economy. For Taylor, a new mining industry will bring jobs to stem "the yearly exodus of young people searching out work."

Others are inclined to express an environmental ethic as their foremost consideration. These rural stewards were represented by a retired mining engineer during a September 1980 public hearing at the U.W. Barron County campus in Rice Lake. **"As a fifth generation native son of this valley (the Blue Hills region in Rusk and Barron Counties) I'm totally opposed to its needless exploitation by outside interests who place their corporate profits first and the welfare of the area and its citizens in the tailings pond along with the waste rock."**

But this is not an anti-mining statement. Rather, the retired engineer is expressing a healthy skepticism that current mining technology can extract the sought-for mineral ores without first destroying the natural environment these northern residents depend on. For these stewards, environmental rules governing mineral ore extraction and mine waste disposal should be strict enough to force the mining companies to develop new, less damaging technology, an insurance policy that will prevent the degradation of their air and water resources.

Yet, a third perspective has been gaining momentum over the past five years, an attempt to balance the desire for new jobs and an expanded tax base with the urgent demands of the environmental stewards. This so-called consensus process has developed as a mediation arena for corporate officials, lawyers representing local interests, elected officials, and one or two representatives of Madison-based environmental groups. The goal of the consensus group has been to work out a mining, with safeguards, agreement "we can all live with."

Among state policy makers, the consensus effort has found support from the Public Intervenor's office, the Department of Development, and the Wisconsin Geological and Natural History Survey.

The challenge faced by the consensus group was described by State Geologist Meredith Ostrom as ". . .the adoption of policies which will provide for a healthy domestic mineral industry consistent with reasonable environmental goals to the exclusion of neither."

Ostrom's views are outlined in his essay in this issue, "Mining and the Environment: An Appeal for Perspective." Here Ostrom notes that each U.S. citizen "requires on the average over 40,000 pounds of mineral material each year to satisfy our needs. . . .The unavoidable environmental implication is that there will be more mining." Moreover, Ostrom asserts that while "mineral resources are essential to the security, economic health, and social welfare of our nation," we are increasingly dependent on foreign sources for a key group of metals. His warning: "Anyone who doubts the significance of being dependent on foreign markets for mineral supplies has only to be reminded of the impact of recently decreased foreign petroleum supplies on our economy."

Industrial nations are now more aware of this dependence upon imported nonfuel minerals because of the strengthening nationalism in their former colonies with the consequent demand for higher prices for the natural resources traditionally extracted from the earth of these third-world nations. This economic self-interest in rebuilding a domestic mineral industry led one multinational resource corporation to the banks of the Flambeau River in Rusk County. By 1974 the Flambeau Mining Company, a subsidiary of the Kennecott Copper Corporation, had already purchased 11 dairy farms and proposed an open-pit copper mine only 300 feet from the Flambeau River.

The eventual confrontation between Kennecott and the citizens of the Town of Grant in Rusk County was partially reviewed for the Democratic Party of Dane County at its June meeting by Public Intervenor Peshek. He recalled how in November of 1976, "Kennecott Copper Corporation sought state permits to mine its copper ore body in the Town of Grant. . ." However, according to Peshek, "the 960 citizens of the Town of Grant stated their unified collective belief that it was premature to approve the permit applications."

Two Town of Grant residents in particular were responsible for thwarting Kennecott's efforts in 1976. Evelyn and Roscoe Churchill were instrumental in forming the Rusk County Citizens' Action Group in March of that year. On November 10, as a member of the Rusk County Board of Supervisors, Roscoe introduced a resolution to "stop the issuance of county mining permits" until adequate mining laws were passed by the legislature. The board adopted the resolution 21-0. Later that day, on the strength of this resolution, the Department of Natural Resources had no choice but to dismiss the mining permit hearings then scheduled at Mount Scenario College in Ladysmith.

According to Roscoe Churchill, "the Town of Grant is largely a dairy farming area, with a variety of other small businesses, factory laborers. . . .However, dairying is the number-one occupation, and an open-pit copper mine was proposed to be set right in the center of the thriving farming activities." A concern for the effects of mining wastes on the area groundwater and wetlands prompted the Churchills to spend several months of their retirement years visiting producing metallic mine sites. Roscoe recalled these travels in an essay, "The People are mightier than the Corporation," in the Late Winter 1980 issue of *Clearwater Journal.*

"In my own travels to metallic mines in Canada and the United States, I have not seen one site that has not poisoned the rivers and streams adjacent to the mining activities. And, of course, areas with heavy rainfall, such as Wisconsin, would find the mining pollution most difficult to handle." He continues, "I am not sure—after some five years of study—that I think the mineral deposits in the Town of Grant in Rusk County and the Town of Nashville in Forest County (site of Exxon's Crandon Project) can be developed without destroying two of the great watersheds of Wisconsin, the Flambeau River and the Wolf River.

One reason the Churchills were not sure the Flambeau River watershed could be protected was the corporate "bottom line," or the rate of return on investment. Says Roscoe, "The great multinational mining corporations have one motive for exploiting the mineral resources of the world, and that is profit. Although they want to convince the gullible citizenry of their interests in safeguarding the environment, the mining companies' overwhelming purpose for existence is profits." The Rusk County Citizens' Action Group believes that corporate bottom line should not gain precedence over their concern for maintaining the natural heritage for future generations.

This environmental bottom-line philosophy was set down by Roscoe Churchill in his *Clearwater Journal* essay: "Many of us will do the best we can to get laws passed that will regulate the mining companies, protect the delicate environment from the ravages of the developers, and in the end, set up funds to patch up the damage certain to occur once Wisconsin becomes the great metallic mining country that so many are so anxious to see.

"Let's go slowly," Churchill continues, "Let's be most cautious. Let's have good laws and proper regulations in place before the first spadeful of dirt is turned for metallic development. . . .For, who could put a dollar-and-cents value on our rivers, our wetlands, and our freshwater supply? Wisconsin's great rivers are a gift that we should not sacrifice to the stockholders' profits of out-of-state mining corporations," concludes Churchill. Then the marching orders: "The time to act is now; the person to act is you. The choice is usable rivers or flowing sewage dumps, and the choice is yours."

From Churchill's six-year tenure as one of the more widely known senior stewards of the land, he recalls: "We learned to write resolutions, to distribute petitions . . . how to study the right materials . . . and we've improved our efforts."

At meetings throughout the state's northern highlands, Roscoe Churchill prompted the townsfolk in attendance to follow the Rusk County group's proven "recipe for action." His "recipe for dealing with large corporations" involves these steps:

"Educate yourself and your neighbors and friends until you are able to discuss intelligently and unemotionally all phases of the issue."

"Get qualified legal help."

"Get to the legislators, they are often much less informed than the concerned individuals. They need education too."

"Above all, do not give up, and do not despair that your voice will not be heard."

Though the Rusk County group developed this "recipe for action," based on community education and citizen action, other representatives of Wisconsin's environmental community were falling into line in support of a different strategy—the consensus process. Peter Peshek and James Derouin summarize their perspective on the consensus strategy elsewhere in this issue. Peshek and Derouin now criticize the environmental groups and individuals who choose to remain outside of their consensus strategy as "leftwing" and "irrelevant."

However, by October of 1981, it became clear that Peshek could not deliver a united front of support from Wisconsin's established environmental community. A different, "outsider's," view of consensus, is now often repeated at public hearings—whether they are in Ladysmith, Crandon, Hayward, or Madison.

There has been no end to meetings and hearings: a Rod and Gun Club meeting in Hayward; a Legislative Council committee hearing in the basement of an Armstrong Creek church; a community meeting inside Bohemian Hall in Ashland; a citizen's gathering at a county court house in Antigo; and quite a few living rooms and town halls in between.

As individuals and families from one township or city were introduced to other concerned neighbors at these meetings, an informal network gradually developed. That network had work to do.

As these rural stewards became increasingly skeptical of the state's ability

to regulate the mining industry, they began to pressure local government units—towns and counties—to restrict corporate exploration activity. At first, these exploration moratoria focused on uranium and other radioactive metals likely to be found in Wisconsin, such as vanadium and thorium. Later, several towns and counties expanded these anti-uranium moratoria to include "all mining."

By mid-year 1980, the five county boards of Rusk, Sawyer, Langlade, Washburn, and Barron counties, twelve township boards, and three Indian tribal councils had adopted moratorium resolutions on all further exploration for uranium within their respective jurisdictions for periods ranging from one to fifteen years. Thompson Township, south of Duluth, Minnesota, became the first town in that area to adopt a similar moratorium.

An emerging tri-state arc of resistance to uranium development was strengthened during the summer of 1980 when four counties in Michigan's Upper Peninsula—Houghton, Iron, Baraga, and Keeweenaw—approved moratoria on uranium exploration. In addition, the response of native tribal communities to mining development generally in the upper midwest was the primary issue at the Indian Treaty Conference held in early June 1981, at the White Earth Chippewa Reservation in Minnesota.

This past summer, the Townships of Round Lake in Sawyer County and Trego in Washburn County approved moratoria on all metallic mineral mining in their areas.

William Simpson of Barron County drafted a resolution proposing an indefinite ban on "exploring, prospecting, and mining of metallic minerals in the Town of Doyle" that was accepted at the annual Town Meeting on April 1, 1980. A rural tradition of respect for the land is expressed in Simpson's evocative description of Doyle Township, "located in the Blue Hills area, which is an important part of the Lower Chippewa River Basin . . . with its watersheds, springs, and wetlands." Simpson, another of the elder environmental stewards, then concluded, "mining is a temporary land use that may strongly affect our township, county, and state." Simpson and other northern residents hope to maintain tourism, agriculture, and forestry as the stable, long-term economic base for their communities.

Two other concerns are reflected by these moratorium efforts:

A regional mining district eventually could develop; would site-specific mining rules then adequately address the effects on northern Wisconsin's ecosystem of a dozen mines?

Regardless of whether uranium exists in "economic" deposits—those that would stand on their own as feasible mining ventures—many citizens are now asking: **why should environmental rules to regulate zinc and copper mining operations be approved, if they do not address the potential for the co-occurence of uranium in those nonfuel metallic mineral deposits?** According to the rural stewards, co-occurence does imply the potential of uranium extraction as a "byproduct." If so, who will establish the acceptable level of radioactivity in the tailings ponds that will be constructed alongside the zinc-copper mines?

On the question of a mining district in Wisconsin, we need only turn to the recent exploration records. Since 1968, nearly four dozen mineral and energy corporations have responded to numerous geological clues throughout central and northern Wisconsin. The minerals they search for include copper, zinc, nickel, vanadium, thorium, and uranium. Their exploration efforts bring them to popular recreational areas: the Flambeau and Wolf Rivers, Lake Metong near Crandon,Lac Court Oreilles north of Ladysmith, and the Chequamegon and Nicolet National Forests.

It is now clear there won't be one or two isolated mines in that great northern expanse of forests, lakes, and dairy farms. The prospect, according to State Geologist Meredith Ostrom, is 20 mines by 1996, in an area stretching from Pembine in northeastern Marinette County over to the Tiger Cat Flowage in Sawyer County. An even larger-scale mining district could develop as government and corporate geologists continue their search for copper, manganese, and natural gas under Lake Superior.

The occurence of uranium deposits in Wisconsin has only recently become a public issue although several "prospects" in the state have been identified by the Atomic Energy Commission and the state Geological and Natural History Survey. The Survey's pamphlet on uranium notes: The northeastern counties have been the focus for uranium exploration due to "the occurrence of uranium concentrations in granitic rocks in Waushara and Shawano counties and the reported find of uranium-bearing quartz-pebble conglomerate near McCaslin Mountain, between Forest and Marinette counties."

Moreover, a map of water samples taken in Forest County by the federal National Uranium Resource Evaluation (NURE) program identifies the Armstrong Creek area as a "hot spot" for potential resources of uranium ore. Archie Wilson, a mine reclamation specialist with the state's Department of Natural Resources, stated at a May 1980 meeting in Hayward, Wisconsin, that the "Minatome-sponsored drilling in old iron-ore pits around Florence was based on the belief that uranium co-occurs with the bedrock in that area."

With this in mind, an ever-growing number of citizens in northern Wisconsin are attempting to draw attention to the mineralization of uranium within larger base metal ore bodies and the likely byproduct extraction of uranium at zinc-copper mines in Wisconsin.

Regardless of whether uranium is actually removed as a byproduct, northern stewards are pressing the issue of who will set the standards for acceptable levels of radioactivity in the mining wastes, since there is substantial evidence of uranium mineralization within the massive-sulfide ore deposits in the northern highlands of Wisconsin.

Cassandra Dixon of Stevens Point brought a copy of the federal Environmental Protection Agency's report, "Natural Radioactivity Contamination Problems," when she traveled to Madison in mid-October 1981, for a hearing on the environmental rules proposed by the consensus group. Opening the 1978 study to the chapter "Mineral Extraction and Processing Activities," Dixon quoted: "Numerous industries such as copper, flourospar, vanadium . . . extract ores which often occur in strata containing above-average concentrations of uranium, thorium, and their decay products."

Therefore, reports the EPA, one source of radiation "is the pumpout waters of mines." Further, "As an active mine must be continuously pumped, this effluent presents a potential groundwater contamination . . . Likewise, as high sulfur content is often associated with copper tailings, sulfuric acid produced with rainwater can gradually leach out uranium and its daughter products from storage piles." Later, the report states: "Although it is apparent that the generally low concentrations of uranium found in primary ore has discouraged such investigation, significantly elevated radionuclide concentrations in underground mine atmospheres, mine runoff effluent, and leaching solutions tend to refute the conclusion that a potential source of radiation exposure cannot exist."

Apparently, the consensus group in Wisconsin does not feel the issue of co-occurrence of uranium within the massive-sulfide metallic ore deposits in the northern highlands to be as significant an issue as the EPA, NURE, Archie Wilson, or the increasing numbers of vocal environmental stewards from that region's communities.

Indeed, Ronald Koshoshek, a member of the Citizens Advisory Committee to the Public Intervenor, stated his support for the consensus rules package at recent DNR-sponsored public hearings in Ladysmith and Crandon. Koshoshek then acknowledged "the adoption of these administrative rules will not resolve all public policy issues regarding metallic mining." He identified five issues "that have been set aside for future discussion

and resolution." Number four on his list is "the creation of a definition of 'radioactivity' for mining wastes generated by copper and zinc mining."

An additional criticism of the consensus rules package was put forward at the Ladysmith hearing. Late in the evening of September 14, Al Reinemann, a supervisor from the Town of Round Lake, asked why the proposed rules did not consider an acceptable level of 'radioactivity' for mining wastes generated by vanadium mining.

Reinemann rejected the consensus rules package and asserted that he, as an elected official of the Town of Round Lake, had not been kept abreast of the consensus rule-making process, even though the "people in my township are close by one of the largest deposits of vanadium in North America."

A written statement prepared by Mary Reinemann, a Hayward area realtor, identifies the "mineral deposit beneath the Tiger Cat Flowage" to be an estimated "750,000,000 tons of vanadium/titanium." She reports: "The area, particularly an area of about one square mile, has experienced numerous test bore holes. Since this core drilling, which was done prior to 1976, the area has experienced changes in the quality of its water.

"Water flows through the flowage," she continued, "past the area of the drilling . . . then settles in a pond below the dam as it flows into the Chief River. This settling pond has a very orange/yellowish color. When it was first noticed in early June 1981, the DNR was called by a member of the Town of Round Lake Board to take a sample and analyze it. The response was that there wasn't any fund available to make a special trip and the next time they were in the area a sample would be taken."

Reinemann concludes: "In order to detect changes in the environment, monitoring should be done before prospecting (not just during and after as proposed in NR 141 and NR 132). Then go one step further and monitor before test core drilling to get a true assessment of the environment. I cite the experience in the Town of Round Lake where our water quality has been affected by test core drilling."

Are these the people that Derouin identifies as "the leftwing of the environmental movement," as he recently charged in Madison? Are these the criticisms of people "who are opposed to mining in any way, shape, and form under any circumstances," again, as Derouin has charged?

These are not the concerns of young, emotional, and independent radicals as the consensus group would like to pretend. Rather, these are the substantive criticisms of cautious and well-versed stewards of the land, and many are longtime residents of their areas.

To be sure, the two groups—the consensus participants and the environmental stewards—are at odds over strategy. Consensus was able to move along with an occasional reminder that the new generation of mining companies intended to be good citizens and respect the environment. Obviously, a number of northern residents now believe the consensus group negotiated away several minimum environmental protection standards. The stewards now claim the environmental bottom line has been obscured. Their goal for a more complete, prevention-oriented regulatory scheme conflicts with Peshek's announced "incremental approach." That approach is best summarized as the "we'll come back for more next year" strategy.

Moreover, the stewards now see Peshek in an awkward and contradictory stance. On the one hand, Peshek claims "the consensus process helps provide mining companies certainty . . . since the developer knows what the rules are, and can expect them to stay in place, they are willing to accept tough environmental legislation and rules. . . ." On the other, Peshek is asking citizens in the northern communities to accept the incremental nature of the consensus package, with the understanding that changes can be made in the next legislative session. The stewards' message to the public intervenor is that he really can't have it both ways.

The feeling is so strong in certain northern Wisconsin communities that several people have initiated a letter campaign directed to Governor Lee Dreyfus. One sample letter notes: ". . .many citizens are watching with anxiety," as the consensus process attempts "to establish mining laws that will give them less than the needed protection for their groundwater and will make it possible for the mining companies to pay little or no taxes for the many impacts caused by metallic mining. . . ."

Says Al Reinemann, the unwillingness of the mining companies to accept the 1977 Net Proceeds Tax Structure "proved they were unwilling to mine in Wisconsin on citizens' terms."

Assemblyman Robert Larson, a Republican representing the Town of Grant, has introduced Assembly Bill 647 to replace "the net proceeds tax on mining of metallic minerals with a severance tax equal to 12.5 percent of the net value of the products of mining." Larson believes that the consensus effort to reduce the rate structure within the Net Proceeds Tax will result in less money to the northern communities. "A severance tax will guarantee some return of tax dollars to protect their environment," says Larson. He points to the experience in other states with a severance tax, particularly Montana and North Dakota, and emphasizes that mining continues in both states. Realistically, Larson doesn't expect the legislature to reject the proposed amendments to the current tax structure in favor of a new severance tax. However, he does see "the possibility of a 2 percent or 4 percent severance tax in addition to the revised net proceeds tax."

Only with a severance tax, says Larson, will dollars be available for the future cleanup of environmental problems and the profit of the local communities. Noting that small northern communities will face a boom-town development atmosphere once the mining companies begin construction, with the consequent expenses of road maintenance and expansion of social services, Larson concludes: "I don't want blood out of the mining companies . . . but I don't want to be bled either."

For James Derouin, the detractors and "naysayers" of consensus are working to deny "other individuals the economic development opportunities in which they rightfully are interested as fellow citizens of the state."

Perhaps, the environmental stewards would suggest, Derouin represents one of the more familiar ambiguities in American frontier mythology. Thomas Merton's essay on "The Wild Places," notes that as citizens of our industrial society, "we all proclaim our love and respect for wild nature, and in the same breath we confess our firm attachment to values that inexorably demand the destruction of the last remnant of wilderness." So, when people like Wisconsin's environmental stewards attempt to suggest that our capacity to poison the nature around us is some indication of sickness in ourselves, we dismiss them as fanatics. Merton asks why.

"The Puritan, and after him the pioneer," [and now the corporations] concluded Merton, "had an opportunity to prove his worth . . . by the singleminded zeal with which he carried on this obsessive crusade against wildness . . . You justify your existence and you attain bliss by transforming nature into wealth . . . . Until transformed, nature is useless and absurd. Anyone who refuses to see this or acquiesce in it is some kind of halfwit—or worse, rebel, an anarchist, a prophet of apocalyptic disorders."

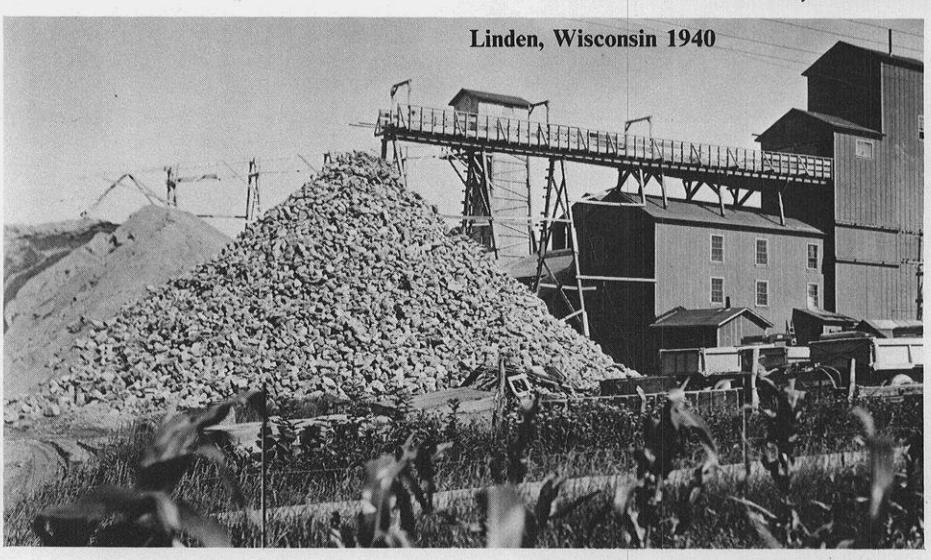
Merton's conclusion recalled the words of Aldo Leopold, a homestate preservationist and steward. According to Merton, Leopold laid down a basic principle of the ecological conscience. According to Wisconsin's present-day stewards, the Leopold rule should be used to assess the consensus package: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."□

New Metal Mining In Wisconsin

By Peter Peshek
Wisconsin Public Intervenor

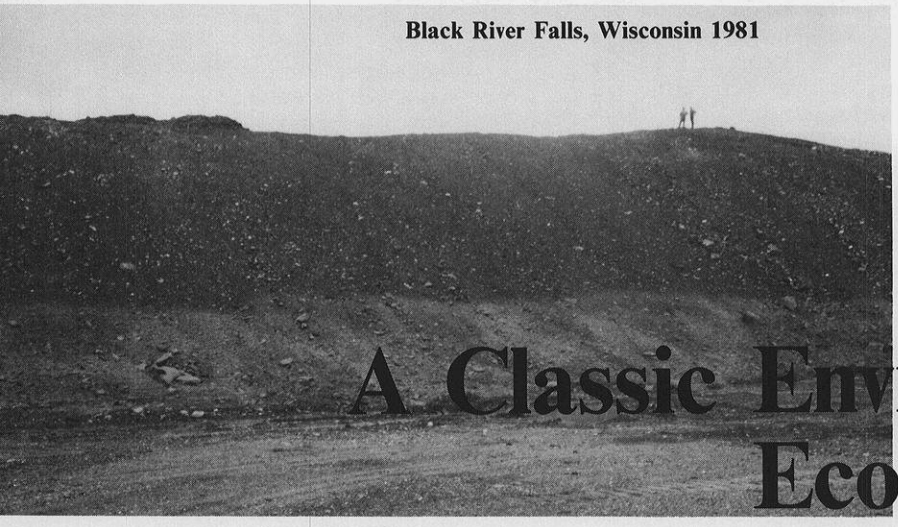
Florence, Wisconsin 1940

Courtesy State Historical Society of Wisconsin



Linden, Wisconsin 1940

Courtesy State Historical Society of Wisconsin



Black River Falls, Wisconsin 1981

Courtesy Department of Natural Resources

A Classic Environmental, Economic, and Political Dilemma

Metal mining has played a central role in the political, economic, and social history of the Upper Great Lakes Region. The results of mining have been uneven, ranging from prosperity and full employment, to serious environmental damage and high unemployment. The Upper Great Lakes Region now has the opportunity to develop an entirely new generation of copper, zinc, and nickel mines. Wisconsin is preparing itself for a new era of copper and zinc mining in northern Wisconsin. I will discuss the environmental issues associated with this proposed development.

A Historical Overview—Round I

In November of 1976 Kennecott Copper Corporation sought state permits to mine its copper ore body in the Town of Grant, Rusk County, Wisconsin. The 960 citizens of the Town of Grant stated their unified collective belief that it was premature to approve the permit applications. The town hired Kevin Lyons, a respected trial attorney, and solicited and received the support of the Natural Resources Defense Council and the Public Intervenor.

Within a short period of time, all three lawyers and their clients came to recognize that Wisconsin was not then in any position to determine intelligently whether, or under what conditions, Kennecott should be permitted to mine its Ladysmith ore body. It was even more evident that the state of Wisconsin did not have a comprehensive and integrated regulatory scheme for copper and zinc mining. In time, the Wisconsin Department of Natural Resources (DNR) hearing examiner came to recognize these and other problems and dismissed the Kennecott mining operation. (In a case of this significance, one must distinguish between the legal-technical reason for dismissal and the broader underlying reasons causing this hearing examiner's decision.)

What the citizens of the Town of Grant found out in the fall of 1976 about Wisconsin's regulatory void, Kennecott had discovered in 1975. For a long time Kennecott did not know if the solid waste laws applied to mining. For example, an internal Kennecott memorandum of December 5, 1975, said, "[T]he WDNR's oscillating their opinion re [solid waste rules] to the point that I advise *we apply for a license*." An earlier 1975 memorandum said, "Again the solid waste section is creating confusion. I am not clear whether we need either, none, or both of the [solid waste] licenses." The Wisconsin Legislature and the DNR clarified that issue on March 14, 1979, by requiring the mining companies to obtain solid waste licenses.

Another confusion was about the Wisconsin Pollutant Discharge Elimination System permit (WPDES). On April 15, 1975, Kennecott was orally informed that "we need to apply for . . . [a WPDES] permit to discharge . . . process plant tailings into our waste containment site." Subsequently, DNR told Kennecott that such a permit was not necessary. On November 1, 1976, the Public Intervenor filed a declaratory ruling petition with DNR, asking whether a WPDES permit was necessary for a tailings pond as proposed by Kennecott, which would leak at least 27.8 gallons per minute. A ruling was never issued on that petition, but in the summer of 1980 a WPDES permit was issued for the Jackson County Iron Company tailings pond which was already leaking at a rate of 326 gallons per minute. What the industry and the environment community do not yet know is when a tailings pond leaks at a sufficient rate to be classified as a source of pollution requiring a WPDES permit.

Robert L. Russell, manager of the Crandon Project, Exxon Mineral Company, U.S.A., recently stated:

> It is also important to realize that in 1977, a state regulatory framework for permitting of mines did not exist, because of the fact that no new mines have been brought into production in Wisconsin in recent years or since the enactment of the several major national environmental laws. It is important to consider that a total state environmental regulatory framework had to somehow be developed and successfully promulgated into law and regulation. It was obvious that permitting would not be successful unless this could be done.
>
> At the time, the state-wide public and political climate with regard to mining was anything but favorable. The Kennecott deposit near Ladysmith had attracted considerable attention across the state. Intervention in the permit proceedings by the state public intervenor and local groups provided visible evidence that the state not only did not have mining regulations in place, but also that the permit procedure mechanisms were either ill-defined or absent.
>
> *Skillings' Mining Review*, 70, no. 27 (July 4, 1981)

It is easy with historical hindsight to recognize that Wisconsin was unprepared to grant mining permits in 1976. It was far more difficult to make that conclusion in 1976, particularly for a rural Wisconsin community that had had no major experience with Wisconsin's environmental laws before a mining company proposed to develop an ore body in its midst. It is to the absolute credit of the citizens of the Town of Grant that they recognized the political, policy, and legal vacuum that existed in 1976 and stood with great resolve against substantial legal and political odds to make their point in a forceful and effective manner.

It is also important to observe that industry has a right to clear and detailed guidelines, which establish the comprehensive regulatory framework under which they must operate. A Kennecott official wrote in May 1977:

> Wisconsin . . . possess[es] sufficient quantities of base metal mineralization to place it in a position to being a significant metal supplier. What remains to be seen, however, is whether it is prepared to provide a reasonable and stable regulatory environment.

Legislature Reaction—Round II

Immediately upon the adjournment of the Kennecott mining permit application hearings, there began a political process that would propel Wisconsin into the lead nationwide in an effort to regulate metallic mining operations. The Natural Resources Defense Council, under the guidance of Frank Tuerkheimer, subsequently United States Attorney for the Western District of Wisconsin, prepared a comprehensive paper on the inadequacies of the 1973 Metallic Mine Reclamation Act and made a series of recommendations for changes. Special committees of the state legislature, which had thus far been principally concerned with taxation of mining operations, formed a working group to evaluate the need for additional regulation of the industry and to propose changes in the statutes.

On July 13, 1977, the Wisconsin Public Intervenor emphasized to this special legislative committee four of the policy problems facing Wisconsin:

1) The state of Wisconsin lacks legislative standards upon which to make judgments regarding the approval of disapproval of metallic mining operations.

2) There is a need for improvement in the process by which we conduct hearings relative to the aforementioned decision-making process.

3) The Wisconsin Environmental Protection Act (WEPA) must be made to work effectively in relation to the metallic mining industry.

4) DNR must be provided adequate resources if our environment is to be protected.

The emphasis on standards, WEPA, contested case hearings, and DNR was well founded in the Kennecott experience. An open process of decisionmaking and due process rights are required to protect the environment. Some Kennecott examples are in order.

At the close of mining Kennecott proposed to leave a 56-acre, 285-foot deep lake which would be located some 300 feet from the Flambeau River. The water near the top of the pit lake would flow westerly toward the Flambeau River. The issue was whether the water near the top

of the open pit lake would be contaminated.

Kennecott alleged that the water would not be contaminated because the lake would become meromictic, a lake that does not turn over seasonally. Because the heavy metals and other environmentally dangerous materials would only occur in the lower levels of the meromictic lake, the theory was that there would be no potential danger to pollution of the Flambeau River.

DNR's environmental impact statement (EIS) dated February 3, 1976, said, "Regardless of the method of filling the pit, the lake would eventually become meromictic." The EIS does not state who reached that conclusion and upon what information, if any, it was based.

In contrast to DNR staff's absolute declarations that the lake would become meromictic, University of Wisconsin consultants told Kennecott as early as 1973 that it could not be ascertained with certainty if the lake would be meromictic. Even more disturbing is an April 21, 1977, letter sent by Kennecott which said in part, "Our recent investigations indicate that the lake would not become meromictic."

Because of the public hearing process it became evident that if we could not ascertain whether the lake would become meromictic, we could not know whether the open pit lake would contaminate the Flambeau River. Thus it was obvious that the DNR Environmental Impact Statement was inadequate and misleading. It was the public hearing process, including a comprehensive discovery process, which helped focus on this most critical issue of whether the Flambeau River could become contaminated by the open pit lake.

These August 1981 mining rules and supplemental legislation will provide more information, more public participation opportunities, more environmental insurance programs, and more comprehensive standards for decisionmaking than provided for any other activity in the state.

Another example of the need for full disclosure of information to the public and to the regulator involves the question of baseline data gathering and verification. On April 19, 1976, one Kennecott employe wrote a memorandum to another Kennecott employe dealing with monitoring of water quality, which said in part:

> A meeting was called to discuss with [our environmental consultant] and [our testing laboratories] repeated sloppy reporting of results, anomalous results, and [consultant laboratories'] inability to reproduce EPA standards on two occasions. . . [Consultant's laboratories] could not adequately explain the results of the EPA "blanks" nor could they satisfy my inquiries regarding typographical errors and inconsistent significant figures on their report sheets . . . Furthermore, I discovered that [consultant] has not been following EPA recommendations during their sampling.

Obviously, a well established verification program between DNR and industry would minimize errors in baseline data gathering. However, public confidence in such a baseline data gathering and verification program would only be established through processes which guarantee full due process to environmentalists and local units of government.

Under the able leadership of representatives Mary Lou Munts and Harvey Dueholm and senators Michele Radosevich and Henry Dorman, a substantial portion of the new regulatory scheme for metallic mining was developed in Chapter 421, Laws of 1979. The environmental concerns were adequately addressed. The new consensus legislation was developed, thanks in very large measure to the able efforts of Exxon's attorney James G. Derouin, Exxon's geologist Ed May, and many environmental representatives, particularly Peter Anderson of Wisconsin's Environmental Decade, Inc. This legislation was adopted by an almost unanimous vote of the Wisconsin Legislature.

However, due to lack of federal direction and the complexity of the problem, the state legislature in Chapter 421, Laws of 1979 did not make any final decisions about the location and regulation of waste containment areas associated with copper and zinc mines. That decision was delegated to DNR and the Metallic Mining Reclamation Council. They were to complete this work by May 21, 1980.

The Rules Process—Round III

Following the adoption of the enabling legislation, the development of detailed rules became necessary. The initial question was: who had the combination of money, expertise, and political sensitivity to the scope of environmental concerns to do a first draft of the rules? DNR clearly lacked all three prerequisites. The towns lacked the money. The strategy developed was for the most liberal of the mining companies, Exxon, to write the first draft, and the others involved would continually remind the company of their concerns and position.

Exxon's draft was creditable, as first drafts go. DNR immediately rejected it because it was organized as one chapter of rules, and, DNR argued, the package should be subdivided in the way that DNR was subdivided. Exxon and the towns' consultants opposed this approach on the basis that the ecosystem was not organized into the subdivisions existing in the department. DNR's position prevailed, and the environment lost on the issue.

At the time DNR's draft was produced, it was absolutely appalling. The towns, tribal communities, and their allies drew up their list of 133 desirable items not contained in the DNR draft. This "shopping list" would, in time, be incorporated in the rules draft, usually with the support of the mining companies and the opposition of DNR staff.

By August of 1981, the DNR, mining companies, towns, and their allies had agreed upon a rules draft. These rules and supplemental legislation will provide more information, more public participation opportunities, more environmental insurance programs, and more comprehensive standards for decisionmaking than provided for any other activity in the state, public or private, industrial or agricultural. A few of these programs are noteworthy.

The draft rules for mining contain a provision which permits any of those rules to be made stricter on a case-specific basis for any proposed mining project. There are no other environmental rules in Wisconsin or anywhere else in the country which specifically permit an agency to make its rules stricter on a case-specific basis, if the environment warrants such protection. Many of our current environmental statutes have a variance program in them, but all are designed to give breaks to the industry and developer. This rules program will allow the citizen or the department to urge that rules be made tougher if the environment needs such protection.

The draft rules will require the mining companies to study and under some circumstances to market their waste in lieu of perpetually storing it in the north woods of Wisconsin. In short, mining need not create tailings piles of waste rock, for these materials can be utilized in the free marketplace. This policy initiative is yet unmatched for any other industry in Wisconsin.

Permits are required for an agricultural enterprise to divert water from

streams for irrigation; the only nonagriculture enterprise requiring permits to divert surfact water will be mining companies. Although we do not currently regulate groundwater quantity use, a comprehensive regulatory program is embodied in the draft rules.

Chapter 421, Laws of 1979 and the DNR rulemaking process were not the only policy making arenas. Other efforts are described below.

When historians write of the fight in the late 1970s and early 1980s about mining in northern Wisconsin, they will probably concentrate on the fundamental shift in power that has occurred as a result of these pieces of legislation.

Other Legislation—Round IV

Other legislative initiatives required to protect mining and assist local citizens were adopted. When historians write of the fight in the late 1970s and early 1980s about mining in northern Wisconsin, they will probably concentrate on the fundamental shift in power that has occurred as a result of these various pieces of legislation. The legal, political, and economic powers of the mining companies and state agencies, vis-a-vis local units of government and citizens' environmental groups have been equalized.

Wisconsin has established a metallic Mining Investment and Local Impact Fund Board, which provides funds in at least four significant areas. (See article by Kohl and Bradbury for the description.)

It should be emphasized that we have no impact board in Wisconsin for any other industry. Even so, three mining companies and various local units of government, along with environmental advocates, are urging the Wisconsin Legislature to pass enabling legislation to permit potentially impacted towns to receive substantial bloc grants from mining companies on an annual basis, beginning immediately, to provide them with more monies to organize effectively their communities, hire the necessary legal talent, and provide for consultants and studies so that the citizens in these towns can effectively participate in the decision on mining. These funds would be available for towns with as few as 400 people and tribal communities with as few as 185 people, to help them control their own destinies.

Wisconsin has adopted a long-term liability legislation package, which provides up to $150,000 per claim for a private injury to a person or property based on finding of strict liability. The claimant need only prove before a state agency that he or she was injured and that it was caused by mining; there need be no evidence that the company acted in negligence. The program also provides that, if Wisconsin does find liability, the state government can then go against the mining company to collect the damages. State government need not concern itself with the corporate structure, either at the time of mining or after mining. The parent corporation or its successor will be responsible. Again, it is noteworthy from an environmental prospective that such a program exists for no industry other than mining.

Wisconsin has established a specific funding mechanism to provide individual rural Wisconsin citizens with monies and water for damage caused to domestic or agricultural water supplies from mining activities. This program is in addition to, and supplements, long-term liability legislation.

Why So Much Success?

The Wisconsin Public Intervenor is often asked why so much has been accomplished in protecting Wisconsin's environment from mining activity. More specifically, the question is asked: Why is it that we seem to be able to develop creative environmental regulations for mining that may be absent for other industries or agricultural development? There are several reasons for the environment success.

The progressive political heritage of northern Wisconsin has been exemplified by the vigorous political leadership of the local community governments. The citizens in the Town of Grant, Town of Nashville, Town of Lincoln, the Sokaogon-Chippewa community and the Forest County Potawatomi community have actively sought to protect their own interests. The original work of the residents of the Town of Grant provided that catalyst for all of northern Wisconsin.

Representative Mary Lou Munts has provided particularly creative leadership in employing the consensus process to reach environmental decisions. Former legislators Harvey Dueholm, Henry Dorman, and Michele Radosevich, along with current state Senator Tim Cullen, have all worked to make the concensus system effective.

The environmental legal team of Kathleen Falk and Susan Steingass of Madison, Kevin Lyons of Milwaukee, and Donald Zuidmulder of Green Bay have also contributed to the success of the regulatory program, and initial work of Frank Tuerkheimer of Madison was most helpful.

The mining companies themselves were active in conceptualizing the environmental program and pushing for adoption. Exxon led the way, Kennecott, in time, began to participate, and finally Inland Steel joined in supporting these important environmental initiatives.

The conduct of the mining companies is easily explained. Wisconsin had not provided the mining companies with the certainty, direction, and regulations necessary to give corporate management the security necessary to make wise mining development decisions in Wisconsin. The consensus process helps provide this certainty to the mining companies. Therefore, the companies can, and do, accept programs and regulations which they would rather avoid for political and economic reasons. As long as the developers know the rules and can expect stability, they are willing to accept tough environmental legislation and rules that they probably could otherwise politically defeat.

Two days after Kennecott saw its mining permit application hearing adjourned in November 1976, a Kennecott official told his superiors what had become painfully obvious: "Getting into bed with environmentalists might rub raw with many of our colleagues, but in this day and age I cannot recommend a better course of action for expedition of our project."

For a few environmental activists in northern Wisconsin I would offer this paraphrase of the Kennecott official's thoughts: Getting into bed with moderate industrialists might rub raw with many of our supporters, but in this day and age of less government, fiscal conservatism, and Jim Watts, I cannot recommend a better course of action for adoption of legislation and administrative rules to protect Wisconsin's environment.

The Environmental Movement

Given the high rate of success in litigation, why is it, then, that the Town of Grant, the Town of Nashville, the Town of Lincoln, the Wisconsin's Environmental Decade, Inc., the Wisconsin Public Intervenor, and others are prepared to use the consensus process to meet the legitimate needs of the environment? Consensus makes sense for the environmental movement for at least six reasons.

First, the results of a consensus approach tend to be logical. Ideas which survive the intense scrutiny of the negotiators generally prove to be sensible. The work product survives the scientific and legal analyses of all the competitors.

Second, the results of the political and legal process are often less certain than the results of a consensus process. In the legal process, particularly, a good advocate cannot always predict the outcome.

With consensus one can have a greater control over the outcome.

Third, the state of Wisconsin has neither the personnel nor the financial resources necessary to allow northern Wisconsin communities to feel comfortable with new mining operations. The mining companies who wish to develop mining enterprises in northern Wisconsin can provide the major personnel and cash contributions. I estimate that Exxon has spent more than $400,000 participating in the development of administrative rules for the protection of the environment from metallic mining waste. And Kennecott has also spent a considerable sum. The expertise, both internal and external, that Exxon, Kennecott, and Inland Steel have brought to the process of writing appropriate regulations is not available to citizens or local and state government in Wisconsin. The consensus approach maximizes utilization of the companies' resources in helping to formulate public policy.

Fourth, the energy and resources needed for a political struggle are more limited for local governments and environmental groups than for corporations. A developer can expect that a prolonged political fight will wear down opponents. Therefore, environmentalists and local governments should secure their legitimate objectives without a fight whenever possible and save their limited energy and resources for conflicts which are inevitable.

The results of the political and legal process are often less certain than the results of a consensus process. In the legal process, particularly, a good advocate cannot always predict the outcome. With consensus one has greater control.

Fifth, a significant reason why the consensus approach to the development of mining regulations was selected was because the towns and the environmentalists needed allies to overcome the Wisconsin Department of Natural Resources' inability to decide the major issues surrounding mining in northern Wisconsin. Exxon, later Kennecott and Inland Steel, came to recognize that mining in northern Wisconsin would only be a reality if the state could complete its regulatory framework. For a variety of reasons—some internal to DNR but some caused by a mobilized consensus group—the department came around to play a major role in the development of Wisconsin's mining policy during 1980.

Sixth, the consensus approach to policy development is a sound social and political way to meet the legitimate needs of both industry and environment. It is an approach that should be encouraged, because it provides a vehicle for maximum citizen participation.

Although there are distinct advantages to the consensus approach to policy development, there is room for differences of opinion and conflict. When and how such conflict will occur will depend on the good faith of those involved, as well as on the complexity and difficulty of the policy issues. While consensus should be the primary tool for policy resolution, all parties reserve the right to diverge from the consensus approach when that is the only way their legitimate needs can be protected.

Risks of Participation in Consensus Process

When participating in the consensus process for the development of public policy for metallic mining in northern Wisconsin, environmental groups are exposed to risks.

An outside observer might conclude that the environmental movement is being soft on the mining companies, since in the consensus movement they work closely with the mining companies. This perception is not accurate: None of the parties to the consensus approach has lost sight of its own needs. Private and public conversations and meetings are vigorous and even heated, although less of the antagonism is expressed to the media. The participants believe that a more sound public policy will be developed if everyone cooperates in an open and public process.

Another risk is that consensus, to a large measure, is dependent upon the individuals who represent various parties to the proceedings. If James Wimmer and Richard Olson from Kennecott, James Derouin from Exxon, or Jeffrey Bartell from Inland Steel were not the representatives of those companies, different political and legal strategies might well have been developed by the mining companies. For example, in January 1979, I observed:

> This Kennecott [litigation] strategy simply depletes the resources and energies of those who should be working on . . . policy items . . . This stonewalling also throws in disarray the ability of everyone else to process the policy problems in an orderly fashion . . . Those of us in Wisconsin must hope that the internal struggle that is occurring at Kennecott at this time will result in the newer progressive forces being able to take charge of mining operations in Wisconsin and that the result will be settlement of the eight legal proceedings.

Individuals make a difference. Moderates within Kennecott succeeded in convincing management to participate in the consensus process. As a result, Wisconsin's environmentalists, local units of government, and Kennecott have all won.

There is also the risk that some participants will be overwhelmed by the experience, expertise, and political muscle of others, particularly when the public forum, which is part of the environmental movement's power, is not used by tacit agreement. All parties to the consensus process need adequate resources to participate at arms-length.

The Remaining Agenda—Round VI

The program described above does not resolve all public policy issues regarding metallic mining. Indeed, those who have participated in the development of draft rules recognize that certain issues have been set aside for future discussion and resolution. Five issues have been clearly identified for future policy development: (1) appropriate rules to regulate acute and chronic toxicity from mining activity; (2) appropriate performance standards for mine shafts and pits to protect groundwater quality and quantity; (3) the role of the WPDES permit program for regulating mining waste; (4) agreement on a definition of "radioactivity" for mining wastes generated by copper and zinc mining; and (5) administrative rules to define and develop the policy concerns of sec. 107.05 of the *Wisconsin Statutes*.

The Permit Hearings—Round VII

Sometime between late 1984 and the end of 1986, the final permit hearing for a new metal mine will be conducted. The mining company's proposal will be measured against the standards for approval established by the state of Wisconsin. While no one knows if the permit will be approved or rejected, one can be reasonably sure that the permitting procedure will be comprehensive, fair, and vigorous. The hearings should be in the best tradition of progressive government.

Conclusion

The Citizens' Advisory Committee to the Wisconsin Public Intervenor and the Wisconsin Public Intervenor are pleased with the direction Wisconsin public policy has taken on mining in the last four years. Whether one is *promining, antimining*, or simply neutral on the issue, one should be encouraged by the tremendous progress that has been made. The consensus approach to policy development has played a significant role in that policy growth.□

Wisconsin's Environmental Regulation of Metal Mining

By Gordon H. Reinke
Chief of the Mine Reclamation Section
Department of Natural Resources

Contrary to popular belief, the Wisconsin Department of Natural Resources has been involved with regulation of the "new" metal mining for over a decade. Probably its first involvement was in the late 1960s when it issued a permit to Jackson County Iron Company (JCIC) for the diversion of water from the Black River for use as process water at their taconite (low-grade iron ore) mine and mill east of Black River Falls.

This permit was granted under a provision of Chapter 107, *Wisconsin Statutes* which was passed when the political climate was much different than now. The purpose of this provision was to ensure that a metallic mineral deposit would not be precluded from being mined because access to needed water was cut off by private landowners. At that time a strong effort was made by the state and the local area to enable the mining company to open and operate their mine, and Chapter 107 was a part of that effort.

As it turned out, JCIC never used the Chapter 107 permit. Enough water for processing the ore was obtained from the open pit mine itself, plus several high capacity wells which the DNR later approved. At this writing, the JCIC mine is the only operating metal mine in Wisconsin.

In the late 1960s and early 1970s DNR staff participated in the development of a mine reclamation statute. The early thrust of this effort was directed at reclamation of sand and gravel pits and quarries. However, the formal announcement by Kennecott in 1970 of their discovery of a small but rich copper deposit near Ladysmith changed the direction of this work. The end result, Chapter 318, Laws of 1973, known as the Metallic Mining Reclamation Act, specifically excluded sand and gravel pits and quarries.

Meanwhile, other environmental legislation was being passed in Wisconsin. Most notable was Wisconsin's Environmental Policy Act which became effective in April 1972. Passage of this act resulted in Kennecott's first formal contact with DNR on July 26, 1972. Because the "Ladysmith Experience" is the DNR's first and most complete experience involving a new northern Wisconsin massive-sulfide deposit under the new environmental laws, because it has led to the complex array of new laws and rules and revisions of existing laws and rules, and because it has become the subject of so many inaccuracies, it will be treated in detail later in this article. For now, let it suffice to say that many of the DNR staff were involved with this project from July 1972 to the permit hearing in November 1976.

The Metallic Mining Reclamation Act became effective in July 1974. The act created a five-member Mine Reclamation Council appointed by the governor to assist DNR in the development of administrative rules to implement the act. Council members were appointed in July 1975 and from that time assisted DNR staff in the drafting of these rules. The rules became effective November 1, 1976, as Chapter NR 130 (prospecting) and NR 131 (mining).

During this interval several other events of major significance to DNR and related to metal mining occurred. In 1975 Noranda Exploration presented DNR with a preliminary project proposal for their small zinc-copper discovery near Pelican Lake in Oneida County. In March 1976 DNR held a hearing in Ladysmith on its Environmental Impact Statement (EIS) for the Kennecott project. On May 9, 1976, the DNR's Mine Reclamation Section was established.

The most significant event, and the one which initiated the considerable controversy over metallic mineral mining which continues to this day and will probably be with us for some time, occurred on May 12, 1976 (three days after the writer innocently assumed his present position as chief of the Mine Reclamation Section). On that day, Exxon announced the discovery of their large massive sulfide zinc-copper discovery near Crandon in Forest County.

A hearing on the Kennecott permit application was held in November 1976. Following this hearing, there was intensive legislative activity relating to metallic mineral mining. Most important to the DNR were the extensive revision of the Metallic Mining Reclamation Act (Chapter 421, Laws of 1977, effective June 1978) and the revision of the solid waste statute (Chapter 377, Laws of 1977, effective May 1978).

As a result of Chapter 421, the DNR had to revise the existing administrative

rules for mining. The new codes had to be presented to the legislature within 90 days after the effective date of Chapter 421. This was accomplished with the advice and assistance of the new Metallic Mining Council, created by Chapter 377 to replace the Mine Reclamation Council. The new council consisted of nine members appointed by the secretary of DNR for the purpose of advising and assisting DNR in the development of mining rules.

The second set of rules, which became effective February 1, 1979, and are still in effect at this writing, are NR 130 (exploration), NR 131 (prospecting), and NR 132 (mining). Besides creating the new council, Chapter 377 also stipulated that metallic mining wastes were solid wastes and as such must be licensed under the solid waste law. However, it recognized that these wastes had unique characteristics and directed DNR to prepare special administrative rules governing them, with the advice and comment of the new council.

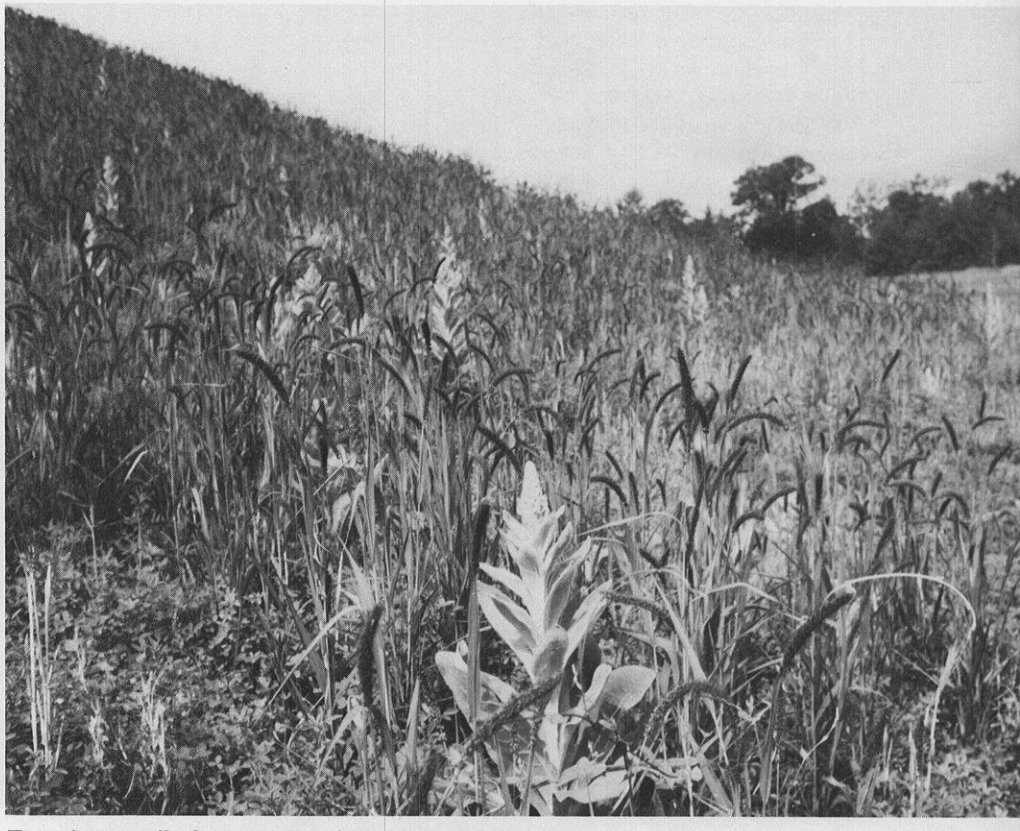
The DNR working with many interested parties and with the council has prepared these rules, known as NR 182. As a result of legislative changes and the new provisions of NR 182, Chapters NR 131 and NR 132 have also been revised. These three codes have been the subject of three public hearings held in Ladysmith, Crandon, and Madison in September 1981; they will go to the Natural Resources Board in the near future for their final adoption and submission to the legislature.

From 1977 to the present, in addition to the many hours spent working with new legislation and rules development, DNR staff at both the district and headquarters level have spent thousands of hours monitoring Exxon's data-gathering activities in the Crandon area and reviewing and commenting on numerous company and consultant preliminary reports and other documents.

This lengthy chronicle of the past and present DNR involvement with mining has been made for several reasons. The primary reason is to give the reader a perspective of where we are and how we got there with regard to DNR regulation of mining. Time and space limitations do not permit a detailed discussion, but the point should also be made that in addition to complying with the specific mining laws and rules which have been developed as described above, mining operations must comply with all other applicable DNR regulations just as other industries must. Required permits and approvals governing water treatment and discharge, air contamination, surface water use, and all the other possible activities must be obtained by the companies in addition to the mining permit, solid waste license, and compliance with EIS procedures.

Taconite ore pile before reclamation

Courtesy Department of Natural Resources



Taconite ore pile four months after being hydroseeded

A second reason for the lengthy discussion was to establish the fact that DNR has had considerable experience and involvement in the new metal mining, dating back to the late 1960s. In conjunction with this, a criticism often leveled at DNR is that it does not have the staff or expertise to deal with mining. There will be additional staff requirements if and when permit applications are submitted. Such occurrence depends on world metal prices, taxes, and local acceptance, as well as other variables beyond DNR control. I believe that when such staff requirements develop they will be met. In addition, the mining staff does not operate in isolation from other environmental disciplines within the department. When a problem is encountered that crosses the administrative divisions within DNR, persons from other bureaus make their expertise available, in effect augmenting the mine reclamation section and Bureau of Environmental Impact.

Now, as promised earlier, a more detailed view of the "Ladysmith Experience." The first formal contact between Kennecott and DNR was made on July 26, 1972. On October 4, 1972, DNR notified Kennecott of permit and EIS requirements. This happened two years before the effective date of the original Metallic Mining Reclamation Act. On June 25, 1974, DNR received an Environmental Impact Report (EIR) on the project from Kennecott consisting of four volumes totaling over 800 pages. (The EIR provides information which is used in the EIS.) The DNR reviewed this document and requested additional information and eventually received an addendum of 186 pages.

The DNR prepared a Preliminary Environmental Report (PER) which was published in August 1975, and circulated *widely* for comment. At the end of the comment period, the DNR had received three letters from federal agencies, five from state agencies, and *none* from local agencies. We also received six review letters from citizens and corporations concerned with the project. This small number of letters from citizens was unusual, especially in light of subsequent citizen concern about the project.

After reviewing these comments, the DNR requested and the company supplied additional written material. The PER was subsequently redrafted and issued as the DNR's EIS which was circulated to the public on February 3, 1976. Over 200 notices of the availability of the EIS and of the public hearing to be held were sent to various units of government and to citizens concerned with the project.

The public hearing on the EIS was held in Ladysmith on March 4, 1976. Following the public hearing a 14-day period was set aside to receive written comments on the document. On June 15, 1976, the hearing examiner issued his opinion that the DNR's EIS had fulfilled the requirements of the Wisconsin Environmental Policy Act. It is interesting to note that although this EIS has been the subject of considerable criticism, at the time it was rated excellent by a University of Wisconsin survey of EIS's, with the sole criticism that it was perhaps "too technical."

During the summer of 1976 the company developed and eventually submitted applications for the mining permit, water discharge permit, and several surface water regulatory permits which were to be the subject of a contested-case public hearing. These applications were developed with the DNR, and consideration was given to all the concerns raised by the EIS review process. It should be pointed out that Chapter NR 151, the administrative code of solid waste management in effect at that time, exempted from license requirements those facilities which were exclusively for mine-tailings disposal. Requirements for the construction, operation, monitoring, and maintenance of the proposed tailings facility were to be covered under the mining permit but were to be determined by personnel from the DNR's solid waste section.

The hearing on the mining permit and the other required DNR permits was held on November 9 and 10, 1976, in Ladysmith. The new public intervenor became involved in the project a little over a month before the public hearing on the permits was held. The Town of Grant, where the ore body is actually located, hired a lawyer to represent their interests, also about one month before the hearing. The Natural Resources Defense Council was represented by attorney Frank Tuerkheimer.

These parties met with Kennecott's attorneys and DNR's legal counsel at a prehearing conference. At that conference a hearing procedure was established by the parties. It was agreed that the hearing would follow this format: About one week would be devoted to direct testimony by all witnesses. A special evening session would be held at which concerned citizens could express their views in an uncontested setting without being subject to cross-examination. The hearing examiner would give whatever value he chose to these citizen comments. At the end of direct testimony, the hearing would be recessed for about one month. Transcripts of that portion of the hearing would be prepared and furnished to all parties. The hearing would reconvene and cross-examination of the regular witnesses would take place. Upon completion of the cross-examination the hearing would be adjourned, and the hearing examiner would examine the hearing record and render his decision.

The hearing proceeded as planned for the first one and one-half days. However, on the afternoon of the second day, during the testimony of Kennecott's second witness, the attorney for the Town of Grant presented the examiner with a resolution just passed by the Rusk County Board (Resolution #229) which said in essence that the county would deny zoning to Kennecott until the state legislature passed legislation adequately protecting private property and revised the tax laws to provide an acceptable return of tax money to the local communities.

Since the law and rules provided that a complete application must include evidence satisfactory to the DNR that the project would comply with local zoning requirements and since Resolution #229 clearly was a denial of such zoning, the hearing examiner adjourned the hearing.

Only two witnesses for the company had testified. Several more company experts had been scheduled to testify on the hydrogeologic aspects of the pit and the tailings pond. No other witnesses received an opportunity to appear. In my opinion this lack of scientific testimony for all parties with subsequent cross-examination was unfortunate. DNR was prepared to offer testimony by a hydrogeologist from the solid waste section, an environmental engineer from the industrial waste water section, and a limnologist from the Inland Lake Renewal Office, among others.

Resolution #229, which led to the adjournment of the Kennecott hearing, is fairly well known. Not as well known, but perhaps equally significant is the fact that on February 8, 1977, three months after the hearing was adjourned, the Rusk County board passed Resolution #258. This resolution states:

> NOW THEREFORE, BE IT RESOLVED that the Department of Natural Resources be advised that it is the desire of Rusk County that the mining permit and reclamation plan proceedings before it be permitted to continue; that **it is the intent of Rusk County to grant necessary zoning approvals and mining permits to the Flambeau Mining Corporation provided Flambeau Mining Corporation complies with all requirements of law,** [emphasis added] all on condition that the legislature enact legislation allocating a just and equitable share of the tax dollars derived from the proposed mining operation to the local units of governments in which said mining operation will be located; and on further condition that reasonable protection be provided to the property owners of the Town of Grant for the impact of the mining operation upon them.

Many important decisions regarding mine laws and rules have been made since that time, and a complete documentation

Courtesy Department of Natural Resources

JCIC class 3 ore pile being hydroseeded in May 1981

The same ore pile after summer's growth, August 1981

of the project and DNR's reaction to it would have been helpful to the decision makers. In addition, many misunderstandings about the project which still persist today might have been cleared up had the hearing been completed. **For example, when Kennecott first approached the DNR with a proposal, they wanted to place the process water remaining in the tailings pond at the end of the operation in the bottom of the abandoned open pit and fill the rest of the pit with water from the Flambeau River to create a lake. To justify this proposal, the company presented data showing that the lake would be meromictic—that is, it would not experience the normal seasonal turnover of water which would, of course, bring this contaminated water to the surface. At that time, when DNR informed the company that this proposed disposal of contaminated water was unacceptable, the company dropped the idea and did not propose it in their permit application. Once this idea was vetoed, the question of whether or not the lake would be meromictic became of much less significance and was certainly no longer a key issue. Testimony by DNR's limnologist and other witnesses would have done a great deal to establish the degree of importance of meromixis.** To this day, this issue has been treated by some as of much greater importance than it actually is in the view of DNR technical staff.

To conclude the "Ladysmith Experience," about one year after the aborted hearing the DNR dismissed Kennecott's application "without prejudice." If Kennecott decides to proceed with the project, they will have to submit new applications. A new EIS will have to be prepared by DNR, and a hearing will have to be held on the permits and the EIS.

I would like to conclude with what I perceive as DNR's role regarding metal mining in Wisconsin. We are neither pro-mining nor anti-mining. Our job is to determine that any mining operation in this state will be permitted to proceed only if it will be done in an environmentally sound manner as outlined by our laws and rules. Further, we must see to it that such operations do actually comply with permit requirements and the applicable laws and rules during the actual operation, and upon closure of the mine. This includes reclamation of the site and the return of the land to a useful condition as spelled out in the reclamation plan.

The people's elected representatives in the legislature determine that metallic mining as an industry is acceptable in Wisconsin, which they have done with the existing laws. Whether or not an individual operation is acceptable to a local area is up to the local citizens. These decisions will be made on a site-specific basis by the local citizens through their elected representatives and using local authority such as zoning regulation.□

The board was established to provide financial assistance to communities affected by mining-related impacts incurred prior to, during, and after mineral development in an effort to avoid the "boom-bust" mining syndrome. The board has granted nearly one-million dollars to municipalities for comprehensive planning, legal counsel, environmental studies, consultants, education, and capital improvements.

Wisconsin's Mining Investment and Local Impact Fund Board

By Elizabeth Kohl and Philip J. Bradbury

As a new entity in the governmental structure of Wisconsin, the board wields great influence in deciding how to alleviate mining-related impacts, is an important link in the relationship between state agencies and local governments, and complements the local fiscal structure in determining how mining tax monies will be distributed.

The discovery of an ore deposit is likely to be accompanied by the expectation of economic development, bringing new businesses, more jobs, and capital investments to an area. History has shown that adverse social and environmental impacts may also be the companions of mineral development. In 1977, the Wisconsin Legislature established the Mining Investment and Local Impact Fund Board to help local communities address mining-related impacts. This article provides an overview of the board's statutory authority, as well as the policies and decisions that have characterized it since its inception.

Wisconsin's approach

The nature of mineral development creates short and long term costs not commonly associated with other kinds of industrial activity. Often, the ore body is located in a rural area lacking the public and private services required to accommodate sudden growth. An influx in population places new demands on housing, schools, water and sewer facilities, roads, and businesses. Local governments are faced with far-reaching decisions involving where and when to build, and more importantly, how to pay for expensive improvements. Without other sources of revenue, these front-end costs can burden existing, local taxpayers.

Communities must also consider the long-term social, environmental, and economic costs of metallic mining. The development and extraction of a mineral deposit represents a temporary, commercial endeavor. During the operation of a mine, employment is relatively stable. When the mine closes, however, alternative job opportunities and local development projects will be needed to compensate for economic decline and social impact. In addition, the depletion of a valuable natural resource may permanently alter the quality of the environment.

Anticipating a new generation of mining in Wisconsin, the state legislature established the Mining Investment and Local Impact Fund Board (MILIFB):

> to provide funds to municipalities for costs associated with social, educational, environmental, and economic impacts of metalliferous mineral mining incurred prior to, during, and after the extraction of metalliferous minerals. Sec. 70.395(2) of the *Wisconsin Statutes*

This step should ease the strain on local communities as they prepare for mineral development and reduce the likelihood of "boom-bust" mining in Wisconsin.

The MILIFB is composed of five local government officials, two public members, and two state agency representatives. As a new entity in the governmental structure of Wisconsin, the board wields great influence in deciding how to alleviate mining-related impacts and has become an important link in the relationship between state agencies and local governments, as well as among local municipalities in the region where a deposit is located. In bringing together the interests of various communities, the board complements the local fiscal structure in determining how mining tax monies will be distributed. The board derives its revenues from the Investment and Local Impact Fund.

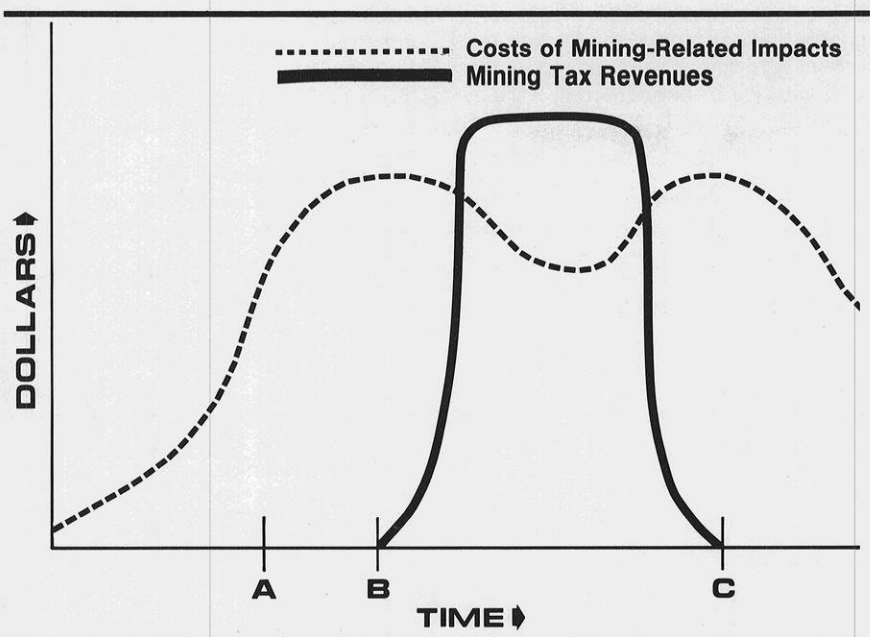


Fig. 1 Under Wisconsin's net proceeds tax on mining, the collection of tax receipts does not begin until the mine is in operation. Communities need revenue to pay for mining-related impacts before and after mineral extraction takes place. The MILIFB provides financial assistance to municipalities preparing for mineral development, as well as those localities where a mine has closed (A = mine construction, B = mine operation begins, and C = mine closes).

The Investment and Local Impact Fund

Currently the Investment and Local Impact Fund has three sources of revenue. Sixty percent of Wisconsin's net proceeds tax on mineral mining is deposited in the fund. Because the net proceeds tax is not collected until a mining company begins operation, this source of revenue has been limited, thus far. To cover front-end mining expenses, the state legislature has given the board a two million dollar loan. This loan, along with 20 percent of Wisconsin's occupational tax on iron ore concentrates, has enabled the board to make payments and grants to municipalities for mining impacts (Fig. 1).

The MILIFB awards three kinds of grants to communities from the impact fund. First, payments are made directly to those municipalities and counties where metallic minerals are being extracted. These "guaranteed payments" are determined by the amount of net proceeds tax a mining company pays for each active site, ranging from $75,000 for municipalities to $750,000 for counties. The funds are to be used by the communities for mining-related costs. Ordinarily, local property taxes would be used to finance such expenses. However, mineral deposits are exempt from property taxes, thereby cutting off a primary source of local government revenue. In January 1982 the first guaranteed payments will be made to Jackson County and the Town of Brockway—the location of Wisconsin's only active mine site.

The impact fund also provides revenue for discretionary payments and emergency grants. Each year, the MILIFB distributes grant monies to counties, townships, cities, villages, school districts, and tribal governments to alleviate mining-related costs. To date, this Discretionary Payment Program has focused on impacts associated with premining development and postmining problems. The board also has the authority to allocate emergency grants to communities for sudden and unforeseen problems related to mining.

Board policy

The *Wisconsin Statutes* provide guidelines for distributing mining tax revenues to municipalities. The Statutes outline the projects and purposes for which discretionary grants can be made. In addition, these funds must be apportioned according to geographical priorities based on the location of the extracted minerals. Within the context of these guidelines, the MILIFB has broad policy-making authority. Such flexibility allows the board to respond to a variety of mining-related impacts that communities face.

Several large mineral deposits have been discovered in northern Wisconsin and extensive exploration continues. The status of full-scale mineral development, however, remains uncertain. This uncertainty has been influential in guiding the policy of the MILIFB. Furthermore, because a relatively small amount of mining tax revenue has been generated, the fiscal policy of the board has been somewhat restrained. These factors also influence communities as they prepare for the potential impacts of mining and the kinds of projects that require funding. Several of the MILIFB's policies for the Discretionary Payment Program are summarized here:

(1) *To encourage cooperation among neighboring units of government:* In an effort to promote comprehensive solutions, reduce costs, and avoid duplication, the board has funded several projects which encompass the mutual concerns of adjacent communities. The board has encouraged the coordination of planning projects, environmental and technical studies, and the formation of joint impact committees.

(2) *To establish levels of funding assistance:* Each year, the board has set levels of funding assistance for communities in certain geographical areas. The levels reflect the proximity of a municipality to a mine site, the status of the mining operation, and the degree to which an impact is mining-related. In addition, the MILIFB has established uniform levels of assistance for project categories, including legal services, local impact committees, and comprehensive planning. This policy attempts to treat each community in a similar manner and assumes that need is not necessarily a function of size.

(3) *To require cost-sharing by local governments:* The MILIFB has initiated cost-sharing arrangements with communities for those projects which are partially mining-related and when certain benefits will accrue to the municipalities beyond those which address, specifically, a mining impact. This policy is designed to increase the accountability of the board and the local units of government. Although this method of distribution enables the MILIFB to assist more communities, the policy has been criticized by some who feel that all mining-related projects should be funded, in total, by the board.

(4) *To give priority to noncapital projects:* In those regions where the timetable for mineral development remains uncertain, the MILIFB has given priority to noncapital projects. The pending status of mining makes it difficult to determine when public services will be needed. The board has encouraged municipalities to apply grant monies to the identification of potential mining impacts and strategies to deal with these impacts. Consequently, the board has given priority to comprehensive planning, legal and technical studies, or those projects which prepare a community for mineral development. Capital intensive projects will be given a greater priority as mining companies finalize their development plans.

As mining progresses in the state and the membership on the board changes, revisions in these policies can be expected.

What's happened so far

The MILIFB has just completed the third Discretionary Payment Program. To date, a total of $880,000 has been awarded to thirty communities (Fig. 2). The majority of these funds have been allocated for premining impacts. These projects have included grants for (1) comprehensive planning to assess community needs for housing, transportation, public services, capital improvements, and recreation; (2) legal services for community representation in negotiations with mining companies and state agencies; (3) environmental and technical studies to acquire base-line data for planning projects and to review environmental impact reports; and (4) local impact committees to organize citizen input into the planning process, to gather information for public dissemination, and to serve as the focal point for mining concerns in the community. Although local impact committees have received a relatively small portion of impact funds, they have played an important role for citizen participation. In a few instances, funds were provided to repair roads damaged by mining activities and to expand existing government facilities.

Lingering problems associated with the early mines of northern and southwestern Wisconsin have received attention by the board as well. The MILIFB has provided funding to Lafayette County to assist landowners dealing with groundwater pollution near a recently abandoned zinc mine. The board awarded grant monies for Mineral Point to evaluate reclamation alternatives for mine-waste disposal sites. In Iron County, the board has funded fencing and filling activities to help Hurley and Montreal address safety problems where old mine shafts and tunnels have caved in.

Grant awards for 1982 covered many of the same activities funded in previous years. Changes in the development plans of the mining companies could, however, cause communities to reevaluate their needs. Similarly, the MILIFB may want to review their current policies in light of any changes and make necessary revisions. For example, a decision by one of the mining firms to cancel a project would reduce the need to provide funds to an area. On the other hand, a decision to go ahead with an operation could increase the funds for certain capital projects and expansion of public services.

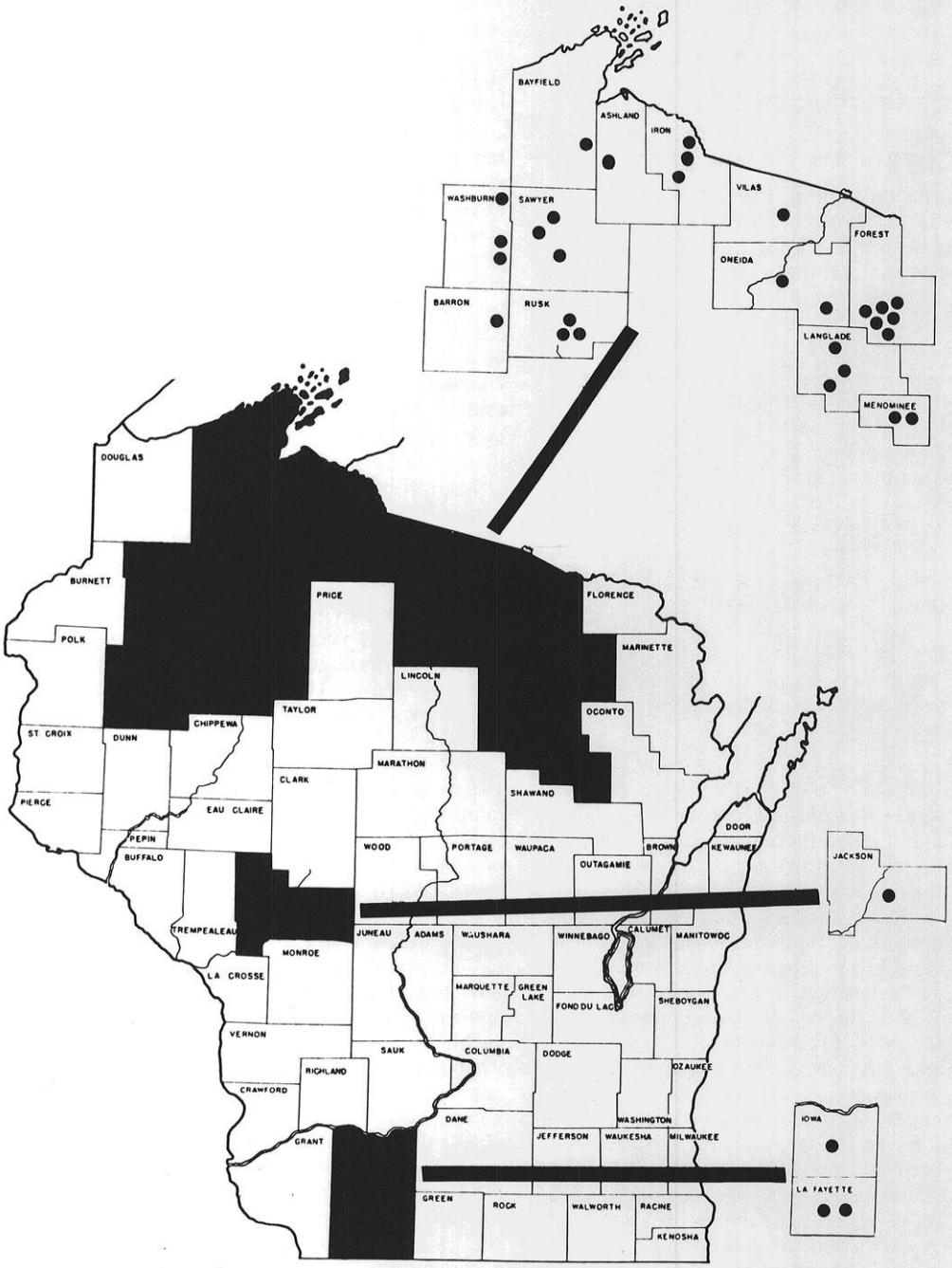


Fig. 2. Grant Recipients for Mining Impact Funds June 1979 - October 1981

Summary

The Mining Investment and Local Impact Fund Board was established to serve the needs of communities affected by mining-related impacts incurred prior to, during, and after mineral development. By providing financial assistance to municipalities, the board hopes to avoid the problems associated with "boom-bust" mining impacts. During these formative years, and not without controversy, the MILIFB has granted nearly one million dollars to municipalities for comprehensive planning, legal counsel, environmental studies, consultants, education, and capital improvements.

The future success of the MILIFB will depend on the board's ability to anticipate and address local needs, given its statutory responsibility and available funding. Its success will also be reflected in how well communities are able to deal with the adverse effects of mining and benefit from its many opportunities. To date, the board has achieved a responsible balance between the needs of individual communities and the broader interests of the state. In the years ahead, the board will be challenged to find innovative ways to maintain this balance□

Lore

By Arthur Hove

The speaker at a social gathering launches into a detailed recounting of how this year's Master's champion played the fifteenth hole at the Augusta National Golf Course. The selection of club for each shot is mentioned, as is the speed and direction of the wind and the condition of the fairway and green. Reference is even made to how the champion dressed and the size of the crowd that followed him around the course. Comments are also offered about other players in the tournament; observations are made about everything from the fluidity of their golf swings to the types of products they endorse to supplement their earnings.

Those who are interested in such things listen attentively. Those who are not let their eyes glaze over with indifference or boredom. Often they will drift towards another group where the conversation is on another subject. If they feel trapped and cannot graciously extricate themselves from the conversation, they feign concentration on the speaker as their thoughts wander to a topic quite removed from the talk that swirls about them.

Their problem is they are unresponsive to the lore of the subject being discussed. If the conversational direction suddenly shifts to something that interests them, they respond with relish to the special language used to explain and expound upon the topic at hand. Boredom is no longer a problem. Enthusiasm fills the former vacuum of indifference. Under the proper circumstances the listener becomes a speaker, particularly if the subject is one he feels comfortable with.

It is not essential to be an expert if you are reasonably familiar with the lore. The very nature of lore is that it is constantly being refined. New insights and experiences are being accumulated to augment the canon. There is no definitive answer. If there were, the subject would lose much of its aura and appeal. Too much definition, too much certainty and things are relegated to a catalog of dusty scholarship and legalisms.

The fifteenth hole at Augusta National has an infinite range of possibilities. Those who play it—even if it is only in their minds—take into account how all those who have gone before have played it. Yet each time the hole is played, it is played anew. Meanwhile, the lore about this particular hole and golf in general continues to grow—and change. New mysteries are added, old ones discarded. The fascination with the subject continues for those who find talking about golf sometimes as important as playing it.

In this century, the scope of lore seems to have grown exponentially as the topics that generate lore proliferate. The field was narrower in those times when folklore served as the principal vehicle for the preservation and transmission of information. From the Arabian Nights through the Mabinogi and the Norse sagas to the Brothers Grimm, Asbjørnsen and Moe, and Hans Christian Andersen, collections of stories and tales transmitted simple lessons and information to the commonfolk. The tales were a source of wisdom on how to survive in a hostile world or how to understand the capricious nature of fate.

Many of our own childhood impressions were colored by these stories which have been transmitted to us from a variety of cultures. Parents, recognizing their effect, would often use them to strike fear into our innocent hearts and thereby elicit obedience, or simply to demonstrate that the world is a wondrous place.

Over the past several years, lore has accumulated in other places; an incredible amount of information flows through the steadily rising stream of contemporary communication. Stewart Brand synthesized a significant sampling of this lore in his *Whole Earth Catalog* which first appeared in the 1960s. For those who don't remember—or who haven't got a copy of the catalog with its moldering newsprint pages lying around the house—Brand's dizzyingly eclectic compendium is designed to give an individual the power "to conduct his own education, find his own inspiration, shape his own environment, and share his adventure with whoever is interested." Everything from the arcane to the pedestrian is included in this volume which offers information on subjects which range from building a yurt to making a shakuhachi flute. Subtitled "access to tools," the catalog is a liberating document for those who feel trapped by the strictures of modern civilization or for those seeking release from the numbing sameness of mass culture.

Brand and his colleagues who helped assemble and market the catalog captured a spirit that was in the air during the 1960s. A replication of their efforts has appeared on the shelves of bookstores throughout the country as publishers have eagerly sought to capitalize on the latest fad that sets some sort of creative impulse loose in a segment of the population. The number of volumes on any given subject grows because nothing ever seems to be the definitive treatment. There is always reason to consult another book, check another source to make sure nothing has been missed.

That, of course, is the constant about lore. The covers are never closed on the book. Chapters filled with new insights and information are continually being added. Such a realization is a godsend for the entrepreneur. It means that anyone who has the right instincts and reasonable business savvy can put together a package that will appeal to those information junkies who are forever seeking a new fix of lore.

In the past, lore was transmitted through a tribal network, passed from generation to generation by shamans and other pretenders. In today's global village, where the tribe, much less the nuclear family, has lost its cohesion, lore is passed along not by the elders or the storytellers, but by the media.

As some social scientists periodically remind us, the media have an inordinate influence on shaping our thoughts and perceptions. They form an environment that many of us are more familiar with than the topography of the landscape we inhabit. From the *National Enquirer* to the *New York Times,* from "Peanuts" to the Op-Ed page, from "All in the Family" to "Masterpiece Theatre," from *The Joy of Sex* to *Theory Z: How American Business Can Meet the Japanese Challenge,* the lore builds up. We take bits and pieces from the sampling to reinforce our prejudices and expand our perspectives. Subconsciously we carry around an ideological baggage that is freighted with facts

and lore and psychology. The collection process is constant and, in many cases, unconscious.

While lore belongs exclusively to no special group, it is—or can be—the special province of those who share its secrets and can decipher its special language. Jargon and idiom become the key components in this context. Words, phrases, and shadings of meaning can all have an impact on our understanding of and appreciation for a particular subject. What might seem a commonplace to the uninitiated is really the essence of the subject for those who know the significance of the lore. This way lore separates the insiders from the outsiders. It says "I know this and you don't." Or, as a popular comedian used to introduce himself, "Hi! I'm Chevy Chase . . . and you're not."

Those who know the lore about a given subject form a branch of freemasonry that sets them apart from others. The acquisition of lore becomes simultaneous with the achievement of status. Those who know the lore not only obtain individual but group identity. The sharing of lore or its transmission becomes a way of controlling things, of selecting who belongs and who does not. As a result, lore is often zealously guarded lest the uninitiated or unworthy gain an access they are not entitled to. Not everyone is awed by the prospect of others possessing privileged information. Emerson said, "I laugh at the lore and pride of man."

The interesting thing about lore is that it has a way of accumulating without any particular regard for the intrinsic value of the subject it describes. The lore just grows, like some kind of magic mushroom, so that once it reaches a given size it subdivides into additional subgroupings of interest.

By its nature, lore can invest the things of everyday life with a quality that exceeds their relative importance in the overall scheme of things. Storytellers, both ancient and modern, reflect this phenomenon. It is an essential part of their bag of tricks to imbue the quotidian with a mystical quality. What was dirt common suddenly becomes etherial or a peg on which to hang elaborate skeins of narrative to be woven into myths that comprise a truth of sorts.

For those of us who don't indulge, it would seem that one television show about bass fishing or one magazine article about bowhunting would be enough. But apparently not. The possibilities for variations on the basic theme are seemingly endless judging by the frequency of the bass fishing shows and bowhunting articles that keep circulating.

Along the way in this and other instances, truth often gets mired down in the sloughs of instinct and intuition. But then truth is a relative concept anyway. In the case of lore, it often seems to be a byproduct rather than the essence. Lore involves a certain bending of the truth—or at least a generous stretching of the imagination.

American folklore reflects a noticeable penchant for exaggeration and hyperbole. As Bernard de Voto has observed, "The Americans, and especially the Americans who live in the open, have always been storytellers—one need only recall the rivermen, the lumberjacks, the cowmen, or in fact the loafers round any store at a rural crossroads. . . ." From Paul Bunyan to Mighty Joe Young, we have come to prefer that our heroes and heroines be larger than life. Historians and anthropologists are just now getting around to providing us with a revisionist, reductionist perspective of the heretofore romanticized nineteenth-century American experience. Some of the lore of the American frontier, we are reminded, was inflated to the point where it bore little actual resemblance to the reality of the day. The inclination has not been abandoned. Television, for example, gives us "Dallas" with its impressions of life in a city that is largely unrecognizable by the natives who currently inhabit the place.

But even in the light of its sometimes dubious truth, lore has a characteristic that properly identifies it—it must be quantifiable and capable of being catalogued into a body of knowledge that can be preserved and passed on. Random bits and pieces won't do. There has to be more substance. Lore has to possess a palpable reality, even though it may often deal with realities not apparent to the naked eye.

It is unlikely we will loose our enthusiasm for or fascination with lore. In troubled economic times such as the present, lore takes on a new significance. It has a double-edged purpose. On the one hand it takes our thoughts off the concerns of the moment. On the other hand, it can set us to leafing through newspapers and magazines, reading books, or listening to radio and watching television as we search for some new fragment of lore that will be useful in achieving some form of economic security, even if we don't get rich in the process.

Few of us ever do get filthy rich, or even mildly soiled by what W.C. Fields called "those elusive spondulicks." But then few of us can resist the temptation to consult the latest lore for hints on how others manage to wallow in the good fortune they have achieved through following the lore.□

The Trees

The object of my life is
to think about death.
—John Henry Newman

At this moment
thousands of trees are falling
all over the world,

Are moving through
appointed space and time,
leaning over each other
in silent diaspora:

Are crashing into each other
crumbling through upper branches
still with the green
of last spring,

Are hurling one off the other
stripping, in silence,
the bark of the other
to cold and mossy ground.

Some fall straight and clean
and hard to bare ground,
releasing their lizards
and nestling birds.

One is caught in the sling
of another's arms,
two fall parallel
as mates in the trenches.

One or two fall and
like the swan's neck peer
in wait of heavier rain
or simply the slow decay
of each thin ring.

—Travis Du Priest

BOOKMARKS/WISCONSIN

THE RENÉ VON SCHLEINITZ COLLECTION OF THE MILWAUKEE ART CENTER. MAJOR SCHOOLS OF GERMAN NINETEENTH-CENTURY POPULAR PAINTING by Rudolf M. Bisanz; Milwaukee Art Center/The University of Wisconsin Press, Milwaukee/Madison, 1980. 293 pp. $30.

By Barbara C. Buenger

The Milwaukee Art Museum's René von Schleinitz collection comprises over one hundred and eighty German paintings of the nineteenth century, many of which demonstrate popular romantic and realist tendencies of artists of the Wilhelmian period (1871–1918) now considered relatively minor if not forgotten. The collection, which was formed by Schleinitz, a German-born resident of Milwaukee, in the 1950s and 1960s, has finally received thorough treatment in Rudolf Bisanz's definitive catalogue. The author's lengthy introductory essay and catalogue entries seem to document everything relevant to the works, their artists, and their historical background and to the artistic centers—primarily Munich and Düsseldorf—in which this kind of popular painting flourished. Bisanz, a well-known authority on German Romantic and Biedermeier art, brings a remarkable mixture of learning, questioning, and sensitive observation to his complex and informative study; unfortunately, it is often just because he covers his subject so exhaustively that his discussion becomes muddled. The text is almost too detailed, with the look but not the clarity of organization; it has too many passages of flowery description that seem to have no purpose, and far too many terms enclosed in quotation marks but never explained. Readers will be stimulated by a wealth of ideas, but left longing for more decisive answers to questions about these paintings' significance.

Although the collection contains many minor works, it is not at all lacking in paintings of considerable interest and quality, many of which are usefully reproduced in color plates. The better ones tend to date from the earlier period of circa 1840–1870, and are by several highly respected figures (including Achenbach, Braith, Bürkel, Defregger, Gauermann, Leibl or a follower, Lenbach, Schreyer, Spitzweg, Waldmüller, and Zügel) who were included in the important Centennial Exhibition of German Art held in Berlin in 1906. For every artist in the collection exhibited in that show, however, five others were not.

Most of the Schleinitz paintings were executed primarily in the period following the Franco-Prussian war, as Germany's rapidly expanding industrialization contributed to the growth of a large middle class that sought to demonstrate its arrival in possessions and especially in art. These patrons were drawn chiefly to works that embodied the best bourgeois values of simplicity, thrift, intimacy, and humor; they chose pronouncedly German and stereotyped subjects of pastoral or domestic genre depicted on a relatively small scale, subjects that with time became increasingly banal, saccharine, or droll. Although this kind of painting is called bourgeois realism, it really is romantic, almost totally removed from a period that generally championed progress and monumentality and that witnessed highly disruptive changes as the nation went from an agrarian to an industrial economy, forcing a large segment of the rural population to deal with the grim realities of the new cities. At its most intense it was no more than chidingly didactic or moralizing: in Bokelmann's 1877 *The Broken Bank,* for instance, one of the collection's few paintings to deal with a contemporary theme, the artist uses a symbolic spilt dustbin in the foreground to warn chiefly against the risky modern ways of the city; unlike the Naturalists of the next decades, he makes almost no attempt to suggest the harsh consequences that did accompany the bank failures and depressions of 1873 and 1877.

Bisanz notes how these popular tendencies and the huge academic salon-pieces of Makart, Kaulbach, and Piloty continued to win official and popular approval in Munich even after 1900; since he only marginally notes the existence of other contemporary trends, however, he unwittingly leaves the impression that these were the only alternatives open to German artists. Another development, far more relevant to these popular traditions than academic practice, was the unprettified and frank form of realism of Leibl, Liebermann, and Trübner, now represented in Milwaukee by Trübner's forceful *Salome* of 1898. That realism, however, was so harshly criticized as "repulsive" and "coarse" in the Munich that enthusiastically received the popular tendencies that its masters eventually had to leave that city to find support elsewhere.

In trying to redress earlier neglect of popular traditions Bisanz often makes claims for their originality and importance that seem exaggerated or weakly based. The Schleinitz paintings are enjoyed not because they are great, challenging, or original, but because they are so German, timeless, amusing, and lacking in complexity. The better German artists of that period—the Leibls, the Liebermanns, and the Trübners—subjected themselves and their works to a more severe scrutiny; their more serious convictions about their art and calling ultimately became that period's most vital and important legacy to the inventive artists of the following generations.

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OUR NATIONAL PARKS by John Muir; The University of Wisconsin Press, Madison, Wis., 1981 (reprint of 1901 edition). 370 pp. $25 cloth; $6.95 paper.

By Dennis Ribbens

The ten essays which make up the chapters of this book were first published in *The Atlantic Monthly.* This latest of Muir works published by The University of Wisconsin Press joins three reprints of the same title already on the market. The virtue of this edition is not in anything new that it brings (the introduction is

adequate though unremarkable), but in its greater accessibility to the book-buying public. Today Muir's *Our National Parks* deserves attention, though not primarily for the reasons given by the publisher who calls it "a guidebook supreme," one which will leave its readers without rest until they have retraced Muir's steps.

One could argue that the title of the book was inappropriate even in 1901. The first chapter provides an overview of the western national parks; the second a description of Yellowstone National Park. But the following six chapters, not surprisingly, provide great detail on the Yosemite area. In the close cataloging of the area's geology, flora, fauna, birds, and hydrology, one easily loses the park perspective. Likewise the chapter on the sequoia provides a fascinating history and description of the tree itself, not an introduction to the park lands. Even more to the point is the final chapter on the American forests: an essay on forest usage, a diatribe on misusage, not an introduction to any forest locale.

To present the book as "a guidebook supreme" in 1981 seems especially to be an error. The book might better be billed as vintage Muir, a book containing the old Muir zest, one which not only glories in nature, but states eloquently his conservationist ethic. Most people who turn to this book in our time will do so to uncover Muir's mind, not to be enticed to western park travel. Within his customary literary framework of personal narrative and tours, Muir's natural descriptions consistently reflect not only a scientific and experiential understanding but also a masterful, poetic command of language, language always vibrant, natural, compelling, immediate, and fresh. This is no old book. It reads as new as this morning's sunrise. Though Muir comes across as a good botanist and ornithologist, it is as a geologist that he is positively rhapsodic. The work is at its best when description of fact gives way to reflections on value.

Here, too, one finds several famous events in Muir's life: his observation of an earthquake, his ride on an avalanche, and his visit by Emerson. But for all the interesting biographical material, for all the compelling description of nature, what one will remember most from reading this book is its conservation ethic, fact become value. Examples speak for themselves. "The question comes up, 'What are rattlesnakes good for?' As if nothing that does not obviously make for the benefit of man had any right to exist; as if our ways were God's ways." "Climb the mountains and get their good tidings. Nature's peace will flow into you as sunshine flows into trees. The winds will blow their own freshness into you, and the storms their energy, while cares will drop off like autumn leaves. As age comes on, one source of enjoyment after another is closed, but Nature's sources never fail." And those wonderful Muir metaphors are there, like this one describing Yellowstone: "So we see Nature working with enthusiasm like a man, blowing her volcanic forges like a blacksmith blowing his smithy fires, shoving glaciers over the landscapes like a carpenter shoving his planes, clearing, ploughing, hoeing, irrigating, planting and sowing broadcast like a farmer and gardener, doing rough work and fine work. . . ."

The forests of America, Muir was convinced, "Must have been a great delight to God; for they were the best he ever planted." Probably the best thing one could do with *Our National Parks* is to give a copy to Secretary of the Interior James Watt. Religious man that he is, a devout man like John Muir might be able to speak to him. "Under these circumstances [monied interests influencing politicians in order to gain access to federal lands], the bawling, blethering oratorical stuff drowns the voice of God himself." But most appropriate of all for Mr. Watt is that now famous conclusion to the essay "The American Forests." "God has cared for these trees, saved them from drought, disease, avalanches, and a thousand straining leveling tempests and floods; but he cannot save them from fools, only Uncle Sam [and Mr. Watt] can do that."

FIRE IN THE DUST by John Bennett; Houghton College Department of Writing, Houghton, N.Y., 1980. 55 pp. $3.50.

By Dennis Ribbens

An ecumenical book this, written by an Episcopalian who teaches at Wisconsin's Roman Catholic St. Norbert College, published at an evangelical college with Methodist roots, some poems of which first appeared in *The Reformed Journal*. *Fire in the Dust* is a collection of unmistakably Christian poems, intended for a sympathetic audience. Section I contains hymns appropriate for important days of the Christian calendar (Christmas, Easter, etc.) and life (marriage, christening, burial), and nine unrelated meditations. Section II, "Observations on the Nature of Hell," presents the orthodox position in a curious way evoking Edgar Allen Poe and C. S. Lewis at the same time. Section III contains a miscellany of poems "From a Christian Enclave," though from which and to whom is unclear. Throughout, the reader finds orthodoxy without arrogance (though "Three Snapshots Taken in Hell" is excessive, more likely to humor right-to-lifers than reach those of a different mind).

Much poetry strikes me as written to impress—other poets in particular—with verbal virtuosity, concentrating on technical means rather than the mind/mood end. Bennett knows what he is writing about, for whom he is writing, and what forms will suit his purposes. This collection of poems is offered to thoughtful church people not only for individual consideration but also for collective use. Though the contemplative poems are mostly written in free verse, those written for collective use with musical accompaniment employ simple meter and rhyme. It takes courage these days to write serious poetry to the tune of Greensleeves or in iambic tetrameter in abcb rhyme. Bennett recognized the virtue of such forms for public ceremony; his poems are at least as good as most hymns now in use.

Though occasionally predictably traditional, Bennett is never trivial. At times he is profound. A lovely, traditional dignity and excitement are conveyed in the christening poem, for example. But it is in the contemplative poems one finds the best Bennett. "Meditation I" elegantly encapsulates the notion of all created things finding their real being in God. "Meditation IV" is good enough to be tucked into the book of *Job*. Or consider:

Meditation V: On Immortality

Proactive and retroactive in its eternal instant,
Now is the wild center of the still Noumenon
where each man lives his dying back to birth
along the endless, curved, beginning line which
bears him changelessly past birth and death
to birth and death made same, Self outside self.

"Genesis" is a perfectly fascinating poem, as interesting a speculation on the origins of individual sinfulness as I have encountered. But I continue to be partial to "Elegy for Anne Jones," reprinted in this volume, a moving account of the death and life of the author's mother-in-law.

For it is life which Bennett's poems offer the reader. At the end of the book he speculates, "I write a poem from my heart and learn / the utter coldness of the written work." Actually the title of the book more accurately describes Bennett's poems: there is *Fire in the Dust*.

Dennis Ribbens is librarian at Lawrence University.

CLASSICS IN THE EDUCATION OF GIRLS AND WOMEN by Shirley Nelson Kersey; Scarecrow Press, Metuchen, N.J., 1981. 335 pp. $17.50.

By Audrey Roberts

Shirley Nelson Kersey, a professor of education at UW-Parkside, has collected into one volume comments on female education from Plato through the nineteenth century. There have been some studies of one or a small group of women

educators (Barbara Cross's *The Educated Woman in America*) or historical overviews (Phyllis Stock's *Better Than Rubies* is the best recent one), but no one has brought together so many texts in the words of the original authors to describe this history. Kersey has made selections from a wide spectrum of authors and periods, yet the book demonstrates the unfortunate narrow views that have persisted through time.

Long enough to express an argument, yet brief enough to retain the interest of even casual browsers, the selections expound a severely limited range of opinions. More often than not, classic views of woman's nature include her moral, intellectual, or physical weakness; her vulnerability and corruptability; lust; irrationality; and God-given inferiority. A woman's sex is never far removed from any consideration of her destiny in every age. St. Jerome, Rousseau, and Erasmus Darwin are classics.

Even so, for one reason or another, education is recommended for a woman: to serve God, the state, her husband, his business, men in general, her children, others' children. Often, education is limited to one sphere: Latin and Greek, the Bible, feminine arts, domestic science. Rarely before the nineteenth century is a full range of study proposed to equal men's. Yet, from time to time, a rare voice suggests woman's equal ability and urges her right to be educated.

Plato, in the opening selection states, "We shall not have one education for man and another for women, especially as the nature to be wrought upon is the same in both cases." Daniel Defoe in the seventeenth century writes that if women had the same education as men, "Ignorance and Folly wo'd be no more to be found among women than men." Mary Astell points out that if education were as much neglected, "and as little care taken to cultivate and improve them [men], perhaps they would be so far from surpassing those whom they now despise." In the nineteenth century Emily Davies questions innate differences and writes, "We do not know how far they [specific differences] are native, and to what extent those which strike the eye may have been produced by artificial influences."

The nineteenth century, which saw the widest developments in female education, is the most represented in Kersey's book. However, the concluding selection by Hersey is hardly forward-looking. Hersey's educated woman is "intellectual" and "lovable," "brave" and "true." Preaching women's education for "the fine art of Living" is a classic nineteenth-century view that urged women to remain at home and discouraged them from public life. The book stops here because, Kersey says, "without the perspective of adequate historical distance, it is difficult to know what writing will have permanent value." Surely the writing of John Dewey, Alice Rossi, Sheila Tobias, Helen Astin, and Gerta Lerner, to name just a few, will be read in the twenty-first century. And Title IX of the Education Amendments of 1972, which assures equal educational opportunity, will stand as a landmark document.

Kersey has done a valuable service by bringing together a diverse selection of statements about women's education, in the original texts, without paraphrasing or bias. Thus today's reader or student, aware of current research and developments in the education field but lacking historical perspectives, may find them here. Reading, again and again, of women categorized as the second sex, patronized and undervalued, they will better comprehend the progress of the last few decades in the education of girls and women.

Audrey Roberts teaches English at UW-Whitewater.

HUNTING A SHADOW: THE SEARCH FOR BLACKHAWK edited by Crawford B. Thayer; Banta Book Systems, Harrisonburg, VA, 1981. xxx, 480 pp. $9.95.

By Hannah Swart

Hunting A Shadow is unusual. Almost every word in the book is direct quotation from participants in the search for Black Hawk in Rock and Jefferson counties (Michigan Territory) in that hot, wet summer of 1832. It presents every word (that the editor could find) on every event experienced by troops with Brigadier General Henry Atkinson, which included Abraham Lincoln of the Illinois militia and Colonel Zachary Taylor of the U.S. Army.

Instead of being confusing or seeming redundant, the several similar but different statements about the same event produce a stereoptican effect; several references to the same event give a richer picture of what actually happened than had the editor presented one flat statement about each event or retold the story.

This is a history from the White Man's point of view of the search for Black Hawk and his starving people, an eyewitness report of the disdain one race of people held for another, a journal by men wading through Rock River swamps up to their arm pits in search of a 65-year-old Sauk warrior named Ma-ka-tai-meshe-kia-kiak (Black Sparrow Hawk). Now that 150 years have passed, we have the perspective to view this history with something approaching objectivity.

Thayer has taken the participants' words from such sources as Ellen M. Whitney's *The Black Hawk War 1831-1832,* four volumes of archival material published by the Illinois State Historical Library; Lyman Draper's collection of reminiscences of Wisconsin pioneers published in the *Collections of the State Historical Society of Wisconsin;* and the archives from the U.S. government now available on microfilm.

Hunting A Shadow is an intensive look at just twenty-four days out of the four-month-long Black Hawk War; it only covers the search for Black Hawk. The editor promises the Battle of Wisconsin Heights in 1982 and the Massacre at Bad Axe in 1983, plus others as needed to complete this eye-witness series on the last major Indian "war" east of the Mississippi.

The editor, Crawford B. Thayer, was the original director of the more-or-less annual Fort Atkinson, Wisconsin, Black Hawk historical pageant written by William Starks. Now retired as advertising manager from the Jamesway Division of Butler Mfg. Co., Thayer was one-time teacher at the University of Iowa and Yale University and served as director of publications at UW-Whitewater.

Hunting A Shadow (with photographs, maps, bibliography, and index) is available from the Fort Atkinson Historical Society, 407 Merchants Avenue, Fort Atkinson, Wisconsin 53538.

Hannah Swart is curator of the Hoard Historical Museum and former WASAL councilor-at-large.

WILDERNESS FIRES by Peter Stambler; Jump River Press, Wausau, Wis., 1981. 57 pp. $5.00.
PRACTICING VIVALDI by Mary Shumway; Juniper Press, La Crosse, Wis., 1981. 27 pp. $4.00.

By Helen Fahrbach

Peter Stambler's *Wilderness Fires* recalls a tragic event in Wisconsin history, while recording the early frontier spirit, the personalities of the settlers, and the courage of the survivors.

The narrator suggests the background of the story in the first poem, "Petrified Blackberries," ". . .a million nights / which cool a million hot days . . . By the chance of stone, the ancient clusters." The next poem, "The Immigrants Handbook To Wisconsin," records the settlers' journey to Peshtigo.

Stambler has chosen his characters with a flair for the dramatic, among them Sam White who imports the first piano to Peshtigo and is a tragic victim with his two daughters in the fire. Olaf Pederson, the blind cooper, dictates letters to his friend Henrik Ibsen: "I have no sight beyond Peshtigo. Send news! Send news."

Father Perin tells in vivid detail the story of the fire, ". . .the roaring and whistling of the / hurricane, the fire's crackling. . . / All sounds save that of the human voice. Struck dumb, people / jostled together without exchanging a word." He reflects at the end of the poem, "Thus any standing man perished. The prone man, I learned / survives."

The narrator's heroine "M" speaks in a less dramatic voice. In letters to her father she writes of her experiences, and it is she who, in the end, lists the things that hold them all to the wilderness.

Peter Stambler's talent lies with the narrative poem. *Wilderness Fires* is distinguished by a compelling story combined with this remarkable talent. The poems are predominately carefully crafted free verse, their varied patterns avoiding monotony, the language strong and vital.

Stambler is resident poet at UW-Green Bay and lives in that city.

Mary Shumway's *Practicing Vivaldi* is a collection of lyric poetry emphasizing the natural world, yet always the human experience is woven through her reflections of seasons, birds, lakes, and trees. She watches two lovers in "Nightwalk" walking ". . .hand toward hand and never / touching. . ." She shares memories of her grandmother in "Hand-Me-Downs," ". . .the braided rug you made with wool / thread rubbed stern with bees wax."

She uses delicate imagery with skill and imagination, as in "Night Vision," ". . .dark rumps the window / scratching fireflies" and then "the cat / leaps on the sill into a dance / of moths, and I'm caught, bagged / till the heart bursts." In a poem about Minoqua, Wisconsin, where "Fishing boats thumped / the dock that fumbled restless / toward the shore," the fishermen ". . .lock their oars and row into yarns / again."

Some of her references and language may send the reader to the dictionary, but her effective descriptive phrases shine with careful word choices as in the title poem: "Somewhere in juniper a bird practices / Vivaldi while all the upturned faces / of the meadow praise at dusk the nighthawks' / dives, the growl of wings, the clean chandelles." It ends ". . .we celebrate while nightbirds sing."

There is a kind of magic in this collection that is filled with celebrations, satisfying in both their detail and rich texture.

Mary Shumway teaches at the UW-Stevens Point.

Helen Fahrbach is a published poet and special services librarian at the Elisha D. Smith Public Library in Menasha, Wisconsin.

DOOR WAY by Norbert Blei; The Ellis Press, Peoria, Ill. 61655, 1981. 307 pp. illus. $14.95.

By Richard Boudreau

Whether it's to front the raw forces of nature, dally at the outer edges of things, or experience a near-total sense of isolation, we all respond in some elemental way to the lure of island and peninsula. Ample reason, then, for a place like Door County, both peninsula and island, to figure so largely in the mystique of our region.

Of course, there is more to Door than that: orchards and shipyards, buildings of great and picturesque antiquity, fishing vessels and fish boils, ethnic festivals and cultural gatherings, and scapes, both land and sea, beyond expressing. These are as close to the Door County experience as we summer swallows come, but (we have told ourselves privately) hardly to the Door County essence.

Perhaps that's why *Door Way* becomes so valuable; it makes us aware of that great gap only guessed at—at the same time it helps fill it up. Though presuming the same locale, it is in reality describing another country. Oh, the sport and commercial fishing is there, such places as the Ridges, Peninsula Park and Washington Island are mentioned, and the goats atop Al Johnson's restaurant figure in it. But they are asides, not of the essence, gewgaws merely.

What we have here is a collection of interviews of real people whose lives often touch one another, mixed with the musings of a Chicago expatriate trying to come to grips with the "Door County Consciousness." The cast of characters consists of those native to Door County—Charley Root, philosophical dirt farmer living down to his name; Gerhard Miller, painter and donor of the county's art museum; "Clean Piece Wally" Mickelson, used-car salesman of Sister Bay; and Emma Toft, independent spirit and remarkable protector of Mud Bay—and those who have immigrated here. Blei belongs to the latter group, but it is surprising how many other people do too. Yet both groups have their parts to play. The newly rooted are more conscious of the role of place in their lives, a role that the deeply rooted generally relegate to the subconscious.

The book is a conglomerate of hard pebbles of experience cemented together by the manipulative imagination of the author. Make no mistake about it: it isn't the thirty plus interviews alone that involve the reader; it is the voice behind them, the initial prompter who listens, leads, and links those lives to one another, to his own sensibilities, and to the landscape in which they move and by which they have been moved. If you press the right button, you can get a story from anyone. Blei knows how to do that. More—he knows when to step aside and let the teller take over.

Helped by the photos, the art work, the art objects, the book jacket (all done by the people of the book, the book itself become artifact), eventually all facets come together. And it's strange: what seems a book of stories about people is really a book about place. Both groups of residents have internalized that outward sea and landscape and both maintain a love affair with it. So that what seems a focus on individuals becomes a focus on landscape and its subtle power.

The key to Blei's intention and achievement remains in the pun of the title; reading it should stir the waters of the inland sea in us, prompting us to take a closer look at the people in our own landscape.

Richard Boudreau specializes in Wisconsin literature at UW-La Crosse. Last summer he toured the state promoting Wisconsin authors for the Council for Wisconsin Writers.

YANKEE DOODLE DANDY edited by Patrick McGilligan; **THE PUBLIC ENEMY** edited by Henry Cohen; **LITTLE CAESAR** edited by Gerald Peary, Wisconsin/Warner Bros. Screenplay Series, University of Wisconsin Press, Madison, 1981. Each $5.95.

By Arthur Hove

Two gangsters and a songwriter—lives chronicled in these three volumes which are part of the University of Wisconsin Press's continuing series of Warner Bros. screenplays.

Doug Bradley has provided a comprehensive and useful introduction to this series in an earlier *Academy Review* (March 1980). This latest sampling of titles carries forward previous efforts to demonstrate how films are made and promoted. They also demonstrate how films can be part of the social mosaic of the time in which they are made.

Each editor has checked pertinent sources. Their introductory essays show how writers, producers, directors, and actors try to assert their respective influences on the final shape of the film. Reading the production accounts of these films, I find it something of a miracle that a film ever really makes it from the original concept into the film can. As Jimmy Durante used to say, "Everybody wantsta get inta da act."

Getting into the act involves a great deal of calculated subterfuge. Dying of cancer as his film biography (*Yankee Doodle Dandy*) is being made, George M. Cohan is not allowed access to the screenplay-in-progress. The end result is an idealized version of his life, but one his daughter said "daddy would have liked to have lived." James Cagney smooshes half a grapefruit in Mae Clarke's face (*The Public Enemy*) in a gesture that was not called for in the script but was cooked up by director William Wellman. Edward G. Robinson creates a lifetime acting stereotype for himself by playing a gangster (*Little Caesar*) he perceives as the stuff of Greek tragedy rather than Hollywood escapism.

The editors of these screenplays have done well in placing the films in the context of their time and illuminating for us how the films were made. The makeup of the individual volumes—with their introductory essays, selections of actual frames from the films, and screenplays

with annotations—gives us an effective transmutation of one art form into another. The introductory essays are also generally free from the cant or gee-whiz enthusiasm that flavors too much of current writing about films.

The screenplays themselves, however, are hardly enduring literary documents. In fact, their authors remain all but invisible—unless they are embroiled in some kind of conflict with the producer, director, or star. Then they become actors in a behind the scenes drama. They are almost never identifiable as creators of a language that endures.

Arthur Hove, assistant to the chancellor of the UW-Madison campus, contributes a regular column to the Review.

IN THE SKIN by Karl Harter; Avon Books, New York, 1981. 270 pp. $2.75.

By Hayward Allen

New Jersey has sent another son to Wisconsin to write. William Ellery Leonard came early in this century and created two works that stand alone in the tradition of American autobiographical letters, *Two Lives* and *Locomotive God.* Just before WW II, a young scholar named Leslie Fiedler came west from New Jersey to study at the University of Wisconsin. Fiedler dedicated his greatest work, the definitive mythopoeic *Love and Death in the American Novel* to Professor Leonard.

Karl Harter left Trenton eight years ago to settle in Madison. He's too young to know his Wisconsin/New Jersey heritage, to recognize the substance of his forebears. Yet he shares with them the articulation of a unique vision and the ability to focus on things we take for granted and turn them into remarkable fiction.

His first novel, *In the Skin,* is dedicated to his father, "who showed me Trenton's beauty, then urged me to escape." Closer to another New Jersey product, Bruce Springsteen, than Leonard or Fiedler, perhaps, but those two geniuses did not return to their birthplaces to live, either.

Harter gives Trenton an evocative, haunting allure, possibly ironic, but nonetheless he turns the industrial city over to reveal its strangely lovely portrait of pollution, decay, and human flotsam and jetsam. Like the intricate underbelly of a turtle, Trenton has a pattern all its own.

In this obscure environment, the novelist places Jerre and Nino Franzone, father and son. In the 1950s Jerre was a champion bodybuilder, taking the Mr. Trenton title three years straight. Now an old man, still in shape, living on homemade navy bean soup and whatever else he can buy from the junk he steals from floundering factories along the deadly Delaware River, he spends considerable time in a maple tree at the edge of a decadent city park: there he mourns the loss of his loving, understanding wife.

Nino Franzone is training to be Mr. New Jersey, often following his father's advice but mainly developing his own discreet but balletic style. In the beginning of *In the Skin,* Nino is living with a hospital dietician who finally takes umbrage at his quirky eating habits. A friend of Jerre's, a go-go dancer moves in just before the Mr. New Jersey test.

The humble story of *In the Skin,* with its array of street-people and its seamy settings, does catch one up in a flow of time that neither bores nor embarrasses. It is the relationship between Jerre and Nino which provides the strength of the novel. Their love and respect for each other is obvious, yet each one knows how to preserve the other's individuality and defend that right. Harter spends more time on Jerre's personality—developing movements, thoughts, memories, actions which ultimately protect Jerre's eccentricity from becoming either precious or stereotypical.

Nino, on the other hand, is too busy concentrating on his training regimen, his performance mindset, and his time-sequenced diet to emerge as strongly. Yet he, too, does not seem to be denied a sense of reality, for Harter provides Nino with a heart as big as his trapezius, rhomboideus, and teres major and minor put together.

It is Harter's descriptive powers which reveal, I think, his destiny as a writer, such as describing the scabrous dogs of the streets: "perhaps this is how mutts committed suicide—wandering, aimless, until the four toothpicks that passed for legs would go no further. Then, in a greasy back street they collapsed and waited for death on their own terms. A dog's death."

In a picture of his father's single room, he writes: "A table neither round nor square occupied the middle. The walls were bare. Cobwebs grew like grey flowers in the corners." At another time, Harter writes: "The sky was purple and blue, like an ugly bruise on the meat of one's thigh."

Even in what we might think unpleasant and depressing, even threatening, Harter finds beauty—Zen-like reflections which give the reader pause to see for himself the originality of that single, poetic thought.

In the Skin, like any first novel, is not without its flaws. Dialog seems often stiff. Secondary characters are occasionally ambiguously defined. Continuity flags at times. Certain plot turns seem merely developmental dead ends. Nothing egregious, however. Not even the subject of bodybuilding is tedious. The sculptured metaphor of the sport is not overemphasized or made grotesque. Harter carefully rations scientific know-how with the progress of *In the Skin,* the title's meaning coming from a weight-lifting phenomenon. And it is, finally, the father/son relationship that is the novel's real substance.

DIRT ROADS: A COLLECTION OF STORIES by Josie Churchill; La Crosse Tribune/Crescent Printing, La Crosse, Wis., 1981. 137 pp. illus. $5.95.

By Hayward Allen

Creative writers are born, not made. The eye either sees detail or doesn't. The ear either hears human speech or dialog sounds like a cracked clay bell. The mind must remember sequences, timing, emotions long buried; the imagination needs internal brakes to stop when the story, the scene, the work is done.

All the creative writing workshops held in succession will not create writers if the sculpture is not already within the stone. What will emerge from well-meant efforts are clean, cliché-ridden narratives that try too hard to succeed, if the writer was not born one.

I would never have had to tell Josie Churchill that warning if she had sat in one of my creative writing classes: Josie Churchill is a born writer. She has that eye, that ear, that memory, and that imagination. She may have not discovered all this until she was 84 years old, but now that she knows she's got it, she's flaunting it in *Dirt Roads,* her collection of stories that were printed in the *La Crosse Tribune.*

The *Tribune*'s editor knew a writer when he read one two years ago. Mrs. Churchill had decided that she would write about her childhood in Vernon County, near Dell, Wisconsin. She wrote about being nine or so, about her family, her farm's animals, her neighbors, and the stories that she couldn't forget.

Dirt Roads' narratives are not reminiscences. Not "I remember when it snowed in '06. . ." Mrs. Churchill brings in the details all around the child's eyes and ears. What she recreates is the time and place of years ago, not just a quaint memory, but a composition of the small stuff of life that shows up uninvited in old photographs. For example, the horsehide robe she snuggled under one winter's day on the way to Gramma's was all that remained of Old Dick, "a noble horse that had died the winter before." She describes dazzling merchandise of traveling peddlers, exciting tent shows, and Raleigh rigs all spanking new. Conversations sound overheard.

In fact, Josie Churchill's writing reminds me of Charles Van Schaick's Black River Falls photographs. This connection comes through the author's excellent inclusion of family photographs amidst the text. That pretty, petite woman with the soft eyes and gentle face becomes Josie's mother, who becomes a respected midwife in the area. It is that rare moment of making human and identifiable what was first merely a curiosity, a quaint questioning.

I was not surprised to see a quote from Ben Logan on *Dirt Roads*' back cover: "Josie has a nice, clean writing style, capturing the facts without oversaturating the reader." There are many of the same feelings in Josie Churchill's book as in *The Land Remembers,* that same sense of rural place.

At times when I read works like *Dirt Roads,* I am struck by the way time finds out those who will introduce new visions to us who need them. It took Josie Churchill nearly twice my lifetime to discover the fire within, the light to expose her carefully constructed and reordered memories.

There is a poignancy in this, of course, but it is really more a promise finally realized that draws me closer to that flame that Josie Churchill ignited. The warmth is reassuring.

Hayward Allen is a Madison editor and free-lance reviewer.

Letter to the editor

The Academy welcomes letters which express readers' opinions on material appearing in the *Review.* The deadline for inclusion in any issue is two months in advance of the month of the *Review* publication, that is, January 1 for March publication, April 1 for June publication, etc.

Reviewing the Reviews

I'd like to suggest that book reviewers read their assigned books, then write about how well the authors (or editors) succeeded in doing what they set out to do.

Good examples of reviewing were found in the June 81 *Academy Review.* Sara Rath, for example, in her review of *Mills of Wisconsin and the Midwest,* did not fault Apps and Strang for failing to write a guidebook on mills but spoke of what they set out to do and to what degree they succeeded. She included enough of her own background to qualify herself as a reviewer of this book, and she provided sufficient information on the material in the book to give a potential reader some sense of what he/she might expect to find between the covers.

Lenore Coberly, in her review of *And Her Name Shall Be Demeter* presented almost a visual picture of the book's pages, layout, and even the manner in which the book was put together, as well as including quotes and descriptions which would enable readers to gain a sense of what this book is about. In addition, she entices the reluctant reader of poetry with kernels of poetic knowledge. Both these reviewers were generous in their response to their books without being in any way false.

Dennis Ribbens, on the other hand, chided Frances Hamerstrom for writing the book she chose to write, *Strictly for the Chickens.* Rather than giving a review of *this* book, he complains through the space he is provided because she did not write a book which would provide a "mature assessment of the life work of a brilliant ornithologist." Well. The fact is Hamerstrom chose to write the book she chose to write, and a reviewer would do well to respond to that book and not to the one he might like her to have written. Ribbens was at least astute enough to note some several hundred words into his review something that should have been obvious from the beginning—that "as the frivolous title indicates, it offers no significant systematic environmental statement." (Nor, might I add, was it intended to!)

Arthur Hove reviewing *Poetry Out of Wisconsin* stated that editors Fries and McCormick were understandably inclusive in their selection of Wisconsin poets, considering that the publisher was a fellowship of poets and that fellowships are supposed to embrace as many as possible. However, throughout his review he complained that this prevented "us from gaining a more comprehensive sampling of poems from the better Wisconsin poets." Well. Being exclusive was not what the editors chose to do, as this is not what a fellowship is all about. The reviewer might better have spent his valuable space discussing those poems which he felt strongest and wherein he felt the book succeeded *in its intent.*

The best reviews probably tend to be written by those who have taken positive and generous attitudes toward the books. This in no way suggests that criticisms may not be made. However, the very least that can be hoped for is that the reviewer deal with the book that has been written rather than with some book he/she might like to have seen written. Writing is such a painful process, and the act of producing a book seems such a horrendous feat that its author is entitled to a careful and positive assessment.

Sally Benforado
Madison, Wis.

Erratum

We regret the error in Gwen Schultz' story "Return of the Wolves" in the September *Review:* Column three on page five was inverted. The lines "of weeks ago, when Hank was apparently" (now 18 lines from the bottom of the column) through "now when they sensed he was gone?" should be the first part of column three, followed by "Loyal Guard sat beside her, relaxed by . . ." We apologize to the author and to our readers.

And On Earth

The church is dark, heavy with weather and breath.
We sit wedged in the pews
swaddled in winter coats, scarves, and gloves,
hugging our hymnals, our children
growing restless between us.

Outside, an ice storm
has shut down the city
and cut the electricity off.
Inside, the stars aren't working,
the whole nave nothing but dark,
until a custodian, drunk in the sacristy,
lifts his thin flashlight up.
In that uncertain beam
of intoxicated light
the pageant begins:

Up in the chancel
one angel bungles her lines
while another trips over her robes, ascending
the paint-stained ladder
to announce the coming of the Lord.
The three shepherds, lodged in the dark
at the back of the sanctuary, do not
hear them or start their long walk.
One pops his bubble gum, while another
adjusts his dish towel headdress
and the third fiddles with his crotch.

Meanwhile, Mary and Joseph are stuck somewhere
in the back seat of a snowbound Buick,
and the three kings, their gifts wrapped in tinfoil,
are at home in their kitchen,
in front of the gas stove, shivering.

Tomorrow, Christ will be born.
But tonight, unredeemed and awkward,
we squat on the hard pews
wondering why we've come
out in such weather
to watch the poor shepherds
watch their invisible flocks.

Ronald Wallace

Authors

continued from page 2

Gordon Reinke was born at Springfield, Wisconsin, attended East High in Madison, and took his B.S. in geology from UW-Madison. After serving with the army in Korea during the Korean War, Reinke returned to Madison and began graduate work in geology.

Mr. Reinke worked in Kansas for three years as exploration petroleum geologist for Pure Oil Company. Then he worked in southwestern Wisconsin in the lead-zinc area for 12 years as mining and exploration geologist.

After joining the Wisconsin Department of Natural Resources, he worked for three-and-a-half years as hydrogeologist in the private water supply section. In May of 1976, Gordon Reinke was made chief of the DNR mine reclamation section, the position he still holds.

Travis Du Priest, a native of Crewe, Virginia, has attended colleges in Virginia, Kentucky, Massachusetts, and England. He now teaches English and creative writing at Carthage College and has published in numerous magazines. His first book, *Soapstone Wall,* was published by Wolfsong Publications in 1980.

Peter Peshek was born in Two Rivers, Wisconsin, took a B.S. in education from the University of Wisconsin in 1964, and his law degree from the University of Wisconsin Law School in 1968. He has served as 17th ward Alderperson for the Madison city council (1970–71), consultant to the Law Enforcement Assistance Administration in Washington, D.C. (1970–71), and as head of the Criminal Prosecution Unit of the Wisconsin Department of Justice (1972–76). Since 1976 Mr. Peshek has been Wisconsin Public Intervenor.

Active in the Wisconsin Association for Mental Health since 1968, Mr. Peshek has held several offices in the organization including the presidency and has received several honors from the organization including Citizen of the Year.

Peter Peshek lives in Madison with his wife and four children.

Phil Bradbury is a policy analyst with the Wisconsin Department of Revenue, specializing in topics related to resource development. He received a B.A. in economics from Rutgers College in 1975 and a M.A. in urban and regional planning from UW-Madison in 1977, with an emphasis on resource economics. Phil is currently working on a law degree at UW-Madison and serves as vice-president of Independent Living, a Madison based organization providing services to the elderly. In his free time, he enjoys cooking and tennis.

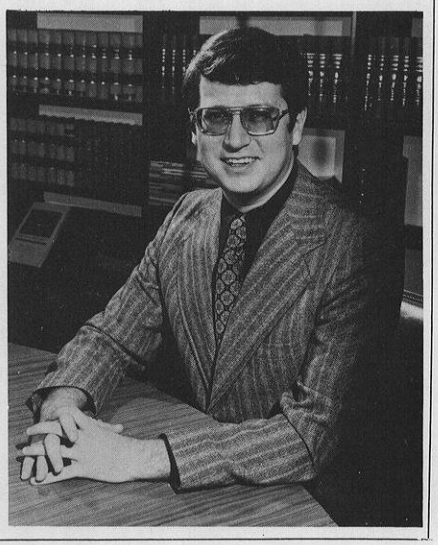
Ronald Wallace is associate professor of English and director of the creative writing program at UW-Madison. His poems have appeared in the *New Yorker, The Nation, Poetry, Paris Review* and other magazines. His most recent collection of poems, *Plums, Stones, Kisses & Hooks,* was published this year by the University of Missouri Press. He has also published *Henry James and the Comic Form* and *The Last Laugh.*

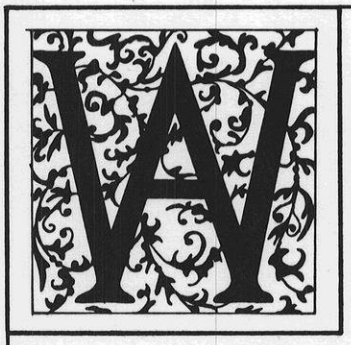
James G. Derouin is a practicing attorney specializing in administrative law and in legislative representation for business trade associations with particular emphasis on environmental and energy issues. He is a partner in the Madison law firm of DeWitt, Sundby, Huggett and Schumacher.

Graduating from UW-Eau Claire with a B.A. in economics, Mr. Derouin took his law degree from the University of Wisconsin Law School in 1968. A volunteer for the Peace Corps from 1969–71, he was stationed as a special placement in public administration in Brazil.

James Derouin has served as Chairman of PCB Advisory Council to the Wisconsin Department of Natural Resources, member of the Department of Natural Resources Citizens Advisory Committee on Public Participation, member of the Department of Natural Resources Environmental Advisory Committee, member of the Hazardous Waste Subcommittee of the Legislative Council Committee on Solid Waste Management, member of the Metallic Mining Reclamation Act Revision Committee, member of the Department of Natural Resources Metallic Mining Council, member of the Legislative Council Special Committee on the Reduction and Recycling of Solid Waste, and member of the Ad Hoc Committee on Hazardous Waste Management.

Mr. Derouin lives in Madison, is married, and has two children.





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