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SYMPOSIUM ON ENVIRONMENTAL AND NATURAL RESOURCES LAW

PREFACE: ON NATURAL RESOURCES AS AN AREA OF THE LAW

DAVID H. GETCHES

Natural resources is not new to the practice or to the study of law, but it has recently gained dignity as a field of study producing its own scholarship as well as being a widespread practical specialty. Greater attention has been focused on legal issues surrounding the discovery, development, regulation, use, and protection of natural resources because of increased commercial activity and legislative intervention in the area. The responses have included the creation of natural resources departments in law firms and government agencies, specialization by lawyers, addition of natural resources courses to law school curricula, and a proliferation of research and writing in the field. This Symposium is particularly reflective of the latter two trends. The four lead articles are products of a Special Institute for Natural Resources Law Teachers held at the University of Colorado School of Law May 28-30, 1981 under the sponsorship of the Rocky Mountain Mineral Law Foundation, where the authors presented papers. In the final paragraphs of this preface the articles are summarized. This Symposium also presents an appropriate occasion to remark on the evolution of natural resources law as a distinct area of the law.

More than ever before, the work of lawyers involves issues related to the allocation, development, and regulation of natural resources. This is attributable partly to the concentration of interest by society in utilizing a pool of resources that is rapidly diminishing. Over the last decade, concern has heightened over the dependence of the United States on foreign sources of energy and hard rock minerals. Domestic exploration and production of these commodities is now increasing. Population growth and periodic drought challenge the ingenuity of engineers and lawyers to develop and to transport available water resources. Because vast land areas are in federal ownership, national policies and laws concerning use of the public lands are vital to the drive for domestic supplies of minerals, for wa-
tersheds and water projects, and for a variety of other essential resources such as timber and forage. Never before has there been more demand for outdoor recreation. For most of this century the public has considered the unspoiled areas of the country to be national treasures worthy of preservation. All of these uses and values compete for priority in governmental decisionmaking and in the marketplace. At the same time an awareness of the adverse health impacts and non-aesthetic effects of development has led to elaborate schemes for resource protection such as antipollution legislation. Matters formerly left, largely without success, to private remedies are now controlled by technically detailed statutes and voluminous implementing regulations administered by giant bureaucracies. The challenge to lawyers in this milieu is as exciting as it is awesome.

**Increased Legal Activity Related to Natural Resources**

The number of lawyers in private practice, industry, and government whose work is primarily natural resources law has been rising sharply and most general practices are now likely to include some natural resources matters. Lawyers have always dealt with the allocation of private rights to use water, with securing rights in publicly owned land and resources, with private arrangements for development of oil and gas, and with governmental restraints on the use of private property. Several developments have led to a dramatic increase of lawyer involvement in natural resources work. They include an increase in the number and magnitude of transactions, the imposition and enforcement of broader and more detailed governmental controls, and the emergence of broad, private challenges to government decisionmaking made on behalf of the public interest.

There have been great fluctuations in mineral development and in the quantity of public land dispositions. With the closing of the frontier around 1900, federal policy shifted away from disposal and toward retention and management of public lands.¹ The briskness in patenting many millions of acres to private owners as homesteads or mining claims dwindled to almost nothing. The interface of government and private enterprise continued to have importance in public land law. Greater stewardship over public lands and other resources in the form of more intensive management began at the turn of the century and widened and extended the need for legal involvement in these matters. Only since 1970 has the federal government begun its ambitious regulation of activities affecting not only federal property

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but the common resources of air and water. This created a vast body of statutory and administrative restrictions on pollution of these resources. Pricing, transportation, and marketing of petroleum have been subject to extensive federal regulation and special taxation regimes. Since early in the nation’s history land use controls at the state and local level have regulated the manner in which property may be developed and used. Now the federal government also legislates local land use controls related to resource development such as mining.

America’s demand for lawyers in natural resources has rapidly accelerated in this century, especially since the 1960’s. Although in the post-war era market forces and government policies made foreign sources attractive to oil and gas and mining interests, there was always enough domestic natural resources activity to maintain the established practice. The more recent advent of domestic investment and efforts that require acquisition of rights and compliance with an increasingly complicated body of regulatory laws has required ever greater commitments of lawyers’ energies and skills. Putting together massive projects such as Alaska’s Prudhoe Bay oil field and the Trans-Alaska Pipeline, tapping new resources such as oil shale, and implementing transportation techniques such as coal slurry lines,


6. There is no reliable index of the numbers of lawyers practicing in the field. Some indication of the growth of interest in the area is shown by increases in membership of the Section of Natural Resources Law of the American Bar Association. It has gone from a “Section of Mineral Law” with 363 members in 1928, to a “Section of Mineral and Natural Resources Law” with 2,013 members in 1967, to a membership of 7,143 in 1981. Telephone interview with Ms. Marian Zehner, ABA Staff Liaison for Section of Natural Resources Law (Feb. 10, 1982).
all demand a dedication of legal talents of unprecedented volume and sophistication.

In an earlier, simpler time there may not have been enough substantive law, let alone sufficient work, to support a natural resources specialty. Today, anyone who would use or affect natural resources is at once confronted with a regulatory challenge, in addition to being concerned with proper allocations of rights to the resources. The drive for energy and mineral development in the United States has stirred legal activity in most urban areas and throughout the West generally. That activity is made more complex because of competing uses on resource-rich lands—grazing, timber, wildlife, recreation and wilderness. Since the enactment of the National Environmental Policy Act in 1969 there has been an avalanche of new statutes and regulations controlling natural resources to achieve a variety of ends—environmental, distributive, and social.8

Statutory law is interpreted and applied through a morass of administrative regulations and implemented and enforced by a variety of agencies, officials, and boards. Government regulators are assisted by large legal staffs and are typically represented in litigation by the Department of Justice.9 As might be expected, legal activities within the government stimulate or require responsive action by those who are regulated. Rulemaking, administrative actions, and litigation concerning natural resources now regularly involve "public interest" lawyers in addition to participants from government and the regulated industries.10 Conservation organizations supported by contributions and membership fees, including the Sierra Club Legal Defense Fund, Environmental Defense Fund, Natural Resources Defense Council and National Wildlife Federation, have employed staffs of lawyers. They not only participate in the administrative process but they also act as "private attorneys general" to fill enforce-

9. Most litigation that involves the Departments of Agriculture and Interior and most of the other federal land management agencies is handled by the Department of Justice, Land and Natural Resources Division. There are 170 attorneys in the division. Telephone interview with Marcia Jordan, Personnel Liaison Assistant, Land and Natural Resources Division, Department of Justice (March 1, 1982).
ment gaps left by the agencies. As such they have become vigilant watchdogs against administrative abuses and misapplications or misinterpretations of the law, a role encouraged by the "citizen suit" provisions of many statutes. Public interest lawyers sometimes stand in the shoes of a reluctant agency. At other times they will vigorously challenge agency action. Frequently they assume a position that balances industry, as an agency or official takes a middle of the road position.

Several non-profit organizations have been formed to assert other versions of the public interest. Organizations such as the Pacific Legal Foundation and the Mountain States Legal Foundation are financially supported by individuals and industries who utilize legal staffs to further their conceptions of the proper administration of public resources and regulatory statutes. Typically they join forces with or take over advocacy for an industry or developer. In some instances they will take on an issue that is broader than a single party or industry would be likely to support.

The participation of non-profit organizations in natural resources matters has led to more responsible government action from officials whose actions may have been remote from oversight or review. Yet the process has generated an unprecedented amount of legal activity on complicated issues, often concerning highly technical subject matter. The increased bulk of substantive law in an era of

11. Id. See also Sierra Club v. Morton, 405 U.S. 727, 734-41 (1972).
13. E.g., Wisconsin's Environmental Decade, Inc. v. Wisconsin Power and Light, 395 F. Supp. 313 (W.D. Wis. 1975) (suit to require EPA to issue a notice of violation of state implementation plan under Clean Air Act).
15. E.g., Alabama Power Co. v. Costle, 606 F.2d 1068 (D.C. Cir. 1979) (challenges by industry and environmental groups to validity of EPA's final regulations concerning prevention of significant deterioration under Clean Air Act).
16. E.g., Valdez v. Applegate, 616 F.2d 570 (10th Cir. 1980) (grazers of livestock on public land represented by Mountain States Legal Foundation).
17. E.g., Mountain States Legal Foundation v. Costle, 630 F.2d 754 (10th Cir. 1980) (challenging EPA's decision conditionally approving portions of Colorado's air quality control implementation plan).
mounting pressure for access to natural resources for the often incompatible goals of entrepreneurs and the general public makes natural resources law one of the greatest areas of growth in the law. Lawyers are involved in far greater numbers and in much more significant ways than ever before.

Legal questions of global importance arise as world population multiplies and industrialization increases the per capita dependence on natural resources for food, fuel, shelter, disposal of waste, and accumulation of wealth. Society looks to the law for improvement of the quality of resource management and for rational prevention and mediation of conflict, even as it looks to the sciences for technological solutions. Lawyers, no less than engineers or businessmen, must be aware that a resource decision sends ripples through both time and space that sooner or later must be reckoned with. This realization complicates the responsibilities of professionals who would view their roles as agents promoting the interest of a single client in an isolated transaction. In an era of worldwide interdependence on common pools of scarce resources, greater vision and ingenuity are essential. The legal profession is thus confronted with new ethical and intellectual frontiers, as well as with unprecedented challenges to traditional talents.

**Law School Curricula in Natural Resources**

Only recently have natural resource subjects earned a position of respect in law school curricula. This new-found respect is a phenomenon of their moving beyond filling a practical niche by embellishing the legal education of students who would work in the field. In the past, a course or two could be justified as a means of familiarizing prospective lawyers with the substantive content of a particular area that facilitated their entry into practice. That rationale could support much of the natural resources law teaching today, as a large and growing number of lawyers are being employed in jobs involving natural resources law. But if the appropriateness of law school curriculum was ever judged solely on its immediate utility to a new practitioner, it is not so judged in modern legal education.

Law schools once prescribed nearly all the courses a student must complete for graduation; now almost all courses after the first year are elective. To earn a place on the menu of courses at a first rate law school today, a course must do more than transmit specialized subject matter. While philosophies differ as to the essential components of a legal education, most educators agree that law schools must go beyond teaching students rules and skills and the
practicalities of serving clients. There must be intellectual training to deal with broader principles and development of an appreciation of the ways in which principles can reflect the policies of governments and the values of societies. At least some of these goals of legal education can be satisfied in any properly chosen and effectively presented course. Natural resources courses, however, are especially well suited to fulfill a range of objectives for legal education.

Natural resources law found its way into law school curricula to fill an apparent need to prepare students for practice in the field. Very early, mining and water rights courses were offered in some schools. By 1950 nearly all western law schools offered oil and gas or water law courses but most eastern schools offered neither. In 1949 Clyde O. Martz, then a professor at the University of Colorado School of Law, wrote in the Journal of Legal Education:

In the past few years the West has witnessed a new burst of activity in natural resource exploitation. Accompanying such activity is an increase in the need for grounding the law student in the statutory and case law governing the acquisition, development, and conservation of mineral, oil and gas, water and land resources.

Martz's statement is apt today, but we need not simply rely on the


19. See Rowles, supra note 18. Some have suggested that even the sacrosanct first year courses might give way to courses that fulfill more of the law school's overall objectives than the introduction of fundamental doctrines. See Kelso, Curricular Reform for Law School Needs of the Future, 21 U. MIAMI L. REV. 526 (1967). Harvard Law School attempts to offer virtually any course in which there is substantial student interest. Quality and educational objectives are achieved by careful selection of instructors from existing faculty or from among outside experts. Interview with Albert M. Sacks, former Dean, Harvard Law School (Jan 6, 1982).

20. Arnold, The Study of Public Land Law in the Western Law Schools, 4 CALIF. L. REV. 316 317 (1916). If Arnold was not exaggerating when he said "many law schools of the East, and all of the West, have courses in mining and irrigation law," id. at 316, the numbers of such courses appear to have receded by 1933. In that year the Association of American Law Schools reported that water law was taught at ten schools, mining law at seven, and oil and gas at six. Brosman, Meeting of the Association of American Law Schools—1933, 7 AM. L. SCH. REV. 1076, 1082 (1933).


utility of "grounding" students in some laws that may change a year or so after their graduation. Nor do we need to rely on the strong demand for courses in the field expressed by prospective and entering students and substantiated by high enrollments in natural resources courses.

Natural resources law has come of age as a field of law. It bristles with legal issues and provides fora as useful as many "traditional" courses to ripen the skills of future lawyers. Courses in the area are justified by the same reasons that support offering a variety of courses in business-related subjects. Resources law classes vary greatly in content and purpose and bring together doctrines from such diverse areas as constitutional law, administrative law, property, regulated industries, federal courts and others. They can be used to educate students in the fundamentals of the law: processes for decision-making and dispute resolution; statutory interpretation; jurisprudence; analytical reasoning; and lawyering skills (e.g., litigation, planning, drafting). These goals are met as students study substantive law that may be useful in practice. Furthermore, opportunities abound for relating the law to important social policy issues and ethical concerns. In addition, natural resources law study conveniently and necessarily partakes of other, non-legal disciplines such as economics and geology. Beyond these virtues, issues in the field arise in contexts that are likely to hold student interest.

Education in natural resources law has evolved from isolated specialty courses that catered to an employment market to a legal discipline with its own integrity. It always has been possible to teach natural resources law with all the intellectual benefit and pedagogical rigor of the most vital courses in the curriculum, although it seems easier to do so today. The last two decades have seen the growth of substantive issues in natural resources law so that it now touches more transactions, fosters more issues, and commands greater judicial attention. The enactment of far-reaching environmental laws in the late 1960's and early 1970's was the catalyst for making natural resources a complete field for study. Courses can have depth and complexity which may have been lacking before. The body of law relating to natural resources is now full enough to deal with most of the fundamental goals of legal education.

Many law schools are adding course offerings in the natural resources field. The growth of curriculum in natural resources began
slowly in the 1950's, and was given impetus by the addition of environmental law courses in the 1970's. Initially natural resources issues were discussed as an adjunct of real property law. Now schools offer a number of courses specifically related to the development, regulation, and protection of particular resources.

An obstacle to curriculum expansion in the area has been the dearth of published teaching materials. The availability of a casebook can be the trigger for offering a course. It gives credibility to a proposed course that helps convince a law faculty, curriculum committee or dean that the offering is worthy. Moreover, it can make teaching the course feasible for a faculty member who otherwise would have to assemble a vast collection of materials. The unavailability of natural resources law teaching materials has been both a cause and an effect of the scarcity of established courses. Law publishers were wary of the unproven market and, with notable exceptions they have refused to venture significantly into the resources field until very recently.

The first American casebook was reportedly Angell on Watercourses published in 1824. Although water and mining law materials were available early in the century, they were highly specialized

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24. See Martz, supra note 22; Biblowit supra note 21, at 142-147. M. McDougal & D. Haber, Property, Wealth, Land: Allocation Planning and Development (1948) is often cited as the leading example of treatment of resources questions in a real property casebook. See Clark, supra note 23, at 169.

25. A 1980 survey of 95 law schools showed that 78 schools offered two or more courses; 44 offered four or more; and 12 schools had 8 or more courses in natural resources law. The most common offerings were in environmental law (77 schools); water law (37 schools); oil and gas (36 schools); energy law (26 schools); and land use (24 schools). Other courses offered at five or more schools included public land law, mining, natural resources, agricultural law and ocean law. Natural Resources Law Survey, included in Report of Meeting of Natural Resources Law Teaching Committee, Rocky Mountain Mineral Law Foundation, July 17, 1980.

A survey done of courses offered at 115 law schools in 1967 showed that courses were taught in the following subjects: land use (67 schools); oil and gas (47 schools); water law (37 schools); mining (3 schools); atomic energy (3 schools). Del Duca, Continuing Evaluation of Law School Curricula—An Initial Study, 20 J. Legal Educ. 309 (1968).

Another surveyor came up with the following counts for the period 1968-70: land use (74 schools); water law (46 schools); oil and gas (30 schools). Tarlock, Current Trends in the Development of an Environmental Curriculum, in Law and the Environment 321-22 (M. Baldwin & J. Page eds. 1970).


27. E.g., J. Bingham, Cases on the Law of Water Rights (1916); G. Costigan, Cases on the American Law of Mining (1912); G. Craig, Selected Cases on Water Rights and Irrigation Law in California and the Western States (1910).
and were not kept current. Oil and gas casebooks, like courses in that subject, have been readily available since the 1940's.  

An important experiment in natural resources teaching materials was Martz's *Cases on Natural Resources*, published by West in 1951. The volume covered water law, public land law, mining, and oil and gas and was designed for a single, all purpose natural resources course. Although the book was criticized for attempting to roll too much into materials for a single course, it gave teachers an opportunity to devise courses with some creativity. The single course idea did not enjoy wide acceptance, however. Nevertheless, West published a similar effort under an identical title by Professors Frank J. Trelease, Harold S. Bloomenthal and Joseph R. Geraud in 1965. Only two years later, Dean Trelease's water law section of the work was published as a separate volume and other publishers soon responded to a growing water law market. Availability of good teaching materials in water law helped to make the subject a staple in many law schools.

Land use materials and courses also have become popular since 1960. The publication of Professor Charles M. Haar's *Land-Use Planning* in 1959 by Little, Brown and Company was well-received and spurred inclusion of courses on the subject at law schools across the country. It appears, however, that course offerings in the sub-


ject have been declining in favor of environmental law courses.  

Public land law—the study of the allocation, use and management of the federal lands that constitute about a third of the total land area in the United States—has received little curricular attention until recently. The books by Martz and Trelease, Bloomenthal, and Geraud surveyed the subject. It was also treated as a part of most mining law courses. But it was not until 1981 that published materials designed for a comprehensive course on the subject were available with the publication by Foundation Press of Professors George C. Coggins' and Charles F. Wilkinson's Federal Public Land and Resources Law. The first separately published teaching materials on mining law since 1912, Loren Mall's Public Land and Mining Law, were published this year by Butterworths. One may expect an increase in mining law courses as a consequence.

The largest number of recently published course books in natural resources law has been in environmental law, the most widely taught course in the field. The title "environmental law" suggests impossibly extensive coverage for a single course. Thus, authors have had to grapple with the problems of focusing on attainable goals and coherent subject matter. Most books cover only a few federal pollution statutes. The statutes do present an appropriate setting

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34. See note 25 supra.

35. In 1916 an early teacher of the subject opined that public land law should be taught at western schools because of its broad practical importance. Arnold note 20 supra.

36. The authors made the materials available to others in 1980 in a paperback, mimeographed version, and fifteen law schools adopted the unpublished materials. Telephone interview with Charles F. Wilkinson (March 3, 1982).


38. See note 25 supra. Enthusiasm for environmental law courses ran so high in the early 1970's that at least four schools (University of Denver, University of Iowa, University of Kansas, and State University of New York at Buffalo) required first year courses with environmental content. Irwin, The Law School and the Environment, 12 NAT. RESOURCES J. 278, 279 (1972).

for development of the pervasive natural resources issues of allocation, public and private rights, and regulatory mechanisms. Techniques of statutory analysis, examination of the administrative process and an understanding of economics all can be taught. While the subject is a vehicle for teaching a variety of skills and dealing with diverse subject matter, it nevertheless has been an enigma for some law teachers. Furthermore, rapid development of environmental law has outstripped the ability of authors and publishers to update their works. The difficulties and limitations of teaching a single environmental law course has contributed to the trend of diversification of natural resources courses. Now many schools offer a course in federal pollution law and a number of courses in other resources subjects.

The popular concern with energy shortages has been an impetus to the publication of materials in energy law that probe difficult and engaging questions of resource allocation. The first such book was by Professor William H. Rodgers, *Energy and Natural Resources Law* in 1979. Foundation Press has announced that in early 1983 it will release *Energy Law* by Professors Donald N. Zillman and Larry Lattman.

A few law schools, including those at the Universities of Colorado, Minnesota, Montana, and Oregon, have begun ambitious clinical programs in natural resources law. They provide students with opportunities to receive law school credit for supervised work on matters of major importance on behalf of actual clients in administrative proceedings, litigation, and negotiations. These programs offer unique experiences in cases that are complex, both legally and factually. The enrichment and challenges are rarely equalled in other clinical education.

Some schools have instituted programs leading to graduate degrees and offer other opportunities for specialized advanced study. Some regularly organize continuing legal education pro-

40. See Irwin, supra note 38; Tarlock, supra note 25, at 302-309.
41. See, e.g., Biblowit, supra note 21, at 152-154.
42. University of Alberta (LL.M); George Washington University (LL.M); University of Miami (LL.M); University of Utah (LL.M); Vermont Law School (M.S.L.).
43. E.g., the Natural Resources Law Institute at Lewis and Clark Law School holds short courses for non-lawyer professionals; the Natural Resources Program at the University of Denver has a joint degree program with graduate schools at the university and with the Department of Mineral Economics at Colorado School of Mines; the Energy Law Center at the University of Utah has interdisciplinary programs with the Colleges of Mining and Engineering; the Natural Resources Law Center at the University of Colorado will begin a fellowship program for lawyers doing research projects on resources law.
grams in natural resources for lawyers. The presence of these programs and the accompanying activity in legal research and writing stimulate student interest in studying natural resources law.

The Scholarship of Natural Resource Law

Until after World War II, little scholarly legal work was done in the field of natural resources. Although there were treatises on oil and gas, mining, and water law, only oil and gas law produced any significant number of articles and other original work. Similarly, as pointed out earlier, only oil and gas law was the subject of published teaching materials. With the growth of intellectual interest in the subject matter and practical necessity, the number and quality of publications in the area have increased. Organizations dedicated to publication and education in the field and specialized journals formed to satisfy a natural resources law audience have contributed to the promotion of legal scholarship. Today the number of law review articles produced in the field is impressive. They are found in almost all major journals because the number of articles far exceeds the capacity of the specialized publications. Another more recent phenomenon is the creation of institutes and centers at law schools to encourage research in the field.

The Rocky Mountain Mineral Law Foundation is an example of an organization that was formed in response to the limited availability of legal research materials in natural resources. In 1955, several oil and gas lawyers recognized a need for research and continuing education. They organized the first Rocky Mountain Mineral Law Institute, which was held at the University of Colorado. Shortly afterward, they incorporated the Foundation to perpetuate annual institutes modeled after the first one. Institutes have been held annually ever since at which speakers present papers on oil and gas, mining, public lands, and water law that later are published in a
bound volume. The Foundation also holds numerous special institutes and regularly publishes books and articles. An especially notable contribution was preparation of the five volume *American Law of Mining* published in 1960 by Matthew Bender & Co. Although the Foundation has concentrated on producing programs and publications that explain existing law and that furnish practical advice, annual institutes and some other activities have produced scholarship that analyzes, criticizes, and suggests new solutions to problems of doctrine and policy. Citation by the courts is a tribute to the importance of recent work presented at the institutes.47

Four years ago the Foundation, which long had involved law school representatives in its governance and activities,48 formed a Committee on Natural Resources Law Teaching. The committee is becoming an important communication conduit among law professors in the field. It can take credit for inspiring the production of scholarly work in the field and for facilitating an ongoing dialogue concerning law school curricular and research developments and needs. The Special Institute for Natural Resources Law Teachers held in May, 1981 was an important step in giving definition to this significant field of the law. Besides bringing together teachers from 33 schools in 27 states to discuss matters of common interest, it included presentations on eighteen subjects by leading scholars in the field. The subjects were grouped into four main areas: Judicial Review, Federalism, Planning, and Legal Issues in Energy Development. The articles in this Symposium represent those general areas and were among the papers presented at the Institute.

The *Natural Resources Journal* is the premier example of a scholarly publication devoted to the field. It has been published by the University of New Mexico School of Law since 1961. Today it enjoys an excellent reputation among cognoscente because of the many significant contributions to the field that were first aired in the *Journal*.49 A reason for the respect scholars hold for the publication

47. *E.g.*, Amoco Production Co. v. Guild Trust, 636 F.2d 261, 264 (10th Cir. 1980); Shell Oil Co. v. Andrus, 591 F.2d 597, 598 (10th Cir. 1979); United States v. Union Oil Co. of California, 549 F.2d 1271, 1275, 1279 (9th Cir. 1977); Mountain Fuel Supply Co. v. Smith, 471 F.2d 594, 597 (10th Cir. 1973); United States v. White, 401 F.2d 610, 613-614 (10th Cir. 1968).

48. The Foundation's Board of Trustees represents 22 law schools, 12 bar associations, 19 mining and oil and gas associations. In addition, there are several at large and honorary trustees.

49. *E.g.*, the *Journal* carried a symposium that included papers presented at a meeting entitled "Pollution and Political Boundaries: U.S.-Mexican Environmental Problems." The symposium had an important influence on the negotiation of the United States-Mexican
is that it has the distinction, rare among American law reviews and journals, of being refereed. The Journal is also one of the few truly inter-disciplinary legal publications. Frequent articles by engineers, economists and others are included which supply the necessary but often missing ingredients for fully comprehending legal issues. Its editor-in-chief, Professor Albert E. Utton, has assured a constant quality and balance among its articles almost since it began publication.

Just as the growth of environmental legislation and awareness deserves much credit for drawing the curricular attention of law schools to the natural resources field, so has it spurred tremendous growth in scholarship in the area. Since 1970 at least thirteen new law reviews have been dedicated to natural resources subject matter, many specifically dealing with environmental law. There is now a flow of regularly available, current research in natural resources law found within these specialized journals, as well as in other reviews. The natural resources field is dynamic and thought provoking; it consequently attracts excellent authors.

The articles in this Symposium epitomize the diversity in subject matter, issues and approach that invigorates legal scholarship. As the authors demonstrate, natural resources law is fertile territory for exploring pervasive issues that stimulate inquiry throughout the law. Thus, the articles examine tensions between law and public policy; search for the proper interpretation of legislation; criticize judicial decisions relative to established doctrine; and suggest philosophical bounds for the judicial function. Writing in this area is given a special vitality because it pertains to tangible resources, the allocation and use of which is recognized to be critically important to society. The likelihood that scholarship will have utility, and may influence the administrative and judicial processes, public policy and even


50. E.g., Blaney and Criddle, Determining Water Requirements for Settling Water Disputes, 4 Nat. Resources J. 29 (1964). (The Blaney-Criddle formula, which has become the standard approach of courts and lawyers for determining consumptive use of irrigation water, was set forth and explained by the two engineers that devised it.)

the improvement of society, infuses it with a sense of importance.

In his "Theories of Judicial Review in Natural Resources Law," Professor William H. Rodgers, Jr. discusses the virtues and frailties of value systems that often guide the quest for "justice"—the mission of judicial review. He acknowledges that economics has been at center stage in contemporary debates on legal theory, but he suggests that perceptions from sociobiology, cultural anthropology, decision or game theory, and ethics deserve at least as much attention. Courts necessarily indulge values as they presume norms for assessing the conduct of both governments and mortals, and as they mold the wisdom of equity. The use of market theory in this process, says Professor Rodgers, is incomplete at best, misleading at worst. The task of resources allocation is an especially useful litmus for Rodgers' thesis, for if the thesis holds in an area already heavily influenced by market values, it should work elsewhere.

Professor George C. Coggins makes an important contribution to public land law by soberly suggesting that courts are not without standards to interpret the legislatively imposed public land management philosophy of "multiple use." His article, "Of Succotash Syndromes and Vacuous Platitudes: The Meaning of 'Multiple Use, Sustained Yield' for Public Land Management," challenges those who would throw up their hands in bewilderment over the imprecision of multiple use mandates in the Multiple-Use, Sustained-Yield Act and the Federal Land Policy and Management Act. He argues that the meaning of these statutes is discernable in context. Nice sounding, but facially vague, directives can be parsed in light of the thrust of the statutes as a whole to yield sufficiently clear meanings to adjudicate challenges to administrative actions. Professor Coggins shows that Congress has breathed meaning into the multiple use philosophy by some directive language in the statutes. This is at least as much as courts have to go on in other statutory frameworks where there has been substantial judicial activity. He stops short of saying, although the inference is possible, that the gist of all current legislation favoring conservative public land and resources management is an interpretive aid for the multiple use laws. If Professor Coggins' views are correct, it would be an abdication of the courts' proper role for them to remain outside the fray over the meaning of "multiple use." Courts that refuse to become involved may by default validate decisions of the federal bureaucracy that cause agencies to follow

53. 43 U.S.C. §§ 1702(c), 1732(a) (1976).
inconsistent courses and to allocate resources in ways which offend Congress's intent.

Montana's 30% coal severance tax was the crucible for Commerce Clause principles in *Commonwealth Edison Co. v. Montana.* In "Severance Taxes and Federalism: the Role of the Supreme Court in Preserving a National Common Market for Energy Supplies" Professor Stephen F. Williams engages in a penetrating analysis of the recent decision. He examines the case against prevailing doctrine, noting the Court's departures from precedent that apparently exempted severance taxes from judicial scrutiny and from tests prescribed for determining the constitutional limits of taxation in other contexts. Professor Williams recognizes that courts are generally ill-suited to define limits with numerical precision and that appropriate solutions to excessive taxation are more likely to emanate from Congress. The Court's decision not to disturb the enormous tax accommodated constitutional tensions by stating that the Commerce Clause may impose limits upon the taxation of the severance of minerals, yet avoided the temptation to determine a specific maximum rate. Professor Williams explains that to allow unfettered state taxation would risk impairment of the single, national marketplace championed by the framers; to prescribe limits based not on effects but upon a presumptive limit would offend the equally important ability of states to vary their systems of law, including taxation.

Federal coal policy is charged with being misconceived and unworkable in "Western Coal in Context" by Professor A. Dan Tarlock. A brief history of coal development and use examines the interaction of government policy, economics and labor relations. Professor Tarlock points out that lawmakers have not been content to trust the marketplace. Instead they have enacted legislation making it virtually impossible for coal to take its rightful place in the nation's energy family. In the past, Congress has not dealt comprehensively with the energy supply problem, imposing import quotas and taxes on some sources, providing aid to some, regulating pricing of others, and passing environmental legislation affecting different types of energy sources in different ways. Each measure may deal soundly with a specific problem, but at the same time may ignore the collateral effects on coal development. Professor Tarlock concludes that the current coal policy, while valiantly attempting to deal simultaneously with the goal of increasing coal production and with other na-

tional goals such as environmental protection, goes well beyond the proper role of government. Although the new policy removed a governmental log jam that had blocked nearly all coal production for several years, it instituted greater centralized planning than was required to deal with conflicting policy objectives.

The wealth of subject matter to be researched and analyzed by legal scholars is well exemplified by the lead articles in this Symposium. The transcendent importance of the matters discussed suggests that even if the growth of lawyers' work in the field should prove ephemeral, the study of natural resources subjects need not be so. Legal scholarship in the area is more than a response to peculiar research needs. Natural resources law is a theoretical proving ground as active and interesting as any in the law.
SYMPOSIUM ON ENVIRONMENTAL AND NATURAL RESOURCES LAW

PREFACE: ON NATURAL RESOURCES AS AN AREA OF THE LAW

DAVID H. GETCHES

Natural resources is not new to the practice or to the study of law, but it has recently gained dignity as a field of study producing its own scholarship as well as being a widespread practical specialty. Greater attention has been focused on legal issues surrounding the discovery, development, regulation, use, and protection of natural resources because of increased commercial activity and legislative intervention in the area. The responses have included the creation of natural resources departments in law firms and government agencies, specialization by lawyers, addition of natural resources courses to law school curricula, and a proliferation of research and writing in the field. This Symposium is particularly reflective of the latter two trends. The four lead articles are products of a Special Institute for Natural Resources Law Teachers held at the University of Colorado School of Law May 28-30, 1981 under the sponsorship of the Rocky Mountain Mineral Law Foundation, where the authors presented papers. In the final paragraphs of this preface the articles are summarized. This Symposium also presents an appropriate occasion to remark on the evolution of natural resources law as a distinct area of the law.

More than ever before, the work of lawyers involves issues related to the allocation, development, and regulation of natural resources. This is attributable partly to the concentration of interest by society in utilizing a pool of resources that is rapidly diminishing. Over the last decade, concern has heightened over the dependence of the United States on foreign sources of energy and hard rock minerals. Domestic exploration and production of these commodities is now increasing. Population growth and periodic drought challenge the ingenuity of engineers and lawyers to develop and to transport available water resources. Because vast land areas are in federal ownership, national policies and laws concerning use of the public lands are vital to the drive for domestic supplies of minerals, for wa-
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tersheds and water projects, and for a variety of other essential resources such as timber and forage. Never before has there been more demand for outdoor recreation. For most of this century the public has considered the unspoiled areas of the country to be national treasures worthy of preservation. All of these uses and values compete for priority in governmental decisionmaking and in the marketplace. At the same time an awareness of the adverse health impacts and non-aesthetic effects of development has led to elaborate schemes for resource protection such as antipollution legislation. Matters formerly left, largely without success, to private remedies are now controlled by technically detailed statutes and voluminous implementing regulations administered by giant bureaucracies. The challenge to lawyers in this milieu is as exciting as it is awesome.

**Increased Legal Activity Related to Natural Resources**

The number of lawyers in private practice, industry, and government whose work is primarily natural resources law has been rising sharply and most general practices are now likely to include some natural resources matters. Lawyers have always dealt with the allocation of private rights to use water, with securing rights in publicly owned land and resources, with private arrangements for development of oil and gas, and with governmental restraints on the use of private property. Several developments have led to a dramatic increase of lawyer involvement in natural resources work. They include an increase in the number and magnitude of transactions, the imposition and enforcement of broader and more detailed governmental controls, and the emergence of broad, private challenges to government decisionmaking made on behalf of the public interest.

There have been great fluctuations in mineral development and in the quantity of public land dispositions. With the closing of the frontier around 1900, federal policy shifted away from disposal and toward retention and management of public lands. The briskness in patenting many millions of acres to private owners as homesteads or mining claims dwindled to almost nothing. The interface of government and private enterprise continued to have importance in public land law. Greater stewardship over public lands and other resources in the form of more intensive management began at the turn of the century and widened and extended the need for legal involvement in these matters. Only since 1970 has the federal government begun its ambitious regulation of activities affecting not only federal property

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but the common resources of air and water. This created a vast body of statutory and administrative restrictions on pollution of these resources. Pricing, transportation, and marketing of petroleum have been subject to extensive federal regulation and special taxation regimes. Since early in the nation’s history land use controls at the state and local level have regulated the manner in which property may be developed and used. Now the federal government also legislates local land use controls related to resource development such as mining.

America’s demand for lawyers in natural resources has rapidly accelerated in this century, especially since the 1960’s. Although in the post-war era market forces and government policies made foreign sources attractive to oil and gas and mining interests, there was always enough domestic natural resources activity to maintain the established practice. The more recent advent of domestic investment and efforts that require acquisition of rights and compliance with an increasingly complicated body of regulatory laws has required ever greater commitments of lawyers’ energies and skills. Putting together massive projects such as Alaska’s Prudhoe Bay oil field and the Trans-Alaska Pipeline, tapping new resources such as oil shale, and implementing transportation techniques such as coal slurry lines,


6. There is no reliable index of the numbers of lawyers practicing in the field. Some indication of the growth of interest in the area is shown by increases in membership of the Section of Natural Resources Law of the American Bar Association. It has gone from a “Section of Mineral Law” with 363 members in 1928, to a “Section of Mineral and Natural Resources Law” with 2,013 members in 1967, to a membership of 7,143 in 1981. Telephone interview with Ms. Marian Zehner, ABA Staff Liaison for Section of Natural Resources Law (Feb. 10, 1982).
all demand a dedication of legal talents of unprecedented volume and sophistication.

In an earlier, simpler time there may not have been enough substantive law, let alone sufficient work, to support a natural resources specialty. Today, anyone who would use or affect natural resources is at once confronted with a regulatory challenge, in addition to being concerned with proper allocations of rights to the resources. The drive for energy and mineral development in the United States has stirred legal activity in most urban areas and throughout the West generally. That activity is made more complex because of competing uses on resource-rich lands—grazing, timber, wildlife, recreation and wilderness. Since the enactment of the National Environmental Policy Act in 1969\(^7\) there has been an avalanche of new statutes and regulations controlling natural resources to achieve a variety of ends—environmental, distributive, and social.\(^8\)

Statutory law is interpreted and applied through a morass of administrative regulations and implemented and enforced by a variety of agencies, officials, and boards. Government regulators are assisted by large legal staffs and are typically represented in litigation by the Department of Justice.\(^9\) As might be expected, legal activities within the government stimulate or require responsive action by those who are regulated. Rulemaking, administrative actions, and litigation concerning natural resources now regularly involve "public interest" lawyers in addition to participants from government and the regulated industries.\(^10\) Conservation organizations supported by contributions and membership fees, including the Sierra Club Legal Defense Fund, Environmental Defense Fund, Natural Resources Defense Council and National Wildlife Federation, have employed staffs of lawyers. They not only participate in the administrative process but they also act as "private attorneys general" to fill enforce-


\(^9\) Most litigation that involves the Departments of Agriculture and Interior and most of the other federal land management agencies is handled by the Department of Justice, Land and Natural Resources Division. There are 170 attorneys in the division. Telephone interview with Marcia Jordan, Personnel Liaison Assistant, Land and Natural Resources Division, Department of Justice (March 1, 1982).

ment gaps left by the agencies.\(^1\) As such they have become vigilant watchdogs against administrative abuses and misapplications or misinterpretations of the law, a role encouraged by the "citizen suit" provisions of many statutes.\(^1\) Public interest lawyers sometimes stand in the shoes of a reluctant agency.\(^1\) At other times they will vigorously challenge agency action.\(^4\) Frequently they assume a position that balances industry, as an agency or official takes a middle of the road position.\(^5\)

Several non-profit organizations have been formed to assert other versions of the public interest. Organizations such as the Pacific Legal Foundation and the Mountain States Legal Foundation are financially supported by individuals and industries who utilize legal staffs to further their conceptions of the proper administration of public resources and regulatory statutes. Typically they join forces with or take over advocacy for an industry or developer.\(^6\) In some instances they will take on an issue that is broader than a single party or industry would be likely to support.\(^7\)

The participation of non-profit organizations in natural resources matters has led to more responsible government action from officials whose actions may have been remote from oversight or review. Yet the process has generated an unprecedented amount of legal activity on complicated issues, often concerning highly technical subject matter. The increased bulk of substantive law in an era of

\(^{11}\) Id. See also Sierra Club v. Morton, 405 U.S. 727, 734-41 (1972).


\(^{13}\) E.g., Wisconsin's Environmental Decade, Inc. v. Wisconsin Power and Light, 395 F. Supp. 313 (W.D. Wis. 1975) (suit to require EPA to issue a notice of violation of state implementation plan under Clean Air Act).

\(^{14}\) E.g., Natural Resources Defense Council, Inc. v. Train, 411 F. Supp. 864 (S.D.N.Y. 1976), aff'd, 545 F.2d 320 (2d Cir. 1976) (requiring EPA to list lead as a criteria pollutant under the Clean Air Act).

\(^{15}\) E.g., Alabama Power Co. v. Costle, 606 F.2d 1068 (D.C. Cir. 1979) (challenges by industry and environmental groups to validity of EPA's final regulations concerning prevention of significant deterioration under Clean Air Act).

\(^{16}\) E.g., Valdez v. Applegate, 616 F.2d 570 (10th Cir. 1980) (grazers of livestock on public land represented by Mountain States Legal Foundation).

\(^{17}\) E.g., Mountain States Legal Foundation v. Costle, 630 F.2d 754 (10th Cir. 1980) (challenging EPA's decision conditionally approving portions of Colorado's air quality control implementation plan):
mounting pressure for access to natural resources for the often incompatible goals of entrepreneurs and the general public makes natural resources law one of the greatest areas of growth in the law. Lawyers are involved in far greater numbers and in much more significant ways than ever before.

Legal questions of global importance arise as world population multiplies and industrialization increases the per capita dependence on natural resources for food, fuel, shelter, disposal of waste, and accumulation of wealth. Society looks to the law for improvement of the quality of resource management and for rational prevention and mediation of conflict, even as it looks to the sciences for technological solutions. Lawyers, no less than engineers or businessmen, must be aware that a resource decision sends ripples through both time and space that sooner or later must be reckoned with. This realization complicates the responsibilities of professionals who would view their roles as agents promoting the interest of a single client in an isolated transaction. In an era of worldwide interdependence on common pools of scarce resources, greater vision and ingenuity are essential. The legal profession is thus confronted with new ethical and intellectual frontiers, as well as with unprecedented challenges to traditional talents.

**Law School Curricula in Natural Resources**

Only recently have natural resource subjects earned a position of respect in law school curricula. This new-found respect is a phenomenon of their moving beyond filling a practical niche by embellishing the legal education of students who would work in the field. In the past, a course or two could be justified as a means of familiarizing prospective lawyers with the substantive content of a particular area that facilitated their entry into practice. That rationale could support much of the natural resources law teaching today, as a large and growing number of lawyers are being employed in jobs involving natural resources law. But if the appropriateness of law school curriculum was ever judged solely on its immediate utility to a new practitioner, it is not so judged in modern legal education.

Law schools once prescribed nearly all the courses a student must complete for graduation; now almost all courses after the first year are elective. To earn a place on the menu of courses at a first rate law school today, a course must do more than transmit specialized subject matter. While philosophies differ as to the essential components of a legal education, most educators agree that law schools must go beyond teaching students rules and skills and the
practicalities of serving clients. There must be intellectual training to deal with broader principles and development of an appreciation of the ways in which principles can reflect the policies of governments and the values of societies.\textsuperscript{18} At least some of these goals of legal education can be satisfied in any properly chosen and effectively presented course.\textsuperscript{19} Natural resources courses, however, are especially well suited to fulfill a range of objectives for legal education.

Natural resources law found its way into law school curricula to fill an apparent need to prepare students for practice in the field. Very early, mining and water rights courses were offered in some schools.\textsuperscript{20} By 1950 nearly all western law schools offered oil and gas or water law courses but most eastern schools offered neither.\textsuperscript{21} In 1949 Clyde O. Martz, then a professor at the University of Colorado School of Law, wrote in the \textit{Journal of Legal Education}:

\begin{quote}
In the past few years the West has witnessed a new burst of activity in natural resource exploitation. Accompanying such activity is an increase in the need for grounding the law student in the statutory and case law governing the acquisition, development, and conservation of mineral, oil and gas, water and land resources.\textsuperscript{22}
\end{quote}

Martz’s statement is apt today, but we need not simply rely on the

\begin{itemize}
\item \textsuperscript{19} See Rowles, supra note 18. Some have suggested that even the sacrosanct first year courses might give way to courses that fulfill more of the law school's overall objectives than the introduction of fundamental doctrines. See Kelso, \textit{Curricular Reform for Law School Needs of the Future}, 21 \textit{U. Miami L. Rev.} 526 (1967). Harvard Law School attempts to offer virtually any course in which there is substantial student interest. Quality and educational objectives are achieved by careful selection of instructors from existing faculty or from among outside experts. Interview with Albert M. Sacks, former Dean, Harvard Law School (Jan 6, 1982).
\item \textsuperscript{20} Arnold, \textit{The Study of Public Land Law in the Western Law Schools}, 4 \textit{Calif. L. Rev.} 316 317 (1916). If Arnold was not exaggerating when he said “many law schools of the East, and all of the West, have courses in mining and irrigation law,” \textit{id.} at 316, the numbers of such courses appear to have receded by 1933. In that year the Association of American Law Schools reported that water law was taught at ten schools, mining law at seven, and oil and gas at six. Brosman, \textit{Meeting of the Association of American Law Schools—1933}, 7 \textit{Am. L. Sch. Rev.} 1076, 1082 (1933).
\item \textsuperscript{21} Biblowit, \textit{The Teaching of Natural Resources Law in Eastern Law Schools}, 6 \textit{Colum. J. Envtl. L.} 139, 148 (1980).
\item \textsuperscript{22} Martz, \textit{The Study of Natural Resource Law}, 1 \textit{J. Legal Educ.} 588 (1949).
\end{itemize}
utility of "grounding" students in some laws that may change a year or so after their graduation. Nor do we need to rely on the strong demand for courses in the field expressed by prospective and entering students and substantiated by high enrollments in natural resources courses.

Natural resources law has come of age as a field of law. It bristles with legal issues and provides fora as useful as many "traditional" courses to ripen the skills of future lawyers. Courses in the area are justified by the same reasons that support offering a variety of courses in business-related subjects. Resources law classes vary greatly in content and purpose and bring together doctrines from such diverse areas as constitutional law, administrative law, property, regulated industries, federal courts and others. They can be used to educate students in the fundamentals of the law: processes for decision-making and dispute resolution; statutory interpretation; jurisprudence; analytical reasoning; and lawyering skills (e.g., litigation, planning, drafting). These goals are met as students study substantive law that may be useful in practice. Furthermore, opportunities abound for relating the law to important social policy issues and ethical concerns. In addition, natural resources law study conveniently and necessarily partakes of other, non-legal disciplines such as economics and geology. Beyond these virtues, issues in the field arise in contexts that are likely to hold student interest.

Education in natural resources law has evolved from isolated specialty courses that catered to an employment market to a legal discipline with its own integrity. It always has been possible to teach natural resources law with all the intellectual benefit and pedagogical rigor of the most vital courses in the curriculum, although it seems easier to do so today. The last two decades have seen the growth of substantive issues in natural resources law so that it now touches more transactions, fosters more issues, and commands greater judicial attention. The enactment of far-reaching environmental laws in the late 1960's and early 1970's was the catalyst for making natural resources a complete field for study. Courses can have depth and complexity which may have been lacking before. The body of law relating to natural resources is now full enough to deal with most of the fundamental goals of legal education.

Many law schools are adding course offerings in the natural resources field. The growth of curriculum in natural resources began
slowly in the 1950's, and was given impetus by the addition of environmental law courses in the 1970's. Initially natural resources issues were discussed as an adjunct of real property law. Now schools offer a number of courses specifically related to the development, regulation, and protection of particular resources.

An obstacle to curriculum expansion in the area has been the dearth of published teaching materials. The availability of a casebook can be the trigger for offering a course. It gives credibility to a proposed course that helps convince a law faculty, curriculum committee or dean that the offering is worthy. Moreover, it can make teaching the course feasible for a faculty member who otherwise would have to assemble a vast collection of materials. The unavailability of natural resources law teaching materials has been both a cause and an effect of the scarcity of established courses. Law publishers were wary of the unproven market and, with notable exceptions they have refused to venture significantly into the resources field until very recently.

The first American casebook was reportedly Angell on Water-courses published in 1824. Although water and mining law materials were available early in the century, they were highly specialized


24. See Martz, supra note 22; Biblowit supra note 21, at 142-147. M. McDougal & D. Haber, Property, Wealth, Land: Allocation Planning and Development (1948) is often cited as the leading example of treatment of resources questions in a real property casebook. See Clark, supra note 23, at 169.

25. A 1980 survey of 95 law schools showed that 78 schools offered two or more courses; 44 offered four or more; and 12 schools had 8 or more courses in natural resources law. The most common offerings were in environmental law (77 schools); water law (37 schools); oil and gas (36 schools); energy law (26 schools); and land use (24 schools). Other courses offered at five or more schools included public land law, mining, natural resources, agricultural law and ocean law. Natural Resources Law Survey, included in Report of Meeting of Natural Resources Law Teaching Committee, Rocky Mountain Mineral Law Foundation, July 17, 1980.

A survey done of courses offered at 115 law schools in 1967 showed that courses were taught in the following subjects: land use (67 schools); oil and gas (47 schools); water law (37 schools); mining (3 schools); atomic energy (3 schools). Del Duca, Continuing Evaluation of Law School Curricula—An Initial Study, 20 J. Legal Educ. 309 (1968).

Another surveyor came up with the following counts for the period 1968-70: land use (74 schools); water law (46 schools); oil and gas (30 schools). Tarlock, Current Trends in the Development of an Environmental Curriculum, in Law and the Environment 321-22 (M. Baldwin & J. Page eds. 1970).


27. E.g., J. Bingham, Cases on the Law of Water Rights (1916); G. Costigan, Cases on the American Law of Mining (1912); G. Craig, Selected Cases on Water Rights and Irrigation Law in California and the Western States (1910).
and were not kept current. Oil and gas casebooks, like courses in that subject, have been readily available since the 1940's.\textsuperscript{28}

An important experiment in natural resources teaching materials was Martz's \textit{Cases on Natural Resources}, published by West in 1951. The volume covered water law, public land law, mining, and oil and gas and was designed for a single, all purpose natural resources course. Although the book was criticized for attempting to roll too much into materials for a single course,\textsuperscript{29} it gave teachers an opportunity to devise courses with some creativity. The single course idea did not enjoy wide acceptance, however.\textsuperscript{30} Nevertheless, West published a similar effort under an identical title by Professors Frank J. Trelease, Harold S. Bloomenthal and Joseph R. Geraud in 1965. Only two years later, Dean Trelease's water law section of the work was published as a separate volume\textsuperscript{31} and other publishers soon responded to a growing water law market.\textsuperscript{32} Availability of good teaching materials in water law helped to make the subject a staple in many law schools.

Land use materials and courses also have become popular since 1960. The publication of Professor Charles M. Haar's \textit{Land-Use Planning} in 1959 by Little, Brown and Company was well-received and spurred inclusion of courses on the subject at law schools across the country.\textsuperscript{33} It appears, however, that course offerings in the sub-

\begin{itemize}
\item \textsuperscript{29} Johnson, Book Review, 4 J. Legal Educ. 503, 506 (1952).
\item \textsuperscript{30} Clark, \textit{supra} note 23, at 168.
\item \textsuperscript{33} Professor Sho Sato earlier had published mimeographed materials entitled \textit{Water Resources Allocation} (1962).
ject have been declining in favor of environmental law courses.\textsuperscript{34}

Public land law—the study of the allocation, use and management of the federal lands that constitute about a third of the total land area in the United States—has received little curricular attention until recently.\textsuperscript{35} The books by Martz and Trelease, Bloomenthal, and Geraud surveyed the subject. It was also treated as a part of most mining law courses. But it was not until 1981 that published materials designed for a comprehensive course on the subject were available with the publication by Foundation Press of Professors George C. Coggins' and Charles F. Wilkinson's \textit{Federal Public Land and Resources Law}.\textsuperscript{36} The first separately published teaching materials on mining law since 1912, Loren Mall's \textit{Public Land and Mining Law}, were published this year by Butterworths. One may expect an increase in mining law courses as a consequence.

The largest number of recently published course books in natural resources law has been in environmental law,\textsuperscript{37} the most widely taught course in the field.\textsuperscript{38} The title “environmental law” suggests impossibly extensive coverage for a single course.\textsuperscript{39} Thus, authors have had to grapple with the problems of focusing on attainable goals and coherent subject matter. Most books cover only a few federal pollution statutes. The statutes do present an appropriate setting

\begin{thebibliography}{99}
\bibitem{Note25} See note 25 supra.
\bibitem{Note20} In 1916 an early teacher of the subject opined that public land law should be taught at western schools because of its broad practical importance. Arnold note 20 supra.
\bibitem{Note26} The authors made the materials available to others in 1980 in a paperback, mimeographed version, and fifteen law schools adopted the unpublished materials. Telephone interview with Charles F. Wilkinson (March 3, 1982).
\bibitem{Note25} See note 25 supra. Enthusiasm for environmental law courses ran so high in the early 1970's that at least four schools (University of Denver, University of Iowa, University of Kansas, and State University of New York at Buffalo) required first year courses with environmental content. Irwin, \textit{The Law School and the Environment}, 12 \textit{Nat. Resources J.} 278, 279 (1972).
\end{thebibliography}
for development of the pervasive natural resources issues of allocation, public and private rights, and regulatory mechanisms. Techniques of statutory analysis, examination of the administrative process and an understanding of economics all can be taught. While the subject is a vehicle for teaching a variety of skills and dealing with diverse subject matter, it nevertheless has been an enigma for some law teachers. Furthermore, rapid development of environmental law has outstripped the ability of authors and publishers to update their works. The difficulties and limitations of teaching a single environmental law course has contributed to the trend of diversification of natural resources courses. Now many schools offer a course in federal pollution law and a number of courses in other resources subjects.

The popular concern with energy shortages has been an impetus to the publication of materials in energy law that probe difficult and engaging questions of resource allocation. The first such book was by Professor William H. Rodgers, Energy and Natural Resources Law in 1979. Foundation Press has announced that in early 1983 it will release Energy Law by Professors Donald N. Zillman and Larry Lattman.

A few law schools, including those at the Universities of Colorado, Minnesota, Montana, and Oregon, have begun ambitious clinical programs in natural resources law. They provide students with opportunities to receive law school credit for supervised work on matters of major importance on behalf of actual clients in administrative proceedings, litigation, and negotiations. These programs offer unique experiences in cases that are complex, both legally and factually. The enrichment and challenges are rarely equalled in other clinical education.

Some schools have instituted programs leading to graduate degrees and offer other opportunities for specialized advanced study. Some regularly organize continuing legal education pro-

40. See Irwin, supra note 38; Tarlock, supra note 25, at 302-309.
41. See, e.g., Biblowit, supra note 21, at 152-154.
42. University of Alberta (LL.M); George Washington University (LL.M); University of Miami (LL.M); University of Utah (LL.M); Vermont Law School (M.S.L.).
43. E.g., the Natural Resources Law Institute at Lewis and Clark Law School holds short courses for non-lawyer professionals; the Natural Resources Program at the University of Denver has a joint degree program with graduate schools at the university and with the Department of Mineral Economics at Colorado School of Mines; the Energy Law Center at the University of Utah has interdisciplinary programs with the Colleges of Mining and Engineering; the Natural Resources Law Center at the University of Colorado will begin a fellowship program for lawyers doing research projects on resources law.
grams in natural resources for lawyers. The presence of these programs and the accompanying activity in legal research and writing stimulate student interest in studying natural resources law.

The Scholarship of Natural Resource Law

Until after World War II, little scholarly legal work was done in the field of natural resources. Although there were treatises on oil and gas, mining, and water law, only oil and gas law produced any significant number of articles and other original work. Similarly, as pointed out earlier, only oil and gas law was the subject of published teaching materials. With the growth of intellectual interest in the subject matter and practical necessity, the number and quality of publications in the area have increased. Organizations dedicated to publication and education in the field and specialized journals formed to satisfy a natural resources law audience have contributed to the promotion of legal scholarship. Today the number of law review articles produced in the field is impressive. They are found in almost all major journals because the number of articles far exceeds the capacity of the specialized publications. Another more recent phenomenon is the creation of institutes and centers at law schools to encourage research in the field.

The Rocky Mountain Mineral Law Foundation is an example of an organization that was formed in response to the limited availability of legal research materials in natural resources. In 1955, several oil and gas lawyers recognized a need for research and continuing education. They organized the first Rocky Mountain Mineral Law Institute, which was held at the University of Colorado. Shortly afterward, they incorporated the Foundation to perpetuate annual institutes modeled after the first one. Institutes have been held annually ever since at which speakers present papers on oil and gas, mining, public lands, and water law that later are published in a

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44. E.g., University of Colorado School of Law; University of Denver College of Law; University of Idaho College of Law; Louisiana State University School of Law; University of Oklahoma School of Law; University of Texas School of Law; Tulsa College of Law; University of Utah College of Law; Vermont Law School.

45. University of Calgary, Canadian Institute of Resources Law; University of Colorado, Natural Resources Law Center; University of Denver, Natural Resources Program; George Washington University, Environmental and Energy Law Program; Lewis and Clark Law School, Natural Resources Law Institute; University of Miami, Ocean and Coastal Law Program; University of Tulsa, National Energy Law and Policy Institute; University of Utah, Energy Law Center; Vermont Law School, Environmental Law Center.

bound volume. The Foundation also holds numerous special institutes and regularly publishes books and articles. An especially notable contribution was preparation of the five volume *American Law of Mining* published in 1960 by Matthew Bender & Co. Although the Foundation has concentrated on producing programs and publications that explain existing law and that furnish practical advice, annual institutes and some other activities have produced scholarship that analyzes, criticizes, and suggests new solutions to problems of doctrine and policy. Citation by the courts is a tribute to the importance of recent work presented at the institutes.47

Four years ago the Foundation, which long had involved law school representatives in its governance and activities,48 formed a Committee on Natural Resources Law Teaching. The committee is becoming an important communication conduit among law professors in the field. It can take credit for inspiring the production of scholarly work in the field and for facilitating an ongoing dialogue concerning law school curricular and research developments and needs. The Special Institute for Natural Resources Law Teachers held in May, 1981 was an important step in giving definition to this significant field of the law. Besides bringing together teachers from 33 schools in 27 states to discuss matters of common interest, it included presentations on eighteen subjects by leading scholars in the field. The subjects were grouped into four main areas: Judicial Review, Federalism, Planning, and Legal Issues in Energy Development. The articles in this Symposium represent those general areas and were among the papers presented at the Institute.

The *Natural Resources Journal* is the premier example of a scholarly publication devoted to the field. It has been published by the University of New Mexico School of Law since 1961. Today it enjoys an excellent reputation among cognoscente because of the many significant contributions to the field that were first aired in the *Journal.*49 A reason for the respect scholars hold for the publication

47. *E.g.*, Amoco Production Co. v. Guild Trust, 636 F.2d 261, 264 (10th Cir. 1980); Shell Oil Co. v. Andrus, 591 F.2d 597, 598 (10th Cir. 1979); United States v. Union Oil Co. of California, 549 F.2d 1271, 1275, 1279 (9th Cir. 1977); Mountain Fuel Supply Co. v. Smith, 471 F.2d 594, 597 (10th Cir. 1973); United States v. White, 401 F.2d 610, 613-614 (10th Cir. 1968).

48. The Foundation's Board of Trustees represents 22 law schools, 12 bar associations, 19 mining and oil and gas associations. In addition, there are several at large and honorary trustees.

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is that it has the distinction, rare among American law reviews and journals, of being refereed. The Journal is also one of the few truly inter-disciplinary legal publications. Frequent articles by engineers, economists and others are included which supply the necessary but often missing ingredients for fully comprehending legal issues. Its editor-in-chief, Professor Albert E. Utton, has assured a constant quality and balance among its articles almost since it began publication.

Just as the growth of environmental legislation and awareness deserves much credit for drawing the curricular attention of law schools to the natural resources field, so has it spurred tremendous growth in scholarship in the area. Since 1970 at least thirteen new law reviews have been dedicated to natural resources subject matter, many specifically dealing with environmental law. There is now a flow of regularly available, current research in natural resources law found within these specialized journals, as well as in other reviews. The natural resources field is dynamic and thought provoking; it consequently attracts excellent authors.

The articles in this Symposium epitomize the diversity in subject matter, issues and approach that invigorates legal scholarship. As the authors demonstrate, natural resources law is fertile territory for exploring pervasive issues that stimulate inquiry throughout the law. Thus, the articles examine tensions between law and public policy; search for the proper interpretation of legislation; criticize judicial decisions relative to established doctrine; and suggest philosophical bounds for the judicial function. Writing in this area is given a special vitality because it pertains to tangible resources, the allocation and use of which is recognized to be critically important to society. The likelihood that scholarship will have utility, and may influence the administrative and judicial processes, public policy and even

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50. E.g., Blaney and Criddle, Determining Water Requirements for Settling Water Disputes, 4 Nat. Resources J. 29 (1964). (The Blaney-Criddle formula, which has become the standard approach of courts and lawyers for determining consumptive use of irrigation water, was set forth and explained by the two engineers that devised it.)

the improvement of society, infuses it with a sense of importance.

In his "Theories of Judicial Review in Natural Resources Law," Professor William H. Rodgers, Jr. discusses the virtues and frailties of value systems that often guide the quest for "justice"—the mission of judicial review. He acknowledges that economics has been at center stage in contemporary debates on legal theory, but he suggests that perceptions from sociobiology, cultural anthropology, decision or game theory, and ethics deserve at least as much attention. Courts necessarily indulge values as they presume norms for assessing the conduct of both governments and mortals, and as they mold the wisdom of equity. The use of market theory in this process, says Professor Rodgers, is incomplete at best, misleading at worst. The task of resources allocation is an especially useful litmus for Rodgers' thesis, for if the thesis holds in an area already heavily influenced by market values, it should work elsewhere.

Professor George C. Coggins makes an important contribution to public land law by soberly suggesting that courts are not without standards to interpret the legislatively imposed public land management philosophy of "multiple use." His article, "Of Succotash Syndromes and Vacuous Platitudes: The Meaning of 'Multiple Use, Sustained Yield' for Public Land Management," challenges those who would throw up their hands in bewilderment over the imprecision of multiple use mandates in the Multiple-Use, Sustained-Yield Act58 and the Federal Land Policy and Management Act.59 He argues that the meaning of these statutes is discernable in context. Nice sounding, but facially vague, directives can be parsed in light of the thrust of the statutes as a whole to yield sufficiently clear meanings to adjudicate challenges to administrative actions. Professor Coggins shows that Congress has breathed meaning into the multiple use philosophy by some directive language in the statutes. This is at least as much as courts have to go on in other statutory frameworks where there has been substantial judicial activity. He stops short of saying, although the inference is possible, that the gist of all current legislation favoring conservative public land and resources management is an interpretive aid for the multiple use laws. If Professor Coggins' views are correct, it would be an abdication of the courts' proper role for them to remain outside the fray over the meaning of "multiple use." Courts that refuse to become involved may by default validate decisions of the federal bureaucracy that cause agencies to follow

53. 43 U.S.C. §§ 1702(c), 1732(a) (1976).
inconsistent courses and to allocate resources in ways which offend Congress's intent.

Montana's 30% coal severance tax was the crucible for Commerce Clause principles in Commonwealth Edison Co. v. Montana. In “Severance Taxes and Federalism: the Role of the Supreme Court in Preserving a National Common Market for Energy Supplies” Professor Stephen F. Williams engages in a penetrating analysis of the recent decision. He examines the case against prevailing doctrine, noting the Court’s departures from precedent that apparently exempted severance taxes from judicial scrutiny and from tests prescribed for determining the constitutional limits of taxation in other contexts. Professor Williams recognizes that courts are generally ill-suited to define limits with numerical precision and that appropriate solutions to excessive taxation are more likely to emanate from Congress. The Court’s decision not to disturb the enormous tax accommodated constitutional tensions by stating that the Commerce Clause may impose limits upon the taxation of the severance of minerals, yet avoided the temptation to determine a specific maximum rate. Professor Williams explains that to allow unfettered state taxation would risk impairment of the single, national marketplace championed by the framers; to prescribe limits based not on effects but upon a presumptive limit would offend the equally important ability of states to vary their systems of law, including taxation.

Federal coal policy is charged with being misconceived and unworkable in “Western Coal in Context” by Professor A. Dan Tarlock. A brief history of coal development and use examines the interaction of government policy, economics and labor relations. Professor Tarlock points out that lawmakers have not been content to trust the marketplace. Instead they have enacted legislation making it virtually impossible for coal to take its rightful place in the nation's energy family. In the past, Congress has not dealt comprehensively with the energy supply problem, imposing import quotas and taxes on some sources, providing aid to some, regulating pricing of others, and passing environmental legislation affecting different types of energy sources in different ways. Each measure may deal soundly with a specific problem, but at the same time may ignore the collateral effects on coal development. Professor Tarlock concludes that the current coal policy, while valiantly attempting to deal simultaneously with the goal of increasing coal production and with other na-

tional goals such as environmental protection, goes well beyond the proper role of government. Although the new policy removed a governmental log jam that had blocked nearly all coal production for several years, it instituted greater centralized planning than was required to deal with conflicting policy objectives.

The wealth of subject matter to be researched and analyzed by legal scholars is well exemplified by the lead articles in this Symposium. The transcendent importance of the matters discussed suggests that even if the growth of lawyers' work in the field should prove ephemeral, the study of natural resources subjects need not be so. Legal scholarship in the area is more than a response to peculiar research needs. Natural resources law is a theoretical proving ground as active and interesting as any in the law.
tersheds and water projects, and for a variety of other essential resources such as timber and forage. Never before has there been more demand for outdoor recreation. For most of this century the public has considered the unspoiled areas of the country to be national treasures worthy of preservation. All of these uses and values compete for priority in governmental decisionmaking and in the marketplace. At the same time an awareness of the adverse health impacts and non-aesthetic effects of development has led to elaborate schemes for resource protection such as antipollution legislation. Matters formerly left, largely without success, to private remedies are now controlled by technically detailed statutes and voluminous implementing regulations administered by giant bureaucracies. The challenge to lawyers in this milieu is as exciting as it is awesome.

**Increased Legal Activity Related to Natural Resources**

The number of lawyers in private practice, industry, and government whose work is primarily natural resources law has been rising sharply and most general practices are now likely to include some natural resources matters. Lawyers have always dealt with the allocation of private rights to use water, with securing rights in publicly owned land and resources, with private arrangements for development of oil and gas, and with governmental restraints on the use of private property. Several developments have led to a dramatic increase of lawyer involvement in natural resources work. They include an increase in the number and magnitude of transactions, the imposition and enforcement of broader and more detailed governmental controls, and the emergence of broad, private challenges to government decisionmaking made on behalf of the public interest.

There have been great fluctuations in mineral development and in the quantity of public land dispositions. With the closing of the frontier around 1900, federal policy shifted away from disposal and toward retention and management of public lands. The briskness in patenting many millions of acres to private owners as homesteads or mining claims dwindled to almost nothing. The interface of government and private enterprise continued to have importance in public land law. Greater stewardship over public lands and other resources in the form of more intensive management began at the turn of the century and widened and extended the need for legal involvement in these matters. Only since 1970 has the federal government begun its ambitious regulation of activities affecting not only federal property

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but the common resources of air and water. This created a vast body of statutory and administrative restrictions on pollution of these resources. Pricing, transportation, and marketing of petroleum have been subject to extensive federal regulation and special taxation regimes. Since early in the nation's history land use controls at the state and local level have regulated the manner in which property may be developed and used. Now the federal government also legislates local land use controls related to resource development such as mining.

America's demand for lawyers in natural resources has rapidly accelerated in this century, especially since the 1960's. Although in the post-war era market forces and government policies made foreign sources attractive to oil and gas and mining interests, there was always enough domestic natural resources activity to maintain the established practice. The more recent advent of domestic investment and efforts that require acquisition of rights and compliance with an increasingly complicated body of regulatory laws has required ever greater commitments of lawyers' energies and skills. Putting together massive projects such as Alaska's Prudhoe Bay oil field and the Trans-Alaska Pipeline, tapping new resources such as oil shale, and implementing transportation techniques such as coal slurry lines,

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6. There is no reliable index of the numbers of lawyers practicing in the field. Some indication of the growth of interest in the area is shown by increases in membership of the Section of Natural Resources Law of the American Bar Association. It has gone from a "Section of Mineral Law" with 363 members in 1928, to a "Section of Mineral and Natural Resources Law" with 2,013 members in 1967, to a membership of 7,143 in 1981. Telephone interview with Ms. Marian Zehner, ABA Staff Liaison for Section of Natural Resources Law (Feb. 10, 1982).
all demand a dedication of legal talents of unprecedented volume and sophistication.

In an earlier, simpler time there may not have been enough substantive law, let alone sufficient work, to support a natural resources specialty. Today, anyone who would use or affect natural resources is at once confronted with a regulatory challenge, in addition to being concerned with proper allocations of rights to the resources. The drive for energy and mineral development in the United States has stirred legal activity in most urban areas and throughout the West generally. That activity is made more complex because of competing uses on resource-rich lands—grazing, timber, wildlife, recreation and wilderness. Since the enactment of the National Environmental Policy Act in 1969 there has been an avalanche of new statutes and regulations controlling natural resources to achieve a variety of ends—environmental, distributive, and social.

Statutory law is interpreted and applied through a morass of administrative regulations and implemented and enforced by a variety of agencies, officials, and boards. Government regulators are assisted by large legal staffs and are typically represented in litigation by the Department of Justice. As might be expected, legal activities within the government stimulate or require responsive action by those who are regulated. Rulemaking, administrative actions, and litigation concerning natural resources now regularly involve "public interest" lawyers in addition to participants from government and the regulated industries. Conservation organizations supported by contributions and membership fees, including the Sierra Club Legal Defense Fund, Environmental Defense Fund, Natural Resources Defense Council and National Wildlife Federation, have employed staffs of lawyers. They not only participate in the administrative process but they also act as "private attorneys general" to fill enforce-

9. Most litigation that involves the Departments of Agriculture and Interior and most of the other federal land management agencies is handled by the Department of Justice, Land and Natural Resources Division. There are 170 attorneys in the division. Telephone interview with Marcia Jordan, Personnel Liaison Assistant, Land and Natural Resources Division, Department of Justice (March 1, 1982).
ment gaps left by the agencies. As such they have become vigilant watchdogs against administrative abuses and misapplications or misinterpretations of the law, a role encouraged by the "citizen suit" provisions of many statutes. Public interest lawyers sometimes stand in the shoes of a reluctant agency. At other times they will vigorously challenge agency action. Frequently they assume a position that balances industry, as an agency or official takes a middle of the road position.

Several non-profit organizations have been formed to assert other versions of the public interest. Organizations such as the Pacific Legal Foundation and the Mountain States Legal Foundation are financially supported by individuals and industries who utilize legal staffs to further their conceptions of the proper administration of public resources and regulatory statutes. Typically they join forces with or take over advocacy for an industry or developer. In some instances they will take on an issue that is broader than a single party or industry would be likely to support.

The participation of non-profit organizations in natural resources matters has led to more responsible government action from officials whose actions may have been remote from oversight or review. Yet the process has generated an unprecedented amount of legal activity on complicated issues, often concerning highly technical subject matter. The increased bulk of substantive law in an era of

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11. Id. See also Sierra Club v. Morton, 405 U.S. 727, 734-41 (1972).
13. E.g., Wisconsin's Environmental Decade, Inc. v. Wisconsin Power and Light, 395 F. Supp. 313 (W.D. Wis. 1975) (suit to require EPA to issue a notice of violation of state implementation plan under Clean Air Act).
15. E.g., Alabama Power Co. v. Costle, 606 F.2d 1068 (D.C. Cir. 1979) (challenges by industry and environmental groups to validity of EPA's final regulations concerning prevention of significant deterioration under Clean Air Act).
16. E.g., Valdez v. Applegate, 616 F.2d 570 (10th Cir. 1980) (grazers of livestock on public land represented by Mountain States Legal Foundation).
17. E.g., Mountain States Legal Foundation v. Costle, 630 F.2d 754 (10th Cir. 1980) (challenging EPA's decision conditionally approving portions of Colorado's air quality control implementation plan):
mounting pressure for access to natural resources for the often incompatible goals of entrepreneurs and the general public makes natural resources law one of the greatest areas of growth in the law. Lawyers are involved in far greater numbers and in much more significant ways than ever before.

Legal questions of global importance arise as world population multiplies and industrialization increases the per capita dependence on natural resources for food, fuel, shelter, disposal of waste, and accumulation of wealth. Society looks to the law for improvement of the quality of resource management and for rational prevention and mediation of conflict, even as it looks to the sciences for technological solutions. Lawyers, no less than engineers or businessmen, must be aware that a resource decision sends ripples through both time and space that sooner or later must be reckoned with. This realization complicates the responsibilities of professionals who would view their roles as agents promoting the interest of a single client in an isolated transaction. In an era of worldwide interdependence on common pools of scarce resources, greater vision and ingenuity are essential. The legal profession is thus confronted with new ethical and intellectual frontiers, as well as with unprecedented challenges to traditional talents.

**Law School Curricula in Natural Resources**

Only recently have natural resource subjects earned a position of respect in law school curricula. This new-found respect is a phenomenon of their moving beyond filling a practical niche by embellishing the legal education of students who would work in the field. In the past, a course or two could be justified as a means of familiarizing prospective lawyers with the substantive content of a particular area that facilitated their entry into practice. That rationale could support much of the natural resources law teaching today, as a large and growing number of lawyers are being employed in jobs involving natural resources law. But if the appropriateness of law school curriculum was ever judged solely on its immediate utility to a new practitioner, it is not so judged in modern legal education.

Law schools once prescribed nearly all the courses a student must complete for graduation; now almost all courses after the first year are elective. To earn a place on the menu of courses at a first rate law school today, a course must do more than transmit specialized subject matter. While philosophies differ as to the essential components of a legal education, most educators agree that law schools must go beyond teaching students rules and skills and the
practicalities of serving clients. There must be intellectual training to deal with broader principles and development of an appreciation of the ways in which principles can reflect the policies of governments and the values of societies. At least some of these goals of legal education can be satisfied in any properly chosen and effectively presented course. Natural resources courses, however, are especially well suited to fulfill a range of objectives for legal education.

Natural resources law found its way into law school curricula to fill an apparent need to prepare students for practice in the field. Very early, mining and water rights courses were offered in some schools. By 1950 nearly all western law schools offered oil and gas or water law courses but most eastern schools offered neither. In 1949 Clyde O. Martz, then a professor at the University of Colorado School of Law, wrote in the *Journal of Legal Education*:

"In the past few years the West has witnessed a new burst of activity in natural resource exploitation. Accompanying such activity is an increase in the need for grounding the law student in the statutory and case law governing the acquisition, development, and conservation of mineral, oil and gas, water and land resources."

Martz's statement is apt today, but we need not simply rely on the

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19. See Rowles, supra note 18. Some have suggested that even the sacrosanct first year courses might give way to courses that fulfill more of the law school's overall objectives than the introduction of fundamental doctrines. See Kelso, *Curricular Reform for Law School Needs of the Future*, 21 U. Miami L. Rev. 526 (1967). Harvard Law School attempts to offer virtually any course in which there is substantial student interest. Quality and educational objectives are achieved by careful selection of instructors from existing faculty or from among outside experts. Interview with Albert M. Sacks, former Dean, Harvard Law School (Jan 6, 1982).

20. Arnold, *The Study of Public Land Law in the Western Law Schools*, 4 Calif. L. Rev. 316 317 (1916). If Arnold was not exaggerating when he said "many law schools of the East, and all of the West, have courses in mining and irrigation law," id. at 316, the numbers of such courses appear to have receded by 1933. In that year the Association of American Law Schools reported that water law was taught at ten schools, mining law at seven, and oil and gas at six. Brosman, *Meeting of the Association of American Law Schools—1933*, 7 Am. L. Sch. Rev. 1076, 1082 (1933).


utility of "grounding" students in some laws that may change a year or so after their graduation. Nor do we need to rely on the strong demand for courses in the field expressed by prospective and entering students and substantiated by high enrollments in natural resources courses.

Natural resources law has come of age as a field of law. It bristles with legal issues and provides fora as useful as many "traditional" courses to ripen the skills of future lawyers. Courses in the area are justified by the same reasons that support offering a variety of courses in business-related subjects. Resources law classes vary greatly in content and purpose and bring together doctrines from such diverse areas as constitutional law, administrative law, property, regulated industries, federal courts and others. They can be used to educate students in the fundamentals of the law: processes for decision-making and dispute resolution; statutory interpretation; jurisprudence; analytical reasoning; and lawyering skills (e.g., litigation, planning, drafting). These goals are met as students study substantive law that may be useful in practice. Furthermore, opportunities abound for relating the law to important social policy issues and ethical concerns. In addition, natural resources law study conveniently and necessarily partakes of other, non-legal disciplines such as economics and geology. Beyond these virtues, issues in the field arise in contexts that are likely to hold student interest.

Education in natural resources law has evolved from isolated specialty courses that catered to an employment market to a legal discipline with its own integrity. It always has been possible to teach natural resources law with all the intellectual benefit and pedagogical rigor of the most vital courses in the curriculum, although it seems easier to do so today. The last two decades have seen the growth of substantive issues in natural resources law so that it now touches more transactions, fosters more issues, and commands greater judicial attention. The enactment of far-reaching environmental laws in the late 1960's and early 1970's was the catalyst for making natural resources a complete field for study. Courses can have depth and complexity which may have been lacking before. The body of law relating to natural resources is now full enough to deal with most of the fundamental goals of legal education.

Many law schools are adding course offerings in the natural resources field. The growth of curriculum in natural resources began
slowly in the 1950's, and was given impetus by the addition of environmental law courses in the 1970's. Initially natural resources issues were discussed as an adjunct of real property law. Now schools offer a number of courses specifically related to the development, regulation, and protection of particular resources.

An obstacle to curriculum expansion in the area has been the dearth of published teaching materials. The availability of a casebook can be the trigger for offering a course. It gives credibility to a proposed course that helps convince a law faculty, curriculum committee or dean that the offering is worthy. Moreover, it can make teaching the course feasible for a faculty member who otherwise would have to assemble a vast collection of materials. The unavailability of natural resources law teaching materials has been both a cause and an effect of the scarcity of established courses. Law publishers were wary of the unproven market and, with notable exceptions they have refused to venture significantly into the resources field until very recently.

The first American casebook was reportedly *Angell on Watercourses* published in 1824. Although water and mining law materials were available early in the century, they were highly specialized...
and were not kept current. Oil and gas casebooks, like courses in that subject, have been readily available since the 1940's. 28

An important experiment in natural resources teaching materials was Martz's *Cases on Natural Resources*, published by West in 1951. The volume covered water law, public land law, mining, and oil and gas and was designed for a single, all purpose natural resources course. Although the book was criticized for attempting to roll too much into materials for a single course, 29 it gave teachers an opportunity to devise courses with some creativity. The single course idea did not enjoy wide acceptance, however. 30 Nevertheless, West published a similar effort under an identical title by Professors Frank J. Trelease, Harold S. Bloomenthal and Joseph R. Geraud in 1965. Only two years later, Dean Trelease's water law section of the work was published as a separate volume 31 and other publishers soon responded to a growing water law market. 32 Availability of good teaching materials in water law helped to make the subject a staple in many law schools.

Land use materials and courses also have become popular since 1960. The publication of Professor Charles M. Haar's *Land-Use Planning* in 1959 by Little, Brown and Company was well-received and spurred inclusion of courses on the subject at law schools across the country. 33 It appears, however, that course offerings in the sub-

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subject have been declining in favor of environmental law courses.\textsuperscript{34}

Public land law—the study of the allocation, use and management of the federal lands that constitute about a third of the total land area in the United States—has received little curricular attention until recently.\textsuperscript{35} The books by Martz and Trelease, Bloomenthal, and Geraud surveyed the subject. It was also treated as a part of most mining law courses. But it was not until 1981 that published materials designed for a comprehensive course on the subject were available with the publication by Foundation Press of Professors George C. Coggins’ and Charles F. Wilkinson’s \textit{Federal Public Land and Resources Law}.\textsuperscript{36} The first separately published teaching materials on mining law since 1912, Loren Mall’s \textit{Public Land and Mining Law}, were published this year by Butterworths. One may expect an increase in mining law courses as a consequence.

The largest number of recently published course books in natural resources law has been in environmental law,\textsuperscript{37} the most widely taught course in the field.\textsuperscript{38} The title “environmental law” suggests impossibly extensive coverage for a single course.\textsuperscript{39} Thus, authors have had to grapple with the problems of focusing on attainable goals and coherent subject matter. Most books cover only a few federal pollution statutes. The statutes do present an appropriate setting

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for development of the pervasive natural resources issues of allocation, public and private rights, and regulatory mechanisms. Techniques of statutory analysis, examination of the administrative process and an understanding of economics all can be taught. While the subject is a vehicle for teaching a variety of skills and dealing with diverse subject matter, it nevertheless has been an enigma for some law teachers. Furthermore, rapid development of environmental law has outstripped the ability of authors and publishers to update their works. The difficulties and limitations of teaching a single environmental law course has contributed to the trend of diversification of natural resources courses. Now many schools offer a course in federal pollution law and a number of courses in other resources subjects.

The popular concern with energy shortages has been an impetus to the publication of materials in energy law that probe difficult and engaging questions of resource allocation. The first such book was by Professor William H. Rodgers, *Energy and Natural Resources Law* in 1979. Foundation Press has announced that in early 1983 it will release *Energy Law* by Professors Donald N. Zillman and Larry Lattman.

A few law schools, including those at the Universities of Colorado, Minnesota, Montana, and Oregon, have begun ambitious clinical programs in natural resources law. They provide students with opportunities to receive law school credit for supervised work on matters of major importance on behalf of actual clients in administrative proceedings, litigation, and negotiations. These programs offer unique experiences in cases that are complex, both legally and factually. The enrichment and challenges are rarely equalled in other clinical education.

Some schools have instituted programs leading to graduate degrees and offer other opportunities for specialized advanced study. Some regularly organize continuing legal education pro-

40. See Irwin, supra note 38; Tarlock, supra note 25, at 302-309.
41. See, e.g., Biblowit, supra note 21, at 152-154.
42. University of Alberta (LL.M); George Washington University (LL.M); University of Miami (LL.M); University of Utah (LL.M); Vermont Law School (M.S.L.).
43. E.g., the Natural Resources Law Institute at Lewis and Clark Law School holds short courses for non-lawyer professionals; the Natural Resources Program at the University of Denver has a joint degree program with graduate schools at the university and with the Department of Mineral Economics at Colorado School of Mines; the Energy Law Center at the University of Utah has interdisciplinary programs with the Colleges of Mining and Engineering; the Natural Resources Law Center at the University of Colorado will begin a fellowship program for lawyers doing research projects on resources law.
grams in natural resources for lawyers. The presence of these programs and the accompanying activity in legal research and writing stimulate student interest in studying natural resources law.

The Scholarship of Natural Resource Law

Until after World War II, little scholarly legal work was done in the field of natural resources. Although there were treatises on oil and gas, mining, and water law, only oil and gas law produced any significant number of articles and other original work. Similarly, as pointed out earlier, only oil and gas law was the subject of published teaching materials. With the growth of intellectual interest in the subject matter and practical necessity, the number and quality of publications in the area have increased. Organizations dedicated to publication and education in the field and specialized journals formed to satisfy a natural resources law audience have contributed to the promotion of legal scholarship. Today the number of law review articles produced in the field is impressive. They are found in almost all major journals because the number of articles far exceeds the capacity of the specialized publications. Another more recent phenomenon is the creation of institutes and centers at law schools to encourage research in the field.  

The Rocky Mountain Mineral Law Foundation is an example of an organization that was formed in response to the limited availability of legal research materials in natural resources. In 1955, several oil and gas lawyers recognized a need for research and continuing education. They organized the first Rocky Mountain Mineral Law Institute, which was held at the University of Colorado. Shortly afterward, they incorporated the Foundation to perpetuate annual institutes modeled after the first one. Institutes have been held annually ever since at which speakers present papers on oil and gas, mining, public lands, and water law that later are published in a

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44. E.g., University of Colorado School of Law; University of Denver College of Law; University of Idaho College of Law; Louisiana State University School of Law; University of Oklahoma School of Law; University of Texas School of Law; Tulsa College of Law; University of Utah College of Law; Vermont Law School.

45. University of Calgary, Canadian Institute of Resources Law; University of Colorado, Natural Resources Law Center; University of Denver, Natural Resources Program; George Washington University, Environmental and Energy Law Program; Lewis and Clark Law School, Natural Resources Law Institute; University of Miami, Ocean and Coastal Law Program; University of Tulsa, National Energy Law and Policy Institute; University of Utah, Energy Law Center; Vermont Law School, Environmental Law Center.

bound volume. The Foundation also holds numerous special institutions and regularly publishes books and articles. An especially notable contribution was preparation of the five volume *American Law of Mining* published in 1960 by Matthew Bender & Co. Although the Foundation has concentrated on producing programs and publications that explain existing law and that furnish practical advice, annual institutes and some other activities have produced scholarship that analyzes, criticizes, and suggests new solutions to problems of doctrine and policy. Citation by the courts is a tribute to the importance of recent work presented at the institutes.

Four years ago the Foundation, which long had involved law school representatives in its governance and activities, formed a Committee on Natural Resources Law Teaching. The committee is becoming an important communication conduit among law professors in the field. It can take credit for inspiring the production of scholarly work in the field and for facilitating an ongoing dialogue concerning law school curricular and research developments and needs. The Special Institute for Natural Resources Law Teachers held in May, 1981 was an important step in giving definition to this significant field of the law. Besides bringing together teachers from 33 schools in 27 states to discuss matters of common interest, it included presentations on eighteen subjects by leading scholars in the field. The subjects were grouped into four main areas: Judicial Review, Federalism, Planning, and Legal Issues in Energy Development. The articles in this Symposium represent those general areas and were among the papers presented at the Institute.

The *Natural Resources Journal* is the premier example of a scholarly publication devoted to the field. It has been published by the University of New Mexico School of Law since 1961. Today it enjoys an excellent reputation among cognoscente because of the many significant contributions to the field that were first aired in the Journal. A reason for the respect scholars hold for the publication

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The articles in this Symposium epitomize the diversity in subject matter, issues and approach that invigorates legal scholarship. As the authors demonstrate, natural resources law is fertile territory for exploring pervasive issues that stimulate inquiry throughout the law. Thus, the articles examine tensions between law and public policy; search for the proper interpretation of legislation; criticize judicial decisions relative to established doctrine; and suggest philosophical bounds for the judicial function. Writing in this area is given a special vitality because it pertains to tangible resources, the allocation and use of which is recognized to be critically important to society. The likelihood that scholarship will have utility, and may influence the administrative and judicial processes, public policy and even

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50. E.g., Blaney and Criddle, Determining Water Requirements for Settling Water Disputes, 4 NAT. RESOURCES J. 29 (1964). (The Blaney-Criddle formula, which has become the standard approach of courts and lawyers for determining consumptive use of irrigation water, was set forth and explained by the two engineers that devised it.)

51. E.g., SOLAR LAW REPORTER (1979); COLUMBIA JOURNAL OF ENVIRONMENTAL LAW (1974); ENVIRONMENTAL LAW (1970); HARVARD ENVIRONMENTAL LAW REVIEW (1976); PUBLIC LAND LAW REVIEW (1980); LAND AND WATER LAW REVIEW (1966); BOSTON COLLEGE ENVIRONMENTAL AFFAIRS LAW REVIEW (1978); ECology LAW QUARTERLY (1971); ENERGY LAW JOURNAL (1980); LAND USE AND ZONING DIGEST (1974); ENVIRONMENTAL POLICY AND LAW (1975); LAND USE AND ENVIRONMENT LAW REVIEW (1970); VIRGINIA JOURNAL OF NATURAL RESOURCES LAW (1980).
the improvement of society, infuses it with a sense of importance.

In his “Theories of Judicial Review in Natural Resources Law,” Professor William H. Rodgers, Jr. discusses the virtues and frailties of value systems that often guide the quest for “justice”—the mission of judicial review. He acknowledges that economics has been at center stage in contemporary debates on legal theory, but he suggests that perceptions from sociobiology, cultural anthropology, decision or game theory, and ethics deserve at least as much attention. Courts necessarily indulge values as they presume norms for assessing the conduct of both governments and mortals, and as they mold the wisdom of equity. The use of market theory in this process, says Professor Rodgers, is incomplete at best, misleading at worst. The task of resources allocation is an especially useful litmus for Rodgers’ thesis, for if the thesis holds in an area already heavily influenced by market values, it should work elsewhere.

Professor George C. Coggins makes an important contribution to public land law by soberly suggesting that courts are not without standards to interpret the legislatively imposed public land management philosophy of “multiple use.” His article, “Of Succotash Syndromes and Vacuous Platitudes: The Meaning of ‘Multiple Use, Sustained Yield’ for Public Land Management,” challenges those who would throw up their hands in bewilderment over the imprecision of multiple use mandates in the Multiple-Use, Sustained-Yield Act and the Federal Land Policy and Management Act. He argues that the meaning of these statutes is discernable in context. Nice sounding, but facially vague, directives can be parsed in light of the thrust of the statutes as a whole to yield sufficiently clear meanings to adjudicate challenges to administrative actions. Professor Coggins shows that Congress has breathed meaning into the multiple use philosophy by some directive language in the statutes. This is at least as much as courts have to go on in other statutory frameworks where there has been substantial judicial activity. He stops short of saying, although the inference is possible, that the gist of all current legislation favoring conservative public land and resources management is an interpretive aid for the multiple use laws. If Professor Coggins’ views are correct, it would be an abdication of the courts’ proper role for them to remain outside the fray over the meaning of “multiple use.” Courts that refuse to become involved may by default validate decisions of the federal bureaucracy that cause agencies to follow

53. 43 U.S.C. §§ 1702(c), 1732(a) (1976).
inconsistent courses and to allocate resources in ways which offend Congress's intent.

Montana's 30% coal severance tax was the crucible for Commerce Clause principles in Commonwealth Edison Co. v. Montana.\textsuperscript{54} In “Severance Taxes and Federalism: the Role of the Supreme Court in Preserving a National Common Market for Energy Supplies” Professor Stephen F. Williams engages in a penetrating analysis of the recent decision. He examines the case against prevailing doctrine, noting the Court's departures from precedent that apparently exempted severance taxes from judicial scrutiny and from tests prescribed for determining the constitutional limits of taxation in other contexts. Professor Williams recognizes that courts are generally ill-suited to define limits with numerical precision and that appropriate solutions to excessive taxation are more likely to emanate from Congress. The Court's decision not to disturb the enormous tax accommodated constitutional tensions by stating that the Commerce Clause may impose limits upon the taxation of the severance of minerals, yet avoided the temptation to determine a specific maximum rate. Professor Williams explains that to allow unfettered state taxation would risk impairment of the single, national marketplace championed by the framers; to prescribe limits based not on effects but upon a presumptive limit would offend the equally important ability of states to vary their systems of law, including taxation.

Federal coal policy is charged with being misconceived and unworkable in “Western Coal in Context” by Professor A. Dan Tarlock. A brief history of coal development and use examines the interaction of government policy, economics and labor relations. Professor Tarlock points out that lawmakers have not been content to trust the marketplace. Instead they have enacted legislation making it virtually impossible for coal to take its rightful place in the nation's energy family. In the past, Congress has not dealt comprehensively with the energy supply problem, imposing import quotas and taxes on some sources, providing aid to some, regulating pricing of others, and passing environmental legislation affecting different types of energy sources in different ways. Each measure may deal soundly with a specific problem, but at the same time may ignore the collateral effects on coal development. Professor Tarlock concludes that the current coal policy, while valiantly attempting to deal simultaneously with the goal of increasing coal production and with other na-

\textsuperscript{54} 101 S. Ct. 2946 (1981).
tional goals such as environmental protection, goes well beyond the proper role of government. Although the new policy removed a governmental log jam that had blocked nearly all coal production for several years, it instituted greater centralized planning than was required to deal with conflicting policy objectives.

The wealth of subject matter to be researched and analyzed by legal scholars is well exemplified by the lead articles in this Symposium. The transcendent importance of the matters discussed suggests that even if the growth of lawyers' work in the field should prove ephemeral, the study of natural resources subjects need not be so. Legal scholarship in the area is more than a response to peculiar research needs. Natural resources law is a theoretical proving ground as active and interesting as any in the law.