7-1975

The Law of Water Allocation in Kentucky

Digital Object Identifier: https://doi.org/10.13023/kwrri.rr.86

Richard C. Ausness
University of Kentucky, rausness@uky.edu

Bill H. Flynn
University of Kentucky

Research Report No. 86

THE LAW OF WATER ALLOCATION IN KENTUCKY

Richard C. Ausness
Principal Investigator

Bill H. Flynn
Research Associate

Project Number: A-060-KY

Agreement Number: 14-31-0001-5017 (FY 1975)

University of Kentucky
Water Resources Research Institute
Lexington, Kentucky

The work on which this report is based was supported in part by funds provided by the Office of Water Research and Technology, United States Department of the Interior, as authorized under the Water Resources Research Act of 1964.

July 1975

ABSTRACT

This study discusses navigability concepts, consumptive rights to surface and ground waters, the disposal of diffused surface waters and the administration of Kentucky's statutory water allocation system.

Federal regulatory powers are based on navigability as is state ownership of submerged lands. Kentucky uses the ebb-and-flow test of navigability to determine title to submerged lands but uses a navigability-in-fact test to determine the scope of state regulatory authority. Consumptive uses of water in Kentucky are governed by the riparian landowner to use as much water as he needs as long as his use does not interfere with the legitimate uses of other riparians. Underground streams are subject to the same consumptive use rules, but an overlying landowner can use as much percolating ground water as he needs even though other users are harmed. Kentucky follows the civil law rule with respect to the disposal of diffused surface water, but recent cases seem to have applied the more modern reasonable use rule.

In addition to these common-law rules, the Department for Natural Resources and Environmental Protection, under the provisions of KRS Chapter 151, administers a permit system under which both riparian and nonriparian users are allowed to make beneficial uses of water. The permit system, however, is not particularly comprehensive, and is subject to various criticisms.

Descriptors:

Legal Aspects*, Legislation, Water Law*, Water Policy, Water Resources Development

TABLE OF CONTENTS

INTRODUCTION

Drastically increased demands upon the nation's water resources may develop in the coming years because of population growth, increased per capita use of water, and the progressive concentration of population in urban areas.[1]

The population of the United States has grown from 76 million in 1900 to 204 million in 1970, and projections indicate that this trend is likely to continue.[2]

Per capita use of water is also rising. Because of industrialization, per capita use of water in America increased from 526 to 1893 gallons daily per person during the first six decades of this century.[3] As industrial growth continues, per capita water use will also increase.[4]

Water problems are also created by urban concentration. By 1980 it is estimated that more than half of the population will live in urban areas of more than 50,000 persons.[5] This urbanization will put a severe strain on the nation's water resources since the water-holding capacity of an area is reduced when rural lands are converted into high-density residential uses.

At the present time, Kentucky's water resources are substantial. Kentucky has 544 square miles of mountain streams, rivers, lakes, and reservoirs.[6] The Commonwealth's average yearly precipitation of of 46 inches produces about 100 million acre-feet of water annually.[7] However, according to the Department for Natural Resources and Environmental Protection, water demand will increase in the future for agriculture, industry, municipal uses, recreation and pollution control.

Although natural rainfall and storage ponds should provide adequate water for agricultural uses, irrigation is continually increasing, especially for tobacco. Industry is the heaviest use of Kentucky in water, accounting for two-thirds of present water used, while smaller amounts are used for commercial purposes. Chemicals, paper and metals are industrial uses in Kentucky which require large amounts of water. The state's growing metropolitan areas, Louisville, Lexington, Covington-Newport, Ashland, Owensboro, Bowling Green and Paducah, will all require greater quantities of water, although no shortages are imminent. Large quantities of water are required to support wildlife, and planning is needed to control minimum

stream flows and lake levels. Kentucky's recreational potential depends greatly upon sound water management. Finally, increasing amounts of stream water will be needed to purify polluted discharge.

Although Kentucky's water resources are sufficient to meet immediate needs, they are not unlimited, and competition among the state's water users may occur in the future. Moreover, the introduction of new high-water use industries such as coal gasification and liquefaction could accelerate this process in some areas of the state. Kentucky's water allocation system may eventually have to be substantially modified in order to maximize use of that resource. Ideally, proposals for such changes should be made before a serious breakdown of the allocation system occurs. This study is intended as a preliminary step in that direction.

Each of the five sections of this study examines a different facet of Kentucky water law. Section 1 deals with the rights of landowners whose property lies adjacent to a water course. Concepts of navigability as they relate to federal regulatory powers and the ownership of submerged lands, are discussed. Kentucky uses the "ebb and flow" test of navigability in order to determine owner-

ship of submerged lands, while the "navigability-in-fact" test is employed where the public right of navigation is concerned.

Consumptive use rights in contained surface waters are explored in section 2. The riparian system prevails in most of the eastern states, while most of the western states subscribe to the prior appropriation system. Riparian jurisdictions generally follow the reasonable use rule, but some utilize the older natural flow doctrine. Under the natural flow doctrine, the riparian owner, except for domestic purposes, may not cause the flow of the watercourse to diminish appreciably. The reasonable use rule, which Kentucky follows allows the riparian owner to utilize as much water as he needs as long as it does not interfere with the rights of other users.

Section 3 examines consumptive uses of ground water. Ground waters are classified as either underground streams or percolating ground water. Consumptive use rights in underground streams are the same as those of contained surface waters. However, there are four positions associated with the use of percolating ground water: the absolute ownership doctrine, the reasonable use rule, the

correlative rights doctrine, and the prior appropriation system.

The absolute ownership doctrine permits the landowner to extract an unlimited amount of water for use on overlying or distant lands regardless of injury to other users. The reasonable use rule limits a landowner's use to beneficial purposes on overlying land even though it interferes with the uses of others. The correlative rights doctrine restricts the use of water to overlying lands and also requires that it be reasonable in relation to the needs of other users. Finally, in some western states the prior appropriation doctrine is applied to ground water. Under this approach, the first landowner who puts the water to beneficial use has priority over subsequent appropriators during periods of shortage.

Diffused surface water is discussed in section 4. A landowner normally has a right to impound and use any diffused surface water on his property. There are three doctrines, however, that relate to the disposal of such waters: the common enemy rule, the civil law rule and the reasonable use rule. According to the common enemy rule the landowner may take any action to prevent diffused surface

water from coming upon his property, while under the civil law rule the upper owner has an easement upon the lower owner's property for the water to drain in its natural manner. The reasonable use rule provides for liability due to interference with the natural flow of diffused surface waters if the defendant's is deemed to be unreasonable or negligent. Kentucky once followed the civil law, but now seems to adhere to the reasonable use rule.

Section 5 is concerned with Kentucky's water regulatory legislation. Under the provisions of KRS chapter 151, the Division of Water Resources, operating within the Department for Natural Resources and Environmental Protection, deals with water use problems in the state. Consumptive uses of water are regulated by a permit system. Parties who wish to withdraw, divert or transfer water must obtain a permit from the Division, but many water users are exempted from this requirement. The right granted under the permit is specific in terms of quantity and rate of diversion. Nonriparians can apply for permits, and the transfer of water from one watershed to another is permitted. Water rights under the permit are granted for an

indefinite period, but the agency may make temporary allocations during periods of shortage.

1. NAVIGABLE WATERS

(a) Property Rights in Navigable Waters

Landowners whose property borders on a navigable watercourse commonly possess riparian rights.[9] These include a right to make consumptive use of the water as well as a right of access[10] to the water. Riparian landowners also share with other members of the public the right to navigate,[11] fish,[12] and swim or bathe in adjacent navigable waters,[13] subject, however, to reasonable regulation by the government in the exercise of its police power.[14]

Riparian property is also subject to the doctrines of accretion, reliction, avulsion, and erosion.[15] Accretion adds to the land by the gradual deposit by water of sand, sediment or other material.[16] Reliction occurs when submerged land is exposed by the imperceptible recession of the water.[17] Erosion is the gradual and imperceptible wearing away of land bordering on a body of water by the natural action of the elements.[18] Avulsion is either the sudden and perceptible alteration of the shoreline by action of the water, or a sudden change of the bed or course of a stream forming

a boundary whereby it abandons its old bed for a new one.[19]

As a general rule, where the shoreline is gradually and imperceptibly altered by accretion, reliction or erosion, the riparian owner's boundary line also shifts in the same direction. The landowner thus acquires title to all additions arising by accretions or reliction, and loses soil that is worn or washed away by erosion.[20] However, any change in the shoreline that takes place suddenly and perceptibly does not result in a change of boundary or ownership.[21]

Although a landowner may not intentionally increase his estate through accretions or reliction by artificial means,[22] he may acquire additions resulting from artificial conditions created by third persons without his consent.[23]

(b) Ownership of Submerged Lands

(i) The Public Trust Doctrine

In addition to other rights, riparian landowners sometimes possess rights in the streambed itself. Rights to these submerged lands, however, often depend upon whether the watercourse is navigable or not. While

the beds under nonnavigable waters are subject to private ownership,[24] those under navigable waters are usually held in trust by the state for the common use and benefit of its citizens.[25]

This rule is derived from the English common law. The common law in England distinguished between the proprietary interests of the sovereign and the rights of the public in tidal waters. The former was known as jus privatum while the latter was called jus publicum.[26] Although the King could convey his private interest in the soil, he could not thereby impair the public's right to navigation.[27] Unlike the jus privatum, the public right to navigation extended to navigable fresh watercourses, as well as tidal waters, even where the beds were privately owned.[28] Thus, in England, ownership of the submerged bed was not an inevitable consequence of navigability.

On the other hand, in America, the protection of public rights in navigable waters was associated with ownership of submerged lands.[29] This concept, known as the public

trust doctrine may be traced in a series of federal cases beginning with Martin v. Waddell,[30] decided in 1842. The plaintiff in that case claimed an exclusive right of fishery through a grant from the colonial propreitor. The Court declared that the dominion and property in the tidal waters were an aspect of the proprietor's governmental powers and could not be conveyed to private citizens. Accordingly, the colonial grant was declared invalid.

Shortly thereafter, in Pollard's Lessee v. Hagan,[31] the United States Supreme Court determined that new states must be admitted on an equal footing with existing states, and that title to tidelands in Mobile Bay vested in the state of Alabama upon its admission to the Union in 1819. In Shively v. Bowlby,[32] the Court declared that prior to statehood, the federal government held the beds of tidal waters in trust for the citizens of the future state and could not alienate such lands in any way that would impair the trust.

The fullest exposition of the public trust doctrine, however, appeared in Illinois

Central Railroad Company v. Illinois[33] in 1893. The Court stated that the title under which Illinois held the navigable waters of Lake Michigan was a "trust devolving upon the state for the public . . . which can only be discharged by the management and control of property in which the public has an interest, and cannot be relinquished by a transfer of property."[34] In its present form, therefore, the public trust doctrine constitutes a substantial limitation of the power of states to dispose of lands under navigable waters.[35] The doctrine has traditionally been employed to protect public rights to navigation, commerce and fishing,[36] and in some states has also been utilized to protect recreational interests.[37]

(ii) Navigability for Title Purposes

Various tests of navigability have been used for purposes of determining ownership of submerged lands.[38] Common law rights to submerged lands were associated with tidal effect.[39] Tidal waters included the foreshore and "arms and creeks of the sea" as far as the ebb and flow of the tide extended. Lands

under such waters belonged "prima facie" to the Crown, although they could be conveyed into private ownership.[40]

In America some states retained the "ebb and flow" test for purposes of determining ownership of submerged lands.[41] However, beginning with Carson v. Blazer[42] in 1810, a majority of states adopted a "navigability-in-fact" test.[43] This formula has also been utilized by the federal courts to determine the ownership of submerged lands.

The federal navigability test with respect to ownership of submerged lands does not require that the waters be navigable in interstate commerce; intrastate navigability is sufficient.[44] It is immaterial that the watercourse is not presently used for commerce or that it has not been used for many years, so long as it was used or was susceptible of commercial use at the time that the state was admitted to the Union.[45] United States v. Holt State Bank[46] which involved a dispute over the title to the bed of Mud Lake in northern Minnesota, is the leading case. The federal government asserted that Mud Lake was

not navigable under state law and had remained in federal ownership. The defendants maintained that the lake in its natural condition was navigable, that the state had acquired ownership of the bed upon admission to the Union. The Supreme Court found the lake to be navigable but indicated that navigability, when asserted as the basis of a right arising under the Federal Constitution, was a question of federal law.[47]

(iii) Ownership of Submerged Lands in Kentucky

Kentucky adheres to the ancient "ebb and flow" test of navigability for purposes of determining the ownership of submerged beds.[48] Since no watercourse in Kentucky is subject to the influence of the tides, in theory all submerged lands are privately owned.[49] Presumably the federal test of navigability set forth in Holt State Bank would not apply to Kentucky since the state was not created out of federal public domain land and was never subject to federal ownership.

As a general rule, the title of landowners along nonnavigable streams extends to the thread of the stream,[50] and the amount of

submerged land owned is dependent upon the frontage possessed by the landowner.[51] Until recently, however, this principle was uncertain in Kentucky. The Court in Berry v. Snyder[52] held that riparian ownership extended to the middle thread of the main channel, rather than to the center of the stream itself, and subsequent decisions on this issue were seldom consistent.[53] Finally in Louisville Sand & Gravel Co. v. Ralston,[54] the Court held that the "thread of the stream", as applied to the Ohio River, meant the middle line as measured from the State's northern boundary, the low water mark on the northern shore to the corresponding low water mark on the southern shore.

In the case of nonnavigable lakes, landowners usually own to the center,[55] but special rules have evolved with respect to the rights of boating, swimming and fishing on the surface of the lake.[56] The common law position restricts each owner to the use of the water immediately over his portion of the bed and treats any intrusion as a trespass.[57] Other states subscribe to the civil law or common

use approach, which allows the owner of a portion of the bed to use the surface of the entire lake for fishing, boating and swimming, as long as he does not unreasonably interfere with the rights of other proprietors.[58] There are no cases on this issue in Kentucky.

(c) Public Regulatory Powers Over Navigable Waters

(i) Federal Regulatory Authority Under the Commerce Clause

Federal regulatory activity over water resources is based primarily on the commerce clause of the Federal Constitution.[59] The Supreme Court first recognized the power of the federal government to regulate navigation and general commercial relations in 1824.[60] Later in Gilman v. Philadelphia,[61] the Court stated that the power to regulate navigation and commerce permitted the government to keep the navigable waters free from obstruction to navigation "imposed by the states or otherwise; to remove such obstructions when they exist; and to provide, by such sanctions as they may deem proper, against the occurrence of the evil and for the punishment of offenders".[62]

Since then, both the concept of navi-

gability and the scope of federal regulatory power have broadened considerably. In The Genesse Chief v. Fitzhugh,[63] the test advanced was a factual one: if the stream was navigable in fact, it was navigable for purposes of regulation under the commerce clause. This test was later reaffirmed by the Court in The Daniel Ball.[64]

The Court held that nonnavigable waters affected the navigable capacity of a river were also subject to federal regulation.[65] Finally in United States v. Appalachian Power Co.,[66] the Court declared that a watercourse that was nonnavigable in its natural state would be considered navigable for purposes of Federal commerce clause jurisdiction if it could be made navigable by means of reasonable improvements.

The federal test of navigability for commerce clause purposes now covers any stream, river or lake that affords a channel for useful commerce, whether navigable in its natural state or not, or whether, as a result of reasonable improvement, it could be made so. In the event the water in question

fits this definition, the federal government has authority to undertake necessary regulations to protect its federal interest in navigation.[67] This power is sufficient to override contrary state regulations.[68]

(ii) State Regulation Powers Over Navigable Waters

Although the federal government's regulatory authority over navigable waters is superior to that of the states, it is not exclusive.

Although the states may exercise some control over nonnavigable waters within their borders,[69] their authority over navigable waters is usually much more extensive.[70] Accordingly, the scope of the state's regulatory power for purposes of protecting public rights is usually a function of its test for navigability. Most states utilize the navigability-in-fact test for regulatory purposes. Under this approach, a watercourse is considered navigable when it is used, or is susceptible of being used, in its ordinary condition, as a highway of commerce, over which trade and travel can be conducted in the

customary fashion.[71] Some states, however, have rejected commercial use as a test of navigability and substituted for it a recreational or "pleasure boat" standard.[72] Other states have broadened their notions of commerce to include some recreational uses. In Luscher v. Reynolds,[73] for example, the Oregon court stated that "a boat used for the transportation of pleasure seeking passengers is, in a legal sense, as much engaged in commerce as is a vessel transporting a shipment of lumber."[74]

(iii) Regulation of Navigable Waters in Kentucky

Kentucky follows the navigability-in-fact test for purposes of determining the extent of public navigation rights in such waters.[75] If a stream in its natural conditions is capable of being used for that purpose, the public has an easement of navigation in it.[76] Thus, a watercourse susceptible at certain periods of the year to valuable use for the purpose of floating logs to market is deemed to that extent, a navigable stream.[77] Moreover, a navigable capacity of the stream

need not be continuous, as long as its periods of high water and navigable capacity continue a sufficient length of time to make it useful as a highway.[78]

2. CONSUMPTIVE RIGHTS IN SURFACE WATERCOURSES

(a) Riparian Rights

Consumptive rights to contained surface waters are governed by two major allocation systems, riparianism and prior appropriation. The doctrine of prior appropriation prevails in the western states.[79] Under this system beneficial use of water, not land ownership, is the source of the right, and priority of use is the basis of allocation among appropriators in periods of shortage.[80] The water use is not confined to riparian land, and with a few exceptions, the water can be used anywhere it is needed. Finally, an appropriation is always stated in terms of the right to take a definite quantity of water.

Riparian rights, on the other hand, arise from ownership of land that borders on a watercourse.[81] Under this regime, water may only be used on riparian land.[82] The riparian character of a tract of land may be determined according to the source of title test, under which riparian rights extend only to the smallest tract held under one title in a chain of title leading to the present owner.[83]

A more liberal approach is the unity of title test, under which riparian rights extend to all contiguous land owned by a riparian proprietor.[84] In addition, some courts have held that only that portion of a tract which lies within the same watershed can be considered as riparian.[85]

Limitations on the use of water to riparian land have not, however, been strictly observed in many jurisdictions. Thus, it is often recognized that a riparian may grant to another person, whether a riparian or not, all or part of the riparian's right to the use of the water.[86] But while the grantee of this right may be able to enforce it as against his riparian grantor, he is unable to assert it successfully against other riparians who may interfere with his use of the water, or whose uses or rights may be interfered with by his use.[87]

(i) The Natural Flow Doctrine

There are two forms of riparianism, the natural flow doctrine and the reasonable use rule. At the present time only four states adhere to the natural flow doctrine,[88] while the remaining riparian jurisdictions utilize

the reasonable use rule. Under the natural flow doctrine, each riparian proprietor on a watercourse is entitled to have the stream flow through his land in its natural condition, undiminished and unpolluted by others.[89]

Water uses are classified as natural or artificial. A natural or domestic use of water arises out of the necessities of the riparian land, including household uses, drinking water, and watering of a reasonable number of domestic animals. The domestic use is a favored one, and a riparian may use as much water as desired, even the entire flow of the watercourse.[90] However, a riparian may make an artificial use only where it will not harm other riparians by substantially affecting the flow of the watercourse.[91] Artificial uses are not directly related to the necessities of life on riparian land. Examples of artificial uses include business and trade uses, irrigation, mining operations, generation of power, and watering of large herds of stock.

(ii) The Reasonable Use Rule

The reasonable use theory is based on the

rationale that natural watercourses exist primarily for the use and benefit of mankind, not merely to be maintained in their natural state. This theory emphasizes the right to use water, as opposed to the natural flow idea of having a stream flow in a particular way. Under the reasonable use theory, each riparian is entitled to use the water for any beneficial purpose, on the condition that his use is reasonable and does not unreasonably interfere with a neighboring riparian's right.[92] Thus, riparian rights under the reasonable use rule are correlative: no one riparian landowner can use more than use share of the water. Existing users must adjust their consumption of water to accommodate new riparian users, and riparian users must all reduce their water use during periods of water shortage.

A similar concept applies to water quality. Riparians have a limited right vis a vis other riparians to discharge pollutants into a watercourse. However, such conduct will be deemed unreasonable and can be enjoined if it substantially injures another riparian user.[93]

The distinction between natural and arti-

ficial uses discussed above in connection with the natural flow theory, however, also applies to the reasonable use rule, and domestic uses are always superior to artificial uses such as irrigation.[94]

(b) Riparian Rights in Kentucky

Although Kentucky is clearly a riparian state, for many years it was unclear whether it followed the natural flow doctrine or the reasonable use rule. In many cases the Court of Appeals treated the two doctrines as if they were equivalent to each other. Anderson v. Cincinnati Southern Railway,[95] the first case to discuss riparian rights in Kentucky, is illustrative of this confusion. The plaintiff in the Anderson case owned a grist mill on a small creek. Two miles above the mill the defendant railroad company constructed a small dam to supply a reservoir of water for its trains. The dam however, interferred with the plaintiff's mill.

The Court declared that "[t]he right of every riparian owner to the enjoyment of a stream of running water in its natural state in flow, quantity, and quality is now well established.[96] This language indicates that the Court was adopting the

natural flow theory. Later portions of the opinion, however, were suggestive of the reasonable use rule:[97]

> The owner is entitled to the reasonable use of the water for natural and domestic purposes; but when he undertakes to divert the course of the stream, or detain the water by means of a dam, so as to prevent the previous supply to other riparian owners, he became a wrongdoer . . . . The use and detention of the water on a large stream by means of of a dam, for purposes of the railroad, might not be an unreasonable use, as ordinarily there would be ample water left for all the purposes of the riparian owners below; yet, where the stream is small, or even large, if the dam so obstructs the water as to diminish the flow and lessen the capacity of the water power below, it is an injury to the proprietor for which damages may be awarded.

In the end the Court reversed the lower Court's decision for the plaintiff and remanded the case for a new trial. The Court stated that no recovery could be had by the plaintiff unless the use of the water by the defendant caused his material injury - a question of fact for the jury to determine.

Many of the Kentucky cases involved impairment of water quality rather than strictly consumptive uses. In Kraver v. Smith,[98] a distillery was polluting a stream by discharging waste therein. The court granted an injunction to a lower riparian on the theory that the riparian was " . . . entitled

to the natural flow of the water, unimpaired in quality, except as may be occasioned by reasonable use of the stream by other proprietors."[99] Pollution, therefore, is not a reasonable use under this standard.

Later, in Fackler v. Cincinnati N.O. & T.R.C. Co.,[100] the court declared ". . . [a] proprietor is entitled to have the water of a stream flow to his land in its natural course undiminished in quantity and unimpaired in quality."[101]

City of Louisville v. Tway,[102] however, was less clear. In this case, the defendant dammed a stream, thereby reducing the velocity of its flow. The reduced flow resulted in a pollution problem for the plaintiff. The court stated that:

> It is true, as suggested by counsel for appellant, that our court is committed to the "natural flow rule" though as we read the two rules (reasonable use) . . . the distinction is rather close, and even under what may be termed the more restricted theory (natural flow), . . . each riparian owner is recognized as having a privilege to use the water to supply his natural wants, and extraordinary or artificial uses, so that such does not sensibly or materially affect the quantity of the water and such uses by the lower riparian owner.[103]

The Court held that the plaintiffs had failed to show that the defendants had made "unreasonable

use of the water from the stream". It also declared, however, that the defendants' dam "did not appreciably affect the flow of water" in the stream. The Court upheld the lower court's refusal to grant injunctive relief since the defendant's actions had not caused any demonstrated harm to the plaintiff's property.

This continuing uncertainty between the natural flow and reasonable use theories led in 1954 to a legislative adoption of the reasonable use rule:[104]

> The owner of land continguous to public water shall have the right to such reasonable use of this water for other than domestic purposes as will not deny the use of such water to other owners for domestic purposes or impair existing uses of other owners heretofor established, or unreasonably interfere with a beneficial use by other owners.

The Kentucky Court of Appeals adopted a general formulation of the rule in Daugherty v. City of Lexington.[105] In this case the city of Lexington denied a building permit to the plaintiff who had plans to build a restaurant, because he failed to show that his septic tank system would not endanger the purity of city water in a nearby city reservoir. The plaintiff argued that his proposed restaurant would be a reasonable use of his land.

The court quoted from a Michigan case, People v. Hulbert,[106] which set forth a reasonable use formula for water:[107]

> . . . in determining whether a use is reasonable we must consider what the use if for, its extent, duration, necessity, and its application; the nature and size of the stream, and the several uses to which it is put; the extent of the injury to the one propietor and of the benefit to the other; and all other facts which may bear upon the reasonableness of the use.

According to the Court, the determination of reasonable use is a question of fact to which a balancing test must be applied. The necessity of the use of water must be considered and balanced against the harm which would ensue from the use.

Thus it seems that Kentucky firmly adheres to the reasonable use rule insofar as common-law riparian rights are concerned. This appears to be a sound choice. Despite its limitations, the reasonable use rule is a more efficient and realistic approach to water allocation than the obsolete natural flow doctrine.

3. CONSUMPTIVE RIGHTS TO GROUND WATER

(a) Consumptive Use Rules

There are two legal categories of ground water, underground streams and percolating waters, and a distinct set of legal rules is associated with each.[108] Underground streams flow in fixed or definite channels[109] and are governed by the same rules that apply to surface watercourses.[110] Percolating waters are subsurface waters which, without any permanent or definite channel, ooze, seep or filter through the soil beneath the surface.[111] Ground water is presumed to be percolating unless it is affirmatively shown that the water is flowing in an underground stream.[112]

There are four doctrines that deal with the allocation of percolating ground water: (1) the English or absolute ownership doctrine; (2) the American or reasonable use rule; (3) the correlative rights doctrine; and (4) the prior appropriation system.

The English or absolute ownership rule was first ennunciated in Acton v. Blundell[113] in 1842. Under this doctrine, the landowner may extract an un-

limited amount of percolating ground water from his land and use it on either overlying or distant lands, regardless of injury to adjacent landowners.[114] The rule is normally interpreted to hold a user liable only for waste or for malicious injury to his neighbor[115] and in some jurisdictions even these are permitted.[116] The absolute ownership doctrine has been criticized because it fails to take into account the nature of ground water and because it favors municipalities and other large users who are able to drill deep wells, even though they often cut off the supply of water from the shallow wells of others.[117]

The American or reasonable use rule limits a landowner's use of ground water to beneficial purposes having a reasonable relationship to the use of overlying land,[118] but without regard to adverse effects on adjacent landowners. Use of the water on nonoverlying lands, however, is unreasonable and actionable if it injures the ground water supply of an adjoining landowner.[119] Even though the use is wasteful or the water is used on nonoverlying lands, the plaintiff must show

an injury or a threatened injury to his ground water supply in order to maintain an action.[120]

Under the correlative rights doctrine, or California rule, each owner over a common pool has an equal and correlative right to make a beneficial use of the water on his overlying land.[121] The use of the water must be reasonable in relation to the rights and needs of neighboring landowners. Priority of use is unimportant since in time of shortage the common supply is apportioned among the overlying owners on the basis of their reasonable needs.[122] The correlative rights doctrine, in fact, is similar to the doctrine of reasonable use that applies to contained surface waters and underground streams.

Finally, some western states apply their prior appropriation system to percolating ground water. This rule gives priority to the landowner who first puts the ground water to beneficial use. Thus, the first landowner to take the water will be the last to be cut off in time of shortages.[123]

Scientific understanding of the relationship between surface and ground waters has emphasized the defects of the common law classification

system - a system which has received much criticism from both hydrologists and legal commentators.[124]

> Any water pumped from wells under equilibrium conditions is necessarily diverted into the acquifer from somewhere else, but not necessarily, from places where it was of no use to anyone. There are enough examples of streamflow depletion by pollution from wastes released by surface waters, to attest to the close though veriable relation between surface water and ground water.

(b) Consumptive Use Rules in Kentucky

Kentucky has long recognized the legal distinction between underground streams and percolating ground water. In Nourse v. Andrews,[125] a plaintiff owning land on the Muddy River in Logan County tried to stop the city of Russellville from using two springs for its water supply since this caused the river to be depleted. The plaintiff argued that the springs were part of the source of the river, but lost the case because he was unable to prove this allegation. The court stated that one who alleges the existence of an underground stream has the burden of proof on that issue. The court added that:[126]

> Subterranean streams, as distinguished from subterranean percolations, are

> governed by the same rules, following surface streams . . . . The owner of the land under which a stream flows can, therefore, maintain an action for the diversion of it, if such diversion took place under the same circumstances as would have enabled him to recover, if the stream had been wholly above ground.

Therefore, according to the Nourse case, a landowner may assert riparian rights to underground water if he can prove the existence of an underground stream. In Commonwealth v. Sebastian,[127] such proof was established by pointing to a line of green grass which flourished in spite of dry weather. The Court in Sebastian also stated that "there is an initial presumption that subterranean waters are percolating, but once a subterranean stream is shown to exist, there arises a presumption that it has a fixed and definite course and channel".[128]

In the case of percolating ground water, Kentucky originally followed the absolute ownership rule. In Kinnard v. Standard Oil Co., [129] the court stated that percolating waters "belong to the soil, constitute part of it, and may be used, controlled, or removed by the owner in the same manner that he could the soil through which the

water percolates or runs".[120] In Long v. Louisville & Nashville Railway Co., [131] the court declared that "The rule is universal that the owner may dig on his own land such wells as he needs, although in doing so he may dig up his neighbor's well."[132]

This doctrine was reaffirmed in Nourse v. Andrews:[133]

> Percolating waters are part of the earth itself, as much as the soil and stones, with the same absolute right of use and appropriation by the owner of the land . . . . The law seems to be well settled that water percolating through the soil is not, and cannot be, distinguished from the soil itself. The owner of the soil is entitled to the waters percolating through it, and such water is not subject to the appropriation.

The absolute ownership rule, however, was replaced by the American rule of reasonable use in Sycamore Coal v. Stanley.[134] In this action, plaintiff brought suit because the defendant coal company's core hole (used to test for coal) caused the water in his well to disappear. The defendant plugged the hole, but the water rose only 14 inches, as compared to the previous 54-inch level. The court found no evidence to establish the existence of an underground stream, and, therefore, assumed the waters to be percolating. The plaintiff

received no damages, and the Kentucky court adopted the American rule of reasonable use for future disputes over the use of percolating waters.

The rule adopted in Sycamore Coal Co. limited the landowner over subterranean percolating waters to a "reasonable and beneficial use of the waters . . ., and he has no right to waste them, whether through malice or indifference, if, by such waste, he injures a neighboring landowner."[135] Since the landowner's use was "properly connected with the use, enjoyment and development of the land itself," the Court held that he was entitled to all he could use, regardless of the depletion of his neighbor's supply.

Rights to the use of ground water can be impaired by means of contamination as well as through diversion or depletion. For instance, Kinnard v. Standard Oil Co.[136] allowed a spring owner to recover damages from the defendant because defendant's coal oil storage tanks leaked and polluted plaintiff's spring, which was fed by percolating waters. In accord is Rogers v. Bond Brothers,[137] where the court quoted from Cooley on Torts:[138]

> It is said in an early case that where one has filthy deposits on his premises, he whose dirt it is must keep it that it may not trespass. Therefore, if filthy matter from a privy or other place of deposit percolates through the soil of the adjacent premises, or breaks through into the neighbor's cellar, or finds its way into his well, this is a nuisance.

However, in United Fuel Gas Co. v. Sawyers,[139] a gas company defendant was not held liable when a newly-drilled gas well contaminated the plaintiff's home water source. The Court declared that "the owner of land when putting it to a legitimate and not unreasonable use is not liable to the owner of adjoining land for injuries to well or springs fed by hidden underground waters."[140]

Although Kentucky now follows the American or reasonable use rule, serious consideration should be given to the Eastern "correlative rights" rule, where each landowner's right to percolating water "is a co-equal usufructuary right and, therefore, correlative."[141] This rule would provide for a more uniform approach to both surface and ground waters. Unlike the reasonable use rule, the user in the correlative rights jurisdictions is required to compare the equities of conflicting uses. This is the most important

important characteristic of the rule, because unlike Kentucky's present rule, it does not leave property owners who may be dependent on percolating waters without any protection.

4. DIFFUSED SURFACE WATER

Diffused surface waters are those waters resulting from falling rain or melting snow, or those rising to the surface in springs, which have not collected in a lake or pond or natural watercourse and are still in a diffused state or condition.[142] Water which overflows the bank of a natural watercourse and follows the course of the stream to its outlet, or which on subsidence returns to the stream, is considered to be part of the watercourse from which it comes and not diffused surface water.[143] Likewise, water which overflows the banks of a lake but which remains connected to the lake, or flows through the natural outlet of the lake is a defined path into another body of water, or returns to the lake, is not diffused surface water.[144] However, flood waters which entirely lose their connection with a lake or stream and spread out over the adjoining country and settle in low places and become stagnant are treated as diffused surface waters.[145]

Normally a landowner has an absolute right to any diffused surface water on his property, and he

may impound this water and prevent it from flowing into the property of an adjoining landowner.[146] Some commentators have criticized this doctrine,[147] but only New Hampshire has restricted the consumptive use of such waters.[148] At the present time, the disposal of unwanted diffused surface water is more important than the regulation of its consumptive use. There are three positions on this issue: (1) the common enemy rule; (2) the civil law rule; and (3) the reasonable use rule.

(a) Common Enemy Rule

Under the common enemy rule, a landowner may dispose of diffused surface water on his land regardless of injury to his neighbor. This rule originated in the right of a landowner to use his property as he pleases,[149] but has been justified on the basis of the right to fight the "common enemy",[150] and on the ground that it encourages land improvement and cultivation.[151] The common-enemy rule, however, has undergone some modification in the past hundred years. The modern common-enemy rule allows the landowner to obstruct or divert surface water only if the obstruction or diversion is related to ordinary use, improvement or protection of his land, and is done without

malice or negligence.[152]

(b) Civil Law Rule

The civil law rule is expressed by the maxim "aqua currit et debet currere, ut solebat es jure naturae." (Water runs and should run, as it is wont to do, by natural right.)[153] According to the civil law rule, the upper owner has an easement upon the lower owner's land for diffused surface water to drain in its natural manner,[154] and the lower owner may not obstruct the flow to the injury of the upper owner.

The advantage of the civil law rule is that rights thereunder are readily predictable, but strictly applied, the rule may inhibit the development and improvement of land. To avoid this danger the civil law rule has been modified in many jurisdictions. For example, the rule usually permits the upper owner to enhance the drainage of his property to some degree, particularly for agricultural purposes.[155] Moreover, the upper owner may normally hasten the flow of water by natural drainage, if he can do so in a reasonable manner.[156] Finally, since a strict prohibition against leveling or filling property would substantially hinder the improvement and development

of urban porperty, the courts frequently except city lots from the application of the civil law rule.[157]

(c) Reasonable Use Rule

The more recently developed rule of reasonable use occupies the middle ground between the original common enemy and civil law rules and produces a result similar to the modified versions of each.[158] The rule, adopted by the Restatement of Torts, provides that liability for invasion of a person's interest in the use and enjoyment of his land resulting from interference with the natural or normal flow of surface waters depends on whether the action, if intentional, was unreasonable, or if unintentional, was negligent, reckless or ultra-hazardous.[159]

(d) Diffused Surface Water in Kentucky

At first Kentucky applied the conventional "civil law" rule for diffused surface waters. This approach was employed in Pickerill v. Louisville,[160] a 1907 case, in which a lower landowner raised the foundation of his land to avoid effects of diffused surface waters. This caused the upper landowner's privy to overflow. In its opinion, the court

stated:[161]

> . . . this . . . court has adopted in respect to such cases as this rule of the civil law, which only subjects the lower estate to the easement or servitude of receiving the natural flow of surface water from the upper estate . . . the owner of the lower ground has no right to erect embankments, or create other obstructions, whereby the natural flow of surface water from the upper ground is stopped or caused to back upon and overflow the upper ground. On the other hand, the owner of the upper ground has no right to make excavations, barriers, or drains upon his ground by which the flow of surface water is diverted from its natural channel and a new channel made on the lower ground, nor can he collect into our channel waters usually flowing off into his neighbor's land by several channels and thereby increase the flow upon the lower ground.

For many years the civil law rule announced in Pickerill was consistently followed by the Court of Appeals.[162]

Klutey v. Commonwealth,[163] a 1967 case, marked a change in Kentucky's approach to diffused surface waters. Klutey involved a suit by the Commonwealth to enjoin property owners from maintaining embankments on their property which were designed to divert the flow of water from two drainage pipes under a state road. The accelerated flow of water from the drainage pipes caused ex-

tensive erosion and flooding and so the property owners constructed embankments to protect their land. This, however, caused the water to back up on the highway. When the owners were ordered to remove the embankments, they argued that under the civil law rule the Commonwealth could not change the natural drainage of the land if such actions would accelerate the flow and cause damage to their property.

The court pointed out that the "civil law" rule failed to consider the socially desirable uses of the property or the extent of damage one property owner might cause his neighbor. Thus, the court announced that Kentucky would follow the reasonable use rule: "In substance the rule balances the reasonableness of the use by the upper owner against the severity of damage to the lower owner."[164]

The court in Klutey recognized the potential problems in a test for reasonableness, and adopted the standard set forth in the Minnesota case of Enderson v. Kelehan:[165]

> . . . the rule is that in effecting a reasonable use of his land for a legitimate purpose a landowner, acting in

good faith, may drain his land of surface waters which would otherwise have never gone that way but would have remained on the land until they were absorbed by the soil or evaporated in the air if

(a) there is a reasonable necessity for such drainage;

(b) reasonable care be taken to avoid unnecessary injury to the land receiving the burden;

(c) the utility or benefit accuring to the land drained reasonably outweighs the gravity of the harm resulting to the land receiving the burden; and

(d) where practicable, it is accomplished by reasonably improved and aiding the normal and natural system of drainage according to its reasonable carrying capacity, or if, in the absence of a practicable natural drain, a reasonable and feasible artificial drainage system is adopted.

Commonwealth v. Baird[166] further refined Klutey's reasonable use test by stating that the question of reasonableness of the upper owner's use of his land against the harm to the lower owner from such use is a matter for the jury, except in extreme cases where the liability may be determined as a matter of law.

Cases since Klutey indicate that the "reasonable use" test, as a practical matter, has not changed the main characteristics of the "civil law" rule.

The "reasonable use" test, as set forth in Klutey, is a more flexible standard which can be applied where necessity or utility dictates.

5. STATE REGULATION OF WATER RESOURCES

(a) Water Resources Administration in Kentucky

The riparian system has been criticized because it restricts the use of stream water to riparian owners and because it limits the use of the water to riparian land.[170] Another undesirable feature is the uncertain nature of water rights under the riparian system;[171] in many jurisdictions the extent of a riparian's right of reasonable use can be determined only by litigation.[172] These concerns have led to the statutory modification of common law riparianism in a number of eastern states. Under these statutes water use is regulated by a state administrative under some form of permit system.[173]

Kentucky made the first significant legislative change in its riparian system in 1954. The droughts of the two preceding years caused many farmers to turn to the streams and lakes bordering their land to satisfy their needs.. The increased use of riparian water demonstrated the need for a more satisfactory definition of riparian rights in Kentucky. With this in mind, the legislature set forth in the 1954 act a basic statement of the rights of landowners in such

waters.[174] The statute also provided for the Legislative Research Commission to make a thorough study of all problems relating to water resources and to report its findings to the 1956 legislature.

The act applied to "public water" which included contained surface water and ground water, but not diffused surface water. Section 3 of the act set forth the rights of landowners to use the public waters of the state. The act provided that the use of water by a riparian owner for domestic purposes would have priority over other uses and declared that riparian owners "shall have a right to make such reasonable use of the water for other than domestic purposes as will not deny the use of such water to other owners for domestic purposes or impair existing uses of other owners heretofore established, or unreasonably interfere with a beneficial use by other owners". Finally, the act allowed riparians under certain conditions to impound and store water on their land as long as this would not injure the rights of other users.[175]

In 1966 the older act was replaced by a more comprehensive piece of legislation, KRS chapter 151. This legislation, administered by the Department for

Natural Resources and Environmental Protection, attempts to deal with the state's water resources on a coordinated and comprehensive basis. Consumptive uses of water are regulated by a permit system. The construction of dams and impoundments is also controlled by the agency. In addition, the legislation authorizes water resources planning and construction for flood control and water development purposes.

The Division of Water Resources within the Department for Natural Resources and Environmental Protection administers the act.[176] Originally, the Division of Water Resources performed both adjudicatory and planning functions. The first five years of the Division's operation concentrated on the gathering of data and the study of federal water plans. The data collected was designed to provide the factual basis necessary to coordinate the planning for Kentucky's water.[177] The Division's most important function was implementation of the state's water plans, and it was empowered to issue permits for the use of water in Kentucky.[178]

The 1974 General Assembly transferred some of the Division's regulatory powers to the Department

of Natural Resources and Environmental Protection and the Commissioner of that agency.[179] However, the Division retains the power to allocate water in times of shortage[180] and to issue permits for dams within the commonwealth.[181]

KRS 151.330(1) created the Water Resources Authority of the Commonwealth. A 1974 amendment lists the following persons as members of the Authority: the governor, the commissioner of Natural Resources and Environmental Protection, the secretary for finance and administration, the commissioner of health, the commissioner of commerce, the commissioner of agriculture, the attorney general, the secretary of the department of transportation, the commission of fish and wildlife resources, and the commissioner of parks, none of whom are compensated for their duties. The Authority is "empowered to coordinate the programs of all state agencies in the conservation, development, and wise use of public water,[182] and to simultaneously "promote the beneficial and proper distribution of water throughout the state.[183] Its chief function, however, is to contract with the federal government, primarily the U.S. Army Corps of Engineers, to obtain water supply space in existing federal projects.[184]

The agencies mentioned in KRS 151 are only two of the many agencies and governmental bodies which affect Kentucky's water resources. The governor's cabinet maintains planning responsibility of water matters in Kentucky.[185] Pollution matters are under the control of the Water Pollution Control Commission, which is within the Department of Health. This commission was created in KRS Chapter 224, and it has a permit system whereby polluters must first obtain a permit before discharging waste into state waters.

Agencies on a local level with responsibilities relating to water resources development or control include: (1) drainage, levee, and reclamation districts;[186] (2) soil and water conservation districts;[187] (3) watershed conservancy districts;[188] (4) flood control districts and cities;[189] and (5) water districts.[190]

The Water Resources Act also deals with flood control and water development. Before any party in Kentucky can construct any dam, levee, dike, or other obstruction across a stream, he must submit plans to the Div_sion of Water Resources and apply for a permit.[191] The same rule applies to

any building, barrier, or other obstruction which will result in distrubing the flow of the stream.[192]

The 1974 General Assembly established strict criteria for periodic, five-year safety inspections of dams, levees, or other obstructions restricting water flow in Kentucky.[193] Such inspections emphasize safety and non-interference with beneficial uses of other water users. Stiff penalties are provided for those who fail to comply with the standards set by the Department for Natural Resources and Environmental Protection. The Department may take full charge of the unsafe dam, correct the situation, and charge all costs to the owner of the dam. The owner's property is subject to a foreclosure sale if payment is not made.

The permit system for dam construction, is weakened by several exceptions. First, the Division has no control over dams or obstructions "which are not of such size or type as to require approval by the division in the interest of safety or retention of water supply".[194] The 1974 General Assembly was more specific, when it

defined dam as:[195]

> . . . any artificial barrier, including appurtenant works, which does or can impound or divert water, and which either (1) is or will be twenty-five (25) feet or more in height from the natural bed of the stream or watercourse at the downstream toe of the barrier, as determined by the department, or (2) has or will have an impounding capacity at maximum water storage elevation of fifty (5) acre-feet or more.

The primary exemption is extended to Kentucky farmers:[196]

> Nothing in this section is intended to give the division any jurisdiction or control over the construction, reconstruction, improvement, enlargement, ditch, or system established for agricultural purpose, or to require approval of the same except where such obstruction of the stream or floodway is determined by the division to be a detriment or hindrance to the beneficial use of water resources in the area . . . .

Other parts of KRS 151 are concerned with the financing of state water projects. A special revolving trust fund, known as the water resources fund, has been established, from which the Water Resources Authority is authorized to make loans and expenditures.[147] The loans are available to any "country city, water district, watershed conservancy district, or other governmental subdivision,"[198] and their interest is determined

by the Authority, and they must be secured.[199] In addition, the Authority is authorized to issue revenue bonds for the purpose of paying all or part of such projects.[200]

(b) Regulation of Consumptive Uses of Water in Kentucky

KRS 151.110 states that it is the policy of the Commonwealth "to protect the rights of all persons equitably and reasonably interested in the use and availability of water." This policy is implemented by a permit system under which consumptive water uses are regulated by the Division of Water Resources. KRS 151.140 provides that "No person, business, industry, city, county, water district, or other political subdivision has been granted a permit by the division for such withdrawal, diversion or transfer of water."

Unless otherwise exempted, all parties, public or private, must register with the Division and apply for a permit to withdraw, divert, or transfer public water. The agency conducts an investigation to determine that "the quantity, time, place, or rate of withdrawal of public water will not be detrimental to the public interest or rights of other public water users."[201]

To date about 800 permits have been granted. Permit holders are required to keep daily records of their withdrawals and submit quarterly reports to the agency. The Division is also empowered to inspect withdrawal records to determine whether such records are correct and in proper order. KRS 151.170 provides that the permits shall be specific in terms of quantity, time, and rate of diversion, transfer or withdrawal. Although there is no durational limit on their effectiveness, the permits are not necessarily perpetual, nor do they create any rights of priority in times of water shortage. Instead, KRS 151.200 (1) authorizes the Division, with the approval of the Water Resources Authority, to make temporary allocations of available public water among users in times of droughts, shortages or emergency situations.

The Kentucky statute departs substantially from the riparian system by allowing nonriparian owners to obtain permits. KRS 151.200 (2) allows the transfer or diversion of water from one watershed to another. Moreover, no express restriction is placed on the transfer of water rights as long as the nature or location of the

of the diversion is not changed.

The scope of the permit system is limited in several respects. The first limitation stems from the definition of "public waters". Diffused surface waters and waters "left standing in natural pools in a natural stream when the natural flow of the stream has ceased" are excluded from the definition of public water by KRS 151.120 (2) and are thus unregulated.

In addition, KRS 151.140 expressly exempts: (1) domestic users; (2) agricultural users, including irrigators; (3) uses exempted by administrative regulation; (4) stream generating plants; and (5) water injected underground in connection with oil and gas production.

The exemption for domestic use reflects the high priority given to such uses under riparian dictrine. Domestic uses are exempted from regulation in most states. KRS 151.100 (10) defines "domestic use" as "the use of water for ordinary household purposes, and drinking water for poultry, livestock and domestic animals."

The exemption for agricultre is more significant. Irrigation in Kentucky in 1970 averaged about seven million gallons of water per day

on 25,000 acres of land.[203] Tobacco is the principal crop using irrigation waters, and if a drought year occurs, some 36,000 acres would require 4,320,000,000 gallons of water.[204] The exemption is due largely to the efforts of the Farm Bureau which views with extreme alarm any regulation of farm activities. Nevertheless, this exemption is a major weakness in the regulatory scheme.

No permit is required "if the amount of water withdrawn, diverted or transferred is less than the amount established by regulation." This exemption was created as a result of an amendment in 1974 to KRS 151.140 requested by the agency. The agency now exempts from the permit system those who use less than 10,000 gallons per day.

The 1966 act orginally exempted many manufacturing and industrial users from the permit requirements, provided that the water was returned in substantially the same quantity and condition as it was when withdrawn. This provision was repealed in 1972, leaving only stream-generating facilities still exempt.

Finally, the use of water for secondary recov-

ery operations continues to be exempt from the permit requirements.

There are a number of weaknesses in Kentucky's water regulatory system. For example, water resource development authority is fragmented among various state and local agencies. There is no clear relationship between the regulatory permit system and a comprehensive state water use plan.[205]

The permit system itself is subject to serious criticism. At the administrative level, formal procedures available to applicants or other interested parties to contest the grant or denial of a permit could be made somewhat more elaborate. In addition, the agency should be given authority to settle disputes among water users. Finally, a process by which water can be set aside for future public uses such as conservation, recreation, water quality control or public water supply should be established.

The large number of statutorily exempted users undermines effective use of the agency's regulatory power and renders the permit system useless as a means of effectuating any meaningful water use policy. Moreover, the permit system as it presently operates, does not allocate water among competing

users in a fair and efficient manner. This is largely because rights to water vis a vis other users are not clearly defined.

Water rights under KRS Chapter 151 are similar in some respects to those in a prior appropriation jurisdiction. As in the West, the right to water under the permit system is based on priority in time and beneficial use. KRS 151.170 (2) provides that no permit shall be denied to a responsible applicant who is willing to put the water to a useful purpose as long as water is available. The Kentucky statute, although it does not specifically adopt a "beneficial use" standard, in effect utilizes this approach since any productive use qualifies and no attempt is made to establish preferential use categories. The element of priority is important in Kentucky because existing permit users (and riparian users exempt from regulation) are protected against subsequent permit applicants. The agency can only grant permits where water is available and apparently cannot revoke a permit in order to make water available to another applicant. Thus, as far as the initiation of a water use is concerned, "first in time is first in right."

The relationship between existing permitees and unregulated riparian users needs clarification. What happens when an unregulated riparian owner increases his water use, or makes a new use, and this interferes with a permitee? For example, if a farmer begins to make a withdrawal of water for purposes of irrigation, an unregulated use, is his right to the water superior to that of the permittee? Must both the riparian user and the permittee adjust their water use in accordance with the common-law reasonable use rule or is the right of the riparian superior to that of the permittee (or vice versa)? In the hypothetical case discussed above, would it make any difference if the permittee was a nonriparian user? Conflicts of this nature are certain to arise eventually in Kentucky and will probably have to be settled by litigation.

In times of water shortage, a term which is not defined, KRS 151.200 (1) allows the Division of Water Resources to suspend the operation of the permit system and make temporary allocations of water among permittees on some other basis. This provision raises two questions: (1) What is

the relationship between riparians and permittees during periods of water shortage? and (2) What is the relationship among the various permittees during periods of water shortage?

The relationship between riparians and permittees has already been discussed. Since the agency has no authority to regulate exempt users even during periods of water shortage, the courts must decide whether unregulated riparian users must accommodate permittees during such periods and if so, on what terms.

The relationship between permit users is also left very vague under the Kentucky statute. Under prior appropriation the right to water during periods of shortage (as well as any other time) are based on priority in time. No attempt is made to pro-rate water use but instead the senior appropriator may take his full amount before a junior appropriator is entitled to any water at all. Although this rule is harsh at times it provides an element of certainty that is lacking under both the riparian system and Kentucky's statutory framework. KRS 151.200 (1) gives neither the agency nor permits users any indication of the basis upon which water will be allocated among

permittees during periods of water shortage. This is a very serious defect in the Kentucky legislation. An important objective of any permit system is to provide a degree of certainty in the water allocation process so that water users can make intelligent investment decisions. In Kentucky, this element of certainty is lacking because the water user cannot rely on his permit right at the very time he needs it most.

CONCLUSION

The law of water rights in Kentucky is a complex and sometimes uncertain mixture of common law doctrine and regulatory legislation. Both the common-law and the statutory aspects of Kentucky system of water allocation are in need of modification. In the former case, the archaic distinction between ground water and surface water consumptive use rules should be abolished. Since Kentucky now follows the reasonable use rule with respect to contained surface waters (and underground streams), the adoption of the correlative rights rule with respect to percolating ground water would provide the Commonwealth with a uniform standard for all non-regulated consumptive uses.

Some changes are also desirable for Kentucky's statutory framework. The statute's broad exemption provisions should be modified or eliminated, and the rights of water permit holders should be clarified. The dual system of water rights which now prevails between permittees and non-regulated riparians inhibits its maximum productive use of water and promises to create severe administrative problems for the agency during periods of water shortage.

Finally, the state must continue, and perhaps increase, its water resource planning activities. Comprehensive planning must include both water quality and consumptive use needs, and must be coordinated with federal, state and local land use policies.

FOOTNOTES

1. Maloney & Ausness, Administering State Water Resources: The Need for Long-Range Planning, 73 W.Va. L. Rev. 209 (1971).

2. Bureau of the Census, U.S. Dept. of Commerce, Statisical Abstract of the United States 5, table 2 (1970).

3. J. Wright, The Coming Water Famine, 19 (1966).

4. Stein, Problems and Programs in Water Polution, 2 Natural Resources J. 388, 394 (1962).

5. Id. at 393.

6. Water Information Center, Inc., Water Atlas, plate 3 (1973).

7. R. Krieger, R. Cushman & N. Thomas, Water in Kentucky, 10 (Ky. Geol. Survey, Spec. Pub. No. 16, 1969).

8. Kentucky Dept. of Natural Resources, Kentucky Water Resources: 1965 (1965).

9. The term riparian is applied to fresh water streams, while the term littoral is used in connection with lakes and the seashore. 1 H. Farnham, The Law of Waters and Water Rights §63 (1904).

10. Lyon v. Fishmonger's Co., L.R. 1 App. Cas. 683 (H.L. 1876); San Francisco Savings Union v. R.G.R. Petroleum & Mining Co., 144 Cal. 134, 77 p. 823 (1904); McCluskey v. Pacific Coast Co., 160 F. 794 (9th Cir. 1908); McCarthy v. Coss Head Timber Co., 208 Ore. 371, 302 P.2d 238, 246 (1956); Hollan v. State, 308 S.W.2d 122, 125 (Tex. Civ. App. 1958); Board of Trustees v. Madeira Beach Nominee, Inc., 272 So. 2d 209, 214 (2d D.C.A. Fla. 1973); Annot., Right of Riparian Owner on Navigable Water to Access to Water, 89 A.L.R. 1156 (1934).

11. Maloney & Plager, Florida's Lakes: Problems in a Water Paradise, 13 U. Fla. L. Rev. 1, 26-31 (1960).

12. Harris v. Brooks, 225 Ark. 436, 283 S.W.2d 129, 134 (1955); Annot., Validity of Prohibition or Regulation of Bathing, Swimming, Boating, Fishing or the Like to Protect Public Water Supply, 56 A.L.R.2d 790 (1957).

13. People v. Hulbert, 131 Mich. 156, 91 N.W. 211 (1902); Butler v. Attorney General, 195 Mass. 79, 80 N.E. 688 (1907); State v. Morse, 84 Vt. 387, 80 A. 189 (1911); Petition of Clinton Water District, 36 Wash.2d 283, 218 P.2d 309, 312 (1950); Harrison County v. Guice, 224 Miss. 95, 140 So. 2d 838, 842 (1962).

14. Carmazi v. Board of County Commissioners, 108 So. 2d 318 (3d D.C.A. Fla. 1959); Colberg, Inc. v. State, 67 Cal. 2d 408, 62 Cal. Rptr 401, 432 P.2d 3 (1967), cert. denied, 390 U.S. 949 (1968). Comment, 72 Dickinson L. Rev. 375 (1968).

15. See generally, 56 Am. Jur., Waters §§476-98 (1947); 65 C.J.S., Navigable Waters §§80-7 (1966); 6 R. Powell, The Law of Real Property §§983-86 (1973); 5A G. Thompson, Commentaries on the Modern Law of Real Property §§2560-65 (J. Grimes ed. 1957).

16. Jones v. Turlington, 243 N.C. 681, 92 S.E.2d 75, 77 (1956); Miehaelson v. Silver Beach Improv. Assn., 342 Mass. 251, 173 N.E.2d 273, 275 (1961); Municipal Liquidators, Inc. v. Tench, 153 So. 2d 728, 730 (2d D.C.A. Fla. 1963); 1 H. Farnham, supra note 9 §69.

17. Martin v. Busch, 93 Fla. 535, 112 So. 274 (1927); McClure v. Couch, 182 Tenn. 563, 188 S.W.2d 550, 553 (1945); Note, Avulsion and Accretion - Emphasis Oregon, 3 Willamette L. J. 345, 346 (1965).

18. 3 American Law of Property §15.26 (1952); United States v. 461.42 Acres of Land, 222 F. Supp. 55, 56 (D. Ohio 1963).

19. Benson v. Morrow, 61 Mo. 345, 352 (1875); State v. Johnson, 278 N.C. 126, 179 S.E.2d 371, 384 (1971).

20. There are four reasons for this principle: (1) de minimis non curat lex; (2) he who sustains the burden of losses and of repairs imposed by the contiguity of waters ought to receive whatever benefits they may bring by accretion; (3) it is in the interest of the community that all land have an owner, and for convenience, the riparian is the chosen one; (4) the necessity for preserving the riparian right of access to water. Board of Trustees v. Madeira Beach Nominee, Inc. 272 So.2d 209, 212-4 (2d D.C.A. Fla. 1973).

21. Harper v. Holston, 119 Wash. 436, 441-2, 205 P. 1062, 1064 (1922); Hirt v. Entus, 37 Wash.2d 418, 224 P.2d 620 (1950); Ford v. Turner, 142 So. 2d 335, 42 (2d D.C.A. Fla. 1962); Municipal liquidators v. Tench, 153 So. 2d 728, 730 (2d D.C.A. Fla. 1963).

22. Kansas v. Meriwether, 182 F. 457 (8th Cir. 1910); Annot., Accretions by Filling or Dredging, 91 A.L.R.2d 859 (1963); contra, Davis Morgan, 228 N.C. 78, 44 S.E.2d 593 (1947).

23. Bonelbi Cattle Co. v. Arizona, 414 U.S. 313 (1973); State v. Gill, 259 Ala. 177, 66 So. 2d 141 (1953); Michaelson v. Silver Beach Improvement Ass'n., 342 Mass. 251, 173 N.E.2d 273 (1961); Harrison County v. Guice, 224 Miss. 95, 140 So. 2d 838 (1962).

24. Ausness, A Survey of State Regulation of Dredge and Fill Operations in Nonnavigable Waters, 8 Land & Water L. Rev. 65 (1973).

25. Note, The Public Trust in Public Waterways, 7 Urban L. Ann. 219 (1974).

26. Maloney & Ausness, The Use and Legal Significance of the Mean High Water Line in Coastal Boundary Mapping, 53 N. Car. L. Rev. 185 (1974).

27. Gann v. Free Fishers, 11 Eng. Rep. 1305, 1312 (H. L. 1864); Attorney General ex rel. Moore v. Wright, [1897] 2 Q. B. 318 (C.A.).

28. Palmer v. Mulligan, 3 Cai. R. 307, 313 (N.Y. 1805); S. Moore, A History of the Foreshore 374-376 (1888).

29. Fraser, Title to the Soil Under Public Waters -- A Question of Fact, 2 Minn. L. Rev. 313 (1918).

30. 41 U.S. (16 Pet.) 376 (1842).

31. 44 U.S. (3 How.) 212 (1845).

32. 152 U.S. 1 (1893).

33. 146 U.S. 387 (1893).

34. Id. at 453.

35. Comment, The Tideland Trust: Economic Currents in a Traditional Legal Doctrine, 21 U.C.L.A. L. Rev. 826 (1974); Note, Conveyances of Sovereign Lands Under the Public Trust Doctrine: When are They in the Public Interest? 24 U. Fla. L. Rev. 285 (1972).

36. Sax, The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention, 68 Mich. L. Rev. 471 (1970).

37. Eckhardt, A Rational National Policy on Public Use of Beaches, 24 Syracuse L. Rev. 967, 978-79 (1973).

38. Maloney & Ausness, supra note 26, at 207-218.

39. S. Moore, History and Law of the Foreshore and Seashore (1888).

40. Kirby v. Gibs, 2 Keb. 294, 84 Eng. Rep. 183 (K.B. 1666); Whitaker v. Wise, 2 Keb. 759, 84 Eng. Rep. 479 (K.B. 1670); Earl of Salisbury v. Joyn, 3 Keb. 753, 84 Eng. Rep. 992 (K.B. 1676); Attorney General v. Parameter, 10 Price, 378, 147 Eng. Rep. 345 (Ex. 1811); Attorney General v. Burridge, 10 Price 350, 147 Eng. Rep. 335 (Ex. 1802).

41. E.g., State v. Bayou Johnson Oyster Co., 130 La. 604, 58 So. 405 (1912); Wagner v. City of Baltimore, 210 Md. 615, 624, 124 A.2d 815, 819-20 (1956); International Paper Co. v. Mississippi State Highway Dept., 271 So. 2d 395 (Miss. 1972);

Fulton Light, Heat & Power Co. v. State, 200 N.Y. 400, 94 N.E. 199 (1911).

42, 2 Binn. 475 (Pa. 1810).

43. E.g., Bolsa Land Co. v. Burdick, 151 Cal. 254, 90 P. 532 (1907); Edward Bolf Co. v. Hartford Electric Light Co., 106 Conn. 315, 138 A. 122 (1927); Clement v. Watson, 63 Fla. 109, 58 So. 25 (1912); Wilson v. Forbes, 13 N.C. 30 (1828).

44. United States v. Utah, 283 U.S. 64 (1931).

45. Johnson & Austin, Recreational Rights and Titles to Beds on Western Lakes and Streams, 7 Natural Resources J. 1, 16-17 (1967).

46. 270 U.S. 49 (1926). See also Brewer-Elliot Oil & Gas Co. v. United States, 260 U.S. 77 (1922).

47. The federal question involved was the "equal footing" doctrine mentioned earlier in connection with Pollard's Lessee v. Hagan, 44 U.S. (3 How.) 212 (1845). Since the beds of navigable watercourses were held in trust in the original thirteen states, new states created out of the federal public domain, upon their admission into the Union, automatically received title to the beds under their navigable waters (but subject to the public trust doctrine) from the federal government. Thus, new states would have the same rights of ownership in the beds of their navigable waters as the original states.

48. Berry v. Snyder, 3 Bush 266 (Ky. 1867); Miller v. Hepburn, 8 Bush 326 (Ky. 1871); Wilson v. Watson, 141 Ky. 324, 132 S.W. 563 (1910).

49. Robinson v. Wells, 142 Ky. 800, 135 S.W. 317 (1911).

50. Maloney & Plager, Florida's Streams - Water Rights in a Water Wonderland, 10 U. Fla. L. Rev. 294 (1957).

51. Knight v. Wilder, 56 Mass. (2 Cush.) 199 (1848); Clark v. Campau, 19 Mich. 324 (1869); Cordovana v. Vipond, 198 Va. 353, 94 S.E.2d 295 (1956); Lambert's Paint Co. v. Norfolk & W. Ry Co., 113 Va. 270, 74 S.E. 156 (1912). The judicial rules for apportionment are not absolute, but are subject to variation where equity demands. See Groner v. Foster, 94 Va. 650, 27 S.E. 493 (1897).

52. 3 Bush. 266 (Ky. 1867).

53. Note, Boundaries - "thread of the stream" - Kentucky Rule, 44 Ky. L. J. 466 (1956).

54. 266 S.W.2d 119 (Ky. 1954).

55. Scheifert v. Briegel, 90 Minn. 125, 96 N.W. 44 (1903); Richardson v. Sims, 118 Mass. 728, 80 So. 4 (1918); Stewart v. Turney, 237 N.Y. 117, 142 N.E. 437, (1923); Lembeck v. Nye, 47 Ohio St. 336, 24 N.E. 686 (1890).

56. Many states have rejected title to the bed as controlling and have focused on the suitability of a body of water for recreational use. Some states have only gone so far as to permit common use among riparians and their licenses. Florida v. State ex rel. Epperson, 119 So. 2d 305 (Fla. Ct. App. 1960); Johnson v. Seifert, 257 Minn. 159, 100 N.W.2d 689 (1960); Monroe v. State, 111 Utah 1, 175 P.2d 759 (1946). Other states allow recreational use by anyone who may gain access without trespassing on the uplands. D'Albora v. Garcia, 144 So.2d 911 (La. Ct. App. 1962); Kerley v. Wolfe, 349 Mich. 350, 84 N.W.2d 748 (1957); State Game and Fish Comm'n v. Louis Fritz Co., 187 Miss. 539, 193 So. 9 (1940); Elder v. Delcour, 364 Mo. 835, 269 S.W.2d 17 (1954); State v. Twiford, 136 N.C. 603, 48 S.E. 586 (1904); State v. Red River Valley Co., 51 N.M. 207, 182 P.2d 421 (1945); Luscher v. Reynolds, 153 Ore. 625, 56 P.2d 1158 (1936); State v. Malmquist, 114 Vt. 96, 40 A.2d 534 (1944); Diana Shooting Club v. Husting, 156 Wis. 261, 145 N.W. 816 (1914); Day v. Armstrong, 362 P.2d 137 (Wyo. 1961).

57. Note, Extent of Private Rights on Nonnavigable Lakes, 5 U. Fla. L. Rev. 166, 176 (1952); Sanders v. DeRose, 207 Ind. 90, 191 N.E. 331 (1934); Walden v. Pines Lake Land Co., 126 N.J. Eq. 249, 8 A.2d 581 (Ct. Err. & App. 1939); Mix v. Tice, 164 Misc. 261, 298 N.Y.S. 441 (Sup. Ct. 1937); Akron Coral & Hydraulic Co. v. Fontaine, 72 Ohio App. 93, 50 N.E.2d 897 (1943); Smoulter v. Boyd, 209 Pa. 146, 58 A. 144 (1904).

58. Johnson & Morry, Filling and Building on Small Lakes - Time for Judicial and Legislative Controls, 45 Wash. L. Rev. 27, 38 (1970); Harris v. Brooks, 225 Ark. 436, 283 S.W.2d 129 (1955); Duval v. Thomas, 114 So.2d 791 (Fla. 1959); Beach v. Hayner, 207 Mich 93, 173 N.W. 487 (1919); Johnson v. Seifert, 257 Minn. 159, 100 N.W.2d 689 (1960); State Game & Fish Comm'n v. Louis Fritz Co., 187 Miss 539, 193 So. 9 (1940); Elder v. Delcour, 364 Mo. 835, 269 S.W.2d 17 (1954); Snively v. Jaber, 48 Wash. 2d 815, 296 P.2d 1015 (1956); Improved Realty Corp. v. Sowers, 195 Va. 317, 78 S.E.2d 588 (1953).

59. U.S. Const. Art. 1, §8.

60. Gibbons v. Ogden, 22 U.S. (9 Wheat.) 1 (1824).

61. 70 U.S. (3 Wall.) 713 (1865).

62. Id. at 725.

63. 53 U.S. (12 How.) 443 (1851).

64. The Court in The Daniel Ball, 77 U.S. (10 Wall.) 557 (1870), stated the test as follows: "Those rivers must" be regarded as public navigable rivers in law which are navigable in fact. And they are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water." 77 U.S. at 563.

65. United States v. Rio Grande Dam & Irrigation Co., 174 U.S. 690 (1899).

66. 311 U.S. 377 (1940).

67. Baldwin, The Impact of the Commerce Clause on Riparian Rights Doctrine, 16 U. Fla. L. Rev. 370 (1963); Trelease, Federal Limitations on State Water Law, 10 Buffalo L. Rev. 399 (1961). Federal jurisdiction under the Federal Water Pollution Control Act Amendments of 1972 has recently been expanded to cover waters that are clearly nonnavigable. United States v. Holland, 373 F.Supp. 665 (M.D. Fla. 1974).

68. First Iowa Hydro-Electric Cooperative v. Federal Power Commission, 328 U.S. 152 (1946).

69. Ausness, A Survey of State Regulation of Dredge and Fill Operations in Nonnavigable Waters, 8 Land & Water L. Rev. 65 (1973).

70. Leighty, Public Rights in Navigable Waters -- Some Statutory Approaches, 6 Land & Water L. Rev. 459 (1971).

71. Johnson & Austin, Recreational Rights and Titles to Beds on Western Lakes and Streams, 7 Nat. Res. J. 1 (1967).

72. Lamprey v. Metcalf, 52 Minn. 121, 53 N.W. 1142 (1893); Grand Rapids v. Powers, 29 Mich. 44, 50 N.W. 661 (1891); Colman v. Schaeffer, 126 N.E.2d 444 (Ohio 1955); but see State v. Adams, 251 Minn. 521, 89 N.W.2d 661 (1957).

73. 153 Ore. 625, 56 P.2d 1158 (1936).

74. 153 Ore. 625, 56 P.2d at 1162.

75. Note, Navigability of Waters in Kentucky, 25 Ky. L. J. 274 (1937).

76. Goodin's Ex'rs. v. Kentucky Lumber Co., 90 Ky. 625, 14 S.W. 775 (1890); Floyd County v. Allen, 190 Ky. 532, 227 S.W. 994 (1921).

77. Ford Lumber & Mfg. Co. v. McQueen, 14 Ky. L. Rep. 521 (Super Ct. 1892).

78. Murray v. Preston, 106 Ky. 561, 50 S.W. 1095 (1899).

79. For a more complete discussion of the prior appropriation system see 5 R. Clark, Water and Water Rights §§400-446 (1972).

80. Trelease, Law, Water and People: The Role of Water Law in Conserving and Developing Natural Resources in the West, 18 Wyo. L. J. 3 (1963).

81. Lauer, Reflections on Riparianism, 35 Mo. L. Rev.1, 5 (1970).

82. Farnham, Permissible Extent of Riparian Land, 7 Land & Water L. Rev. 31 (1972).

83. Boehmer v. Big Rock Creek Irr. Dist., 117 Col. 19, 48 P. 908 (1897).

84. Jones v. Conn, 39 Ore. 30, 64 P. 855 (1901); Clark v. Allaman, 71 Kan. 206, 80 P. 571 (1905).

85. Stratton v. Mt. Hermon Boy's School, 216 Mass. 83, 103 N.E. 87 (1913); Gordonsville v. Zinn, 129 Va. 542, 106 S.E. 508 (1921); Murphy, A Short Course on Water Law for the Eastern United States, 1961 Wash. U.L.Q. 93, 114-115.

86. St. Anthony Falls Water Power Co. v. City of Minneapolis, 41 Minn. 270, 43 N.W. 56 (1889); United Paper Board Co. v. Iroquois Pulp & Paper Cp., 226 N.Y. 38, 123 N.E. 200 (1919); contra Harvey Realty Co. v. Borough of Wallingford, 111 Conn. 352, 358-9, 150 A. 60, 63 (1930).

87. Lauer, Reflections on Riparianism, 35 Mo. L. Rev. 1, 7 (1970) Stoner v. Patten, 132 Ga. 178, 63 S.E. 897 (1909); Roberts v. Martin, 72 W.Va. 92, 77 S.E. 535 (1913).

88. Robertson v. Arnold, 186 S.E. 806 (1936); McCord v. Big Brothers Movement, Inc., 120 N.J. Eq. 446, 185 A.480 (1936); Palmer Water Co. v. Lehighton Water Supply Co., 280 Pa. 492, 124 A.747 (1924); McCausland v. Jarrell, 136 W.Va. 569, 68 S.E.2d 729 (1951).

89. Hanks, The Law of Water in New Jersey, 22 Rutgers L. Rev. 621, 628-9 (1968).

90. 1 S. Wiel, Water Rights in the Western States, §739 (2d ed. 1911).

91. Id.

92. Hanks, supra note 89, at 630-32.

93. F. Maloney, S. Plager & F. Baldwin, Water Law and Administration - The Florida Experience §112.1 (1968).

94. Comment, Irrigation in Kentucky as Affected by the Law of Riparian Rights, 40 Ky. L. J. 423 (1952).

95. 86 Ky. 44, 5 S.W. 49 (1887).

96. 86 Ky. at 49, 5 S.W. at 51.

97. 5 S.W. at 52.

98. 164 Ky. 674, 177 S.W. 286 (1915).

99. 164 Ky. at 684, 177 S.W. at 291.

100. 229 Ky. 339, 17 S.W.2d 194 (1929).

101. 229 Ky. at 343, 17 S.W.2d at 195.

102. 297 Ky. 565, 180 S.W.2d 278 (1944).

103. 297 Ky. at 569, 180 S.W.2d at 280.

104. Ky. Acts, ch. 247 §2 (1954). This statute, however, was repealed in 1966. See Ky. Acts, ch. 23 §39 (1966). There is no similar provision in Kentucky's present water resources legislation, K.R.S. chapter 150.

105. 294 S.W.2d 775 (Ky. 1952).

106. 131 Mich. 156, 91 N.W. 211 (1902).

107. 91 N.W. at 217.

108. 93 C.J.S. Waters §86.

109. Canada v. City of Shawnee, 179 Okla. 53, 64 P.2d 694 (1937).

110. Note, Water Law-Groundwater Rights in Missouri - A Need for Clarification, 37 Mo. L. Rev. 357, 358 (1972); Gagnon v. French Lick Springs Hotel Co., 163 Ind. 687, 72 N.E. 849 (1904); Evans v. City of Seattle, 182 Wash. 450, 47 P.2d 984 (1935).

111. Tampa Waterworks v. Cline, 37 Fla. 586, 20 So. 780 (1896); Clinchfield Coal Corp. v. Compton, 148 Va. 437, 139 S.E. 308 (1927).

112. Wilkening v. State, 54 Wash.2d 692, 344 P.2d 204 (1959); Pecos County Water Control Improvement District No. 1 v. Williams, 271 S.W.2d 503 (Tex. 1954); C. & W. Coal Corp. v. Salyer, 200 Va. 18, 104 S.W.2d 50 (1958); contra Karl F. Hehl Engineering Co. v. Hubbell, 132 Colo. 96, 285 P.2d 593 (1955). Idaho has done away with the classification and held all ground waters to be percolating. Hinton v. Little, 50 Idaho 371, 375, 296 P. 582, 583 (1931). Other states have done so by statute. Kan. Gen. Stat. Ann. §82a-702, 703 (1949); Ore. Rev. Stat. §537.515(3)(1953); N.D. Code Ann. §61-01-01 (1960); Wyo. Stat. §341-121 (1957).

113. 12 M. & W. 324, 152 Eng. Rep. 1235 (1842); see also Chasemore v. Richards, 2 H. & N. 168 (1957), aff'd, 7 H.L. Cas. 349, 11 Eng. Rep. 140 (1959).

114. Stoner v. Patten, 132 Ga. 178, 63 S.E. 897 (1909); Edwards v. Haeger, 180 Ill. 99, 54 N.E. 176 (1899).

115. Roath v. Driscoll, 20 Conn. 533 (1850); Gagnon v. French Lick Springs Hotel Co., 163 Ind. 687, 72 N.E. 849 (1904); Greenleaf v. Francis, 35 Mass. (18 Pick) 117 (1836); Wheatley v. Baugh, 25 Pa. 528 (1855); Rose v. Sacony - Vacuum Corp., 54 R.I. 411, 173 A. 627 (1934); St. Amand v. Lehman, 120 Ga. 253, 47 S.E. 949 (1904).

116. Weelock v. Jacobs, 70 Vt. 162, 40 A. 41 (1897); Huber v. Merkel, 117 Wis. 355, 94 N.W. 354 (1903); Chatfield v. Wilson, 28 Vt. 49 (1856); City of Corpus Christi v. City of Pleasanton, 154 Tex. 289, 276 S.W.2d 798 (1955).

117. 3 H. Farnham, Waters and Water Rights 2717 (1904); McHendrie, The Law of Underground Water, 13 Rocky Mt. L. Rev. 1, 5 (1940); F. Maloney, S. Plager & F. Baldwin, supra note 93, §54.2(a) at 155 (1968).

118. Harnsberger, Oeltjen & Fischer, Groundwater: From Windmills to Comprehensive Public Management, 52 Neb. L. Rev. 179, 205 (1973); Sloss-Sheffield Steel & Iron Co., v. Wilkes, 231 Ala. 511, 165 So. 764 (1936); Debok v. Doak, 188 Iowa 597, 176 N.W. 631 (1920); Bayer v. Nello L. Teer Co., 256 N.C. 509, 124 S.E.2d 552 (1962).

119. Schenk v. City of Ann Arbor, 196 Mich 75, 163 N.W. 109 (1917); Forbell v. City of New York, 164 N.Y. 527, 58 N.E. 644 (1900).

120. Davison v. City of Ann Arbor, 237 Mich. 453, 212 N.W. 81 (1927).

121. Katz v. Walkinshaw, 141 Cal. 116, 137, 70 P. 663 (1902); 141 Cal. 116, 74 P. 766 (1903).

122. W. Hutchins, The California Law of Water Rights, 438 (1956); O'Leary v. Herbert, 5 Cal.2d 416, 422-3, 55 P.2d 834, 837-8 (1936); Eckel v. Springfield Tunnel & Dev. Co., 87 Cal. App. 617, 262 P. 425 (1927).

123. Clark, Ground Water Legislation in the Light of Experience in the Western States, 22 Mont. L. Rev. 42 (1960); R. Clark, Waters & Water Rights §51.5-51.9 (1967).

124. Piper & Thomas, Hydrology and Water: What is Their Future Common Ground, 7 Water Resources and the Law 12 (1958).

125. 200 Ky. 467, 255 S.W. 84 (1923).

126. 255 S.W. at 86.

127. 345 S.W.2d 46 (Ky. 1961).

128. Id. at 47.

129. 89 Ky. 468, 12 S.W. 937 (1890).

130. 89 Ky. at 471, 12 S.W. at 938.

131. 128 Ky. 26, 107 S.W. 203 (1908).

132. 107 S.W. at 205.

133. 200 Ky. 467, 255 S.W. 84, 86 (1923).

134. 292 Ky. 168, 166 S.W.2d 243 (1942).

135. 292 Ky. at 169, 166 S.W.2d at 294.

136. 89 Ky. 468, 12 S.W. 937 (1890).

137. 279 Ky. 239, 130 S.W.2d 22 (1939).

138. 279 Ky. at 241, 130 S.W.2d at 23.

139. 259 S.W.2d 466 (Ky. 1953).

140. Id. at 468.

141. Davis, Wells and Streams: Relationship at Law, 37 Mo. L. Rev. 189 (1972).

142. Maloney & Plager, Diffused Surface Water: Scourge or Bounty, 8 Natural Resources J. 72 (1968); Restatement of Torts §86.

143. Watts V. Evansville, Mt. C. & N. Ry., 191 Ind. 27, 129 N.E. 315 (1921); Frese v. Michalec, 148 Neb. 567, 28 N.W.2d 197 (1947).

144. Thomson V. Public Service Comm'n, 241 Wis. 243, 5 N.W.2d 769 (1942).

145. Hengelfelt v. Ehrmann, 141 Neb. 322, 3 N.W.2d 576 (1942); Crawford v. Tambo, 44 Ohio St. 279, 7 N.E. 429 (1886).

146. Maloney & Plager, supra note 142, at 108.

147. Dolson, Diffused Surface Water and Riparian Rights: Legal Doctrine in Conflict, 1966 Wis. L. Rev. 58; Shaffer, Surface Water in Indiana, 39 Ind. L. J. 69 (1963).

148. Swell v. Cutts, 50 N.H. 439 (1870).

149. Gannon v. Hargadon, 92 Mass. (10 Allen) 106 (1865).

150. Town of Union v. Durkes, 38 N.J.L. 21 (1875).

151. Timmons v. Clayton, 222 Ark. 327, 259 S.W.2d 501 (1953); Barkley v. Wilcox, 86 N.Y. 140 (1881); Bowlsby v. Speer, 31 N.J.L. 351 (1965).

152. Sheehan v. Flynn, 59 Minn. 436, 61 N.W.462 (1894); Baker v. Allen, 66 Ark. 271, 50 S.W. 511 (1899); Hume v. Des Moines, 146 Iowa 624, 125 N.W. 846 (1910); Werner v. Popp, 94 Minn. 118, 102 N.W. 366 (1905); Shaw v. Ward, 131 Wis. 646, 111 N.W. 671 (1907); Dobbins, Surface Water Drainage, 36 Notre Dame Law. 518, 523-524 (1961).

153. Kauffman v. Griesemer, 26 Pa. 407, 413 (1856); Note, Rule in Kentucky as to Surface Water, 35 Ky. L.J. 86, 87 (1946).

154. Tideman v. Village of Middleton, 25 Wis.2d 443, 130 N.W.2d 783 (1964); Phillips v. Chesson, 231 N.C. 566, 58 S.E.2d 343 (1950); Slatten v. Mitchell, 22 Tenn. App. 547, 124 S.W.2d 310 (1935).

155. Martin v. Jett, 12 La. 501 (1838).

156. Ratcliffe v. Indian Hill Acres, Inc., 93 Ohio App. 231, 113 N.E.2d 30 (1952); Thompson v. Andrews, 39 S.D. 477,

165 N.W. 9 (1917); Vinson v. Turner, 252 Ala. 271, 40 So. 2d 863 (1949); Battists v. Perkins, 210 Md. 542, 124 A.2d 288 (1956).

157. Hall v. Rising, 141 Ala. 431, 37 So. 586 (1904); Lunsford v. Stewart, 95 Ohio App. 383, 120 N.E.2d 136 (1953); contra Carland v. Aurin, 103 Tenn. 555, 53 S.W. 940 (1899).

158. Maloney & Plager, supra note 142, at 79.

159. Restatement of Torts §§822-31 (1939); Franklin v. Durgee, 71 N.H. 186, 51 A. 911 (1901); Hopler v. Morris Hills Regional Dist., 45 N.J. Super. 409, 133 A.2d 336 (1957); Armstrong v. Francis Corp. 20 N.J. 320, 120 A.2d 4 (1956); Enderson v. Kelehan, 226 Minn. 163, 32 N.W.2d 286 (1948); Weinberg v. Northern Alaska Dev. Corp. 384 P.2d 450 (Alas. 1963).

160. 125 Ky. 213, 100 S.W. 873 (1907).

161. 125 Ky. at 225-6, 100 S.W. at 875-6.

162. E.g. Dugan v. Long, 234 Ky. 511, 28 S.W.2d 765 (1930); Franz v. Jacobs, 183 Ky. 647, 210 S.W. 163 (1919).

163. 428 S.W.2d 766 (Ky. 1967).

164. Id. at 769.

165. 226 Minn. 163, 32 N.W.2d 286 (1948).

166. 444 S.W.2d 541 (Ky. 1969).

167. Commonwealth v. S. & M. Land Co., 503 S.W.2d 495 (Ky. 1972).

168. Burkshire Terrace, Inc. v. Schroerlacke, 467 S.W.2d 770, (Ky. 1971); Commonwealth v. Watson, 446 S.W.2d 294 (Ky. 1969).

169. E.g., Commonwealth v. Robbins, 421 S.W.2d 820 (Ky. 1967); Rutherford v. Louisville & Nashville R.R. 243 S.W.2d 1017 (Ky. 1951).

170. Maloney & Ausness, A modern Proposal for State Regulation of Consumptive Uses of Water, 22 Hastings L.J. 523, 524 (1971).

171. F. Maloney, R. Ausness & J. Morris, A Model Water Code 156 (1972).

172. Fisher, Western Experience and Eastern Appropriation Proposals, The Law of Water Allocation in the Eastern United States, 75, 80 (1958).

173. National Water Commission, Water Policies for the Future, 280-294 (1973).

174. Ky. Acts ch. 247 (1954).

175. For a discussion of the 1954 statute see Gregory, Riparian Rights -- Analysis of New Statutory Provisions, 43 Ky. L.J. 407 (1955).

176. K.R.S. 151.130 (1974).

177. A. Tarlock, Evaluation of the Legal Institutions of Diversion, Transfer, Storage, and Distribution of Water in Kentucky, 44 (K.W.R.I. Research Rept. No. 15, 1968).

178. K.R.S. 151.180 (1974).

179. Ky. Acts ch. 285 §§2,4,5,7, (1974).

180. K.R.S. 151.200(1) (1974).

181. K.R.S. 151.250 (1974).

182. K.R.S. 151.360 (2) (1974).

183. K.R.S. 151.360 (3) (1974).

184. K.R.S. 151.360 (1) (1974).

185. K.R.S. 147.070 (1)(a) (1974).

186. K.R.S. ch. 266-269 (1974).

187. K.R.S. ch. 262 (1974).

188. K.R.S. ch. 104 (1974).

189. K.R.S. ch. 104 (1974).

190. K.R.S. ch. 74 (1974).

191. K.R.S. 151.250(1) (1974).

192. K.R.S. 151.250(2) (1974).

193. Ky. Acts ch. 285 §§8,10 (1974).

194. K.R.S. 151.250(1) (1974).

195. K.R.S. 151.100(13) (1974).

196. K.R.S. 151.250(3) (1974).

197. K.R.S. 151.380 (1974).

198. K.R.S. 151.390 (1974).

199. K.R.S. 151.400 (1974).

200. K.R.S. 151.420 (1974).

201. K.R.S. 151.170(2) (1974).

202. K.R.S. 151.170(2) (1974).

203. Water Information Center, Inc., Water Atlas, plates 79-80 (1973).

204. A. Tarlock, supra note 177, at 56.

205. The Department for Natural Resources and Environmental Protection, which administers the permit system, does have substantial planning responsibilities. K.R.S. 151.220 (1974).