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## Articles

# Water, Water Everywhere But Much Less Than You Think

Leslie M. MacRae\*

### I. Introduction

People living in the Northeast are spoiled. They have for decades blithely assumed that plenty of water exists for their wells and rivers. Recent periods of drought should be treated as warnings to policy and law makers. Now is the time to consider the revamping of Pennsylvania's entire water system. Policy and law makers should systematically address both surface and groundwater allocation<sup>1</sup> systems. As this article is being written, Cumberland County Pennsylvania, the home of the *Environmental Law Review*, is ten inches behind its normal

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1. As used in this article, surface water refers to waters located in streams, rivers, ponds, lakes, and the like. Ground water is that water located under the surface of the earth that supplies water to wells. After this article was completed, Pennsylvania adopted new legislation pertaining to water. Its purpose is to survey the resource with an eye toward the creation of a new water strategy.

level of precipitation for the year.<sup>2</sup> Western Pennsylvania is experiencing unusually low precipitation levels for the third time in four years.<sup>3</sup>

The phenomenon of low precipitation levels, however, is not restricted to Pennsylvania and the Northeast.<sup>4</sup> In the West and Southwest, chronic low levels of rain and snow have dictated the water law system,<sup>5</sup> just as the water law in the Northeast has been premised on an abundance of water.<sup>6</sup> Even with a system which anticipates shortages, the Northeast has recently developed a significant strife over access to water:

- In southern Oregon, 5000 protesters rallied around a massive empty bucket, a symbol of the water crisis that has engulfed the region.
- In Missouri, a coalition of farmers, barge interests, and business groups threaten a suit to block a government proposal to alter the flow of the Missouri River.
- Meanwhile, negotiators from Georgia, Florida, and Alabama worked against a deadline to craft a landmark water B sharing agreement. Failure could mean that a judge will divvy up the water from rivers that have been depleted by urban sprawl.

These actions tell a story of heightened tensions over water and new attempts, sometimes rancorous, to share an increasingly precious resources.

## II. Conflicts And Scarcity<sup>7</sup>

Conflicts in areas such as the humid Southeast are surprising.<sup>8</sup> Such

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2. Commonwealth of Pennsylvania, Department of Environmental Protection, *Drought Watch Expanded to Include 22 additional Pennsylvania Counties*, PR Newswire (August 24, 2001). Recently, however, two friendly hurricanes have helped to replenish the counties' water supply.

3. Scott Deacle, *The Thirsty Earth*, PITT. POST GAZETTE, Sept. 2, 2001 at n.6.

4. WESTERN WATER POLICY REVIEW ADVISORY COMMISSION, WATER IN THE WEST: CHALLENGE FOR THE NEXT CENTURY 1-1 (1998). The Report references the following:

The West is defined . . . by inadequate rainfall, which means a general deficiency of water. We have water only between the time of its falling as rain or snow and the time it flows or percolates back, into the sea or the deep subsurface reservoirs of the earth. We cannot create water or increase it. We can only hold back and redistribute what water is already exists.

(quoting Wallace Springer, *The American West as Living Space* (1987)).

5. CHARLES J. MEYERS, A HISTORICAL AND FUNCTIONAL ANALYSIS OF THE APPROPRIATION SYSTEM, NATIONAL WATER COMMISSION, LEGAL STUDY No. 5 at 3.

6. GEORGE COGGINS ET AL., FEDERAL PUBLIC LAND AND RESOURCES LAW (4th ed. 2001).

7. Bill Lambrecht, *In Regions Across U.S., Water Use is Hot Issue; Farmers, Cities Compete with Conservationists*, ST. LOUIS POST, Aug. 26, 2001 at A1.

conflicts, however, are occurring all over the United States.<sup>9</sup> The problems, however, are not limited to the United States.<sup>10</sup> According to a new report prepared by the *World Resources Institute*, by 2025, 3.5 billion people will face water shortages and twenty-nine river basins of the world will experience additional shortages.<sup>11</sup> Now is the time for states such as Pennsylvania to reexamine their water law systems. The concerns expressed and problems identified in this article are applicable to any system of private property rights in water. Any analysis of a system of allocation today must take into account issues of scarcity, priority, and public interest demand on the water supply. Water demands associated with the Endangered Species Act,<sup>12</sup> the Public Trust Doctrine,<sup>13</sup> and the doctrine of reserved waters rights are the focus of this article.<sup>14</sup> While this author prefers the appropriation doctrine for water allocation for reasons that will be discussed below, even the riparian system will have to be adjusted as water becomes more scarce.<sup>15</sup>

### III. The Appropriation Doctrine

The Appropriation Doctrine is the water system that predominates the Western part of the country.<sup>16</sup> The doctrine is based upon the concept that the first in time is given priority in use.<sup>17</sup> The use must be

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8. *Id.*

9. *Id.*

10. CARMEN REVENGA ET AL., *WORLD RESOURCES INSTITUTE, PILOT ANALYSIS OF GLOBAL ECOSYSTEMS: FRESHWATER SYSTEMS* (2000).

11. *Id.* at 26-27.

12. 16 U.S.C. § 1531.

13. *See* Ill. Cent. R.R. Co. v. Ill., 146 U.S. 387 (1982). The Public Trust Doctrine provides that submerged lands are of such critical importance to society, that the state must protect them from conveyance to private owners. The lands are then to be used by or for the public for fishing, navigation, and commerce. Some additional uses have been added to the original three uses, as will be discussed below.

14. This doctrine provides that upon the creation by the federal government of reservations for Indian Tribes, there were reserved adequate amounts of water to satisfy the basic needs of the tribe. The doctrine has caused concern in Western States that have appropriation systems because the reserved amount is not immediately quantified. *See* *Winters v. United States*, 207 U.S. 564 (1908). This case will be discussed in more detail below.

15. GEORGE A. GOULD ET AL., *WATER LAW* 6-7 (West 1995).

16. *Id.*

17. JOSEPH L. SAX ET AL., *LEGAL CONTROL OF WATER RESOURCES* 124 (West 2000).

The requirement that a use be beneficial has two quite distinct elements, though they are not routinely distinguished in cases. The first is that the purpose for which the water is used is permissible . . . .

The second element of beneficially- and by far the more important one as far as litigated cases are concerned- is the requirement that uses not be wasteful in amount, though the purpose is perfectly appropriate.

*See also* JAN LAITOS ET AL., *ENERGY AND NATURAL RESOURCES LAW* 369 (West 1992) (listing domestic, municipal, industrial, commercial, agriculture, and others as recognized

considered one that is beneficial.<sup>18</sup> An appropriator perfects a water right if she satisfies certain requirements.<sup>19</sup> First, the appropriator must find a water source that has water that is unappropriated.<sup>20</sup> She must demonstrate an intent to appropriate.<sup>21</sup> She must then make a physical diversion from the stream.<sup>22</sup> Then, in order to perfect her water right, the appropriator must put the diverted water to a beneficial use with reasonable dispatch.<sup>23</sup>

Once the appropriator has perfected the water right, her use is prioritized. Prioritization means that she will have a prior (superior) right to the water than those who perfect their rights later in time.<sup>24</sup> The system is based on priorities.<sup>25</sup> During a period of water shortage, those with an earlier right can demand that water be supplied to them at the expense of those with later priorities.<sup>26</sup> As long as the prior appropriator is putting her water to a beneficial use, her priority protects her against junior water users.<sup>27</sup> She is, however, junior to those who have senior priorities.<sup>28</sup> One of the major advantages of the system of prior appropriation is its diligence.<sup>29</sup> The permit system and the administrative agency eliminate priority conflicts and can set the amount of water allowed to be diverted.<sup>30</sup> This amount is often called the water duty<sup>31</sup> and is characterized by the total yearly allowances and instantaneous flow.<sup>32</sup> All of these parameters are regulated by the state in which the

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beneficial uses).

18. LAITOS ET AL., *supra* note 17, at 367. The authors list three things that must be done to perfect an appropriation in states which have permit systems:

- (1) intent to appropriate and notice of the appropriation;
- (2) diversion; and
- (3) application of the water to a beneficial use within a reasonable time.

19. Water that can be appropriated is found in streams, rivers, and etc. and have not yet been appropriated to another water user. *See id.*, *supra* note 17, at 364.

20. *Id.* at 367.

21. *Id.* at 368.

22. *Id.* at 368-69 and *see* City and County of Denver v. N. Colo. Water Conservancy Dist., 276 P.2d 992 (Colo. 1954).

23. State *ex rel.* Cary v. Cochran, 292 N.W. 239 (Neb. Ct. App. 1940).

24. LAITOS ET AL., *supra* note 17, at 363-64.

25. *Id.* at 364.

26. *Id.* at 372-73.

27. *Id.* at 372.

28. *Id.* at 371-72.

29. LAITOS ET AL., *supra* note 17, at 370.

30. *Id.* at 371.

31. SAX ET AL., *supra* note 17, at 942. Water duty in irrigation is:

...the quantity of water required to satisfy the irrigation requirements of the land. It is expressed either as the rate of flow required per unit area of land, the area which can be served by a unit, or the total volumetric quantity of water in terms of depth of water required during the irrigation season or given portion thereof. *Id.* at 942.

32. *Id.*

water right is perfected.<sup>33</sup> This regulatory system is what helps make the prior appropriation system practical in states such as Pennsylvania. Dates of priority are fixed by permits granted by the state.<sup>34</sup> Quantities of water and beneficial uses can be and are memorialized so that questions concerning the correct use and quantities are easily accessed.

During periods of low water and/or drought, senior appropriators can "call the river."<sup>35</sup> This means that the state official in charge of water allocation normally must prevent junior appropriators from taking water.<sup>36</sup> Normally, there is no reduction in the amount of water due a senior.<sup>37</sup>

The appropriation doctrine can also accommodate preference.<sup>38</sup> When a number of applications exist for unappropriated waters, and insufficient waters exist to satisfy all of them, priority in grants to applicants can be made on the basis of statutory preference.<sup>39</sup> In converting from a riparian to an appropriation system in a state like Pennsylvania, a number of preferences would be required due to the difficulty of determining the priority of the old riparian use. Those who could prove their dates of use, however, should be given senior status.

In states using the appropriation doctrine, entire watersheds are often "adjudicated" at one time.<sup>40</sup> No reason exists to believe that a similar process could not be used for riparian systems changing over to a prior appropriation one.

#### IV. Riparian Water Law

Riparian water systems are based upon location, location, location.<sup>41</sup> Riparian rights belong to the owners of land, abutting rivers, and streams.<sup>42</sup> At common law, water acquired by riparians was restricted in a number of ways. First, the water could only be used by riparians or riparian property.<sup>43</sup> Second, the water had to be used within the watershed from which the water was drawn.<sup>44</sup> Third, the water could

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33. LAITOS ET AL., *supra* note 17, at 370-72.

34. *Id.*

35. SAX ET AL., *supra* note 17, at 939. Sax defines calling the river as: The action taken by a senior appropriator to curtail junior diversions when necessary to permit the senior to take her full entitlement. *Id.* at 939.

36. DAVID H. GETCHES, *WATER LAW IN A NUTSHELL* 103-04 (West 1990); WELLS HUTCHINS, *WATER RIGHTS LAWS IN THE NINETEEN WESTERN STATES* 570 (1971).

37. HUTCHINS, *supra* note 36, at 569 and GETCHES, *supra* note 36, at 101.

38. GETCHES, *supra* note 36, at 106.

39. *Id.*

40. *Id.* at 149.

41. SAX ET AL., *supra* note 17, at 21.

42. *Id.*

43. *Id.*

44. *Id.* at 25.

only be used for reasonable uses.<sup>45</sup>

Reasonable use means that a riparian may use the water for any legal purpose but should not materially diminish the stream's quantity or quality.<sup>46</sup> This goal is of course impossible to achieve in fact because riparians are entitled to use water consumptively for domestic purposes which include drinking, washing, cooking, and other "natural wants."<sup>47</sup> This right applies even if its exercise results in exhausting the water supply in a stream during a drought.<sup>48</sup> No priorities exist among riparians. As long as a use is reasonable, each upstream riparian has a right to her use of the water.<sup>49</sup> About the only type of priority that exists is geographic. Upstream riparians obviously get to use the water before downstream users.

The major problem that arises with riparian rights is the lack of a systematic regulation of priorities and preferences in states such as Pennsylvania that do not have comprehensive permit systems. As of 1995, fourteen eastern states had adopted permit systems for their riparian water sights.<sup>50</sup> These systems normally have common aspects: registration and quantification of pre-existing water uses and the control of new withdrawals.<sup>51</sup> These systems have deficiencies<sup>52</sup> but at least some control exists as to the amount of water use. As observed by two water law text writers:

In the eastern states, a "shortage" seems to be conceived of as a one-sided phenomenon, a temporary subnormal supply of natural origin. There appears to be little recognition that demands upon normal supplies can exceed the available quantity and thus create a shortage. Although in the *Tequesta* case<sup>53</sup> a new permit was refused because increased drafts on the supply would ruin the entire source for everyone, there are no statutes or cases which recognize that too many permits can produce a permanent shortage or that on a fluctually source each new permit will cause the next shortage to cut deeper, and will bring the one after that sooner. There is no apparent recognition that as the permit-granting process continues the existing uses will be impaired by having their shares reduced during the next below-normal year. There are no statutory requirements that call for

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45. GETCHES, *supra* note 36, at 18.

46. *Id.* at 33.

47. *Id.* at 34.

48. *Id.*

49. GOULD ET AL., *supra* note 15, at 275.

50. *Id.* at 275-77.

51. *Id.*

52. *Id.* at 279.

53. *Tequesta v. Jupiter Inlet Corp.*, 371 So. 2d 663 (Fla. 1979). The case shows how Florida has instituted a permit system for groundwater.

halting the issuance of permits when some limit of safe yield or dependable supply is readied . . . .<sup>54</sup>

In states where no permit system exists, such as Pennsylvania, unregulated access to and use of surface water by riparians set the stage for extreme shortages. There seems to be no legal impediment to quantifying and qualifying such interests through some sort of registration, prioritization and permit program. States such as California and Texas have taken similar action.<sup>55</sup>

#### V. Things To Consider In Adopting A New Water Law System

Regardless of which system of water rights Pennsylvania uses, there are three significant restraints that the states must consider.<sup>56</sup> Pennsylvania must learn from the Western States that during chronic shortages, there may in fact exist three significant demands on water in the streams and rivers that in reality result in even less water available than it appears to water users. The first demand is the federal Endangered Species Act (ESA).<sup>57</sup> The second demand is the public trust doctrine, and the third demand is the reserved water doctrine.<sup>58</sup>

#### VI. The Endangered Species Act

The Endangered Species Act (ESA) is designed to protect endangered and threatened species as expressed in §1531 which outlines Congress' findings and policies.<sup>59</sup> The terms conserve, conserving, and conservation are broadly defined to capture the preservationist policies of the Act.<sup>60</sup> The Secretary of Interior is required to adopt regulations to prevent further harm to a species she finds threatened or endangered.<sup>61</sup>

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54. *Id.* at 279.

55. *Id.* at 284-86 and see Robert H. Abrams, *Water Allocation by Comprehensive Permit Systems in the Eastern United States: Considering a Move Away From Orthodox*, 9 VA. ENVTL. L.J., 255 (1990).

56. There are a number of fine articles which discuss the public trust, the reserved Indian water right, and the endangered species. Two fine ones are: James P. Morris, *Who Controls the Water? Incorporating Environmental and Social Values in Water Resource Planning*, 6 W.-NW. HASTINGS J. ENVTL. L. & POL'Y 117 (2000) and A. Dan Tarlock, *Putting Rivers Back in the Landscape: The Revival of Watershed Management in the United States*, 6 W.-NW. J. ENVTL. L. & POL'Y 167 (2000). The goal of this article is to acquaint the readership and Pennsylvania lawyers and legislators about other management ideas and opportunities.

57. 16 U.S.C. § 1531 (2002).

58. The Public Trust Doctrine will be discussed more fully below. However, the Doctrine provides that submerged lands are to be preserved for use of the public for things such as fishing, navigation and commerce.

59. 16 U.S.C. § 1531(a).

60. 16 U.S.C. §§ 1531(b), 1532(3).

61. *Id.* at § 1533(a).



Upon determination that a species is threatened or endangered the Secretary is required to develop a recovery plan(s).<sup>62</sup> The Secretary must designate a critical habitat for the species.<sup>63</sup>

The term species is defined to include fish, wildlife, or plants.<sup>64</sup> Once both a species and a critical habitat are identified, with only a few exceptions,<sup>65</sup> a species or habitat cannot be harmed without effectuating a taking.<sup>66</sup>

Numerous cases and some academic comment have been generated with reference to the ESA and water in the western states. One such case is *Kandra v. United States*.<sup>67</sup> Water users complained that the United States was interfering with their Water Association contractual rights to water by denying access to water for irrigation as a result of a Bureau of Reclamation decision to maintain water levels in a lake and an appropriate flow behind the dam.<sup>68</sup> The purpose behind the Bureau of Reclamation's decision was to protect fishes listed under the ESA.<sup>69</sup> Two species of fish were listed as endangered.<sup>70</sup> Both were suckers: one the short nosed sucker the other the Lost River sucker.<sup>71</sup> The Coho salmon was listed as threatened.<sup>72</sup>

The water users claimed that the Bureau of Reclamation had improperly determined that the ESA compelled the Bureau to restrict the availability of water.<sup>73</sup> The District Court rejected this argument finding that the Bureau's decision was based on the correct administrative record

62. *Id.* at § 1533(f).

63. *Id.* at § 1533(a)(3)(A). The term "critical habitat for a threatened or endangered species" means:

(i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provision of section 1533 of this title, on which are found those physical or biological features

(I) essential to the conservation of the species and

(II) which may require special management considerations or protection; and

(ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 1533 of this title, upon a determination by the Secretary that such areas are essential for the conservation of the species.

64. 16 U.S.C. § 1532(16).

65. *See, eg.*, 16 U.S.C. § 1536(h).

66. 16 U.S.C. § 1532(19). The term "take" is defined broadly by the ESA:

The term take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. *Id.*

67. *Kandra v. United States*, 145 F. Supp. 2d 1192 (D. Or. 2001).

68. *Id.* at 1196.

69. *Id.*

70. *Id.*

71. *Id.*

72. *Id.* at 1197.

73. *Kandra*, 145 F. Supp. 2d at 1206.

and that the agency had not acted arbitrarily and capriciously.<sup>74</sup> The decision to release water to maintain minimum flows to sustain the Coho salmon was upheld as well as the decision to keep water in the Reservoir for the protection of the suckers.<sup>75</sup> These actions, in addition to the need to retain water for Indian tribes under the reserved water doctrine, meant that the water users might have to see a reservoir with water in it but not get their water allotments guaranteed to them under the prior appropriation system. One can imagine the frustration that irrigations would feel with water seemingly available but to be used to protect short nosed suckers, salmon and Indians. The water users attempted to argue that to divert waters for uses for the fish and Indians would result in a fatal conflict between the statutorily mandated purpose of the irrigation project and the ESA.<sup>76</sup> The irrigations of course wanted the court to resolve that conflict in favor of them and not the fish. In rejecting this solution the court stated:

True, an RPA is defined as alternative action which is 'consistent with the purpose of the action' and 'economically and technically feasible' . . . Read in context however, the RPAs must be economically and technically feasible for the government to implement. Additionally, as discussed above, agency actions pursuant to the Reclamation Act must comply with the requirements of the ESA. *See Tennessee Valley Authority v. Hill* . . . (ESA obligations take Apriority over the primary missions' of federal agencies). Further, agency actions are subject to the government's duty to protect tribal resources.<sup>77</sup>

In concluding, the court recognized the dilemma faced by those interested and dependent on the waters of the Klamath River Basin:

The scarcity of water in the Klamath River Basin is a situation likely to reoccur. It is also a situation which demands effort and resolve on the part of all parties to create solutions that provide water for the necessary protection of fish, wildlife and tribal trust resources as well as agriculture needs of farmers and their communities. Continued litigation is not likely to assist in such a challenging endeavor. This court hopes and expects that the parties and other entities necessary to long-term solutions will continue to pursue alternatives to meet the needs of the Klamath River Basin.<sup>78</sup>

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74. *Id.* at 1210.

75. *Id.*

76. *Id.* at 1207.

77. *Id.*

78. *Id.* at 1211.

Other courts have wrestled with similar problems.<sup>79</sup> In the 1940s, a dam was built as part of the Central Valley Project (CVP) damming the San Joaquin River.<sup>80</sup> Prior to the construction of the dam, the river joined the Sacramento River and flowed into the Pacific Ocean.<sup>81</sup> On the date of the *Houston* decision, a stretch of the San Joaquin was dry as a result of the impoundment and diversion of the river.<sup>82</sup> For forty years, water behind the Friant Dam had been supplied to irrigations pursuant to contracts.<sup>83</sup> In 1956, Congress provided that irrigations who were supplied with water would get first right to a share of the water and that the parties would mutually agree upon the conditions.<sup>84</sup>

As these forty-year contracts began to expire, the Bureau of Reclamation began to renew them.<sup>85</sup> The Bureau approved fourteen, or one half, of the original contracts before Congress enacted the Central Valley Project Improvement Act.<sup>86</sup> This Act required that the government perform an Environmental Impact Statement (EIS) on the Friant before renewing the remaining contracts.<sup>87</sup> The ESA, however, also applied to all the renewals that occurred after the listing of the Chinook salmon as a threatened or an endangered species.<sup>88</sup> The Act also limited the number of years that the contract could remain in existence to twenty-five years.<sup>89</sup> Prior contracts were for terms of forty years. Before the dam was built, the San Joaquin River supported a variety of aquatic species such as the Chinook salmon.<sup>90</sup> Obviously, the dam adversely affected the salmon.<sup>91</sup> In fact, as noted above, part of the River is dry as a result.<sup>92</sup>

The Chinook salmon is listed as an endangered species under the ESA.<sup>93</sup> The Natural Resources Defense Council claimed that the Bureau violated the ESA by renewing the contracts without formally consulting with the National Marine Fisheries Service and the untimely consultation with the Fish and Wildlife Service, the two agencies most involved in

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79. *Natural Res. Def. Council v. Houston*, 146 F.3d 1118 (9th Cir. 1998).

80. *Id.* at 1123.

81. *Id.*

82. *Id.*

83. *Id.*

84. *Id.*

85. *Natural Res. Def. Council*, 146 F.3d at 1123-24.

86. *Id.*

87. *Id.* at 1124.

88. *Id.* at 1125.

89. *Id.* at 1124.

90. *Id.*

91. *Natural Res. Def. Council*, 146 F.3d at 1124.

92. *Id.* at 1123.

93. *Id.* at 1124.

Chinook salmon management.<sup>94</sup> The court concluded that the Bureau of Reclamation had violated the ESA with both its failure to consult and with its untimely consultation. This result meant that the bureau had to rescind the contracts it had entered into and renegotiate them after satisfying its obligations under the ESA.<sup>95</sup> Consequently, the irrigation needs would be subservient to the Chinook salmon's. Once again, irrigation would come second to the needs of endangered species.

## VII. Reserved Water Rights

Another area of concern for eastern states is the reserved rights doctrine. This doctrine first emerged in *United States v. Winans*.<sup>96</sup> This case involved the interpretation of a treaty negotiated between the United States and the Yakima Native American tribe.<sup>97</sup> The treaty provided for the creation of an Indian reservation, and the treaty also identified certain rights guaranteed to the tribe.<sup>98</sup> The treaty recognized that members of the tribe possessed the right to take fish on the reservation and the right to use and occupy the land within the reservation.<sup>99</sup>

In understanding this case and the holding, one must be conversant with the fact that Indian tribes are recognized as "domestic dependent nations."<sup>100</sup> This notion means that the tribe has limited sovereignty within its sphere of responsibility including the responsibility over its lands.<sup>101</sup> In discussing these sovereign rights in *Winans*, the Court stated:

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94. *Id.* at 1124-28.

95. *Id.* at 1133. *Tulare Lake Basin Water Storage District et al. v. United States*, 49 Fed. Ct. 313 (2001) might be a case of monumental significance for the continued viability of the ESA as a costless method of saving water for wildlife protection. A member of California Water Holders sued in the Claims Court for a regulatory taking caused by interference with his water rights by use of the ESA. The Claims Court determined that a takings had resulted. The case has not as yet been examined by an appellate court.

96. *United States v. Winans*, 198 U.S. 371 (1905).

97. *Id.* at 377.

98. *Id.* at 381.

99. *Id.*

100. *Cherokee Nation v. Georgia*, 30 U.S. (5 Pet.) 1, 16 (1831).

101. *Id.* at 17:

Though the Indians are acknowledged to have an unquestionable, and heretofore unquestioned right to the lands they occupy until that right shall be extinguished by a voluntary cession to our government, yet it may well be doubted whether those tribes which reside within the boundaries of the United States can, with strict accuracy be denominated foreign nations. They may more, correctly, perhaps be denominated domestic dependent nations. They occupy a territory to which we assent a title independent of their will, which must take effect in point of possession when their right of possession ceases. Meanwhile, they are in a state of pupilage. Their relationship to the United States resembles that of a ward to his guardian.

The right to resort to the fishing places in controversy was part of larger rights possessed by the Indians upon the exercise of which there was not a shadow of impediment, and which were not much less necessary to the existence of the Indians than the atmosphere they breathed. New conditions came into existence, to which those rights had to be accommodated. Only a limitation of them, however, was necessary and intended, nor a taking away. In other words, the treaty was not a grant of rights to the Indians, but a grant of rights from them a reservation of those not granted.<sup>102</sup>

In *Winans* the Court recognizes that the Indians had retained the right to fish within the boundaries of the Reservation and the right was exclusive.<sup>103</sup> The Court also rejected the State's argument that the Indian right was subservient to the State.<sup>104</sup> The Court determined that the United States had the right to secure the right to fish for the tribes as part of the tribe's reserved powers.<sup>105</sup>

Three years later, the right to reserved water, which was implied in *Winans*, became explicit in *Winters v. United States*.<sup>106</sup> In 1874, Congress created a Reservation for a number of the tribes in what today is the State of Montana.<sup>107</sup> In 1888, Congress desired part of the land within the Reservation for settlement by the Americans.<sup>108</sup> To facilitate this goal, Congress entered into another treaty with the tribes to shrink the reservation.<sup>109</sup> The new Reservation was to be bordered on the north by the middle of the Milk River.<sup>110</sup> In 1895, settlers began settling the ceded area and posted water claims on the Milk River.<sup>111</sup> Apparently, the Milk river was the only water available to Indians or Settlers in the area and its total appropriation to settlers would leave the Reservation without water and useless.

The Indians had rights to use the water as early as 1887 and had diverted a considerable amount of it through diversions constructed by the federal government in 1898. The settlers, however, had laid claim to more than 5000 miners' inches in the early 1890 by following the correct appropriation steps for Montana.<sup>112</sup> The miners' claims deprived the

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102. *Winans*, *supra* note 97, at 381.

103. *Id.*

104. *Id.* at 381-82.

105. *Id.*

106. *Winters v. United States*, 207 U.S. 564 (1907).

107. *Id.* at 567.

108. *Id.* at 565.

109. *Id.* at 567-68.

110. *Id.* at 565-66.

111. GETCHES ET AL., FEDERAL INDIAN LAW, 4TH ED. 796-97 (West 1998).

112. *Id.* at 569. A miner's inch or "inch of water" is a unit that formerly was widely used to measure small flows . . . . It is a quantity that will flow through a one inch square orifice under a certain pressure. GOULD ET AL., *supra* note 15, at 13.

Indians of their water because the miners were upstream.<sup>113</sup> When the Indians were deprived of their water, the government sued on their behalf. As in the *Winans* case, the case turned on the proper interpretation of a Treaty. In this case, it was the 1888 Treaty of Fort Belknap, which had ceded so much of the original reservation to the federal government and which eventually became part of the State of Montana.<sup>114</sup> The Court recognized that part of the impetus for the cession, was the desire on the part of the tribes and federal government to have the tribe turn to agrarian pursuits.<sup>115</sup> The Court believed the only way to accomplish this change was to have an adequate supply of water.<sup>116</sup> Of course, Montana and the settlers wanted this water for the same purposes.<sup>117</sup> The land was arid, without irrigation and basically worthless.<sup>118</sup> The Court seemed bemused with the allegation that the tribes had intentionally given up their claims to the water at the time they had planned to begin farming. In rejecting this contention, and giving birth to the explicit reserved waters doctrine, the Court provided:

... And yet, it is contended, the means of irrigation were deliberately given up by the Indians and deliberately accepted by the Government. The lands ceded were, it is true, also arid; and some argument may be urged, and is urged, that with their cession there was the cession of the waters, without which they would be valueless, and "civilized communities could not be established thereon." And this, it is further contended, the Indians knew, and yet made no reservation of the waters. We realize that there is a conflict of implications, but that which makes for the retention of the waters is of greater force than that which makes for their cession. The Indians had command of the lands and the waters B command of all their beneficial use, whether kept for hunting, "and grazing roving herds of stock," or turned to agriculture and the arts of civilization. Did they give up all this? Did they reduce the area of their occupation and give up the waters which made it valuable or adequate? And, even regarding the allegation of the answer as true, that there are springs and streams on the reservation flowing about 2,900 inches of water, the inquiries are pertinent. If it were possible to believe affirmative answers, we might also believe that the Indians were awed by the power of the Government or deceived by its negotiators. Neither view is possible. The Government is asserting the rights of the Indians. But extremes need not be taken into account. By a rule of

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113. *Id.* at 567.

114. *Id.* at 575-76.

115. *See id.* at 576.

116. *Id.*

117. *GETCHES ET AL.*, *supra* note 111, at 576-77.

118. *Id.* at 576.

interpretation of agreements and treaties with the Indians, ambiguities occurring will be resolved from the standpoint of the Indians. And the rule should certainly be applied to determine between two inferences, one of which would support the purpose of the agreement and the other impair or defeat it. On account of their relations to the Government, it cannot be supposed that the Indians were alert to exclude by formal words every inference which might militate against or defeat the declared purpose of themselves and the Government, even if it could be supposed that they had the intelligence to foresee the "double sense" which might some time be urged against them.<sup>119</sup>

This passage nicely sums up the doctrine of reserved water rights. The Court identified the underlying policy that Indians are not to be seen as turning their reservations into patches of land without water.<sup>120</sup> This result would be a particularly absurd result in the West where the absence of water could mean death or starvation. The Court also identified the rule of interpretation that all ambiguities must be resolved in favor of the Indians.<sup>121</sup> This rule is the logical result of the jurisprudential view announced in the "Trilogy" that the Court has adopted: that while Indian tribes are sovereigns, the Indians are subservient to the superior sovereignty of the United States and are thus to be treated both as equals and as wards of the federal government and at times need to be protected from the States as well as themselves.<sup>122</sup>

The early journals of Congress exhibit the most anxious desire to conciliate the Indian nations. Three Indian departments were established and commissioners were appointed in each "to treat with the Indians in their respective departments in the name and on the behalf of the United Colonies, in order to prevent their taking any part in the present commotions" (American Revolution).

The most strenuous exertions were made to procure those supplies on which Indians friendships were supposed to depend; and everything

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119. *Id.* at 576-77. The doctrine that documents should be read so as to resolve ambiguities in favor of the tribes is based on the fact that the treaties were written and interpreted in English, a language that many of the Indians did not understand. See Wilkinson and Volkman, *Judicial Review of Indian Treaty Abrogation: As long as Water Flows Or Grasses Grow Upon the Earth" - How Long a Time is That?*, 63 CAL.L.REV. 601 (1975). See also *United States v. Washington*, 384 F. Supp. 312 (W.D. Wash. 1974).

120. *Winters*, *supra* note 105, at 576.

121. See *supra* note 120 for a further explanation of the rule of construction.

122. See *Johnson v. McIntosh*, 21 U.S. (8 Wheat.) 543 (1823), *Cherokee Nation v. Georgia*, 30 U.S. (5 Pet.) 1 (1831), and *Worcester v. Georgia*, 31 U.S. 515 (1832). These three cases are hereafter referred to as the Trilogy cases. These cases set out the outline for Indian/Federal Law that is still used today, particularly the trust theory and the rules concerning Indian title to real property.

which might excite hostilities was avoided. The first treaty was made with the Delawares, in September, 1778.

The Language of equality in which it is drawn evinces the temper with which the negotiations were undertaken, and the opinion which then prevailed in the United States.<sup>123</sup>

The Court analyzed a Treaty between the United States and the Cherokee.<sup>124</sup> The Cherokee had sided with the British during the Revolution.<sup>125</sup> The Peace Treaty between the Cherokee and the United States illustrated the two facets of United States Indian policy. The Treaty was negotiated between sovereigns, albeit a superior sovereign, which had just beaten the Cherokee's ally. The other as a supplicant, dependent on another for protection:

The meaning of this has already been explained. The Indian nations were, from their situation, necessarily dependent on some foreign potentate for the supply of their essential wants, and for their protection from lawless and injurious intrusions into their country. That power was naturally termed their protector.

. . . They assumed the relation with the United States which had before subsisted with Great Britain.

The second article repeats the important acknowledgment that the Cherokee Nation is under the protection of the United States of America, and of no other sovereign whosoever.<sup>126</sup>

As noted as a consequence of its position as an inferior sovereign, a Tribe is given the benefit of the doubt when treaties to which the Tribe is a party is interpreted and applied:

The language used in treaties with the Indians should never be construed to their prejudice. If words be made use of which are susceptible of a more extended meaning than their plain import, as connected with the tenor of the treaty, they should be used only in the latter sense. . . . How the words of the treaty were understood by this unlettered people, rather than their critical meaning, should form the rule of construction.<sup>127</sup>

Justice Marshall had alluded to this state of affairs in *Johnson v.*

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123. *Worcester, supra* note 122, at 549.

124. *Id.* at 550.

125. *Id.*

126. *Id.* at 555.

127. *Id.* at 582.



*McIntosh*.<sup>128</sup> The Court further elaborated on the thesis in *Cherokee v. Georgia*:

Though the Indians are acknowledged to have an unquestionable, and heretofore, unquestioned right to the lands they occupy, until that right shall be extinguished by a voluntary cession to our government; yet it may well be doubted whether those tribes which reside within the acknowledged boundaries of the United States can with strict accuracy, be *denominated domestic dependent nations*. They occupy a territory to which we assert a title independent of their will, which must take effect in point of possession when their right of possession ceases. Meanwhile they are in a state of pupilage. Their relation to the United States resembles that of a ward to his guardian.<sup>129</sup>

The inconceivable dichotomy of a ward also being sovereign underlies the reserved water doctrine.<sup>130</sup> The United States creates reservations for the tribes thus affording their wards an area within which to exercise their sovereignty.<sup>131</sup> In creating reservations in such areas, the United States has argued and the courts have determined to have enough reserved water set aside as of the date of the creation of the reservation to satisfy the tribe's need for agriculture and/or fishing.<sup>132</sup>

The amount of water reserved was one of the central issues in *Arizona v. California*.<sup>133</sup> The Court decided that the amount of water reserved when the Reservation is created is the amount needed to irrigate those acres of land that could be made productive.<sup>134</sup> The date of priority for state and federal appropriate purposes was the date of the creation of the reservation.<sup>135</sup> Any appropriation perfected before the date of creation of the reservation by state law would presumably retain its priority.<sup>136</sup>

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128. Trilogy cases, *supra* note 122.

129. *Cherokee Nation v. Georgia*, 30 U.S. (5 Pet.) 1, 17 (1831) (emphasis added).

130. *Worcester*, 31 U.S. at 582.

131. See *Johnson*, 21 U.S. (6 Pet.) at 588 in particular. All of the cases in the Trilogy, however, discuss Treaties with Tribes, the title possessed by the tribes and the fact that the various States have engaged in negotiations with the Indians in the same manner as the governments of Great Britain and the United States carried on relations with each other.

132. *Winters*, 207 U.S. at 577. The term reservation is used two ways in Indian law. One refers to the traditional concept of the place set aside for the members of a Tribe to live. The other way the term is used is to refer to reserved water that often is implicit in the creation of the place for the Tribe to live. As *Winters* holds, to interpret that a Reservation has been created upon which the Tribe is to live without water adequate for the need of the Tribe would be ridiculous. *Id.*

133. *Arizona v. California*, 373 U.S. 546 (1963).

134. *Id.* at 600-01.

135. *Id.* at 600.

136. See *United States v. Adair*, 723 F.2d 1394 (9th Cir. 1983). A note of caution should accompany the observation about the relative priority dates of reserved waters and

One can readily understand what a demand this reserved water doctrine has made in the water scarce west. The states bitterly opposed the doctrine when it first emerged from the *Winans* and *Winters* doctrines.<sup>137</sup> There were 310 federal reservations as of 1993 and within these reservations and land owned by individual Indians there was a total of 56.6 million acres.<sup>138</sup> Most of the federal reservations are located west of the Mississippi. There are, however, a number of Indian reservations east of the Mississippi.<sup>139</sup> Any conversion or modifications of existing water systems would need to take into account these reservations as well. In New York, for example, at least seven reservations exist.<sup>140</sup> It is reasonable to assume that some of them depend on water that is shared by Pennsylvanians.<sup>141</sup>

#### VIII. The Public Trust Doctrine Demand For Minimum Flows

The Public Trust Doctrine provides that submerged lands underlying navigable water must be preserved to ensure that the public can fish, navigate and engage in commerce in or over the waters above the submerged lands.<sup>142</sup> The doctrine is an ancient one, which originated in Roman law, and it became a part of United States because of our ties to England.<sup>143</sup> Over the years, the uses to which the lands and water can

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state appropriators. Authority exists to suggest that uses established by Tribes before the creation of the Reservation might date from time immemorial. *Id.* One should also note that authority exists to prove that Tribes, pursuant to Treaty grants of fishing rights, may also have the right to demand that minimum flows be provided in addition to traditional reserved amounts of water or as part of newly calculated reserved water rights. *See, eg., Colville Confederated Tribes v. Walton*, 752 F.2d 397 (9th Cir. 1985).

137. *See* Harold A. Ranquist, *The Winters Doctrine and How It Grew: Federal Reservation of Rights in the Use of Water*, 1975 B.Y.U. L. REV. 639.

138. GETCHES ET AL., *supra* note 36, at 8-20.

139. *Id.* at 10-11 (referencing a map showing the location of Native American Indian lands and communities).

140. *Id.*

141. *Id.*

142. SLADE ET AL., *PUTTING THE PUBLIC TRUST TO WORK* (Coastal States Organization, Inc. 2d ed., Coastal States Organization, Inc.) (1990).

143. *Id.* at xvii:

Roman civil law eventually influenced the jurisprudence of all Western European nations. Most important to American jurisprudence, Roman civil law was adopted in substance (with modifications) by English common law after the Magna Carta. English common law in turn recognized the special nature of tidelands and waters, giving them protection in the King's name for all English subjects. From England to the American colonies through the American Revolution to the Thirteen Original States, tempered by the United States Constitution and the evolution of modern society, the Public Trust Doctrine survives in the United States as one of the most important and far reaching doctrines of American property law.

be used for has been greatly expanded.<sup>144</sup> Recreation and ecological values have been added to the original trilogy of uses.<sup>145</sup> Some states have recognized that the doctrine demands that aquatic life be maintained in the streams, rivers, and bays, especially in times of drought or high demand.<sup>146</sup> The mechanism that has been used to accomplish this goal has sometimes been the minimum flow or minimum level. This minimum flow or minimum level means that the state must determine the amount of water that must remain in the stream, river, or lake in order to maintain the aquatic life in the stream.

Obviously, the minimum flow or minimum level has an effect on the amount of water available for other water users. If the trust is to be preserved, private water users might lose their allocations of or priorities in water. In one of the most important cases pitting the trust against water users, the California Supreme court defined the state's divided responsibilities.<sup>147</sup>

The dispute centered on Mono Lake, the second largest lake in California.<sup>148</sup> The lake is saline and has no fish.<sup>149</sup> The lake, however, is full of brine shrimp that serve as a food source for any number of waterfowl.<sup>150</sup> The state of California had allowed four of the five fresh

144. *Id.* at 132-34.

145. *Id.* at 133.

146. Many states hold that the Public Trust applies to submerged lands, the water columns above submerged lands and the aquatic life in the columns and on the lands. These states take the position that they own the fish and plants in and under the waters. For example the State of Texas Parks and Wildlife Code provides:

§1.011 Property of the State

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(b) All fish and other aquatic animal life contained in the freshwater rivers, creeks and streams and in lakes or sloughs subject overflow from rivers or other streams within the borders of the state are the property of the people of the state.

(c) All the beds and bottoms of the products of the beds and bottoms of the public rivers, bayous, lagoons, creeks, lakes, bays, and inlets in this state and of that part of the Gulf of Mexico within the jurisdiction of this state are the property of the people of this state.

It stands to reason that the states property must be preserved. Two excellent articles help make the case for minimum flows in Texas. The first is Corwin W. Johnson, *Legal Assurances of Adequate Flows of Fresh Water into Texas bays and Estuaries Maintain Proper Salinity Levels*, 10 HOUSTON L. REV. 598 (1973) and Morrison, *Public Trust Doctrine: Insuring Needs of Texas Bays and Estuaries*, 37 BAYLOR L. REV. 365 (1985).

147. The classic decision on this point is *Nat'l Audubon Soc'y v. Superior Court of Alpine County*, 658 P.2d 709 (Cal. 1983). See also *Cal. Trout, Inc. et al. v. Superior Court of Sacramento County et al.*, 266 Cal. Rptr. 788 (Cal. Ct. App. 1990). *Nat'l Audubon* is discussed more fully below.

148. *Nat'l Audubon*, 658 P.2d at 719.

149. *Id.*

150. *Id.*

water streams that flowed into the lake to be fully appropriated.<sup>151</sup> This allocation caused a rise in the salinity of the lake and threatened the lake's very existence.<sup>152</sup> The surface of the lake had shrunk by one third as of the date of the suit.<sup>153</sup> The court conceded that the scenic beauty and the ecological values of the lake were threatened by the rising salinity level.<sup>154</sup>

The court also recognized that the protection of the environment is an important part of the public trust.<sup>155</sup> It provided:

There is a growing public recognition that one of the most important public uses of the tidelands - a use encompassed within the tidelands trust - is the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space and as environments which provide food and habitat for birds, and marine life which favorably affect the scenery and climate of the area.<sup>156</sup>

The court recognized that these values are not limited to tidelands, but apply to all navigable streams and lakes.<sup>157</sup> As important as the public trust is, the court recognized that the State's water allocation system was also important but both could be accommodated.<sup>158</sup> The court made several conclusions relevant to the interaction of the Trust Doctrine and the water system. The first involved the public Trust Doctrine:

The state as a sovereign retains continuing supervisory control over its navigable waters and the lands beneath those waters. This principle, fundamental to the concept of the public trust, applies to rights in flowing waters as well as to rights in tidelands and lakeshores; it prevents any party from acquiring a vested right to appropriate water in a manner harmful to the interests protected by the public trust.<sup>159</sup>

The court similarly recognized the state's obligation to provide a water use system that could sometime impinge and possibly harm the subjects of the trust, particularly during times of scarcity.<sup>160</sup> The court, however, also determined that appropriators might find their allocations

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151. *Id.*

152. *Id.*

153. *Id.*

154. *Nat'l Audubon*, 658 P.2d at 719.

155. *Id.* at 719.

156. *Id.* (citing *Mars v. Whitney*, 6 Cal. 3d 251 (1971)).

157. *Id.*

158. *Id.* at 727.

159. *Id.*

160. *Nat'l Audubon*, 658 P.2d at 728.

changed as a result of Trust interests.

Once the state has approved an appropriation, the public trust imposes a duty of continuing supervision over the taking and use of the appropriated water. In exercising its sovereign power to allocate water resources in the public interest, the state is not confined by past allocation decisions which may be incorrect in light of current knowledge or inconsistent with current needs.<sup>161</sup>

Other states relate the public trust to minimum flows by statute or common law.<sup>162</sup> In Hawaii, the State's supreme court in an exhaustive opinion examined the public trust's relationship to all the State's water supplies.<sup>163</sup> In determining whether a number of water use permits were appropriately issued, the court observed:

Under the public trust and the Code, permit applicants have the burden of justifying their proposed uses in light of protected public rights in the resource. As stated above, the public trust effectively creates this burden through its inherent presumption in favor of public use, access, and enjoyment. The legislature supplied the specific procedure for potential users to meet this burden in the permitting provisions of the Code, HRS chapter 174C, part IV.<sup>164</sup>

At one time stream flow standards were not available in the Hawaii permit cases, therefore, making the burden tougher on the applicants in order to show that the public interest was not harmed.<sup>165</sup> Another western state has also recognized the need for minimum flows. The Washington Supreme Court considered the appropriateness of the State's water agency's denial of four permits for ground water withdrawals and their effects on in stream flows.<sup>166</sup> The denials were based in part on the effect that such withdrawals would have on minimum in stream flows.<sup>167</sup> While the Court rejected the public trust doctrine as a separate source of consideration in approving or denying the permits, the court made it clear that the public's interest in the water and the preservation of its ecology is part of the agency's mandate:

R.C.W. 90.22.010 and .020, enacted in 1969, Laws of 1969 . . . authorize ecology to establish by rule, minimum in stream flows or levels to protect fish, game, birds, other wildlife resources, and

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161. *Id.*

162. See TEX. WATER CODE ANN. §§ 11.147 and 11.148 that statutorily protect instream flows and salinity in bays and estuaries; see also *Cal. Trout*, 266 Cal. Rptr. 788.

163. *In re Water Use Applications*, 9 P.3d 409 (Haw. 2000).

164. *Id.* at 472.

165. *Id.* at 473.

166. *Postema v. Pollution Control Hearings Bd.*, 11 P.3d. 726 (Wash. 2000).

167. *Id.* at 740-41.

recreational and aesthetic values. Then, in 1971, as part of the Water Resources Act, establishment of base flows in rivers and streams was mandated by R.C.W. 90.54.020(3)(a), which provides in part: "The quality of the natural environment shall be protected and where possible, enhanced as follows: . . . Perennial rivers and streams of the state shall be retained with base flows necessary to provide for preservation of wildlife, fish, scenic, aesthetic, and other environmental values and navigational values." R.C.W. 90.54.040 authorizes Ecology to establish by rule a comprehensive state water resources program for making future water allocations and use decisions. Pursuant to this authorization, Ecology adopted rules establishing the WRIs and minimum flow at issue in these cases.<sup>168</sup>

A recent case, *In Re Missouri River*, decided by the Montana Supreme Court is of some note.<sup>169</sup> Before this case was decided, the Montana Supreme Court had held that for an appropriation to be perfected, there must exist a diversion. In the *In Re Missouri River* decision, the court over-ruled its prior case law.<sup>170</sup> The Montana Department of Fish Wildlife and Parks had filed five claims for diversions on the Missouri for fish, wildlife and recreation.<sup>171</sup> The Chief Water judge had denied the diversions from which the Department appealed.<sup>172</sup> The Supreme Court reversed the Water Judge by overruling its prior decision in *Bean Lake v. Montana*.<sup>173</sup> The Court apparently had been convinced that the real essence of a water right in an appropriation system is beneficial use, not a physical relocation of the water away from the stream.<sup>174</sup> While the case is not per se based on the public trust, it is easy to conclude that the trust is what helps make the use of the water beneficial. In fact, the majority, in responding to the dissent, reminds the dissenters that the state had long recognized and relied upon the trust:

. . . Relying on this constitutional provision and on the public trust doctrine dating back to statehood, the Court concluded that navigability for purposes of determining public 'use' rights is determined by the capacity of use of the water for recreational purposes.

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168. *Id.* at 735.

169. *In the Matter of the Adjudication of the Existing Rights to the Use of All the Water, Both Surface and Underground Within the Missouri River Drainage Area, Including All Tributaries of the Missouri River in Broadwater, Cascade, Jefferson and Lewis and Clark Counties, Montana*, 55 P.3d 396 (2002) [hereinafter *In re Mo. River*].

170. *Id.* at 345.

171. *Id.* at 329.

172. *Id.*

173. *Id.* at 345.

174. *In re Mo. River*, 55 P.3d 396 at 6.

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The dissent queries "how this 1984 decision interpreting the 1972 Constitution could have established in-stream water rights for prior years." The dissent conveniently ignores the fact that the Court, in *Montana Coalition*, interpreted not only the 1972 Constitution, but also the public trust doctrine which dates back to Montana's statehood.<sup>175</sup>

The most important facet of the decision is that it represents an acknowledgment that even in an appropriation system, the trust works to demand an instream flow. Pennsylvania has a public trust provision in its Constitution. The Provision gives the people of Pennsylvania the right to clean air and water, and guarantees the preservation of the natural resources of the state.<sup>176</sup> The public natural resources are the common property of the people of the state.<sup>177</sup> The Commonwealth Court, in *Payne v. Kassab*,<sup>178</sup> set out the considerations that must be examined by the state in protecting its resources:

We must recognize, as a corollary of such a conclusion, that decision makers will be faced with the constant and difficult task of weighing conflicting environmental and social concerns in arriving at a course of action that will be expedient as well as reflective of the high priority which constitutionally has been placed on the conservation of our natural, scenic, [a]esthetic and historical resources. Judicial review of the endless decisions that will result from such a balancing of environmental and social concerns must be realistic and not merely legalistic. The court's role must be to test the decision under review by a threefold standard: (1) Was there compliance with all applicable statutes and regulations relevant to the protection of the Commonwealth's public natural resources?; (2) Does the record demonstrate a reasonable effort to reduce the environmental incursion to a minimum?; and (3) Does the environmental harm which will result from the challenged decision or action so clearly outweigh the benefits to be derived therefrom that to proceed further would be an abuse of discretion?<sup>179</sup>

Presumably, these factors would be applied to a determination of the amount of water actually available under a prior appropriation scheme should Pennsylvania change its system of surface water law.

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175. *Id.* at 340.

176. PA. CONSTIT. art. I, § 27.

177. *Id.*

178. *Payne v. Kassab*, 312 A.2d 86 (Pa. Comm. 1973).

179. *Id.* at 94.

### IX. Implications Of The Public Trust, Endangered Species Act, and The Native American Reserved Water Doctrine

Pennsylvania is in one of its worst droughts ever.<sup>180</sup> As this article is being written, Pennsylvania has instituted what it considers severe water restrictions and the Governor has issued proclamations starting the State's cumbersome but weak process.<sup>181</sup> Pennsylvania's legislative and executive response to droughts is minimalististic. It is certainly symptomatic of a system based on the presumption that there will be plenty of water available in a short time. Individual municipalities are required to develop a plan for the reduction of nonessential water use in anticipation of a drought.<sup>182</sup>

Once the Governor, by proclamation or executive order, declares a drought emergency, municipalities and public water supply agencies are authorized to create and present their management plans to the Commonwealth Drought Coordinator.<sup>183</sup> The plan must balance the daily demands on the water supply with the requirements that the supply must be preserved.<sup>184</sup> Each public water supply agency or local government is given the responsibility of monitoring their water supply.<sup>185</sup> The plan that is developed must:

- (i) Prohibit nonessential water use, if the restrictions do not conflict with Chapter 119 (relating to prohibition of nonessential water uses in a Commonwealth drought emergency area).
- (ii) Establish equitable water rationing provisions for residential, nonresidential and other water uses together with appropriate implementing procedures.
- (iii) Provide for granting of variances or exemptions to the provisions

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180. *No End to Drought in Sight*, THE SENTINEL, Aug. 17, 2002:

The extreme drought parching the Northeast is already being called one of the worst in years, and it continues to lower groundwater levels, slow waterways and damage crops . . . . About 40 percent of the nation is in a severe drought and the Northeast is especially hard hit, said Mark Svoboda a climatologist with the National Drought Mitigation Center at the University of Nebraska. Usually only about ten percent of the nation is in drought.

181. 32 Pa. Bull. 1035 (Feb. 2002) and 32 Pa. Bull. 4121 (Aug. 2002). The first of the proclamations named twenty-four counties that were suffering from the drought and in which there were water shortages. The later proclamation represents the latest extension of the emergency for another ninety days for fourteen counties. The proclamations are made pursuant to 35 Pa. C.S.A. § 7301.

182. During drought emergency declarations, the Pennsylvania Emergency Management Agency implements proclamations made by the Governor, 35 Pa. C.S.A. § 7313 (11) (West 2002).

183. 4 PA. CODE § 120.

184. *Id.* at § 120.3 (2002).

185. *Id.* at § 120.4 (2002).



of a plan to address extraordinary hardships which may exist as a result of a plan.<sup>186</sup>

Once the plan has been approved and implemented, the public water supply agency or the local governing body has the responsibility of enforcing their plans.<sup>187</sup> A person who violates a provision of a plan, is to be punished by a fine not exceeding \$200 or imprisonment not exceeding thirty days or both.<sup>188</sup> Subsequent violations carry with them a fine of \$500 or imprisonment not exceeding ninety days or both.<sup>189</sup>

The description of the plan demonstrates its major weakness. Implementation and enforcement is fractionalized. There are as many plans as there are public water suppliers and local governments, which have to plan and enforce. Little or no participation by the State exists.

In the western states, there is generally one water agency that is responsible for managing private and public water use. The prior appropriation system is regulated by the agency and priorities are granted by it as rights are perfected. Likewise, during times of water shortage, the state enforces the call on the river. Junior appropriators have their water shut off by the state. While the western states have a system of appropriation based on priority in time, a state, like Pennsylvania, starting anew could base its system on both time and type of use. The present riparian system has at its base a concept of reasonable use, which prioritizes certain uses such as domestic uses over recreational uses.

If Pennsylvania or other Eastern states adopted a permit system, they could borrow the best of both Western and Eastern states that adopted a permit system and could avoid the pitfalls that have created uncertainty regarding the adequacies of supply. While it would not be easy, states in the East could make estimates concerning the unmet demands that could be generated by the Endangered Species Act,<sup>190</sup> the Indian Reserved Water Doctrine<sup>191</sup> and the Public Trust Doctrine.<sup>192</sup> By quantifying these amounts before the permit system is instituted, the disruption experienced in cases such as *Kandra*<sup>193</sup> would be avoided.

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186. *Id.* at § 120.5 (2002).

187. *Id.* at § 120.7 (2002).

188. *Id.* at § 120.12 (2002); *see also* 35 Pa. C.S.A. § 7707 (West 2002).

189. 4 PA. CODE § 120.12; *see also* 35 Pa. C.S.A. § 7707.

190. GOULD ET AL., *supra* note 15, at 279.

191. GOULD ET AL., *supra* note 15, at 284-86; *see also* Robert H. Abrams, *Water Allocation by Comprehensive Permit Systems in the Eastern United States: Considering a Move Away From Orthodox*, 9 VA. ENVTL. L.J. 255 (1990).

192. *Ill. Cent. R.R. Co.*, 146 U.S. 387.

193. *Kandra*, 145 F. Supp. 2d 1192.