

# The North Giveth and the North Taketh Away: Negotiating Delivery Reductions to Mexico through the Colorado River Seven State Agreement for Drought Management – A Potential Conflict?

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## I. INTRODUCTION

Water disputes between the United States and Mexico in the arid West are not recent phenomena.<sup>1</sup> The two nations have skirmished over Colorado River water for at least a century.<sup>2</sup> Despite differing views over how much water to which each nation was entitled, the United States and Mexico agreed to a treaty in 1944 ("1944 Treaty") specifying exactly how much Colorado River water the United States must deliver annually to Mexico.<sup>3</sup> That treaty forms the backbone of U.S.-Mexican relations over the Colorado River.<sup>4</sup> Even before the 1944 Treaty was signed, however, the Colorado River Basin States recognized their duty to deliver some water to Mexico.<sup>5</sup> They manifested that recognition in the Colorado River Compact of 1922 ("Compact").<sup>6</sup>

After dividing the Colorado River Basin into Upper and Lower Basins, the Compact established that each basin was entitled to 7.5 million acre-feet ("maf") of water per year.<sup>7</sup> The Compact further declared that if, in the future, the United States recognizes that Mexico has a right to a certain amount of Colorado River water, such water must first come from any surplus over the aggregate amount allocated to the Upper and Lower Basins.<sup>8</sup> Finally, the Compact specified that if water supplies in the River are insufficient to meet the annual apportionments within the United States and deliver Mexico's entitlement, then the Upper and Lower Basins must share the burden of meeting Mexico's delivery equally.<sup>9</sup> At first glance, this language seems to establish Mexico's delivery as a priority above the annual allocations to the Upper and Lower Basins. However, the Compact did not actually declare that Mexico had any

<sup>1</sup> See generally, NORRIS HUNDLEY, JR., *DIVIDING THE WATERS: A CENTURY OF CONTROVERSY BETWEEN THE UNITED STATES AND MEXICO* 23 (1966).

<sup>2</sup> *Id.*

<sup>3</sup> Treaty between the United States of America and Mexico Respecting Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, U.S.-Mex., art. 10, Feb. 3, 1944, 59 Stat. 1219 [hereinafter 1944 Treaty].

<sup>4</sup> *Id.*

<sup>5</sup> See *infra* text accompanying notes 6-10.

<sup>6</sup> Colorado River Compact, 1922, art. III(c), (authorized in 67 Cong. Ch. 72, August 19, 1921, 42 Stat. 171) [hereinafter Compact], available at <http://www.usbr.gov/lc/region/pao/pdfiles/crcompct.pdf>; see also Letter from Herbert Hoover to Albert W. Hawkes Relative to the Pending Treaty with Mexico Allocating the Waters of the Colorado River and Its Relation to the Colorado River Compact (March 28, 1945) reprinted in S. Doc. No. 79-32 at 2 (1945) [hereinafter Herbert Hoover Letter] (refuting that the Compact "foreshadows" a treaty with Mexico regarding the Colorado River but acknowledging that the Compact commissioners recognized that such a treaty would likely follow).

<sup>7</sup> *Id.* art. III(b) (allocating additional one maf of surplus water to Lower Basin).

<sup>8</sup> *Id.* art. III(c).

<sup>9</sup> *Id.*

right at all.<sup>10</sup> It merely stated that if Mexico has a right to Colorado River water, then the Upper and Lower Basins would share the burden of delivering it equally.<sup>11</sup>

The 1944 Treaty established that Mexico did have a right to Colorado River water: at least 1.5 maf per year.<sup>12</sup> After identifying Mexico's minimum annual Colorado River water right, however, the 1944 Treaty qualified that delivery obligation, stating that in the event of "extraordinary drought... making it difficult for the United States to deliver the guaranteed quantity[,],... the water allocated to Mexico... will be reduced in the same proportion as consumptive uses in the United States are reduced."<sup>13</sup> The parties did not define the specific terms of this provision, such as "extraordinary drought," and "making it difficult to deliver," leaving open for interpretation issues about when such elements have been satisfied such that reductions to Mexico may ensue. Since the treaty was ratified, the United States has never invoked this qualification to deliver less than its treaty obligation.<sup>14</sup> If recent hydrologic trends of below average annual precipitation continue, however, the United States and Mexico may face that possibility.<sup>15</sup>

From 2000 to 2005, the Colorado River basin experienced an unprecedented drought, substantially reducing water storage in the Colorado River system and leaving reservoir levels in the United States at historic lows.<sup>16</sup> For example, the drought reduced storage in Lake Powell, one of the Colorado River's largest storage facilities, to only 33% by April 2005.<sup>17</sup> Such conditions raised the possibility for divisive conflict within the United States between the basin states over how water should be allocated during times of severe drought. Responding to then-Secretary of Interior Gale Norton's admonition, the seven Colorado River basin States agreed on a proposal for how the Colorado River should be managed during droughts.<sup>18</sup> Among its provisions, this seven state proposal

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<sup>10</sup> *Id.*

<sup>11</sup> *Id.*

<sup>12</sup> 1944 Treaty, *supra* note 3, art. 10.

<sup>13</sup> *Id.*

<sup>14</sup> While there is no academic literature supporting this point, a brief look through the records and minutes of the International Boundary and Water Commission shows that Article 10 of the 1944 Treaty has never been invoked to deliver shortages to Mexico. See International Boundary & Water Commission, Index of Minutes 180-311, [http://www.ibwc.state.gov/html/body\\_minutes.HTM](http://www.ibwc.state.gov/html/body_minutes.HTM) (last visited Jan. 31, 2007).

<sup>15</sup> See discussion *infra* Parts II, III.

<sup>16</sup> Letter from Don A. Ostler, Director, Upper Colorado River Commission, to The Honorable Gale Norton, Secretary, U.S. Department of Interior (Apr. 20, 2005) (on file with author).

<sup>17</sup> *Id.*

<sup>18</sup> See Letter from the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming Governor's Representatives on Colorado River Operations to the Honorable Gale A. Norton, Secretary, Department of Interior, February 3, 2006, [hereinafter Letter from the Seven States to Secretary Norton] available at <http://www.usbr.gov/lc/region/programs/strategies/>

("Proposal") calls for a reduction in the annual water delivery to Mexico when storage in the Colorado River system is substantially reduced.<sup>19</sup>

The States submitted the Proposal, as well as an agreement implementing it, to the Secretary of Interior for adoption in a Record of Decision for establishing Colorado River operational criteria under drought conditions.<sup>20</sup> The U.S. Bureau of Reclamation ("Reclamation") subsequently adopted the Proposal as one of its four alternatives in a Draft Environmental Impact Statement ("Draft EIS").<sup>21</sup> The Proposal represents a significant step toward collaborative management and avoiding conflict and litigation among the Colorado River Basin States. However, it also raises questions about when the United States may legally and equitably reduce deliveries to Mexico.<sup>22</sup> Despite being heralded as setting the stage for a new era of peace on the river, the provision reducing exports to Mexico in the Proposal has the potential to spark serious contention.<sup>23</sup>

Of course, Reclamation has not yet adopted the Proposal, and it remains only one of four alternatives where there is no preferred alternative to managing the Colorado River during drought conditions.<sup>24</sup> Furthermore, the Proposal, as presented in the Draft EIS does not actually include the provisions for reducing deliveries to Mexico.<sup>25</sup> However, in the Proposal, the states admonished the U.S. State Department to begin negotiating such reductions with Mexico

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scopingreport/Appendices/AppQ.pdf.

<sup>19</sup> Seven Basin States' Preliminary Proposal Regarding Colorado River Interim Operations, § 3(F) [hereinafter Proposal], available at <http://www.usbr.gov/lc/region/g4000/strategies/SevenBasinStatesPreliminaryProposal.pdf>.

<sup>20</sup> See Letter from the Seven States to Secretary Norton, *supra* note 18; see also Draft Agreement available at <http://www.usbr.gov/lc/region/g4000/strategies/BasinStatesDraftAgreement.pdf>.

<sup>21</sup> Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead, 72 Fed. Reg. 9026 (Feb. 28, 2007); see also U.S. Bureau of Reclamation, Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead. Draft Environmental Impact Statement [hereinafter Draft EIS], <http://www.usbr.gov/lc/region/programs/strategies/draftEIS/index.html> (last visited March 21, 2007).

<sup>22</sup> See discussion *infra* Parts II, III.

<sup>23</sup> Joe Baird, *Tentative Pact on Colorado River*, S.L. TRIB., Jan. 7, 2006, at A1.

<sup>24</sup> See Draft EIS, *supra* note 21, at 2.3; This would not be the first time that the Secretary of Interior has adopted an agreement of the seven Colorado River Basin States to fulfill its obligation under NEPA. During the process of adopting the Interim Surplus Guidelines, 66 Fed. Reg. 7772 (Jan. 25, 2001), the seven states negotiated a similar agreement to the one at issue here. That agreement was called the "Basin States Alternative," 65 Fed. Reg. 48,531 (Aug. 8, 2000), and was eventually adopted in slightly modified form as the preferred alternative in the Final Environmental Impact Statement for Interim Shortage Criteria. U.S. Dept. of Interior, Final Environmental Impact Statement, Colorado River Surplus Criteria 2-10 (2000), available at [http://www.usbr.gov/lc/region/g4000/surplus/SURPLUS\\_FEIS.HTML](http://www.usbr.gov/lc/region/g4000/surplus/SURPLUS_FEIS.HTML). However, as noted below, the Interim Surplus Guidelines did not affect Mexico as directly as does the seven-state proposal at issue here. Thus, while it seems likely that the Secretary would adopt the states proposal given the political pressure to do so from the Basin States, it is still very unclear what will happen.

<sup>25</sup> Draft EIS, *supra* note 21, at 2-4.

through the International Boundary and Water Commission pursuant to the 1944 Treaty.<sup>26</sup> It is not yet clear whether such a process is under way, or what will inevitably come of such a negotiation. However, the provision detailing delivery shortages to Mexico in the Proposal might be inconsistent with the provisions in the 1944 Treaty which specify when such delivery shortages are allowed.

This paper analyzes Article 10 of the U.S.-Mexico Treaty and discusses whether the delivery reductions provision of the Proposal sufficiently meets the criteria in Article 10 to justify reducing Mexico's water allocation.<sup>27</sup> Assuming the Proposal meets the Article 10 criteria, this paper then addresses the policy implications of the proposed delivery reductions to Mexico.<sup>28</sup> Part I provides a background on the treaty including an explanation of how the treaty requirements concerning Mexican deliveries correspond with the Compact requirements.<sup>29</sup> Part I then describes Article 10 and discusses its meaning in the context under which it was negotiated.<sup>30</sup> Part II analyzes the Proposal.<sup>31</sup> It compares the Proposal to Article 10's requirements and concludes that the provisions in the Proposal requiring reductions to Mexico may conflict with Article 10's limited exceptions for minimum deliveries to Mexico.<sup>32</sup> Finally, part III analyzes the policy implications of reducing deliveries to Mexico and concludes that such reductions are not desirable for preserving and enhancing the ecological health of the Colorado River Delta or U.S.-Mexican relations.<sup>33</sup>

## II. BACKGROUND: NEGOTIATING A TREATY FOR DIVIDING THE COLORADO RIVER

When the Compact was signed, no formal delivery requirements to Mexico existed.<sup>34</sup> Many officials in the United States still embraced the Harmon doctrine, which argued that the United States bore no legal duty to deliver water to Mexico.<sup>35</sup> Secretary of Commerce Herbert Hoover and others expressed this

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<sup>26</sup> See Letter from the Seven States to Secretary Norton, *supra* note 18; The International Boundary and Water Commission, first established in 1889, was later delegated authority under the 1944 Treaty to settle disputes arising between the two nations over the waters of the Colorado and Rio Grande. 1944 Treaty, *supra* note 3, art. 2.

<sup>27</sup> See discussion *infra* Part II.A.

<sup>28</sup> See discussion *infra* Part III.

<sup>29</sup> See discussion *infra* Part I.

<sup>30</sup> See discussion *infra* Parts I.A.-B.iii.

<sup>31</sup> See discussion *infra* Part II.

<sup>32</sup> *Id.*

<sup>33</sup> See discussion *infra* Part III.

<sup>34</sup> See Compact, *supra* note 6, at art. III(c) (stating that "[i]f, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to the use of any waters of the Colorado River System . . .").

<sup>35</sup> HUNDLEY, *supra* note 1, at 23.

sentiment during Compact deliberations.<sup>36</sup> Mexico pleaded with U.S. government officials to be included in the Compact negotiations.<sup>37</sup> The U.S. government denied Mexico's petition claiming that the Compact would deal only with "domestic matters."<sup>38</sup> Nevertheless, probably due to the notion that the previous 1906 Rio Grande treaty<sup>39</sup> had established a precedent for solving allocation issues on grounds of international comity, the Compact negotiators conceded that Mexico might have a right to some of the Colorado River's water.<sup>40</sup> The Compact declares:

If, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to the use of any waters of the Colorado River System such waters shall be supplied first from the waters which are surplus... and if such surplus shall prove insufficient for this purpose, then, the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin....<sup>41</sup>

Formal recognition of Mexico's 1.5 million acre-feet ("maf") minimum annual delivery was later negotiated in the 1944 treaty.<sup>42</sup> This, however, was no easy bargain. The United States and Mexico carried on negotiations over how to share the waters of the Colorado River and the Rio Grande for twenty years before both countries finally ratified the treaty.<sup>43</sup> Moreover, while the treaty has proven stable enough to avoid major conflicts over the allocations of the Colorado and the Rio Grande, it has been unable to avoid some minor ones. Conflicts over both the quality and quantity of the Colorado and Rio Grande have attracted international attention.<sup>44</sup> The International Boundary and Water Commission, the entity charged with settling disputes over the waters of both rivers subject to each government's approval, has issued more than one hundred minutes addressing or dealing with issues or disputes that have arisen since the treaty was signed.<sup>45</sup>

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<sup>36</sup> *Id.* at 51.

<sup>37</sup> *Id.* at 54-55.

<sup>38</sup> *Id.*

<sup>39</sup> Convention with Mexico Providing for the Equitable Distribution of the Waters of the Rio Grande for Irrigation Purposes, U.S.-Mex., May 21, 1906, 34 Stat. 2953, (effective Jan. 16, 1907) [hereinafter 1906 Treaty].

<sup>40</sup> HUNDLEY, *supra* note 1, at 51.

<sup>41</sup> Compact, *supra* note 6, art. III(c).

<sup>42</sup> 1944 Treaty, *supra* note 3, art. 10(a).

<sup>43</sup> See HUNDLEY, *supra* note 1, at 97-136 (providing extensive details of negotiations between U.S. and Mexico over treaty).

<sup>44</sup> *Id.* at 175.

<sup>45</sup> International Boundary and Water Commission, Index of Minutes, [http://www.ibwc.state.gov/html/body\\_minutes.HTM](http://www.ibwc.state.gov/html/body_minutes.HTM) (last visited on Jan. 31, 2007).

A. *Background of the U.S.-Mexico Water Treaty*

The United States and Mexico carried on negotiations over the division and allocation of the waters of the Rio Grande and Colorado Rivers very early in the twentieth century, though apparently little documentation of such intercourse still exists.<sup>46</sup> In 1924, two years after the states signed The Compact, Congress passed an act authorizing the President to designate three special commissioners to work with representatives of Mexico on a study regarding the equitable use of water from the Rio Grande below Fort Quitman, Texas.<sup>47</sup> Mexico, however, hoping to strike a better bargain, was not willing to negotiate the Rio Grande without also solving the problems of the Colorado River.<sup>48</sup> Congress responded in 1927 by extending the scope of the investigation to include the Colorado and Tijuana Rivers.<sup>49</sup> Each Nation appointed three commissioners to the International Water Commission.<sup>50</sup> In 1929, the American delegation, chaired by Dr. Elwood Mead, formally offered Mexico 750,000 acre-feet of Colorado River water per year plus compensation for some losses in the main canal.<sup>51</sup> In total, some estimate that the offer would have amounted to about one maf per year,<sup>52</sup> a mere 5% of the river's then estimated average annual flow.<sup>53</sup> Mexico flatly rejected this offer, instead demanding 3.6 maf per year, approximately 20% of the river's average annual flow.<sup>54</sup> In response to the failure of these negotiations, Congress abolished the American section of the International Water Commission with the Economy Act of 1932.<sup>55</sup>

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<sup>46</sup> See *Water Treaty With Mexico: Hearings on the Treaty With Mexico Relating to the Utilization of the Waters of Certain Rivers Before the S. Comm. on Foreign Relations, 79th Cong. 81, 1801* (1st Sess. 1945) [hereinafter *Treaty Hearings*].

<sup>47</sup> *Id.* at 1801.

<sup>48</sup> *Id.*; Charles J. Meyers & Richard L. Noble, *The Colorado River: The Treaty With Mexico*, 19 *STAN. L. REV.* 367, 368 (1967).

<sup>49</sup> *Treaty Hearings, supra* note 46, at 1801.

<sup>50</sup> *Id.* The Act of May 13, 1924, ch. 153, 43 Stat. 1118 (1924), authorized the President to name these commissioners. See also The International Boundary & Water Commission, *The International Boundary and Water Commission, Its Mission, Organization and Procedures for Solution of Boundary and Water Problems*, [http://www.ibwc.state.gov/html/about\\_us.html](http://www.ibwc.state.gov/html/about_us.html) (last visited Jan. 31, 2007).

<sup>51</sup> *Treaty Hearings, supra* note 46, at 1801; Meyers & Noble, *supra* note 48, at 368.

<sup>52</sup> *Treaty Hearings, supra* note 46, at 1801.

<sup>53</sup> There is discrepancy in what the estimated annual flow of the Colorado River was at the time of the Compact negotiations. Most scholars believe that the estimated flow at the time of the Compact was 18,000,000 acre-feet per year. However, some evidence exists suggesting many believed it was closer to 20,000,000 acre-feet per year or greater. At the time of the 1944 Treaty negotiations, most agreed that the average annual flow was approximately 18,000,000 acre-feet per year. See A Report Given to the Mexican Senate By Engineer Adolfo Orive Alba, Executive Chairman of the National Irrigation Commission of Mexico, translated and reprinted in S.Docs. No. 79-98 at 10952 (1945).

<sup>54</sup> *Treaty Hearings, supra* note 46, at 1801.

<sup>55</sup> *Id.*

Meanwhile, irrigation developments proceeded in both countries.<sup>56</sup> In light of Mexico's rapid expansion, many states began to feel that some agreement limiting Mexico's use of Colorado River water was necessary to make developments in the United States more secure.<sup>57</sup> Thus, Congress attempted again to pursue negotiations with Mexico on a possible treaty.<sup>58</sup> In 1935, Congress extended the powers and duties of the American section of the International Boundary Commission.<sup>59</sup> Congress authorized the President to designate the American Commissioner and other agencies to cooperate with Mexico in a study regarding equitable uses of the Colorado, Rio Grande and Tijuana River designed to be the basis for negotiating a treaty.<sup>60</sup> Though not much happened in the few years following this expansion of the International Boundary Commission's duties, by 1939, informal negotiations between the U.S. State Department and Mexican Ambassadors were well under way.<sup>61</sup> These negotiations carried on for at least three years<sup>62</sup> but were complicated by other disputes between the two nations.<sup>63</sup> For example, tensions rose when American investors filed a complaint for adequate compensation when the Mexican Government confiscated their oil properties.<sup>64</sup> These additional problems aside, the Mexican government was driving a hard bargain and progress toward an agreeable solution of dividing the Colorado was slow.<sup>65</sup>

The negotiation difficulties were further complicated by the American perception that any treaty with Mexico regarding waters of the Colorado River could only be executed within the existing Compact framework.<sup>66</sup> The Colorado River Compact appropriates 7.5 maf annually to each basin and the right to increase consumptive use of an additional one maf to the Lower Basin.<sup>67</sup> Together, this allocation represents sixteen million acre-feet per year.<sup>68</sup> The consensus among engineers at the time of the treaty negotiations, despite some differing accounts, was that the average annual Colorado River runoff was

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<sup>56</sup> *Id.* at 76-79, 82.

<sup>57</sup> *Id.* at 83 (L. M. Lawson, American Commissioner for the International Boundary Commission, testifying that without limiting Mexico's use to 1.5 million acre-feet as designed in the treaty, Mexico might continue to develop and increase irrigated acreage thereby acquiring rights by prior use).

<sup>58</sup> Treaty Hearings, *supra* note 46, at 1801.

<sup>59</sup> *Id.*

<sup>60</sup> *Id.*

<sup>61</sup> Meyers & Noble, *supra* note 48, at 369-80.

<sup>62</sup> *Id.* (providing details of correspondence between State Department and Ambassador Najera).

<sup>63</sup> *Id.* at 372.

<sup>64</sup> *Id.*

<sup>65</sup> *Id.* at 369-80.

<sup>66</sup> See *infra* text accompanying notes 67-71.

<sup>67</sup> Compact, *supra* note 6, art. III (a)-(b).

<sup>68</sup> *Id.*



closer to 18,000,000 acre-feet per year.<sup>69</sup> This left only 2,000,000 acre-feet of unappropriated water.<sup>70</sup> Thus, the United States' position in the treaty negotiations was that any delivery to Mexico had to come from that 2,000,000 acre-feet surplus and could not exceed that amount.<sup>71</sup>

By 1943, with the aid of several entities representing American interests, including representatives from each of the basin states as well as the power industry, a formula was approved as the basis for negotiations that eventually established deliveries to Mexico on the order of 1.5 maf per year.<sup>72</sup> This formula, (the "Santa Fe Formula"<sup>73</sup>) was used as the basis for formal negotiation of what eventually became the treaty, although it was not ultimately adopted.<sup>74</sup> The treaty, signed in Washington D.C. on February 3, 1944, recognized an annual minimum delivery requirement of 1.5 maf.<sup>75</sup> However, this delivery requirement contained a very important qualification, embodied in Article 10 of the Treaty.

### *B. Requirements of Article 10*

Article 10 of the 1944 Treaty established the 1.5 maf minimum delivery requirements described above.<sup>76</sup> It also provides a qualification to the minimum deliver requirements.<sup>77</sup> The article provides:

In the event of extraordinary drought or serious accident to the irrigation system in the United States, thereby making it difficult for the United States to deliver the guaranteed quantity of [1.5 maf] (1,850,234,000 cubic meters) a year, the water allotted to Mexico under subparagraph (a) of this Article will be reduced in the same proportion as consumptive uses in the United States are reduced.<sup>78</sup>

Recalling that, under the Compact, Mexico's delivery must be satisfied even when the Upper and Lower Basins are required to curtail use, one may initially wonder which provision governs: the Compact or the Treaty. As noted above,

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<sup>69</sup> Treaty Hearings, *supra* note 46, at 1802. Some, including then Secretary of Interior Hoover, believed that, beyond the 16 million acre-feet allocated by the Compact, there existed an unappropriated Colorado River surplus of nearly 5 million acre feet per year. *Id.* See also, Herbert Hoover Letter, *supra* note 6, at 1 (noting that the 16 maf allocations specified under the Compact, were within "safe limits" of the river's average annual flow.

<sup>70</sup> Treaty Hearings, *supra* note 46, at 1802.

<sup>71</sup> *Id.*

<sup>72</sup> *Id.* at 1803.

<sup>73</sup> *Id.* at 1802-03.

<sup>74</sup> Meyers & Noble, *supra* note 48, at 383-86.

<sup>75</sup> 1944 Treaty, *supra* note 3, at art. 10; Treaty Hearings, *supra* note 46, at 1803.

<sup>76</sup> 1944 Treaty, *supra* note 3, art. 10(a).

<sup>77</sup> *Id.*

<sup>78</sup> *Id.*

however, the Compact does not actually specify that Mexico has any right to Colorado River Water.<sup>79</sup> It states only that if the United States later recognizes that Mexico has any right, then the Upper and Lower Basins will share the burden of delivering such a right during any time of deficiency.<sup>80</sup> Yet, the Compact defines neither the right, nor the conditions of deficiency – nor could it have, given that such a right was not negotiated for another twenty years. Thus, interpreting the Compact to mean that the United States has an unqualified delivery obligation to Mexico is dubious.

Even if the Compact could be interpreted in such a way, there is other evidence that the 1944 Treaty trumps the Compact with regard to Mexican deliveries. The Supreme Court has ruled that congressional consent transforms an interstate compact into a law of the United States.<sup>81</sup> Moreover, in addressing conflicts between treaties and federal laws, the Court held that when a treaty and a statute “relate to the same subject, the courts will always endeavor to construe them so as to give effect to both, if that can be done without violating the language of either; but if the two are inconsistent, the one last in date will control the other...”<sup>82</sup> Since the Treaty followed the Compact, its provisions relating to the United States delivery burden to Mexico trump the Compact provisions.

Thus, Article 10 of the Treaty qualifies the United States’ delivery obligation to Mexico. However, the precise meaning of this qualification is unknown.<sup>83</sup> Indeed, Herbert Hoover, former President of the United States and Chairman of the Colorado River Commission, which negotiated the Compact, said of this delivery qualification: “The so-called ‘escape clause’ entitling the United States to diminish deliveries only if he own consumptive use is curtailed by extraordinary drought is so uncertain in operation as to invite acrimonious dispute.”<sup>84</sup> Nevertheless, it is helpful to think of this qualification as comprising three elements: 1) that there exists an “extraordinary drought,” 2) which makes it “difficult” to deliver Mexico’s share, and 3) that any reductions to Mexico must occur in proportion to the reduction in “consumptive uses in the United States.”<sup>85</sup>

A central difficulty in understanding the meaning of the Article 10 provision is that terms like “extraordinary drought” are not defined in the treaty.<sup>86</sup>

<sup>79</sup> See *supra* text accompanying notes 34-45.

<sup>80</sup> Compact, *supra* note 6, art. III(c).

<sup>81</sup> *Cuyler v. Adams*, 449 U.S. 433, 438 (1981).

<sup>82</sup> *Whitney v. Robertson*, 124 U.S. 190, 194 (1888).

<sup>83</sup> See *Meyers & Noble*, *supra* note 48, at 411-15 (discussing meaning of provision).

<sup>84</sup> See *Herbert Hoover Letter*, *supra* note 6, at 3.

<sup>85</sup> See *Meyers & Noble*, *supra* note 48, at 411-15 (discussing these three conditions).

<sup>86</sup> Treaty Hearings, *supra* note 46, at 92 (testimony of Frank B Clayton, Counsel, American Section, International Boundary Commission); *id.* at 1085 (testimony of Royce J. Tipton, Consulting Engineer).

Moreover, no extensive dialogue concerning this provision occurred during negotiations.<sup>87</sup> The provision was apparently included because the 1906 treaty with Mexico,<sup>88</sup> which concerned equitable distribution of the waters of the Rio Grande, contained a similar provision.<sup>89</sup> However, as Charles Meyers and Richard Noble have pointed out:

Article 10 of the 1944 treaty differs from the 1906 provision in two respects: (1) in the 1944 treaty, “deliveries” are to be reduced after reductions are made in “consumptive uses,” whereas under the earlier treaty “a reduction of water delivered [to Mexico is made] against water delivered [in the United States]”; and (2) the earlier treaty provided for reduction in deliveries to Mexico when deliveries from a limited reservoir system were reduced in the United States, whereas the 1944 agreement apparently provides for reductions in Mexican deliveries when there is a reduction in consumptive use in the Colorado River system.<sup>90</sup>

These differences are important because the Proposal structures delivery shortages to Mexico much more like the 1906 treaty governing the Rio Grande than what is prescribed in the 1944 treaty governing the Colorado.<sup>91</sup> First, however, it is important to explore the meaning of each of the three elements of the provision.

### 1. Extraordinary Drought

There is no definition of “extraordinary drought” in Article 10 of the 1944 Treaty.<sup>92</sup> Treaty negotiators had little reason to discuss the term since it was previously used in the 1906 treaty with apparently no resulting conflicts.<sup>93</sup> However, treaty opponents were not satisfied with that history.<sup>94</sup> During the ratification hearings before the Senate, Senator Sheridan Downey of California warned that the term “extraordinary drought” was a “very uncertain and ambiguous expression without any clarity or precision of meaning.”<sup>95</sup> The

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<sup>87</sup> Treaty Hearings, *supra* note 46, at 92 (testimony of Frank B Clayton, Counsel, American Section, International Boundary Commission); *id.* at 1085 (testimony of Royce J. Tipton, Consulting Engineer); *id.* at 106 (testimony of Frank B. Clayton, Counsel, American Section, International Boundary Commission).

<sup>88</sup> 1906 Treaty, *supra* note 39.

<sup>89</sup> *Id.*; see also Treaty Hearings, *supra* note 46, at 92-93 (testimony of Frank B Clayton, Counsel, American Section, International Boundary Commission).

<sup>90</sup> Meyers & Noble, *supra* note 48, at 412 (citations omitted).

<sup>91</sup> See Proposal, *supra* note 19; 1906 Treaty, *supra* note 39.

<sup>92</sup> 1944 Treaty, *supra* note 3.

<sup>93</sup> Treaty Hearings, *supra* note 46, at 92-93 (testimony of Frank B Clayton, Counsel, American Section, International Boundary Commission).

<sup>94</sup> *Id.* at 1155.

<sup>95</sup> *Id.*

Senator questioned the meaning further by quoting a definition of “extraordinary floods” used by the Texas Supreme Court in the case of *Gulf, Colorado & Santa Fe Railway v. Pool*.<sup>96</sup> That definition reads:

The term “extraordinary flood”... means such floods as are of such unusual occurrence as cannot be foreseen by men of ordinary experience and ordinary prudence, and differs from “ordinary floods” which are those the occurrence of which may be reasonably anticipated from the general experience of men residing in the region where the flood happens.<sup>97</sup>

This definition, applied to droughts in the arid region of the Colorado River Basin, would greatly reduce the prospect of invoking Article 10 to reduce deliveries. This is because a drought of almost any magnitude in such an extreme and unpredictable environment might be reasonably foreseeable.<sup>98</sup> Treaty proponents responded that, while not explicitly discussed in the negotiations, an “extraordinary drought” occurs whenever there is a reduction in consumptive uses which reflects a decrease in Upper Basin storage, or simply when the Upper Basin must curtail its use to satisfy its burden to the Lower Basin.<sup>99</sup> Regardless of which of these two interpretations is used, there is no clear standard for determining when deliveries to Mexico may be reduced.<sup>100</sup> Even if the meaning of “extraordinary drought” were established, the said drought must make it demonstrably “difficult” to deliver Mexico’s apportionment.

## 2. Difficult to Deliver

There is nothing in the Treaty that defines when it will be “difficult” for the United States to deliver its Treaty obligation to Mexico. Treaty negotiators apparently dismissed the issue during their discourse.<sup>101</sup> In his testimony before the Senate, R.J. Tipton, Consulting Engineer for the Six States Committee (Arizona, Colorado, New Mexico, Texas, Utah and Wyoming) stated that:

The interpretation of the word “difficult” is in the hands of the United

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<sup>96</sup> *Gulf, Colo. & Santa Fe Ry. v. Pool*, 8 S.W. 535, 537 (1888).

<sup>97</sup> *Id.*

<sup>98</sup> One need only briefly look at a hydrograph of the Colorado River over the last one hundred years to see that annual Colorado River flows fluctuate wildly due to the severe climate extremes of the Colorado River Basin. See National Academy of Sciences, Report in Brief: Colorado River Basin Water Management: Evaluating and Adjusting to Hydroclimatic Variability, [http://dels.nas.edu/dels/rpt\\_briefs/colorado\\_river\\_management\\_final.pdf](http://dels.nas.edu/dels/rpt_briefs/colorado_river_management_final.pdf) (last visited March 21, 2007) (including a Colorado River hydrograph showing annual flow fluctuating between nearly 5 maf, to more than 25 maf during the period from 1906-2006).

<sup>99</sup> Treaty Hearings, *supra* note 46, at 1084 (testimony of R.J. Tipton, Consulting Engineer); *id.* at 1345-46.

<sup>100</sup> Meyers & Noble, *supra* note 48, at 413.

<sup>101</sup> Treaty Hearings, *supra* note 46, at 1228-29 (testimony of R.J. Tipton).

States Commissioner. He can determine that it is difficult if the upstream reservoirs are threatened with depletion by reduction in run-off in the upper basin. It is within his discretion to make the determination of what constitutes extraordinary drought and as to what constitutes difficulty in making deliveries.<sup>102</sup>

When pressed by other Senators, Mr. Tipton admitted that this was an assumption and later abandoned his position, calling the issue "a legal question" of which he, as an engineer, was not capable of answering.<sup>103</sup> It seems that the hard issue, not addressed in the hearings, is whether the provision meant difficult before or after meeting the Upper and Lower Basin allocations. The basin states might argue that the Compact established a pre-existing condition which Treaty negotiators would have taken into account. Mexico might counter that the burden to "share deficiency equally" imposed on the basin states by the Compact specifically envisioned the opposite.<sup>104</sup> Since neither the Treaty nor the Treaty hearings substantiate either position, it is difficult to know how to interpret such a provision.<sup>105</sup> Moreover, even if it is "difficult" for the United States to deliver Mexico's allocation, it may only do so in proportion to the reduction of consumptive uses in the United States.<sup>106</sup>

### 3. Consumptive Uses in the United States

The third element under Article 10 that must be met in order to reduce deliveries to Mexico is that reductions must be proportional to the reduction in "consumptive uses in the United States."<sup>107</sup> As traditionally defined, "consumptive use" refers to waters consumed by a particular use and thus unavailable for further use.<sup>108</sup> This definition was essentially adopted by the 1944 Treaty which states that, "[i]n general [consumptive use] is measured by the amount of water diverted less the part thereof which returns to the stream."<sup>109</sup> In defining "consumptive uses in the United States," Frank Clayton, counsel for the American Section of the International Boundary Commission, pointed out that while there was no discussion of the matter in negotiations,

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<sup>102</sup> *Id.*

<sup>103</sup> *Id.*

<sup>104</sup> Compact, *supra* note 6, art. III(c).

<sup>105</sup> 1944 Treaty, *supra* note 3; Treaty Hearings, *supra* note 46.

<sup>106</sup> 1944 Treaty, *supra* note 3, art. 10.

<sup>107</sup> *Id.*

<sup>108</sup> JOSEPH L. SAX, ET AL., *LEGAL CONTROL OF WATER RESOURCES: CASES AND MATERIALS* 939 (3rd ed. 2000).

<sup>109</sup> 1944 Treaty, *supra* note 3, art. 1(j). The full definition of "Consumptive Use" in the treaty reads: "Consumptive use" means the use of water by evaporation, plant transpiration or other manner whereby the water is consumed and does not return to its source of supply. In general it is measured by the amount of water diverted less the part thereof which returns to the stream." *Id.*

reduction in consumptive uses need not occur throughout the basin as a prerequisite for reductions to Mexico.<sup>110</sup> It is sufficient that curtailment occur in any portion of the basin to invoke the provision.<sup>111</sup> As compared to the other elements, this one was attacked not for being unclear, but rather for being difficult to administer.<sup>112</sup>

One argument in favor of using consumptive use as a measuring stick for reductions to Mexico was that it is easier than measuring reductions in the thousands of deliveries in the United States.<sup>113</sup> As some have pointed out, however, measuring a reduction in consumptive uses may be no easier than measuring reductions in deliveries since there are equally thousands of consumptive uses.<sup>114</sup> Treaty proponents argued however, that utilizing "consumptive use" as a measuring stick rather than deliveries was preferable.<sup>115</sup> Mr. Tipton explained that in the 1930's a drought in the Upper Rio Grande Basin resulted in a reduction of consumptive uses for several years.<sup>116</sup> However, deliveries below Elephant Butte Reservoir were not curtailed, and, because of the 1906 Treaty, which based allowable delivery reductions to Mexico on delivery reductions in the United States below Elephant Reservoir, the United States could not reduce deliveries to Mexico.<sup>117</sup> He further insisted that had the provision in the 1906 treaty been based on reductions in consumptive uses, the United States could have reduced deliveries to Mexico much sooner.<sup>118</sup>

Mr. Tipton's testimony notwithstanding, it remains uncertain whether the consumptive uses criterion is preferable to the delivery criterion.<sup>119</sup> With regards to the 1930s drought in the Upper Rio Grande, it seems the problem was not that reductions were based on deliveries but rather that reductions were based on deliveries below Elephant Reservoir.<sup>120</sup> Since there was sufficient storage in Elephant Reservoir, no delivery reductions were made below the reservoir and thus no reductions to Mexico. At present, there is over fifty million acre-feet of storage capacity in the Colorado River system within the United States.<sup>121</sup> As in the drought situation of the 1930s, it is unclear how the

<sup>110</sup> Treaty Hearings, *supra* note 46, at 106.

<sup>111</sup> *Id.*

<sup>112</sup> Meyers & Noble, *supra* note 48, at 414; *see also* Treaty Hearings, *supra* note 46, at 1124 (testimony of Senator Downey) (pointing out irrationality of measuring delivery reductions compared to reductions in consumptive use).

<sup>113</sup> Treaty Hearings, *supra* note 46, at 1223-25 (Testimony of R. J. Tipton).

<sup>114</sup> Meyers & Noble, *supra* note 48, at 412.

<sup>115</sup> Treaty Hearings, *supra* note 46, at 1223-24 (Testimony of R. J. Tipton).

<sup>116</sup> *Id.*

<sup>117</sup> *Id.*

<sup>118</sup> *Id.*

<sup>119</sup> Meyers & Noble, *supra* note 48, at 414.

<sup>120</sup> 1906 Treaty, *supra* note 39.

<sup>121</sup> Glen Canyon Adaptive Management Program, *Water Storage and Delivery, History of the*

United States might presently reduce deliveries to Mexico when it could certainly rely on stored water before reducing consumptive uses. The only thing that seems clear is that as long as water users in the United States can have their customary needs satisfied, Mexico may have a call on the river.<sup>122</sup>

### III. ANALYSIS

The Proposal establishes criteria for when shortage deliveries should occur in the Lower Basin and how lakes Powell and Mead should be managed during droughts.<sup>123</sup> The Proposal also calls for reduced deliveries to Mexico in certain circumstances.<sup>124</sup> By comparing the Proposal to the requirements of the 1944 Treaty, this section concludes that the Proposal may not fully comply with the law, and may therefore need to be revised before adopted.

The Proposal came after five years of significant drought lowered storage in the Colorado River to levels not seen since prior to building some of the major dams.<sup>125</sup> Water delivery disputes came to a head when Secretary of Interior Gale Norton proposed reducing the Lower Basin's annual delivery for water year 2005 to mitigate the loss of storage in the Upper Basin.<sup>126</sup> The Upper and Lower Basins clashed over this proposal and, despite the admonition of the Secretary, were unable to agree on how to proceed with water deliveries under such low storage conditions.<sup>127</sup> Shortly after Secretary Norton decided not to reduce the Lower Basin's water year 2005 delivery, she initiated a process for developing Colorado River management strategies under drought conditions and encouraged the states to draft an agreement that could be used during this administrative process.<sup>128</sup> The states submitted their proposal and agreement to the Secretary and asked that it be adopted in the Record of Decision for the

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*Colorado River Storage Project*, <http://www.gcdamp.gov/keyresc/waterSD.html> (last visited Jan. 31, 2007).

<sup>122</sup> Meyers & Noble, *supra* note 48, at 413.

<sup>123</sup> *Id.*

<sup>124</sup> *Id.*

<sup>125</sup> Joe Baird, *Thirsty Lake Powell Will Get a Big Gulp of Runoff; Bone-Dry No More: Heavy Snows and a Wet Spring Will Raise Water Level for the First Time in Five Years*, SALT LAKE TRIB., Mar. 26, 2005, at A1.

<sup>126</sup> See Letter from Gale A. Norton, Secretary, U.S. Department of Interior, to The Honorable Kenny Guinn, Governor, State of Nevada (November 19, 2004) in U.S. Dept of the Interior, Bureau of Reclamation, *Reclamation: Managing Water in the West, Annual Operating Plan for Colorado River Reservoirs 2 (2005)* available at [http://www.usbr.gov/lc/region/g4000/aop05\\_final.pdf](http://www.usbr.gov/lc/region/g4000/aop05_final.pdf).

<sup>127</sup> For a detailed treatment of this conflict, see Brian Poulsen, *Reduce? A Look at the Upper Colorado River Basin's Annual Delivery Obligation to the Lower Basin in Light of Secretary Norton's Mid-year 2005 AOP Decision*, 26 J. LAND RES. & ENVTL. L. 207 (2005).

<sup>128</sup> Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions, 70 Fed. Reg. 34,794 (June 15, 2005).

ongoing NEPA process.<sup>129</sup>

While it is yet unclear whether the Bureau, or more importantly the International Boundary and Waters Commission, will ultimately adopt the Proposal, its possible implications are important.<sup>130</sup> The following section compares the language of the Proposal with the 1944 Treaty criteria for delivery reductions and concludes that the provision for Mexican delivery reductions in the Proposal may be inconsistent with the Treaty criteria for such reductions.

#### A. Meeting Article 10 Requirements in the Proposal

The Proposal sets up a structure for dealing with water shortages and delivery reductions.<sup>131</sup> Section 3(F) of the Proposal, entitled "Shortage Conditions" provides:

Shortages would be implemented in the lower Division States and Mexico under the following conditions and in the following manner:

1. 400,000 acre foot shortage: In years when Lake Mead content is projected on January 1 to be at or below elevation 1075 ft. and at or above 1050 ft. a quantity of 400,000 acre-feet shall not be released or delivered in the Lower Division States and Mexico.

2. 500,000 acre foot shortage: In years when Lake Mead content is projected on January 1 to be at or below elevation 1050 ft. and at or above 1025 ft. a quantity of 500,000 acre-feet shall not be released or delivered in the Lower Division States and Mexico.

3. 600,000 acre foot shortage: In years when Lake Mead content is projected on January 1 to be at or below elevation 1025 ft., a quantity of 600,000 acre-feet shall not be released or delivered in the Lower Division States and Mexico.

...

5. The United States, through the appropriate mechanisms, should implement a shortage pursuant to Article 10 of the 1944 Treaty.... The Total quantity of water that will not be released or delivered to Mexico shall be based on Lower Basin water deliveries during normal water supply conditions. The proportion of the shortage that shall be borne by Mexico will be 17% (1.5 maf / 9 maf x 100% = 17%).<sup>132</sup>

As noted above, in order to satisfy the requirements of Article 10 of the 1944

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<sup>129</sup> Letter from The Seven States to Secretary Norton, *supra* note 18.

<sup>130</sup> See discussion *infra* Part II.A-III.

<sup>131</sup> Proposal, *supra* note 19, § 3(F).

<sup>132</sup> *Id.*



Treaty, there must be: 1) an “extraordinary drought, 2) which makes it “difficult” for the United States to deliver the 1.5 maf, and 3) deliveries to Mexico “will be reduced in the same proportion as consumptive uses in the United States are reduced.”<sup>133</sup> In essence, Article 10 outlines when and how much shortage the United States may impose on Mexico. The first two elements establish when shortages may occur. The third element provides how much the United States may reduce its delivery to Mexico. Examining the Proposal with regard to each of these elements, it is evident that the Proposal may not comport with the requirements of the 1944 Treaty.

First, while the 1944 Treaty furnishes no concrete definition of either “extraordinary drought” or “difficult to deliver,” the plain meaning of these provisions indicates that water delivery reductions are permitted pursuant to Article 10 only under unusual circumstances.<sup>134</sup> The fact that this provision has not been invoked to reduce Mexico’s delivery in the more than sixty years since the 1944 treaty was ratified, lends further support to this proposition.<sup>135</sup> However, one could hardly dispute that a drought capable of reducing storage in Lakes Powell and Mead to the levels stipulated in the Proposal would qualify as an unusual circumstance. In fact, it seems unlikely that anyone, even Mexico, would contest that such conditions qualify as an “extraordinary drought.” Furthermore, since the agreement calls for delivery shortages to both the Lower Basin and Mexico, the United States has a good argument that making their full delivery to Mexico under the described conditions would be “difficult” despite the absence of a concrete definition of the term.<sup>136</sup> Thus, it seems that the Proposal fulfills the first two “when” elements for delivering shortages to Mexico under Article 10 of the 1944 Treaty.

The more problematic part of the Proposal deals with the “how much” criterion. Article 10 states that deliveries to Mexico may only be reduced in proportion to reduction of consumptive uses in the United States.<sup>137</sup> As noted in the Senate Treaty Hearings, using consumptive use as a measurement of how much water may be reduced from Mexico’s annual appropriation may not have been wise.<sup>138</sup> One reason is that it is possible to reduce deliveries without reducing consumptive uses.<sup>139</sup> For example, a party who receives 1000 acre-feet annually may only have a consumptive use of 500 acre-feet. That is, of the 1000

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<sup>133</sup> 1944 Treaty, *supra* note 3, art. 10.

<sup>134</sup> *Id.*

<sup>135</sup> However, since the Treaty was signed, the Upper Basin has not utilized its full apportionment. Now, it is much closer to doing so and there has never been a serious drought while at the same time, the Upper Basin was increasing its uses.

<sup>136</sup> Proposal, *supra* note 19, § 3(F).

<sup>137</sup> 1944 Treaty, *supra* note 3, art. 10.

<sup>138</sup> Meyers & Noble, *supra* note 48, at 414; *see also* Treaty Hearings, *supra* note 46, at 1124.

<sup>139</sup> Treaty Hearings, *supra* note 46, at 1127.

acre-feet applied, half returns to the stream as return flow. If, because of drought, that user's delivery is reduced so that only 700 acre-feet is applied, it is possible, due to soil aridity or the user's increase in efficiency, that only 200 acre-feet returns to the stream and thus that user's consumptive use remains the same.<sup>140</sup> Ed Watson, State engineer for Utah, conceded this fact in the Senate Treaty Hearings.<sup>141</sup> However, Treaty negotiators insisted that, by basing reductions on consumptive use rather than deliveries, the United States could invoke Article 10 much earlier and more often.<sup>142</sup>

The Proposal states that:

The United States, through the appropriate mechanisms, should implement a shortage pursuant to Article 10 of the 1944 Treaty.... The Total quantity of water that will not be released or delivered to Mexico *shall be based on lower Basin water deliveries* during normal water supply conditions. The proportion of the shortage that shall be borne by Mexico will be 17% (1.5 maf / 9 maf x 100% = 17%).<sup>143</sup>

Surprisingly, the Proposal, while invoking Article 10, actually uses deliveries as its reduction criterion rather than consumptive uses.<sup>144</sup> The reductions to Mexico are based on water deliveries to the Lower Basin.<sup>145</sup> The substitution in Article 10 of "consumptive uses" was supposed to alleviate problems with the previously used "delivery" criterion in the 1906 Treaty.<sup>146</sup> However, the only time the United States has proposed to invoke Article 10 to reduce its delivery burden to Mexico, it has used "deliveries" as the reduction criterion.<sup>147</sup> One explanation for using deliveries in this sense is that the Lower Basin currently consumes all of the water delivered to it.<sup>148</sup> Thus one might argue that reducing deliveries to the Lower Basin by 600,000 acre-feet, is the same as reducing consumptive uses by 600,000 acre-feet in the Lower Basin.

Even assuming deliveries and consumptive use in the Lower Basin are the same, the proportionality of reduction in the Proposal is questionable.<sup>149</sup> Article 10 requires that "water allotted to Mexico be reduced in the same proportion as

<sup>140</sup> See *id.* (testimony of Senator Downey) (explaining complications involved in calculating consumptive use).

<sup>141</sup> *Id.* at 852.

<sup>142</sup> *Id.* at 1223-24.

<sup>143</sup> Proposal, *supra* note 19, § 3(F) (emphasis added).

<sup>144</sup> *Id.*

<sup>145</sup> *Id.*

<sup>146</sup> Treaty Hearings, *supra* note 46, at 1223-24.

<sup>147</sup> Proposal, *supra* note 19, § 3(F).

<sup>148</sup> This is because consumption equals the amount diverted less any return flow. While some Lower Basin water is returned to the river, most is not because it is diverted through the Colorado River Aqueduct, the All American Canal, and the Central Arizona Project.

<sup>149</sup> See *infra* text accompanying notes 150-62.

consumptive uses *in the United States* are reduced.”<sup>150</sup> It is unclear what the 1944 Treaty means by “in the United States,” but there are two possible interpretations. First, when there are reductions anywhere in the United States, Mexico’s allotment should be reduced proportional to those same reductions. For example, if the Lower Basin reduces consumptive uses by 10% of their annual apportionment, Mexico should also reduce by the same 10%. The proposed agreement follows this rationale.<sup>151</sup> It bases reductions proportionally to deliveries made to the Lower Basin during normal water years (9,000,000 acre-feet).<sup>152</sup> Since Mexico receives 17% of Lower Basin Deliveries,<sup>153</sup> it would be responsible for 17% of reductions under the Proposal.<sup>154</sup> For example, during years that Lake Mead content is projected to be below 1025 ft.,<sup>155</sup> Mexico’s delivery would be reduced 102,000 acre-feet (17% / 100% x 600,000 maf = 102,000 maf).

An alternative way to interpret “consumptive uses in the United States,” considers reductions in the entire United States as a whole. For example, if the Lower Basin reduces its consumptive uses by 10% but the Upper Basin does not reduce, then the total reduction of consumptive uses in the United States equals 5%. In this case, the United States would only deliver a 5% reduction to Mexico. Applying this logic to the instant facts, if reductions to Mexico were based on overall reductions in consumptive use in the United States, and such a reduction was assumed to be 600,000 acre-feet, then Mexico’s delivery would only be reduced by 54,000 acre-feet.<sup>156</sup> By basing reductions to Mexico on deliveries to the Lower Basin, rather than on the consumptive use within the *entire* United States, Mexico’s reduction is much greater.<sup>157</sup>

<sup>150</sup> 1944 Treaty, *supra* note 3, art. 10 (emphasis added).

<sup>151</sup> Proposal, *supra* note 19, § 3(F).

<sup>152</sup> *Id.*

<sup>153</sup> *Id.* (basing percentage on formula: 1.5 maf / 9 maf x 100% = 17%).

<sup>154</sup> *Id.*

<sup>155</sup> *Id.*

<sup>156</sup> (1.5 maf / 16.5 maf x 100% = 9%; 9% / 100% x 600,000 maf = 54,000 maf).

<sup>157</sup> One might argue that in fact, the Proposal does not base delivery reductions to Mexico solely on delivery reductions to the Lower Basin because of the “share the burden equally” clause in the Compact. That is, the Proposal states that delivery reductions to Mexico are based on delivery reductions in the Lower Basin, assuming that the Compact provisions are fully implemented. If the Lower Basin gets a 10% reduction, then one must assume that the Upper Basin will reduce 10% also and therefore Mexico is justifiably reduced 10%. While both the Upper and Lower Basins would surely insist on this interpretation, the Proposal is not so clear. The Proposal does not specify what reductions are made by the Upper Basin when the Lower Basin explicitly receives a reduction. Furthermore, this does not eliminate the problem with using deliveries as the measuring stick rather than consumptive uses. While the Lower Basin might argue that a reduction in deliveries is the same as a reduction in consumptive uses since it consumes virtually all of its deliveries, the Upper Basin is not so fortunate. Despite that much of Colorado’s water diversions are consumed because they are taken out of the basin, diversions in other parts of the Upper Basin are not. Thus consumptive uses do not equate as nicely as water deliveries in the Upper Basin. Since proportional reductions to

The Treaty is not clear on which interpretation should be used. When Charles Carson, an attorney with the Colorado River Commission of Arizona testified to the Senate Committee during the Treaty Hearings, he and the senators in committee assumed it was the latter of the two interpretations.<sup>158</sup> That is, they assumed that “consumptive uses in the United States” required considering reductions in the United States as a whole.<sup>159</sup> Mr. Carson testified that the drought provision would do little to alleviate any serious shortage in the United States, because any reduction to Mexico would be dwarfed by the reductions required in the United States.<sup>160</sup> He assumed that if deliveries to Mexico were reduced by 10% or 150,000 acre feet, then the United States must reduce 1,650,000 acre-feet (assuming a flow of 18,000,000 acre-feet).<sup>161</sup> While the Treaty is not definitive as to how to interpret “consumptive uses in the United States,” Treaty negotiators appear to have assumed that it would be interpreted as applying to the aggregate of consumptive uses in the United States as a whole.<sup>162</sup>

Thus, the Proposal seems to conflict with the provisions of Article 10. Presumably few would doubt the delivery reduction provision of the Proposal meets the “extraordinary drought” and “difficult to deliver” criteria. However, the Proposal’s terms do not match up with the “consumptive use” provision, by instead using deliveries as a measurement for reductions. The agreement also stipulates that reductions to Mexico will be based on deliveries to the Lower Basin alone rather than on reductions in consumptive use in the *entire* United States – effectively increasing Mexico’s proportional reduction.<sup>163</sup>

#### IV. POLICY IMPLICATIONS

Whether or not the Proposal is consistent with the provisions of the 1944 Treaty for reducing deliveries to Mexico, reducing deliveries has some important policy implications. An exhaustive discussion of such implications is far beyond the scope of this work. However, the following briefly discusses a few. These include, how delivery reductions will impact efforts to revive and maintain the environmental health of the Colorado River and its delta, and how such reductions might impact relations between the two countries. Ultimately,

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Mexico, under the terms of the treaty, are made only on a showing of reductions in consumptive uses, the provision in the Proposal to reduce Mexico’s delivery based on delivery reductions to the Lower Basin does not seem to square with the Treaty even if one assumes the Upper Basin is reducing its deliveries as well.

<sup>158</sup> Treaty Hearings, *supra* note 46, at 274.

<sup>159</sup> *Id.*

<sup>160</sup> *Id.*

<sup>161</sup> *Id.*

<sup>162</sup> *Id.*

<sup>163</sup> See *supra* text accompanying notes 144-62.

for the sake of preserving the ecological integrity of the Colorado River delta or relations between the two countries, the United States should work with Mexico, much like the seven Colorado River Basin States did with one another, to determine how to manage Colorado River deliveries during severe droughts.

#### A. *The Colorado River Delta*

The Colorado River delta is an ecological center of continental importance.<sup>164</sup> It supports a variety of wildlife, including several threatened or endangered species in both the United States and Mexico.<sup>165</sup> The delta also serves as a critical stopover on the Pacific flyway, a migration corridor used by more than seventy-five percent of North American migrating birds.<sup>166</sup> Unfortunately, the development of the Colorado River system over the past century has been devastating to the delta.<sup>167</sup> Since the major storage facilities were built, virtually no water has reached the delta.<sup>168</sup> Without the water and sediment that the Colorado River historically carried, the delta has been reduced from 1.8 million acres, to perhaps only 40,000 acres, devastating fisheries, wildlife, and indigenous Delta communities.<sup>169</sup>

Currently, Mexico uses its entire Colorado River allocation to support the metropolitan areas of Tijuana and Mexicali, and to irrigate more than 530,000 acres of land in the Mexicali Valley.<sup>170</sup> In normal years, virtually no Colorado River water actually reaches the Delta.<sup>171</sup> However, in the last two decades, brief but substantial flows reached the delta as a result of flood releases from overwhelmed storage facilities.<sup>172</sup> The result has been an explosion in vegetation and wildlife, and the Delta now supports more riparian habitat than the entire stretch of the Colorado between the Grand Canyon and the Mexican border.<sup>173</sup> Some of the wetlands adjacent to the delta have also survived on

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<sup>164</sup> Jennifer Pitt, et al., *Two Nations, One River: Managing Ecosystem Conservation in the Colorado River Delta*, 40 NAT. RES. J. 819, 829 (2000).

<sup>165</sup> *Id.* at 829.

<sup>166</sup> *Id.* at 829-30; Robert Jerome Glennon & Peter W. Culp, *The Last Green Lagoon: How and Why the Bush Administration Should Save the Colorado River Delta*, 28 ECOLOGY L.Q. 903, 909 (2002).

<sup>167</sup> Glennon & Culp, *supra* note 166, at 905.

<sup>168</sup> *Id.* at 906.

<sup>169</sup> *Id.*

<sup>170</sup> Douglas A. Hayes, *The All-American Canal Lining Project: A Catalyst for Rational and Comprehensive Groundwater Management on the United States-Mexico Border*, 31 NAT. RESOURCES J. 803, 808 (1991).

<sup>171</sup> Pitt, et al., *supra* note 164, at 829; see also, Edward P. Glenn et al., *Effects of Water Management on the Wetlands of the Colorado River Delta, Mexico*, 10 CONSERVATION BIOLOGY 1175, 1178 (1996).

<sup>172</sup> Glennon & Culp, *supra* note 166, at 907.

<sup>173</sup> *Id.*; see also, Mark K. Briggs & Steve Cornelius, *Opportunities for Ecological Improvement Along the Lower Colorado River and Delta*, 18 WETLANDS 513, 515-16 (1998).

agricultural wastewater, most notably from the highly saline wastewater of the Wellton-Mohawk Irrigation and Drainage District.<sup>174</sup>

Some have argued, however, that the Delta's regenerative capacity is being stretched to its limits, and that long-term restoration of the Delta can only happen with more water.<sup>175</sup> To date, the United States has been unwilling to consider the ecological impacts of its operations on the Mexican portion of the Colorado River.<sup>176</sup> Recognizing water specifically for the Delta is something that neither Nation has conceded.<sup>177</sup> Both private and nonprofit groups, however, have proposed possible solutions to bring more water to the delta and have lobbied both U.S. and Mexican authorities to support such actions.<sup>178</sup> One of the more promising proposals is voluntary market based water buyouts or transfers which could potentially result in net economic benefits to both countries by reducing salinity of delivered water.<sup>179</sup> The Proposal does not bode well for these efforts. Facing even less water supply from the Colorado in the event of an extended drought, Mexican authorities will be even less likely to entertain discussion of flow requirements to the Delta.

If the United States and Mexico continue to ignore these problems, or if Mexico declines to allow for dedicated flows to the Delta because of the proposed reductions, the Delta could be permanently pushed beyond its ecological limits.<sup>180</sup> Furthermore, if the native communities and commercial fisheries that the Colorado River once supported are to survive, steps to bring more water to the Delta are necessary.<sup>181</sup> In order to preserve the ecological health of the Colorado River Delta, the United States must not pursue reductions in deliveries to Mexico under Article 10, without at least beginning a dialogue with Mexico about managing the Delta and reduced Colorado River flows.

### B. U.S.-Mexico Relations

Likewise, unilateral Mexican delivery reductions might also erode U.S.-Mexican relations. The waters of the Colorado River have played a significant role in U.S.-Mexican relations over the past century.<sup>182</sup> Indeed, Colorado River

<sup>174</sup> Glennon & Culp, *supra* note 166, at 907; Briggs & Cornelius, *supra* note 173, at 515.

<sup>175</sup> Glennon & Culp, *supra* note 166, at 909.

<sup>176</sup> See generally *id.* (discussing how Bush Administration should begin recognizing how U.S. management of Colorado River is harming Delta ecosystem).

<sup>177</sup> *Id.*

<sup>178</sup> *Id.* at 952 (describing and analyzing proposals of Sonoran Institute and Michael Clinton Engineering which both include market based water transfers to accomplish delta restoration).

<sup>179</sup> *Id.* at 963-71.

<sup>180</sup> *Id.* at 909-10.

<sup>181</sup> See generally, Pitt, et al., *supra* note 164.

<sup>182</sup> See generally HUNDLEY, *supra* note 1 (chronicling conflicts and negotiations that have taken place between U.S. and Mexico over Colorado and Rio Grande).

water is used to irrigate one of the most productive and prosperous agricultural areas in Mexico.<sup>183</sup> Accordingly, interest in the quantity and quality of Mexican deliveries has reached even the highest officials in both countries.<sup>184</sup> The most notorious dispute between the nations came in the late 1960's. That dispute, over salinity levels in the deliveries to Mexico, left a legacy of hard feelings, particularly in Mexico.<sup>185</sup> More recently, Mexican President Vicente Fox protested the Colorado River Surplus Guidelines,<sup>186</sup> arguing that the guidelines would reduce both the quantity and quality of water reaching Mexico.<sup>187</sup>

The Mexican government can be expected to actively protest any reductions in their annual Colorado River allotment. Moreover, since "Mexico has seen one of its largest rivers, wealthiest agricultural districts, and most important fisheries dried up, or salted up, by United States development upstream,"<sup>188</sup> some have argued that the Treaty was substantively unfair to begin with.<sup>189</sup> Unilateral reductions to Mexico, pursuant to Article 10, may further that sentiment and deteriorate already strained U.S.-Mexican border relations. Again, to preserve good relations with Mexico and avoid conflict, the United States must begin a dialogue with Mexico regarding how to manage Colorado Deliveries during droughts.

### C. Other Implications

The Proposal raises another important implication: there is significantly more water allocated from the Colorado River than is actually in it, even on average years.<sup>190</sup> This is important because the reductions to Mexico under the Proposal

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<sup>183</sup> Joseph F. Friedkin, *The International Problem with Mexico Over the Salinity of the Lower Colorado River*, in *WATER AND THE AMERICAN WEST* 51 (David Getches ed., 1988).

<sup>184</sup> *Id.* at 53 (describing how former Mexican President Echeverria met with former U.S. President Nixon and spoke before joint session of Congress in reaching solution to salinity problem).

<sup>185</sup> Glennon & Culp, *supra* note 166, at 970; *see also* PHILIP L. FRADKIN, *A RIVER NO MORE: THE COLORADO RIVER AND THE WEST* 303-18 (1981).

<sup>186</sup> Colorado River Interior Surplus Guidelines, 66 Fed. Reg. 7772 (Jan. 25, 2001).

<sup>187</sup> *See Mexico Expected to Spend Billions of Dollars to Ensure Adequate Water Supplies For Growing Population*, SOURCEMEX ECON. NEWS & ANALYSIS ON MEX., Mar. 14, 2001, available at 2001 WLNR 4225866.

<sup>188</sup> Glennon & Culp, *supra* note 166, at 970.

<sup>189</sup> *Id.* (arguing that from Mexican perspective, Treaty was negotiated during period of U.S. dominance and relative Mexican weakness).

<sup>190</sup> *Id.* at 916. While there is some controversy over what the Colorado River's long term annual average flow, most agree that the river is currently overallocated. Some have asserted, based on historic tree-ring analysis, that the River's annual average is significantly less than what is currently being withdrawn from the river. *See* CHARLES W. STOCKTON & GORDON C. JACOBY, JR., *LONG-TERM SURFACE-WATER SUPPLY AND STREAM FLOW TRENDS IN THE UPPER COLORADO RIVER BASIN* 38 (1976) (Lake Powell Research Project Bulletin No. 18). This problem is exacerbated by the fact that evaporation from the Colorado's large reservoirs has been estimated to be nearly 1.5 maf annually, or equivalent to Mexico's entire allotment. *See* DALE PONTIUS, SWCA, INC., *COLORADO RIVER BASIN STUDY: REPORT TO THE WESTERN WATER POLICY REVIEW ADVISORY*

all hinge on the amount of storage in the Colorado System.<sup>191</sup> That is, when Lake Mead (and Powell by virtue of the management plan to correlate storage between the two) is reduced to a certain level, under the proposed agreement, Article 10 is presumed to be satisfied and reductions to Mexico follow.<sup>192</sup> However, the logical conclusion of using more water from the Colorado River system than is actually running in the river is that storage in the system will invariably be reduced over time. It is therefore conceivable that, eventually, storage will be reduced to the point that Lake Mead's levels will be low enough to invoke reductions to Mexico perpetually even when there is no "extraordinary drought."

## V. CONCLUSION

The seven Colorado River Basin States' proposed Colorado River management strategy is a commendable effort to cooperatively work toward a solution for managing the Colorado River during times of drought. It also raises serious concerns, though, over when and how much the United States may reduce Mexico's annual allocation under the 1944 Treaty. Specifically, the Proposal may conflict with Article 10's requirements that any reductions in Mexico's annual allotment be made in the same proportion as reductions in consumptive uses in the United States are made. Even if the proposed agreement satisfies the 1944 Treaty's provisions governing reductions to Mexico, it will neither adequately protect the health of the Colorado River Delta nor improve U.S.-Mexican relations without Mexico's input. As in negotiating the Compact, the Basin States failed to invite Mexico to the bargaining table before dividing up the waters of the Colorado. Ultimately, that led to significant distrust over the Colorado River that was not overcome until the two Nations entered into a treaty some twenty years later. To avoid a similar mistake, the States, acting through the federal government must consult Mexico before negotiating Mexican delivery reductions on the Colorado River. Moreover, they would do well to remember that much is at stake in considering whether to reduce deliveries to Mexico, including already strained political relations and the ecological health of one of the most important wetlands in the northern hemisphere. Indeed, though the north giveth, it should not so be so quick to taketh away.

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COMMISSION 10 (1997).

<sup>191</sup> Proposal, *supra* note 19, § 3(F).

<sup>192</sup> *Id.*