

## **The Deschutes Estuary and the Clean Water Act**

The Deschutes River in Washington State flows from its headwaters in the Gifford Pinchot National Forest to its nexus at Budd Inlet of South Puget Sound. In 1951, the mouth of the river was dammed at 5<sup>th</sup> Avenue in Olympia, which created Capitol Lake on the state Capitol Campus. This action altered the connection between the river and sound, changing a brackish estuary to a freshwater reservoir. The impounded river has been a source of great debate and controversy in the local community, which can be generalized by opposing positions of lake management versus estuary restoration. There are many complex facets to this debate that could fill an entire book, and probably will one day. This paper focuses on the Clean Water Act and its implications for the future of the southernmost tip of the Puget Sound.

### **The Clean Water Act & Deschutes Watershed TMDL**

The Clean Water Act (CWA) was established in 1972 after the Ohio Cuyahoga River caught fire due to industrial pollution. This legislation established water quality standards of all surface waters, allowing the United States Environmental Protection Agency (EPA) to create risk-based standards for pollution levels. EPA determines “fishable/swimmable” standards to protect designated uses, which include recreation, water supply, aquatic life, agriculture, industry and navigation (EPA, 1993). If a water body fails to meet standards, a Total Maximum Daily Load (TMDL) study is mandated. The TMDL serves to calculate the maximum amount of a pollutant that a water body can receive and still meet the established water quality standards. The pollutants for the TMDL include fecal coliform, temperature, dissolved oxygen, pH and fine sediment (EPA, “Impaired Waters”).

The CWA put the Deschutes on the radar as a failing watershed, triggering a TMDL technical study. While there are several factors that contribute to poor water quality, dissolved oxygen (DO) has been the primary concern for Capitol Lake and north Budd Inlet. Low levels of DO are dangerous for fish and wildlife that breathe oxygen from the water. Contributors to low DO levels include poor circulation, shallow depth, warm temperature, and algal blooms (Ecology, 2009). DO levels in Capitol

Lake fail the designated water quality standards as a Lake Class water body, designated as such for its detention time and minimal annual storage (Ecology, 2012a, p. xxi). If the estuary was to be restored, it will be reclassified with marine standards, as addressed in estuary scenarios for the TMDL.

The TMDL water quality report in June 2012 identified pollution capacities under both lake management and estuary restoration. It also stated the pollutant load reduction targets to meet water quality standards. The report does not make a recommendation between lake and estuary. It does state, “If the lake were to revert to an estuary, a smaller portion of Budd Inlet would violate standards for DO, and the geographic area that is currently Capitol Lake would meet marine water quality standards for DO under all nutrient loading alternatives“ (Ecology, 2012a, p. xxiv). Ecology is actively working on the TMDL, which will be reviewed by EPA. They do not yet have an estimated completion date because they need to decide whether to divide the TMDL between marine and freshwater or to submit the report as one document. They could potentially submit the freshwater TMDL to be approved by August 2014, which allow for earlier implementation of improvements on the Deschutes River. In regards to the marine studies, Ecology says: “While one phase of the South Puget Sound Dissolved Oxygen (SPSDO) study is done, the sediment work could turn into a two year study” (Ecology, 2013, p. 2).

### **Response from Lake Management Advocates**

Capitol Lake Improvement and Protection Association (CLIPA), a non-profit organization advocating for lake management, refutes the findings of the TMDL. They presented a summary paper to the Alliance for a Healthy South Sound (AHSS) on January 16, 2014. AHSS is the Local Integrating Organization of the Puget Sound Partnership (PSP) state agency, who currently has Deschutes estuary restoration on their Strategic Priority Initiatives for Puget Sound recovery (PSP, 2012, p. ES-9). Dr. David Milne authored the summary paper. He refutes the quality and accuracy of the TMDL study, asserting that the authors “often confuse ‘water quality standards violations’ with ‘water quality problems’” (Milne, 2014, para. 5). He claims that, “In one case – p. 200 -- (sic) the

Report writers themselves have probably mistaken a positive effect of the Lake for a negative effect” (Milne, 2014, para. 6). He does not state the basis for this claim, nor evidence of error. Upon review, there is no obvious inaccuracy. CLIPA has released no other statement to respond to the TMDL. Further explanation is required to justify their claim.

Dr. Milne purports that there is no evidence of water quality problems, and that Capitol Lake itself improves water quality of Budd Inlet by removing excess nitrogen from the river before it enters the sound, comparing the lake to the Lacey Olympia Tumwater Treatment facility. He claims, “This effect has been known (and strangely over-looked) for at least 38 years. In different years, the amount removed varies from about 40% to about 90%+” (Milne, 2014, para. 3). There are no citations or resources listed to verify the history or statistics. It is difficult to believe that these claims hold merit, considering the need for a federally mandated TMDL to comply with the CWA. Milne does not make note of the CWA in his summary paper.

### **Evidence to Restore the Estuary**

In the TMDL water quality study, various modeling methods use several scenarios for point and nonpoint pollution loads, modeled for both lake and estuary conditions. All scenarios for Capitol Lake lead to water quality violations, while fewer violations were observed for the restored estuary (Ecology, 2012a, p. 205). The TMDL Technical Report concluded that, “The combined effects of current nonpoint and point-source nutrient loads exceed the loading capacity of Capitol Lake and Budd Inlet for DO. Load reductions are needed. With Capitol Lake in place, more of Budd Inlet would not meet water quality standards under critical conditions compared with the estuary alternative” (Ecology, 2012, p. 218). At a meeting of the TMDL Advisory Group in November 15, 2012, it was asked: “Can Budd Inlet meet water quality standards with the Capitol Lake dam in with all possible point and nonpoint source reductions within the model domain and outside the model domain?” The answer to the question is “no” (Ecology, 2012b, p. 3). The dam must be removed to comply with the CWA.

The further the TMDL of the Deschutes Watershed progresses, the more obvious it becomes that estuary restoration is the only way forward to comply with the CWA. In a presentation to the Deschutes TMDL Advisory Group on June 27, 2013, Mindy Roberts of the Department of Ecology presented the most recent and improved model results for DO in Capitol Lake and Budd Inlet. The models confirmed previous findings and demonstrate that Capitol Lake is the primary cause of DO violations in Budd Inlet. If all anthropogenic inputs into Budd Inlet were eliminated, but the dam left in place, the water quality would still fail EPA standards (Ecology, 2013, p. 13).

### **Policy Implications**

The Deschutes estuary and 5<sup>th</sup> Avenue Dam are owned by the state of Washington, so it is the state that must choose to restore the estuary. The decision-making process began with the Capitol Lake Adaptive Management Plan committee, which was comprised of representatives from state, local and tribal governments. In a period of 10 years (1999-2009), they researched and reviewed various scenarios, including lake management and estuary restoration. In September 2009, a majority of the committee voted to recommend estuary restoration (DES, 2009, p. 6). Department of Enterprise Services (DES), who currently manages the lake, acknowledges many problems with Capitol Lake, including sub-standard water quality (DES, "Capitol Lake Management"). However, they have not furthered the CLAMP recommendation to affect any executive decision-making on the issue. Currently, they are studying permitting processes to dredge Capitol Lake, which would be required for estuary restoration or lake management. Without an outcome, however, it is unlikely that permits can be obtained, according to an unofficial record of last meeting of the Capitol Campus Design Advisory Committee on December 4, 2013, provided by David Peeler, President of the Deschutes Estuary Restoration Team (Peeler, 2013, p. 2). An official record of the minutes from this meeting and current study results are not yet available from DES.

Another legal liability tied to the CWA is the violation of the Medicine Creek Treaty. As their ancestral land, the Deschutes watershed is a Usual and Accustomed area of the Squaxin

Island Tribe. The treaty reserves the rights of tribes to fish and hunt their traditional grounds. The Treaty Indian Tribes of Western Washington has demanded that EPA enforce the water quality standards of the CWA to protect and enhance salmon habitat, advising “federal oversight and coordination to align environmental and conservation programs to achieve salmon recovery and protect treaty-reserved rights” (Treaty Indian Tribes, 2011, p. 5). They urge Washington to make use of the federal funds for water quality improvement to restore salmon runs (Treaty Indian Tribes, 2011, p. 20). The Squaxin Island Tribe has specifically called for the restoration of the Deschutes estuary (Indian News, 2011). Washington is legally obligated to honor the treaty, the supreme law of the land under the United State Constitution, which guarantee salmon recovery through the restoration of habitat.

### **Recommendations and Conclusion**

From a public policy perspective, in consideration of the Clean Water Act and treaty relations, it is in the best interest of Washington to restore the Deschutes estuary. The watershed is currently out of compliance with federal standards. Until corrective action is taken, it remains an environmental, legal and financial liability for the state of Washington, right at the doorstep of the legislature. The longer it takes to move forward on this inevitable decision, the more it will cost the local, state and federal taxpayers to undo the damage done to the Puget Sound. Washington citizens, environmental litigation groups or the Squaxin Island Tribe could file a lawsuit at any time, which would create additional cost and further strain social tension around the issue. Unless CLIPA is able to produce a quality rebuttal with cited and peer-reviewed scientific research, their response will remain reactionary and unqualified. The best available science, produced through the TMDL report, confirms that estuary restoration is the only way to meet federally mandated water quality standards. Once the estuary is restored, we will have gained immeasurable benefits for cleaner water, natural habitat, restored recreational opportunities, and an economic boost from the restoration economy.

## References

- Indian News. (2011, July 28). *Squaxin Island Tribe Calls for Restoration of the Deschutes River*.  
Hansen, Terry. Retrieved from:  
<http://indiancountrytodaymedianetwork.com/2011/07/28/squaxin-island-tribe-works-toward-restoration-deschutes-river-44981>
- Milne, David. (2014, January 7). *Summary of Analysis of Capitol Lake's Effect on Dissolved Oxygen in Budd Inlet*.
- Peeler, Dave. *Summary of CCDA's Meeting, 1-4*. (2013, December 4). Unofficial record.
- Treaty Tribes of Western Washington. (2011, July 14). *Treaty Rights at Risk: Ongoing Habitat Loss, the Decline of the Salmon Resource, and Recommendations for Change*, 5.
- U.S. Environmental Protection Agency (EPA). (1993, September 15). *Water Quality Standards Handbook – Chapter 2: Designation of Uses (40 CFR 131.10), 2.1*. Retrieved from:  
<http://water.epa.gov/scitech/swguidance/standards/handbook/chapter02.cfm>
- U.S. Environmental Protection Agency (EPA). *Impaired Waters and Total Maximum Daily Loads*.  
Retrieved from: [http://water.epa.gov/scitech/swguidance/standards/about\\_index.cfm](http://water.epa.gov/scitech/swguidance/standards/about_index.cfm)
- Washington State Department of Ecology. (2009, June). *Modeling Dissolved Oxygen in Budd Inlet and Capitol Lake*. Publication No. 09-03-034. Roberts, M., Ahmed, A., and Pelletier, G.  
Poster presentation. Retrieved from:  
<https://fortress.wa.gov/ecy/publications/publications/0903034.pdf>
- Washington State Department of Ecology. (2012a, June). *Deschutes River, Capitol Lake, and Budd Inlet Temperature, Fecal Coliform Bacteria, Dissolved Oxygen, pH, and Fine Sediment Total Maximum Daily Load Technical Report: Water Quality Study Findings*, xix-xxiv, 187-212. Publication No. 12-03-008,. Roberts, M., Ahmed A., Pelletier G., Osterberg, D.  
Retrieved from: <https://fortress.wa.gov/ecy/publications/publications/1203008.pdf>

Washington State Department of Ecology. (2012b, November 15). *Deschutes River, Capitol Lake,*

*and Budd Inlet TMDL Advisory Group Meeting*, 3. Official record. Retrieved from:

<http://www.ecy.wa.gov/programs/wq/tmdl/deschutes/advisorycomm/111512DeschutesAdvMtgNotesFinal.pdf>

Washington State Department of Ecology. (2013, November 21). *Deschutes River, Capitol Lake, and*

*Budd Inlet TMDL Advisory Group Meeting*, 1-2. Official record. Retrieved from:

<http://www.ecy.wa.gov/programs/wq/tmdl/deschutes/advisorycomm/112113DeschutesAdvMtgNotesFinal.pdf>

Washington State Department of Enterprise Services (DES). *Capitol Lake Management*. Retrieved

from: <http://www.des.wa.gov/about/pi/CapitolLake/Pages/CapitolLakeFAQ.asp>

Washington State Department of Enterprise Services (DES). (2009, September 3). *Long-Term*

*Management Recommendation for the Capitol Lake Basin from the Capitol Lake Adaptive*

*Management Plan (CLAMP) Steering Committee*, 6-7. Retrieved from:

<http://www.des.wa.gov/SiteCollectionDocuments/About/CapitolLake/24-SteeringCommitteeRecommendation%28September2009%29.pdf>

Washington State Puget Sound Partnership (PSP). (2012, August 28). *The 2012/2013 Action Agenda for Puget Sound*, ES-9. Retrieved from:

[http://www.psp.wa.gov/downloads/AA2011/083012\\_final/Action%20Agenda%20Book%202\\_Aug%2029%202012.pdf](http://www.psp.wa.gov/downloads/AA2011/083012_final/Action%20Agenda%20Book%202_Aug%2029%202012.pdf)