

*Blue Paper: The future of Van Norden Lake and Wetlands — Do we
destroy or preserve an irreplaceable natural resource of the Donner
Summit Valley?*

INTRODUCTION

Van Norden Lake and its surrounding wetlands constitute a unique natural resource that enriches the biodiversity of the Donner Summit Valley. Referred to as the “Crown Jewel” of the valley, this area is currently administered by the Truckee Donner Land Trust (TDLT). When TDLT acquired Van Norden Lake in 2012 as part of the historic Royal Gorge purchase, it proposed selling Van Norden Lake and its surrounding wetlands to the US Forest Service. However, the dam securing the lake (“Van Norden dam”) is out of compliance with the requirements of the California State Division of Safety of Dams (DSOD), and TDLT initially proposed lowering the spillway of the dam to reduce the volume of the lake to just under 50 acre-ft to comply with DSOD concerns and make it non-jurisdictional for the State. However, in early 2014, the Forest Service threatened not to buy the property unless the dam was drained to 5 acre-ft based on a hydraulic evaluation performed in 2013 by Balance Hydrologics. The Forest Service claimed that the study showed the dam to be a public safety concern. To assuage the demands of the Forest Service, TDLT proposes to lower the Van Norden dam by 5 feet. In spite of previous statements extolling the preservation of the habitats and biodiversity in the valley, TDLT switched its mission of preservation to a rationale of “restoration” at the expense of the two most bio-diverse habitats in the valley.

The purpose of this “Blue Paper” (a response to TDLT’s [white paper](#)) is to examine the reasoning of both the Forest Service and TDLT in making this drastic proposal. The Blue Paper will show that

- 1) The dam poses no added threat to public safety and in fact improves public safety
- 2) Draining Van Norden Lake will destroy an irreplaceable wetlands habitat that contributes to the rich biodiversity of Donner Summit Valley that exists in very few places in the high Sierra.

PUBLIC SAFETY: THE DAM IS SAFE

Lowering the dam is not the best way to ensure public safety in the Summit Valley. In fact, we argue, based on state and federal regulations and data from the [hydraulic evaluation of the dam](#) that the dam is safe. The probability of failure of Van Norden Dam, as with all the dams in the Donner Summit area, is extremely low. The dam was originally constructed to be 24 ft high and hold 5800 acre-ft of water. If the dam is notched 2.2 ft, it will be less than 8 ft high and hold less than 50 acre-ft of water, less than 1% of the water it was originally designed to hold. When the dam is notched the existing 100 ft wide spillway will be rebuilt to current engineering standards. Thus, the dam will act more as a weir. There will be no danger of overtopping, which is the main threat to an embankment dam. Therefore, 50 acre-ft of water (deemed non-jurisdictional by DSOD) can be held by a dam that will be performing at less than 1% of capability it was designed for and, the current dam will not pose a danger to public safety. This is supported by the hydraulic evaluation which determined that there was an extremely low probability of the risk of loss of life to the dam.

A more important concern to public safety is the danger that is posed if the lake and wetlands are removed. Currently the lake and wetlands provide significant flood mitigation for storm surge in early winter as indicated in the hydraulic evaluation. The removal of the lake and wetlands will also lower the water table in the Summit Valley and allow for increased encroachment of the Lodgepole pine forest. A much dryer valley with dense Lodgepole growth will be a tinderbox for wildfire in a drought year like we are currently experiencing. The

positive contributions of the dam, lake and wetlands to the public safety in the valley far outweigh the extremely low risk the dam represents.

THE FOREST SERVICE AND THEIR SUBJECTIVE DEFINITION OF “SIGNIFICANT HAZARD”

The US Forest Service considers the current dam a “significant hazard” and will not buy a property with a dam of this classification. However, the Forest Service is being inconsistent in the application of state and federal regulations and somewhat arbitrary in its definition of “significant hazard”. The Forest Service has declared that a “safe” volume of water behind Van Norden is 5 acre-ft based on the hydraulic analysis. However, **both the [California Department of Safety of Dams \(DSOD\)](#) and the federal Bureau of Reclamation consider a dam under 8-ft high and less than 50 acre-ft to automatically be a “low hazard” dam and safe.** Moreover, the study that they base their claim on clearly **shows an extremely low probability of loss of life.** What the study does show is that the Yuba River does flood periodically and in rare events presents a significant flood hazard threat to the valley. More importantly, the study shows that the presence of a dam provides flood control potential that could improve the safety of the valley in the event of dangerous storms.

It is hard to understand why the Forest service refuses to purchase and accept responsibility for Van Norden Lake and its surrounding wetlands when its own Best Management Practices (BMPs) ([best practices in managing wetlands](#)) excerpted below suggest that it is in everybody’s best interest to do so:

THREE PRIMARY CONSIDERATIONS

1. Consider the relative importance of the wetland in relation to the total property to be managed. Perhaps the wetland should simply be left undisturbed.
2. Protect the environment. Do not alter the hydrology of the wetland by:
 - restricting the inflow or outflow of surface, sub-surface or groundwater,
 - reducing residence time of waters,
 - introducing toxic substances,
 - changing the temperature regime.
3. Protect wildlife habitat to the extent that knowledge permits and to a level consistent with its value to society.

■ **All of the BMP's in this document can be traced back to these three primary considerations.**

We feel this excerpt justifies and in fact mandates the purchase of Van Norden Lake and its wetlands. Currently, wetlands are the most endangered habitat in the world, and governments all over the planet, including the United States, are implementing regulations and projects to preserve them. By not purchasing this area, the Forest Service is ignoring one of its own mandates. True, sensitive wetlands require special attention, but we feel the reward for preserving this biodiverse area justifies its purchase price of 2 million dollars.

WATER RIGHTS

It is true that currently the water rights for the Summit Valley belong to the State of California, after PG&E abandoned them in 1976 when they breached the dam. The current status of the water rights is laid out in a [letter from the Department of Water Resources](#) (DWR) to the TDLT dated April 30, 2014. In order for TDLT to impound the water for Van Norden Lake they must obtain the rights from the State. The letter presents two

options for solving the water rights issue which is paraphrased here (refer to page 4 of the letter for exact wording).

1. File an application for the water rights.
2. Render the dam incapable of storing water

This is not quite the same as TDLT phrases these alternatives

1. Go through an onerous and lengthy legal process of claiming a right to the water. This is a very expensive process and it is doubtful the Land Trust would be successful.
2. Lower the dam so that it stores less than 10 acre-feet.
3. Submit plans to remove the dam entirely. (not even discussed in the letter)

In that same letter DWR specifies a person in their office, Michael Contreras (916-341-5307), to contact concerning water rights issues. Mr. Contreras was contacted by George Lamson in June 2014 and asked specifically about the availability of water rights in the Summit Valley. Mr. Contreras stated that their office had received no inquiries or applications concerning water rights for Van Norden Dam. When asked about the likelihood of obtaining the rights if an application was submitted, he stated that there would be no *a priori* reason that TDLT could not obtain rights for legitimate reasons. A request for information concerning water rights for Van Norden Dam was filed under the California Publics Record Act and no other records were found concerning any water rights contacts at DWR for Van Norden Dam. The simple truth is that there is no record of TDLT inquiring about or applying for water rights. It's hard to understand how they can state that the process was going to be onerous, lengthy or expensive when they never even inquired. Water rights for wetland preservation and wildlife habitat are legitimate criteria for obtaining water rights and are used extensively in California. The 10,000 acres of watershed draining into Summit Valley provide over 50,000 acre-ft of snow melt water that travels down the South Yuba River. The 50-100 acre-ft of water needed to support the lake and wetlands represents a minuscule amount of that water.

HABITAT PRESERVATION: THERE'S NO PLACE LIKE THIS IN THE SIERRAS.

Finally and most importantly, the ecosystem that has developed in the last 38 years behind Van Norden dam has created a wetland habitat that is biodiverse and irreplaceable. This habitat contrasts starkly with habitats associated with most high elevation Sierra lakes, which are deep, well defined tarn depressions containing little wetland habitat. In fact, the alpine wetlands that surround Van Norden Lake are much rarer than montane meadows. **Draining Van Norden Lake by 5 ft will deplete over 95% of the lake and wetland habitat** ([see habitat maps](#)). Although the claim is that this action will restore rare montane meadows, we submit that it is not necessary to do so, as 179 acres of montane meadow already thrive in the Summit Valley. We maintain that draining the lake will not restore anything that isn't already there. In fact, draining the lake will destroy over 150 acres of unique and irreplaceable alpine lake and wetland habitat. Before TDLT proceeds with such a drastic action, it might want to revisit its mission statement, as stated [on its website](#):

To preserve and protect scenic, historic and recreational lands with high natural resource values in the greater Truckee Donner region.

It is hard to understand the claim by TDLT that draining the lake will increase the biodiversity of the Summit Valley. Certainly, montane meadows are a great source of biodiversity, and in general, restoration of montane meadows degraded by livestock grazing and development augments biodiversity. However, such restoration is not necessary for the meadow that abuts Van Norden Lake. This existing montane meadow has recovered naturally over the 50 to 60 years since sheep stopped grazing in the meadow. Over that time period, two

additional habitats, open water lake and wetlands, have matured and now support a myriad of aquatic fauna and flora. Additionally, the wetlands serve as breeding grounds for water fowl, shore birds, terrestrial birds, amphibians, fish, and aquatic mammals. They also function as stop over points for migratory birds like Sand Hill Cranes and Tundra Swans, and as hunting grounds for raptors such as Osprey and Bald Eagles. Hundreds of species depend on the rich nutrients provided by the current configuration of Van Norden Lake and its surrounding wetlands. Draining Van Norden Lake decimates this habitat and severely diminishes the biodiversity of the valley. It in fact results in exactly the opposite of what it purports to achieve as claimed by TDLT.

Example: The Willow Flycatcher, an endangered bird in California, nests in the branches of willows in wetland areas. It requires both wetland willows and open water for its nesting areas (see reference 8). The wetlands adjoining Van Norden Lake provide both a dense population of [Lemmon's Willow](#) and open water and are a prime habitat for the Willow Flycatcher. If however, Van Norden Lake is lowered by 5 ft, the Lemmon's Willow, which has roots only 20 inches deep, will disappear. The open water will also disappear. And so will the Willow Flycatcher.

To summarize, we believe that:

- The current dam does not constitute a “significant hazard” based on state and federal standards and hydraulic analysis and poses no safety concerns for the Forest Service not to purchase Van Norden Lake and its surrounding wetlands. In fact the dam can improve public safety.
- Water rights are available from the state of California and should be applied for under the auspices of the legitimate and commonly used justification of preservation of wetland and wildlife habitat.
- Lowering the dam drains and destroys Van Norden Lake and its wetlands, unique and irreplaceable habitats that enrich the biodiversity and scenic beauty of the Summit Valley.

Please consult the references below so you can make your own informed decision about what is best for Van Norden Lake and the future of the Summit Valley. For more information, please visit our website at [SaveVanNordenLake.org](#).

References:

1. White Paper from Truckee Donner Land Trust - <http://tdlandtrust.org/sites/default/files/VNM%20white%20paper.pdf>
2. Balance Hydrologics Hydraulic Evaluation of Van Norden Dam - <http://onthesummit.net/Docs/BalanceHydroVNDhydraulicevaluation1-20-14.pdf>
3. DSOD Letter on bringing Van Norden Dam into compliance - <http://onthesummit.net/Docs/DSODletterdirectingVanNordenDamfix9-30-11.pdf>
4. DSOD jurisdictional chart - <http://www.water.ca.gov/damsafety/jurischart/index.cfm>
5. Balance Hydrologics bathymetry of Van Norden Lake – <http://onthesummit.net/Docs/BalanceHydrologicbathymetricanalysisofVanNordenLake2013.pdf>
6. National Inventory of Dams Guidelines for Hydrologic Safety of Dams - http://www.fema.gov/media-library-data/20130726-1849-25045-6913/02_hydrosafetydam_ch_2_4.pdf
7. Bureau of Reclamation – Embankments Dams and Geotechnical Engineering Groups - <http://www.usbr.gov/pmts/geotech/>
8. Department of Water Resources letter on Van Norden Lake water rights – <http://onthesummit.net/Docs/SWRlettertoTRUCKEEDONNERLANDTR4-30-14UST.pdf>
9. Birds of the Sierra Nevada, 2013, E.C. Beedy and E.R. Pandolfino, page 207.
10. Summit Valley Habitat scenarios - <http://onthesummit.net/Docs/SummitValley-HabitatChanges6-6-14.pdf>
11. Lemmon's Willow - <http://www.gardenguides.com/taxonomy/lemmons-willow-salix-lemmonii/>
12. U.S. Forest Service Wetlands Best Management Practices - http://www.na.fs.fed.us/spfo/pubs/n_resource/wetlands/wetlands11_access%20systems.htm