



August 10, 2023

Life's better outside.®

Commissioners

Arch "Beaver" Aplin, III
Chairman
Lake Jackson

Dick Scott
Vice-Chairman
Wimberley

James E. Abell
Kilgore

Oliver J. Bell
Cleveland

Paul L. Foster
El Paso

Anna B. Galo
Laredo

Jeffery D. Hildebrand
Houston

Robert L. "Bobby" Patton, Jr.
Fort Worth

Travis B. "Blake" Rowling
Dallas

Lee M. Bass
Chairman-Emeritus
Fort Worth

T. Dan Friedkin
Chairman-Emeritus
Houston

David Yoskowitz, Ph.D.
Executive Director

Ms. Laurie Gharis, Chief Clerk
Office of the Chief Clerk (MC 105)
Texas Commission on Environmental Quality
PO Box 13087
Austin, Texas 78711-3087

Re: TCEQ Water Right Application WRPERM 13524

Dear Ms. Gharis:

Texas Parks and Wildlife Department (TPWD) appreciates the opportunity to provide comment on the water right application for the Waterstone Creek, LLC (WRPERM 13524). TPWD has a strong interest in this application and requests notification of future communications and correspondence. The applicant proposes to construct a dam and impound 12.02 acre-feet of water for recreational purposes in the South Llano River (Segment 1415) in Edwards County.

TPWD is the agency with primary responsibility for protecting the state's fish and wildlife resources (Texas Parks and Wildlife Code Section 12.0011(a)). Furthermore, we are charged with providing information on fish and wildlife resources to any local, state, or federal agency or private organization that make decisions affecting those resources (Texas Parks and Wildlife Code §12.0011(b)(3)). Please be aware that a written response to this comment letter is required by Texas Parks and Wildlife Code Section 12.0011(c)-(d).

The proposed dam and impoundment would have negative impacts to downstream flows affecting fish, freshwater mussels, and recreation on the South Llano River and the Llano River downstream. Special draft permit conditions allowing for impoundment are based on environmental flow standards being met or exceeded at the Llano River at Llano, TX USGS gage (08151500) approximately 114 river miles downstream. At times, streamflows at the Llano River gage could be met from upstream hydrologic sources allowing the impoundment of water within the South Llano River under the permit conditions, even when streamflows in the South Llano River are zero. This outcome is concerning and puts TPWD assets at risk, including those of the 2,750-acre South Llano River State Park, several miles of the South Llano Paddling Trail upstream of Junction, and the Coke Stevenson Scenic Riverway. As the agency with primary responsibility for protecting the state's fish and wildlife resources, we are concerned about possible negative impacts to the health and longevity of these natural resources for the enjoyment of the people of Texas, and the approximately 65,000 annual visitors to the South Llano River State

Park. Additionally, TPWD is concerned with the permanence of the dam considering that the right to impound water in the South Llano River is based on a 10-year Firm Water Contract with the Lower Colorado River Authority. The permit is silent to the maintenance or disposition/removal of the dam should the contract not be renewed, amended, or otherwise in force, and TPWD is concerned that a permanent structure would be authorized to remain in place without the availability of water to impound.

The Llano River basin lies within a gradient of water stress across Texas in an area that is especially vulnerable to changes in water availability (Nielsen-Gammon et al. 2020). As Texas continues to shift towards more arid conditions (Seager et al. 2013), the impoundment and consequent evaporation of water within the South Llano River will have negative impacts to the quality and quantity of downstream aquatic resources and habitat. The proposed dam and impoundment will greatly reduce fish passage, alter instream habitat, and affect downstream flows, negatively impacting freshwater fish and mussel populations. In particular, the state-threatened freshwater mussel, Texas Fatmucket *Lampsilis bracteata*, occurs near the proposed project location and has recently been proposed as Endangered by the U.S. Fish and Wildlife Service (USFWS) with proposed critical habitat occurring just downstream from the proposed dam (USFWS 2021). Reductions in water availability can lead to higher stream temperatures (van Vliet et al. 2013) to which some mussel species are particularly sensitive. Early life stages of Texas Fatmucket are already experiencing critical thermal maximum temperatures at or exceeding lethal temperatures in the Llano River basin (Khan et al. 2019, Goldsmith et al. 2022). Impacts to fish passage and availability of suitable fish spawning habitat will also affect freshwater mussels because freshwater fish serve as hosts for larval mussels and are required for successful recruitment and distribution. Centrarchids, such as sunfish and black bass, are common inhabitants of the South Llano River and serve as obligate hosts for Texas Fatmucket (Johnson et al. 2012, Seagroves et al. 2019). Additionally, the South Llano River is home to two Species of Greatest Conservation Need (SGCN), the Guadalupe bass *Micropterus treculii* and Texas shiner *Notropis amabilis*. The Guadalupe bass is the state freshwater fish of Texas and highly sought by anglers who bring in recreational revenue to the state. As a riverine specialist, the Texas shiner depends on spring-fed ecosystems of the Texas hill country, such as the South Llano River. This species has been extirpated from portions of its native range in Mexico and only persists within the state of Texas.

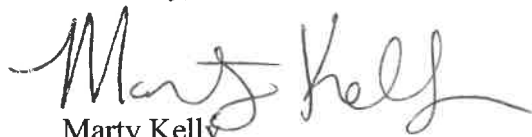
Dams to impound water can be designed with both fish passage and recreational use in mind by utilizing naturalized bypass channels (Silva et al. 2018) which simulate the natural geomorphic heterogeneity of rivers (i.e., riffles, runs, and pools; Ward et al. 1998) to facilitate upstream and downstream movement of fishes and other aquatic organisms. TPWD strongly encourages the consideration of a naturalized bypass channel within the proposed dam structure, if constructed, that incorporates natural riffle-run-pool mesohabitat sequences to facilitate both

recreation and essential fish passage, and mitigate impacts to downstream flows and aquatic organisms. The project as proposed may also require additional local, state, and federal permits. Disturbance within the South Llano River may require a sand and gravel permit from TPWD. Under Parks and Wildlife Code Chapter 86 and 31 Texas Administrative Code Chapter 69, TPWD regulates the disturbance or take of sedimentary material within state-designated navigable streams, state-owned streams, and certain other perennial streams. Information regarding this permit can be obtained at: http://tpwd.texas.gov/faq/landwater/sand_gravel/. The applicant should also contact Inland Fisheries Permits by phone at (512) 389-4655 or at IFPermits@tpwd.texas.gov for information regarding a permit application.

Project activities that involve placement of fill and/or dewatering within a public water may also be subject to coordination with TPWD Kills and Spills Team (KAST). If construction in the stream occurs during times when water is present and dewatering activities or other harmful construction activities are involved (such as trenching, dredging, and placement of structures, temporary fills, or permanent fills), then TPWD recommends relocating potentially-impacted native aquatic resources in conjunction with a Permit to Introduce Fish, Shellfish or Aquatic Plants into Public Waters and an accompanying Aquatic Resource Relocation Plan (ARRP) in order to mitigate damage to public natural resources. The applicant should coordinate with Travis Tidwell, TPWD Region 1 KAST, by email at Travis.Tidwell2@tpwd.texas.gov and by phone (512) 389-4848, on the potential need for an ARRP and an Introduction Permit.

We appreciate the opportunity to offer comment and look forward to working with the Texas Commission on Environmental Quality, the applicant, and other stakeholders on this matter. If you have any questions or need more information, please contact me at email at Marty.Kelly@tpwd.texas.gov or by phone at (512) 389-8214.

Sincerely,

A handwritten signature in black ink that reads "Marty Kelly". The signature is written in a cursive, flowing style.

Marty Kelly
Water Resources Program Coordinator

References:

- Goldsmith, A., J.M. Khan, C.R. Robertson, R. Lopez and C.R. Randklev. 2022. Using upper thermal limits of *Lampsilis bracteata* (Texas fatmucket) from the North Llano and San Saba rivers, Texas to inform water management practices in the Edwards Plateau. *Aquatic Conservation: Marine and Freshwater Ecosystems* 32(1):85-97.
- Johnson, M.S., P.D. Caccavale, C.R. Randklev, and J.R. Gibson. 2012. New and confirmed hosts for the threatened freshwater mussel *Lampsilis bracteata* (Gould, 1855), the Texas Fatmucket (Bivalvia: Unionidae). *The Nautilus* 126(4):148-149.
- Khan, J.M., M. Hart, J. Dudding, C.R. Robertson, R. Lopez and C.R. Randklev. 2019. Evaluating the upper thermal limits of glochidia for selected freshwater mussel species (Bivalvia: Unionidae) in central and east Texas, and the implications for their conservation. *Aquatic Conservation: Marine and Freshwater Ecosystems* 29(8):1202-1215.
- Nielsen-Gammon, J. W., Banner, J. L., Cook, B. I., Tremaine, D. M., Wong, C. I., Mace, R. E., & Kloesel, K. 2020. Unprecedented drought challenges for Texas water resources in a changing climate: what do researchers and stakeholders need to know?. *Earth's Future*, 8(8), e2020EF001552.
- Seager, R., Ting, M., Li, C., Naik, N., Cook, B., Nakamura, J., & Liu, H. 2013. Projections of declining surface-water availability for the southwestern United States. *Nature Climate Change*, 3(5), 482-486.
- Seagroves, L.A., M.C. Barnhart, T. Hardy, and A.N. Schwalb. 2019. Reproductive ecology of the threatened and endemic freshwater mussel *Lampsilis bracteata*. *Aquatic Conservation: Marine and Freshwater Ecosystems* 29(8):1216-1226.
- Silva, Ana., Lucas, M., Castro-Santos, T. Katopodis, C., Baumgartner, L., Theim, J., Aarestrup, K., Popeu, P., O'Brien, G., Braun, D., Burnett, N., Zhu, D., Fjeldstad, H., Forseth, T., Rajaratnam, N., Williams, J., Cooke, S. 2018. The future of fish passage science, engineering, and practice. *Fish and Fisheries*, 19, 340 – 362.
- U.S. Fish and Wildlife Service (USFWS). 2021. Endangered and threatened wildlife and plants; endangered species status with critical habitat for Guadalupe fatmucket, Texas Fatmucket, Guadalupe orb, Texas pimpleback, and false spike, and threatened species status with section 4(d) rule and critical habitat for Texas fawnsfoot. *Federal Register* 86(163):47916-48011.

- van Vliet, M. T., Franssen, W. H., Yearsley, J. R., Ludwig, F., Haddeland, I., Lettenmaier, D. P., & Kabat, P. 2013. Global river discharge and water temperature under climate change. *Global Environmental Change*, 23(2), 450-464.
- Ward, J. 1998. Riverine landscapes: biodiversity patterns, disturbance regimes, and aquatic conservation. *Biological conservation*, 83(3), 269-278.