THE NATURE CONSERVANCY

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Subject: Nevada Supreme Court Commission to Study the Adjudication of Water Law Cases: Consideration of Water for Natural Systems in Water Law Decisions

Dear Chief Justice Hardesty and Commission Members,

The Nature Conservancy (TNC), a leading international conservation organization, has been working in Nevada for almost 40 years with a mission to conserve the lands and waters on which all life depends. No issue is more important to protecting the people, plants and wildlife of Nevada than effectively managing the use and conservation of the State's limited water resources. Water is the lifeblood of Nevada's residents and communities, enabling domestic use, ranching, agriculture, mining, business, industry, hunting, fishing, and recreation. Water is also essential for Nevada's natural environment – all plants, fish, and wildlife depend on freshwater resources.

TNC commends the State and the Nevada Supreme Court for assembling the Commission to Study the Adjudication of Water Law Cases with an aim to improve the education, training, specialization, timeliness, and efficiency of Nevada's district courts in the judicial review of water cases. TNC submits this letter in support of creating consistent training programs to better equip judges as they weigh complex cases and determinations that involve applying Nevada water laws to cases that are often scientifically technical and have high-stakes outcomes for our residents, communities, economies, and the public interest, including natural systems.

While water for natural systems is considered in Nevada water law in several places,[1] judges are often asked to navigate the scientific complexities of the state's surface water and groundwater resources for water rights holders while also protecting environmental water needs for nature. It is especially challenging to manage groundwater because it is difficult to observe groundwater dynamics and flows, and those dynamics are spatially and temporally complex. In arid and semi-arid regions like Nevada, groundwater-dependent ecosystems are especially sensitive to changes in water availability because they are often associated with rare and endemic species (i.e., species found nowhere else in the world). These species may not be very resilient to changes in water availability because their populations are so small

[1] §NRS 533.023 defines wildlife purposes to include "the watering of wildlife and the establishment and maintenance of wetlands, fisheries and other wildlife habitats"
§NRS 533.0243 allows the temporary conversion of agricultural water rights for wildlife purposes for up to 3 years in duration, with the possibility of extension
§NRS 533.027 allows de minimus collection of precipitation to provide water for wildlife
§NRS 533.367 provides waiver conditions for ensuring that wildlife that customarily uses water from a spring or water that has seeped to the surface of the ground has access to that water
§NRS 533.370 states that the State Engineer must consider whether an application for an interbasin transfer of groundwater is environmentally sound in the basin from which the water is exported
§NRS 533.437, 533.4373, 533.4375, and 533.4377 provide provisions for environmental permits which are temporary permits to appropriate water to avoid the pollution or contamination of a water source
Applications (including change applications, temporary permits, and environmental permits) must be made in the public interest (§NRS 533.345; §NRS 533.370, §NRS 533.371, §NRS 533.436, §NRS 533.4375, §NRS 533.500, §NRS 533.504, §NRS 534.320)

and may exist in only a few locations. Lagged responses to historic, ongoing, and new groundwater withdrawals, and changes in recharge rates because of climatic variability can lead to water shortages for ecosystems, but there is a lot of uncertainty associated with such impacts because there are very limited data about groundwater-dependent ecosystems and their responses to groundwater dynamics (Saito et al. 2021). Further, it is the policy of the state to conjunctively manage groundwater and surface water resources (§NRS 533.024), which is scientifically appropriate but adds more complexity and uncertainty, especially when considering how natural systems are part of interconnected surface and groundwater dynamics.

In 2019, TNC released a database and story map of indicators of groundwater-dependent ecosystems in Nevada that revealed that at least 10 percent of the state's land area is associated with groundwater-dependent ecosystems, and the state has over 25,000 documented springs (Saito et al. 2020). The enclosed fact sheet includes data about these wet places that are critical areas for Nevada's plants and wildlife.

With the limited water resources in Nevada, we strongly recommend that training of judges who will hear water cases include specific education about the impacts of water decisions on water-dependent natural systems that covers relationships between groundwater, surface water, ecological systems and wildlife, and human water uses in addition to hydrologic fundamentals. Such trainings could be provided specifically for judges who hear water cases or could be more widely available for attorneys and judges. If the Commission determines that specialized water tribunals are the most efficient and effective way to move forward, it is imperative that these tribunals be able to transparently balance tradeoffs between promoting beneficial use of Nevada's water resources while protecting the environment and public interest (Thorson 2015). Building knowledge related to hydrologic and ecologic fundamentals – whether through specialized judicial trainings, continuing legal education courses available to all Nevada judges and attorneys, or development of special tribunals – would support judges navigating case-by-case scientific complexity and potential tradeoffs involved in water management decisions so that Nevada's water laws are applied in a manner consistent with the State's policies and with protecting this State's most precious natural resource for people and nature into the future.

Please do not hesitate to contact us for further discussion should the Commission need more information on considerations of water for plants and wildlife.

Sincerely,

Mauricia M. M. Baca
State Director

References

Saito L, Byer S, Badik K, McGwire K, Provencher L, Minor B. 2020. Mapping indicators of groundwater dependent ecosystems in Nevada: Important resources for a water-limited state. Journal of the Nevada Water Resources Association, Winter 2020:48-72. Available at http://www.nvwra.org/journal.

Saito L, Christian B, Diffley J, Richter H, Rohde MM, Morrison SA. 2021. Managing groundwater to ensure ecosystem function. Groundwater 59(3): 322-333. Available at https://ngwa.onlinelibrary.wiley.com/doi/10.1111/gwat.13089.

Thorson JE. 2016. A permanent water court proposal for a post-general stream adjudication world. Idaho Law Review 52: 18-51.

Nevada's Groundwater Dependent Ecosystems

Ruby Lake National Wildlife Refuge © Simon Williams/TNC

Did you know that a lot of Nevada's water is located underground, and it is important for people and nature?

Nevada is the nation's driest state, receiving on average less than 10 inches of rainfall each year. However, underground water helps that limited rainfall to sustain the state's 3 million residents and Nevada's natural environment.

Here are more fascinating facts about Nevada's groundwater dependent ecosystems:

- The Silver State has more than 350 endemic species (species found nowhere else), and almost half of them rely on groundwater dependent ecosystems (GDEs) for all or part of their lives.
- Of the 242 wetland-dependent species recorded by the Nevada Natural Heritage Program, *143 occur nowhere else but in Nevada*.
- It may be the driest state, but Nevada has more than 25,000 known springs!
- Most of Nevada's rivers, streams and lakes are groundwater dependent.
- Nevada's rivers and streams support more than 600,000 acres of riparian habitat.
- There are more than 900,000 acres of groundwater-dependent forests in Nevada, with trees such as aspen, mesquite, and riparian Jeffrey pine conifers. That's almost the size of Rhode Island!
- Nevada has more than 800,000 acres of meadows, most of which are groundwater dependent.
- Plant communities that depend on groundwater cover at least 10% of Nevada, creating more than 7 million acres of groundwater dependent habitat, which is about the size of Belgium!
- Of all groundwater dependent plant communities, greasewood shrublands cover the largest area of Nevada (more than 2 million acres).

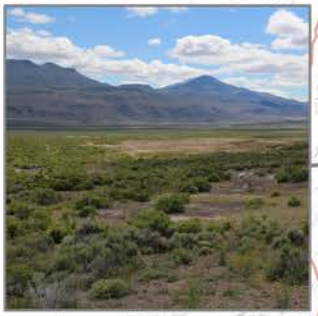
To learn more about Nevada's groundwater resources and GDEs, please visit https://arcg.is/qyj0v.

NEVADA DEPARTMENT OF WILDLIFE

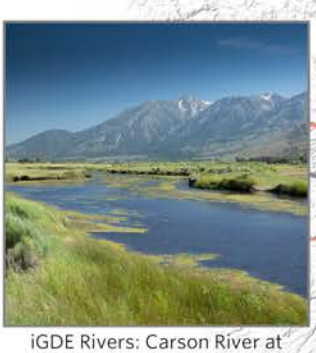
The Nature Conservancy Nevada

Indicators of Groundwater Dependent Ecosystems in Nevada

The Nature Conservancy
Nevada



iGDE Phreatophytes: greasewood in Soldier meadows (C. Fichtel/TNC)



iGDE Rivers: Carson River at River Fork Ranch (S. Williams/TNC)

Winnemucca
Elko
Reno/Sparks
Fallon
Carson City
Ely
Tonopah
Las Vegas

4 iGDES:
6 acres of phreatophytes
40 acres of wetlands
2 springs
0.1 river miles

iGDE Springs: Crystal Spring at Ash Meadows National Wildlife Refuge (S. Williams/TNC)

Number of iGDE Types

0 1 2 3 4 5

*Rivers & Streams, Lakes & Playas, Springs, Wetlands, Phreatophytes**

**Phreatophytes are plants that can tap into groundwater with their roots*

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