STRATEGY 5

Include requirements for maintaining or protecting GDEs in regulations, codes, and laws for land and water management and economic development

Why this strategy is needed

As the Nation's driest state, Nevada has limited water resources. Groundwater in many of Nevada's hydrographic basins is either fully allocated or overallocated and almost all of the State's surface waters are fully appropriated and administered by civil, federal or state decrees (Legislative Counsel Bureau 2017). Nevada's continued growth and industrial development create additional demands and recent appropriations by the U.S. Congress to accelerate the nation's transition to "green energy" puts pressure on renewable energy expansion with associated transmission infrastructure (The Nature Conservancy 2023), and mineral extraction to support the transition. For example, Nevada is estimated to have enough lithium to supply the world at current rates for over 80 years (Parker et al. 2022). On top of that, drought conditions threaten the sustainability of existing water supplies, with all of Nevada's 256 hydrographic areas projected to be more droughty in the future (2022-2060; Saito et al. 2022a). The coordination of land and water use is critical for healthy communities, ecosystems, and future generations of Nevadans.

Examples of actions associated with this strategy

- Enact policies to apply Smart-from-the-Start planning to prioritize areas where development can have minimal or no impacts to GDEs
- Enact policies that require and implement management plans for federal or state listed or sensitive species
- Include protection for vulnerable GDE species in zoning codes and Federal, State or local codes, regulations or other policies

Challenges and considerations

To be effective, policies that maintain or protect GDEs will need to be coordinated across a wide range of federal, state, and local regulations, which would be challenging and there would likely be pushback from developers as well. As with other policy-related strategies, it may be hard to get buy-in from senior water right holders if potential actions might appear to challenge prior appropriation. Education and training about the implementation of new code is also paramount to avoid inconsistent applications, confusion, and inefficiency. In addition, for regulations, codes, and laws that target invasive species treatment and/or require monitoring, care should be taken to ensure consistent funding and sustained efforts over time. Integrating more groundwater components into management and development plans and frameworks, such as Smart-from-the-Start, will be helpful for getting these ideas to a broader audience and including ecosystem values provided by GDEs into management and development decisions. The Sustainable Groundwater Management Act in California and its implementation may be a helpful example for designing solutions for Nevada.

Qualitative assessment of the effectiveness of Strategy 5's ability to reduce the impacts of each GDE stressor and threat.

STRESSOR RISK	EFFECTIVENESS
S1: Groundwater pumping status	*Somewhat Likely*
S2: Declining groundwater level trends	*Somewhat Likely*
S3: Current climate	
S4: Ungulate impacts	*Somewhat Likely*
S5: Non-native species presence	*Somewhat Likely*
S6: Surface diversions	*Somewhat Likely*
S7: Urbanization	
THREAT RISK	**EFFECTIVENESS**
T1: Appropriation status	*Somewhat Likely*
T2: Potential withdrawal proximity to GDEs	*Highly Likely*
T3: Future climate	*Somewhat Likely*
T4: Non-native species spread	*Somewhat Likely*
T5: Future urbanization	*Highly Likely*