

# Effluent Dependent Waters Issues and Approaches

---

Utah Division of Water Quality  
Water Quality Standards Workgroup  
July 21, 2014



# Existing Definitions

- “Ephemeral water” means a surface water that has a channel that is at all times above the water table and flows only in direct response to precipitation.
- “Ephemeral stream” means an entire stream which flows only during or immediately after a rainfall event, and contains no refuge pools capable of sustaining a viable community of aquatic organisms.



# Definitions

- “Effluent-dependent water” means a surface water that consists of a point source discharge of wastewater. An effluent-dependent water is a surface water that, without the point source discharge of wastewater, would be an ephemeral water.
- “Effluent-dominated” means a surface water that consists of >50% wastewater.



# Definitions

- “Intermittent water” means a stream or reach that flows continuously only at certain times of the year, as when it receives water from a spring or from another surface source, such as melting snow



# Problem Statement

1. Waterbodies that do not have flow during critical conditions (i.e., 7Q10 flow is zero) would potentially benefit from the discharge of treated effluent through the creation and sustenance of aquatic habitat
2. It may be costly or impractical to meet water quality based effluent limits (WQBELs) due to the lack of dilution and assimilative capacity in the receiving water. Utah's water quality standards should be revised to consider the value of the additional /enhanced aquatic habitat while still meeting the requirements of the Clean Water Act.



# Applicability

## Effluent Dependent Waters

- Ephemeral streams, i.e. dry washes
- Intermittent streams
- Great Salt Lake transitional waters (5E)
  - Waters below boundary of GSL and above open water of GSL
- Perennial streams that are unnaturally dewatered for some portion of the year
- Wetlands? (impounded, fringe, etc.)



# Existing Options

1. Establish beneficial use class and criteria for ephemeral waters and/or effluent dependent waters.
2. Individual Use Attainability Analyses (site-specific standards)

Both require evaluation of the Designated Uses, e.g., UAA.



# Beneficial Use Class

- Approach adopted in WY, AZ, NM, and several other states nationwide
- Establish beneficial use class for ephemeral waters and effluent dependent waters.
- Recalculate criteria based on species expected to be present (AZ) or adopt acute-only.
- Requires adoption of beneficial use class, numeric criteria and designation of waters with the new use class (would typically require a UAA).
- Could be incorporated into tiered aquatic life use (TALU) approach under consideration



# Wyoming Example

The adopted statewide numeric criteria may be modified on Class 2D and 3D waters to reflect ambient conditions by developing a UAA demonstrating that the water body is effluent dependent and that continued discharge of a permitted effluent to the water body has been shown to create a net environmental benefit. Criteria modification based on a finding of net environmental benefit is authorized where:

[http://deq.state.wy.us/wqd/WQDRules/Chapter\\_01.pdf](http://deq.state.wy.us/wqd/WQDRules/Chapter_01.pdf)



# Wyoming Example

- (i) The water body is effluent dependent;
- (ii) The discharge has been shown to create an environmental benefit and removal of the discharge would cause more environmental harm than leaving it in place;
- (iii) There is a credible threat to remove the discharge; and
- (iv) Appropriate safeguards are in place, ensuring that downstream uses will be protected and the discharge will pose no health risk or hazard to humans, livestock or wildlife.



# WY Class 2D

Class 2D. Effluent dependent waters which are known to support fish populations and where the resident fish populations would be significantly degraded in terms of numbers or species diversity if the effluent flows were removed or reduced. Class 2D waters are protected to the extent that the existing fish communities and other designated uses are maintained and that the water quality does not pose a health risk or hazard to humans, livestock or wildlife. Uses designated on Class 2D waters include game or nongame fisheries, fish consumption, aquatic life other than fish, recreation, wildlife, industry, agriculture and scenic value.



## Discussion

