Criteria and purpose of NC

- Aquatic life criteria are developed without regard to the ambient conditions of the waterbodies for which they apply.
  - Numeric criteria match the optimal needs of the most sensitive species and life stage to meet full protection (in WA this is based on salmon spawning and emergence)
  - In WA waterbodies these life stages are limited in duration and these spawning times vary among streams
- Washington defaulted to include stringent criteria for all streams at all times regardless if the streams naturally regime met those criteria
- The purpose of the Natural Condition standards is to allow for site-specific information to better inform the WQ Standards needs and set the appropriate criteria to match the natural regime.

The Challenges

- Complex modeling often shows restored natural condition would not meet numeric water quality criteria
- Results in permit limits to achieve the unnatural water quality criteria
  - Technology not always available to achieve
  - Very expensive infrastructure costs
  - Towns that discharge to these variable streams often lower socioeconomic conditions
- Natural Conditions determinations
  - Need a robust method to determine natural conditions
  - Need a transparent procedure for documenting natural condition criteria decisions

Performance Based Approach

- "Performance-based approach to site-specific natural-criteria development"
- Prescribed methodology incorporated into the water quality standards and then used to develop water quality criteria based on defensible determination of natural conditions
- Consistent with EPA guidance published in February 2015 Document and 2000 Federal Register

Performance Based Approach

- Use methodology to develop criteria that accurately match a given parameter's natural condition or regime under fully restored natural conditions
- Standardizes process to credibly determine the natural condition or regime for specific parameters

Modeling Conditions Checklist

- Purpose: To ensure all critical elements necessary to determine natural water quality conditions are examined when
  - Using the performance-based approach for natural condition criteria;
  - Modeling a natural condition scenario for a TMDL; or
  - Developing site-specific criteria.
- Instructions: <u>All elements affecting a natural condition determination must be considered.</u>
  - *If a required element is deemed not critical in a particular analysis, an explanation why it was not included must be provided.*
  - Justification for why a particular model or other predictive method was chosen to make the determination must be described.
  - How each element was applied in modeling scenarios must be documented.
  - Errors and uncertainty in the modeling must be discussed.

Modeling Conditions Checklist

- Boundary conditions
- Channel morphology changes
- Flow reductions or increases
- Hydrologic modifications (dams, weirs)
- Invasive species
- Microclimate
- Natural nutrient concentrations
- Nonpoint sources
- Point source effluent
- System potential shade
- Biological measure or indices