# Fish Habitat Workshop Definition of Terms

## What do you mean by that?

**Aggregation-** The data summary unit (county, catchment, reach, etc.)

**Extent-** The area covered by the data.

- Global = Covering at least North America
- Nationwide = Covering at least the contiguous United States
- US Coastal = Covering at least the coastal United States
- Watershed = Covering at least the entire Chesapeake Bay Watershed (inland)
- Baywide = Covering at least the entire Chesapeake Bay coastal area and estuary
- BT range = Covering the eastern range of Brook Trout, but not the entire Chesapeake Bay Watershed
- State = Covering the state(s) listed

**Factor-** A broad category of variables that include stressors influencing fish habitat and conditions that are a measure of habitat quality.

**Fish Habitat-** Any area on which an aquatic organism depends, directly or indirectly, to carry out the life processes of the organism, including an area used by the organism for spawning, incubation, nursery, rearing, growth to maturity, food supply, or migration, including an area adjacent to the aquatic environment if the adjacent area: (1) Contributes an element, such as the input of detrital material or the promotion of a planktonic or insect population providing food, that makes fish life possible; (2) Affects the quality and quantity of water sources; (3) Provides public access for the use of fishery resources; or (4) Serves as a buffer protecting the aquatic environment. [definition is adopted from the National Fish Habitat Partnership (NFHP) Action Plan 2nd edition]

**Habitat Condition-** State of the habitat in a specific area for a specified time that could produce fish occupancy, which may include survival and reproduction.

**Habitat Function-** The biological, geochemical and physical processes and components that take place or occur within an ecosystem and support fish habitat.

**Habitat Types** (used at the workshop) -

1. Headwaters 3rd order and lower. (Non-tidal cold and upstream waters)

2. Nontidal 4th order plus (Non-tidal warm)

3. Tidal Estuarine
   a. Tidal saltwater nearshore and intertidal (ex. marshes, SAV)
   b. Saltwater sub-tidal (ex. oyster reefs, open water)

4. Tidal freshwater (e.g., tidally influenced rivers below head of tides, emergent wetlands)

**Habitat Quality-** the ability of the environment to provide conditions appropriate for individual and fish population persistence. "Quality should be based on the demographics of the population and not necessarily numbers alone. Quality is an outcome (e.g., survival and productivity) and is not a user-defined inherent property of a location. For example, Hall et al. (1997) suggested low habitat quality represents the resources available for survival, medium habitat quality represents resources available for survival and reproduction, and high-quality habitat includes resources available for population persistence. These are critical distinctions because a geographic location (e.g., study area) could fluctuate from year-to-year in some critical resource (e.g., berry or insect production) yet retain the same basic vegetation composition and structure. Thus, habitat quality could vary from year to year." [derived in part from (Krausman & Morrison, 2016.)]

**Habitat Vulnerability**- A measure of future threats (some may not exist currently), transitions to future states, and the likelihood/probability of the future conditions occurring.

**National Fish Habitat Assessment**- Provided through the National Fish Habitat Partnership (NFHP), it is a nationwide assessment of human effects on fish habitat in the rivers and estuaries of the United States. The assessment assigns a risk of current habitat degradation scores for watersheds and estuaries across the nation and within 14 sub-regions. The results also identify some of the major sources of habitat degradation."
http://assessment.fishhabitat.org/#578a9a43e4b0c1aacab89763/578a99f4e4b0c1aacab89699

**Scale-** The resolution of data. The question of interest in regards to scale is: What are the smallest features that are captured?

**Stressor-** Changes to environmental drivers that affect habitat quality and the species that occupy those habitats.

**Variable-** category that includes both stressors to fish habitat and measures of condition.

# How are these terms related in the data file?

Factor (The data available at the workshop is provided under 15 factors).

- Variable
  - Stressor
  - Condition

| Factors | # Variables | # Variables NFHP Inland | # Variables NFHP Estuary | Description/ Examples |
|---|---|---|---|---|
| Watershed | 17 | 0 | 1 | Layers and information used to delienate watershed boundaries, salinity zones, drainage or catchment areas, stream order |
| Pollution | 38 | 2 | 3 | Toxic Release Inventory, nitrate deposition, NPDES major sites, pesticide applied |
| Dams | 11 | 1 | 1 | Number of dams, type, habitat fragmentation due to dams |
| Mines | 53 | 6 | 1 | pipelines |
| Water_Use | 7 | 5 | 1 | Water withdrawal information |
| Human | 4 | 1 | 1 | Population density information |
| Urban | 32 | 6 | 4 | Road length/crossing density, urban areas, impervious surface cover, landfills |
| Ag | 26 | 4 | 1 | Percent hay/agriculture, pesticide use, confined animal feeding operation information |
| Natural | 87 | 5 | 6 | Elevation, slope, habitat, runoff, soil information, geology, stream density, ecoregions |
| Nutrient | 29 | 4 | 4 | Nitrogen and Phosphorus amounts, 303(d) |
| Water_Quality | 19 | 0 | 2 | Salinity, water temperature, dissolved oxygen |
| Climate | 20 | 2 | 0 | Precipitation, temperature, sea level rise, number of wet days |
| Habitat | 13 | 0 | 0 | Bathymetry, wetlands, tidal marsh vegetation |
| Biological | 50 | 0 | 0 | Fish abundance, stream IBI, % priority watersheds |
| Miscellaneous | 9 | 0 | 0 | Shoreline Structure/erosion, dredging |
| **Total = 15** | **415** | **31** | **28** | |