

## 1.2.5 CHANNEL ALTERATIONS

### Parameter Guidelines

This category considers direct impacts to the stream channel from anthropogenic sources. Examples of channel alterations that may disrupt the natural conditions of the stream include, but are not limited to the following:

- Stream crossings (bridges or culverts)
- Riprap, gabions or concrete within channel
- Straightening of channel
- Channelizing stream flow (i.e. increase capacity to convey large flows)
- Filling or piping of reach

The presence of a structure does not necessarily result in a reduced score. For instance, a bridge that completely spans the floodplain would not be considered an alteration.

This assessment condition does not include indirect anthropogenic effects, such as the adverse impacts from increased flow rates caused from upstream development.

Within the alteration categories, the timeframe of when any noted straightening may have taken place is considered. A straightened channel completed many years ago has likely re-vegetated and reached some level of stability and is, therefore, scored higher than a more recently channelized stream.

**SEVERE:** Greater than 60% of reach is disrupted by either stream crossings, hard-stabilization, or channelization.

**MODERATE:** 30 - 60% of reach is disrupted by either stream crossings, hard-stabilization, or channelization

**-or-**

50 - 100% of reach was straightened and stream has re-vegetated and is stable.

**MINOR:** Stream Crossings are present, but do not disrupt the stream beyond the immediate area of impact.

**-or-**

Less than 50% of reach was straightened and stream has re-vegetated and is stable.

**NEGLIGIBLE/NONE:** Either no structure is present, or the structure present is non-impacting (i.e. bridge that spans floodplain).

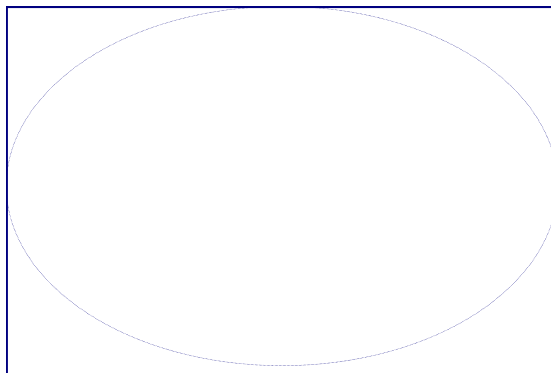
## CHANNEL ALTERATIONS (cont.)



SEVERE: More than 60% of reach is stabilized with riprap



SEVERE: Reach is straightened and channelized with culvert disruption



SEVERE: Multiple stream crossings (and channelization)

## CHANNEL ALTERATIONS (cont.)



MODERATE: More than 30% of riprap in streambed and bridge



MODERATE: 30 - 60% of reach disrupted by culverts with recent channel straightening



MODERATE: Bridge crossing causing significant bank erosion on over half of the reach

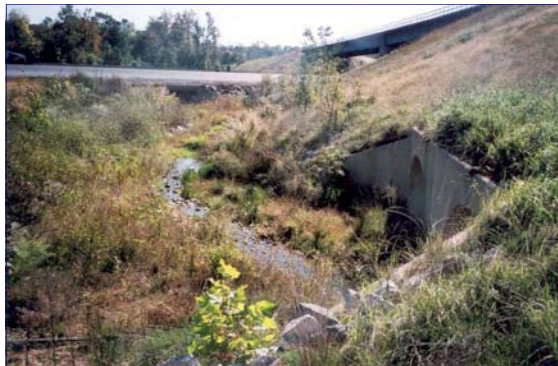
## CHANNEL ALTERATIONS (cont.)



MINOR: Bottomless bridge (minor impact) causing negligible impacts to remainder of reach



MINOR: Bottomless, multi-opening bridge (minor impact) causing negligible impacts to remainder of reach



MINOR: Culvert with relocated channel using natural channel design techniques.



### CHANNEL ALTERATIONS (cont.)



NEGLIGIBLE - Fence is not impacting the stream



NEGLIGIBLE - Pedestrian Crossing not impacting stream



NONE - Stream with no impacts

**NOTES:**