Westslope Cutthroat Trout
2009 Data Entry Methods

START-UP BASICS

Open ArcMAP 9.3 with 'WestSlopeGIS.mxt' template

Personal Geodatabase File Name = 'WCT_[HUC4#]'

'ON' = Activate by checking the layer's box ☑ in *Display* TOC (lower left tab)
'OFF' = Deactivate by unchecking layer's box ☐ in *Display* TOC (lower left tab)

FOR FISHERIES BIOLOGIST UPDATE SESSIONS

Source: Project Layer Files: 'WestslopeCut' folder ➔ ' WCT_[HUC]'
Source: Layer Symbology Files: 'WestslopeCut' folder [yellow diamond] + [name]

Project Layer Files include ('[LayerName]', *top to bottom*):

'**br_[HUC#]**' = Barriers (See Layer descriptions on following pages)

'**cd_[HUC#]**' = Current Distribution (See Layer descriptions on following pages)

'**hd_[HUC#]**' = Historic Distribution (See Layer descriptions on following pages)

'**StreamCopy**' = Stream Segments [USE FOR STREAM LABELS]

'**NHDCopy**' = NHD Stream Segments

'**lk_[HUC#]**' = Lakes

'**WSCT_HUCs_MT**' – '**ON**' ☑ **to view HUC layer:**

  TO VIEW ALL HUCS:
    Properties➔ Symbology ➔ Features ➔ Single symbol

    Fill Color=[No color]➔ Outline Width=2.0➔ Outline Color=[(default) Grey, or any]

  TO MASK ADJACENT HUCS:
    Properties➔ Symbology ➔ Categories ➔ Unique values ➔ Value Field ➔ [FOURCODE]

    ☑ <all other values>

    Double-click 'Symbol' box to assign symbol attributes:

      Fill Color = White ➔ Outline Width=0.00➔ Outline Color = [No color]

      Click ['Add Values'] ➔ *Select* [HUC#] ➔ *Click* ['OK']

    Double-click 'Symbol' box to assign symbol attributes:

      Fill Color = No color ➔ Outline Width=2.0➔ Outline Color = [(default) Grey)]

Data Entry Procedures

BARRIERS

Enable 'Editing' Toolbar (View → Toolbars → 'Editor')
        ***Select* Start Editing** (from drop-down options)
***Click* WCT Barrier Tool [BAR]** (top of project)
Target Layer = Barrier ([br_'HUC#'])
On the Selection Tab (lower left / third tab),
        Ensure that the Barriers Layer ([br_'HUC#']) alone is selectable ☑

***Click* "Get ID"**

Attribute existing barriers by clicking on individual barrier symbols.
Layer symbology can be changed to symbolize characteristics (see next page).

Use the following tables to attribute Barriers layers:

TABLE 2. BARRIER TYPE (Field = [barTypeID])
Types of barriers to upstream fish movement (Check the <u>one</u> that best applies to each barrier).

Barrier-TypeID	Barrier Type
1	Water diversion
2	Fish culture facility/research facility
3	Temperature
4	Bedrock
5	Culvert
6	Debris
7	Insufficient flow
8	Manmade Dam
9	Manmade temporary restoration barrier
10	Pollution
11	Beaver dams
12	Velocity barrier
13	Waterfall
-99	Unknown

TABLE 3. BLOCKAGE EXTENT (Field = [barExtID])
Extent of blockage caused by barriers (Check the <u>one</u> that best applies).

Code	Blockage Extent
1	Complete
2	Partial
-99	Unknown

TABLE 4. BARRIER SIGNIFICANCE (Field = [barSigID])
Barrier significance (Check the <u>one</u> that best applies to each barrier).

Code	Barrier Significance
1	Historically significant – Limited historical distribution
2	Prevents or limits introgression
3	Prevents ingress of competing species
4	Temporary, but presently prevents introgression or ingress of competing species
5	Confines population to small area of usable habitat
6	Limits or precludes opportunity for population re-founding
7	Limits expression of life history characteristics
-99	Unknown

TABLE 5. BARRIER INFORMATION CONFIDENCE (Field—[ISID])
 Information sources associated with the barrier (Check <u>one</u> that best applies).

Code	Barrier Information Source
1	Low level of reliability-- Anecdotal Information
2	Moderate level of reliability – Professional Judgment - Ocular Reconnaissance
3	High level of reliability -- Minor Sampling – minor sampling; contained in agency databases, reports and summaries (generally, non-peer reviewed)
4	Highest level of reliability -- Major Sampling – Major amount of sampling; Generally contained in agency databases, a Thesis or Dissertation or a published paper (generally, peer reviewed).

BARRIERS LAYER SYMBOLOGIES

BARRIER TYPE — Load Layer file 'br_BarrierType'

BLOCKAGE EXTENT — Load Layer file 'br_BarrierExtent'

BARRIER SIGNIFICANCE — Load Layer file 'br_BarrierSignificance'

BARRIER TYPE — Load Layer file 'br_BarrierType'

HISTORIC DISTRIBUTION

Enable 'Editing' Toolbar (View → Toolbars → 'Editor')
       Select **Start Editing** (from drop-down options)
Click **WCT Historic Distribution Tool [HIST]** (top of project)
Target Layer = Historic Distribution ([hd_'HUC#'])
On the Selection Tab (lower left / third tab),
       Ensure that the Historic Distribution Layer ([hd_'HUC#']) **alone is selectable** ☑
To Label Streams: *Right-click* **on** [StreamCopy] and ***Click*** **on** [Label Features]

Attribute existing Historic Distribution by clicking on individual yellow or blue ([hd]) line segments.
Layer symbology can be changed to symbolize characteristics.
Use the following table to attribute Historic Distribution layers:

TABLE 6. Inclusion / Exclusion from Historic Distribution (Fields = [Included] and [HistReasID])
This table provides possible rationales for exclusion or inclusion of habitat segments as historical
WCT habitat.

	Include or exclude		Reason
0	Exclude	1	Habitat limited – Primarily based on judgment regarding gradient, elevation, temperature
	Exclude	2	Geologic barrier – May be based on judgment. Must correspond to a mapped barrier location and must be a complete barrier to fish movement.
1	Include	3	Anecdotal information (e.g., newspaper, letter, journal, etc.)
	Include	4	Historical scientific survey data (e.g., published report)
	Include	5	Judgment

TO ADD A LINE SEGMENT TO HISTORIC DISTRIBUTION:

Ensure that the Target Layer = Historic Distribution ([hd_[HUC#])
On the Selection Tab (lower left / third tab),
      Make both Historic Distribution ([hd_[HUC#]) **and** [StreamCopy] **selectable** ☑

Click **on** [StreamCopy] **line segment to be added to Historic Distribution**
Click **Copy** (Edit → 'Copy') — this copies the line segment from the [StreamCopy] layer, then
Click **Paste** (Edit → 'Paste') — this pastes the line segment into the Target Layer ([hd_'HUC#'])

Click **"Get ID"**

Attribute characteristics to new Historic Distribution line segment as described above.

TO CUT A LINE SEGMENT IN HISTORIC DISTRIBUTION:

Click **on line segment** to be split in Historic Distribution
Target Layer = Historic Distribution ([hd_'HUC#'])
Use Split Tool (first button to the right of 'Target Layer'), ***Click*** **on point** of line segment to be split
Unselect line segment, then select new segment
Click **WCT Historic Distribution Tool [HIST]** (top of project)

Click **"Get ID"**

Attribute characteristics to new Historic Distribution line segment as described above.
TO DELETE A LINE SEGMENT IN HISTORIC DISTRIBUTION:

Ensure that the Historic Distribution Layer ([hd_'HUC#']) **alone is selectable** ☑
Click **on line segment to be deleted in Historic Distribution→** *Click* "Delete"

Alternately, change the characteristics of the line segment from *Included* to *Excluded*

CURRENT DISTRIBUTION

Enable 'Editing' Toolbar (View → Toolbars → 'Editor')
          Select **Start Editing** (from drop-down options)

Click **WCT Current Distribution Tool [CURR]** (top of project)
Target Layer = Current Distribution ([cd_'HUC#'])
On the Selection Tab (lower left / third tab),
          Ensure that the Current Distribution Layer ([cd_'HUC#']) **alone is selectable** ☑
To Label Streams: *Right-click* **on** [StreamCopy] and *Click* **on** [Label Features]

Attribute existing Current Distribution by clicking on individual red ([cd]) line segments.
Layer symbology can be used to populate characteristics.

Use the following tables to attribute Current Distribution layers:

TABLE 7. ORIGIN (Field = [OriginID]) Origin of self-sustaining WCT (Check <u>one</u> that best applies).

Code	Origin
1	Aboriginal – naturally occurring population
2	Restored – human restoration to start population
-99	Unknown

TABLE 8. STOCKING (Field = [Stocking])
Fish stocking associated with the occupied habitat segment (Check <u>all</u> that apply).

Code	Fish Stocking Status
1	No Record of fish stocking
2	Record of rainbow stocking (coastal source)
3	Record of brown trout stocking
4	Record of brook trout stocking
5	Record of lake trout stocking
6	Record of WCT stocking
7	Record of redband/steelhead stocking
8	Record of other cutthroat trout subspecies being stocked. Specify:
9	Other non-native fish stocked. Specify:
10	Chinook

TABLE 9. GENETIC STATUS (Field = [GenStatID])
Genetic status of WCT within a stream segment or lake (Check <u>one</u> that best applies).

Code	Genetic Status
1	Genetically unaltered (<1% introgression detected) as a result of intro-duced species interaction– tested via electrophoresis or DNA
2	>1% and <u><</u>10% introgressed (hybridized) with introduced species – tested via allozyme or DNA and introgression indicated to be from a hybrid swarm. This range of introgression may include WCT that interact with native redband trout (anadromous or resident) that do not exist as a hybrid swarm (personal communication with Don Campton, FWS)
3	>10% and <u><</u>25% introgressed (hybridized) with introduced species – tested via allozyme or DNA and introgression indicated to be from a hybrid swarm
4	>25% introgressed (hybridized) with introduced species – tested via al-lozyme or DNA and introgression indicated to be from a hybrid swarm
5	Not genetically tested -- Suspected unaltered with no record of stocking or contaminating species present
6	Not genetically tested -- Potentially hybridized with records of introduced hybridizing species being stocked or occurring in stream
7	Hybridized and Pure populations co-exist (sympatric mixed-stock) in stream (use only if there is evidence of reproductive isolation, non-random mating, and/or genetic testing has been completed)

TABLE 10. This table is not currently in use.

TABLE 11. POPULATION DENSITY (Field = [DensityID])
Population density (numbers per mile) of sexually mature adults (15 cm small streams with non-migratory fish and 30 cm for larger streams and rivers with non-migratory and migratory fish; also equates to age 2+ and age 3+ fish) within stream mapping segment. Include the spawning density of migratory fish that use the segment for reproduction (Check the <u>one </u>that best applies). If a specific density estimate is available, specify the density within the appropriate density range.

Code	Mapping Segment Adult Fish Density
1	0 to 50 fish per mile (Specific density within this range, if available_____)
2	51 to 150 fish per mile (Specific density within this range, if available_____)
3	151 to 400 fish per mile (Specific density within this range, if available_____)
4	401 to 1000 fish per mile (Specific density within this range, if available_____)
5	1001 to 2000 fish per mile (Specific density within this range, if available _____)
6	Over 2000 fish per mile (Specific density, if available _____)
-99	Unknown

TABLE 12. This table is not currently in use.

TABLE 13. FISH DENSITY CONFIDENCE (Field = [DensityISID])
Information sources associated with the fish density information (Check <u>one</u> that best applies).

Code	Fish density Information Source
1	Low level of reliability-- Anecdotal Information
2	Moderate level of reliability – Professional Judgment - Ocular Reconnaissance
3	High level of reliability - Minor Sampling – minor sampling; contained in agency databases, reports and summaries (generally, non-peer reviewed)
4	Highest level of reliability -- Major Sampling – Major amount of sampling; Generally contained in agency databases, a Thesis or Dissertation or a published paper (peer reviewed).

TABLE 14. HABITAT QUALITY (Field = [HqID])
Relative quality of occupied stream habitat (Check <u>one</u> that best applies).
Refer to attachment B for optimal desired habitat reference conditions.

Code	Habitat Quality Determination
1	Excellent habitat quality (e.g., majority of attributes in optimal condition (e.g. ample pool environment, low sediment levels, optimal temperatures, quality riparian habitat, ample stream flows,etc.)
2	Good habitat quality (may have some habitat attributes that are slightly less than ideal)
3	Fair habitat quality (has a greater number of attributes that are less than ideal)
4	Poor habitat quality (most habitat attributes reflect inferior conditions
-99	Unknown

TABLES 15-17. These tables are not currently in use.

TABLE 18. HABITAT QUALITY CONFIDENCE (Field = [HqISID])
Information sources associated with the stream habitat information (Check <u>one</u> that best applies).

Code	Habitat Information Source
1	Low level of reliability-- Anecdotal Information
2	Moderate level of reliability – Professional Judgment - Ocular Reconnaissance
3	High level of reliability - Minor Sampling – minor sampling; contained in agency databases, reports and summaries (generally, non-peer reviewed)
4	Highest level of reliability -- Major Sampling – Major amount of sampling; Generally contained in agency databases, a Thesis or Dissertation or a published paper (peer reviewed).

TABLE 19. NON-NATIVE FISH PRESENCE (Field = [NonNative])
Presence of non native fish and/or native redband/ steelhead trout sympatric with WCT in the mapping segment stream or lake (Check <u>all</u> that apply).

Code	Presence of Non-native and/or native redband/ steelhead trout
1	No non-native fish present
2	Rainbow trout
3	Brown trout
4	Brook trout
5	Lake trout
6	Native Redband/ steelhead trout
7	Large-spotted YCT
8	Other cutthroat trout subspecies. *Specify:*
9	Other Salmonid *Specify:*
10	Other fish. *Specify:*
11	Chinook
-99	Unknown

TABLE 20. NON-NATIVE FISH PRESENCE CONFIDENCE (Field = [NnISID])
Information sources associated with the presence of non native fish and native redband/rainbow sympatric with WCT (Check <u>one</u> that best applies).

Code	Non-native and/or native redband/ steelhead trout Information Source
1	Low level of reliability-- Anecdotal Information
2	Moderate level of reliability – Professional Judgment - Ocular Reconnaissance
3	High level of reliability - Minor Sampling – minor sampling; contained in agency databases, reports and summaries (generally, non-peer reviewed)
4	Highest level of reliability -- Major Sampling – Major amount of sampling; Generally contained in agency databases, a Thesis or Dissertation or a published paper (peer reviewed).

Attribute existing Current Distribution by clicking on individual (default red) ([cd]) line segments. Layer symbology can be changed to symbolize characteristics.

TO ADD A LINE SEGMENT TO CURRENT DISTRIBUTION:

Ensure that the Target Layer = Current Distribution ([cd_[HUC#])
On the Selection Tab (lower left / third tab),
           Make both Current Distribution ([cd_[HUC#]) **and** [StreamCopy] **selectable** ☑

Click on [StreamCopy] **line segment to be added to Current Distribution**
Click **Copy** (Edit ➔ 'Copy') — this copies the line segment from the [StreamCopy] layer, then
Click **Paste** (Edit ➔ 'Paste') — this pastes the line segment into the Target Layer ([hd_'HUC#'])

On the Selection Tab (lower left / third tab),
           Ensure that *only* **the Current Distribution Layer** ([cd_'HUC#']) **is selectable** ☑
Click **"Get ID"**

Attribute characteristics to new Current Distribution line segment as described above.
           Ensure that the Current Distribution Layer ([cd_'HUC#']) **alone is selectable** ☑

TO CUT A LINE SEGMENT IN CURRENT (OR HISTORIC) DISTRIBUTION:

Click **on line segment** to be split in Current Distribution
Target Layer = Current Distribution ([cd_'HUC#'])
Use Split Tool (first button to the right of 'Target Layer'), *Click* **on point** of line segment to be split
Unselect line segment, then select new segment
Click **WCT Current Distribution Tool [CURR]** (top of project)
  Click **"Get ID" + "Delete ID" + "Get ID"** *(for new line segment)*
  Click **"Get ID"** *(for section of existing line segment that will remain)*

Attribute characteristics to new Current Distribution line segment as described above.

TO DELETE A LINE SEGMENT IN CURRENT DISTRIBUTION:

Ensure that the Current Distribution Layer ([cd_'HUC#']) **alone is selectable** ☑
Click **on line segment** to be deleted in Current Distribution → *Click* "Delete"

CURRENT DISTRIBUTION LAYER SYMBOLOGY FILES

    ORIGIN — Load Layer file 'cd_Origin'
    FISH STOCKING STATUS — Load Layer file 'cd_Stocking'
    GENETIC STATUS — Load Layer file 'cd_GeneticGenStat'
    FISH DENSITY — Load Layer file 'cd_Density'
    DENSITY CONFIDENCE — Load Layer file 'cd_DensityConfidence'
    HABITAT QUALITY — Load Layer file 'cd_HabitatQuality'
    HABITAT QUALITY CONFIDENCE— Load Layer file 'cd_HabQualConfidence'
    NON-NATIVE — Load Layer file 'cd_NonNative'
    NON-NATIVE CONFIDENCE— Load Layer file 'cd_NonNativeConfidence'

LAKES DISTRIBUTION

CONSERVATION POPULATION
Entered by hand on paper during 2009 update sessions
(Refer to Tables 21—27 on Instruction Sheet)

Table 21. Degree of network or connectedness with multiple habitats associated with the conservation population (Check one that best applies).

Code	Degree of Habitat Network Associated with Population
1	Strongly networked. Migratory forms (fluvial/ad-fluvial) must be present and migration corridors must be open (significant connectivity). Occupied habitat consists of numerous (> 5) individual streams w/ sub-populations.
2	Moderately networked. Migratory forms are present but connection periodically disrupted. Genetic exchange limited at times. Occupied habitat consists of a few (4-5) individual streams w/ sub-populations.
3	Weakly networked. Questionable whether migratory forms exist within connected habitat; however possible infrequent straying of adults within occupied connected habitat. Occupied habitats consists of 2 to 3 streams w/ sub-populations.
4	Population not networked or connected. Population functions as an independent entity (single stream or stream segment with no interaction with other sub-populations.

Code	Network Information Source
1	Low level of reliability-- Anecdotal Information
2	Moderate level of reliability – Professional Judgment - Ocular Reconnaissance
3	High level of reliability - Minor Sampling – minor sampling; contained in agency databases, reports and summaries (generally, non-peer reviewed)
4	Highest level of reliability -- Major Sampling – Major amount of sampling; Generally contained in agency databases, a Thesis or Dissertation or a published paper (peer reviewed).

Table 22. Conservation Population Qualifier (Check one that best applies).

Code	Conservation Population Qualifier
1	Core Conservation Population (must be tested genetically unaltered – greater than 99% WCT genes and/or only have stream and lakes segments suspected of being unaltered based on no stocking records of hybridizing fish and/or no hybridizing fish present…Tables 9 and 10).
2	Conservation Population with Known or Probable Unique Life History (fluvial, ad-fluvial, or non-migratory) Or may include populations that represent the last, best WCT populations within a given watershed or drainage basin.
3	Conservation Population with Known or Probable Ecological Adaptation to extreme environmental condition (e.g. temperature, alkalinity, pH, sediment)
4	Conservation Population with Known or Probable Predisposition for large size or unique coloration
5	Conservation Population of Mixed Genetic Makeup – An aggregate of sub-populations or habitat segments that include both non-introgressed and introgressed individuals identified as a single conservation unit.

Code	Conservation Population Qualifier Information Source
1	Low level of reliability-- Anecdotal Information
2	Moderate level of reliability – Professional Judgment - Ocular Reconnaissance
3	High level of reliability - Minor Sampling – minor sampling; contained in agency databases, reports and summaries (generally, non-peer reviewed)
4	Highest level of reliability -- Major Sampling – Major amount of sampling; Generally contained in agency databases, a Thesis or Dissertation or a published paper (peer reviewed).

Table 23. Specific life history attributes associated with the conservation population (Check <u>all</u> that apply).

Code	Life History Attributes
1	Fluvial disperses locally in one stream or a group of small streams as the home range)
2	Individuals moving from larger river into tributaries to spawn.
3	Lacustrine (lake) fish moving into lake tributaries to spawn)
4	Lake fish moving into outlet stream to spawn)
5	Unknown

Code	Life History Information Source
1	Low level of reliability-- Anecdotal Information
2	Moderate level of reliability – Professional Judgment - Ocular Reconnaissance
3	High level of reliability - Minor Sampling – minor sampling; contained in agency databases, reports and summaries (generally, non-peer reviewed)
4	Highest level of reliability -- Major Sampling – Major amount of sampling; Generally contained in agency databases, a Thesis or Dissertation or a published paper (peer reviewed).

Table 24. Conservation activities associated with the conservation population (Check <u>all</u> that apply).

Code	Conservation Actions
1	Water lease/In-stream flow enhancement
2	Channel restoration
3	Bank stabilization
4	Riparian restoration
5	Diversion modification
6	Barrier removal
7	Barrier construction
8	Culvert replacement
9	Installation of fish screens to prevent loss
10	Fish ladders to provide access
11	Spawning habitat enhancement
12	Woody debris placement
13	Pool development
14	Increase irrigation efficiency
15	Grade control
16	In-stream cover habitat
17	Re-founded population
18	Riparian fencing
19	Physical removal of competing/hybridizing species
20	Chemical removal of competing/hybridizing species
21	Public outreach efforts at site (Interpretative site)
22	Population Expansion (e.g. expanding the occupied area of a specific population)
23	Population supplementation (e.g. to implement genetic swamping or to reduce potential of bottle necking, etc.)
24	Special Angling Regulations
25	Land-use mitigation direction and requirements (e.g., Forest Plan direction, regulation, permit req., coordination stipulations, etc.)
26	Population covered by special protective mgt emphasis (e.g., Nat'l Park, wilderness, special mgt area, conservation easement, etc.
27	Other:
28	None:

Table 25. Human-use associated with conservation population. (Check <u>all</u> that apply).

Code	Activity
1	Timber Harvest
2	Range (Livestock grazing)
3	Mining
4	Recreation (non-angling)
5	Angling
6	Roads
7	De-watering
8	Fish Stocking (e.g., non-native fish)
9	Hydroelectric, water storage and/or flood control
10	Other
11	None
12	Unknown

<u>Conservation Population Risks and Relative Health Evaluations</u>

Only conservation populations will be evaluated for risks associated with genetic and disease influences and each population will be given a relative population health evaluation.

It is important to note that these evaluations <u>are not</u> intended to define the inherent probability of persistence or exclusion, but rather to identify index conditions that put a population at greater or lesser risk based on certain attributes.

Genetic Stability Assessment
A genetic stability ranking will be made for each conservation population (e.g., <u>Network- or non-networked)</u> using an index ranking of 1 to 4 to indicate lower to progressively higher levels of possible risk (Table 26). **The index <u>should not be viewed</u> as an absolute but rather as an indicator of possible or potential genetic influences.**

Table 26. Genetic index ranking (Check <u>one</u> that best applies).

Rank	Genetic stability or Risk Characterization
1	Introduced potentially hybridizing fish **cannot interact** with existing WCT population. **Barrier provides complete blockage to upstream fish movement or potentially hybridizing fish are not present in same or adjacent drainages**.
2	Introduced potentially hybridizing fish are in same stream and/or drainage **further than 10 km** from WCT population, but not in same stream segment as WCT, **or within 10 km where existing barriers exist, but may be at risk of failure.**
3	Introduced potentially hybridizing fish are in same stream and/or drainage **within 10 km of WCT population and no barriers exist** between introduced species and WCT population. However, introduced hybridizing species have not yet been found in same stream segment as WCT population.
4	Introduced potentially hybridizing fish are **sympatric** with WCT in same stream segment.

Significant Disease Influence Assessment

A significant disease influence ranking will be made for each (networked or non-networked population) using a ranking index of 1 to 5 to indicate low to progressively higher levels of risk associated with the possible or potential influence of significant diseases (Table 27). Population isolation and security are important considerations, but cannot be viewed as absolutes. The diseases of concern are those that cause severe and significant impacts to population health and include, but are not limited to, whirling disease, furunculosis, infectious pancreatic necrosis virus, etc. The assessment should be completed and/or reviewed by fish health professional.

The level of influence <u>should not be viewed</u> as an absolute but rather as an indicator of possible or potential disease influences.

Table 27. Significant disease risk influence index (Check <u>one</u> that best applies).

Rank	Risk of Disease Characterization
1	Significant diseases and the pathogens that cause these diseases **have very limited opportunity to interact** with existing WCT population. Significant disease and pathogens are not known to exist in the stream or watershed associated with WCT population. **Barrier provides complete blockage to upstream fish movement**. Stocking of fish from other sources does not occur.
2	Significant diseases and/or pathogens have been introduced and/or identified in same stream and/or drainage **further than 10 km** from WCT population, but not in same stream segment as WCT, **or within 10 km where existing barriers exist, but may be at risk of failure.** Stocking of fish from others source areas requires fish health screening and pathogen free clearance.
3	Significant diseases and/or pathogens have been introduced and/or have been identified in same stream and/or drainage **within 10 km of WCT population and no barriers exist** between disease and/or pathogens and diseased fish species and the WCT population. However, diseases and/or pathogens have not yet been found in same stream segment as WCT population.
4	Significant disease and/or pathogens and disease carrying species are **sympatric** with WCT in same stream segment but WCT have not tested positive.
5	WCT population is known to be positive for significant disease and/or pathogens are present. WCT population has a history of impacts from significant diseases. Environmental and/or biological conditions may have intensified disease impact.

INSTRUCTIONS FOR CREATING PAPER MAP ONLY

Source: Project Layer Files: 'WestslopeCut' folder → ' WCT_[HUC]'
Source: Layer Symbology Files: 'WestslopeCut' folder [yellow diamond] + [name]

Source: [sde.DEFAULT (ifwis2]
    '**States Adjacent**' – 'ON' if HUC is near Idaho state boundary
    '**State of Idaho**' – 'ON' if HUC is near Idaho state boundary

Source: [within Watershed folder]
    '**Hydro_HUC4**' – **'ON' for Map to mask adjacent HUCs**
      Properties → Symbology → Categories → Unique values → Value Field = HUC_ID
        ☑ <all other values> → Fill Color = White → Outline Width = 0
        <Add Values…> = [Current HUC#] → Fill Color = No color → Outline Width = 0.4
'**br_[HUC#]**' = Barriers
'**cd_[HUC#]**' = Current Distribution
'**hd_[HUC#]**' = Historic Distribution
'**StreamReach**' = Stream Segments (may be 'StreamCopy')
'**lk_[HUC#]**' = Lakes
'**raster_svc**' = Topographic layers for geospatial reference (Montana only)