

## Point Module VI—Overland Flow/Delivery to Water

Overland Flow/Delivery to Water is a new module for the 1997 NRI.

### *Definition*

*Overland flow* is the path that surface runoff follows as it flows from a PSU point to a receiving water area. [NRI-97]

### *Importance*

The path that water follows and the type of vegetation it flows through are important input to the delivery of sediment, nutrients, and pesticides and their impact on water quality. Overland flow information, when combined with geospatial information, will allow modeling the delivery of sediment, nutrients, and pesticides to water.

### *Guidelines and Clarification*

Overland Flow and Delivery to Water data are collected only for points classified as land cover/use of cropland, pastureland, and CRP land for 1997. Information related to distance from point to nearest receiving water, type of receiving water, cover categories that surface water flows through, and length of each cover within the water flow route will be collected for these points.

## Distance to Receiving Water

### *Definition*

Distance to receiving water is the straight line distance from the PSU point to the nearest receiving water. [NRI-97]

### *Guidelines and Clarification*

If the PSU point falls on cropland, pastureland, or CRP land cover/use, determine the straight line distance from the point to the nearest receiving water. Receiving water includes any of the four categories of perennial water: small streams, large streams, small waterbodies, and large waterbodies. The closest water need not be in the PSU, so it may be necessary to check for water outside the PSU boundary.

Use a photograph or projected image of the PSU and the 7.5 minute USGS quad to determine the distance to receiving water. If the straight-line distance from the point to the receiving water is between 1 and 660 feet, determine the distance to the nearest 10 feet. If the straight-line distance from the point to the receiving water is more than 660 feet, report as **661 (Greater than 660)** in the PDA, and no further entry is required for this point in Module VI.

## ***Documentation Required in the PSU Folder***

None.

### ***PDA Instructions***

Tap the diamond next to **Enter straight line distance from point to nearest receiving water**. Choice list of distances, at 10-foot intervals, starting at 10 feet to 660 feet will appear. Tap the appropriate distance. If the distance was greater than 660 feet, tap **661 (Greater than 660)**.

### ***Example***

Point 1. If the straight-line distance is measured as 426 feet, round distance to 430 feet.

Point 2. If the straight line distance is measured as 750 feet, this will be reported as **661 (Greater than 660)**, and no further entry in Point Module VI is needed for this point.

Point 3. Forest land cover/use code 341 had been previously determined. Screen 6, Overland Flow/Delivery to Water, will not appear on the PDA for this point.

## **Type of Receiving Water**

### ***Definition***

Receiving water includes any of the four categories of perennial water: small streams, large streams, small waterbodies, and large waterbodies. [NRI-97]

### ***Guidelines and Clarifications***

Determinations of type of receiving water should be consistent with definitions used and determinations made in PSU Module III—Water Areas. However, the receiving water may be outside the PSU boundary and not have been classified. Use photography, quadrangle map, and references used in the Water Areas module to determine type of receiving water.

## ***Documentation Required in PSU Folder***

No special documentation is needed for type of receiving water other than file copy of PSU photo and quadrangle map.

**Point 1:27013:010101R:1:Point Speci...**  
**6. Overland Flow/Delivery to Water** **Note**

Beginning at the current point, determine and enter the cover category and segment lengths for the overland flow path of water. Enter straight line distance from point to nearest receiving water. ◆

◆ Type of receiving water

	Class	Length (feet)
1		
2		
3		
4		
5		

Names Dates Extras Undo Find Assist

## ***Categories and codes***

<b>Code</b>	<b>Category</b>
SS	Small streams
LS	Large streams
SW	Small waterbodies
LW	Large waterbody

## ***PDA Instructions***

Tap the **Type of receiving water** diamond, and select the type of receiving water from the choice list.

## **Path of Overland Flow**

### ***Definition***

Path of overland flow is the path that surface water follows as it flows from a PSU point to the shoreline of a receiving perennial waterbody or perennial stream. [97 NRI]

### ***Guidelines and Clarifications***

Use a photograph or projected image and the 7.5 minute USGS quadrangle to determine the downslope surface water flow route from the PSU point to the receiving water area. The flow path for 2 points can, in part, follow the same path to the receiving water.

### ***Documentation Required in PSU Folder***

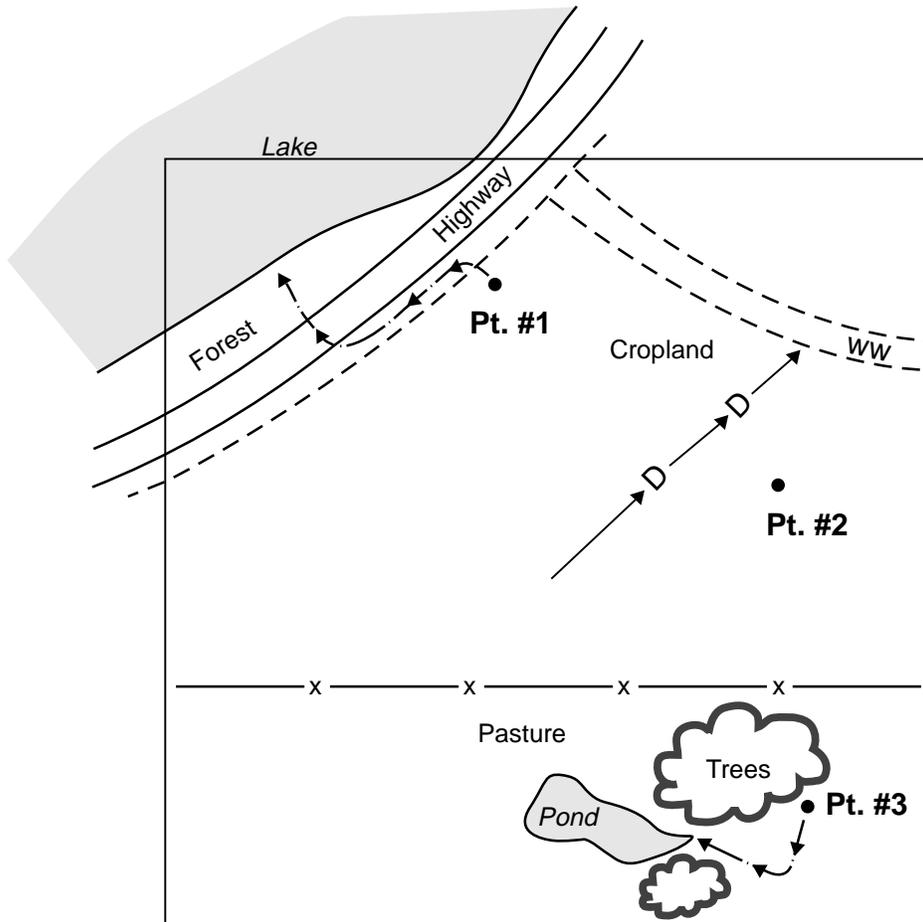
Plot the water flow route from the PSU point to the receiving water area on a 1997 PSU support map.

**Example**

Water flow route from PSU point to receiving water area

FIPS 00123

PSU 01 02 04 R



**Straight-line Distance to Receiving Water**  
(to determine if point is close enough to receiving water)

- Point 1 500 feet
- Point 2 > 661 feet
- Point 3 550 feet

## Cover Categories and Distances

### *Guidelines and Clarifications*

Data on the general cover that water flows through are collected for the entire flow distance from the PSU point to the receiving water. This distance may include the length within and outside the PSU boundary.

Measurement of general cover categories is made along the path of overland flow to the nearest 10 feet. A cover category area must be at least 1 contiguous acre to be classified except for linear features and areas identified below as artificial and modified surfaces. Linear features must be at least 10 feet wide and 330 feet long to be classified.

The eight general cover categories used in this module are the same ones used in PSU Module III—Shoreline Characterization and Point Module V—Habitat Composition and Configuration. They are:

- c** Crop: annually cultivated crops or their residue. Crops in this category include annually cultivated plants used for food, feed, fiber, or oilseed production. Perennial crops are not included in this category.
- h** Herbaceous: perennial (i.e., alfalfa, clovers, pastures, etc.) or noncultivated annuals, predominantly herbaceous but may have woody canopy cover <5%.
- s** Short woody plants: >25% canopy cover and < 4m tall, often multistemmed (i.e., shrubs, seedlings, saplings).
- t** Tall woody plants: >25% canopy cover and  $\geq$  4m tall, usually single stemmed (i.e., trees).
- r** Open canopy short woody plants: 5-25% canopy cover and < 4m tall, often multistemmed (i.e., shrubs, seedlings, saplings).
- p** Open canopy tall woody plants: 5-25% canopy cover and  $\geq$  4m tall, usually single stemmed (i.e., trees).
- b** Barren: nonvegetated natural, includes saline barrens, unreclaimed mined land, and other barren areas that are incapable of supporting vegetative growth.
- a** Artificial and modified surfaces: roads and rights-of-way, buildings, parking lots, farmsteads (includes complete polygons of farmsteads and ranch headquarters, urban and built-up, small built-up areas, and rural transportation designated on the PSU support map, and any other buildings that have a surface area greater than 1,000 square feet).

**Linear features** should also be classified as to one of the eight general cover categories if they meet the minimum area requirement described above. Linear features include brushy fencerows, hedgerows, field windbreaks, utility rights-of-way, ditchbanks and vegetated strips along streams and waterbodies.

### **Classification rules**

General cover categories h, s, t, r, and p are distinguished by the life form for the plants that constitute the uppermost canopy layer within each category. Categories with over 25% canopy cover take precedence over those with 5-25%, and either of the preceding take precedence over the herbaceous category. If linear features are detectable on the photograph, but covered by adjacent canopy cover (i.e., streams or roads), record the full width of the linear feature as if the canopy was not present. Barren areas are those that are incapable of supporting plant growth and should not be confused with arid plains and desert areas which would be classified under one of the vegetated categories even though the productivity at the site may be very low. If the vegetative canopy obscures more than 75 percent of the view of water areas, record category appropriate for the vegetative cover. Short and tall woody plant designations are made for current conditions, not for potential height of the plants.

**Procedure**

Identify categories of cover and their distances along the entire plotted water flow route starting at the PSU point. The process of determining and measuring cover categories is the same as that used in Point Module V—Habitat Composition and Configuration. Measure all general cover categories to the nearest 10 feet. A cover category area must be at least one contiguous acre to be classified, except for linear features and certain areas of artificial and modified surfaces.

***Documentation Required in PSU Folder***

Delineate the boundary between each cover category occurring along the entire water flow path on the 1997 PSU support map. Label each cover using the appropriate cover code (c, h, s, t, r, p, b, or a). Measure the length of each cover category along the flow route, to the nearest 10 feet, starting at the PSU point.

***Categories and Codes***

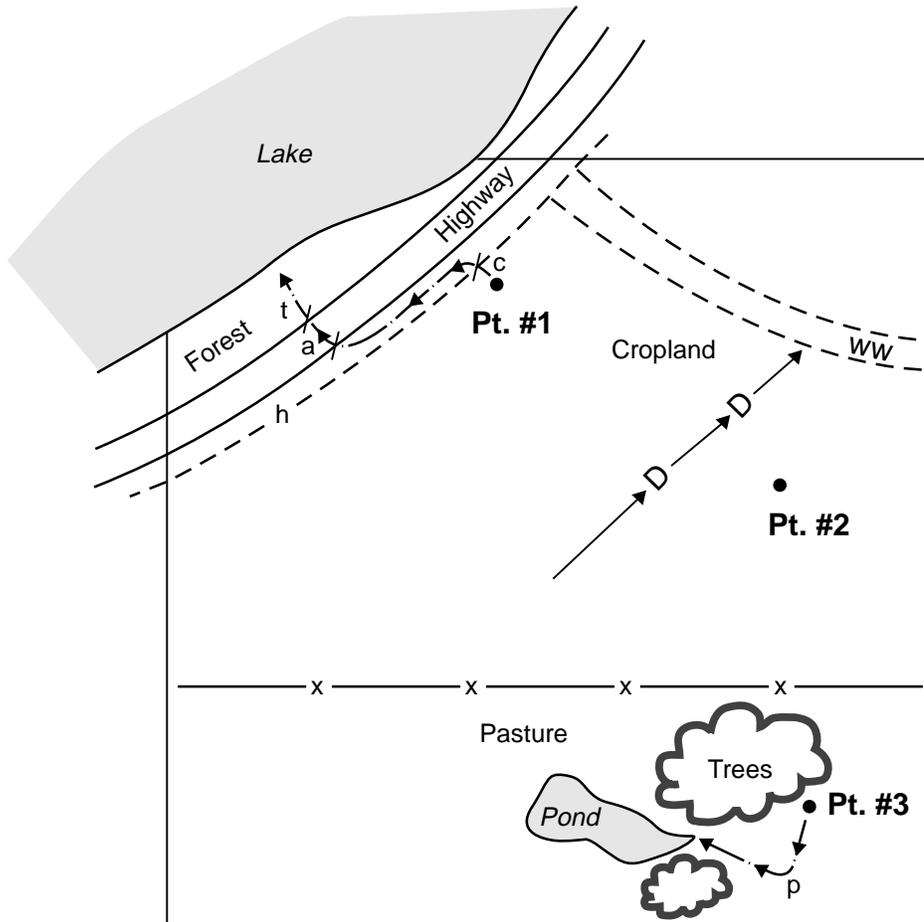
<b>Code</b>	<b>Category</b>
c	Crop cover
h	Herbaceous
s	Short woody plants (canopy greater than 25 percent)
t	Tall woody plants (canopy greater than 25 percent)
r	Open canopy short woody plants
p	Open canopy tall woody plants
b	Barren
a	Artificial and modified surfaces

**Example**

Boundaries between each cover category are delineated and cover code labeled.

FIPS 00123

PSU 01 02 04 R



**Distance to Receiving Water**

Point #1:  
50 feet c (cropland)  
310 feet h (herbace-grass)  
70 feet a (highway)  
100 feet t (forest)

Point #3:  
600 feet p (pasture with open  
canopy tall woody plants,  
5 to 25% canopy cover)

## PDA Instructions

Record all cover category lengths to the nearest 10 feet. Because the flow is generally not in a straight line, it is expected that the sum of the lengths will be greater than the straight-line distance.

Beginning at the point, record the cover category code and the length of first cover category as follows:

- Tap the PDA screen in the data field under **Class** and select the appropriate code for first cover.
- Tap the data field under **Length** and select length of first cover.

Record the second cover category and its length on line 2.

Continue recording cover categories and their length until the entire water flow path from the PSU point to the receiving water is recorded.

The PDA will sum the distances and refuse to accept any sum less than the straight-line distance previously entered. Because of 10-foot recording, the straight-line distance can be accepted, but only after a warning. The sum of the distances can be much greater than the straight-line distance to receiving water determined earlier.

**Completion check.** Upon completion of data entry for this module, tap completion check box to verify data entry. Resolve any reported edit checks.

## Point Module VI Glossary

(The following definitions are extracted from the 1997 National Resources Inventory glossary.)

**Artificial and modified surfaces.** A general cover category consisting of roads and rights-of-way, buildings, parking lots, farmsteads (includes complete polygons of farmsteads and ranch headquarters, urban and built-up, small built-up areas, and rural transportation designated on the PSU support map, and any other buildings that have a surface area greater than 1,000 square feet). [NRI 97]

**Barren.** A general cover category consisting of nonvegetated lands, including alkaline barrens, unreclaimed mined land, and other barren areas incapable of supporting vegetation. Barren areas are nonvegetated either because the substrate will not support plant growth or because the area is subject to frequent disturbance (i.e., scouring, flooding, etc.) to prevent growth. [NRI 97]

**Crop cover.** A general cover category consisting of annual cultivated plants or their residue, that are usually grown for food, feed, oil, fiber, or oil seed production. It includes annually cultivated row crops, close grown crops, and horticultural crops, but excludes perennial crops, hay, horticultural shrubs and trees, and aquaculture areas. Included are recently tilled portions of fields.

Point 1:27013:010101R:1:Point Speci...

### 6. Overland Flow/Delivery to Water

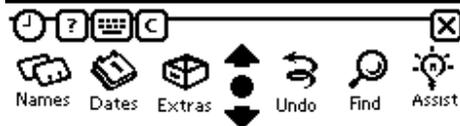
Beginning at the current point, determine and enter the cover category and segment lengths for the overland flow path of water.

Note

Enter straight line distance from point to nearest receiving water. ◆

◆ Type of receiving water

	Class	Length (feet)
1	c	50
2	h	310
3	a	70
4	t	100
5		



*Herbaceous.* A general cover category consisting of predominately perennial herbaceous plants and, or, noncultivated annuals. The tall woody canopy cover is less than 5 percent, and the short woody canopy cover is less than 5 percent. Arid rangelands and desert can fall into this category although vegetation density and percent ground cover may be low. [NRI 97]

*Large streams.* Perennial streams at least 1/8 mile wide. [NRI-97]

*Large waterbodies.* Water bodies of at least 40 acres. [NRI-97]

*Open canopy short woody plants.* A general cover category consisting of short woody canopy cover of 5 to 25 percent and tall woody canopy cover of less than 5 percent. The distinction between tall (greater than 4m) and short (less than 4m) woody plants is made for current conditions, not potential. Arid rangelands and desert can fall into this category although vegetation density and percent ground cover may be low. [NRI 97]

*Open canopy tall woody plants.* A general cover category consisting of tall woody canopy cover of 5 to 25 percent and short woody canopy cover of less than 25 percent. The distinction between tall (greater than 4m) and short (less than 4m) woody plants is made for current conditions, not potential. Arid rangelands and desert can fall into this category although vegetation density and percent ground cover may be low. [NRI 97]

*Short woody plants.* A general cover category consisting of short woody canopy cover of greater than 25 percent, and tall woody canopy cover is less than 25 percent. Short woody plants are less than 4 meter tall, often multi-stemmed, i.e., shrubs, seedlings, etc. The distinction between tall (greater than 4m) and short (less than 4m) woody plants is made for current conditions, not potential. [NRI 97]

*Small streams.* Perennial streams less than 1/8 mile (660 feet) wide. [NRI-97]

*Small waterbodies.* Inland bodies of water with a water surface area of less than 40 acres. [NRI-97]

*Tall woody plants.* A general cover category consisting of tall woody canopy cover of greater than 25 percent. Tall plants are greater than 4 meters tall, usually single stemmed trees. The distinction between tall (greater than 4m) and short (less than 4m) woody plants is made for current conditions, not potential. Thus a 3-meter-tall Douglas fir is a short woody plant. [NRI 97]