

Methods

(& Limitations)

1

Methods...

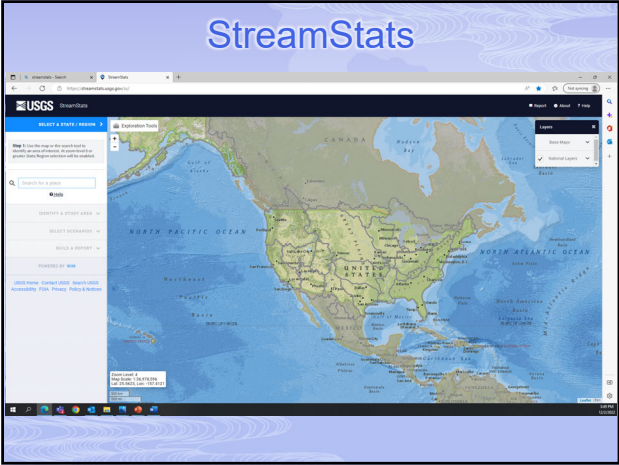
- ▣ StreamStats
 - USGS
 - <http://water.usgs.gov/osw/streamstats/pennsylvania.html>
- ▣ EFH-2
 - NETS-Hydrology Tool (EFH-2 Replacement)
- ▣ WinTR-55/WinTR-20
 - NRCS
 - Engineering Application

2

StreamStats

- ▣ USGS Water Science Center Software
 - Assistance from Federal, State and Local Agencies:
- ▣ Uses Regression Equations
 - 2-, 5-, 10-, 50-, 100-, and 500-year peak flows
- ▣ Accounts for urban, forest, , storage (lakes, ponds, etc.)
- ▣ Interactive Map

3

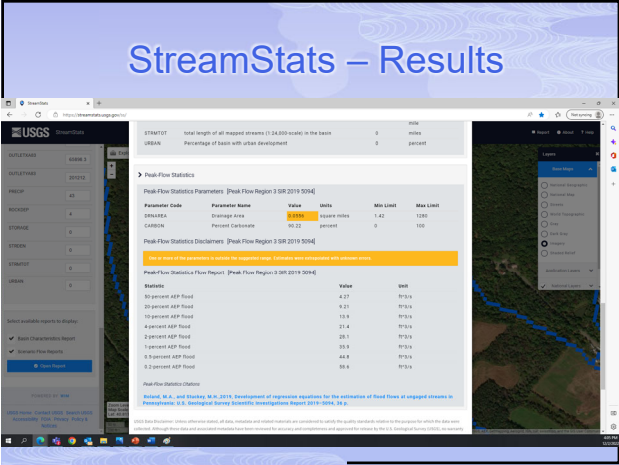


4

StreamStats

- Search location by address or pan to location
- Select Pennsylvania as Regional Study Area
- Select Delineate button and select location of interest on the blue line.
 - Watershed will be delineated
- Watershed can be edited
- Estimate flows using regression equations and/or select from various watershed

5



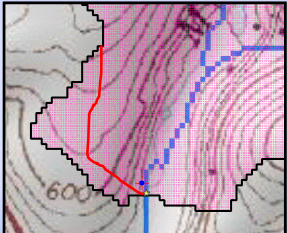
6

StreamStats


- WATERSHED MUST BE OVER 1.4 SQUARE _____ IN SIZE!!! (~900 acres)
 - Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.
- Does not report runoff depth
- CHECK YOUR WATERSHED!

7

Does it make sense?



- Change the delineation, if needed.



8

StreamStats (usgs.gov)


OBERHOLTZER FARM
527 Tower Road,
Mifflinburg, PA 17844

9

Stream Crossing Example

StreamStats

- 0.49 mi² (313.6 acres)
- % Forest = 3.5%
- % Urban = 0%
- Basin Slope = 3.2° (5.6%)
- Q₁₀ = 77.9 cfs**




10

EFH-2

Welcome to EFH-2 for Windows

EFH - 2
Engineering Field Handbook,
Chapter 2, Hydrology




Disclaimer

Although EFH-2 has been tested by its developers, NO warranty, expressed or implied, is made as to the accuracy and functioning of the program and related program material nor shall the fact of distribution constitute any such warranty, and NO responsibility is assumed by the developers in connection therewith.

11

Grassed Waterway Example


EFH-2

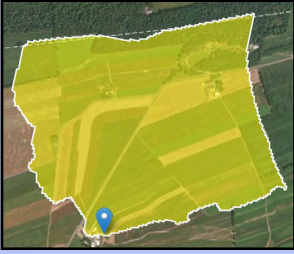


- 303 acres (~0.47 mi²)
- CN = 68
- Watershed Slope = 7.1%
- Watershed Length = 6100ft
- Q₁₀ = 167.8cfs**

12

Grassed Waterway Example

EFH-2


StreamStats


13

Grassed Waterway Example

EFH-2

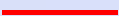
- 303.3 acres (0.47 mi²)
- CN = 68
- Watershed Slope = 7.1%
- Watershed Length = 6100 ft
- Q₁₀ = 167.8 cfs**

StreamStats

- 313.6 acres (0.49 mi²)
- % Forest = 3.5%
- % Urban = 0%
- Basin Slope = 3.2° (5.6%)
- Q₁₀ = 77.9 cfs**

14

WinTR-55/WinTR-20

- NRCS Software
-  Watersheds
- Flood Routing
 - Detention basins, multiple sub watersheds, etc.
- Uses Curve Number

15

WinTR-55/WinTR-20

- NRCS
- Flood
- Det
- Uses

Sub-area Name	Sub-area Description	Sub-area Flow to Reach/Outlet	Area (ac)	Weighted CN	To (ft)
Lake Ancho	Pond	Lake Ancho	9.00	71	0.169
Wetland	Wetland	Wetland	6.00	75	0.167
NB Basin E	New Britton Basin East	New Britton	7.00	64	0.456
NB Basin W	New Britton Basin West	New Britton	3.10	86	0.216

Area: 25.90 (ac)

16

So what do you use?

17

It depends...

- If you're working with watersheds of this size, you're probably above your Job Authority
 - a.k.a. – call for help!

18

Answer Key

- ▣ Karst
- ▣ Mile
- ▣ Urban
- ▣ Approval

19
