

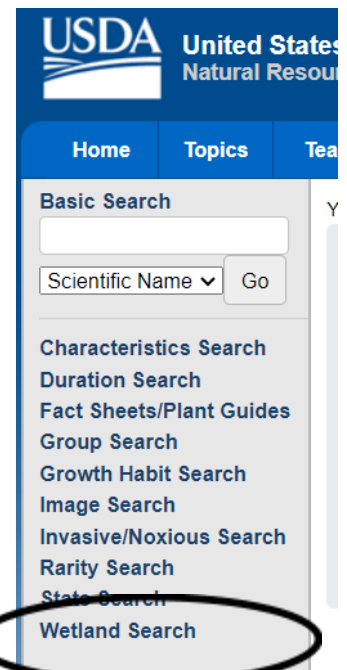
DESIGN ELEMENTS OF NATURE:

WATER

1. **Where is the watershed?** A watershed is an area of land where all flowing surface water drains to a common body of water (eg., stream, river), eventually reaching the ocean or a large lake.
→ Find your watershed: <http://tinyurl.com/3ude79f7>
2. **The wild garden should keep and absorb rainwater on the land.** Follow where the surface water comes from and drains off to, the design of the land takes shape around this in synergy. The goal is to keep the rainwater runoff on the land, so that it is soaked up by deep-rooted plants, naturally, and held on the land to make it more resilient for drought and storms, rather than running off quickly and causing erosion and other issues.
3. **Understand the value of the wild plants that grow there.** You may think of sedges and rushes as weeds but they have deep roots that will hold water and regenerate organic matter deep in the ground.
4. **Plants are indicators of water.** These wet loving plants are INDICATORS of a continuum of wet to dry land, according to the national database. For example, common rush (*Juncus effusus*) is OBL in the Northeast. The database only gives information about WILD plants.

→ Look up a plant in the PLANT Database: <https://plants.usda.gov/home>

- A. Click "Wetland Search" on the left hand panel.
- B. Type the name of the plant you wish to look up under "Taxonomy", make sure to select "Common Name" from the drop down if using the common name.
- C. Click "Display Results" button
- D. The results will display the Wetland Indicator. The database has been further refined by region, make sure to read Indicator in your region.



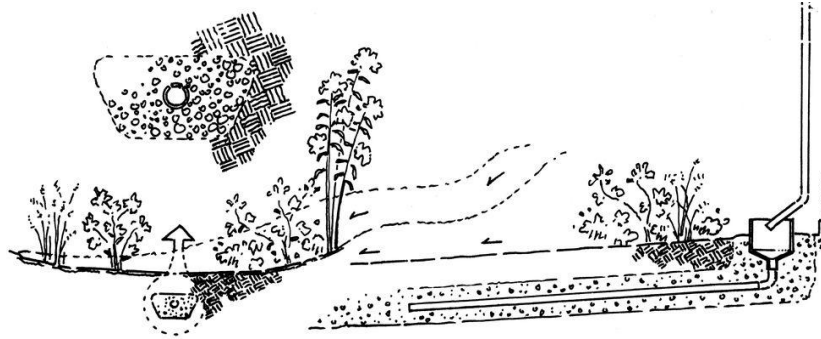
Notes on Wetland Indicator Status:

- **OBL:** Obligate - occurs almost always (>99%) under natural conditions in wetlands
- **FACW:** Facultative wetland - usually occurs in wetlands (67 - 99%), but occasionally found in non wetlands
- **FAC:** Facultative - equally likely to occur in wetlands or non-wetlands (34 - 66%)
- **FACU:** Facultative Upland - usually occurs in non-wetlands (67 - 99%), but occasionally found in wetlands (1 - 33%)
- **UPL:** Upland - occurs almost always (> 99%) under natural conditions in non-wetlands

5. **Capture water from impervious surfaces.** Water that flows off a house and other impermeable surfaces (eg, pavement) can be captured in a project such as making a rain swale (backside of this page).

Making a Rain Swale

Make a swale to channel water runoff into a natural catchment area using native plants as filters and erosion control. Make sure that the swale slopes slightly down and away from the house and does not point towards a wall, the neighbor's property, or a tree. It should be an open area, at least three feet wide.



Materials:

- PVC 90-degree elbow (or if rainflow volume is large a 6-inch plastic round Drainage Catch Basin)
- 10-foot PVC perforated pipe 4 inch diameter,
- Shovel
- River rocks or pebbles
- Gravel
- Deep rooted native plants and shrubs (some suggestions below)

Method:

1. Mark out a curve for the swale following the natural flow of the water.
2. Dig a small, sloped ditch the length of the pipe, at least ten inches deep or more, depending on your frost line (pipe should be placed below frost line).
3. Attach the non-PVC perforated pipe to the bottom of the downspout so that it will carry the water to about 3 inches underground where it meets the trench. Saw to fit where your downspout ends.
4. Attach the PVC elbow to the pipe pointing in the direction of the trench.
5. Line the bottom of the trench under the pipe with a 2 inch deep layer of large river rock or pebbles
6. Attach the perforated PVC pipe to the other end of the elbow, laying it flat in the gravel.
7. Backfill the dirt over the pipe and tamp down.

Plant List Suggestions:

<p>Plant list suggestions for wet areas: <u>Rushes and sedges:</u> Soft Rush (<i>Juncus effusus</i>), Woolgrass, swamp hibiscus, Joepyeweed Woolgrass, Ironweed, Flattopped goldenrod. <u>Shrubs:</u> clethra, Buttonbush, red twig dogwood (osier)</p>	<p>Plant list suggestions for dry areas: Water Use Classification of Landscape Species (WUCOLS), California Center for Urban Horticulture, University of California Davis www.ucanr.edu/sites/WUCOLS/), yarrows, desert broom</p>
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