

## Illinois Natural Areas Inventory community types

NATURAL COMMUNITY - the community type or types where the species is normally found--after White (1978) and Iverson (undated).

**Forest** - community dominated by trees, 80% or better average canopy cover.

- a. upland - forests that do not normally flood--includes terraces.
  1. xeric - soil extremely shallow over bedrock or gravel--canopy trees often stunted and low crowned or there is little understory. Shrubs and small trees may make impenetrable thickets.
  2. dry - soil is dry and poorly developed because of steep, exposed slopes or because of bedrock, gravel, or sand at or near the surface.
  3. dry-mesic - trees make good growth--but canopy is more open than mesic.
  4. mesic - ideal moisture conditions, a dense overstory, and an understory of shade tolerant species.
  5. wet-mesic - unusual, caused by poor drainage on level topography, along shallow drainageways, and in seepage areas.
- b. sand - forest on sand deposits where natural firebreaks have reduced burning frequency.
  1. dry - tops of dunes with least humus and soil moisture--trees often scrubby.
  2. dry-mesic - higher moisture.
  3. mesic - ravines and north or east facing slopes, rare.
- c. floodplain - periodic flooding.
  1. mesic - moderately well drained soil, because of relatively high elevation or coarse texture.
  2. wet-mesic - most common--species diversity higher in overstory but lower in ground layer than in mesic.
  3. wet - frequent and/or prolonged flooding with lowered diversity of trees. Open understory and often overstory.
- d. flatwoods - level or nearly level soil with an impermeable or slowly permeable layer which causes a perched, shallow water table - wide moisture fluctuation.
  1. northern - poorly drained uplands on Valparaiso moraine - abundance of sedge meadows and wet prairie species.
  2. southern - level areas with well developed hardpan, usually on Illinoian glacial till.
  3. sand - >1 meter of acid, peaty sand over clay.

- e. listed - listed in Natural Areas Inventory technical report.

**Prairie** - community dominated by grasses on mineral soil--trees occupy <10% of canopy.

- a. typical - typical, black soil prairie on deep and fine textured soils.
  - 1. dry - steep exposed slopes that are somewhat excessively drained--grasses shorter than 1m.
  - 2. dry-mesic - intermediate moisture--greater diversity and moisture than dry.
  - 3. mesic - favorable moisture for maximum diversity and growth.
  - 4. wet-mesic - water table near surface--composition is mixture of wet and mesic.
  - 5. wet - surface water present during winter and spring, soil nearly always saturated--diversity lower.
- b. sand - soils are coarse textured (sand, loamy sand)--must be acid enough to have characteristic plants.
  - 1. dry - soil lacks dark A horizon, grass is short.
  - 2. dry-mesic - dark A horizon, good diversity.
  - 3. mesic - deep A horizon in acid sand, mosses and low shrubs are common.
  - 4. wet-mesic - surface water present for short periods, a deep acid A is present.
  - 5. wet - surface water present for up to one-third of the year.
- c. gravel - soils are gravelly and usually calcareous.
  - 1. dry - steep gravel slopes, short grasses.
  - 2. dry-mesic - relatively high soil moisture because it occurs on lower slopes.
  - 3. mesic - low topographic position--calciphilic plants common.
- d. dolomite - dolomite <1.5 m from surface--high pH.
  - 1. dry soil extremely shallow to negligible with patches of dolomite pavement--short grasses.
  - 2. dry-mesic - slightly deeper soil over bedrock.
  - 3. mesic - soil depth over 15 cm.
  - 4. wet-mesic - soil depth over 30 cm--close to fen type.
  - 5. wet - shallow, saturated soil over bedrock.
- e. hill - prairie opening on a forested slope in droughty, well drained soil, often on steep, west or south facing slopes.
  - 1. loess - developed on deep loess.
  - 2. glacial drift - on eroded glacial drift, especially where a river valley cuts through an end moraine and there are many deep, steep-sided tributary ravines.

3. gravel - similar to other gravel prairie, but in forest opening.
4. sand - sand dunes atop river bluffs.
- f. shrub - dominated by shrubs and grasses and limited to northern Illinois--intergrades with sand prairie.
- g. listed - in technical report.
  1. dominant
  2. characteristic

**Savanna** - communities with grassy ground cover and an average tree canopy between 10 and 80%. Soils transitional between forest and prairie. Includes "open woods."

- a. typical savanna - fine textured soil on till plains and lowlands, ecotonal belt along stream forests, "islands" in prairie or forest, and extensive hilly land.
  1. dry-mesic - analogous to dry-mesic upland forest in moisture and to dry-mesic prairie in composition
  2. mesic - herbaceous cover similar to mesic prairie, found on base of moraine ridge and as islands in wetland vegetation.
- b. sand - sandy soils with little humus--associated with dune and swale topography, either dunes or beach ridges.
  1. dry - crests of highest dunes--little or no A horizon.
  2. dry-mesic - lower topographic position.
- c. barren - local inclusions of prairie flora, mixed with forest, in forested land mainly in S and W Illinois and along major rivers. Includes a diversity of former communities, some of which have been heavily disturbed since settlement.
  1. dry - shallow soil over bedrock or on dry, exposed slopes--tree layer has stunted, xerophytic oaks.
  2. dry-mesic - deeper, more moist soil.
  3. mesic - unusual--normally the soils support forest.
- d. listed
  1. dominant
  2. characteristic

**Wetland** - communities that are flooded or have hydric (very poorly drained) soils and a vegetative cover.

- a. marsh - dominated by tall graminoid plants--water near or above surface most of the year.
  1. typical - freshwater communities in glacial potholes, river valleys, and on lake plains.
  2. brackish - rare, restricted to salty seepage areas.
- b. swamp - dominated by woody plants.
  1. typical - forested, permanent or semi-permanent body of

- water.
- 2. shrub - at least 50% coverage by shrubs.
- c. bog - low nutrient, acid peat deposits in glacial depressions - restricted to Northeastern Morainal Division.
  - 1. graminoid - nearly always floating, first successional order.
  - 2. low shrub - may or may not be floating--2 strata - low shrubs and moss.
  - 3. tall shrub - climax in Illinois bog succession--occupies the most consolidated peat.
  - 4. forested - hummocks (acid) and small wet depressions present--a tree layer (>20% coverage) and a stratum of tall shrubs.
- d. fen - peat with calcareous seepage on a rather pronounced slope of calcareous, gravelly moraines.
  - 1. calcareous floating mat - has a floating layer of sedge peat with tall layer of sedges and grasses.
  - 2. graminoid - sloping peat due to upwelling of groundwater--diversity is quite high.
  - 3. low shrub - similar to graminoid, except for large poorly vegetated seepage areas which serve as fire breaks to permit dominance by low shrubs.
  - 4. tall shrub - similar to low shrub fen, with addition of tall shrubs.
  - 5. forested - on steep slopes in peat--tree cover >20%.
- e. sedge meadow - dominated by sedges on peat, muck, or wet sand--homogenous in composition and structure.
- f. panne - swales in calcareous sand within one mile of Lake Michigan.
- g. seep and spring - where groundwater flows to the surface (seep - diffuse, spring - concentrated flow).
  - 1. typical seep - typical community with circumneutral water. A tree cover is often present.
  - 2. acid gravel seep - in muck or peat deposits and a low pH caused by water running through gravel.
  - 3. calcareous seep - calcareous groundwater so that tufa (porous limestone formation) deposits form--forest cover is absent.
  - 4. sand seep - acid seepage water flows through sand, usually at the edge of dune or beach ridges.
  - 5. spring community - large springs flowing across broad area--plant community normally not well developed.
- h. listed
  - 1. dominant
  - 2. characteristic

**Lake and pond** - bodies of open, standing water.

- a. pond - eutrophic, small, still body of water shallow enough to allow rooted aquatic plants across most of it. It must have permanent or semi-permanent water.
- b. lake - has on its periphery a barren, wave-swept shore (absence of attached aquatic plants or fine organic matter on bottom)  
--normally having thermal stratification.
  1. Lake Michigan
  2. reservoir
  3. natural impoundment - impoundment formed naturally.
    - a. glacial - glacial derived origin.
    - b. bottomland - backwater lakes
    - c. sinkhole - karst topography
  4. artificial impoundments
    - a. dammed
    - b. perched
    - c. dug
    - d. borrow pit
    - e. quarry pit
    - f. gravel pit
    - g. surface mine
- c. listed
  1. dominant
  2. characteristic

stream - flowing waters that are permanent.

- a. creek - perennial stream or stream segment with an average width of 20 feet or less.
  1. high-gradient -  $\approx$ 10 feet per mile gradient (1.9 m/km).  
Riffles pools, and gravel beds are characteristic.
  2. medium-gradient - 1-10 feet/mi gradient.
  3. low-gradient -  $<$ 1 feet/mi gradient, sluggish current, no riffles, the sediments are silt and organic matter.
- b. river - perennial stream or stream segment  $>$ 20 ft. wide.
  1. small river - width 21-100 ft.
    - a. high-gradient - see creek explanations.
    - b. medium-gradient
    - c. low-gradient
  2. medium river - width 101-300 ft.
    - a. high-gradient - see creek explanations.
    - b. medium-gradient
    - c. low-gradient
  3. large river - width  $>$ 301 ft.
    - a. medium-gradient - see creek explanations.

- b. low-gradient - see creek explanations.
- c. listed
  1. dominant
  2. characteristic

**Primary** - soil thin or absent with parent material near or at surface--communities maintained at early successional stage.

- a. glade - opening in forest caused by bedrock at surface and (usually) a steep southern or western exposure--on sandstone, limestone, or shale.
  1. sandstone - top of cliffs and steep upper slopes of S-facing escarpmentnts. Sandstone crops out, and soil is poorly developed. Herbaceous vegetation sparse.
  2. limestone - steep S and W-facing spurs and bluffs of limestone. Soil rocky and clayey--a more diverse community than sandstone. Limestone outcrops.
  3. shale - rare, steep ridge with thick shale outcrops.
- b. cliff - vertical exposures of resistant bedrock and unconsolidated materials.
  1. sandstone
  2. limestone - less resistance to weathering and higher pH.
- c. lake shore - lake deposited sand.
  1. beach - recently deposited sand.
  2. foredune - beginning of soil development--often dense cover of low shrubs and grasses.
- d. listed
  1. dominant
  2. characteristic

**Cultural** - communities created by human disturbance (do not include if original natural vegetation was not removed or if secondary succession has progressed so a young forest exists).

- a. agricultural field
  1. cropland - row or forage crop.
  2. pastureland - open pastured land.
  3. field division - fence, hedge rows.
- b. successional field - abandoned
  1. abandoned cropland
    - a. early
    - b. middle
    - c. late
  2. abandoned forageland
    - a. early
    - b. middle

- c. late
- c. developed land - highly modified or has structures--includes roadways and vacant lots.
- d. plantation - trees planted - orchards, arboretums, etc.
- e. restoration - man-made attempts to return natural community.
  - 1. forest
  - 2. prairie
  - 3. marsh
- f. mined land - areas strip mined or with deep mine waste deposits.
  - 1. non-vegetated - very little vegetation.
  - 2. vegetated - better than 25% coverage.
  - 3. developed - recreational or other use.
- g. listed
  - 1. dominant
  - 2. characteristic

**References:**

White, J., and M. H. Madany. 1978. Classification of natural communities in Illinois. Pages 309-405 in J. White, ed., Illinois natural areas inventory technical report. Vol. I. Survey methods and results. Illinois Natural Areas Inventory, Urbana.

Iverson, L. R. (undated). Illinois Plant Information Network. Input Form Descriptions. <http://www.fs.fed.us/ne/delaware/ilpin/ilpin.descript.txt>. Accessed online, April 5<sup>th</sup>, 2005.