



National Wetlands Inventory

The U.S. Army Corps of Engineers (Corps) as of 2006 has accepted the administrative responsibility for the National Wetland Plant List from the U.S. Fish and Wildlife Service (FWS). In early 2009 the FWS removed the published 1988 and 1966 wetland plant lists from their National Wetland Inventory (NWI) web site. The web pages and associated files were then provided to the Corps. The web pages, wetland plant lists, and associated downloadable files hosted here by the Corps are exactly the same as those provided by the FWS except that FWS logos have been removed.

1996 National List of Vascular Plant Species That Occur in Wetlands

Introduction

The Fish and Wildlife Service has prepared a National List of Vascular Plant Species That Occur in Wetlands: 1996 National Summary (1996 National List). The 1996 National List is a draft revision of the National List of Plant Species That Occur in Wetlands: 1988 National Summary (Reed 1988) (1988 National List). The 1996 National List is provided to encourage additional public review and comments on the draft regional wetland indicator assignments.

The 1996 National List reflects a significant amount of new information that has become available since 1988 on the wetland affinity of vascular plants. This new information has resulted from the extensive use of the 1988 National List in the field by individuals involved in wetland and other resource inventories, wetland identification and delineation, and wetland research. Interim Regional Interagency Review Panel (Regional Panel) changes in indicator status as well as additions and deletions to the 1988 National List were documented in Regional supplements.

The National List was originally developed as an appendix to the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) to aid in the consistent application of this classification system for wetlands in the field. The 1996 National List also was developed to aid in determining the presence of hydrophytic vegetation in the Clean Water Act Section 404 wetland regulatory program and in the implementation of the swamp-buster provisions of the Food Security Act. While not required by law or regulation, the Fish and Wildlife Service is making the 1996 National List available for review and comment.

Copies of the 1996 National List are available from the Fish and Wildlife Service, National Wetlands Inventory, Suite 101, Monroe Building, 9720 Executive Center Drive, St. Petersburg, FL 33702-2440. An electronic copy of the 1996 National List is available for downloading at <http://www.fws.gov/nwi/plants.htm>. Written comments may be submitted to the Fish and Wildlife Service, National Wetlands Inventory, 4401 N. Fairfax Drive, Arlington, VA 22203, faxed to (703) 358-1869, or electronically transmitted ([email](#)). The principal agency contacts for the cooperating agencies are Dr. Bill O. Wilen, Fish and Wildlife Service, at (703) 358-2278; Richard Lichvar, U.S. Army Corps of Engineers, at (603) 646-4657; Tim Landers, Environmental Protection Agency, at (202) 566-1985; and Dr. Norman Melvin, Natural Resources Conservation Service, at (817) 509-3572.

The 1996 National List was produced under the guidance of National and Regional Panels composed of representatives from the Fish and Wildlife Service, U.S. Army Corps of Engineers, Environmental Protection Agency, and the Natural Resources Conservation Service. The National Panel provides guidance and direction for the development and maintenance of the National List of Vascular Plant Species That Occur in Wetlands. The wetland ecologist of the National Wetlands Inventory, Fish and Wildlife Service, coordinates the activities of the National Panel. The National Panel meets as necessary to review Regional Panel progress and to set future direction and goals.

The Regional Panels solicit and obtain information from their agency personnel, regional reviewers, and from published literature to aid in the assignment of regional wetland indicators. The activities of the Regional Panels are coordinated by a Fish and Wildlife Service representative, usually the Regional Wetland Inventory Coordinator. The Regional Panels also meet as necessary to consider and assess all new submissions recommending changes to the National List of Vascular Plant Species That Occur in Wetlands that relate to their respective Regions.

The cooperating agencies responsible for the development and continued enhancement of the 1996 National List have recently signed an Agreement for Coordination in the Refinement of the National List of Vascular Plant Species That Occur in Wetlands. The 1996 National List represents the combination of the Regional Lists into a single list. National and Regional Lists will be released as Fish and Wildlife Service publications and will be made available to the other agencies and the public.

Regional Lists will be advertised separately in the Federal Register in the future as changes are made by individual Regional Panels. The production of new National Lists will not occur any more often than every 5 years. If changes to the Regional Lists become necessary outside the 5-year cycle, those changes will be made in compliance with these procedures.

To facilitate the development of the new National List of Vascular Plant Species That Occur in Wetlands, the four principal agencies involved in its preparation agree to work cooperatively at achieving their collective goal by adhering to the following steps:

1. The Regional Panels prepare an updated draft of the Regional List of Vascular Plant Species That Occur in Wetlands.
2. The Regional Panels submit proposed changes to the Regional List to the National Panel and identify those changes to taxa in the updated draft that have potentially significant impact for wetland identification and/or delineation in the region.
3. The National Panel reviews proposed changes in close consultation with the Regional Panels. This review includes all technical input and rationale that formed the basis for proposed changes to each Regional List.
4. The National Panel makes additions/deletions/corrections as needed based on their review, and in consultation with the Regional Panels. As part of National Panel's work, agency representatives to the Panel inform the appropriate Headquarters officials in their respective agencies, of the status of the effort during all phases of the process. This will include a briefing by the National Panel.
5. The Service prepares a draft National List and prepares a Notice of Availability in Federal Register (FR) for public review and comment.
6. Public comments come back to the Service. The National Panel will evaluate the comments to determine which merit scientific review and input.
7. Comments meriting scientific review are submitted to the Regional Panels, which will prepare draft responses and clarify any discrepancies.
8. The National Panel, in close consultation with the Regional Panels, reviews the comments and the Regional Panel responses, resolves differences, and prepares responses, including modifications of the proposed changes, if needed.
9. The Ecology Section of the National Wetlands Inventory Center summarizes all responses at each stage of the process and presents the final National List to the National Panel. The National Panel members will inform the appropriate Headquarters officials in their respective agencies of the status and effects of the effort.
10. When the National Panel completes its work on the National List, final technical determinations, and the effects of those determinations are provided to each agency Headquarters by their respective National Panel members.
11. The Service, as chair of the National Panel, summarizes all National and Regional Panel responses and prepares a Notice of Availability in the FR for the final revised National List.

The 1996 National List consolidates all Regional Interagency Review Panel wetland indicator decisions made since 1988. The revision process followed the same procedures described for the development of the 1988 National List. Review submitted for each species was examined by each Regional Panel. A unanimous decision by each Regional Panel on the indicator status for each species was derived by comparing the new review against the previous review and habitat provided by botanical manuals and floras. In some regions, habitat expressed by botanical floras published since the completion of the 1988 National List was extensively used by the Regional Panels in the development of the 1996 National List.

The 1996 National List has been revised to conform to A Synonymized Checklist of the Vascular Flora of the United States, Canada, and Greenland (Kartesz 1994) (1994 Synonymized Checklist). The 1994 Synonymized Checklist replaces the National List of Scientific Plant Names (SCS 1982) (NLSPN) followed by the 1988 National List. The 1994 Synonymized Checklist has been adopted by a number of federal natural resource agencies and is rapidly becoming the federal standard for vascular plant nomenclature. The Natural Resources Conservation Service maintains the 1994 Synonymized Checklist as the PLANTS database. The PLANTS database is accessible electronically at <http://plants.usda.gov/>. The PLANTS database maintains the most current revision of the 1994 Synonymized Checklist and state distribution data. Future revisions of the 1996 National List will follow the most current version of the PLANTS database.

The conversion of the nomenclature to follow the 1994 Synonymized Checklist has resulted in a number of changes within the 1996 National List.

1. A few taxa listed in the 1988 National List were designated in the 1994 Synonymized Checklist as excluded or anomalous names and thus were eliminated from the 1996 National List.
2. A small number of taxa with misapplied or misspelled names were converted manually to the correct name.
3. A number of infra-taxa (subspecies, varieties, and quadrinomials) occur on the 1996 National List as a result of the merger of many formerly accepted taxa into other accepted taxa with a different regional wetland indicator. The wetland indicator assigned to the binomial name for a taxon applies to all infra-taxa unless an indicator is specifically given for one or more infra-taxa.
4. Where two formerly accepted taxa with different indicators were merged into a single taxon with no accepted infra-taxa, the Regional Interagency Review Panels have considered all previous review data for the two or more taxa and developed a single indicator.

The regional distribution of many taxa in the 1996 National List have been modified to reflect revised 1994 state distribution data graciously provided by Dr. John T. Kartesz. A small number of taxa not listed in the 1994 Synonymized Checklist are included in the 1996 National List. These taxa include names inadvertently omitted, unpublished when the 1994 Synonymized Checklist was completed, or occur in the western Pacific outside the coverage of the 1994 Synonymized Checklist. Taxa that have had an Obligate Upland indicator applied across all regions have been removed from the 1996 National List.

The 1996 National List presents for all taxa alphabetically by scientific name the wetland indicator for each region and subregion and the national indicator range. The national indicator range represents the span of indicator assignments from the lowest to the highest frequency of occurrence in wetlands. If a species does not occur in wetlands with an estimated probability equal to or greater than one percent in any Region, it is not on the 1996 National List.

The wetland indicator represents the estimated probability (likelihood) of a species occurring in wetlands versus non-wetlands in the region. The probability percentages applied to each indicator category were provided to enhance an understanding of this methodology. The regional indicator assignments are not based on the results of a statistical analysis of the occurrence of these species in wetlands. The indicator assignments are the best approximation of wetland affinity for these species based upon a synthesis of submitted review comments, published botanical manuals and literature, and field experience. If a Regional Panel was not able to reach a unanimous decision on a species, NA (no agreement) was recorded. An NI (no indicator) was recorded for those species for which insufficient information was available to determine an indicator status or that were not considered by the Regional Panel. An asterisk (*) following a regional indicator identifies tentative assignments based on limited information or conflicting review. A positive (+) or negative (-) sign was used with the Facultative indicator categories to more specifically define the regional frequency of occurrence in wetlands. The positive sign indicates a frequency toward the higher end of the category (more frequently found in wetlands). A negative sign indicates a frequency toward the lower end of the category (less frequently found in wetlands).

Indicator Categories

- Obligate Wetland (OBL). Occur almost always (estimated probability >99%) under natural conditions in wetlands.

- Facultative Wetland (FACW). Usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.
- Facultative (FAC). Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).
- Facultative Upland (FACU). Usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).
- Obligate Upland (UPL). Occur in wetlands in another region, but occur almost always (estimated probability >99%) under natural conditions in non-wetlands in the region specified.

The wetland indicator categories should not be equated to degrees of wetness. Many Obligate Wetland species occur in permanently or semi-permanently flooded wetlands, but a number also occur and some are restricted to wetlands that are only temporarily or seasonally flooded. The Facultative Upland species include a diverse collection of plants that range from weedy species adapted to a number of environmentally stressful or disturbed sites (including wetlands) to species in which a portion of the gene pool (an ecotype) always occur in wetlands. Both the weedy and ecotype representatives of the facultative upland category occur in a variety of wetland habitats, ranging from the driest wetlands to semi-permanently flooded wetlands.

The actual frequency of occurrence of a specific species in wetlands may be anywhere within the frequency range of the indicator category. For example, some species assigned to the Facultative Upland indicator category may actually have a frequency toward the lower end of the category whereas other species may actually have a frequency toward the upper end of the category.

The [regions](#), as defined in the 1988 National List, have been maintained to provide broad geographic divisions for the Regional Panels. The states comprising the regions expressed by the regional codes used in the NLSPN are displayed below.

REGION CODE	REGION	STATE(S) IN REGION
1	Northeast	CT,DE,KY,MA,MD,ME,NH,NJ,NY,OH,PA,RI,VA,VT,WV
2	Southeast	AL,AR,FL,GA,LA,MS,NC,SC,TN
3	North Central	IA,IL,IN,MI,MO,MN,WI
4	North Plains	ND,MT (Eastern),SD,WY (Eastern)
5	Central Plains	CO (Eastern),KS,NE
6	South Plains	OK,TX
7	Southwest	AZ,NM
8	Intermountain	CO (Western),NV,UT
9	Northwest	ID,MT (Western),OR,WA,WY (Western)
0	California	CA
A	Alaska	AK
C	Caribbean	PR (Puerto Rico), VI (U.S. Virgin Islands)
H	Hawaii	HI (Hawaiian Islands), AS (American Samoa), FM (Federated States of Micronesia), GU (Guam), MH (Marshall Islands), MP (Northern Mariana Islands), PW (Palau), UM (U.S. Minor Outlying Islands)

The 1996 National List contains sub-regional indicator assignments that provide a means for the Regional Panels to describe more accurately the ecological variability of a species within a region. The [sub-regions](#), described as Land Resource Regions and Major Land Resource Areas of the United States, are ecologically defined by the Soil Conservation Service (1981) as geographic areas with similar soils, climate, water resources, and land use. Sub-regional wetland indicator assignments have been applied to

only a few species by a limited number of Regional Panels. We anticipate that the number of sub-regional indicator assignments will increase substantially as the 1996 National List is further refined.

A composite list of all synonym names for all accepted taxa included on the 1996 National List from the 1994 Synonymized Checklist (graciously provided by Dr. John T. Kartesz) and the NLSNP is presented alphabetically by scientific name for all synonyms. The previous acceptance in the 1988 National List of a current synonym is indicated by an (*) preceding the synonym name. The accepted name from the 1994 Synonymized Checklist is displayed for each synonym name. The source of each synonym name is presented.

The 1996 National List will remain dynamic and the submission of well documented review based on field experience is encouraged. We are primarily seeking review of the information contained in the 1996 National List. However, comments on other taxa not included on the 1996 National List and recommendations for indicator assignments for other sub-regions are welcome. Comments that concur with an assigned indicator are as important as reviews supporting a different indicator. We especially would appreciate receiving review comments on taxa currently assigned an "NI" (no indicator) in one or more regions. No previous regional review has been submitted for these taxa and/or there is limited habitat information in the botanical literature.

All scientific plant names in a submission except for those taxa occurring in the Western Pacific must be contained in the 1994 Synonymized Checklist or the PLANTS database. Complete documentation, including a description and explanation of the variety of field sites and/or data supporting the recommended wetland indicator, is necessary for the Regional Panels to adequately understand and consider a submission. A submission should contain a strong rationale supporting the proposed recommendation including the extent of the area that the field experience and data provided are based upon. Information presented in the submission from botanical and ecological texts and periodicals should be supplied with the citation of the source. The rationale should clearly discuss as part of the field information the percentage of occurrence of the taxon in both wetland and non-wetland areas. The Regional Panels will consider submissions ranging from short narratives to those containing detailed vegetation sampling data analyses. An ideally complete submission should present for each field site referenced in the submission quantitative community information including the scientific names and importance of all plant taxa, soils data including classification and morphology (especially the presence of field indicators) (USDA NRCS 1996), hydrologic data (especially any intensive water table and redox potential monitoring), and landscape position.

A review form is provided with the [1996 National List](#) to facilitate review submission. Use of this review form is encouraged but not required. Completed submissions and review forms can be sent by email to [Dr. Bill O. Wilen](#).

Literature Cited

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