<u>Flora Conservanda</u>: New England. The New England Plant Conservation Program (NEPCoP) List of Plants in Need of Conservation.

and

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Abstract. The New England Plant Conservation Program (NEPCoP) regional rare plant list, "<u>Flora Conservanda</u>: New England," identifies vascular plant taxa in need of regional conservation. In 1993, NEPCoP established a Listing Committee consisting of representatives of each of the six state Natural Heritage Programs (NHPs) and additional scientists. The most current information on the rare vascular flora of each state, stored at the respective NHPs, was used as the basis of the NEPCoP List. The List comprises 576 taxa in five divisions: Division 1– Globally Rare Taxa (57 taxa); Division 2–Regionally Rare Taxa (273 taxa) ; Division 3–Locally Rare Taxa (75 taxa); Division 4–Historic Taxa (55 taxa); and Division Indeterminate (IND.)–116 taxa.

Key Words: NEPCoP, New England, conservation, endangered species, plants, regional plant program, <u>Flora</u> <u>Conservanda</u>, regional conservation list

The New England Plant Conservation Program (NEPCoP), a voluntary collaboration of botanists, state and federal agencies, and conservation organizations in each of the New England states, was initiated by the New England Wild Flower Society (NEWFS) in 1991. The goals of NEPCoP are to prevent the extirpation and promote the recovery of the endangered flora of New England (New England Wild Flower Society 1992). The Program provides regional coordination for state-based plant conservation efforts to make best use of limited resources. NEPCoP was initiated for several reasons: 1) on a global and regional scale, plant species are under extreme threat; 2) a lack of public awareness concerning the importance of plants has contributed to plant endangerment; and 3) there is inadequate support for plant conservation activities from both the public and private sector.

The Program is administered by a Regional Advisory Council, Task Forces in the six New England states, and NEWFS. The Council, consisting of representatives from each state Task Force, members of the Board of Trustees at NEWFS, and other representatives from other conservation organizations, convenes as necessary to monitor and advise the overall Program. The Council sets policy for regional plant conservation, oversees development of the "Flora Conservanda: New England," and selects priority species for conservation action throughout the region.

State Task Forces are the heart of the program. Each Task Force, comprised of individuals knowledgeable of the state's flora, selects populations of priority species to be surveyed and directs conservation actions. The Task Forces meet at least once annually to discuss progress and set conservation agendas.

NEPCoP integrates in situ with ex situ conservation methods.

1) In situ methods. The best method for conserving plants is to protect the habitats where wild populations occur. Protection of land in itself, however, may not ensure the perpetuation of plant populations. Changes in habitats over time may necessitate management in order to preserve rare species. Members of each state's Task Force survey occurrences of rare plants, identify threats, and make suggestions for future management.

2) <u>Ex situ</u> methods. As a complement to protection and management of wild plant populations, plant propagules are collected from selected populations for seed banking, research, and public education. A seed bank of endangered species has been established at Garden in the Woods, the botanic garden of the New England Wild Flower Society in Framingham, Massachusetts, as a backup in the event of catastrophic loss in the wild. Seeds are collected from vulnerable populations of priority species as determined by each state Task Force. The number of populations sampled depends on many factors including the size and number of occurrences within each state, the type of land ownership, and each species' potential for successful seed banking.

An important part of the seed banking process is research on the propagation and cultivation of rare plant species. As seeds are tested for banking, the optimal propagation methods for each species are researched, and any plants produced can be made available for research. Most importantly, this propagation research provides information that can be applied to management of wild populations as well as propagules for reintroduction if deemed necessary. In addition, plants obtained through propagation research become part of the collection of the New England Garden of Rare and Endangered Plants, also maintained at the Garden in the Woods. This collection is an educational display for the public and a genetic resource for conservation and research.

Realizing that continual monitoring of all regional rare plant populations will not be accomplished by the currently limited number of professionals, NEPCoP has instituted a pilot program of Volunteer Rare Plant Monitors. This program, at present in Massachusetts only, trains volunteers to survey rare plant occurrences. The initial results have been impressive and the expansion of this program both within Massachusetts and throughout the region is anticipated.

New England states have had a strong interest in conservation of the native flora for many years. Connecticut passed a law in 1868 to protect the Hartford Fern, <u>Lygodium palmatum</u> (Mehrhoff 1980), which may be the earliest legal attempt at conservation of plants for aesthetic interest rather than for utilitarian reasons.

The New England Botanical Club (NEBC) formed its first conservation committee, the Natural Areas Criteria Committee, in 1971. The Endangered Species Committee was an offshoot of this initiative and in 1975 began the preparation of individual state reports of rare and endangered vascular plants with the support of the U. S. Fish and Wildlife Service. These reports included: Maine (Eastman 1978), New Hampshire (Storks and Crow

1978), Vermont (Countryman 1978), Massachusetts (Coddington and Field 1978), Rhode Island (Church and Champlin 1978), and Connecticut (Mehrhoff 1978).

These state lists served as a basis for the NEBC regional list (Crow et al. 1981). This regional list included 479 taxa, the majority of which were either "E/T" (Endangered/Threatened - 337 taxa) or "R" (Rare - 133 taxa). Taxa designated as "E/T" were documented from 10 or fewer towns and "R" were documented from 10 to 20 towns. In addition, other designations, such as federal status or consideration, were included. Occurrences for each taxon within each state were noted by a variety of designations.

The 1981 list was "based, in large part, on historical records documented by specimens in herbaria" (Crow et al. 1981). Prior to this publication there had been little concerted effort to collect or document regionally rare taxa, and the NEBC committee was faced with the daunting task of determining which taxa were rare throughout the region. This was accomplished using the first-hand knowledge of state experts, information culled from the literature, and selective checking of herbarium records. Often, there was no way to ascertain the current status of a taxon with only specimens and literature.

Beginning in 1978, The Nature Conservancy facilitated the establishment of state Natural Heritage Programs (or their equivalent) in each of the New England states. Similar programs already existed in some states. These Programs undertook and encouraged intensive field work in their respective states, resulting in many new or updated records for rare taxa. Because of this field work, many individual state lists were refined to reflect the more current status information. Some taxa remained elusive or showed a decline while others were shown to be more common and were removed from state lists. During the 1980s, most New England states formulated state laws regarding rare or endangered plants (see Appendix I for current state laws).

DEVELOPMENT OF THE NEPCoP "FLORA CONSERVANDA: NEW ENGLAND"

Purposes. In order to guide regional efforts, NEPCoP first needed to identify species and populations of regional conservation concern. Towards this end, a Listing Committee of the Regional Advisory Council was formed to develop and maintain a regional list of plants known as "<u>Flora Conservanda</u>: New England" (often referred to as the NEPCoP List).

In addition to identifying taxa and populations of regional conservation concern, the NEPCoP List is intended to promote the resolution of nomenclatural and taxonomic vagaries or problems and to suggest priorities for protection at both the species and population levels. It is hoped that it will aid the development of priorities for research, protection, and recovery on a regional basis, and help states to coordinate their individual species conservation efforts. The NEPCoP List differs from state and federal lists in two ways: first, it provides a regional (New England) perspective on the conservation status of each taxon; second, it has no legal standing. (Legal protection or status, however, may be afforded a taxon within an individual state or through the federal government.)

The NEPCoP List focuses on taxa that are globally and regionally rare (Divisions 1 and 2). It also identifies taxa that may be common throughout a significant portion of the region, but that have occurrences of conservation importance owing to their biological, ecological or (potential) genetic significance (Division 3). It further identifies taxa which are considered historic in the region (Division 4) as well as those which may be rare throughout New England, but for which taxonomic or distributional information is insufficient to determine status (Division IND.).

The List is intended to be useful to the following: 1) NEPCoP State Task Forces in selecting species for conservation; 2) scientists in focusing efforts on critical species; 3) federal, state, and local government agencies and private land conservation organizations in identifying the most important taxa to protect and manage within the region; and 4) the public in supporting conservation efforts.

Methods. "<u>Flora Conservanda</u>: New England" was developed by a Listing Committee consisting of representatives of each of the six state Natural Heritage Programs (NHPs), and several other botanists familiar with the regional flora. The most current information regarding the distribution and status of the rare vascular plants of

each state is stored in their respective NHPs in a comprehensive Biological and Conservation Database (BCD) developed by The Nature Conservancy. The records maintained in the state databases constituted the basis for developing "Flora Conservanda: New England."

Each NHP monitors (tracks) a large number of species considered to be rare within its state. The initial compilation of the six state lists combined with the NEBC list (Crow et al. 1981) resulted in the identification of more than 1100 taxa. Approximately 200 additional taxa were reviewed by the Committee, as well. By developing strict definitions for the inclusion of a taxon within one of the five Divisions of "<u>Flora Conservanda</u>: New England," the Committee succeeded in identifying 576 taxa of highest regional concern out of a total of approximately 3024 indigenous or partly indigenous taxa in New England (Seymour 1969).

Determination for listing is based on the number of Element Occurrences (EO) within each state. The term was devised by The Nature Conservancy and is used in conservation as an alternative to "population." Populations of organisms often are difficult to delineate without intensive research, and use of the term "population" often implies that its limits are known. Somewhat broader in scope, an occurrence is defined as follows: "For species..... element occurrences represent the full occupied habitat (or previously occupied habitat) that contributes, or potentially contributes, to the persistence of the species at that location. EOs are separated from each other by substantial barriers to movement or dispersal, or by specific distances defined for each element across either unsuitable, or suitable but apparently unoccupied habitat." (The Nature Conservancy, Conservation Science Division, in association with the Network of Natural Heritage Programs and Conservation Data Centers 1997).

The state NHPs have made every attempt to verify the records included in the NEPCoP List. In some cases, certain occurrences were revisited during the development of the List with the intent of assessing current status and updating existing NHP files.

Herbarium specimens have been crucial to the preparation of "<u>Flora Conservanda</u>: New England" as vouchered records of occurrences included in the List. An herbarium specimen collected in New England exists for every taxon included in the NEPCoP List. These specimens have helped clarify taxonomic and distributional issues, and they exist as a permanent record of a plant's existence at a particular site and time.

All data included within "<u>Flora Conservanda</u>: New England" are current as of December 1995; in some cases, discoveries made during the 1996 field season are included. Occurrence numbers included in Divisions 1, 2, and 3 and IND. are for occurrences verified as extant since 1970. The database used for "<u>Flora Conservanda</u>: New England" was developed by BG-BASE, Inc., Holden Arboretum, Kirtland, Ohio.

The List is dynamic, and it is the intent of the Regional Advisory Council to update it every five years. To facilitate this process, the state NHPs are actively seeking information on the status of listed taxa. Corrections, comments, and additional information pertaining to any taxon already listed, or warranting listing, are solicited by the NHPs and NEPCoP.

Nomenclature. Precise nomenclature for each taxon was of paramount concern for the Listing Committee because of the diverse audience of anticipated users and the plethora of potential identification manuals and field guides. No single reference is used by botanists, conservationists, government officials, and wildflower enthusiasts throughout New England. The late Arthur Cronquist's recent manual (Gleason and Cronquist 1991) likely will become a standard reference, but nomenclature in this manual does not in all instances match names used in some recent state checklists, i.e., "Checklist of the Vascular Plants of Maine" (Campbell et al. 1995). Furthermore, some state Natural Heritage Programs use names suggested by the national office of The Nature Conservancy which follows Kartesz (1994).

NEPCoP's Regional Advisory Committee adopted the following policy for nomenclature (New England Wild Flower Society 1992):

1) The primary source is to be the <u>Flora of North America</u> (FNA), a multi-year, multi-volume endeavor. As of this writing, only the volume covering the Pteridophyta and Pinophyta has been published (Flora of North America Editorial Committee 1993). A second volume, covering the Magnoliidae and Hamamelidae of Cronquist (1981), is in press.

2) Secondary sources are to be the authors of taxonomic treatments for future volumes of FNA. Although changes in nomenclature are possible through the editing and review phases of the preparation of each volume, it is expected that most of these names are likely to pass the rigorous review of the FNA Editorial Committee and their reviewers. Consequently, for difficult taxonomic groups, every effort was made to contact authors of future treatments of FNA (see Acknowledgments). In some instances, however, authors have not yet been selected by the FNA editorial committee. When the nomenclature to be used in future FNA treatments coincided with that of a published source, the existing publication is cited as the primary source of the name.

3) The tertiary source for nomenclature is Gleason and Cronquist (1991), the most recent floristic manual available for New England. Although most of this work provides an acceptable taxonomic reference, treatments such as those for <u>Viola</u> and <u>Scirpus</u> (sensu lato) pose problems. <u>Viola novae-angliae</u> and <u>Scirpus ancistrochaetus</u>, acknowledged by other sources including the U.S. Fish and Wildlife Service, have been included in other wide-ranging, polymorphic taxa in this manual. Similarly, other treatments do not follow current thought: e.g., the use of <u>Lycopodium</u> instead of the separate genera <u>Lycopodium</u>, <u>Diphasiastrum</u>, <u>Huperzia</u>, <u>Lycopodiella</u>, and <u>Pseudolycopodiella</u> (as cited by Flora of North America Editorial Committee 1993) or <u>Habenaria</u> as opposed to the currently widely accepted <u>Platanthera</u>.

Three important references were not chosen as standards for nomenclature, although they are often cited in the NEPCoP List. Merritt Lyndon Fernald's <u>Gray's Manual of Botany</u> (Fernald 1950), although still used by many field botanists because of its thoroughness, is not current in nomenclature, taxonomy, or descriptions of plant distribution. <u>The Flora of New England</u> (Seymour 1969) was derived primarily from the study of herbarium specimens, and although it is extremely helpful in visualizing plant distribution, it essentially follows the taxonomic treatments found in <u>Gray's Manual of Botany</u> (Fernald 1950). <u>A Synonymized Checklist of the Vascular Flora of the United States, Canada, and Greenland</u> (Kartesz 1994) had not been published at the time this project was started. Moreover, most of the intended audience for the NEPCoP List is not likely to have easy access to this work, which does not contain keys to aid in field identification. Fortunately, many of the names used in the NEPCoP List are the same as in Kartesz (1994), which is an especially valuable reference because of its nomenclatural accuracy.

To increase the utility of "<u>Flora Conservanda</u>: New England," identification manuals and widely reviewed regional floristic treatments are cited either as the primary name or in synonymy in order to facilitate field identification. Either the primary name or its synonym(s) usually can be found in at least one manual that contains a key. Each entry includes preferred synonyms used by one or more of the six New England states. The synonymy is not intended to be complete. An Index to all names and synonyms used in the NEPCoP List follows the Appendices.

FORMAT OF THE NEPCOP LIST

Divisions of the List. "Flora Conservanda: New England" is divided into five divisions:

<u>Division 1: Globally Rare Taxa occurring in New England</u>. Taxa included in this Division are listed as Globally Rare (G1 through G3 or T1 through T3) by The Nature Conservancy (adapted from Master 1991 and The Nature Conservancy 1996; see Global Rank -GRank -explanations under Notes below or in Appendix II). Usually only a few occurrences of these taxa exist within our region, but New England does contain the majority of occurrences for a few of these highly ranked taxa. In some cases, taxa with GRanks that normally would place them in this division have taxonomic or other issues that make their current status in New England unclear, and the majority of these taxa have been placed in other divisions. GRanks for taxa in this division appear in the Notes section under each taxon in the list.

<u>Division 2: Regionally Rare Taxa</u>. These taxa have fewer than 20 current occurrences (seen since 1970) within New England. This division includes taxa which are rare throughout their range in all of New England as well as taxa that reach the edge of their distributional range in our region. It is important to conserve these edge-of-range occurrences as part of New England's natural heritage as well as to avoid further shrinkage of these species' entire ranges. A taxon with more than 20 occurrences in New England might also be included in Division 2 if a substantial number of occurrences contain small numbers of individuals making them more vulnerable to extirpation. These taxa are denoted as 2(a). All taxa in Division 2 have GRanks of G4 or G5 (see Appendix II for definitions).

<u>Division 3: Locally Rare Taxa</u>. These taxa may be common in part of New England, but have one or more occurrences of biological, ecological, or possible genetic significance. For this division, only selected <u>occurrences</u> in a particular state are listed, not the entire taxon's occurrences throughout New England. A taxon may be listed as Division 3 in one or more states (designated by an *), but is not considered to be regionally rare. An occurrence could be designated as Division 3 <u>in a state</u> if:

- 1) The occurrence is disjunct to such a degree that genetic isolation is likely (i.e., separated from other populations by more than 50 miles).
- An occurrence represents an ecological anomaly for the taxon within the New England region (for example, an acid bog occurrence of a species that normally grows under calcareous conditions).
- 3) A significant number of a taxon's occurrences have demonstrably declined within the state (in which case the entire state's occurrences are considered to be in Division 3).

Note: The current distribution immediately outside New England, i. e., New York state and the Canadian provinces of Quebec and New Brunswick, was also considered in determination of disjunction. For example, an occurrence of a taxon in northern Maine that is disjunct from southern New England occurrences would not qualify for Division 3 if it was within 50 miles of an occurrence in New Brunswick or Quebec.

<u>Division 4: Historic Taxa</u>. Taxa that once existed in New England, but that have not been seen since 1970. The purpose of this division is to generate interest in re-locating these taxa if they still exist and to illustrate the level at which species have been lost from the region.

<u>Division Indeterminate (IND.): Indeterminate Taxa</u>. These taxa are under review for inclusion in one of the above divisions, but issues of taxonomy (at least for New England occurrences), nomenclature, or status in the wild are not clearly understood. The purpose of this division is to stimulate interest in taxonomic research and/or field surveys for these taxa.

Structure of the List. The NEPCoP List is divided into 8 columns. Taxa are listed alphabetically by family, alphabetically by genus within each family, and alphabetically by species within each genus.

Column 1 contains the name of the taxon, the author, and source of the name (number in parentheses). Synonyms are listed in italics below the taxon with the source of the name (number in parentheses) and the state using the synonym [in brackets]. For example:

ALISMATACEAE

Echinodorus tenellus (Martius) Buchenau (11) <u>Echinodorus parvulus</u> (15) [MA] <u>Echinodorus tenellus</u> var. <u>parvulus</u> (14) [CT]

Column 2, with the heading DIV, contains the NEPCoP Division. This may be 1,2,3*,4, or IND. (see Divisions of the List above).

Columns 3-8 contain State Data (next six columns under abbreviated names of the states). Under each state are three blocks separated by vertical bars. If no data are present in any of the three blocks the taxon is not known to occur in that state. An asterisk is used when a state has occurrences of a taxon listed in Division 3.

The first block contains the number of currently extant (seen since 1970) occurrences of the taxon in that state. If the number of occurrences is more than 20, but not precisely known, a "+" is placed in this block. Typically, taxa with a "+" are considered common in the state and thus are not tracked by the NHP. Occurrences discovered or known prior to 1970, but not verified since 1970, are not considered current (but could possibly still be extant). If

the taxon once was native in a state, but is not currently considered extant (not seen since 1970), it is designated with "H."

The second block contains the official State endangerment status of the taxon, (Endangered, Threatened, etc...). Depending on the state, this status may have a legal designation. Since the same code may have different meanings in different states, refer to the State status codes in Appendix I for the definition of these terms in each state. Please note that the codes used by some states have been modified in this List for consistency and clarity.

The third block contains the State Rank (SRank) as defined by The Nature Conservancy (adapted from Master 1991 and The Nature Conservancy 1996). This generalized ranking is based on the number of individuals, number of occurrences, and other factors contributing to the vulnerability of a taxon within each state. The SRank codes used in this List are cited in Appendix III, but the most commonly used codes are:

S1 = generally 1-5 occurrences in the state.

S2 = generally 6-20 occurrences in the state.

S3 = generally 21-100 occurrences in the state.

S4 = generally 101-1000 occurrences in the state.

SE = an exotic (non-native) species in the state.

SH = Historic - occurred historically (as a native species) in the state, but is not currently known to be extant in the state.

SU = State Unrankable - the status of the taxon is not known. In many instances where a taxon is ranked "SU," the number of occurrences of the taxon (if any) is not known.

SX = taxon is presumed extirpated in the state.

Notes under a taxon. Explanatory notes and additional information are added where necessary beneath the state data blocks. Included in this section is the taxon's Global Ranking or GRank. A species is given a Global Rank identified by a G followed by a number or symbol, and a subspecies or variety has a T followed by a number or symbol. (For example, <u>Eupatorium leucolepis</u> var. <u>novae-angliae</u> has a GRank of G5T1, which means that the species is secure globally, G5, but that the variety is critically imperiled globally, T1). In this List, GRanks are given only for those taxa with a GRank of G4 or G5. See Appendix II for a complete list of GRank codes used in this List. Most commonly used ranks are:

G1= Critically imperiled globally (typically 5 or fewer occurrences globally).

G2 = Imperiled globally (typically 6 to 20 occurrences globally).

G3 = rare or uncommon but not imperiled globally (typically 21 to 100 occurrences globally).

G#G# = Numeric range rank: A range spanning two or more of the numeric ranks. Denotes range of uncertainty about the exact rarity (for example - G2G3).

G? = Unranked, Element is not yet ranked globally.

G#T# = for infraspecific taxa: the GRank applies to the full species. T = Taxonomic subdivision and the rank applies to the subspecies or variety.

T1, or T2, or T3 = same definitions as G1, G2, G3, but refers to a subspecies or variety.

T#T# = Numeric range rank: A range spanning two or more of the numeric ranks for a variety or subspecies. Denotes range of uncertainty about the exact rarity of variety or subspecies (for example - G5T2T3).

? = Inexact or uncertain (for example G3? or G5T3? means that the numeric ranking is uncertain).

Q = Questionable taxonomy: taxonomic status is questionable; numeric rank may change with taxonomy (for example, G4T3Q means that the taxonomy, in this case of the subspecies or variety, is questionable).

Also contained in the Notes section are codes used by the U.S. Fish and Wildlife Service (USFWS) under the provisions of the U.S. Endangered Species Act of 1973 (the Act), as amended. If a taxon is listed as Endangered or Threatened under the Act, LE (Listed Endangered) or LT (Listed Threatened) will appear in this column. Other designations include C2 for taxa that formerly were considered as candidate species for listing under the Act. This category has been discontinued under a notice of final decision published in 1996 (U.S. Fish and Wildlife Service 1996). Also included are codes for taxa no longer under consideration by the USFWS. These designations (3A, 3B, and 3C) have been discontinued also. See Appendix IV for a complete listing of Federal codes used in this List.

DISCUSSION

Lists of this nature frequently point to the need for additional work. The process of compiling "<u>Flora</u> <u>Conservanda</u>: New England" demonstrated to the Listing Committee the obvious need for protection and management for many taxa and their occurrences. The process also emphasized the need for additional field work to gather data on occurrence sizes and distributions. Unfortunately there are too few knowledgeable field botanists to cover the full extent of rare plants in New England. Volunteers must be sought and trained to help with this task. Basic botanical inventory is essential for an accurate understanding of the true rarity of listed taxa as well as for interpreting population trends over time.

Two areas where additional work is needed became apparent as the Listing Committee worked on "<u>Flora</u> <u>Conservanda</u>: New England." First, many taxonomic questions concerning the New England flora remain unanswered; many of these center on infraspecific taxa. Entities observable in the field (and often named by New England's most famous student of its flora - Merritt L. Fernald) should be studied using current tools and methodologies in order to resolve taxonomic issues. For example, is <u>Eupatorium perfoliatum</u> var. <u>colpophilum</u> a "good" variety or an ecomorph? Is <u>Cardamine longii</u> a "good" species? A particularly perplexing taxonomic issue involves <u>Bidens heterodoxa</u>. Cronquist (Gleason and Cronquist 1991) mentions this taxon (under <u>B</u>. <u>connata</u>), but does not include it as a distinct species as he does for <u>B</u>. <u>eatonii</u> or <u>B</u>. <u>hyperborea</u> (which are present on the NEPCoP List). He states that <u>B</u>. <u>heterodoxa</u> consists of a series of rare and local populations. Should <u>B</u>. <u>heterodoxa</u> be afforded the same protection as listed taxa? The resolution of these questions is not merely an academic exercise but helps to assure the best use of limited conservation resources.

Similarly, hybrids and the hybrid nature of some taxa need clarification. Is a hybrid sterile or fertile? Do both sterile and fertile hybrids deserve protection? Some scientists argue for protection of sterile hybrids because of the possibility of ploidy shift that will allow a polyploid to become fertile. In the NEPCoP List we have included hybrid taxa considered to be nothotaxa (a nomenclatural term that defines species of hybrid origin whose names include all the offspring including backcrosses). We also have listed sterile hybrids in some instances in order to raise the issue of their protection.

Equally important is the need for nomenclatural study. Often, the Committee was faced with a choice of names for a given taxon. Frequently exacerbating this problem was the issue of unclear synonymy. Moreover, different manuals and reference works sometimes use different names for what appears to be the same taxon.

Occasionally, both taxonomy and nomenclature were unclear. For example, the taxon called <u>Puccinellia</u> tenella var. alascana is an extreme example of a taxon that was placed in the Division IND. (Indeterminate) because of unclear nomenclature and taxonomic circumscriptions. Equally confusing are some taxa in the genera <u>Panicum</u> and <u>Viola</u>.

The Listing Committee hopes that by focusing attention on these issues, clarification by the scientific community will follow. Ideally, many of the issues regarding field status, taxonomy, and nomenclature that are highlighted by the publication of "<u>Flora Conservanda</u>: New England" will have been addressed by scientists before the next iteration of the List, anticipated in the year 2002. The ongoing publication of Flora of North America also will provide guidance.

The NEPCoP List contains 576 taxa in the following divisions: Div. 1 - Globally rare = 57 taxa; Div. 2 - Regionally rare = 273 taxa; Div. 3 - Locally rare = 75 taxa; Div. 4 - Historic = 55 taxa; and Div. IND. - Indeterminate = 116 taxa.

In comparison, the NEBC regional list (Crow et al. 1981) included 479 taxa, the majority of which were designated "E/T" (Endangered/Threatened - 337 taxa) or "R" (Rare - 133 taxa). Taxa designated as "E/T" were documented from 10 or fewer **towns** and "R" were documented from 10 to 20 **towns**. Because different criteria were used to create the 1981 NEBC list and the NEPCoP List, comparisons are difficult. The two major differences are:

1) The NEBC list used **towns** as a criterion in contrast with current **occurrences** in the NEPCoP List. Theoretically, a taxon could appear on the NEBC list because it was found in fewer than 20 towns in New England, but since there could be more than one occurrence in a town it theoretically might not appear on the NEPCoP List in Division 1 or Division 2. The taxon could, however, still appear in another NEPCoP division (i. e., Division 3 or Division IND.).

2) The NEPCoP List uses **current** occurrence data. Since 1970 was used as the cutoff date for current occurrences in the NEPCoP List, only occurrences actually verified since that date have been included. In contrast, the NEBC list used herbarium specimens as the primary source for deriving the list (Crow et al. 1981). Although some field investigations were conducted, many of the specimens which counted towards the inclusion (or exclusion) of a taxon in the NEBC list were collected prior to 1970. These historic (by NEPCoP standards) occurrences were not considered as currently extant in the NEPCoP evaluation of the region's rare flora. These occurrences either have been re-located (and thus are considered current) or considered not to be extant.

Discounting synonymy, as well as taxonomic and nomenclatural changes, there are 221 taxa on the NEPCoP List that did not appear on the NEBC list. Seventy-three of these appear in Division 1 or Division 2, indicating that these taxa currently appear to be more rare than previously thought. Seventy-eight taxa on the NEPCoP List as Division IND. (Indeterminate) did not appear on the NEBC list. This shows, perhaps, that as our knowledge about the rarity of the New England flora has increased, so has the realization that there are many taxa whose field status or taxonomy (at least in New England) is still unclear. Also, there are 14 taxa on the NEPCoP List in Division 4 as Historic in New England that did not appear on the NEBC list. Their appearance on the NEPCoP List is partly a function of the 1970 cutoff date, but also reflects our increased knowledge of the flora through field work of the state Heritage Programs, The Nature Conservancy, NEPCoP, NEBC, and other organizations. On the other hand, discounting synonymy as well as nomenclatural and taxonomic changes, there are 38 taxa on the NEBC list that do not appear on the NEPCoP List. Considered more common by NEPCoP standards, their exclusion is again the result of increased field work and data collection.

RECOMMENDATIONS

Because of differences in the criteria used to create the NEPCoP and NEBC lists, we cannot state with certainty that rare plant species have declined in New England in the interim between the publication of the two lists. While comparisons are difficult, anecdotal information and field observations suggest a decline in the number of current occurrences for many taxa. This trend is substantiated by a number of occurrences that have not been relocated despite intensive field searches.

The publication of "<u>Flora Conservanda</u>: New England" provides baseline data to judge the future status of rare species. In order to protect New England's flora the cooperation of many individuals and organizations will be necessary. The NEPCoP List is a good example of such cooperation that combines institutional resources and interests to further conservation goals. NEPCoP recommends that the rare taxa (or occurrences, in the case of Division 3 taxa) be monitored at regular intervals as part of a regional conservation plan. Such a plan would also include habitat protection, management of existing occurrences, seedbanking, and enhancement, reintroduction, or introduction if deemed necessary. Field investigations and/or taxonomic study of Indeterminate taxa (Division IND.) are needed to determine the conservation status of more than 100 taxa in this Division. It is hoped that the NEPCoP List will focus research attention on these problematic taxa.

FLORA CONSERVANDA: NEW ENGLAND

NAME ACANTHACEAE	Div	ME	NH	VT	MA	RI	СТ
Justicia americana L.) M.Vahl (14)	4			H SH			
ADIANTACEAE Adiantum aleuticum (Ruprecht) Paris (12)	2	1 E S1		3 S1			
Adiantum viridimontanum Paris (12)	1	 GRank = G1		7 T S2			
ALISMATACEAE Echinodorus tenellus (Martius) Buchenau (11) Echinodorus parvulus (15) [MA] Echinodorus tenellus var. parvulus (14) [CT]	1	 GRank = G3.	 GRank is bas	 ed on synonyn	H SX n, E. parvulus.		1 E S1
Sagittaria rigida Pursh (14)	3*	3 E S1 * Disjunct occu	SU urrences in Sag	+ S3 adahoc Count	6+ WL S2 y, Maine.	SU	SU
Sagittaria subulata (L.) Buchenau (14)	2 14 SC S3				2 E S1		
Sagittaria teres S. Watson (14)	1	 GRank = G3			54 SC S3	3 E S1	
AMARANTHACEAE Amaranthus pumilus Raf. (14) * SH	4				H SH	H SH SH	H SC
		GRank = G2	; Fed. code = I	LT.			
Amaranthus tuberculatus (Moq.) Sauer (14)	2	SE Considered a and perhaps]	SU dventive in mo New Hampshi	6 S2 ost of New Eng re.	SE land, but appa	 rently native in	SE Vermont
APIACEAE Angelica lucida L. (14) Coelopleurum lucidum (11) [CT]	IND.	? SU More field w	? SU ork needed. No	 ot currently tra	9 WL S2 cked in norther	2 T S1 m states.	3 E S1
Angelica venenosa (Greenway) Fern. 14)	4				$ \mathbf{H} \mathbf{SX} $		SU
Hydrocotyle verticillata Thunb. (14)	2				14 SC S2	H H SH	H SH
Lilaeopsis chinensis (L.) Kuntze.	3* 110 SC S3	5 T S1 *	6 T S2		9 WL S2		
(14)	100000	Disjunct occu	urrences in Sag	adahoc and Yo	ork counties, N	laine.	
Osmorhiza chilensis Hook. & Arn. (14) Osmorhiza berteroi (1) [ME]	2	11+ T S2	H E SH	H SH			
Osmorhiza depauperata (14)	4			H SH			
Sanicula canadensis L. (14)	2		$ \mathbf{H} \mathbf{SH} $	9 T S2	8 T S2		SU
Taenidia integerrima (L.) Drude (14)	2	 Reported in 1	 913 from Mas	7 T S2 sachusetts, but	H? S? no specimen ł	H H SH has been seen.	1 SC S1
Zizia aptera (Gray) Fern. (14)	2					H H SH	3 E S1

IAME QUIFOLIACEAE	Div	ME	NH	VT	MA	RI	СТ
Ilex ambigua Torr. var. montana Ahles (13) <i>Ilex montana</i> (11) [MA]	2				3 T S2		
Ilex glabra (L.) Gray (14)	3*	1 E S1 * One disjunct	H E SH occurrence in 1	 Knox County,	+ S4 Maine.	+ S3	3 T S1
ARISTOLOCHIACEAE Aristolochia serpentaria L. (14)	2						6 T S2
ASCLEPIADACEAE Asclepias purpurascens L. (14)	2		H SH		2 T S1	H SH	H SH
Asclepias tuberosa L. (14)	3*	H SX Documented	H E SH decline of nati	H T SH ve stands in M	+ WL S3 * assachusetts ar	8 C S2 nd possibly oth	+ S4 er states.
Asclepias variegata l. (14)	2				 		1 E S1
Asclepias viridiflora Raf. (14) * SH	4						H SC
ASPLENIACEAE Asplenium montanum Willd. (11)	2			1 T S1	3 E S1	1 E S1	6 T S2
Asplenium trichomanes-ramosum L. (12)	2	1 E S1		4 T S1			
Aspienium viriae (14) [v 1]							
ASTERACEAE Achillea borealis Bong. (11) Achillea millefolium var. nigrescens (14)[ME] Achillea millefolium var. borealis (15) [MA]	IND.	1? SH Considered ir Taxonomic an	1 SU ntroduced in M nd nomenclatu	 assachusetts, b ral confusion v	SE? out not currentl with certain van	 y known to be rieties of <i>A. mi</i>	 extant. Ilefoilum.
Arnica lanceolata Nutt. (14) Arnica mollis (11) [VT]	1	<6 S2 GRank = G3.	2 T S1	H SH			
Artemisia campestris L. ssp. borealis (Pallas) Hall & Clem. (13) Artemisia campestris var. canadensis (14)	2	H SH		3 S1	1 E S1		
Artemisia campestris L. ssp. caudata (Michx.) Hall & Clem. (14)	3*	+ SU Disjunct occu	8 T S2 arrences in Gra	2 S1 * nd Isle County	+ S4 v, Vermont.	3 C S1	+ S4
Aster anticostensis Fern. (14)	4	H SX GRank = G20 does not form historic.	 Q. Cronquist (0 nally include it	 Gleason and Cr in his treatmer	 ronquist, 1991) nt. The northea) mentions this astern Maine lo	 taxon, but ocality is
Aster concolor L. (14)	2				9 E S2	H SH SH	
Aster dumosus L. (14)	3*	2 E S1 * Disjunct occu	SU arrences in Yoi	 k and Oxford	+ S4 counties, Main	+ S4 e.	+ S5
Aster infirmus Michx. (14)	2				3 E S1	H SH SH	H SH
Aster praealtus Poiret (14)	IND.	H? SU Difficult to di work needed.	? SU istinguish from	 other closely	H SX related taxa; m	H SH ore field	SU

NAME Aster prenanthoides Muhl. (14) * SH	Div 2	ME 	NH 	VT 	MA 8 SC S2	RI 	CT H SC			
Aster sagittifolius Willd. (14)	2			1 S1						
Bidens eatonii Fern. (14)	1	5 T S1 GRank = G20	 G3.		2 T S2?		3 SC S1			
Bidens heterodoxa (Fern.) Fern. & St. John (11)	IND.	 GRank = G2 taxonomic sta	 Q. Cronquist (atus is uncertai	 Gleason and Cr n.	 conquist, 1991)	 says that the p	H SH proper			
Bidens hyperborea Greene (15) Bidens hyperborea var. colpophila (11) [MA]	2	11 T S1S2			2 E S1					
Bidens hyperborea Greene var. svensonii Fassett (1) <i>Bidens hyperborea</i> var. <i>cathancensis</i> (11)	IND.	? SU		1111						
Cacalia suaveolens L. (14)	4				SE	H SH SH	H SC			
Synosma suaveolens (15) [MA]		GRank = G3. GRank is for synonym, <i>Synosoma suaveolens</i> .								
Chrysopsis mariana (L.) Elliott (14)	2					2 T S1				
Cirsium horridulum Michx. (14)	IND.	 More field w off Massachu	2 E S1 ork needed to usetts.	 clarify status in	8 WL S2S3 our region, es	1 T S1 pecially on the	3 S1 islands			
Coreopsis rosea Nutt. (14)	1	 GRank = G3			+ S3	7 C S2				
Erigeron acris L. var. kamtschaticus (DC.) Herder (14) <i>Trimorpha acris</i> var. <i>kamtschatica</i> (1) [ME]	4	H SH	1111	1111						
Eupatorium album L. (14)	2						2 E S1			
Eupatorium aromaticum L.	2				2 E S1	H SH SH	2 E S1			
Eupatorium leucolepis (DC.) T. & G. var. novae-angliae Fern. (14)	1	 GRank = G5	 5T1; Fed. code	 = C2.	9 E S2	6 E S1				
Eupatorium perfoliatum L. var. colpophilum Fern.& Grisc. (14)	IND.	1? S1 Taxonomic a	 nd distribution	 al status of this	 s variety in Nev	 w England is u	 nclear.			
Eupatorium rotundifolium L. var. rotundifolium (14)	IND.	 Difficult to d assess curren	 istinguish fron t status	 n closely related	 d taxa. More f	 ield work need	2 SU led to			
Eupatorium sessilifolium L. (14)	3*	 Vermont occ	1 E S1 urrences in Ru	5 E S1 * tland County a	+ S4 re disjunct.	+ S3	+ S3			
Euthamia galetorum Greene (14) Euthamia tenuifolia var. pycnocephala (73) [ME]	IND.	1? SR GRank = G30	SU Q. Presence ir	 n New England	 is questionabl	 e.				

NAME Gnaphalium helleri Britton (14) <i>Gnaphalium helleri</i> var. <i>micradenium</i> (15) [MA,ME]	Div IND.	ME ? SU Gleason and have not seer	NH ? SU Cronquist (19 n any specime	VT 91) note that th ns.	MA H SH his species is in	RI New England	CT , but we
Gnaphalium purpureum L. (14) <i>Gamochaeta purpurea</i> (1) [MA,ME]	2	H SX			2? E S1	H SH SH	H SH
Gnaphalium supinum L. (14) Omalotheca supina (15) [ME]	2	2 E S1	1 E S1				
Gnaphalium sylvaticum L. (14) Omalotheca sylvatica (15) [ME]	IND.	4+ SU More field w	1 SU ork needed to	1 E S1 determine curr	ent status.		
Hieracium robinsonii (Zahn) Fern. (14)	1	H SH GRank = G1	1 E S1 G2; Fed. code	 = C2.			
Hieracium umbellatum L. (14)	2		1 E S1				
Iva frutescens L. var. oraria (Bartlett) Fern. & Griscom (14) <i>Iva frutescens</i> ssp. <i>oraria</i> (1) [CT,MA,ME,NH,RI]	3*	3 T S1 * Disjunct occu	7+ T S2 urrences in Sa	 gadahoc and C	+ S5 umberland cou	+ S3 nties.	+ S4
Krigia biflora (Walter) S. F. Blake (14)	4						$ \mathbf{H} \mathbf{SH} $
Lactuca hirsuta Muhl. (14) Lactuca hirsuta var. sanguinea (11) [CT,MA,ME,NH]	3*	H? SU Disjunct occu to determine	SU urrences in Ch current range	8 T S2 * iittenden Count in New Englar	WL SU ty, Vermont. M nd.	SU lore field work	H SH needed
Liatris scariosa (L.) Willd. var.	1	4 T S1	6 E S1		33 SC S3	4 T S1	
novae-angliae Lunell (14) Liatris borealis (11) [CT,NH]	11 5 C 52	GRank = G5 is for synony	?T3; Fed. cod m <i>L. borealis</i> .	e = C2. Former	Federal candi	date Category	2 status
Pityopsis falcata (Pursh) Nutt. (14) Chrysopsis falcata (14) [CT,RI]	1	 GRank = G3	 G4.		+ S3S4	8 C S2	3 E S1
Polymnia canadensis L. (14)	2			2 E S1			1 E S1
Prenanthes boottii (DC.) A. Gray (14)	1	3 T S1 GRank = G2	4 T S1 ; Fed. code =	2 E S1 C2.			
Prenanthes x mainensis Gray (11)	IND.	SU Possibly seer note that this	 n recently, but as an apparen	<pre> verification ne thybrid of P. 7</pre>	 eded. Gleason racemosa x trif	 and Cronquist <i>coliolata</i> .	 (1991)
Prenanthes racemosa Michx. (14)	2	15 S2 Cronquist (G <i>multiflora</i> .	 leason and Cr	 onquist, 1991)	 suggests that o	 our plants are v	 ar.
Prenanthes serpentaria Pursh (14)	2		H SH		5 E S1	H SH SH	3 S1
Sclerolepis uniflora (Walter) BSP. (14)	2	 Massachusett represent the	1 E S1 ts and Rhode same populat	 Island occurren ion.	1 E S1 aces cross state	1 E S1 boundaries and	 d
Solidago x calcicola Fern. (13) Solidago calcicola (14) [ME,NH]	4	H SH Hybrid betwo	H SH een <i>S. macrop</i>	 <i>hylla</i> and anoth	 her species, pos	 sibly <i>S. canad</i>	 'ensis.
Solidago canadensis L. var. subserrata (DC.) Cronq. (1) Solidago lepida var. molina (11)	IND.	? SH Solidago can appear in Gle from Maine a cutoff date by	 addensis var. s eason and Cro as S. lepida va y the Maine N	 ubserrata is au nquist (1991). r. <i>molina</i> . State atural Areas Pr	 thored by Cror Fernald (1950) e rank of "SH" rogram.	 nquist but does) lists this taxo is based on a 2	 not n 20-year

NAME Solidago cutleri Fern. (14) Solidago multiradiata var. arctica (1) [ME]	Div 2	ME 6 S1S2	NH 9 T S3	VT 1 S1	MA 	RI 	CT
Solidago ptarmicoides (Nees) B. Boivin (14) <i>Aster ptarmicoides</i> (11) [NH,VT]	2		2 E S1	11 8283	4 T S1S2		1 E S1
Solidago rigida L. (11)	2				H SX	$ \mathbf{H} \mathbf{SH} $	4 E S1
Solidago simplex HBK ssp. randii (Porter) Ringius var. monticola (Porter) Ringius (14) <i>Solidago simplex</i> var. <i>randii</i> (1) [ME] <i>Solidago glutinosa</i> ssp. <i>randii</i> (31) [MA,NH]	3*	+ S4 Disjunct at County in 1 are three va England ta:	+ S4 * sites in southe New Hampshin arieties of the s xa is unclear.	 rrn Berkshire C re. According to subspecies. The	4 E S1 * ounty in Massa o Gleason and e e current distrib	 ichusetts and Cronquist(199 pution and sta	 in Chesire J1), there tus of New
Tanacetum bipinnatum (L.) Schultz-Bip. ssp.huronense (Nutt.) Breitung (1) <i>Tanacetum huronense</i> (14)	2(a)	30 S2 Restricted t the habitat	 to St. John Riv are cause for c	 er. Small popu oncern.	 lation sizes and	 d ephemeral r	 nature of
Taraxacum ceratophorum (Ledeb.) DC. (14) <i>Taraxacum latilobum</i> (11) [ME]	IND.	H? SU Two old sp	 ecimens of <i>T</i> .	 <i>latilobum</i> are u	 nverified.		
BERBERIDACEAE Podophyllum peltatum L. (14)	2	SE This taxon native in sc or introduc York state.	1? SU has been intro ome states (CT ed is often diff	2 S1 duced into all N , NH, and VT), icult. It is cons	SE Jew England st determining if sidered native a	SE tates. Althoug f an occurrenc at some locati	SU gh probably ee is native ons in New
BETULACEAE Betula glandulosa Michx. (14) <i>Betula nana</i> (1) [M]	2	1 E S1	11 T S1				
Betula minor (Tuckerm.) Fern. (13) Betula borealis (11) [VT] Betula x minor (1) [ME]	1	1 E S1 GRank = G Cronquist (9 S2 i3G4Q. Noted 1991).	H SH ` as a hybrid of <i>I</i>	 B. papyrifera x	 pumila in Gl	 eason and
Betula nigra L. (14)	2	 Native and determine	6 T S2 introduced po which occurrer	 pulations occur nces are native	3? WL S1 in New Englaa and which are	 nd; it is often introduced.	SU difficult to
Betula pumila L. (14)	3*	+ S3 Ecological	1 E S1 * anomally at a	1 E S1 New Hampshir	4 T S2 e acidic fen.		8 SC S2
BORAGINACEAE Cynoglossum virginianum L. * SH	1	? SH	1 E S1	2 T S1	H SX		H SC
var. boreale (Fern.) Cooperrider (14) and <i>Cynoglossum boreale</i> (11) [MA,NH,VT]. <i>Cynoglossum virginianum</i> [CT]		GRank = C var. <i>virgini</i>	5T3?. The Co anum. under C	nnecticut endar 2. virginianum.	ngered species	list includes v	'ar. boreale
Cynoglossum virginianum L.	4						H SC
var. virginianum (14) boreale		The Conne	cticut endange	red species list	includes var. v	<i>rirginianum</i> ar	nd var.

NAME Cynoglossum virginianum [CT]	Div	ME under <i>C. vi</i>	NH irginianum.	VT	MA	RI	СТ
Hackelia deflexa (Wahlenb.) Opiz var americana (A. Gray) Fern. & I.M. Johnston (14) <i>Hackelia americana</i> (40) [VT]	2	1 E S1	1 E S1	16 T S2			
Mertensia maritima (L.) S. F. Gray (14)	3*	+ S3S4 Disjunct in	 Barnstable an	 Id Nantucket co	6 E S1 * ounties, Massa	 chusetts.	
Onosmodium virginianum (L.) A. DC. (14)	2				H SX	H SH SH	1 E S1
BRASSICACEAE Arabis drummondii A. Gray (14)	3*	+ S4 Vermont o	+? S3? ccurrences in]	2 E S1 * Rutland and Ac	2 WL S1 Idison counties	H SH SH s are disjunct.	SU
Arabis laevigata (Muhl.) Poiret (14)	3*	2 E S1 * Disjunct in	H S1 1 Franklin, Aro	+ S4 oostook, and Pis	10 T S2 scataquis coun	SU ties in Maine.	+ S3
Arabis missouriensis Greene (14)	IND.	4 T S1 Taxonomic into which	3 T S1S2 c question and one author (se	2 S1 difficulty in dis e Mulligan, 19	9 T S2 stinguishing th 95) has recent	SU his taxon from ly placed this t	SU A. laevigata taxon.
Barbarea orthoceras Ledeb. (14)	2	$ \mathbf{H} \mathbf{SH} $	1 E S1				
Braya humilis B. L. Robinson (14)	2			2 T S1			
Cardamine bellidifolia L. (14)	2	1 E S1	3 E S1				
Cardamine concatenata (Michx.) O. Schwarz (14) Dentaria laciniata (11) [CT,MA,NH,VT]	3*	1 E S1 * Aroostook	2 E S1 County, Main	+ S3 e, occurrence is	+ S3 s disjunct.		+ S3
Cardamine douglassii Britt. (11)	2				1 E S1		7 SC S2
Cardamine x incisa K. Schum. (pro. sp.) (15) Dentaria x incisifolia (11) [MA]	IND.	 Fernald (19 and <i>Dentai</i> this taxon th taxon in th	 950) suggests t ria maxima (C under C. angus eir treatment.	 that this is hybr (x <i>maxima</i>). C stata (as <i>D</i> . inc.	SU id of <i>Dentaria</i> ileason and Cr <i>isifolia</i>), but de	 a <i>laciniata</i> (<i>C.</i> conquist (1991) o not formally	2 SU concatenata)) mention include this
Cardamine longii Fern. (14)	1	9 T S2 GRank = 0	H T SH G3Q; Fed. code	 e = 3C.	2 E S1	1 E S1	H SH
Cardamine x maxima (Nutt.) A. Wood (14) <i>Cardamine maxima</i> (15) [ME] <i>Dentaria maxima</i> (14) [CT,MA,NH]	IND.	H SH Taxonomic a sterile hy	H SH c status unclea /brid between (r. Gleason and <i>C. diphylla</i> and	2 WL S1 Cronquist (19 C. concatenat	 991) suggest th ta.	H SH is as possibly
Cardamine pratensis L. var. palustris Wimmer & Graebner (14)	2		1 E S1	3 81	3 T S1		SU
Descurainia pinnata (Walter) Britton var. brachycarpa (Richardson) Fern. (14)	2		H SX	2 S1	SE		
Descurainia richardsonii (Sweet). O. E Schulz. (14) Descurainia incana (15) [ME]	4	H SH					
Draba arabisans Michx. (14)	2	3 T S1 Tracking o abundant t	 of this taxon wa han is now kno	10 S2S3 as only recently own (which is r	 begun in Ver eflected in the	 mont. It may b S2S3 ranking	 be more).

NAME	Div	ME	NH	VT	MA	RI	СТ
Draba cana Rydb. (14) <i>Draba lanceolata</i> (11) [ME,NH,VT]	2	1 E S1	1 E S1	3 T S1			
Draba glabella Pursh (14)	2			5 S1	1111		
Draba reptans (Lam.) Fern. (14)	2				$ \mathbf{H} \mathbf{SX} $	H SH SH	4 SC S2
Neobeckia aquatica (Eaton) Greene (18) <i>Armoracia lacustris</i> (14) [MA,ME,VT]	2	H? SH? Type localit been seen fi	 ty for this taxc rom Massachu	4 T S1 on is in western usetts or Maine	H SH? Massachusett	 s, but no specin	 nens have
Subularia aquatica L. (14)	2	9 S2	SU	$ \mathbf{H} \mathbf{SH} $			
CAESALPINIACEAE Cercis canadensis L. (14) * SH	4	 Literature r		 that this was t		 te in Connectic	H SC
no		longer exter	at there. Only	noturalized oo		in Connectie	ui, bui ii 15
Senna hebecarpa (Fern.)	2		H E SH	H T SH	2 E S1	1 T S1	2 SC S1
Irwin & Barneby (14) <i>Cassia hebecarpa</i> (11) [CT,NH,VT]							
CALLITRICHACEAE Callitriche hermaphroditica L. (14)	4			H SH			
Callitriche terrestris Raf. (14)	4				$ \mathbf{H} \mathbf{SH} $		H SH
CAMPANULACEAE Lobelia spicata Lam. var. hirtella A. Gray (14)	IND.	SU Current stat	H SH us and distrib	 ution of this va	 riety is unclear	 r.	
CAPRIFOLIACEAE							
Lonicera dioica L. (14)	3*	1 E S1 * Cumberland	SU d County, Mai	+ S4 ine occurrence	+ S4 is disjunct.	3 C S1	+ S3
Lonicera hirsuta Eaton (14)	2			12 S2	3 E S1		
Lonicera sempervirens L. (14)	IND.	2 E S1 Difficult to Vermont ar	SU determine wh e no longer ex	SE ich population: tant.	SE s are native. In	SE troduced occurr	SU rences in
Symphoricarpos albus (L.) S.F. Blake var. albus (14)	3*	<pre> Occurrence occurences.</pre>	 in Franklin C	+ S3 ounty, Massac	1 E S1 * husetts is disju	 nct from wester	 m Vermont
Triosteum angustifolium L. (14)	4						H SC
וזינין		Gleason and New Engla	d Cronquist (1 nd.	991) distinguis	sh two varietie	es, but both are	historic in
Triosteum aurantiacum E. Bickn. (14)	3*	2 T S1 * Aroostook (2 E S1 County, Maine	+ S3 e occurrence is	+ S4 disjunct.	4 T S1	+ S3
Triosteum perfoliatum L. (14)	2				4-5 E S1	4 C S1	$ \mathbf{SU} $
Viburnum nudum L. var. nudum * SH	2					1 T S1	H SC

NAME (14) Viburnum nudum (11) [CT,RI]	Div	ME	NH	VT	MA	RI	СТ
Viburnum prunifolium L. (14)	2				1111		8 SC S2
Viburnum rafinesquianum Schultes (14)	3*	 Southern R	5 E SE * ockingham C	+ S3 County, New Ha	4 T S2 mpshire occurr	ences are disju	+ S3 nct.
CARYOPHYLLACEAE Arenaria caroliniana Walter (14) <i>Minuartia caroliniana</i> (15)	4				1111	H SH SH	
Cerastium nutans Raf. (14)	2			? S2	1 E S1		SU
Minuartia glabra (Michx.) Mattf. (15) Arenaria glabra (8) [CT,RI] Arenaria groenlandica var. glabra (14)	2(a)	8 S1S2 Small popu	4 T S2 llation sizes o	 f some occurrer	 nces are cause f	2 E S1 for concern.	7 T S2
Minuartia groenlandica (Retz.) Ostenf. (15) <i>Arenaria groenlandica</i> var. <i>groenlandica</i> (14)	3*	24 S3 High peak Vermont an	+ S4 occurrences i re disjunct.	2 S1 * n Chittenden, L	 amoille, and W	 ashington cour	 nties in
Minuartia marcescens (Fern.) House (15) Arenaria marcescens (11)	1	 GRank = G	 2; Fed. code	1 T S1 = C2. Not inclu	 Ided in Gleason	 and Cronquist	 (1991).
Minuartia rubella (Wahlenb.) Heirn (15) Arenaria rubella (14)	2	1 E S1		1 T S1			
Moehringia macrophylla (Hook.) Fenzl (15) Arenaria macrophylla (14) [CT]	2			9 S2	4 T S1S2		2 E S1
Paronychia argyrocoma (Michx.) Nutt. (14) Paronychia argyrocoma var. albimontana (11) [NH]	2(a)	8 S1S2 Small popu	16 T S3 llation sizes o	 f some occurren	1 E S1 nces are cause f	 for concern.	
Paronychia canadensis (L.) A. Wood (14)	3*	 One occurr	7 T S1 ence on Lake	3 S1 * Champlain in 1	+ S4 Franklin County	SU y, Vermont is d	+ S4 lisjunct.
Paronychia fastigiata (Raf.) Fern. (14)	IND.	 Massachus	etts occurrence	 ces may be adve	SE? entive.		SU
Sagina decumbens (Ell.) T. & G. (14)	IND.	 More study	needed to cl	H SH arify status. Is t	1 WL SU he Massachuset	 tts occurrence t	SU ruly native?
Sagina nodosa (L.) Fenzl ssp. borealis Crow (15) <i>Sagina nodosa</i> var. borealis (14)	2	10 S2?			SU		
Sagina nodosa (L.) Fenzl. ssp. nodosa (14)	IND.	SE This taxon questions a consider th	H SH is considered bout the Mas is to be a glar	introduced by sachusetts occc ndular-hairy var	3 T S2 most botanists, urences. Gleas- iety introduced	 but there are so on and Cronqui from Europe.	 ome ist (1991)
Silene acaulis (L.) Jacq. (13) Silene acaulis var. exscapa (11) [ME,NH]	2	H SH	2 T S1				
Silene stellata (L.) Aiton f. (14)	2			H SH		H SH SH	3 S1

NAME	Div	ME	NH	VT	MA	RI	СТ
CERATOPHYLLACEAE Ceratophyllum echinatum A. Gray (14)	3*	2 SH * Occurrence recorded in cutoff date	2-3 SU es in Penobscot n 1971 and 1975 used by the Ma	6 S2 and Waldo cour 5. State rank of " ine Natural Are	+ S3? nties, Maine, a 'SH" for Main as Program.	SU ire disjunct, bu e is based on a	+ S3 at were last a 20-year
CHENOPODIACEAE Chenopodium foggii H. A. Wahl (15) <i>Chenopodium pratericola</i> (14) [VT]	IND.	 GRank = C <i>c. prateric</i> it native an (which is h	? SU 63?Q. Gleason a <i>ola</i> and conside id historic. Verr istoric there). M	H SH and Cronquist (1 or it introduced f nont does not se fore field work	H WL SH 991) place thi from the west. parate <i>C. fogin</i> needed.	 is taxon under Massachuset i from <i>C. prat</i> e	 ts considers <i>ericola</i>
Chenopodium leptophyllum Nutt. (14)	IND.	SU More field U.S. popul the taxon u	<pre> study needed to ations of this ta inder C. praterio</pre>	<pre> o assess status. N xon to be introd cola.</pre>	 Aost authors countries of the second se	2 C S1 onsider the ea e authors have	 stern included
Chenopodium rubrum L. (14)	3*	4 T S1 * Lincoln an	1 T S2 d Washington c	 ounty, Maine od	+ S4 ccurrences are	SU disjunct.	SU
Chenopodium standleyanum Aellen (14) <i>Chenopodium berlanderi</i> var. <i>boscianum</i> (15) [ME] <i>Chenopodium boscianum</i> (11) [NH]	IND.	1? SU Difficult to native and	1 E S2 o distinguish. M <i>C. boscianum</i> n	 ore field study n nay be introduce	WL SE? needed. <i>C. star</i> ed.	 ndleyanum is c	SU considered
Suaeda americana (Pers.) Fern. (14) Suaeda calceoliformis (1) [ME]	IND.	H SH			12 SC S3		SU
Suaeda maritima (L.) Dumort. (11) Suaeda maritima ssp. richii (1) [MA,ME]	IND.	1 E S1 GRank = C	 35T3?.		7 WL S3?	SU	SU
CISTACEAE Helianthemum dumosum * SH (E. Bickn.) Fern. (14)	1	 GRank = 0	 63; Fed. code =	 C2. Massachuse	92 SC S3 etts has the lar	5 E S1 gest number o	H SC
occurrences		globally, b are cause f	ut small populator	tion sizes and di	minishing hab	vitat of many c	occurrences
Hudsonia tomentosa Nutt. (14)	3*	+ S3S4 Occurrence	14 T S1 es in Chittenden	4 E S1 * and Grand Isle	+ S4 counties, Ver	10 S2 mont, as well	5 T S2 as New
1 OIK		occurrence	s on Lake Chan	nplain, are disju	nct from the re	est of this spec	cies' range
ın		New Engla	ınd.				
Lechea minor L. (14)	IND.	 Current sta	 tus in most Nev	H SH v England states	10 WL S2? is unknown.	SU	SU
CLUSIACEAE Hypericum adpressum Barton (14) * SH	1				8 T S2	5 T S1	H SC
		GRank = C	G2G3; Fed. code	e = C2.			
Hypericum stragalum P. Adams & Robson (14) Hypericum hypericoides ssp. multicaule (15) [MA]	2				8 E S2		

NAME	Div	ME	NH	VT	MA	RI	СТ
CONVOLVULACEAE Calystegia spithamaea (L.) Pursh (14) <i>Convolvulus spithamaeus</i> (11) [NH]	2	3 T S1	2 T S2	8 T S2	2 E S1		H SH
CORNACEAE Cornus florida L. (14)	3*	3 E S1 Strongly decl	+ SC S3 lining in Vermo	5 T S1 * ont due to an a	+ S4 nthracnose fun	+ S4 gus (<i>Discula</i> s	+ S4 p.).
CRASSULACEAE Sedum rosea (L.) Scop. (14)	3*	+ S3 High mounta disjunct.	 in occurrences	2 T S1 * in Bennington	 and Windsor	 counties, Verm	 nont are
CUPRESSACEAE Juniperus horizontalis Moench. (14)	3*	+ S3S4 Taxon disjun Vermont.	2 E S1 * ct in Grafton C	2 T S1 * County, New H	SE ampshire, and	 in Bennington	 County,
CUSCUTACEAE Cuscuta coryli Engelm. (14) * SH	2				6 WL S2	H SH	H SC
		Dificult to di	stinguish. May	be overlooke	d.		
Cuscuta pentagona Engelm. (14)	IND.	 Dificult to di	H E SH stinguish. May	 v be overlooke	+? S3 d.	H SH	H SH
CYPERACEAE Bolboschoenus maritimus (L.) Palla (1) <i>Scirpus maritimus</i> (14) [MA,NH,RI,VT] <i>Scirpus paludosus</i> var. <i>atlanticus</i> (11) [CT]	3*	+ S4? Disjunct in A	+ S3S4 ddison County	1 S1 * , Vermont.	+ S4	4 C S1	9 SC S2
Bolboschoenus novae-angliae	2 8 SC S2S	H? SU 33			6 WL S2		
Scirpus cylindricus (14) [CT,MA]							
Carex adusta F. Boott (14)	2	4 E S1	SU				
Carex albicans Willd. var. emmonsii (Dewey) Rettig (14) <i>Carex emmonsii</i> (11) [CT,NH,RI,VT]	3*	+ S4 Disjunct in C	1 S1 hittenden Cour	1 S1 * nty, Vermont.	+ S4	3 81	+ S3
Carex alopecoidea Tuckerm. (14) * SH	2	1 E S1		4 S1	6 T S2		H SC
Carex arcta F. Boott (14)	3*	+ S4? ` Disjunct occu	SU arrences in Gra	2 E S1 * nd Isle and Fra	 anklin counties	 s, Vermont.	
Carex atherodes Sprengel (14)	4	H SH					
Carex atratiformis Britt. (14)	2	10-15 S2	$ \mathbf{H} \mathbf{SH} $	1 T S1	1111	1111	
Carex backii F. Boott (14)	3*	2 S1 * Disjunct occu	SU arrences in Pen	+ S3 obscot County	 9, Maine.		1 S1

NAME Carex baileyi Britt. (14) *ISHI	Div 3*	ME 1 S1? *	NH 3-5? T S1S2	VT + SU	MA 5 E S1	RI 	CT H SC
511		Disjunct occ	urrence in Oxf	ord County, N	laine.		
Carex barrattii Schwein. & Torr. (14)	2						2 SC S1
Carex bicknellii Britt. (14)	IND.	H SH More field st	 tudy needed.	H SH	+? S3?	SU	SU
Carex bigelowii Torr. (14)	3*	13 S2 High peak oc	+ S3 ccurrences in C	4 S1 * Chittenden, Ad	 dison, Lamoil	 le, and Washir	 ngton
counties,		Vermont are	disjunct.				
Carex bushii Mackenzie (14)	2	H SX		$ \mathbf{H} \mathbf{SH} $	3 E S1	$ \mathbf{H} \mathbf{SH} $	2 S1
Carex buxbaumii Wahlenb. (14)	3*	+ S4 Disjunct occi	H E SH urrence near La	1 E S1 * ake Champlai	11 WL S2 n in Addison (H SH SH County, Vermo	2 E S1 ont.
Carex capillaris L. (14) Carex capillaris ssp. capillaris	2	6 S1	1 T S1	1 T S1			
(27) Carex capitata L. (14) <i>Carex capitata</i> ssp. <i>arctogena</i> (15) [NH]	2		3 S1				
Carex chordorrhiza L. f (14)	3*	+ S4? Disjunct in B Massachuset	 Benington Cour ts.	2 E S1 * hty, Vermont a	1 E S1 * and in Berkshi	 re County in	
Carex collinsii Nutt. (14) * SHI	2					1 E S1	H SC
		Last seen in	1979. This taxe	on has not bee	n relocated in	recent searche	es.
Carex crawei Dewey (14)	2 5 E S1S	1 S1 S2					
Carex davisii Schwein. & Torr. (14)	2			1 S1	1 E S1		2 E S1
Carex eburnea F. Boott (14)	3*	2 T S1 * Disjunct in C	1 E S1 Dxford County,	+ S4 Maine.	+ S3		+ S3
Carex garberi Fern. (15) <i>Carex garberi</i> var. <i>bifaria</i> (11) [NH]	1	14? S2 GRank = G4	6 E S1 T3Q; Fed. cod	4 T S1 e = C2. GRan	 k is for synony	 ym C. garberi	 var. <i>bifaria</i>
Carex glaucodea Tuckerm. (13) Carex flaccosperma var. glaucodea (14)	2		H E SH		4 E S1		1 S1
Carex gracilescens Steudel (14)	2		H $ SH $	$ \mathbf{H} \mathbf{SH} $	1 E S1		5 S2
Carex gynocrates Drej. (1) Carex dioica var. gynocrates (14)	IND.	10+ S2S3 Possibly ove	 rlooked.				
Carex livida (Wahlenb.) Willd. (14) Carex livida var. radicaulis (1) [MA,ME]	2	5 T S1S2		1 T S1	1 E S1		
Carex lupuliformis Sartwell (14)	1	 GRank = G3	 ?.	6 S2			2 SC S1
Carex mitchelliana M. A. Curtis (14)	1	 GRank = G3	 G4.		5 WL S2	SU	

NAME Carex muhlenbergii Schk. (14)	Div 3*	ME H SH Disjunct oc	NH SU courrences in (VT 6 T S2 * Chittenden Cour	MA + S4S5 nty, Vermont. F	RI SU Reportedly exta	CT + S3 ant in
Maine		in 1996.				1 5	
Carex nigromarginata Schwein. * SH (14)	4						H SC
Carex norvegica Retz. (14)	2	1 E S1 Taxonomy	 of this and cl	 osely related spe	 ecies is currentl	 y being studie	 d.
Carex oligocarpa Schk. (14)	2			4 E S1	$ \mathbf{H} \mathbf{SH} $		1 E S1
Carex oronensis Fern. (14)	1	51 E S2 GRank = G watershed.	 2; Fed. code	 = C2. All record	 Is are from the	 Penobscot Riv	 er
Carex polymorpha Muhl. (14)	1	5 T S1 GRank = G	1 T S1 i2G3; Fed. co	de = C2.	2 E S1	1 E S1	3 E S1
Carex prairea Dewey (14)	3*	5 T S1 * Maine occu	 urrences are d	+ S4 isjunct in Aroos	~8 WL S2 took County.		7 T S2
Carex praticola Rydb. (14)	4	$ \mathbf{H} \mathbf{SX} $					
Carex rariflora (Wahlenb.) J.E. Smith (14)	4	H SH					
Carex recta Boott (15)	IND.	1 E S1 This taxon <i>C. salina</i> , b stabilized h	 is listed in Gl put FNA may hybrid betwee	 eason and Cron treat this as a se n <i>C. aquatilis</i> ar	1 E S1 quist (1991) as parate species. nd <i>C. pallacea</i> .	 a synonym un Thought to be More study ne	 der a veded.
Carex richardsonii R. Br. (14)	2			2 E S1			
Carex saxatilis L. (14)	2	2 E S1					
Carex schweinitzii Dewey (14)	1	 GRank = G	 i3; Fed. code	14 S2 = C2.	3 E S1	H SH SH	3 T S1
Carex scirpoidea Michx. (14)	2	2 T S1	6 T S1	11 S2			
Carex siccata Dewey (14) <i>Carex foenea</i> (11) [CT,MA,NH,VT]	3*	H? SU One occurr formerly ki known as C	SU ence in Chitte nown as Care. Carex aenea is	2 E S1 * enden County, V <i>x foena</i> is now 6 s now known as	+ S3? Vermont, is disju Carex siccata, a Carex foenea.	SU unct. Note: the nd what was f	H SH taxon formerly
Carex sparganioides Muhl. (14)	3*	1 E S1 * Disjunct in examinatio	1 E S1 Oxford Cour n.	+ S4 hty, Maine, but v	+ S4 varieties in New	1 C S1 England need	+ S3 1
Carex sterilis Willd. (14)	2	3 T S1			7 T S2	$ \mathbf{H} \mathbf{SH} $	9 SC S2
Carex striata Michx. var. brevis L. Bailey (14)	2		1 S1		5 E S1	1 E S1	
Carex striatula Michx. (14)	2						2 S1
Carex tenuiflora Wahlenb. (14)	2	8 S2		4 S1			
Carex tetanica Schk. (14)	2(a)				14 SC S3		
	/ SC S2	Small popu	lation sizes o	f some occurren	ices are cause fo	or concern.	
Carex trichocarpa Muhl. (14)	2		1 E S1	7 S2	8 T S2		1 S 1

NAME Carex vaginata Tausch. (14)	Div 2	ME 3 T S1	NH 	VT 3 E S1	MA 	RI 	CT
Carex wiegandii Mackenzie (14)	1	7 S2 GRank = 0	4 T S1S2 G3.	H SH	H SH		
Carex willdenowii Schk. (14) * SH	4			H SH	H SH		H SC
Carex woodii Dewey (14) * SH	4		H SX				H SC
Cyperus engelmannii Steud. (14)	IND.	 Taxonomic combine C species. Th	 c confusion. A f <i>engelmannii a</i> nese taxa are her	H SH uture Flora N and <i>C. odorat</i> re separated p	6 SC S3? orth America tre us, but Massachu ending further re	 atment will pr setts separate view.	SU robably es the two
Cyperus houghtonii Torr. (14)	2	H SH Some popu	2 T S1 ulations small ar	14 T S2 nd threatened.	3 E S1		
Cyperus odoratus L. (14)	IND.	 Taxonomic combine C species. Th	 c confusion. A f <i> engelmannii a</i> nese taxa are her	H SH uture Flora N and <i>C. odorat</i> a re separated p	4 WL S3? orth America tre us, but Massachu ending further re	H SH atment will pr setts separate view.	SU robably s the two
Eleocharis equisetoides (Elliott.) Torr. (14)	2				$ \mathbf{H} $ $ \mathbf{SX} $	8 C S2	1 E S1
Eleocharis fallax Weatherby (14)	2				$ \mathbf{H} \mathbf{SH} $	SU	1 SU
Eleocharis microcarpa Torr. var. * SH filiculmis Torr. (11) <i>Eleocharis microcarpa</i> (14) [RI]	2		1111		1 E S1	1 E S1	H SC
Eleocharis nitida Fernald (11)	IND.	SR GRank = 0	H SH G3G4. Possible (H SH occurrence in	 Maine needs ver	 rification.	
Eleocharis ovata (Roth) Roemer & Schultes (14) Eleocharis obtusa var. ovata (14) [CT,MA,ME,VT Eleocharis ovata var. heurseri (13) [ME,NH]	IND.	+ Taxonomic the commo	SU c confusion surr on and widespre	5 S1 ounds this tax ad <i>E. obtusa</i> b	3 E S1 con in New Engla by some authors.	SU and; it is inclu	+ SU Ided within
Eleocharis pauciflora (Lightf.) Link var.fernaldii Svens. (11) Eleocharis pauciflora (14) [VT] Eleocharis quinqueflora (15) [ME]	2	2 E S1	2 E S1	3 T S1	1 E S1		
Eleocharis quadrangulata (Michx.) Roemer & Schultes (14)	2				H SX		2 E S1
Eleocharis rostellata (Torr.) Torr. (14)	IND.	H SH More field	 study needed to	 determine st	10+ WL S3 atus in New Eng	2 C S1 land.	S U
Eleocharis tricostata Torr. (14)	2				2 E S1	H SH SH	
Eleocharis tuberculosa (Michx.) Roemer & Schultes (14)	3*	1 E S1 * Since New occurrence	H E SH Hampshire occ is disjunct.	urrences are 1	+ S4 now historic, the	3+ S2 Oxford Coun	+ S3 ity, Maine
Fuirena pumila (Torr.) Sprengel (14)	3*	 The Hamp	 den County, Ma	 ssachusetts o	34 WL S3 * ccurrence is disju	2 SE S1 unct.	H SH
Rhynchospora capillacea Torr. (14)	2	2 E S1	1 E S1	2 T S1	2 E S1		2 E S1
Rhynchospora inundata (Oakes)	2				6 T S2	4 E S1	

NAME Fern. (14)	Div	ME	NH	VT	MA	RI	СТ
Rhynchospora nitens (Vahl) A. Gray (14) <i>Psilocarya nitens</i> (11)	2				11 T S2		
Rhynchospora torreyana A. Gray (14)	2				10 E S2	1 E S1	
Schoenoplectus etuberculatus (Stud.) Sojak (13) Scirpus etuberculatus (14) [RI]	1					1 E S1	
Schoenoplectus hallii (A.Gray) S.G. Smith (30) Scirpus hallii (11) [MA]	4	 GRank = G Scirpus hall Schoenoplet	 2; Fed. code = <i>lii.</i> Future Flo <i>ctus hallii.</i>	 = C2. GRanks a ra North Ameri	H SX and Federal code ica editions will	 es are for syn probably use	 onym, e the name
Schoenoplectus heterochaetus (Chase) Sojak (28) <i>Scirpus heterochaetus</i> (14) [MA,VT]	IND.	 May be mor S2S3 rankir	 re common in ng. Populatior	? S2S3 Vermont than as are difficult t	WL SU current records o deliniate.	 indicate, hen	 ice the
Schoenoplectus x steinmetzii (Fern.) S.G.Smith & A.E. Schuyler (1)	IND.	1 S1 GRank = G isolated pop	 1Q. Sterile hy pulation persis	 brid of <i>S. heter</i> sting via vegeta	 <i>cochaetus</i> x <i>tabe</i> tive reproduction	 ernaemontant on.	 i. One
Scirpus ancistrochaetus Schuyler (13)	1	 GRank = G	5-7 S1 3; Fed. code =	9 E S2 = LE.	1 E S1		
Scirpus longii Fern. (14)	1	9 E S1	1 S1		4 E S1	1 E S1	H SC
* 5H		GRank = G	2; Fed. code =	= C2.			
Scirpus pendulus Muhl. (14)	3*	3 E S1 * Disjunct in	3 T S2 Penobscot Co	+ S3 ounty, Maine.	26 WL S3		+ S3
Scirpus polyphyllus Vahl. (14)	2		H E SH	2 E S1	5 WL S1		H SH
Scleria pauciflora Muhl. (14)	2		$ \mathbf{H} \mathbf{SH} $		14 E S2	3 T S1	H SC
Scleria pauciflora var. caroliniana (11) [CT,MA]		Massachuse considers th	etts has one oc is taxon as di	ccurrence of S. J stinct from S. p	pauciflora var. j auciflora var. c	vauciflora in aroliniana.	the state and
Scleria reticularis Michx. (14)	1	 GRank = G S. muhlenbe	1 S1 3G4. Species ergii.	 concept used h	60 WL S4 ere does not inc	3 T S1 lude the mor	1 E S1 re southern
Scleria triglomerata Michx. (14)	2				1 E S1	2 T S1	1 E S1
Scleria verticillata Muhl. (14) * SH	4						H SC
Tricophorum clintonii (Gray) S.G. Smith (1) Scirpus clintonii (14)	2	5-10 S2					
DIAPENSIACEAE Diapensia lapponica L. (14)	3*	13 S2 Disjunct on	+ T S3 high peaks ir	1 E S1 * a Chittenden Co	 ounty, Vermont.		
DROSERACEAE Drosera anglica Hudson (14)	2	3 E S1					

NAME	Div	ME	NH	VT	MA	RI	СТ
Drosera linearis Goldie (14)	2	1 E S1					
DRYOPTERIDACEAE Dryopteris filix-mas Schott (12)	2	2 E S1		7 T S2			
Gymnocarpium jessoense (Koidzumi) Koidzumi ssp. parvulum Sarvela (12)	4	 Probably ir	 htroduced in Co	H SH onnecticut, but	 currently not	 extant there.	S E
Woodsia alpina (Bolton) Gray (12)	2	3 T S1		4 E S1			
EBENACEAE Diospyros virginiana L. (14)	2	 There is so The point i species is d	 me question as s moot, howev lioecious.	 s to whether Co er, because on	SE onnecticut's sir ly a single ind	 ngle occurrence ividual is extant	1 SC S1 is native. and the
ELAEAGNACEAE Shepherdia canadensis (L.) Nutt. (14)	3*	1 E S1 * Disjunct in	 Somerset Cou	+ S3 inty, Maine.		1111	
ELATINACEAE Elatine americana (Pursh) Arn. (11)	IND.	SU More field regarding t	 work needed t he New Englar	 o determine sta nd specimens.	2 E S1 itus. There is t	2 T S1 axonomic confu	H SH Ision
EMPETRACEAE Empetrum nigrum L. (14)	3*	+ S4 Disjunct or Vermont.	+ T S3 n high peaks in	4 S1 * Chittenden, O	 rleans, and W	ashington count	 ies,
EQUISETACEAE Equisetum x mackaii (Newman) SU Brichan (12) Taxon	IND.	H SH? More field NH, and V is a hybrid common th	SU study needed. T, but says tha between <i>E. hy</i> , an previously	SU Flora North An t specimens fro <i>male</i> ssp. <i>affine</i> thought.	<pre>IIII merica (1993) om CT and NF e and E. varieş</pre>	 cites this taxon H have not been gatum. May be r	10+ in CT, ME, seen. more
ERICACEAE Arctostaphylos alpina (L.) Sprengel	2	1 T S1	4 T S1		1111	1111	1111
(14) Harrimanella hyppoides (L.) Coville	-	2 F S1	/ T S2				
(14) <i>Cassiope hypnoides</i> (11) [NH]	2	201	102		1111		1111
Loiseleuria procumbens (L.) Desvaux (14)	2	1 E S1	10 T S2				
Lyonia mariana (L.) D. Don (14) * SH	4					H SH SH	H SC
Phyllodoce caerulea (L.) Bab. (14)	2	2 E S1	8 T S2				
Rhododendron lapponicum (L.) Wahlenb. (14)	2	2 E S1	7 SC S3				
Rhododendron maximum L. (14)	3*	6 T S1 *	5 T S2	7 T S2 *	7 T S2	10+ S3	10 S3

NAME	Div	ME Disjunct in some occur	NH Caledonia and rences in Main	VT Orleans cour e.	MA ties, Vermont.	RI Documented	CT decline of
Rhododendron viscosum (L.) Torr. (14)	3*	1 T S1 * Disjunct in	+ T S3 Oxford County	H SH v, Maine.	+ S5	+ S4	+ S4
Vaccinium boreale I.V. Hall & Aald. (14)	1	3 E S1 GRank = G	11 S3 3.	3 S1			
Vaccinium vitis-idaea L. var	3*	+ S4	+ S4 *	4 S1	2 E S1 *		H SC
minus Lodd (11) Vaccinium vitis-idaea ssp. minus (15) [MA]		Disjunct in Hampshire.	Berkshire Cou	nty, Massach	usetts and in Ch	eshire Count	y, New
ERIOCAULACEAE Eriocaulon parkeri Robinson (14)	1	25 S3 GRank = G	 3; Fed. code =	 3C.	<4 E S1		6 E S1
EUPHORBIACEAE Crotonopsis elliptica Willd. (14) * SH	4						H SC
Euphorbia glyptosperma Engelm. (14) Chamaesyce glyptosperma (15) [MA]	IND.	SU Considered only recentl	SU introduced into y begun.	? S1 o several state	SE es; tracking as a	 native specie	 s in Vermont
FABACEAE Astragalus alpinus L. var. brunetianus Fern. (14)	1	27 S2 GRank = G	H SH 5T2T3.	H SX			
Astragalus canadensis L. (14)	2		1111	9 T S2			
Astragalus eucosmus B. L. Robinson (14)	4	$ \mathbf{H} \mathbf{SX} $					
Astragalus robbinsii (Oakes) A. Gray var. jesupii Eggleston (14)	1	 GRank = G	2 E S1 5T1; Fed. code	1 E S1 $= LE.$			
Astragalus robbinsii (Oakes) A. Gray var. minor (Hook.) Barneby (14)	2	H SX		7 S2			
Astragalus robbinsii (Oakes) A. Gray var. robbinsii (14)	4	 GRank = G	 5TX; Fed. code	$ \mathbf{H} \mathbf{SX} $ e = 3A.			
Desmodium canescens (L.) DC. (14)	2		1111		5 WL S1		8 S3
Desmodium cuspidatum (Muhl.) Loudon (14)	2		H SH	3 E S1	3 WL S1		S U
Desmodium glabellum (Michx.) DC. (14)	2						5 SC S1
Desmodium humifusum (Muhl.) Beck (14)	1	 GRank = G	 1G2Q; Fed. co	 de = C2. Rec	2 E S1 ent research sug	gests this tax	2 E S1 on is a
nybrid		of D. panic	ulata x rotundij	folium.			
Desmodium sessilifolium (Torr.) * SH T. & G. (14)	2					1 E S1	H SC
Lathyrus ochroleucus Hook. (14)	2			8 S2			

NAME Lespedeza repens (L.) Barton (14)	Div 2	ME `	NH 	VT 	MA 1? S?	RI 	CT 1 SC S1
Lespedeza stuevei Nutt. (14)	IND.	 Current statu	 s uncertain.	H SH	19 \$3?	SU	SU
Lupinus perennis L. (14)	3*	H SX Documented Hampshire, a isolated, prim	21 T S1 * decline in Cor nd Vermont. N narilly on roads	2 T S1 * nnecticut, Rhod Note: most Nev sides and powe	+ WL S3 * le Island, Mass w Hampshire of rilines.	8 C S2 * eachusetts, New ccurrences are	12 S2 * small and
Oxytropis campestris (L.) DC. var. johannensis Fern. (14)	1	8 T S1S2 GRank = G5	 ?T3; Fed. code	 e = 3C.			
Phaseolus polystachios (L.) BSP. (14)	4						H SC
Phaseolus polystachios var. aquilonius (11) [CT]		Reported from only seen spe	m all of New E ecimens from C	England in Glea	ason and Crono	quist (1991), bu	t we have
Strophostyles umbellata (Muhl.) Britton (14)	4					H SH SH	
FUMARIACEAE Corydalis aurea Willd. (14)	2		H SX	6 T S2			
Corydalis flavula (Raf.) DC. (14)	2						4 T S1
Dicentra canadensis (Goldie) Walp. (14)	3*	3 T S1 * Disjunct in F	11 T S2S3 ranklin and Pe	+ S4 nobscot counti	+ S4 es, Maine.		6 T S2
GENTIANACEAE Gentiana andrewsii Griseb. (14)	2	<pre> Specimens of similarity.</pre>	2 T S1 f this taxon and	5 T S1 1 <i>G. clausa</i> sho	2 T S1 uld be examin	H SH SH ed closely due	SU to
Gentianella amarella (L.) Boerner (14) Gentiana amarella (40) [VT]	2	1 E S1		H T SH			
Gentianella quinquefolia (L.) Small (14)	2	H SH	H SH	2 T S1	12+ WL S2		2 E S1
Lomatogonium rotatum (L.) Fries (14)	2	9 S1S2					
Sabatia campanulata (L.) Torr. (14)	2				5 E S1		
Sabatia dodecandra (L.) BSP. (14) * SH	4						H SC
Sabatia kennedyana Fern. (14)	1	GRank = G3	 Massachusett	 s has the larges	140 SC S3 st number of o	4 E S1 ccurrences glob	 pally.
Sabatia stellaris Pursh (14)	2	 Taxon has no	 ot been seen in	 Masaachusetts	1 E S1 in recent year	4 T S1 s.	2 S1
GROSSULARIACEAE Ribes rotundifolium Michx. (37) * SH	IND.	 Specimen fro	 m Masachuset	 tts appears vali	1 WL S1 d. but it is unk	 nown whether	H SC
is		truly native th	here.	Trong full	,		
HALORAGACEAE Myriophyllum pinnatum (Walter) BSP. * SH	IND.	1111			6 SC S2?	1 T S1	H SC

NAME (14)	Div	ME More field s	NH tudy needed	VT to determine st	MA tatus.	RI	СТ
Myriophyllum verticillatum L. (14)	IND.	+? SU More field s	SU tudy needed	5 S1 to determine st	1 T S1 tatus.		SU
HAMAMELIDACEAE Liquidambar styraciflua L. (14)	2 1815C1525						
	8 3C 323	Taxon has b Connecticut	een introduce occurrences	ed into some st are native and	ates. It is diffi which are intro	cult to determ oduced.	ine which
HIPPURIDACEAE Hippuris vulgaris L. (14)	2	SU	2 T S3	2 E S1			
HYDROPHYLLACEAE Hydrophyllum canadense L. (14)	2			1 T S1	2 E S1		
HYMENOPHYLLACEAE Trichomanes intricatum Farrar (12)	1	 GRank = Gi	1 S1 3G4.	S U	3 T S1		3 SC S1
IRIDACEAE Sisyrinchium mucronatum Michx. (14)	2	<5? S1? Not tracked Areas Progr	H SH by the Conne am began tra	H SH ecticut Natural cking this taxo	3 T S1 Diversity Data n in 1996.	 1 Base. The Ma	SU aine Natural
ISOETACEAE Isoetes acadiensis Kott (12)	1	1 S1 GRank = G3	1 S1 3?.		3 E S1		
Isoetes x eatonii Dodge (12) Isoetes eatonii (13) [NH]	IND.	 GRank = G2 of <i>I. engelln</i>	H SH 2Q; Fed. code <i>nanii</i> with <i>I. e</i>	 e = 3B. GRank echinospora.	1 SU is for synonyr	 n, <i>I. eatonii</i> . S	4 S1 terile hybrid
Isoetes x foveolata A.A. Eaton * SH ex Dodge (12)	IND.	 Current stati	 15 unknown:	 hybrid of <i>Len</i>	H SH gelmannii x I	 tuckermanii	H SC
Isoetes lacustris L. (12) <i>Isoetes macrospora</i> (11) [CT,MA,ME,NH,VT]	IND.	+? SU More field s plants of <i>I. l</i> that the two basis of geo	1 T S1 tudy needed. <i>acustris</i> have taxa cannot i graphy.	? S2? Flora North A been segregat reliably be dist	1 E S1 merica (1993) ed as <i>I. macros</i> inguished from	SU says that Nort spora by some a each other ex	1 SU h American e authors, but cept on the
Isoetes prototypus D.M. Britton (12)	1	1 S1 GRank = G2	 2G3.				
Isoetes riparia Engelmann <i>ex</i> A. Braun (12) <i>Isoetes riparia</i> var. <i>canadensis</i> (11) [RI]	2	H SH	2 T S2	2 S1	H SH	4 C S1	SU
JUGLANDACEAE Juglans cinerea L. (14)	IND.	+ SU Fed. code = <i>Sirococcus c</i>	+ S3? C2. Declinin clavigignenti-	+ S4 ng in some New -juglandacearu	+ S4 v England state um, and therefo	+ SU es because of th ore should be n	+ SU he fungus, nonitored.
JUNCACEAE Juncus alpinus <i>auct non</i> Vill. (13)	2	7-10 T S2	1 S1	8 S2			

NAME Juncus alpinoarticulatus (14) [ME,NH]	Div	ME	NH	VT	MA	RI	СТ
Juncus biflorus Ell. (14)	2				8 E S2		
Juncus debilis A. Gray (14) * SH	2				1 E S1	3 C S1	H SC
Juncus x oronensis Fern. (14) Juncus oronensis (11)	IND.	H SH? Name is ba x <i>vaseyi</i>). S	 Ised on two his Status uncertain	 toric specimen n. Not tracked	 ns occurring wi by the Maine 1	 ith the parents Natural Areas I	 (<i>J. tenuis</i> Program.
Juncus pervetus Fern. (11)	IND.	 Taxonomic Gleason an <i>subnodulou</i>	 e status unclear d Cronquist (1 <i>us</i> .	 . Fernald (195 991) include t	H SX 0) says native he taxon under	 at one site in M the European	 1A, but Juncus
Juncus stygius L. var. americanus Buch. (14)	2	9 S2					
Juncus subtilis E. Meyer (14)	IND.	H SU					
Juncus torreyi Cov. (14)	2	$ $ $ $ SU $ $		2 E S1	S E		
Juncus trifidus L. (14)	3*	+ S3S4 Disjunct oc Lamoille co	+ S3S4 ccurrences on h ounties, Vermo	5 S1 * nigh peaks in C ont.	 Chittenden, Wi	 ndsor, Washin	 gton, and
Juncus vaseyi Engelm. (14)	2	1 S 1		1 S1			
Luzula confusa Lindeberg (14)	2	1 E S1	H E SH				
Luzula spicata (L.) DC. (14)	2	1 E S1	7 T S3	1 S1			
JUNCAGINACEAE Triglochin gaspense Leith & D. Löve (15)	4	H SH GRank = C T. maritimu	 i2; Fed. code = um. (See Löve,	 = C2. This taxo , D. and H. Le	 on has been sep ith, 1961).	 parated from	
LAMIACEAE Agastache nepetoides (L.) Kuntze (14)	2			1 T S1			1 SC S1
Agastache scrophulariifolia (Willd.) 2 Kuntze (14)			1 T S1	H SH		2 SC S1	
Blephilia ciliata (L.) Benth. (14)	2			$ \mathbf{H} \mathbf{SH} $	1 E S1		$ \mathbf{H} \mathbf{SH} $
Blephilia hirsuta (Pursh) Benth. (14)	2			2 T S1	7 E S1		1 SC S1
Blephilia hirsuta (Pursh) Benth. var. glabrata Fern. (11)	IND.	 GRank = C never been	 G4?T1Q. This t recollected.	H SH axon is a Verr	 nont endemic o	 lescribed by F	 ernald. It has
Dracocephalum parviflorum Nutt. (14)	2	SE Recent seat 1983.	 rches have not	1 T S1 relocated the	SE Vermont occur	SE rence. It was la	SE ast seen in
Lycopus rubellus Moench (14)	2		$ \mathbf{H} \mathbf{SH} $	1 S1	2 T S1	1 S U	2 SU
Monarda punctata L. var. villicaulis Pennell (14)	2			2 S1	SE		S U
Pycnanthemum clinopodioides T. & G. (14)	IND.	 GRank = 0	 62. Taxonomic	 confusion. Di	1 E S1 fficult to distin	 guish and susp	3 E S1 bected by

NAME	Div	ME some bota	NH nists to be of hy	VT ybrid origin. M	MA fore field and la	RI boratory wor	CT k needed.
Pycnanthemum torrei Benth. (14)	IND.	 GRank = 0 some bota	1 E S1 G2. Taxonomic nists to be of hy	 confusion. Di ybrid origin. M	 ifficult to disting fore field and la	 guish and sus boratory wor	2 E S1 pected by k needed.
Scutellaria integrifolia L. (14)	2				$ \mathbf{H} \mathbf{SX} $		1 SC S1
Scutellaria leonardii Epling (14) Scutellaria parvula var. leonardi (11) [MA,ME]	2	H SH			WL SU		1 E S1
Scutellaria parvula Michx. var. parvula (14)	2	SU		11 S2			
Stachys hyssopifolia Michx. (14)	3*	 Disjunct in	 n Hartford Cour	 nty, Connectic	59 WL S4 ut.	1 E S1	2 E S1 *
Stachys pilosa Nutt. (13) Stachys palustris ssp. pilosa (1) [MA,ME]	IND.	SE Status unc	SU lear for this tax	SU on and closely	SU related taxa.		
Stachys tenuifolia Willd. (14)	IND.	S E	SU		SU	H SH	H SC
Stachys tenuifolia var. platyphylla (11) [NH]		More field Maine che more west	l study needed. ecklist (Campbe ern range for th	Recorded for ell et al., 1995), is and closely	New England in , but Gleason an related taxa.	n Seymour (1 d Cronquist(969) and the 1991) give a
Trichostema brachiatum L. (15) * SH Isanthus brachiatus (14) [CT]	2			H SH	3 E S1		H SC
LEMNACEAE Lemna valdiviana Philippi (14)	IND.	 Not enoug has been q	1 E S2 h information c juestioned. Mor	 on extant occur re field work no	SU rences. Identity o eeded.	 of plants in co	SU ertain reports
Wolffiella gladiata (Hegelm.) Hegelm. (17)	2	 Taxon is b	eing recommer	 nded for state e	1 S1 indangered speci	 ies list in Ma	 ssachusetts
Wolffiella floridana (14)		1997.					
LENTIBULARIACEAE Pinguicula vulgaris L. (14)	2	1 S1 Unknown	2 E S2 from Maine un	1 S1 til 1996.			
Utricularia biflora Lam. (14)	2				7 T S2	2 T S1	H SC
* Sn		Treated as	a synonym of	<i>U. gibba</i> in Ka	rtesz (1994).		
Utricularia fibrosa Walter (14) * SH	2				6 T S2		H SC
Utricularia inflata Walter (14)	IND.	 Indigenou	 s status in Mass	 sachusetts is ur	2 S1 ncertain.		
Utricularia resupinata B. D. Greene (14)	2(a)	2 T S1 Some ocur	SU rrences contain	5 T S1 small numbers	~8 WL S2 s of plants.	4 T S1	1 SC S1
Utricularia subulata L. (14)	2				10 SC S3	4 C S1	
LILIACEAE Chamaelirium luteum (L.) A. Gray (14)	2				3-4 E S1		5 E S1

NAME	Div	ME	NH	VT	MA	RI	СТ
Melanthium hybridum Walter (14) * SH	4						H SC
Tofieldia glutinosa (Michx.) Pers. (14)	3*	+ S3S4 Disjunct in C Windsor and	4 T S1 * Cheshire, Sulliv Caledonia cou	4 T S1 * van, and Grafto inties, Vermon	 n counties, Ne t.	 w Hampshire a	 and in
Zigadenus elegans Pursh var. glaucus (Nutt.) Preece (14) Zigadenus glaucus (11) [VT]	4			H SH			
LIMNANTHACEAE Floerkea proserpinacoides Willd. (14)	2			H SH	H SX		4 E S1
LINACEAE Linum medium (Planchon) Britton var. texanum (Planchon) Fern. (14) <i>Linum medium</i> [ME,VT]	2	SU		H SH	4 T S1	SU	SU
Linum sulcatum Riddell (14)	2			H SH	H SX	1 E S1	1 SC S1
LYCOPODIACEAE Diphasiastrum x sabinifolium (Willd.) Holub (12) <i>Lycopodium sabinifolium</i> (14) [NH,VT]	2	5 T S1 According to between <i>D</i> . s	SU Flora North A <i>itchense</i> and D	3 S1 merica (FNA) <i>trichystachur</i>	 Editorial Comr n is highly var	 nittee, 1993) th iable.	 nis hybrid
Diphasiastrum sitchense (Rupr.) Holub (12) Lycopodium sitchense (14) [NH,VT]	2	1 E S1	SU	H T SH			
Huperzia appalalchiana Beitel & Mickel (12)	IND.	7 S2 GRank = G3. treatment sug occurrences I suspected to	SU . Recent Flora ggests high-ele have been verif be a hybrid (<i>H</i>	? S1 North America vation alpine o fied. Massachu <i>. appalachiana</i>	1? E S1 a (FNA Editori ccurrences are setts' only kno a x <i>lucidulum</i>).	 al Committee, this taxon, but wn occurrence	 1993) not all is
Huperzia selago (L.) Berhardi <i>ex</i>	IND.	1 S1	? SU	? S1	1 E S1		H SC
Schrank & Martius (12)		Recent Flora	North Americ	a (FNA Editor	ial Committee,	1993) treatme	nt
<i>Lycopodium selago</i> (14) [CT,NH,VT]		lower elevati	on plants are t	this taxon, but	all occurrences	s have not been	verified.
Lycopodiella alopecuroides (L.) * SH Cranfill (12) Lycopodium alopecuroides (14) [CT,MA,RI]	2				1 E S1	1 E S1	H SC
Pseudolycopodiella caroliniana (L.) Holub (12) <i>Lycopodium carolinianum</i> (14) [MA]	4	 This taxon w but is believe	 as last seen in ed to be extirpa	 New England ted from this s	H SX on Mt. Toby in ite.	 Massachusett	 s in 1976,
Lygodium palmatum (Bernh.)	3* 11 \$C \$2	 *	H SX	1 E S1 *	22 SC S3	6 C S1	
Swartz (14)	110002	Documented Vermont.	decline in Cor	nnecticut. Disj	unct occurrenc	e in Lamoille (County,
LYTHRACEAE Cuphea viscosissima Jacq. (14)	4				H SX	H SH	H SH

NAME	Div	ME Sorrie (199	NH 1) considers t	VT his taxon "doul	MA otfully native"	RI in Massachuse	CT tts.
Lythrum alatum Pursh var. alatum (14)	IND.	SE Some occur species is a longer exta	SU rrences in sou dventive north nt.	SE thern New Eng hward. Vermo	SE land are thoug nt occurrences	SU ht to be native, are introduced	H SH but the and no
Rotala ramosior (L.) Koehne (14)	2				1 E S1	1 E S1	5 E S1
MAGNOLIACEAE Magnolia virginiana L. (14)	2				3 E S1		
MELASTOMATACEAE Rhexia mariana L. (14)	2				8 E S1		
MORACEAE Morus rubra L. (14)	2	 Some intro	 duced populat	2 T S1 tions occur in V	3 E S1 fermont and ot	 her New Engla	3 E S1 ind states.
NAJADACEAE Najas guadalupensis (Sprengel) Magnus (14)	IND.	H SH More field (Massachus	SU study needed. setts). May be	5 S1 Considered in more common	WL SE troduced into a than previous	2 T S1 it least one state ly recorded.	1 SC S1
NYMPHAEACEAE Nuphar lutea (L.) Sm. ssp. advena (Ait.) Kartesz & Gandhi (1) Nuphar advena (14) [CT,NH,VT]	IND.	1-5 S2? Relatively f estuaries.	1 S1 few occurrenc	H SH ees of this taxor	 a, but some occ	 currences inclu	H SH de entire
Nymphaea leibergii Morong (13) Nymphaea tetragona (14)	2	6 S1					
Nymphaea odorata Aiton ssp. tuberosa * SH (Paine) Wiersema & Hellquist (13) <i>Nymphaea odorata</i> var. <i>tuberosa</i> [VT] <i>Nymphaea tuberosa</i> (11) [MA]	IND.	 More field	 study needed.	? SU	SE	1111	H SC
ONAGRACEAE Epilobium anagallidifolium Lam. (13) <i>Epilobium alpinum</i> (14)	2	2 T S1	1 S1				
Epilobium hornemannii Reichb. (14) Epilobium hornemanni (11) [ME,NH]	2	3 T S1	6 T S2				
Ludwigia polycarpa Short & Peter (14) * SH	2			2 E S1	7 T S2		H SC
Ludwigia sphaerocarpa Elliott (14)	2				2 T S1	1 E S1	2 E S1
Oenothera fruticosa L. (14)	IND.	S E			S E?	1+ S1	H SC
* SH		More field regarding it	study needed is status as a n	to determine st native species.	atus in New Ei	ngland. Uncerta	ainty exists
OPHIOGLOSSACEAE Botrychium lunaria (L.) Swartz (12)	2	3 E S1 Flora North Massachuse	H SH America (FN etts, but we ha	H E SH JA Editorial Co ave not seen sp	SR ommittee, 1993 ecimens.	 B) reports this ta	 axon from

NAME Botrychium minganense Victorin (12)	Div IND.	ME H? SH? Flora North A New Hampsh	NH SR America (FNA nire and Vermo	VT SR Editorial Com ont, but we hav	MA mittee, 1993) r e not seen spec	RI eports this taxe simens.	CT on from
Botrychium oneidense (Gilbert) House (12)	IND.	SU Difficult taxe	SU on to distinguis	SU h. Flora North	SU America (FNA	SU Editorial Con	SU nmittee,
Botrychium rugulosum W. H. Wagner (12)	IND.	<pre>IIII GRank = G3. in Flora Nort one specimer or B. dissecta</pre>	 IIII Many older V h America (FN n exists from th <i>um</i>. More field 	SU /ermont collect IA Editorial Co lat state. Diffic work is needed	illi tions of this tax ommittee, 1993 ult to distiguish d.	<pre> on exist. Taxe) for Connecti n from B. multiple</pre>	SU on is not cut, but <i>ifidum</i>
Ophioglossum pusillum Raf. (12) Ophioglossum vulgatum (14) [CT]	3*	+? S3? Documented	SU decline in Mas	+ S3 ssachusetts, Co	6 T S2 * onnecticut and I	1 E S1 * Rhode Island.	3 T S1 *
ORCHIDACEAE Amerorchis rotundifolia Banks (13) Orchis rotundifolia (14)	2	6 T S1 `		H SH			
Aplectrum hyemale (Muhl.) Torr. (14) * SH	2			1 T S1	3 E S1		H SC
Arethusa bulbosa L. (14)	3*	+ S3S4 Documented	4 E S1 decline in Con	6 T S2 * mecticut, Mass	16 T S2 * achusetts, Rho	5 E S1 * de Island, and	1 E S1 * Vermont.
Calypso bulbosa (l.) Oakes (14)	3*	+ S3S4 Documented	H E SX decline in Ver	7 T S2 * mont.			
Corallorhiza odontorhiza (Willd.) Nutt. (14)	3*	2 E S1 * Disjunct occu York and Ox	3 E S1 * urrences in Stra ford counties,	6 T S2 afford and Carr Maine.	13 SC 54 coll counties, N	3 T S1 ew Hampshire	10 S3 and in
Cypripedium arietinum R. Br. (14) * SH	1	5 T S1	2 E S1	18 T S2	1 E S1		H SC
		GRank = G3	; Fed. code = 3	C.			
Cypripedium parviflorum Salisb. var. makasin (Farwell) Sheviak (13)	IND.	 Difficult to d three taxa; th	SU istiguish. Reco e disposition o	SU ent taxonomic f this taxon in	2? SU work splits yel New England i	SU low lady's slipj s unclear.	SU pers into
Cypripedium parviflorum Salisb. var. parviflorum (13) <i>Cypripedium calceolus</i> var. <i>parviflorum</i> (14) [CT,MA] <i>Cypripedium parviflorum</i> (15) [ME,NH,RI,VT]	IND.	+? S3? Difficult to d three taxa; th	2 E S1 istiguish. Reco e disposition o	S3 ent taxonomic f this taxon in	2? E S1 work splits yel New England i	SU low lady's slip] s unclear.	 pers into
Cypripedium parviflorum Salisb. var. pubescens (Willd.) Knight (13) <i>Cypripedium calceolus</i> var. <i>pubescens</i> (14) [CT] <i>Cypripedium pubescens</i> (15) [MA,ME,NH,RI,VT]	IND.	+? S3? Difficult to d three taxa; th	6 T S2 istinguish. Ree e disposition o	+ S3 cent taxonomic f this taxon in	+? WL S3 c work splits ye New England i	4 T S1 tllow lady's slij s unclear.	SU ppers into
Cypripedium reginae Walter (14)	3*	26 S2S3 Documented	5 SE S1 decline in Con	+ S3 inecticut and M	18 SC S3 * Iassachusetts.		3 E S1 *
Galearis spectabilis (L.) Raf. (15) Orchis spectabilis (14) [RI,VT]	3*	2 T S1 * Disjunct in O to indicate a	4 T S2 0xford and Son decline in sout	+ S4 herset counties hern New Eng	+ S3 , Maine. Recent land occurrence	1 SE S1 nt field work se es.	+ S3 eems
Goodyera oblongifolia Raf. (14)	2	5 E S1					
Isotria medeoloides (Pursh) Raf. (14)	1	17 E S2 GRank = G2	+ E S2 G3; Fed. code	H E SH = LT. The maj	3 E S1 ority of occurre	1 E S1 ences of this gl	1 E S1 lobally

NAME	Div	ME rare taxon ar	NH re in New Ha	VT mpshire and M	MA laine.	RI	СТ
Liparis liliifolia Rich. (14)	2		$ \mathbf{H} \mathbf{SX} $	1 T S1	8+ WL S2	2 T S1	2 E S1
Listera auriculata Wieg. (14)	1	7 S1 GRank = G3	3 E S1 3.	1 E S1			
Listera australis Lindl. (14)	2			2 E S1			
Listera cordata (L.) R. Br. (14)	3*	+ S3S4 Disjunct in H	8 T S2 Barnstable Co	+ S3 ounty, Massach	1 E S1 * nusetts.	H SH SH	
Malaxis bayardii Fern. (13)	1	 GRank = G2 looked at cri	 ?. This taxon tically.	H SH is similar to M	2-3 E S1 Aalaxis unifolia.	 Specimens s	H SH hould be
Platanthera ciliaris (L.) Lindl. (15) Habenaria ciliaris (14)	2				H SX	2 E S1	8 T S2
Platanthera cristata (Michx.) Lindl. (15) Habenaria cristata (14)	2	 Massachuset extirpated.	 tts occurrence	 has not been s	1? E S1 seen in recent ye	 ears and is like	 ely now
Platanthera leucophaea (Nutt.) Lindl. var. leucophaea (15) <i>Habenaria leucophaea</i> (14)	1	1 E S1 GRank = G2	 2; Fed. code =	 = LT.			
Spiranthes casei Catling & Cruise (14)	IND.	SU Further stud	2 E S1 y needed.	? SU			
Spiranthes x intermedia Ames (20)	IND.	SU SU SU SU SU SU SU Luer (1975) shows this taxon as present in all New England states. It is reportedly (Sorrie, 1991) a hybrid of <i>S. lacera</i> var. gracilis x <i>S. vernalis</i> , but <i>S. vernalis</i> does not occur in Maine. Further study needed.					
Tipularia discolor (Pursh) Nutt. (14)	2				7 E S2		
Triphora trianthophora (Swartz)	2(a)	7 T S1S2	10 T S2	3 T S1	2 E S1		H SC
* SH Rydb. (14)		Small popula occurrences	ation sizes of of this taxon	some occurrer may also not e	nces are cause for emerge every ye	or concern. En ar.	ntire
OXALIDACEAE Oxalis violacea L. (14)	2			1111	5 T S1	1 E S1	5 SC S1
POACEAE Agrostis mertensii Trin. (14) Agrostis borealis (11) [NH]	2	6 S2	7 S3	5 S1			
Ammophila champlainensis Seymour (73)	IND.	GRank = G1variety of A.	 Q. Taxonom breviligulata	2 E S1 ic study to dete t is in progress	 ermine if this is	a good species	 s or a
Amphicarpum purshii Kunth (14)	2				1 E S1		
Aristida basiramea Engelm. (14)	IND.	2 S1 May be more	1 SU e common th	? SU an originally th	 nought. More fie	 ld work need	 ed.
Aristida purpurascens Poiret (14)	2				14 T S2S3	3 T S1	H SH
Aristida tuberculosa Nutt. (14)	2		2 E S1		8 SC S3		5 T S1
Bouteloua curtipendula (Michx.) Torr. (14)	2						1 E S1

NAME Calamagrostis canadensis (Michx.) Beauv. var. langsdorfii (Link) Inman (13) <i>Calamagrostis nubila</i> (11) [NH]	Div 4	ME GRank = Gl the Clouds b	NH H SX HQ. GRank aj by Boott in 18	VT pplies to synon 62.	MA ym <i>C. nubila</i> .	RI Last collectio	CT n at Lake of
Calamagrostis pickeringii A. Gray (14)	2	2 E S1	9 T S3	$ \mathbf{H} \mathbf{SH} $	H SX		
Calamagrostis stricta (Timm) Koel. ssp. inexpansa (Gray) C. W. Greene (15) <i>Calamagrostis stricta</i> var. <i>inexpansa</i> [NH,VT] <i>Calamagrostis lacustris</i> (14) [NH]	2	3 T S1 GRank = G.	7 E SU 3Q. GRank is	2 E S1 for <i>C. lacustri.</i>	 S.		1 SC S1
Calamagrostis stricta (Timm) Koeler ssp. stricta (14) <i>Calamagrostis neglecta</i> (11) [NH]	2	5 E S1	5 T S1				
Deschampsia atropurpurea (Wahlenb.) Scheele (14) Vahlodea atropurpurea (1) [ME]	2	H SH	3 S2	H SH			
Elymus villosus Muhl. (14)	2			3 S1	3 T S2	$ \mathbf{SU} $	SU
Eragrostis capillaris (L.) Nees (14)	IND.	1 E S1 Adventive in occurrences	SU n gardens, roa are native.	? S2S3 dsides, and rai	4 WL SU lroads; difficult	SU t to determine	SU which
Hierochloe alpina (Swatrz) Roemer. & Schultes (14)	2	5 T S1	7 S2	2 T S1			
Leptochloa fasicularis (Lam.) A. Gray var. maritima (Bicknell) Gleason (14) <i>Diplachne maritima</i> (11) [CT,MA,NH]	1	 GRank = G	H SH 5T3T4.		6 T S2	H H SH	2 E S1
Leymus mollis (Trin.) Pilger var. mollis (14) <i>Elymus mollis</i> [MA,NH]	IND.	+ S4 Confusion v unclear.	H SX vith the introd	 uced <i>Leymus a</i>	2 E S1 <i>arenarius</i> make	 s this taxon's s	 status
Muhlenbergia capillaris (Lam.) Trin. (11)	2				$ \mathbf{H} \mathbf{SX} $		2 E S1
Muhlenbergia richardsonis (Trin.) Rydb. (14)	2	2 S1					
Muhlenbergia sobolifera (Muhl.) Trin. (14)	3*	1 E SH * The occurre Maine is bas Program.	2 T S1 nce in Oxford sed on a 20-ye	+ S3 l County, Main ear cutoff date	+ S4 le, is disjunct. S used by the Ma	SU State rank of "State rank A	+ S3 SH" for reas
Oryzopsis canadensis (Poiret) Trin. (14)	4	H? SH?	H E SH				
Panicum amarum Ell. (14)	2	 Massachuse state.	 tts notes <i>Pani</i>	 cum amarum X	SE var. <i>amarulum</i> a	1+ SU as introduced	7 T S2 in the
Panicum flexile (Gattinger) Scribn. (14)	2			2 E S1			H SH
Panicum gattingeri Nash (11)	2				7 SC S2?		H SH
Panicum mattamuskeetense Ashe (11) Panicum dichotomum ssp. mattamuskeetense(13) Dichanthelium mattamuskeetense (31) [MA]	IND.	 May be ove More field v	 rlooked on Ca vork needed.	 pe Cod and the	7? E SU? e islands off the	H SH e coast of Mas	 sachusetts.

NAME	Div	ME	NH	VT	MA	RI	СТ
Panicum polyanthes Schultes (14) * SH	IND.				SU		H SC
Dichanthelium sphaerocarpon var.		There is som	e confusion w	ith this taxon a	nd <i>Panicum sp</i>	phaerocarpon.	More
isophyllum (15) CT] Dichanthelium polyanthes [MA]		work needed	l.				
Panicum rigidulum Bosc. var. pubescens (Vasey) Lelong (13) <i>Panicum longifolium</i> (11) [CT,MA,NH]	2		H SH		6 T S2	SU	H SH
Panicum scabriusculum Elliott (14) Dichanthelium scabriusculum (15) [CT,MA]	2				2 T S1		1 E S1
Panicum sphaerocarpon Elliot (14) Dichanthelium sphaerocarpon (1) [MA,ME]	IND.	SU Taxonomic o and field wo	H E SH confusion betw rk needed.	4 S1 veen this taxon	+ SU and <i>P. polyant</i>	SU thes. Further ta	SU axonomic
Panicum stipitatum Nash (11)	4	 State of Con <i>elongatum</i> as	 necticut endan s this taxon.	 gered species l	 ist cites Panica	 um rigidulum v	H SH rar.
Paspalum laeve Michx. (14)	2				$ \mathbf{H} \mathbf{SX} $		2 E S1
Paspalum setaceum Michx. var. * SH psammophilum (Nash) D. Banks (14)	2				7 WL S2	SU	H SC
Phleum alpinum L. (14)	2	8 T S1	2 T S2				
Poa glauca Vahl (14)	2	<10 SU	H T SH	1 S1			
Poa laxa Haenke ssp. fernaldiana (Nannf.) Hylander (13) <i>Poa fernaldiana</i> (14) [ME,NH,VT]	1	1 E S1 GRank = G2	2 E S2S3 2G3. Global rat	1 S1 nk is for synon	 ym P. fernaldi	 ana.	
Poa pratensis (Fries ex Blytt) Hiitonen ssp. alpigena (13) <i>Poa arctica</i> (14)	IND.	SU In the Maine <i>Poa pratensi</i>	H E SH c checklist (Can is which is con	 mpbell et al., 1 isidered commo	 995) this taxor on in Maine.	 is included un	 der
Puccinellia tenella (Lange) Holm. ssp. langeana (Berlin) Tzelev (15)	IND.	 GRank = G4 recent manua needed.	 PT3T4. Cited als do not list a	 by one source a taxon with thi	SU as historic in N is name for tha	 Iassachusetts, I t state. Investig	 out gation
Puccinellia tenella (Lange) Holmb. ssp.	IND.	? SU	SE		$ \mathbf{H} \mathbf{SH} $		H SC
alascana (Scribn. & Merr.) Tzelev (15) <i>Puccinellia langeana</i> ssp. <i>alascana</i> (16) [CT,MA] <i>Puccinellia paupercula</i> var. <i>alaskana</i> (11) [NH]		Taxonomy a determine sta	nd nomenclatu atus. May not	ire confusing. be rare in Main	More study ne le.	eded in New E	ngland to
Sorghastrum nutans (L.) Nash (14)	3*	2 S1 * Disjunct in S	SU Somerset and A	+ S3 Androscoggin c	+ S4 ounties in Mai	5 C S1 ne.	+ S4
Spartina cynosuroides (L.) Roth (14)	2				8 SC S2	3 C S1	<10 S2
Sphenopholis nitida (Biehler) Scribn. (14)	2			1 E S1	3 T S1	H SH SH	H SH
Sphenopholis obtusata (Michx.) Scribn. (14)	IND.	H SH May be more determine sta	H E SH e common that atus.	1 E S1 n previously the	SU ought; more fie	H SH eld study neede	H SH ed to

NAME Sphenopholis pensylvanica (L.) A. Hitchc. (14)	Div 2	ME 	NH 	VT 	MA 4 T S1	RI SU	CT H SH			
Sporobolus clandestinus (Biehler) * SH A. Hitchc. (14)	4						H SC			
Sporobolus compositus (Poir.) Merr. var. compositus (15) Sporobolus asper (14) [CT,ME,RI,VT]	2	1 E S1		3 E S1	3 WL SE?	H C SH	5 SC S2			
Sporobolus heterolepis A. Gray (14)	2				H SX		5 E S1			
Sporobolus neglectus Nash (14) * SH	2	H SH	1 E S1	1 S1	2 E S1		H SC			
Tripsacum dactyloides L. (14)	2				1 E S1	6 T S1	5 S2			
Trisetum melicoides (Michx.) Scribn. (14)	2	2 E S1	H SH	H SH						
POLEMONIACEAE Polemonium van-bruntiae Britton (14)	1	1 E S1 GRank = G	 3; Fed. code =	8 T S2 = 3C.						
POLYGALACEAE Polygala senega L. (14)	2	2 T S1		12 S2S3	H SX		2 E S1			
Polygala verticillata L. (11) <i>Polygala verticillata</i> var. <i>ambigua</i> (11) [CT,ME,NH,RI] variatias	IND.	+? SU This taxon : 1991) and v	SU includes var. a ar. isocycla.	? S2 ambigua (Polyga Most states have	+ WL S3S4 ala ambigua of not differentia	2 C S1 Gleason and (ated between t	SU Cronquist, he			
varieties.		More field	study needed.							
POLYGONACEAE Oxyria digyna (L.) Hill (14)	2		3 T S1							
Polygonum douglasii Greene (14)	2	4 T S1	5 T S1	3 E S1						
Polygonum erectum L. (14)	IND.	+? SU Although h England. C	H E SH istorically wid urrent status u	1 S1 lespread, this tax inknown.	+ S3? on appears to b	 be declining ir	H SH 1 New			
Polygonum glaucum Nutt. (14)	1				~40 WL S3	3 T S1	H SC			
* SH		GRank = G3. Massachusetts has the majority of New England occurrences.								
Polygonum puritanorum Fern. (11)	IND.	? SE GRank = G Gleason and <i>Persicaria</i> considered	 3Q. Many cur d Cronquist, 1 <i>maculosa</i> in M non-native.	 rrent treatments j 991) which is co Jaine checklist (50 SC S3 place this under ommon and nor Campbell et al.	H SH r <i>P. persicaria</i> n-native. Treat , 1995) and	(as do ted as			
Polygonum setaceum Baldw. var. interjectum Fern. (11) <i>Polygonum hydropiperoides</i> var. <i>setaceum</i> (14)	IND.	 Not always and Cronqu	 distinguishab ist (1991). Me	 le from <i>P. hydro</i> ore field study no	6 SC S2 ppiperoides acc eeded.	H SH SH ording to Glea	 ason			
Polygonum tenue Michx. (14)	3*	H SH Disjunct oc	H E SH currence in Cl	1 S1 * hittenden County	10+ WL S2 y, Vermont.	SU	+ S3			
Polygonum viviparum L. (14) Persicaria vivipara (1) [ME]	2	1 E S1	1 T S1	H SH						

NAME Rumex occidentalis S. Wats. (14) <i>Rumex fenestratus</i> (11) [MA]	Div 4	ME Introduced in Reported in 0 misidentified	NH Massachusett Gleason and Cu l.	VT H SH s, but native po ronquist (1991	MA SE opulations are) from Maine,	RI historic in Veri but the specime	CT mont. en was
POLYPODIACEAE Cheilanthes lanosa (Michx.) D. C. Eaton (12)	2						1 E S1
PONTEDERIACEAE Heteranthera reniformis Ruiz & Pavon (14)	4	 Recent repor	 ts unverified a	 nd not relocate	 :d.		H SH
Zosterella dubia (Jacq.) Small (14) Heteranthera dubia (11) [CT,MA,ME,NH,VT]	3*	4 E S1 * Disjunct in P common that	1 E S1 enobscot and I n records zhow	+ S3 Hancock count in Berkshire (3+ WL S2S3 ties, Maine. Re County, Massa	ported to be mochastic be mochastic be mochastic between the set of the set o	+ S3 ore
PORTULACACEAE Montia fontana L. (14)	2	12 S2					
POTAMOGETONACEAE Coleogeton filiformis (C.H. Persoon) Les and Haynes ssp. alpinus (M.N. Blytt) Les and Haynes (13) <i>Potamogeton filiformis</i> var. <i>alpinus</i> (1) [MA,ME,NH] <i>Potamogeton filiformis</i> var. <i>borealis</i> (14) [VT]	2	9 S2	1 E S1	3 S1	H SX		
Coleogeton filiformis (C.H. Persoon) Les & Haynes ssp. occidentalis (J.W. Robbins) Les & Haynes (13) <i>Potamogeton filiformis</i> var. <i>occidentalis</i> (1) [ME]	2	6 S2					
Potamogeton confervoides Reichb. (14) * SH	1	14 T S2	10+ S2S4	13 S2 - C2	5+ SU	H SH	H SC
		GRank = G3	G4; Fed. code	= C2.			
Potamogeton diversifolius Raf. (14) * SH	IND.	? SU					H SC
		Status uncert	ain.				
Potamogeton hillii Morong (14)	1	 GRank = G3		30 S3	22 SC S3		1 E S1
Potamogeton ogdenii Hellquist & Hilton (14)	1	 GRank = G1		2 S1	1 S1		SU
Potamogeton pusillus L. ssp.	IND.	10 SU	6 T S2		19 S3S4?	H $ SH $	H SC
* SH gemmiparus Robbins (14)		GRank = G5	T3T4. More fi	eld work need	ed to determine	e current status	
Potamogeton strictifolius Ar. Benn. (14)	IND.	H SH Similar to clo	 osely related sp	? SU pecies. Questio	1? S1 ons remain on t	 he identificatio	1 E S1 n of
certain		populations.					
Potamogeton vaseyi Robbins (14) * SH	2	2 E S1	3 T S2	6 S2	1 WL S1		H SC
PRIMULACEAE Primula laurentiana Fern. (14)	2	14 S2					

NAME	Div	ME	NH	VT	MA	RI	СТ		
Primula mistassinica Michx. (14)	3*	+ S3 Disjunct oc	 currences in C	5 T S1 * Caledonia and C	 Drleans counties	 s, Vermont.			
PTERIDACEAE Cryptogramma stelleri (S. G. Gmelin) Prantl (14)	3*	2 T S1 * Disjunct in	6 T S1 Somerset, Piso	+ S3 cataquis and O	5 T S2 xford counties,	 Maine.	2 E S1		
PYROLACEAE Pterospora andromedea Nutt. (14)	2		H SX	2 E S1					
Pyrola minor L. (14)	3*	S3? Occurrence York state a	SU s in Chittender are disjunct fro	1 E S1 * n County, Verr om the rest of t	 nont as well as his taxon's rang	 those in easte ge.	 ern New		
RANUNCULACEAE Anemone multifida Poiret (14)	2	7 T S1		1 E S1					
Hydrastis canadensis L. (14)	2			2 E S1	2 E S1		2 E S1		
Ranunculus allegheniensis Britton (14)	2			8 T S2	1 WL S1	SU	7 S2		
Ranunculus ambigens S. Wats. (14)	2	$ \mathbf{H} $ $ \mathbf{SH} $	H E SH		H SH	$ \mathbf{H} \mathbf{SH} $	1 E S1		
Ranunculus gmelinii DC. var. hookeri (D. Don) L. Benson (14) <i>Ranunculus gmelinii</i> var. <i>purshii</i> (1) [ME]	2	4 T S1							
Ranunculus hispidus Michx. (14)	IND.	Future editions of FNA will likely show that var. <i>hispidus</i> and var. <i>caricetorum</i> are in New England. Gleason and Cronquist (1991) show only var. <i>caricetorum</i> here. The Maine checklist (Campbell et al., 1995) shows var. <i>nitidus</i> as existing statewide. Clarification needed.							
Ranunculus lapponicus L. (14)	2	6 T S1S2				1111			
Ranunculus micranthus Nutt. (14)	2				4 T S1	1 T S1	6 S2S3		
Trollius laxus Salisb. (14) Trollius laxus ssp. laxus (15) [CT]	1	 GRank = G	 4T3Q. GRank	 is for synonyr	 n <i>T. laxus</i> ssp	 laxus.	5 E S1		
RHAMNACEAE Ceanothus herbaceus Raf. (14)	2			1 E S1	S E				
ROSACEAE Agrimonia parviflora Aiton (14)	2				3 E S1		6 SC S3		
Amelanchier nantucketensis Bickn. (11)	1	11 S2 GRank = G seen. Mass	 3Q; Fed. code achusetts has t	 = C2. Reporte the majority of	50 SC S3 d from Connec occurrences gl	 ticut, but no s obally.	SU specimens		
Crataegus mollis (T. & G) Scheele (14)	IND.	H? SU Difficult tax needs verifi	 conomic group cation.	H SH b. The identity	SU of New Englan	 d records for	 this species		
Crataegus x silvestris Sarg. (14) Crataegus bicknellii (31) [MA] Crataegus chrysocarpa var. bicknellii (11)	IND.	 GRank = G status uncle Cronquist (1Q. GRank is ar. Listed as a 1991).	 for synonym (hybrid of <i>C. p</i>	1 E S1 C. bicknellii. Di ruinosa x punc	 fficult taxono <i>tata</i> in Gleaso	 mic group; on and		
Geum peckii Pursh (14)	1	 GRank = G but we hav	+ T S2 2Q. Cronquist e not seen spe	 (Gleason and cimens, nor is	 Cronquist, 199 it in the Maine	 1) reports this checklist (Cat	 s for Maine, mpbell et		

NAME	Div	ME al., 1995).	NH	VT	MA	RI	СТ
Geum vernum (Raf.) T. & G. (14)	4			H SH			
Potentilla pensylvanica L. var. bipinnatifida (Douglas) T.&G. (14) Potentilla pensylvanica var. pectinata (1) [ME,VT] Potentilla pectinata (11) [NH]	IND.	+ S4 Current statu disjunct. Fur	SU is in New Engla rther field work	1 E S1 and is unclear. c needed.	 Some Vermo	 nt occurrences	 may be
Potentilla robbinsiana Oakes (14)	1	 GRank = G1	2 E S1 ; Fed. code = I	 .E.			
Prunus alleghaniensis T.C. Porter (14)	4				S E		H SC
		Fed. code = Connecticut	C2. Introduced are thought to 1	in Massachuse have been nativ	etts, but histori ve.	ic occurences in	n
Prunus maritima Marsh. var. gravesii (Small) G. J. Anderson (15)	IND.	 GRank = G4	 T1Q. Correct s	 status of this ta:	 xon is uncertai	 in.	1 E S1
Rosa acicularis Lindley ssp. sayi (Schwein.) W. H. Lewis (14) <i>Rosa acicularis</i> (14) [MA,NH,VT]	2	H? SU	H E SH	2 E S1	1 E S1		
Rosa blanda Aiton var. glabra Crépin (15) <i>Rosa johannensis</i> (14)	IND.	? S2+ GRank = G5 now combin tracked by M	 T3Q. Present of this taxon un Maine Natural A	 on list because der <i>R. blanda</i> Areas Program	 of GRank, but which is more	most authors common. Not	
Rubus aculiferus Bailey (15) Rubus x aculiferus (14)	IND.	 GRank = G2 Gleason and Appears on t	SU ?. Listed as a p Cronquist (199 his list because	 putative hybrid 91). Current sta e of global rank	 of <i>R. alleghni</i> atus in New Er	 ensis x setosa i ngland is unkno	 n own.
Rubus cuneifolius Pursh (14)	2	 Possibly adv	1 E S1 entive in New	 Hampshire and	SU Massachuset	 ts.	7 SC S2
Sibbaldia procumbens L. (14)`	2		1 E S1				
Waldsteinia fragarioides (Michx.) Tratt. (14)	3*	2 T S1 * Disjunct in K	3 T S1 Kennebec Coun	+ S4 ity, Maine.	24 SC S3		1 E S1
RUBIACEAE Galium kamtschaticum Steller (14)	IND.	<3 SU Distributiona	2 SU 1l status in New	? S2S3 v England is un	 nclear.		
Galium labradoricum (Wieg.) Wieg.	3*	SU	H E S1	2 T S1 *	9+ SC S3 *		H SC
(14)		Taxon is disj County, Mas	unct in Bennin sachusetts.	gton County, V	Vermont, and i	n southern Ber	kshire
Galium trifidum L. var. trifidum (14) Galium brevipes (11) [ME,NH,VT]	4	H SU	S U	H SH			
SALICACEAE Populus heterophylla L. (14)	2					1 C S1	4 E S1
Salix arctophila Cockerell (14)	2	1 E S1					
Salix argyrocarpa Andersson (14)	2	1 E S1	5 T S1				
Salix candida Fluegge (14)	3*	1 T S1 * Disjunct in A	 Aroostook Cour	+ S3 nty, Maine.	35 WL S4		15 S3

NAME Salix cordata Michx. (14)	Div IND.	ME H SH Gleason and but the taxo This taxon i unclear.	NH 1 S1 d Cronquist (1991 n is included in S is distinct from S.	VT) range for th orrie's (1991) <i>eriocephala</i> .	MA SU is taxon does not draft county che Distributional sta	RI include Mass ecklist for Mas atus in New E	CT achusetts, sachusetts. ngland is
Salix exigua Nutt. ssp. interior (Rowlee) Cronquist (14) Salix interior (11) [ME] Salix exigua (15) [CT,MA,NH,VT]	3*	2 T S1 * Disjunct in	SU Kennebec Cour	+ S3 hty, Maine.	10 SC S3		4 T S1
Salix herbacea L. (14)	2	1 E S1	5 T S1S2				
Salix myricoides (Muhl.) J. Carey (14)	2	2 S1					
Salix planifolia Pursh (14)	2	1 E S1	4 T S2	1 T S1			
Salix uva-ursi Pursh (14)	2	2 T S1	10+ S2S3	2 E S1			
SANTALACEAE Geocaulon lividum (Richardson) Fern. (14)	2	10 S2	4 T S2	H SX			
SAURURACEAE Saururus cernuus L. (14)	2				H SX	1 E S1	3 E S1
GROSSULARIACEAE Ribes rotundifolium Michx. (14) * SH	IND.				1 WL S1		H SC

Specimen from Masachusetts appears valid, but it is unknown whether this taxon is truly native there.

NAME SAXIFRAGACEAE	Div	ME	NH	VT	MA	RI	СТ
Saxifraga aizoides L. (14)	2			2 S1			
Saxifraga cernua L. (14)	2		1 E S1				
Saxifraga foliolosa R. Br. (14) Saxifraga stellaris var. comosa (11)	2	1 E S1					
Saxifraga oppositifolia L. (14)	2			5 S1			
Saxifraga paniculata Mill. (13) Saxifraga aizoon var. neogaea (11) [NH,VT]	2	2 T S1	2 E S1	5 S1			
Saxifraga rivularis L. (14)	2		3 E S1				
SCROPHULARIACEAE Agalinis acuta Pennell (14)	1	 GRank = G	 1; Fed. code =	 = LE.	3 E S1	1 E S1	1 E S1
Agalinis neoscotica Greene (11) Agalinis purpurea var. neoscotica (14)	1	4 E S1 GRank = G	 2?.				
Aureolaria virginica (L.) Pennell (14)	3*	 Occurrence	4 T S2 e in Franklin C	2 S1 * County, Vermo	+ S4? nt is disjunct.	12 S2	+ S3
Castilleja coccinea (L.) Sprengel (14)	2	H SX	$ \mathbf{H} \mathbf{SX} $		H SX	H SH SH	4 E S1
Castilleja septentrionalis Lindl. (14)	2(a)	25 S3 Small numl	2 T S1 bers of plants	1 T S1 at most occurr	ences are cause	 for concern.	
Collinsia parviflora Dougl. (14)	4	 Native occu is also not e	 urrences are hi extant.	H SH istoric. Introd	SE uced occurence	 in Massachuse	 etts
Euphrasia disjuncta Fern. & Wieg. (14)	4	H SX					
Euphrasia oakesii Wettst. (14)	2	1 E S1	1 E S1				
Gratiola virginiana L. (14)	2					2 C S1	
Melampyrum lineare Desr. var. latifolium Barton (14)	IND.	SU Most specin annotation	H SH mens not ident needed.	 tified to the va	SU rietal level. Fie	 eld work and sp	? SU becimen
Melampyrum lineare Desr. var. lineare (14)	IND.	SU Most specin annotation	SU mens not ident needed.	SU tified to the va	 rietal level. Fie	 eld work and sp	 becimen
Melampyrum lineare Desr. var. pectinata (Pennell) Fern. (14)	IND.	 Most specin annotation	SU mens not ident needed.	 tified to the va	SU rietal level. Fie	SU eld work and sp	SU becimen
Mimulus alatus Aiton (14)	2				3 E S1		1 S1
Mimulus moschatus Douglas (14)	2	SE This taxon occurrences	3 E S1 is introduced is are native is	6 S2 into some Nev often difficult	4 T S1 v England states	 s; determining v	H SH which
Mimulus ringens L. var. colpophilus Fern. (11)	IND.	12 S2 GRank = G	 5T2Q; Fed. co	 ode = C2. Tax	 onomic status u	 Inclear.	
Pedicularis furbishiae S. Wats. (14)	1	26 E S2 GRank = G	 2; Fed. code =	 = LE.			

NAME	Div	ME	NH	VT	MA	RI	СТ
Pedicularis lanceolata Michx. (14)	2				2 E S1		3 S1
Rhinanthus crista-galli L. (14) Rhinanthus minor (15) [MA]	IND.	? SU Difficult to Gleason ar and the alg	1 S3 o determine wh nd Cronquist (1 pine plants are	SU nich occurences 1991) state that native.	SE are native and our lowland pl	 which are in lants are intro	SE htroduced. oduced
Schwalbea americana L. (14)	4				$ \mathbf{H} \mathbf{SX} $		H SC
* SH		GRank = 0 Massachus	G2; Fed. code = setts in 1963.	= LE. In New E	ingland, this ta	xon was last	seen in
Veronica catenata Pennell (14) Veronica anagallis-aquatica (1) [ME]	IND.	SE Dificult to Gleason an <i>anagallis-</i>	 determine wh nd Cronquist (i <i>aquatica</i> and is	1 S1 ich occurences 1991) state that s included unde	2 E S1 are native and <i>V. catenata</i> hy r the latter taxe	 which are in bridizes with on by some a	 troduced. n V. uthors.
Veronica wormskjoldii Roemer & Schultes (14)	2	1 E S1	2 E S1				
Veronicastrum virginicum (L.) Farw. (14)	IND.	SE Difficult to	 determine wh	1 E S1 nich occurrence	10 SC S2 s are native an	 d which are i	9 SU introduced.
SELAGINELLACEAE Selaginella eclipes W. R. Buck (12)	IND.	 Taxon is n Committee taxon by th	 ot included in e, 1993), but sp ne author of the	 New England i becimen from C e FNA Editoria	 n Flora North A Connecticut was l Committee, 1	 America (FN s later annota 993).	2 SU A Editorial tted as this
SMILACACEAE Smilax tamnoides L. (15) * SH Smilax tamnoides var. hispida (11) [CT] Smilax hispida (14)	4						H SC
SOLANACEAE Leucophysalis grandiflora (Hook.) Rydb. (14) <i>Physalis grandiflora</i> (15) [VT]	4	 GRank = 0	 G3G4.	H SH			
Physalis longifolia Nutt. var. subglabrata (Mackenzie & Bush) Cronquist (14) <i>Physalis subglabrata</i> (11) [CT,NH,RI,VT]	IND.	SE More field population	SU work needed s are native.	H SH to determine sta	SE atus. Difficult t	H SH to determine	H SH which
SPARGANIACEAE Sparganium minimum (Hartm.) * SH Fries (14) Sparganium natans (15) [MA]	3*	? SU Disjunct ir	SU n Berkshire Co	13 T S2 unty, Massachu	4 T S1 * isetts.		H SC
ULMACEAE Ulmus thomasi Sarg. (14)	4	 Extant pop	 pulations in Ve	H SH rmont are intro	 duced. Native	 populations	 are historic.

NAME URTICACEAE	Div	ME	NH	VT	MA	RI	СТ			
Pilea fontana (Lunell) Rydb. (14)	IND.	 More field of similarit	 study needed. y with <i>P. pum</i>	 Taxon has be <i>ila</i> .	? S3? en overlooked	 in New Engla	4 SU and because			
VALERIANACEAE Valeriana uliginosa (T. & G.) Rydb. (14)	2	10 S2	1 E S1	1 E S1						
Valerianella radiata (L.) Dufr. (14) * SH Valerianella radiata var. fernaldiana (11) [CT]	4						H SC			
VERBENACEAE Verbena simplex Lehm. (14)	2			H SH	1 E S1		H SH			
VIOLACEAE Hybanthus concolor (T. Forster) * SH Sprengel (14)	2			1 S1			H SC			
Viola brittoniana Pollard (11) Viola pedatifida ssp. brittoniana (13)	2	H SH 6 T S1 2 E S1 Preliminary research indicates that one Massachusetts population of this taxon is known as Viola brittoniana var. pectinata (GRank of G4G5T3Q as Viola brittoniana ssp. pectinata). It is genetically distinct from the other Massachusetts occurrences.								
Viola hirsutula Brainerd (11) * SH	4						H SC			
Viola novae-angliae House (11)	2	15 S2 Fed. code =	 = 3C.							
Viola palmata L. (22) Viola triloba var. dilatata (11) [MA]	IND.	 The taxono The nomen	 mic relationsh clature reflect	SU hip of violets w s this confusio	SU ithin this com n. Further stud	SU plex is very ur ly needed.	SU ncertain.			
Viola palustris L. (14)	2	1 E S1	4 T S2							
Viola striata Aiton (14)	IND.	SE	S U		S E		H SC			
* SH		More field be suspect	study needed since this spec	to determine st eies is cultivate	atus. New Eng d and sometin	gland occcurer	nces should			
Viola subsinuata Greene (22)	IND.	 The nomen	 alatura of this	SU taxon in Novy	SU England (whi	 h may involv	SU			
palmata							:-			
desperately		needed.	ettes as synon	yms) is nopele	ssiy confusing	. Clarification	15			
XYRIDACEAE Xyris smalliana Nash (14)	3*	1 E S1 * Since the E County, Ma	 Sssex County, aine occurrence	 Massachusetts ce is considered	+ SU occurences ar l to be disjunc	+ S2 e dated pre-19 t.	4 E S1 70, the York			

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Appendix I. State Status codes.

<u>Connecticut:</u> (Connecticut Department of Environmental Protection 1993). Public Act 89-224. E = Endangeredany native species documented by biological research and inventory to be in danger of extirpation throughout all or a significant portion of its range within Connecticut and to have no more than <u>five</u> occurrences in the state, and any species determined to be an "endangered species" pursuant to the federal Endangered Species Act.

T= Threatened - any native species documented by biological research and inventory to be likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range within Connecticut and to have no more than <u>nine</u> occurrences in the state, and any species determined to be a "threatened species" pursuant to the federal Endangered Species Act, except for such species determined to be endangered by the Commissioner in accordance with section 4 of Public Act 89-224.

SC = Special Concern - any native plant species or any native nonharvested wildlife species documented by scientific research and inventory to have a naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would be detrimental to the conservation of its population.

SC * = extirpated from the state.

Maine: Maine Revised Statutes Annotated 5 MSRA C,383, sub C. III, articles 1-A.

E = Endangered - any native plant that is in danger of extinction throughout all or a significant portion of its range within the State or any species determined to be an endangered species pursuant to the United States Endangered Species Act of 1973, Public Law 93-205, as amended.

T = Threatened - any species of native plant likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range or any species of plant determined to be a threatened species pursuant to the federal Endangered Species Act of 1973 as amended.

<u>Massachusetts:</u> (State of Massachusetts 1992). Massachusetts Endangered Species Act, MGL c.131A and its regulations, 321 CMR 10.00.

E = Endangered - any species of plant or animal in danger of extinction throughout all or a significant portion of its range and species of plants or animals in danger of extirpation as documented by biological research and inventory.

T = Threatened - any species of plant or animal likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and any species declining or rare as determined by biological research and inventory and likely to become endangered in the foreseeable future.

SC = Special Concern - any species of plant or animal which has been documented by biological research and inventory to have suffered a decline that could threaten the species if allowed to continue unchecked or that occurs in such small numbers or with such a restricted distribution or specialized habitat requirements that it could easily become threatened within Massachusetts.

WL = Watch List - species with no legal standing, but considered by the state botanist to be sufficiently uncommon to be monitored in the field and studied further for possible listing (or relisting in some cases) under the Massachusetts ESA regulations.

New Hampshire: (New Hampshire Natural Heritage Inventory 1995). State law RSA 217-A:3, III, passed in 1987.

E = Endangered (Note: this state code is actually SE, State Endangered. It has been changed to E in this list for consistency.) - all species in New Hampshire determined to be endangered as defined by RSA 217-A:3, III, or native plants documented as having <u>three</u> or fewer occurrences in the state within the last 50 years, or plants with more than three occurrences which are, in the judgment of specialists, especially vulnerable to extirpation.

T = Threatened (Note: this state code is actually ST, State Threatened. It has been changed to T in this list for consistency.) - all species occurring in new Hampshire determined to be a threatened species as defined by RSA-A:3, XII or Federal candidate species as defined by Res-N 306.01 occurring in New Hampshire which are not listed on the endangered species listing as contained in Res-N 306.02 or native plants documented as having <u>ten</u> or fewer natural occurrences within the last 20 years or are otherwise threatened by extirpation due to habitat loss or other factors.

SC = Special Concern - plants species not threatened or endangered, but listed under state law as Special Concern Plant Species because they may be subject to commercial exploitation or overcollecting.

<u>Rhode Island:</u> (Enser 1996). Rhode Island State Endangered Species Act, Title 20, Chapter 37-1 of the General Laws of the State of Rhode Island.

E = Endangered (Note: this state code is actually SE, State Endangered. It has been changed to E in this list for consistency. Federally Endangered taxa, given the code FE, and Federally Threatened taxa, given the code FT by Rhode Island, are also changed to E in this list.) - in addition to the preceding federally ranked taxa, native taxa in imminent danger of extirpation from Rhode Island. These taxa may meet one or more of the following criteria: taxa formerly considered by the U.S. Fish and Wildlife Service for listing as Federally endangered or threatened (former C2 category species); a taxon with <u>one or two</u> known or estimated total populations in the state; a taxon apparently globally rare or threatened, estimated to occur at approximately 100 or fewer sites range-wide.

T = Threatened (Note: this state code is actually ST, State Threatened. It has been changed to T in this list for consistency.) - native taxa which are likely to become State Endangered in the future if current trends in habitat loss or other detrimental factors remain unchanged. In general these taxa have <u>three to five</u> known or estimated populations and are especially vulnerable to habitat loss.

C = Concern - Native taxa which do not qualify under other categories but are additionally listed due to various factors of rarity and/or vulnerability.

SH = State Historical - native taxa which have been documented for Rhode Island during the last 150 years but for which there are no extant populations.

Vermont: State status as per the Vermont Endangered Species Law 10 V.S.A. Chapter 123 passed in 1991.

E = Endangered. An endangered species means any species whose continued existence as a viable component of the state's wild flora or fauna is determined to be in jeopardy. The term shall also include any species of wildlife or plant determined to be an endangered species pursuant to the Federal Endangered Species Act.

T = Threatened. A threatened species means any species of wild flora or fauna which appears likely within the foreseeable future to become endangered. That term shall also include any species of wildlife or plant determined to be a threatened species pursuant to the Federal Endangered Species Act.

Appendix II. Global Ranks (GRanks; adapted from The Nature Conservancy 1996 and Master 1991).

Ranks issued by the Nature Conservancy's Biological Conservation Database. A species is given a Global Rank of G followed by a number or symbol, and a variety or subspecies has a T followed by a number or symbol. (For example, for <u>Eupatorium leucolepis</u> var. <u>novae-angliae</u>, the Global Rank G5T1 means that the species is secure globally, G5, but that the variety is critically imperiled globally, T1.)

G1= Critically imperiled globally because of extreme rarity or because of some factor(s) making it especially vulnerable to extinction. (typically 5 or fewer occurrences or very few remaining individuals or acres).

G2 = Imperiled globally because of rarity or because of some factor(s) making it very vulnerable to extinction throughout its range (typically 6 to 20 occurrences or few remaining individuals or acres).

G3 = Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single state or a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout its range (typically 21 to 100 occurrences).

G4 = Widespread, abundant, and apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery. Thus, the taxon is of long-term concern (usually 100 or more occurrences).

G5 = Demonstrably widespread, abundant, and secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G#G# = Numeric range rank: A range spanning two or more of the numeric ranks. Denotes range of uncertainty about the exact rarity (for example - G2G3).

G? = Unranked, Element is not yet ranked globally.

G#T# = for infraspecific taxa: the GRank applies to the full species and the TRank applies to the infraspecific taxon.

Subrank

T = Taxonomic subdivision: rank applies to a subspecies or variety.

T#T# = Numeric range rank: A range spanning two or more of the numeric ranks for a variety or subspecies. Denotes range of uncertainty about the exact rarity of variety or subspecies (for example - G5T2T3).

Qualifiers

? = Inexact or uncertain. (For example, G3? or G5T3? means that the numeric ranking is uncertain.)

Q = Questionable taxonomy: taxonomic status is questionable; numeric rank may change with taxonomy. (For example, G4T3Q means that the taxonomy, in this case of the subspecies or variety, is questionable.)

Appendix III. State Rank (SRanks; adapted from The Nature Conservancy 1996 and Master 1991).

S1= Critically imperiled in the state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state (typically 5 or fewer occurrences or very few remaining individuals).

S2 = Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state (typically 6 to 20 occurrences or few remaining individuals).

S3 = Rare and uncommon in the state (typically 21 to 100 occurrences).

S4 = Widespread, abundant, and apparently secure in state, with many occurrences, but is of long-term concern (usually 100 or more occurrences).

S5 = Demonstrably widespread, abundant, and secure in the state, and essentially ineradicable under present conditions.

S#S# = Numeric range rank: A range spanning two or more of the numeric ranks. Denotes range of uncertainty about the exact rarity (for example - S2S3).

S? = Unranked: not yet ranked in the state.

SU = Unrankable: status uncertain; more information needed.

SE = Exotic: an exotic species established in the state.

SR = Reported in the state but without persuasive documentation to provide a basis for either accepting or rejecting (e.g., misidentified specimen) the report. Some of these are very recent discoveries for which first-hand information has yet to be received; others are old, obscure reports that are hard to dismiss because the habitat is now destroyed.

SH = Historical: occurred historically in the state.

SX = Extirpated: believed to be extirpated from the state.

Qualifier

? = Inexact or uncertain.

Appendix IV. Federal Listing Designations

Codes used by the U.S. Fish and Wildlife Service (USFWS) for plants in this list under the U.S. Endangered Species Act of 1973 (the Act) as amended.

Listed Species

LE = Listed Endangered (Note: this Federal code is actually E, Endangered. It has been changed to LE in this list to distinguish from state endangerment status.) - taxa that are in danger of extinction throughout all or a significant portion of their range in the U.S.

LT = Listed Threatened (Note: this Federal code is actually T, Threatened. It has been changed to LT in this list to distinguish from state threatened status.) - taxa that may become endangered in the foreseeable future throughout all or a significant portion of their range in the U.S.

Former Candidate Species

The U. S. Fish and Wildlife Service is required to identify species of wildlife and plants that are endangered or threatened based on the best available scientific and commercial information. As part of the program to identify species for possible listing, the USFWS has maintained a list of species regarded as candidates for listing. Prior to 1996, there were 18 plant taxa occurring in New England that were considered candidates for listing. These taxa, known as Category 2 taxa, were considered taxa for which some information indicated that they might be in danger, but insufficient data on biological vulnerability and threat were available to support listing.

In February 1996, the USFWS published a Proposed Rule which changed the definition of Candidate species, and narrowed the Candidate list to 182 taxa of plants and animals nationally. No plant taxa in New England now appear on this new Candidate list which was given a Notice of final decision on December 5, 1996 (U.S. Fish and Wildlife Service 1996). The Former Candidate species, designated here as 'C2,' technically are no longer monitored (tracked) by the USFWS, but are included in "Flora Conservanda: New England" where appropriate in order that their status can be followed.

C2 = Former Candidate species.

Taxa no longer under Consideration by the USFWS

Taxa that were once considered for listing as endangered but are no longer under such consideration were historically included in Category 3. Such taxa were subdivided further into three subcategories to indicate the reason for their removal from consideration. This designation of Category 3 has been discontinued under the Final Rule published in 1996 (U. S. Fish and Wildlife Service 1996).

3A = Taxa for which the USFWS has persuasive evidence of extinction. If rediscovered, such taxa might acquire high priority for listing. At this time, however, the best available information indicates that the taxa in this subcategory, or the habitats from which they were known, have been lost.

3B = Names that, on the basis of current taxonomic understanding (usually as represented in published revisions and monographs), do not represent distinct taxa meeting the Act's definition of "species." Such supposed taxa could be reevaluated in the future on the basis of new information.

3C = Taxa that have proven more abundant or widespread than previously believed as well as taxa that are not subject to any identifiable threat. If further research or changes in habitat indicate a significant decline in these taxa, they may reevaluated for possible inclusion as candidates.

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Liunis doreuns		
- See Lianis Scanosa val. novae-angilae		1
Lianos scallosa val. novae-alignae	ADIACEAE	1 2 • M/E
Linum medium	AFIACEAE	J.WIE

- see Linum medium var texanum		
Linum medium var. tevanum	LINACEAE	2
Linum sulcatum	LINACEAE	2
Linaris liliifolia	ORCHIDACEAE	2
Liquidambar styraciflua	HAMAMELIDACEAE	2
Listera auriculata	ORCHIDACEAE	1
Listera australis	ORCHIDACEAE	2
Listera cordata	ORCHIDACEAE	2 3·ΜΔ
Lobelia spicata var hirtella	CAMPANUI ACEAE	IND
Loiseleuria procumbens	FRICACEAE	2
Lonseleund procumbens	GENTIANACEAE	2
Lonicera dioica	CAPRIFOLIACEAE	2 3·ME
Lonicera hirsuta	CAPRIFOLIACEAE	2
Lonicera sempervirens	CAPRIFOLIACEAE	2 IND
Ludwigia polycarpa	ONAGRACEAE	111D. 2
Ludwigia sphaerocarpa	ONAGRACEAE	2
Lucivigia spilaciocalpa	FABACEAE	2 3.CT MA NH RI VT
Luzula confusa		2
Luzula spicata		2
Luzula spicata		2
Lycopodium alongeuroides	LICOI ODIACEAE	2
see Lycopodialla alopecuroides		
- see Lycopodicina alopeculoides		
see Decudelyconodiella caroliniana		
- see i seudorycopodiena caroninana		
Lycopoulum saoinijolium		
- see Diphasiastrum \times sabinitolium		
Lycopoaium selago		
- see Huperzia selago		
Lycopodium silchense		
- see Diphasiasi um sitchense		2
Lycopus rubenus		2 2.CT VT
Lygodium paimatum		5:C1,V1
Lyonia mariana		
Lyunun alatum val. alatum		IND.
Malavia havandii		2
Malaxis Dayardii		
Melampyrum lineare var. lautonum	SCROPHULARIACEAE	IND.
Melampyrum lineare var. Ineare	SCROPHULARIACEAE	IND.
Melanthium hubridum		IND.
Mertengia maritima		4 2.MA
Minulua alatua	SCROPHUL ADIACEAE	3:MA
Minulus alatus		2
Minutus moschatus	SCROPHULARIACEAE	
Minuartia acroliniana	SCROPHULARIACEAE	IND.
- see Alenana caronniana		2(a)
Minuartia graenlandiae		2 (a) 2 WT
Minuartia groemandica		5. V I 1
Minuartia marcescens		1
Minuarua rubena Mashringia mashahalla		2
Monordo nunctoto vor villicovilo		2 2
Montio fontana	LAWIACEAE	∠ 2
Morus rubro	TUNIULAUAUEAE	$\frac{2}{2}$
Muhlanhargia capillaria		∠ 2
mumenoergia capinaris	FUALEAE	2

Muhlenbergia richardsonis Muhlenbergia sobolifera Myriophyllum pinnatum Myriophyllum verticillatum	POACEAE POACEAE HALORAGACEAE HALORAGACEAE	2 3:ME IND. IND
Naias guadalunensis	NAIADACEAE	IND
Neobeckia aquatica	BRASSICACEAE	2
Nuphar advena		-
- see Nunhar lutea ssp. advena		
Nuphar lutea ssp. advena	NYMPHAEACEAE	IND
Nymphaea leibergii	NYMPHAEACEAE	2
Nymphaea odorata ssp. tuberosa	NYMPHAEACEAE	IND
Nymphaea odorata yar tuberosa		IIID.
- see Nymphaea odorata ssp. tuberosa		
Nymphaea tetragona		
- see Nymphaea leibergii		
Nymphaea tuberosa		
- see Nymphaea odoratum snn tuberosa		
Oenothera fruticosa	ONAGRACEAE	IND
Omalothaca suning	ONAORACEAE	IND.
soo Granhalium suninum		
- see Ghaphanum supinum		
omaioineca sylvatica		
- see Ghaphanum sylvaucum		2
Onosinourum virginianum		2 2-MA DI CT
	OPHIOGLOSSACEAE	5.MA,KI,CI
Opnioglossum vulgatum		
- see Opnioglossum pusilium		
Orchis rotunaijolia		
- see Amerorchis rotunditolia		
Orchis speciabilis		
- see Galearis spectabilis		4
Oryzopsis canadensis	POACEAE	4
Usmorniza berterol		
- see Osmorniza chilensis		2
Osmorniza chilensis	APIACEAE	2
Osmorniza depauperata	APIACEAE	4
Osmorniza obtusa		
- see Osmorniza depauperata		2
Oxalis violacea	UXALIDACEAE DOLVGONACEAE	2
Oxyria digyna	POLYGUNACEAE	2
Oxytropis campestris var. johannensis	FABACEAE	1
Panicum amarum	POACEAE	2
Panicum dichotomum ssp. mattamuskeetense		
- see Panicum mattamuskeetense		2
Panicum flexile	POACEAE	2
Panicum gattingeri	POACEAE	2
Panicum longifolium		
- see Panicum rigidulum var. pubescens		D ID
Panicum mattamuskeetense	POACEAE	IND.
Panicum polyanthes	POACEAE	IND.
Panicum rigidulum var. pubescens	POACEAE	2
Panicum scabriusculum	POACEAE	2
Panicum sphaerocarpon	POACEAE	IND.
Panicum stipitatum	PUACEAE	4
Paronychia argyrocoma	CARYOPHYLLACEAE	2(a)
Paronychia argyrocoma var. albimontana		

- see Paronychia argyrocoma		
Paronychia canadensis	CARYOPHYLLACEAE	3.VT
Paronychia fastigiata	CARYOPHYLLACEAE	IND.
Paspalum laeve	POACEAE	2
Paspalum setaceum var psammophilum	POACEAE	2
Pedicularis furbishiae	SCROPHULARIACEAE	1
Pedicularis lanceolata	SCROPHULARIACEAE	2
Persicaria vivinara		-
- see Polygonum viviparum		
Phaseolus polystachios	FABACEAE	4
Phaseolus polystachios var aquilonius		•
- see Phaseolus polystachios		
Phleum alpinum	POACEAE	2
Phyllodoce caerulea	ERICACEAE	$\overline{2}$
Physalis grandiflora		_
- see Leucophysalis grandiflora		
Physalis longifolia var. subglabrata	SOLANACEAE	IND.
Physalis subglabrata		
- see Physalis longifolia var. subglabrata		
Pilea fontana	URTICACEAE	IND
Pinguicula vulgaris	LENTIBULARIACEAE	2
Pityopsis falcata	ASTERACEAE	1
Platanthera ciliaris	ORCHIDACEAE	2
Platanthera cristata	ORCHIDACEAE	$\overline{2}$
Platanthera leucophaea var. leucophaea	ORCHIDACEAE	1
Poa arctica	011011101110	-
- see Poa pratensis ssp. alpigena		
Poa fernaldiana		
- see Poa laxa ssp. fernaldiana		
Poa glauca	POACEAE	2
Poa laxa ssp. fernaldiana	POACEAE	1
Poa pratensis ssp. alpigena	POACEAE	IND.
Podophyllum peltatum	BERBERIDACEAE	2
Polemonium van-bruntiae	POLEMONIACEAE	1
Polygala senega	POLYGALACEAE	2
Polygala verticillata	POLYGALACEAE	IND.
Polygala verticillata var. ambigua		
- see Polygala verticillata		
Polygonum douglasii	POLYGONACEAE	2
Polygonum erectum	POLYGONACEAE	IND.
Polygonum glaucum	POLYGONACEAE	1
Polygonum hydropiperoides var. setaceum		
- see Polygonum setaceum var. interjectum		
Polygonum puritanorum	POLYGONACEAE	IND.
Polygonum setaceum var. interjectum	POLYGONACEAE	IND.
Polygonum tenue	POLYGONACEAE	3:VT
Polygonum viviparum	POLYGONACEAE	2
Polymnia canadensis	ASTERACEAE	2
Populus heterophylla	SALICACEAE	2
Potamogeton confervoides	POTAMOGETONACEAE	[
Potamogeton diversifolius	POTAMOGETONACEAE	IND.
Potamogeton filiformis var. alpinus		
- see Coleogeton filiformis ssp. alpinus		
Potamogeton filiformis var. borealis		
- see Coleogeton filiformis ssp. alpinus		

Potamogeton filiformis var occidentalis		
- see Coloegeton filiformis ssp. occidentalis		
Potemogeton hillij	POTAMOGETONACEAE	1
Potamogeton ogdenji	POTAMOGETONACEAE	1
Potamogeton pusillus sen gemminarus	POTAMOGETONACEAE	
Potamogeton strictifolius	POTAMOGETONACEAE	IND.
Potamogeton vasevi	POTAMOGETONACEAE)
Potentilla poetingta	FOTAMODETONACEAE	<u></u>
a potentilla pensulvanica var hininpatifida		
- see i otentina pensylvanica var. bipinnatifida	DOSACEAE	IND
Potentilla pensylvanica var. orplinatilda	ROSACEAE	IND.
rotentilla pensylvanica val. pecunata		
- see Fotentina pensylvanica val. olphinatinua Detentille robbingione	DOSACEAE	1
Propenthes beettij		1
Premanties bootin	ASTERACEAE	
Prenantnes × mainensis	ASTERACEAE	IND.
Prenanthes racemosa	ASTERACEAE	2
Prenanthes serpentaria	ASTERACEAE	2
Primula laurentiana	PRIMULACEAE	2
Primula mistassinica	PRIMULACEAE	3:V1
Prunus alleghaniensis	ROSACEAE	4
Prunus maritima var. gravesii	ROSACEAE	IND.
Pseudolycopodiella caroliniana	LYCOPODIACEAE	4
Psilocarya nitens		
- see Rhynchospora nitens		
Pterospora andromedea	PYROLACEAE	2
Puccinellia langeana ssp. alascana		
- see Puccinellia tenella ssp. alascana		
Puccinellia paupercula var. alaskana		
- see Puccinellia tenella ssp. alascana		
Puccinellia tenella ssp. alascana	POACEAE	IND.
Puccinellia tenella ssp. langeana	POACEAE	IND.
Pycnanthemum clinopodioides	LAMIACEAE	IND.
Pycnanthemum torrei	LAMIACEAE	IND.
Pyrola minor	PYROLACEAE	IND.
Ranunculus allegheniensis	RANUNCULACEAE	2
Ranunculus ambigens	RANUNCULACEAE	2
Ranunculus gmelinii var. hookeri	RANUNCULACEAE	2
Ranunculus gmelinii var. purshii		
 see Ranunculus gmelinii var. hookeri 		
Ranunculus hispidus	RANUNCULACEAE	IND.
Ranunculus lapponicus	RANUNCULACEAE	2
Ranunculus micranthus	RANUNCULACEAE	2
Rhexia mariana	MELASTOMATACEAE	2
Rhinanthus crista-galli	SCROPHULARIACEAE	IND.
Rhinanthus minor		
- see Rhinanthus crista-galli		
Rhododendron lapponicum	ERICACEAE	2
Rhododendron maximum	ERICACEAE	3:ME,VT
Rhododendron viscosum	ERICACEAE	3:ME
Rhynchospora capillacea	CYPERACEAE	2
Rhynchospora inundata	CYPERACEAE	2
Rhynchospora nitens	CYPERACEAE	2
Rhynchospora torreyana	CYPERACEAE	2
Ribes rotundifolium	GROSSULARIACEAE	IND.
Rosa acicularis		

and Dage aniquiaria can coui		
- see Rosa acicularis ssp. sayi	ροςλαελε	r
Rosa deleularis ssp. sayi		
Rosa iohannansis	ROSACEAE	IND.
Rosa Jonannensis		
- see Kosa blalida val. glabla Potala ramosior	Ι ΥΤΗΡΑΓΕΛΕ	2
Rubus aculifarus		
Rubus a confitence	ROSACEAE	IND.
Rubus × deulijerus		
- see Rubus acuments	DOSACEAE	2
Rubus culterionus	ROSACEAE	2
Rumex Jenestrutus		
- see Rumex occidentalis	DOLVCONACEAE	1
Sabatia campanulata	GENTIANACEAE	4
Sabatia dodecandra	GENTIANACEAE	2 1
Sabatia uouccaliura Sabatia konnoduona	GENTIANACEAE	4
Sabatia stallaria	GENTIANACEAE	1
Sadata stellars		
Sagina nedece sen herealis		1ND.
Saging nodosa yar, honoalis	CARTOPHTLLACEAE	2
sugina nodosa val. borealis		
-see Sagina nodosa ssp. boleans		IND
Sagittaria rigida		IND.
Sagittaria subulata	ALISMATACEAE	5.ME
Sagittaria teres	ALISMATACEAE	2 1
Saliy aretophila		1 2
Salix arcupilla	SALICACEAE	2
Salix argylocalpa	SALICACEAE	2 2.ME
Salix conduta	SALICACEAE	
Salix origua	SALICACEAE	IND.
see Soliv evigue sch interior		
- see Salix exigua ssp. interior	SALICACEAE	2.ME
Salix berbacea	SALICACEAE	2.WIE
Salix interior	SALICACEAE	2
- see Saliy evigua ssp interior		
Salix myricoides	SALICACEAE	2
Salix nlanifolia	SALICACEAE	2
Salix uva-ursi	SALICACEAE	$\frac{2}{2}$
Sanicula canadensis	APIACEAE	$\frac{2}{2}$
Saururus cernuus	SAURURACEAE	$\frac{2}{2}$
Savifraga aizoides	SAXIFRAGACEAE	2
Saxifraga aizoon yar neogaea	SAMIRAGACLAL	2
- see Saxifraga paniculata		
Saxifraga cernua	SAXIFRAGACEAE	2
Saxifraga foliolosa	SAXIFRAGACEAE	$\frac{2}{2}$
Saxifraga oppositifolia	SAXIFRAGACEAE	2
Saxifraga paniculata	SAXIFRAGACEAE	$\frac{2}{2}$
Saxifraga rivularis	SAXIFRAGACEAE	$\frac{2}{2}$
Saxifraga stellaris var comosa	Siddin Reference	2
- see Saxifraga foliolosa		
Schoenonlectus etuberculatus	CYPERACEAE	1
Schoenoplectus ballii	CYPERACEAE	4
Schoenoplectus heterochaetus	CYPERACEAE	IND
Schoenoplectus x steinmetzii	CYPERACEAE	IND.
Schwalbea americana	SCROPHULARIACEAE	11.D. 4
ourwaroca americana	SUNOI HULANIAULAL	-1

Scirpus ancistrochaetus	CYPERACEAE	1
Scirpus clintonii		
- see Tricophorum clintonii		
Scirpus cylindricus		
- see Bolboschoenus novae-angliae		
Scirpus etuberculatus		
- see Schoenoplectus etuberculatus		
Scirpus hallii		
- see Schoenoplectus hallii		
Scirpus heterochaetus		
- see Schoenoplectus heterochaetus		
Scirpus longii	CYPERACEAE	1
Scirpus maritimus	e i i EluiteE i E	1
- see Bolboschoenus maritimus		
Scirpus paludosus var atlanticus		
- see Bolboschoenus maritimus		
Scirpus pendulus	CYPERACEAE	3.ME
Scirpus steinmetzii	e i i Eletette	5.14IL
- see Schoenonlectus x steinmetzii		
Scirpus polyphyllus	CYPERACEAE	2
Scleria nauciflora	CVPERACEAE	$\frac{2}{2}$
Scleria pauciflora var caroliniana	CITERACEAE	2
- see Scleria pauciflora		
Scleria reticularis	CVPERACEAE	1
Scleria triglomerata	CYPERACEAE	2
Scleria verticillata	CVPERACEAE	2 4
Sclerolenis uniflora	ASTERACEAE	2
Scutellaria integrifolia	IAMIACEAE	$\frac{2}{2}$
Scutellaria leonardii	LAMIACEAE	$\frac{2}{2}$
Scutellaria narvula var leonardi		2
- see Scutellaria leonardii		
Scutellaria parvula var. parvula	ΙΔΜΙΔΟΈΔΕ	2
Sedum rosea	CRASSIII ACEAE	$\frac{2}{3}$ ·VT
Selaginella eclines	SELAGINELLACEAE	IND
Senna hebecarna	CAESALPINIACEAE	2
Shenherdia canadensis	FLAFAGNACFAF	2 3·ME
Sibbaldia procumbens	ROSACEAE	2.101L
Silene acaulis	CARVOPHVI I ACEAE	$\frac{2}{2}$
Silene acaulis var exscana		2
- see Silene acaulis		
Silene stellata	CARVOPHVIIACEAE	2
Sisvrinchium mucronatum	IRIDACEAE	2
Smilar hisnida	habitelite	2
- see Smilax tamnoides		
Smilax tampoides	SMILACACEAE	4
Smilax tamnoides var hispida		·
- see Smilax tamnoides		
Solidago calcicola		
- see Solidago x calcicola		
Solidago × calcicola	ΛΩΤΕΡΑΓΕΛΕ	1
Solidago canadensis var subserrata	ASTERACEAE	
Solidago cutleri	ASTERACEAE	γ
Solidago alutinosa sen randii	AJIERACEAE	4
- see Solidago simplex sep. randii var. monticolo		
- see Solidago Simplex SSP. Tanun var. moliticola		
sonauzo repiuu vai. monnu		

- see Solidago canadensis var. subserrata		
Solidago multiradiata var. arctica		
- see Solidago cutleri		
Solidago ptarmicoides	ASTERACEAE	2
Solidago rigida	ASTERACEAE	2
Solidago simplex var. randii		
- see Solidago simplex ssp. randii var. monticola		
Solidago simplex ssp. randii var. monticola	ASTERACEAE	3:MA,NH
Sorghastrum nutans	POACEAE	3:ME
Sparganium minimum	SPARGANIACEAE	3:MA
Sparganium natans		
- see Sparganium minimum		
Spartina cynosuroides	POACEAE	2
Sphenopholis nitida	POACEAE	2
Sphenopholis obtusata	POACEAE	IND.
Sphenopholis pensylvanica	POACEAE	2
Spiranthes casei	ORCHIDACEAE	IND.
Spiranthes \times intermedia	ORCHIDACEAE	IND
Sporoholus asper	011011101110	
- see Sporobolus compositus var compositus		
Sporobolus clandestinus	POACEAE	4
Sporobolus compositus var compositus	POACEAE	2
Sporobolus heterolenis	POACEAE	2
Sporobolus neglectus	POACEAE	$\frac{2}{2}$
Stachys hyssonifolia	IAMIACEAE	2. 3.CT
Stachys nyssophona Stachys nalustris ssp. nilosa		5.01
- see Stachys pilosa		
Stachys pilosa	ΙΔΜΙΔΟΈΔΕ	IND
Stachys phosa Stachys tenuifolia	LAMIACEAE	IND.
Stachys tenuifolia var platyphylla	LAWIACLAL	IND.
- see Stachys tenuifolia		
Stronhostyles umbellata	FARACEAE	4
Subpliostyles universitä Subeda americana		
Suacda calcooliformis	CHENOIODIACEAE	IND.
see Suede americana		
- see Sudeud americana		IND
Suaeda maritima sen viehii	CHENOFODIACEAE	IND.
soo Suodo maritimo		
- see Sudeua mantina Subularia aquatica	DDASSICACEAE	2
Subulalla aqualica	CADDIEOLIACEAE	2 2 · M A
Symphonical pos albus val. albus	CAFRIFULIACEAE	5.MA
Synosma suaveolens		
- see Cacalla suaveolens		2
Tanaaatum hinimaatum aan hunananaa	APIACEAE	$\frac{2}{2}$
Tanacetum dipinnatum ssp. nuronense	ASTERACEAE	2(a)
Tanacetum nuronense		
- see Tanacetum bipinnatum ssp. nuronense		
Taraxacum ceratophorum	ASTERACEAE	IND.
Taraxacum latilobum		
- see Taraxacum ceratophorum		2
i ipularia discolor	UKCHIDACEAE	2
I ofieldia glutinosa		3:NH,VT
Trichomanes intricatum	HYMENOPHYLLACEAE	1
Tricnostema brachiatum		2
Tricophorum clintonii	CYPERACEAE	2
I riglochin gaspense	JUNCAGINACEAE	4

Trimorpha acris var. kamtschatica		
- see Erigeron acris var. kamtschaticus		
Triosteum angustifolium	CAPRIFOLIACEAE	4
Triosteum aurantiacum	CAPRIFOLIACEAE	3:ME
Triosteum perfoliatum	CAPRIFOLIACEAE	2
Triphora trianthophora	ORCHIDACEAE	2(a)
Tripsacum dactyloides	POACEAE	2
Trisetum melicoides	POACEAE	2
Trollius laxus	RANUNCULACEAE	1
<i>Trollius laxus</i> ssp. <i>laxus</i>		
- see Trollius laxus		
Ulmus thomasi	ULMACEAE	4
Utricularia biflora	LENTIBULARIACEAE	2
Utricularia fibrosa	LENTIBULARIACEAE	2
Utricularia inflata	LENTIBULARIACEAE	IND.
Utricularia resupinata	LENTIBULARIACEAE	2(a)
Utricularia subulata	LENTIBULARIACEAE	2
Vaccinium boreale	ERICACEAE	1
Vaccinium vitis-idaea var. minus	ERICACEAE	3:NH,MA
Vaccinium vitis-idaea ssp. minus		
- see Vaccinium vitis-idaea var. minus		
Vahlodea atropurpurea		
- see Deschampsia atropurpurea		
Valeriana uliginosa	VALERIANACEAE	2
Valerianella radiata	VALERIANACEAE	4
Valerianella radiata var. fernaldiana		
- see Valerianella radiata		
Verbena simplex	VERBENACEAE	2
Veronica anagallis-aquatica		
- see Veronica catenata		
Veronica catenata	SCROPHULARIACEAE	IND.
Veronica wormskjoldii	SCROPHULARIACEAE	2
Veronicastrum virginicum	SCROPHULARIACEAE	IND.
Viburnum nudum		
- see Viburnum nudum var. nudum		
Viburnum nudum var. nudum	CAPRIFOLIACEAE	2
Viburnum prunifolium	CAPRIFOLIACEAE	2
Viburnum rafinesquianum	CAPRIFOLIACEAE	3:NH
Viola brittoniana	VIOLACEAE	2
Viola pedatifida ssp. brittoniana		
- see Viola brittoniana		
Viola hirsutula	VIOLACEAE	4
Viola novae-angliae	VIOLACEAE	2
Viola palmata	VIOLACEAE	IND.
Viola palustris	VIOLACEAE	2
Viola striata	VIOLACEAE	IND.
Viola subsinuata	VIOLACEAE	IND.
Viola triloba var. dilatata		
- see Viola palmata		
Waldsteinia fragarioides	ROSACEAE	3:ME
Wolffiella floridana		
- see Wolffiella gladiata		
Wolffiella gladiata	LEMNACEAE	2
Woodsia alpina	DRYOPTERIDACEAE	2
Xyris smalliana	XYRIDACEAE	3:ME

Zigadenus elegans var. glaucus	LILIACEAE	4
Zigadenus glaucus		
 see Zigadenus elegans var. glaucus 		
Zizia aptera	APIACEAE	2
Zosterella dubia	PONTEDERIACEAE	3:ME