Fern Families of Massachusetts

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Introduction

The purpose of this work is to highlight historical observations of the various plants found within Massachusetts in an effort to classify their native range and population distributions. Its other intent is to develop an accurate etymology of historical Latin names to the present day. For most plants, we will be using *Florula Bostoniensis* written by Dr. Jacob Bigelow as a launching point for naming conventions and status within Massachusetts. While his book was originally intended to classify plants within 5-10 miles of Boston, Bigelow later expanded his range to many parts of New England. There are many interesting observations of rare plants and those species unique to the alpine zones of Northern New England, but here I only include those that are native to Massachusetts. There should be no plants listed here that are not native to the state. To build a complete picture, I chose the earliest floras from Middlesex County, Worcester County, and Berkshire County as historical markers for various regions of the state: east, central, and west respectively. I have broadly included the southeastern coastal region as part of the east in several descriptions, but be advised that most plants that often appear in this plant community will be ones that prefer dry or sandy soils. The range of collected specimens comes from maps depicted in the work on ferns from 1997, cited below. This document is organized according to the *Vascular Plants of Massachusetts: A County Checklist* which is the authoritative list of the plants known to Massachusetts.

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Huperziaceae – Fir Moss Family

Huperzia

Three species of fir mosses are present. H. appressa and H. selago are rare. Many of the species under Huperzia were formerly classified under the genus Lycopodium.

Huperzia lucidula (Shining Fir Moss)
Bigelow and Gray use Lycopodium lucidulum (Michaux).

Boston District: Damp woods; frequent
Middlesex: Medford, Reading, Tyngsboro, Groton
Worcester: Common
Berkshire: Cool woods; common

Conservation status S5; collected specimens distributed throughout. Dodge states that it is common in damp woods. Suggestion: widely distributed; common

Huperzia appressa (Mountain Fir Moss)
Huperzia selago (Northern Fir Moss)
Bigelow and Gray use Lycopodium selago (Linnaeus). This name describes these two species throughout the 19th century before later being split into the two subspecies.

Worcester: Mt. Watatic
Berkshire: Bank near cold stream on the northeast face of Greylock

Conservation status S2; collected specimens are very scarce. Dodge states that it is found on mountain summits and is frequent in the three northern states.

Isoetaceae – Quillwort Family

Isoetes

Six species of quillwort are present. I. acadiensis and I. lacustris are rare. Bigelow does not describe this genus. This genus is particularly difficult to observe and identify, which makes it tough to fully understand its historic distribution.

Isoetes echinospora (Spiny Quillwort)
Gray uses Isoetes echinospora (Durieu) and divides it into four subspecies: Braunii, robusta, muricata, and Bootii. Subspecies robusta is listed as found in Lake Champlain, while the others are in Massachusetts. Subspecies Braunii has the largest distribution within the United States and was chosen for the descriptions below.

Boston District: Abundant throughout, mostly in mud, but sometimes on sandy shores and bottoms of ponds and large streams.
Middlesex: Not uncommon
Worcester: Collected by G.E. Stone
Berkshire: Shallow water of ponds and streams; frequent, particularly on the upland. Occasionally on exposed muddy shores and at other times at a depth of several feet

Conservation status S5; collected specimens distributed throughout, more abundant in the east. Dodge states that it is common throughout New England. Suggestion: widely distributed; frequent

Isoetes engelmannii (Engelmann's Quillwort)
Gray uses Isoetes engelmannii (Braun).

Boston District: In ponds and ditches, mostly over a clay subsoil; common in the northern part of the district, but not reported south of the Blue Hills
Middlesex: Arlington Brook, Alewife Brook, Woburn

Conservation status S4; collected specimens scarce in the east. Dodge states that it is abundant in eastern Massachusetts. Suggestion: frequent in the east

Isoetes riparia (Canada Shore Quillwort)
Gray uses Isoetes riparia (Engelmann).

Middlesex: South Natick
Worcester: Collected by G. E. Stone

Conservation status S3S4; collected specimens distributed in the east. Dodge lists the Merrimack River in Newburyport as the only station in Massachusetts. Suggestion: occasional in the east

Isoetes tuckermanii (Tuckerman's Quillwort)
Gray uses Isoetes tuckermani (Braun).

Boston District: In ponds on sandy bottom; common
Middlesex: Mystic River and Pond, original station; Horn Pond, Spy Pond

Conservation status S4?; collected specimens distributed in the east. Dodge lists several stations within eastern Massachusetts, stating that the species is plentiful along the muddy shores of the Merrimack River in Newburyport. Suggestion: frequent in the east

Lycopodiaceae – Club Moss Family

Dendrolycopodium

Three species of tree clubmoss are present. Many of the species under Dendrolycopodium were formerly classified under Lycopodium. There is a lot of confusion following the nomenclature as Gray bounces around from using Lycopodium obscurum and Lycopodium dendroideum to describe the classification of this group. I use the 6th edition of the Manual as a historical marker for each description. I also correct observations made in the county floras since it appears that the authors have confused the names.

Dendrolycopodium dendroideum (Prickly Tree Clubmoss)
Bigelow uses Lycopodium dendroideum (Michaux), found in the woods at Sudbury. Gray uses Lycopodium obscurum var. dendroideum (Eaton).

Boston District: Moist woods; occasional
Middlesex: Medford
Worcester: Worcester
Berkshire: Woods, generally dry, occasionally swampy; frequent

Conservation status S4; collected specimens follow a northern pattern. Dodge does not describe this species. Suggestion: frequent in the west, occasional elsewhere

Dendrolycopodium hickeyi (Hickey's Tree Clubmoss)
This species was first described in 1977 as Lycopodium obscurum var. isophyllum (Hickey) and later changed to Lycopodium hickeyi. It's distributed throughout the state, and its populations are likely close to those of D. obscurum.

Conservation status S4S5; collected specimens distributed throughout. Dodge does not describe this species. Suggestion: widely distributed; frequent

Dendrolycopodium obscurum (Flat Branched Tree Clubmoss)
Bigelow and Gray use Lycopodium obscurum (Linnaeus).

Boston District: Moist woods; occasional
Middlesex: Common
Worcester: Moist woods; common
Berkshire: Open woodlands; common

Conservation status S5; collected specimens distributed throughout. Dodge states that it is common to woods. Suggestion: widely distributed; common

Diphasiastrum

Two species of ground cedar are present. Many of the species under Diphasiastrum were formerly classified under Lycopodium. Historically, this genus appears under Lycopodium complanatum, which presently describes a more northern species.

Diphasiastrum digitatum (Southern Ground Cedar)
Bigelow and Gray use Lycopodium complanatum (Linnaeus).

Boston District: Originally common in dry woods and pastures, but eradicated in many places
Middlesex: Common
Worcester: Common
Berkshire: Dry woods and clearings, especially under pines; common

Conservation status S5; collected specimens distributed throughout. Dodge states that it is common and well known. Suggestion: widely distributed; common

Diphasiastrum tristachyum (Blue Ground Cedar)
Bigelow does not describe this species. Gray first describes this as Lycopodium complanatum var. sabinaefolium, but later uses the subspecies chamacyparissus. It is not specifically described in the Middlesex flora, but the others use Lycopodium tristachyum.

Boston District: Open woods and pastures. Abundant in a few localities, but not generally distributed
Worcester: Leicester
Berkshire: Cheshire; rather moist woods near Ward Pond, Becket, altitude 1600 ft; dry woods, Sheffield

Conservation status S5; collected specimens scattered throughout. Dodge does not describe the distribution of this species. Suggestion: scattered; frequent

Lycopodiella

Three species of bog clubmoss are present. Many of the species under Lycopodiella were formerly classified under Lycopodium. L. alopecuroides is rare.

Lycopodiella appressa (Southern Bog Clubmoss)
Bigelow uses Lycopodium carolinianum (Willdenow), found at Sandwich. Gray references this nomenclature as Lycopodium inundatum var. bigelovii (Tuckerman).

Boston District: Swamps and borders of ponds; occasional

Conservation status S4; collected specimens distributed in the east. Dodge states that it is found in sandy peats near the coast. Suggestion: frequent in the east

Lycopodiella inundata (Northern Bog Clubmoss)
Bigelow does not describe this species. Gray uses Lycopodium inundatum (Linnaeus) and states that it is not common.

Boston District: Wet sand, rare. Not reported south of Boston
Middlesex: Medford, North Reading, Tewksbury
Worcester: On sandy shores
Berkshire: Shores of ponds and wet open ground; occasional

Conservation status S5; collected specimens abundant in the east. Dodge states that it becomes more frequent near the coast but is easily overlooked. Suggestion: frequent in the east

Lycopodium

Two species of clubmoss are present. Many species formerly classified under this group have been described under a separate genus.

Lycopodium clavatum (Common Clubmoss)
Bigelow uses Lycopodium clavatum (Linnaeus), growing in the woods of Sweet Auburn (Mt. Auburn Cemetery). Gray uses the same name.

Boston District: Dry woods; occasional
Middlesex: Common
Worcester: Very common, especially in old, hillside pastures
Berkshire: Dry woods and clearings; common

Conservation status S5; collected specimens scattered throughout, widely distributed in the west. Dodge states that it is common in dry woods. Suggestion: widely distributed; common

Lycopodium lagopus (One Cone Clubmoss)
Bigelow and Gray do not describe this species. In the 8th edition of Gray's manual, Fernald lists several subspecies under Lycopodium clavatum that are synonyms. The Berkshire flora describes this as Lycopodium clavatum var. megastachyon, mentioned by Fernald and Bissell in 1910 to have a distribution covering only the western part of the state.

Berkshire: Dry thickets; frequent, especially on the upland

Conservation status S4?; collected specimens not differentiated from L. clavatum. Dodge states that a form of L. clavatum is found in moist, sunny situations. Suggestion: frequent in the west, occasional elsewhere

Pseudolycopodiella

One species of false bog clubmoss was present in Hampshire county but was extirpated. Bigelow does not describe this species. Gray uses Lycopodium carolinianum (Linnaeus). I have not looked into historical information on the abundance of Pseudolycopodiella carolinianum in this county.

Spinulum

One species of interrupted clubmoss is present. Many of the species under Spinulum were formerly classified under Lycopodium.

Spinulum annotinum (Common Interrupted Clubmoss)
Bigelow does not describe this species. Gray uses Lycopodium annotinum (Linnaeus).

Boston District: Rich woods, abundant in Essex and Manchester
Middlesex: Ashby
Worcester: In open woods, apparently not well known in the county
Berkshire: Cool woods; frequent

Conservation status S5; collected specimens scattered throughout but scarce. Dodge states that it is in cold woods and very unusual in Massachusetts, Connecticut, and Rhode Island. Suggestion: frequent in the west, occasional elsewhere

Selaginellaceae – Spike Moss Family

Selaginella

Two species of spikemoss are present and one was historically identified.

Selaginella apoda (Meadow Spikemoss)
Bigelow does not describe this species. Gray uses Selaginella apus (Spring) and includes the synonym Lycopodium apodum (Linnaeus).

Boston District: Wet places; locally abundant in northern portion, occasional elsewhere; probably often overlooked
Middlesex: Bedford
Worcester: Southbridge
Berkshire: Wet meadows and ill-drained hillsides; frequent in the valley, apparently following the limestone up the sides of the valley, reaching an altitude of 1300 feet in Tyringham

Conservation status S4?; collected specimens widely distributed in the Connecticut River Valley and northeast. Dodge states that it is most frequent in the southern portions of New England. Suggestion: frequent in west and northeast, occasional elsewhere

Selaginella eclipes (Hidden Spikemoss)
This species was first described by Buck in 1977 but the name was not adopted until later. Buck identifies a specimen found on a wet hillside in Lee in 1904 as resembling this plant. This apparently is the only known finding in Massachusetts.

Selaginella rupestris (Ledge Spikemoss)
Bigelow uses Lycopodium ruprestre (Linnaeus). Gray references this nomenclature as Selaginella ruprestris (Spring). The species is on the state watch list.

Boston District: Dry rocks; rather common
Middlesex: Probably not uncommon
Worcester: Worcester
Berkshire: Exposed rocks; occasional

Conservation status S3S4; collected specimens scattered, widely distributed in the Connecticut River Valley. Dodge states that it is common and found on dry, exposed rocks. Suggestion: frequent in the east and Connecticut River Valley, occasional elsewhere

Aspleniaceae – Spleenwort Family

Asplenium

Five species of spleenwort are present. A. montanum and A. ruta-muraria are rare.

Asplenium platyneuron (Ebony Spleenwort)
Bigelow and Gray use Asplenium ebeneum (Aiton). Bigelow also uses the unconfirmed synonym Asplenium trichomanoides (Michaux).

Boston District: Rocky soil and ledges throughout
Middlesex: Not uncommon
Worcester: On rocky hillsides and along stone walls and fences; common
Berkshire: Rocky pastures and open rocky woods, generally at the bases of ledges; frequent

Conservation status S5; collected specimens scattered, abundant in the east. Dodge states that it is common and found in dry, rocky soil, often in company with Red Cedar. Suggestion: widely distributed; frequent

Asplenium rhizophyllum (Walking Spleenwort)
Bigelow uses Asplenium rhizophyllum (Linnaeus), found in rocky woods in the western part of the state. Gray references this nomenclature as Camptosorus rhizophyllus (Link). Although this plant is not listed in the Middlesex flora, T.O. Fuller reports an unusual station at Needham, said to likely be introduced by botanists of the time.

Boston District: Granite ledges, Needham, where observed as early as 1877; formerly also on Doublet Hill, Weston
Worcester: Brookfield; scarce
Berkshire: On limestone, chiefly in shade; frequent in the valley

Conservation status S4; collected specimens distributed in the west. Dodge states that it grows on shaded calcareous rocks and is not rare in western New England. Suggestion: frequent in the west

Asplenium ruta-muraria (Wall Rue Spleenwort)
Bigelow uses Asplenium ruta-muraria (Linnaeus), found on dry rocks and hills in the western parts of the state. Gray uses the same name and states that it is rare. This species is threatened in the state and populations are found mostly in western Massachusetts.

Berkshire: Limestone cliffs and boulders; occasional

Conservation status S2; collected specimens scarcely distributed in the west. Dodge states that it grows on calcareous rocks and is scarce. He lists Mt. Toby as the only Massachusetts station. Suggestion: scarce in the west

Asplenium trichomanes (Maidenhair Spleenwort)
Bigelow uses Asplenium trichomanes (Michaux), found among high shady rocks in Roxbury. Gray uses Asplenium trichomanes (Linnaeus) with a reference to Asplenium melanocaulon (Willdenow). Bigelow also uses this synonym but attributes it to Muhlenberg.

Boston District: Dry ledges; frequent, but never abundant in our range
Middlesex: Once rather common, but becoming rare in the neighborhood of large towns
Worcester: On rocky hillsides; not common
Berkshire: On or near shaded rocks, chiefly calcareous; frequent

Conservation status uncertain; collected specimens abundant in the east and west. Dodge states that it is rather frequent, becoming rare in the neighborhood of large cities. Suggestion: frequent in the east and west, occasional elsewhere

Blechnaceae – Chain Fern Family

Woodwardia

Two species of chain fern are present.

Woodwardia areolata (Netted Chain Fern)
Bigelow uses Woodwardia onocleoides (Willdenow) and references the unconfirmed synonym Onoclea nodulosa (Michaux). Gray uses Woodwardia angustifolia (Smith) and references W. onocleoides and W. areolata (Moore) as synonyms. Gray states that the plant is rare to the coast of New England.

Boston District: Swamps and wet woods; frequent within ten miles of tide water, the stations often extensive
Middlesex: Medford, one small station

Conservation status S4; collected specimens abundant in the east. Dodge states that it becomes more common near the coast and lists stations at Hadley and Deerfield. Suggestion: frequent in the east

Woodwardia virginica (Virginia Chain Fern)
Bigelow uses Woodwardia virginica (Willdenow), found in Tewksbury. Gray uses the same name. Bigelow also uses the unconfirmed synonym Woodwardia banisteriana (Michaux).

Boston District: Wet woods and peat bogs, sometimes in water; frequent
Middlesex: Not Very Common
Worcester: Webster

Conservation status S4; collected specimens scattered, abundant in the east. Dodge states that it becomes quite common near the coast, but rare in the interior. He also lists a station at Belchertown. Suggestion: frequent in the east

Dennstaedtiaceae – Hay Scented Fern Family

Dennstaedtia

One species of hay scented fern is present. It is sometimes considered a native invasive. Due to high grazing pressure from herbivores on other understory plants and its rigorous growth patterns, it can become a monoculture within our woodlands.

Dennstaedtia punctilobula (Eastern Hay Scented Fern)
Bigelow uses Dicksonia pilosiuscula (Willdenow) and references Nephrodium punctilobulum (Michaux) as a synonym. Gray uses Dicksonia punctilobula (Hooker) and references the two former names and Dennstaedtia punctilobula (Moore) as synonyms.

Boston District: Moist soil in open places and light shade; common
Middlesex: Common
Worcester: Common, especially along the margins of woods and stone walls, in pastures, and by roadsides
Berkshire: Dry woods and upland hillsides; common

Conservation status S5; collected specimens widely distributed. Dodge states that it is very common.
Suggestion: widely distributed; common

Pteridium

One species of bracken fern is present.

Pteridium aquilinum (Bracken Fern)
Bigelow and Gray use Pteris aquilina (Linnaeus).

Boston District: Dry open woods and uplands; common
Middlesex: Common
Worcester: In dry and in moist sunny places; very common
Berkshire: Borders of woods, open woodland, rocky upland pastures and clearings; common

Conservation status S5; collected specimens widely distributed. Dodge states that it is common throughout New England. Suggestion: widely distributed; common

Dryopteridaceae – Wood Fern Family

Dryopteris

Seven species of wood fern are present. Historically, species under Dryopteris have been categorized within the genera Aspidium, Thelypteris, and Polypodium.

Dryopteris campyloptera (Mountain Wood Fern)
Bigelow does not describe this species. Gray uses Dryopteris dilatata and then later changes to Aspidium spinulosum var. dilatatum (Hooker) with reference to Aspidium campylopterum (Kunze) as a synonym – found chiefly in mountain woods and northward. It is on the state watch list.

Boston District: Swampy woods, fairly plentiful at Brockton
Middlesex: Groton, Malden, Melrose
Berkshire: Common in rocky woods on the upper slopes of Greylock, and probably occasional on the plateau.

Conservation status S3?; collected specimens scarce in the west. Dodge states that it attains its best development in the northern sections. Suggestion: frequent in western mountainous regions

Dryopteris carthusiana (Spinulose Wood Fern)
Bigelow does not describe this species. Gray uses Aspidium spinulosum (Swartz).

Boston District: Low open woods; frequent
Middlesex: Rather common
Worcester: Rich woods; common
Berkshire: Swampy woods; frequent

Conservation status S4; collected specimens abundant in the east. Dodge states that it is common in damp woods near the coast. Suggestion: frequent in central and east, occasional elsewhere

Dryopteris clintoniana (Clinton's Wood Fern)
Bigelow does not describe this species. Gray uses Aspidium cristatum var. clintonianum.

Boston District: Wooded swamps; occasional
Middlesex: Malden, Arlington
Worcester: Worcester
Berkshire: Swampy woods; frequent in the valley, occasional on the plateau

Conservation status S4; collected specimens scarcely distributed. Dodge states that it is rare in New England, attaining its best development in western sections. Suggestion: frequent in the west

Dryopteris cristata (Crested Wood Fern)
Bigelow uses Aspidium lancastriense (Muhlenberg), found in wet meadows in West Cambridge (Arlington). Gray references this nomenclature under Swartz as Dryopteris cristata.

Boston District: Open and wooded swamps; frequent: reported as abundant in Brockton, Easton, and northern Essex County
Middlesex: Rather Common
Worcester: Along brooks through woodlands, and on the margins of swamps; quite common
Berkshire: Borders of swampy woods and low meadows; frequent

Conservation status S4; collected specimens distributed throughout, abundant in the east. Dodge states that it is common. Suggestion: widely distributed; frequent

Dryopteris goldiana (Goldie's Wood Fern)
Bigelow does not describe this species. Gray uses Dryopteris goldiana, in rich woods from Vermont to New York westward. It is on the state watch list.

Worcester: Spencer
Berkshire: Rich woods, generally in alluvial pockets spread by brooks at the bases of slopes of rich soil; occasional in the valley

Conservation status S3; collected specimens distributed in the west. Dodge states that it is frequent west of the Connecticut River. Suggestion: frequent in the west

Dryopteris intermedia (Evergreen Wood Fern)
Bigelow does not describe this species. Gray uses Dryopteris intermedia and then later changes to Aspidium spinulosum var. intermedium.

Boston District: Rich woods; frequent
Middlesex: Not quite so common as the type (D. carthusiana)
Worcester: In woods; common
Berkshire: Rocky or swampy woods; common

Conservation status S5; collected specimens widely distributed. Dodge does not describe the distribution of this species. Suggestion: widely distributed; frequent

Dryopteris marginalis (Marginal Wood Fern)
Bigelow uses Aspidium marginale (Swartz), found in the woods at Roxbury. Gray references this nomenclature as Dryopteris marginale. Bigelow also uses Polypodium marginale (Linnaeus) and Nephrodium marginale (Michaux) as synonyms.

Boston District: Rocky woods, common throughout
Middlesex: Common
Worcester: Very common in woods and shaded places
Berkshire: Rocky or swampy woods; common

Conservation status S5; collected specimens widely distributed. Dodge states that it is common on rocky shaded hillsides. Suggestion: widely distributed; common

Polystichum

Two species of holly fern are present. P. braunii is rare.

Polystichum acrostichoides (Christmas Fern)
Bigelow uses Aspidium acrostichoides (Muhlenberg), found in rocks and hills at Roxbury. Gray references this nomenclature as Polystichum acrostichoides, but attributes the synonym to Swartz. Bigelow also uses Nephrodium acrostichoides (Michaux), recognized by Gray.

Boston District: Rocky woods, distributed here and there, but not very common
Middlesex: Common
Worcester: Rich woods; common
Berkshire: Rocky woods; common

Conservation status S5; collected specimens widely distributed. Dodge states that it is common and well known. Suggestion: widely distributed; common

Equisetaceae – Horsetail Family

Equisetum

Eight species of horsetail are present. E. palustre is historical. E. pratense is rare.

Equisetum arvense (Field Horsetail)
Bigelow uses Equisetum arvense (Linnaeus), found in moist ground at South Boston. Gray uses the same name.

Boston District: Moist sand and gravel, occasional in richer soil; very common
Middlesex: Abundant
Worcester: In sandy soil, as railroad embankments; common
Berkshire: Wet roadsides, banks, and sandy shores; common

Conservation status S5; collected specimens widely distributed. Dodge states that it is common everywhere, especially in gravelly soil. Suggestion: widely distributed; common

Equisetum fluviatile (River Horsetail)
Bigelow uses Equisetum uliginosum (Muhlenberg). Gray references this nomenclature as Equisetum limosum (Linnaeus).

Boston District: Stagnant water. Frequent, especially in the northern portion of the district.
Middlesex: Not very common
Worcester: In swamps and shallow water
Berkshire: Marshes, shallow water, and muddy shores; common

Conservation status S5; collected specimens widely distributed in west and east, abundant near Boston. Dodge states that it is quite common and found in the borders of ponds and muddy edges of streams. Suggestion: frequent in the east and west, occasional elsewhere

Equisetum hyemale (Tall Scouring Rush)
Bigelow uses Equisetum hyemale (Linnaeus), found in moist woods at Lynn and elsewhere. Gray uses the same name.

Boston District: Moist soil; infrequent
Middlesex: Not very common
Worcester: In wet places
Berkshire: Sandy or gravelly banks; frequent

Conservation status S5; collected specimens widely distributed, abundant around Boston and Connecticut River Valley. Dodge states that it is generally distributed, but not abundant. Suggestion: frequent in the west, occasional elsewhere

Equisetum scirpoides (Dwarf Scouring Rush)
Bigelow uses Equisetum scirpoides (Michaux), found in Plainfield. Gray uses the same name. It is uncommon in the state and of special concern.

Boston District: Amesbury
Worcester: Southbridge
Berkshire: Wet gravelly banks; occasional

Conservation status S3; collected specimens widely distributed in the west. Dodge states that it is frequent in the three northern states and lists Greenfield, Southbridge, and Amesbury as stations in Massachusetts. Suggestion: occasional in the west

Equisetum sylvaticum (Wood Horsetail)
Bigelow uses Equisetum sylvaticum (Linnaeus), found in low grounds at Roxbury and Cambridge. Gray uses the same name.

Boston District: Wet fields and woods; frequent
Middlesex: Frequent
Worcester: Damp, shady places; common
Berkshire: Swampy woods and moist shaded banks; frequent

Conservation status S4; collected specimens scattered. Dodge states that it is common along the borders of damp woods. Suggestion: widely distributed; frequent

Equisetum variegatum (Variegated Scouring Rush)
Bigelow does not describe this species. Gray uses Equisetum variegatum (Schleicher), found in shores or riverbanks from Bellows Falls, Vermont, and Buffalo, to Michigan and that it is rare. It is on the state watch list.

Berkshire: Low ground or wet gravelly banks; occasional

Conservation status S3; collected specimens widely distributed in the west. Dodge states that it is found in river banks of calcareous districts and lists Conway as a station. Suggestion: occasional in the west

Hymenophyllaceae – Filmy Fern Family

Trichomanes

One species of bristle fern is present. Trichomanes intricatum is rare with populations existing in western Massachusetts. I could not find any historical observations of this species before October 1981 in Franklin County.

Onocleaceae – Sensitive Fern Family

Matteuccia

One species of fiddlehead fern is present. The historical reports on this plant are very strange to me, as I have always considered this species to be a common plant throughout the state. Maybe its popularity in gardens and as a wild edible is misleading to its common range.

Matteuccia struthiopteris (Ostrich Fern)
Bigelow uses Struthiopteris pennsylvanica (Willdenow) found in low grounds in Hanover, NH. Gray references the nomenclature as Struthiopteris germanica (Willdenow), found in alluvial soil and common northward. Gray also uses the names Osmunda struthiopteris (Linnaeus) and Onoclea struthiopteris (Hoffmann) as synonyms. The synonym Onoclea nodulosa (Schkuhr) used by Bigelow is not confirmed.

Boston District: Moist soil, usually in shade; rare
Middlesex: Rare
Worcester: Worcester, Leicester
Berkshire: Alluvial soil along rivers and brooks to an altitude of 1500 feet; common

Conservation status S4S5; collected specimens widely distributed. Dodge states that it is most common in western sections of New England. Suggestion: frequent in the west

Onoclea

One species of sensitive fern is present.

Onoclea sensibilis (Sensitive Fern)
Bigelow and Gray use Onoclea sensibilis (Linnaeus)

Boston District: Damp woods and meadows; abundant
Middlesex: Very common
Worcester: Very common in low lands
Berkshire: Wet meadows, swampy thickets, and wet woodland; common

Conservation status S5; collected specimens widely distributed. Dodge states that it is abundant in damp soil. Suggestion: widely distributed; common

Ophioglossaceae – Adder's Tongue Family

Botrychium

Eight species of moonwort are present. B. matricariifolium, B. oneidense, B. simplex, and B. tenebrosum are rare.

Botrychium angustisegmentum (Narrow Triangle Moonwort)
Bigelow does not describe this species. Gray uses Botrychium lanceolatum (Angstroem). Pease and Moore classified it as a subspecies until later being separated. It is on the state watch list.

Boston District: Low woods, rare; stations occasionally large
Middlesex: Very rare
Worcester: Princeton
Berkshire: Rich leaf mould, chiefly under deciduous trees; frequent

Conservation status S2S3; collected specimens widely distributed in the northern portion of the west. Dodge states that it is not common but probably often overlooked. Suggestion: frequent in the west

Botrychium dissectum (Dissected Grapefern)
Bigelow does not describe this species. Gray uses Botrychium lunarioides var. dissectum and then later classifies it as a subspecies of Botrychium ternatum.

Boston District: Old fields and pastures; frequent
Middlesex: Rather common
Worcester: Pastures
Berkshire: Woods and pastures; frequent

Conservation status S4?; collected specimens widely distributed. Dodge states that it is abundant in pastures and hillsides. Suggestion: widely distributed; frequent

Botrychium multifidum (Leathery Grapefern)
Bigelow uses Botrychium fumarioides (Willdenow), found in dry pastures in Cambridge. Gray references this nomenclature as Botrychium lunarioides (Swartz) and then later uses Botrychium ternatum var. intermedium.

Boston District: Old fields, pastures, and rarely in woods; frequent
Middlesex: Infrequent
Worcester: In pastures and open woods
Berkshire: Pastures and open woods; frequent

Conservation status S4; collected specimens widely distributed. Dodge states that it is frequent. Suggestion: widely distributed; frequent

Botrychium virginianum (Rattlesnake Fern)
Bigelow uses Botrychium virginicum (Willdenow), found in the woods at Chelsea Beach Island (Oak Island, Revere). Gray uses the same name but attributes it to Swartz.

Boston District: Rich woods; occasional
Middlesex: Not uncommon
Worcester: Rich woods; common
Berkshire: Rich woods; common

Conservation status S5; collected specimens widely distributed. Dodge states that it is not rare in rich woods. Suggestion: widely distributed; frequent

Ophioglossum

One species of adder's tongue fern is present.

Ophioglossum pusillum (Northern Adder's Tongue Fern)
Bigelow does not describe this species. Gray uses Ophioglossum vulgatum (Linnaeus). It was classified as a subspecies by later botanists. It is threatened in the state.

Boston District: Moist fields and pastures; local
Middlesex: Not common
Worcester: Worcester, Spencer
Berkshire: Mucky pockets in low meadows; frequent

Conservation status S2; collected specimens scattered, abundant in the east. Dodge states that it is throughout the New England states and is not rare, but overlooked. Suggestion: scattered; frequent

Osmundaceae – Flowering Fern Family

Osmunda

Two species of royal fern are present.

Osmunda claytoniana (Interrupted Fern)
Bigelow uses Osmunda interrupta (Michaux). Gray references this nomenclature as Osmunda claytoniana (Linnaeus).

Boston District: Somewhat less common than O. regalis
Middlesex: Common
Worcester: Low grounds; common
Berkshire: Moist woods and on the plateau on ill-drained hillsides; common

Conservation status S5; collected specimens widely distributed. Dodge states that it is not as common as O. cinnamomeum. Suggestion: widely distributed; common

Osmunda regalis (Royal Fern)
Bigelow and Gray use Osmunda regalis (Linnaeus). Gray also references Osmunda spectabilis (Willdenow) as a synonym.

Boston District: Swamps, wet woods, and lake shores; common
Middlesex: Common
Worcester: Common in swamps and in moist lands by roadsides
Berkshire: Borders of ponds, swamps, and wet woods reaching an altitude of 2000 feet; frequent

Conservation status S5; collected specimens widely distributed, abundant in the east. Dodge states that it is common in swamps and damp places. Suggestion: widely distributed; common

Osmundastrum

One species of cinnamon fern is present.

Osmundastrum cinnamomeum (Cinnamon Fern)
Bigelow and Gray use Osmunda cinnamomea (Linnaeus).

Boston District: Swamps and low woods; common
Middlesex: Common
Worcester: Low grounds; common
Berkshire: Low wet woods, borders of swamps in the valley, and wet hillsides on the plateau, where it reaches an altitude of 2100 feet; common

Conservation status S5; collected specimens widely distributed. Dodge states that it is very common in swamps, pastures, and low grounds. Suggestion: widely distributed; common

Polypodiaceae – Polypody Family

Polypodium

Two species of polypody are present.

Polypodium appalachianum (Appalachian Polypody)
Bigelow and Gray do not describe this species, and it is not mentioned in the floras. The 8th edition of Gray's Manual describes the species under P. virginianum forma acuminatum (Fernald).

Conservation status S4; collected specimens do not differentiate this species. Dodge does not describe this species. Inaturalist data shows scattered populations in central and west. Suggestion: scattered; occasional

Polypodium virginianum (Rock Polypody)
Bigelow and Gray use Polypodium vulgare (Linnaeus). It was later classified as a subspecies by Eaton.

Boston District: Dry rocks and ledges; common
Middlesex: Common
Worcester: Rocks; common
Berkshire: Shaded rocks, chiefly on schist, but occasionally on limestone; common

Conservation status S5; collected specimens widely distributed. Dodge states that it is common everywhere on cliffs and rocks. Suggestion: widely distributed; common

Pteridaceae – Maidenhair Fern Family

Adiantum

One species of maidenhair fern is present.

Adiantum pedatum (Maidenhair Fern)
Bigelow and Gray use Adiantum pedatum (Linnaeus).

Boston District: Rich deciduous woods; generally distributed, but only locally abundant
Middlesex: Generally distributed, but not abundant
Worcester: Rich moist woods and along walls and fences; common
Berkshire: Rich woods; common

Conservation status S4; collected specimens widely distributed. Dodge states that it is generally distributed, but in most sections not common. Suggestion: frequent in central and west, occasional elsewhere

Cryptogramma

One species of rock brake is present. Cryptogramma stelleri is rare and only observed in western Massachusetts. Bigelow and Gray do not describe this species.

Pellaea

One species of cliff brake is present. It is on the state watch list.

Pellaea atropurpurea (Purple Cliff Brake)
Bigelow does not describe this species. Gray uses Pteris atropurpurea (Linnaeus) and then later Pellaea atropurpurea (Link).

Worcester: Berlin, limestone ledge
Berkshire: Limestone ledges; occasional

Conservation status S3; collected specimens scattered. Dodge states that it is rare and the known stations are nearly all in Vermont. He lists Sunderland as a station and states that it may be expected in the western portions of Massachusetts. Suggestion: occasional in the west

Schizaeaceae – Curly Grass Family

Lygodium

One species of climbing fern is present.

Lygodium palmatum (American Climbing Fern)
Bigelow uses Lygodium palmatum (Swartz), brought from Granby, MA to the Botanic garden in Cambridge, and also found at the Blackstone Canal. Gray uses the same name and states that it is rare. Bigelow also references Hydroglossum palmatum (Pursh) and Cteisium paniculatum (Michaux) as synonyms. Only H. palmatum is confirmed by Gray.

Boston District: Low thickets; rare
Middlesex: Rare
Worcester: Rare
Berkshire: Becket

Conservation status S3; collected specimens widely distributed in the Connecticut River Valley and the east. Dodge states that it is scattered in small patches throughout Massachusetts, listing North Amherst and Uxbridge as stations. Suggestion: frequent in the Connecticut River Valley, occasional elsewhere

Thelypteridaceae – Marsh Fern Family

Parathelypteris

Two species of bog fern are present. Many of the species under Parathelypteris were formerly classified under Thelypteris.

Parathelypteris noveboracensis (New York Fern)
Bigelow uses Aspidium noveboracense (Smith), found at Bussey Hill (Arnold Arboretum). Gray first uses Dryopteris noveboracensis but later uses Bigelow's nomenclature, attributed to Swartz. Bigelow also uses Polypodium noveboracense (Linnaeus) which Gray confirms as a synonym.

Boston District: Low open woods; common
Middlesex: Common
Worcester: Common in rich woods
Berkshire: Moist, well-drained woods; common

Conservation status S5; collected specimens widely distributed, abundant in the east. Dodge states that it is very common in woodlands. Suggestion: widely distributed; common

Parathelypteris simulata (Massachusetts Fern)
Bigelow and Gray do not describe this species. The species was first collected by Raynal Dodge in 1890 and described by Davenport as Aspidium simulatum.

Boston District: Swampy woods; locally abundant
Worcester: Worcester, Holden
Berkshire: Swampy woods, in small colonies; occasional

Conservation status S5; collected specimens widely distributed in the east. Dodge states that it is apparently confined to the vicinity of the Atlantic Coast. Suggestion: frequent in the east, occasional elsewhere

Phegopteris

Two species of beech fern are present.

Phegopteris connectilis (Long Beech Fern)
Bigelow uses Polypodium connectile (Michaux), found in the woods at Hallowell, ME. Gray references this nomenclature as Polypodium phegopteris (Linnaeus) and later uses Phegopteris polypodioides (Fee).

Boston District: Damp rich woods; occasional, especially northward
Middlesex: Not common
Worcester: In moist woods; common
Berkshire: Cool woods, especially on moist banks; frequent in the valley, common on the plateau

Conservation status S5; collected specimens widely distributed. Dodge states that it is abundant in northern, less so southern sections of New England. Suggestion: widely distributed; frequent

Phegopteris hexagonoptera (Broad beech Fern)
Bigelow does not describe this species. Gray uses Polypodium hexagonopterum (Michaux) and later Phegopteris hexagonoptera (Fee).

Boston District: Rich open woods; not common
Middlesex: Not common
Worcester: In dry woods and on hillsides; common
Berkshire: Rich moist soil in rather open woodland; occasional in the valley

Conservation status S4; collected specimens scattered, abundant around Boston. Dodge states that it is generally distributed but most abundant in Rhode Island and Connecticut. Suggestion: scattered; occasional

Thelypteris

One species of marsh fern is present.

Thelypteris palustris (Marsh Fern)
Bigelow uses Aspidium thelypteris (Smith). Gray references this nomenclature under Swartz as Dryopteris thelypteris, later using Aspidium thelypteris (Swartz).

Boston District: Swamps; common everywhere
Middlesex: Common
Worcester: Common in moist woods
Berkshire: Wet meadows, swampy thickets and moist woodland; common

Conservation status S5; collected specimens widely distributed, abundant in the east. Dodge states that it is very common. Suggestion: widely distributed; common

Woodsiaceae – Woodsia Family

Athyrium

Two species of lady fern are present. A. asplenioides is rare.

Athyrium angustum (Northern Lady Fern)
Bigelow uses Aspidium asplenioides (Michaux). Gray references the nomenclature under Swartz as Asplenium filix-foemina (Brown, Bernhardi).

Boston District: Usually in damp woods and shaded places, though occasionally in drier places; common
Middlesex: Common
Worcester: Common along moist roadsides and the edges of woodlands
Berkshire: Dry open thickets; frequent

Conservation status S5; collected specimens widely distributed. Dodge does not describe the distribution of this species. Suggestion: widely distributed; common

Cystopteris

Four species of fragile fern are present. C. laurentiana is rare and found only in Franklin county.

Cystopteris bulbifera (Bulblet Fragile Fern)
Bigelow uses Aspidium bulbiferum (Linnaeus), found in Norwich, CT. Gray references the nomenclature under Swartz as Cystopteris bulbifera (Bernhardi).

Berkshire: Wet banks and moist rocks, chiefly in shade, generally but not always in calcareous soil; frequent in the valley and on the slopes of Greylock and The Dome, but rarer on the plateau

Conservation status S4; collected specimens widely distributed in the Berkshires. Dodge states that it is found west of the Connecticut River. Suggestion: frequent in the west

Cystopteris fragilis (Fragile Fern)
Bigelow does not describe this species. Gray uses Cystopteris fragilis (Bernhardi).

Boston District: Moist or wet rocks and ledges in shade; not common, especially southward
Middlesex: Not uncommon
Worcester: Found sparingly in Worcester and Brookfield
Berkshire: Shaded cliffs, moist banks, and rocky wooded hillsides; frequent

Conservation status S4; collected specimens widely distributed. Dodge states that it is common but easily overlooked. Suggestion: widely distributed; frequent

Cystopteris tenuis (Mackay's Fragile Fern)
Bigelow and Gray do not describe this species. It is not described in the floras. The plant was described in 1889 as Cystopteris fragilis var. mackeyi by Lawson.

Conservation status S5; collected specimens not described, but said to be common and wide ranging, except for northern Maine. Dodge does not describe this species. Suggestion: widely distributed; common

Deparia

One species of false spleenwort is present.

Deparia acrostichoides (Silvery False Spleenwort)
Bigelow uses Asplenium thelypteroides (Michaux), found in a brook at Roxbury. Gray uses the same name. Britton and Brown reference this nomenclature as Athyrium thelypteroides (Desvaux) with the synonym Asplenium acrostichoides (Swartz).

Boston District: Rich woods; occasional in the northern towns, less frequent southwards
Middlesex: Not common
Worcester: In rich moist woods, along the margins of swamps and moist roadsides; common
Berkshire: Found in eastern Massachusetts

Conservation status S5; collected specimens widely distributed. Dodge states that it is generally distributed but not common, the stations being usually small. Suggestion: widely distributed; frequent

Diplazium

One species of glade fern is present.

Diplazium pycnocarpon (Narrow Leaved Glade Fern)
Bigelow uses Asplenium angustifolium (Willdenow). Gray uses the same name, but under Michaux, stating its distribution from western New England to Wisconsin southward. Britton and Brown reference this nomenclature as Asplenium pycnocarpon (Sprengel). It is on the state watch list.

Berkshire: Rich woods, generally in alluvial pockets spread by brooks at the bases of rich slopes; occasional in the valley

Conservation status S3; collected specimens distributed in the west. Dodge states that it is not common and nearly confined to the region west of the Connecticut River. Suggestion: occasional in the west

Gymnocarpium

One species of oak fern is present.

Gymnocarpium dryopteris (Northern Oak Fern)
Bigelow uses Polypodium dryopteris (Linnaeus), found near Hanover, NH. Gray uses the same name and later Phegopteris dryopteris (Fee). Britton and Brown reference this nomenclature as Dryopteris dryopteris (Linnaeus).

Boston District: Rich especially coniferous woods; occasional in Essex County but rare elsewhere. Not reported south of Needham
Middlesex: Very rare
Worcester: In moist woods and thickets; common
Berkshire: Cool woods, often under conifers; frequent

Conservation status S5; collected specimens distributed in the east and west. Dodge states that is common northward, less so in southern sections. Suggestion: frequent in central and west; occasional elsewhere

Woodsia

Three species of cliff fern are present. W. glabella is rare and only present in Berkshire county.

Woodsia ilvensis (Rusty Cliff Fern)
Bigelow uses Polypodium ilvense (Willdenow) and is unsure if Woodsia ilvensis (Pursh, Brown) is a synonym. Gray uses the latter with no reference to the first in his manual. It is highly likely that they are in fact synonyms for each other.

Boston District: Exposed dry ledges; occasional
Middlesex: Not uncommon
Worcester: Spencer
Berkshire: Exposed rocks; occasional

Conservation status S5; collected specimens scattered, abundant in the east. Dodge states that it is not uncommon on exposed rocks. Suggestion: scattered; frequent

Woodsia obtusa (Blunt Lobed Cliff Fern)
Bigelow does not describe this species. Gray uses Woodsia obtusa (Torrey).

Boston District: Shaded ledges; scattered stations throughout
Middlesex: Not very common
Worcester: Rare
Berkshire: Exposed rocks or shaded ledges, chiefly calcareous; occasional in the valley

Conservation status S5; collected specimens widely distributed along the southern border. Dodge states that it is not common, especially in Rhode Island and eastern Massachusetts. Suggestion: scattered; frequent