Symphyotrichum tradescantii

Tradescant's Aster

Asteraceae

Symphyotrichum tradescantii by Bruce Bennett, 2023

***Symphyotrichum tradescantii* Rare Plant Profile**

New Jersey Department of Environmental Protection
State Parks, Forests & Historic Sites
Forests & Natural Lands
Office of Natural Lands Management
New Jersey Natural Heritage Program

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Life History

Symphyotrichum tradescantii (Tradescant's Aster) is a rhizomatous perennial herb in the composite family. It's rhizomes are short so the plants often grow in clusters of up to five stems. The stems are slender, smooth, and usually less than 6 dm in height with alternate ascending branches. The basal leaves of *S. tradescantii* are 1–4 cm long and 5–11 mm wide, and although they can wither by blooming time they sometimes persist. Leaves on the upper part of the stem are 1–6 cm long and stalkless but stalks may be present on the larger, lower stem leaves which are 2–10 cm in length. The leaf edges can be smooth or toothed. As with many other members of the aster family, the flowers of *S. tradescantii* are composite heads of both ray and disc florets. One to ten flower heads are present on each branch. The heads have 14–27 white ray florets and 20–30 disk florets that are initially yellow but become purplish with age. The fruits are tan achenes (cypselae) 3.5–4 mm in length, each bearing a pappus of numerous white bristles that are 3–3.6 mm long. (See Britton and Brown 1913, Fernald 1950, Gleason and Cronquist 1991, Brouillet et al. 2020).

The perennial rhizomatous species of *Symphyotrichum* usually follow a similar seasonal cycle. During the latter part of the summer the plants produce either rhizome buds or rosettes of scale leaves that persist through the winter months. New shoots develop the following spring, and their emergence is generally triggered by local climactic conditions (Jones 1978, Chmielewski and Semple 2001). *Symphyotrichum tradescantii* may flower from July through September in North America (Brouillet et al. 2020, Weakley et al. 2024), blooming during periods when water levels are usually low (MANHESP 2015). In New Jersey, flowering starts around the second week of August and continues into early September. By mid-September the plants are beginning to release seeds and by mid-October most of their seeds have been dispersed (NJNHP 2024). A later blooming period (September to October) has been reported in eastern Europe (Fehér 2008).

Left: Britton and Brown 1913, courtesy USDA NRCS 2025a. Right: Kyle Webster, 2020.

Symphyotrichum was included in *Aster* until Nesom (1994) restructured the original taxon, transferring most of the New World species to eleven other genera. *Symphyotrichum* is still quite

a large genus so some botanists have further divided it into subgenera, sections, and subsections. *Symphyotrichum praealtum* was placed in subgenus *Symphyotrichum* by Nesom (1994) and by Semple and Hood (2005), and although the two systems differed in the names that were assigned to the lower sections and subsections the final species groups that included *S. tradescantii* were comparable. Closely related species that occur in New Jersey include *S. boreale, S. lanceolatum, S. lateriflorum, S. praealtum*, and *S. racemosum*, all of which are usually taller than S. *tradescantii*. With the exception of *S. lateriflorum*, those species also have long rhizomes and are more likely to grow colonially. The flower heads of *S. lateriflorum* have fewer ray florets (8–15) and disk florets (8–16) than those of *S. tradescantii* (Brouillet et al. 2020). Sorrie (1987) noted that the distinctive habitat of *S. tradescantii* can aid in its identification.

Pollinator Dynamics

North American *Symphyotrichum* species utilize a wide variety of pollinators (Robertson 1929, Jones 1978) although white-flowered species like *S. tradescantii* are mainly visited by bees and flies (Bertin et al. 2010). In the northeast, at least six native bees have been identified as specialist pollinators of *Symphyotrichum* and related plants in the Asteraceae (Fowler 2016). Jones (1978) noted that many asters close at dusk, folding in their rays to preserve pollen for the next day. However, that does not occur in all species and may not apply to *Symphyotrichum tradescantii*.

In a typical aster, the pistillate ray florets are the first to become receptive. As the bisexual disc florets open, their styles elongate and push the pollen to the end of the corolla tubes, coating the stigmas in the process. However, that generally does not result in fertilization because many perennial asters are highly self-incompatible and thus dependent on insects for the production of viable seeds (Jones 1978, Bertin et al. 2010). Low seed set has been observed in some related perennial *Symphyotrichum* species (e.g. Jones 1978, Chmielewski and Semple 2001), and Fehér (2008) observed that the fruits of *Symphyotrichum tradescantii* are frequently sterile. Since *S. tradescantii* also reproduces clonally there may be few opportunities for outcrossing within small populations (Jones 1978).

Seed Dispersal and Establishment

The pappus on a *Symphyotrichum tradescantii* cypsela is nearly equal to the length of the seed (Brouillet et al. 2020). A pappus generally aids in wind dispersal by acting as a parachute, although differences in the morphology of both seeds and pappi determine how far the propagules of any given species are able to travel (Greene and Johnson 1990, Anderson 1993). Dispersal distances are also affected by wind velocity and the relative openness of the habitat (Lacroix et al. 2007). Flowing water can be an important seed distribution mechanism for asters in wetland habitats, and some aster seeds are transported by adherence to animals (Fehér 2008). Humans have played a significant role in the dispersal of *S. tradescantii* in Europe (Skubala 2011). Regeneration from fragments of rhizomes has been documented in *Symphyotrichum* (Leck and Leck 1998) so it is possible that vegetative dispersal could occasionally be achieved by the movement of water.

Symphyotrichum species typically disperse their propagules in the fall and germinate in the spring (Chmielewski and Semple 2001). Nearly all of the species that have been examined benefit from a period of stratification, although some are able to sprout immediately after dispersal in controlled settings. Jones (1978) noted that the achenes of *S. tradescantii* can germinate readily without stratification. However, the species is also capable of forming a seed bank (Landis 2008). Generally speaking, the germination of aster seeds requires light, moisture, and warm temperatures and is inhibited by cold or darkness (Baskin and Baskin 1979, Deno 1993, Chmielewski and Ruit 2002). Nutrient availability might also affect the germination rates of some species (Nešić et al. 2022).

Chmielewski and Semple (2003) noted that seedling development was not well documented in the clonal S*ymphyotrichum* species but indicated that young plants typically generate a few flowering stalks the first year and then invest in the production of more numerous shoots for the following season. It is not clear whether *S. tradescantii* is mycorrhizal but fungal associations have been reported in some other members of the genus (Wang and Qui 2006, Wolfe et al. 2006, Bainard et al. 2011, Bauer et al. 2012).

Habitat

One of the common names frequently applied to *Symphyotrichum tradescantii* is Shore Aster, reflecting the habitat in which the species is most frequently found. In North America the aster typically grows on the rocky, gravelly, sandy, or muddy shorelines of rivers, streams, and lakes—or on adjacent rocky ledges—at elevations of 0–200 meters above sea level (Campbell and Eastman 1980, Sorrie 1987, Djan-Chékar et al. 2004, MANHESP 2015, Brouillet et al. 2020). The species does best in full sun, although it has some tolerance for shady sites (Weakley et al. 2024). Beaven and Oosting (1939) recorded *S. tradescantii* in a tidally-influenced cypress swamp in Maryland. Many occurrences in New York have been associated with low, wet swales or swampy habitats, including some that are situated along the edges of canals and roadways (Kelloff and Kass 2018). Most of the *S. tradescantii* populations in New Jersey are located along the Delaware River, where they have established on rocky ledges, gravelly shores, or sandy alluvium (Snyder 1985). One other New Jersey occurrence was found on the rocky shore of an inland lake (NJNHP 2024).

Periodic flooding and occasional ice scour help to maintain the open riverside habitats utilized by *Symphyotrichum tradescantii* by eliminating species that are less tolerant of such disturbances (Sorrie 1987, MANHESP 2015). A five-year study in Europe revealed that the cover of *S. tradescantii* along the shoreline of the Danube River tended to fluctuate, with the species becoming more abundant at some sites and less so at others. On the whole, the aster was most prevalent within 50 meters of the shoreline (Gergely et al. 2001). However, not all of the European populations of Tradescant's Aster occur in such typical habitats. In Poland *S. tradescantii* is often found in ruderal or scrub communities (Tokarska-Guzik et al. 2010) and at one site in eastern Europe the species was recorded growing on industrial spoil heaps associated with lead mining and smelting operations (Skubala 2011).

Wetland Indicator Status

Symphyotrichum tradescantii is a facultative wetland species, meaning that it usually occurs in wetlands but may occur in nonwetlands (U. S. Army Corps of Engineers 2022).

USDA Plants Code (USDA, NRCS 2025b)

SYTR

Coefficient of Conservancy (Walz et al. 2020)

CoC = 10. Criteria for a value of 9 to 10: Native with a narrow range of ecological tolerances, high fidelity to particular habitat conditions, and sensitive to anthropogenic disturbance (Faber-Langendoen 2018).

Distribution and Range

Symphyotrichum tradescantii is native to the northeastern United States and eastern Canada. It has naturalized in a number of European countries including Czechoslovakia, Germany, Poland, and Romania (POWO 2025). *S. tradescantii* was noted as one of the most important invasive plants in Hungary (Fehér 2008)—a country where the aster was deliberately introduced (Csiky et al. 2023)—and in Poland it is classified as a transformer species, meaning that it can substantially alter native ecosystems (Tokarska-Guzik et al. 2010). It has also been recorded in Serbia (Nestorović and Konstantinović 2011), and there are some populations in the Netherlands originated as garden escapes (Sprong and Reumer 2008). Although *S. tradescantii* was cultivated in England as early as 1656 (Favretti and DeWolf 1971) it does not appear to have established in the wild there. The map in Figure 1 depicts the extent of the Tradescant's Aster in North America.

The USDA PLANTS Database (2025b) shows records of *Symphyotrichum tradescantii* in two New Jersey counties: Sussex and Warren (Figure 2). The data appear to reflect the current distribution of the species within the state.

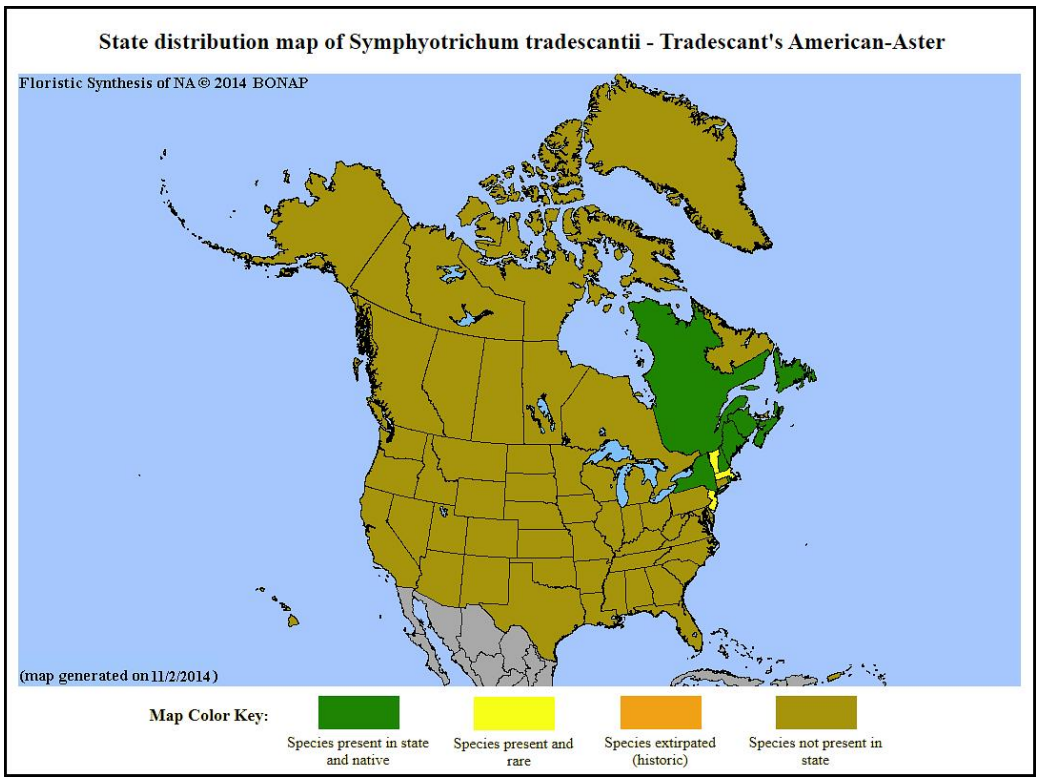

Figure 1. Distribution of S. tradescantii in North America, adapted from BONAP (Kartesz 2015).

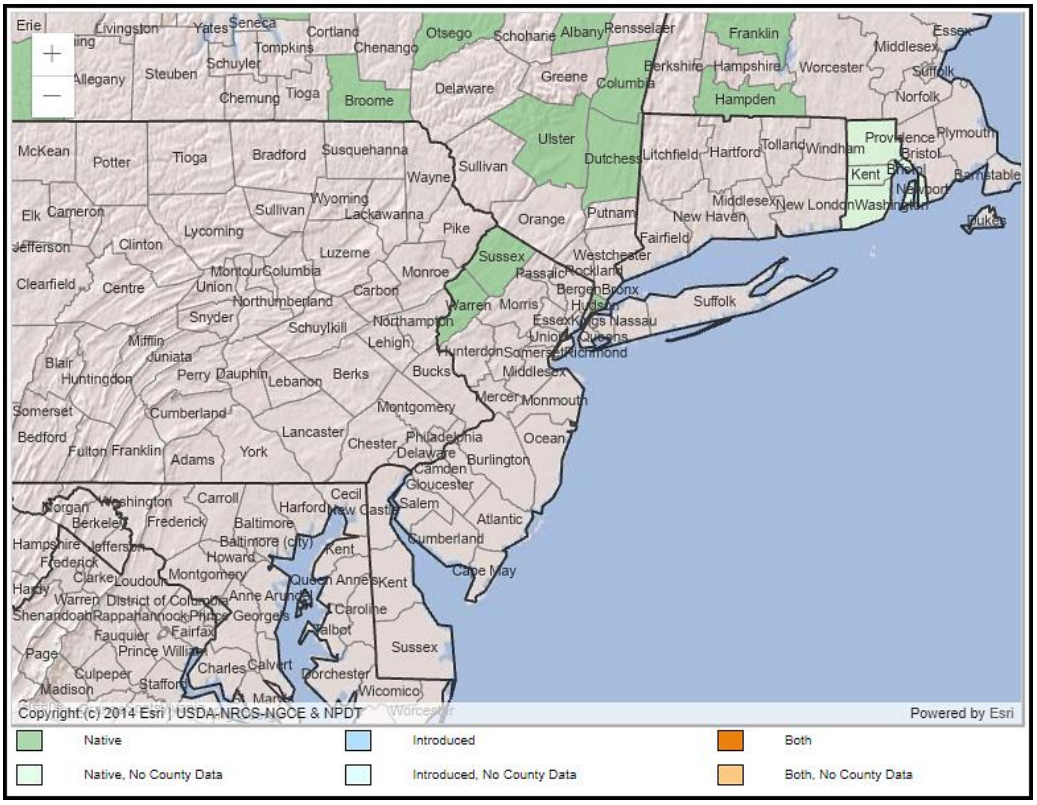

Figure 2. County records of S. tradescantii in New Jersey and vicinity (USDA NRCS 2025b).

Conservation Status

Symphyotrichum tradescantii is apparently secure at a global scale. The G4 rank means the species is at fairly low risk of extinction or collapse due to an extensive range and/or many populations or occurrences, although there is some cause for concern as a result of recent local declines, threats, or other factors (NatureServe 2025). The map below (Figure 3) illustrates the conservation status of *S. tradescantii* in North America. Tradescant's Aster is critically imperiled (very high risk of extinction) in one state and one province, imperiled (high risk of extinction) in two states, and vulnerable (moderate risk of extinction) in one province. The species is apparently secure or unranked in other North American districts where it occurs.

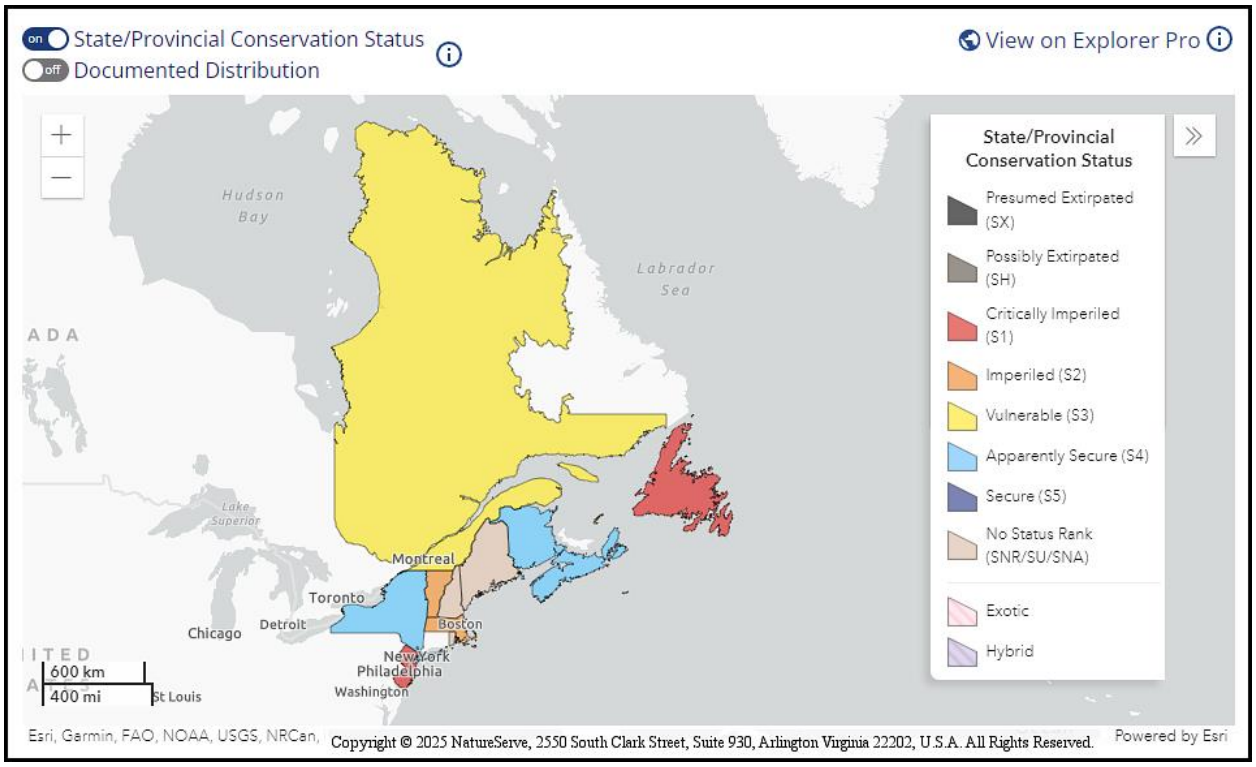

Figure 3. Conservation status of S. tradescantii in North America (NatureServe 2025).

New Jersey is the sole state where *Symphyotrichum tradescantii* is critically imperiled (NJNHP 2024). For many years it was ranked as imperiled (S2) but its status was recently changed to S1 (NJNHP 2022). An S1 rank usually signifies five or fewer occurrences. A species with an S1 rank is typically either restricted to specialized habitats, geographically limited to a small area of the state, or significantly reduced in number from its previous status. *S. tradescantii* has also been assigned a regional status code of HL, signifying that the species is eligible for protection under the jurisdiction of the Highlands Preservation Area (NJNHP 2010).

Early reports of *Symphyotrichum tradescantii* in New Jersey were based on misidentified plant specimens (Hough 1983) and the species was not actually documented in the state until 1982. David Snyder found the first occurrence in Warren County, and subsequent searching revealed additional populations in both Warren and Sussex counties (Snyder 1985, 2000). A total of eight

occurrences were eventually located but no *S. tradescantii* plants could be found during recent searches of two of the sites (NJNHP 2024).

Threats

In New Jersey, a documented decline in several *Symphyotrichum tradescantii* populations has resulted from the proliferation of invasive flora. At multiple locations where *Lythrum salicaria* was noted as a potential threat near the end of the last century, surveys conducted during 2021 and 2022 found that the sites had been almost completely overrun by a suite of nonnative plants. In addition to *L. salicaria*, the most problematic invasive species included *Artemisia vulgaris, Celastrus orbiculatus, Lonicera japonica, Polygonum cuspidatum, P. posumbo,* and *Sedum sarmentosum* (NJNHP 2024). Invasive plants also threaten occurrences of *S. tradescantii* in Massachusetts (MANHESP 2015) and likely at other places in North America (Ventrella 2024).

There is a limited understanding of other factors that may imperil *Symphyotrichum tradescantii*. Changes in hydrology, particularly variations in flooding frequency or intensity, are likely to alter the habitat conditions that favor the aster. Recreational activities that result in shoreline development or increased foot traffic (e.g. boating, fishing) could also threaten some populations (MANHESP 2015, NJNHP 2024, Ventrella 2024).

Extensive herbivory by Canada Geese was noted at the site of one New Jersey *S. tradescantii* occurrence but no detrimental impacts to the population were observed (NJNHP 2024). McCabe (1991) reported that Tradescant's Aster is also used as a larval food plant by some insects including a moth (*Leuconycta diphteroides*, Green Leuconycta) and a butterfly (*Charidryas harrisii*, Harris's Checkerspot), and he noted that the larvae of the latter species were gregarious. Larvae that feed gregariously can rapidly defoliate plants (pers. obs.). However, Harris's Checkerspot is uncommon in New Jersey and is presently listed as a special concern species in the state (NJFWS 2025).

Another invertebrate that uses *Symphyotrichum tradescantii* as a host plant is a foliar nematode, *Aphelenchoides ritzemabosi*. The nematodes access various parts of a host by traveling through films of water on the surfaces of plants that have been moistened by rain or dew. They may enter the leaves through their stomates and feed from within or feed externally on stems, buds, and flowers. Damage may be merely cosmetic or relatively severe depending on the plant species. To date, studies of host impacts have focused mainly on ornamental plants (Kohl 2011).

Symphyotrichum tradescantii is also susceptible to a rust fungus (*Puccinia cnici-oleracei*) that affects species in the Asteraceae and has been documented on multiple asters in the United States. Unlike many rusts in the genus, *P. cnici-oleracei* does not utilize alternate hosts and the damage is mainly limited to patches of leaf tissue. The rust is in turn parasitized by another fungus, *Eudarluca caricis*, which likely keeps its spread in check (Ellett 1989, Kranz and Brandenburger 2021, Ellis 2025).

Climate Change Vulnerability

Information from the references cited in this profile was used to evaluate the vulnerability of New Jersey's *Symphyotrichum tradescantii* populations to climate change. The species was assigned a rank from NatureServe's Climate Change Vulnerability Index using the associated tool (Version 3.02) to estimate its exposure, sensitivity, and adaptive capacity to changing climactic conditions in accordance with the guidelines described by Young et al. (2016) and the state climactic computations by Ring et al. (2013). Based on available data *S. tradescantii* was assessed as Highly Vulnerable, meaning that it is likely to experience a significant decrease in abundance or range extent throughout New Jersey by 2050.

As a result of global warming, New Jersey is experiencing higher temperatures and shifting precipitation patterns that are resulting in more extreme episodes of both heavy rainfall and drought (Hill et al. 2020). *Symphyotrichum tradescantii* reaches the extreme southern edge of its range in the northern part of the state, which indicates that it is better adapted to a cooler climate and likely to fare poorly in the face of rising temperatures. Although a regime of periodic inundation is probably necessary for the maintenance of *S. tradescantii* habitats the particulars of flood frequency, intensity, and seasonality are not known (MANHESP 2015, NJNHP 2024, Ventrella 2024). Nevertheless, the disruption of normal hydrologic cycles can be inferred from recent site visits, which found that riverside populations in New Jersey were underwater during their normal flowering and fruiting period for three consecutive years in a row (NJNHP 2024).

As previously discussed, some of the state's *Symphyotrichum tradescantii* populations have already been replaced by invasive plant species, which are likely to become an even greater threat in New Jersey as the climate continues to warm. Some of the introduced species that have already gained a foothold in the northeast are expected to become more abundant (Dukes et al. 2009, Coville et al. 2021, O'Uhuru 2022), and both the northeastern and mid-Atlantic regions are predicted to become hotspots for the establishment of additional nonnative plants (Bellard et al. 2013, Salva and Bradley 2023).

Management Summary and Recommendations

Updated information is needed regarding the status *of Symphyotrichum tradescantii* both in New Jersey and throughout its native range (NJNHP 2024, Ventrella 2024). Careful searches for the species might turn up some occurrences in Pennsylvania, particularly in suitable habitat across the river from the site of New Jersey's populations (Snyder 1985). Five of New Jersey's eight documented occurrences of *S. tradescantii* have not been monitored since they were first discovered during the 1980s and 1990s. Recent site visits revealed that the other three—one of which formerly contained thousands of plants—have experienced significant declines or disappeared (NJNHP 2024), which suggests that monitoring of the remaining sites should be prioritized. The spread of invasive flora should be actively managed in the vicinity of any remaining and potentially viable *S. tradescantii* populations.

Synonyms

The accepted botanical name of the species is *Symphyotrichum tradescantii* (L.) G. L. Nesom. Orthographic variants, synonyms, and common names are listed below (ITIS 2025, POWO 2025, USDA NRCS 2025b).

Botanical Synonyms	Common Names
Aster tradescanti L.	Tradescant's Aster
Aster tradescanti var. *fragilis* (Willd.) Torr. & A. Gray	Shore Aster
Aster tradescantii var. *saxatilis* (Fernald) House	Small Michaelmas-daisy
Aster artemisiiflorus Poir.	Tradescant's American-Aster
Aster fragilis Willd.	
Aster leucanthemus Desf.	
Aster parviflorus Nees	
Aster recurvatus Pursh	
Aster saxatilis Blanch.	
Aster vimineus var. *saxatilis* Fernald	
Symphyotrichum parviflorum (Nees) Greuter	
Symphyotrichum subulatum var. *parviflorum* (Nees) S. D. Sundb.	

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Bennett, Bruce. 2023. Photo of *Symphyotrichum tradescantii* from Nova Scotia. Shared via iNaturalist at https://www.inaturalist.org/observations/183055859, licensed by https://creativecommons.org/licenses/by-nc/4.0/

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