Chenopodiaceae
Goosefoot Family

A family of mostly shrubs and herbaceous species, there are 1500 in total. Most are annuals, weedy and ruderal with small inconspicuous flowers. Corolla is absent; calyx is five-merous, with 1–5 stamens opposing the lobes. Fruit is an achene, usually shiny. Leaves are mostly alternate, simple or lobed. A few species have the leaves reduced to minute bracts. Several vegetable crops belong to this family, including beets, spinach and chard.

There are historical records for *Axyris amaranthoides* and *Polycnemon verrucosum*, collected from NS >50 years ago. *Axyris amaranthoides* L. or Russian Pigweed was collected and identified by Fernald in 1921, based on a collection at GH as reported by Scoggan (1978). The reliability of the collection of *Polycenomon verrucosum* must be questioned as the specimen cannot be found and the authenticity of the label needs to be confirmed. Neither has been found for more than 50 years.

Key to genera

A. Leaves absent, or if present, much reduced in size. B
B. Leaves absent, replaced by opposite pair of tiny scales. *Salicornia*
bb. Leaves much-reduced, distally a spine. *Salsola*
aa. Leaves present, not drastically reduced in size, usually alternate and sometimes deciduous. C
C. Flowers and fruit enclosed by a pair of bracts; calyx absent in pistillate flowers. *Atriplex*
cc. Calyx 3–5 parted, visible. D
D. Leaves nonsucculent; flowers in a terminal panicle. *Chenopodium*
dd. Leaves, stem, calyx fleshy or succulent; flowers axillary. *Suaeda*

Atriplex L.
Orach

Generally it is associated with coastal habitats, although occasionally found inland at least in Nova Scotia. Their highly variable morphology dictates the need for mature fruit. Flowers from July to September with seeds maturing later in autumn.

Individual flowers are subtended by a pair of bracteoles, which may be spongy in some species, developing large air-filled sacs on the inner surfaces. Seeds dimorphic, brown or black, the latter generally smaller, on the same plant.

Key to species

A. Leaves with veins dark green and netlike when surface is removed. B
- B. Seeds 3.5–4.0mm wide; plant decumbent; northern distribution. *A. laciniata*
- bb. Seeds 2.0–2.5mm wide; plant erect, branches profuse; rare introduction. *A. rosea*

aa. Leaves without dark veins. C
- C. Bracteoles green or membranous, not succulent. *A. patula*
- cc. Bracteoles swollen, especially towards the base where it is succulent. D
  - D. Lower leaves deltate. E
    - E .Inflorescence with leafy bracts throughout; flower clusters loose and irregularly spaced; brown seeds 2.5–4mm wide; black fruits rarely present. *A. glabriuscula*
    - ee. Inflorescence with basal leafy bracts; flowers tightly clustered; brown seeds mostly 1.5–2.5mm wide; black fruits may be more common than the brown fruits. *A. prostrata*
  - dd. Lower leaves linear to ovate or lanceolate. *A. littoralis*

Atriplex glabriuscula Edmonston
Glabrous Orach; arroche glabriuscule

Photo by Martin Thomas

A highly variable sprawling herb, limited to saline soils. Stems are branching freely, the branches nearly oppositely arranged. They are somewhat ridged and bluish-green. Leaves are petiolate and of various shapes and margins. The flowers are loosely aggregated in leafy interrupted inflorescence. Bracteoles are green darkening with age, the spongy layer well-developed at least at the base. Three varieties have been reported from NS.

Photo by Martin Thomas

Photo by Sean Blaney
Var. acadiensis

Key to varieties

A. Bracteoles green or membranous throughout; no spongy tissue present.	var. *acadiensis*
aa. Bracteoles more or less thickened, spongy tissue present especially at the base.	B
B. Some axillary bracteoles stalked; bracteoles toothed or torn on the margins, angles with 1-3 teeth.	var. *franktonii*
bb. Bracteoles sessile, margins entire or slightly toothed; angles pointed, but smooth.	var. *glabriuscula*

Var. *acadiensis* (Taschereau) SL Welsh may have red stripes on its stems. Flowering during summer to early fall. Found in the *Spartina alterniflora* zone of saltmarshes. So far collected from northern coastal regions, Cumberland, Pictou and Cape Breton Counties. (*A. acadiensis* Taschereau).

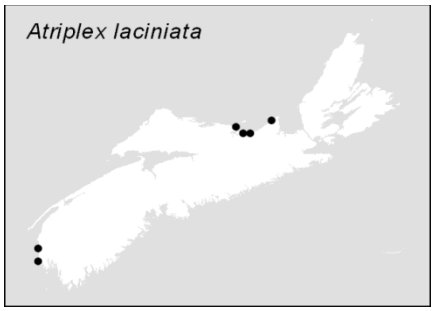
Var. *franktonii* (Taschereau) SL Welsh is a sparsely branched form, having mainly triangular leaves The glomerules of flowers are subtended by leafy bracts only at the base of the inflorescence. It is very common in northern areas, such as the Northumberland Strait region and along Cape Breton's northern coasts. Occasionally seen elsewhere as near Truro and Halifax. (*A. hastata* L.; *A. franktonii* Taschereau).

Var. *glabriuscula* has its stems slightly ridged but without red stripes. Spikes may be axillary or terminal, and leafy. Bracteoles soon become reddish or black. Usually on sandy or cobbly exposed beaches, near the upper tidal reaches. Not seen along the Northumberland coast, but common elsewhere.

The species ranges from NF to lower St. Lawrence River; MB; AB. In the east, south to PA; KY. Also found in IL and MN. Greenland.

Atriplex laciniata L.
arroche laciniée

Photo by Sean Blaney



Decumbent at the base and often nearly covered in sand, this small species is silvery with scales on the surface. The dark venation is a sure character, although its smaller stature differs from other *Atriplex.*

Flowers June and July; sand and cobble coastal beaches.

Uncommon in NS. Collected from the Northumberland shore of Cumberland County and Yarmouth Co.

Ranges from western and northwestern Europe; NS, NB, PE, QC and NY. Introduced to North America.

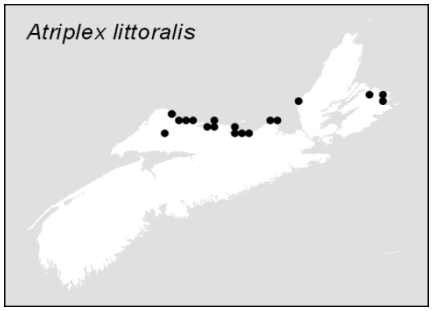
Atriplex littoralis L.
Arroche littorale

Photo by David Mazerolle

Linear leaves will easily separate this species. Flowers are tightly clustered in compact spikes. Seeds are brown, oval, 2.1–2.8mm wide.

A salt marsh species also found in wrack along the strand line.

Only along the Northumberland shore, east to Cape Breton County.



Known from all provinces except SK and AB, south through New England, to PA and west to IL. Introduced from Europe.

Atriplex patula **L.**
Spreading Orach; arroche étalée

Photo by Martin Thomas

A variable species, it was once separated into several varieties. Its habit may be erect or decumbent, reaching 1m in height or length. Stems are angular and striate, somewhat woody at the base. Lanceolate leaves bright-green, lobed at the base, are borne on short petioles. Young leaves may be pruinose. Inflorescence is an interrupted spike, which in fruit, has the bracteoles triangular. Seeds are brown to black, shiny, measuring 1–2mm in diameter.

Long flowering season, July to November.

Frequents beaches, saltmarshes and headlands or even on salted roadsides in disturbed soils.

Yarmouth and Cumberland counties to Cape Breton.

An introduction to most of US and Canada. Eurasian.

Photo by Martin Thomas

Atriplex prostrata **Boucher**
arroche hastée

Photo by Martin Thomas

Photo by Martin Thomas

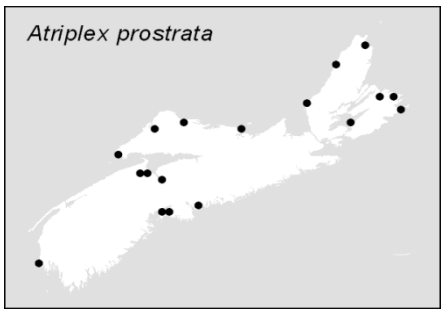
Photo by Martin Thomas

Resembles *A. glabriuscula* but for the absence of leafy bracts in the distant portions of the inflorescence. Stems are red or green; leaves are variable. The inflorescence is up to 9cm long, comprised of compact flower clusters. Seeds are brown, 1.5–2.5mm across.

Flowers June to November. With *A. patula* our only species found in inland, nonsaline soils. Saltmarshes.

Common around the entire coast.

Most of North America, with the exception of a couple of the Gulf Coast states.



***Atriplex rosea* L.**
Red Scale; arroche rosée

These are annual, erect herbs from 1–2m in height. The branches may be straight or arcuate, smooth or mealy. Leaves are alternate, 6cm long, ovate to lanceolate and toothed. They are gray to white but rarely green. Inflorescence comprises axillary clusters and interrupted spikes.

A weedy ruderal of roadsides and other disturbed soils.

So far known only from Queens Co. and may be an historic occurrence only, although it is spreading in western Canada.

Ranges from all western states and provinces eastward to TX and FL. North to NS and ON. Eurasian.

Chenopodium L.

A cosmopolitan genus, it includes 200 or more species. All are herbaceous and many are common weedy species to be expected at any time. They are described as having small greenish flowers with no petals. Fruit is a lenticular achene. Most of ours have the leaves pruinose at least beneath.

Key to species

A. Leaves and stems with sessile glands or glandular hairs; aromatic.	*Chenopodium botrys*
aa. Leaves and stems not glandular; not aromatic.	B
B. Seeds all or mostly horizontal.	*C. album*
bb. Seeds vertical.	C

C. Leaves green on both sides; plant of saline soils. *C. rubrum*
cc. Leaves densely pruinose; plant not restricted to saline soils. *C. glaucum*

Chenopodium album L.
Lamb's quarters; chénopode blanc

Photo by Martin Thomas

A common annual, it grows to 1m on stout angular stems, branching freely. Stems may be brownish yellow but with greenish or red striations. Leaves vary from ovate or lanceolate to hastate. Usually mealy or pruinose beneath; they may sometimes remain green. Margins are lobed or merely toothed. Flowers are perfect, green; petals are absent.

Young leaves are delicious in small quantities, raw or cooked.

Flowers throughout the summer.

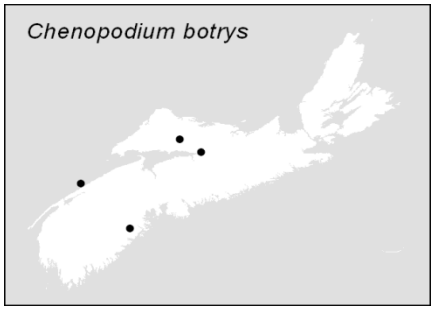
Wasteland, disturbed soil, weedy tendencies.

Very common throughout.

Ranges throughout North America.

Chenopodium botrys L.
Jerusalem Oak; chénopode botrys

Another annual growing up to 1m in height and bearing glandular pubescence. It gives off a strong odour.



Flowers in August.

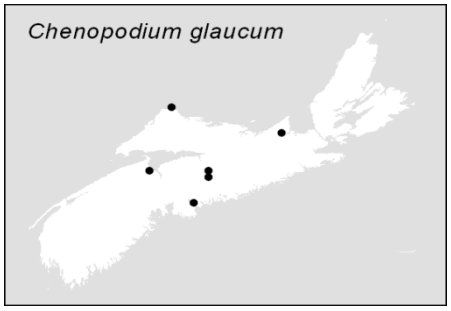
Roadsides and in disturbed soils. Casually adventive but not seen in many years until recently.

Historically found as a railroad weed in Lunenburg Co., at Fancy Lake., Young's Cove in Annapolis Co. Recently collected from Sutherland Lake, Bible Hill and other Colchester Co. stations.

Widely introduced from Eurasia.

***Chenopodium glaucum* L.**
Oak-leaved Goosefoot; chénopode glauque

Photo by Sean Blaney



A conspicuous species with dense mealy white coating on the undersides of the leaves. Decumbent stems may reach 40cm in length. Leaves are lanceolate, lobed around the margins, resembling oak leaves. Flowers are loosely arranged in a panicle, usually shorter than the leaves. Seeds erect.

Flowers July to October.

Frequents waste ground, roadsides and occasionally on cultivated land. Can be an aggressive invader.
Known historically from Mira, Shearwater and Truro. Recently located at Millbrook (Colchester Co.), Halifax and Gays River, Halifax Co. and at Island Point, Victoria Co.

Scattered across the continent; from Eurasia.

***Chenopodium rubrum* L.**
Coast Blight; chénopode rouge

Photo by David Mazerolle

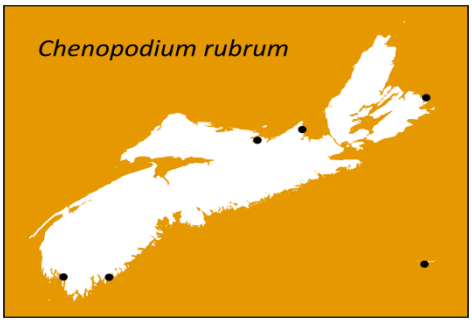
Resembling *C. album*, but for the position of the seeds. Leaves green, not pruinose beneath. Seeds vertical.

Flowers in August to November.

Coastal only: saltmarshes, beaches in saline soils.

Can form extensive colonies on newly-reclaimed dykelands. Common on Sable Island and collected from Northumberland region and Cape Breton.

Photo by Sean Blaney



NF to BC, south to NJ and CA.

STATUS: ORANGE-listed in NS.

Historical reports of western species of *Chenopodium* such as *C. dessicatum* and *C. murale* are questionable as no information nor specimens are extant.

Salicornia L.
Glassworts

Also known as samphire (a corruption of sand-fire) these fleshy halophytes are restricted to saline situations in North America. We have three of 25 species in Nova Scotia. Limited here to tidal flats and saltmarshes, ours are annual species, intolerant of competition.

Succulent green plants, they turn crimson in the fall. The leaves are reduced to minute scales, opposite on the stems. Each stem ends in an inflorescence, of three tiny perfect or pistillate flowers in pits along a succulent cyme.

Key to species

A. Leaves and bracts acute; cymes obscured by bracts, their segments twice as long as wide. *Salicornia bigelovii*

aa. Leaves and bracts not acute; central flower not obscured; cyme segments < twice as long as wide. B

B. Terminal axis cylindrical to sharply acute; cyme segments tubular; stamens mostly exerted. *S. depressa*

bb. Terminal axis and branches swollen, round at tip, cyme segments clavate; stamens rarely exerted. *S. maritima*

Salicornia bigelovii Torr.
Dwarf Glasswort, Samphire

Annual and erect, reaching no more than 40cm. Cymes may be up to 10cm in length subtended by acutely pointed bracts.

Summer flowering and only found in saltmarshes.

Distribution remains unknown without a re-examination of all of our material.

NS to TX, CA, Mexico and the West Indies.

Salicornia depressa Standl.
Glasswort, Samphire; salicorne de Virginie

Photo by Sean Blaney

Profusely branched, the branches tapering at the distal end. Fleshy cyme axis is 1.5–4.5mm thick. Stamens are noticeably exerted.

Flowers later, from August to November.

Coastal in saltmarshes and on tidal flats, where it is an early colonizer. Also found on newly-reclaimed dykelands and saltsprings.

Common around the entire coast where habitat is suitable.

NF and lower St. Lawrence River, south to GA; Pacific coast and on saline continental soils; Europe and Africa.

Salicornia maritima Wolff. & Jefferies

Photo by Sean Blaney

Less common than the previous species and distinguished by its thicker branches 4.5–6mm. Stamens barely exerted, or not at all.

Also flowers late summer.

Found above the mean high water level, in open areas or shallow depressions and at the edges of saltmarshes.

So far known only from Conrad's Beach, Halifax County and Cheverie, Hants Co.

NF to James Bay, south to the Bay of Fundy.

Salsola L.
Saltwort

Worldwide, there about 50 species of saltworts, with only two reaching Nova Scotia. Flowers are axillary and inconspicuous. The succulent leaves end in spines, especially towards the top of the plant.

Key to species

Leaves slender, but not threadlike; stems without red striations; limited to seashores.	*Salsola kali*
Leaves filiform; stems with reddish striations; waste places, rarely natural habitats.	*S. tragus*

Salsola kali L.
Common Saltwort; saule des vanniers

Photo by Sean Blaney

Photo by Ross Hall

Sprawling plant with many spreading branches. Sessile leaves are recurved, ending in a spine. Flowers are solitary in the leaf axils, subtended by spiny bractlets. Inconspicuous.

Flowers from July to October.

Sandy seashores.

Scattered around the coast in southwestern NS and common along the Northumberland Strait to Cape Breton.

Ranges elsewhere from NF to LA; eastern Europe.

Salsola tragus L.
Russian Thistle; soude roulante

Once included in the above species. Noticeable in our region by its presence about settlements and not on beaches. The reddish colour on the stems is also pronounced.

Summer-flowering.

Grows in light, sandy soils.

May have been introduced in feed or along railways. Reported from Halifax and Port Williams, Kings Co.

Throughout temperate and boreal North America. Absent in FL. Introduced.

Suaeda Forssk.
Sea-blite, Seepweed

A widely distributed genus, it includes approximately 50 species, Nova Scotia claims only three. All are succulent halophytes. Freely branched, their leaves are linear. Numerous flowers carried in clusters from 1–3 in the axils of reduced leaves. It is necessary to collect plants in fruit to identify to species.

Key to species

A. Calyx lobes equal in size, rounded distally, keeled but not forming a hood; leaves not wider at the base. *Suaeda maritima*

aa. Calyx lobes unequal, with at least one beaked and forming a hood; leaves variable. B

B. Leaves lanceolate; stem may branch from the base, prostrate; biconvex seeds of one type, black, <1.5mm wide. *S. calceoliformis*

bb. Leaves linear; stem branching midway, erect; seeds may be biconvex, reddish brown or black, >1.5mm wide - or- flattened, dull brown and 2.0mm wide. *S. rolandii*

***Suaeda calceoliformis* (Hook.) Moq.**
suéda couché

Photo by David Mazerolle

Photo by Sean Blaney

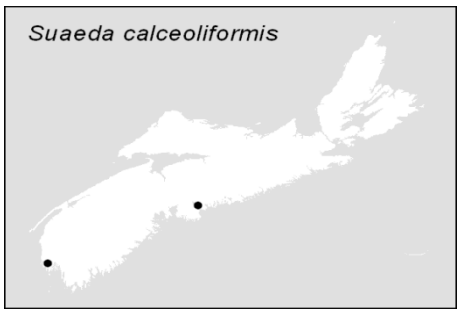
Mature plants have reddish-purple colour. These sprawling plants are usually prostrate on the soil.

Late flowering, from August to October.

Frequents seashores and saltmarshes, in sand.

Near Pictou and along the Northumberland Strait where large colonies are found. Scattered elsewhere but uncommon on the Fundy shores. Our collections do not reflect the known distribution at this time.

Ranges from Maritime Canada, lower St. Lawrence River to southern ME; James Bay; west coast; inland western continental.



***Suaeda maritima* (L.) Dumort**
Sea-blite; suéda maritime


Photo by David Mazerolle


Photo by Martin Thomas

A prostrate or erect plant, it reaches to 50cm. Leaves are numerous, long and slender, decreasing in size towards the top of the plant. Seeds are variable.

Seeds <1.5mm wide.	ssp. *richii*
Seeds 1.5–2.0mm wide.	ssp. *maritima*

Flowers during August and early September.

Saltmarshes, running dykes, often with *Salicornia*, another species intolerant of competition. Saltsprings.

Common around the coast, although ssp. *richii* (Fern.) Basset & CW Crompton is less common. It has been reported from Antigonish and Shelburne counties, Boylston, Guysbough Co. and Port Williams, Kings Co.

Its range is restricted to NF, NS to southern ME and MA.

As ssp. *maritima*, it ranges from Maritime Canada, St. Lawrence River, south to FL and LA; Hudson Bay, west coast.

***Suaeda rolandii* Bassett and Crompton**
Roland's Sea-blite; suéda de Roland

Little is known of this species in Nova Scotia to date. Its flowers are large and succulent, with the fruit maturing later than those of the species above.

Limited to saltmarshes and saline soil.

Collected from the head of the Bay of Fundy: Avonport, Kings Co.; Sweets Corner, Hants Co; Economy, Colchester Co.; as well as the Amherst marsh in Cumberland Co.

NS and the Petitcodiac River, NB.

STATUS: ORANGE-listed for Nova Scotia.