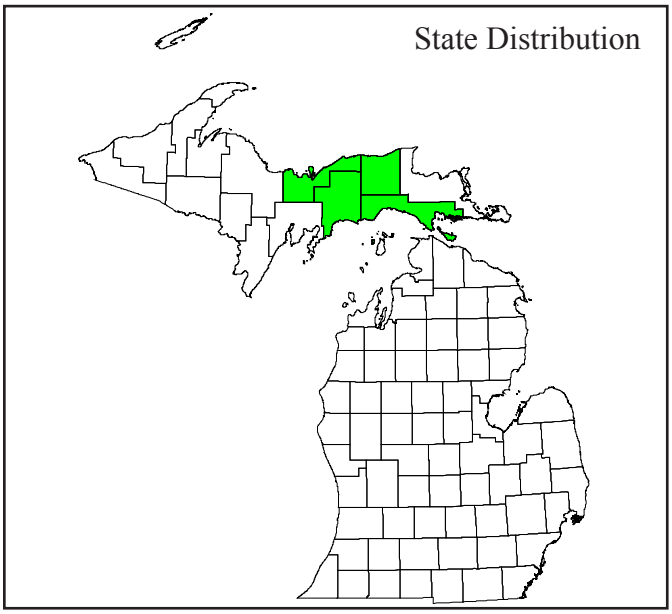
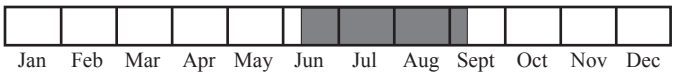
Stellaria longipes Goldie — stitchwort

Photo by Susan R. Crispin



Best Survey Period



Status: State special concern

Global and state rank: G5/S2

Other common names: long-stalked or long-stalk starwort

Family: Caryophyllaceae (pink family)

Synonyms: *Alsine longipes* (Goldie) Coville, in addition to numerous synonyms for subsp. *longipes* as detailed in the current treatment in Flora of North America (2005).

Taxonomy: *S. longipes* is regarded by Voss (1985) as appearing to be very distinctive in Michigan but somewhat difficult to distinguish within a key. This wide-ranging and highly variable species is widely known as representing a taxonomically difficult complex, as described in detailed overviews by Macdonald and Chinnappa (1988) and Chinnappa and Morton (1984, 1976). Owing to a high degree of variability in several morphological traits, *S. longipes* has been recognized by some taxonomists as consisting of a number of distinct taxa, whereas others regard it as a single variable species (Macdonald and Chinnappa 1988). For North America, the *S. longipes* complex is divided into the typical subspecies, *longipes*, and the endemic subsp. *arenicola* (Raup) C.C. Chinnappa & J.K. Morton, the latter known only in Canada along the southern periphery of Lake Athabasca (Flora of North America 2005).

Range: In the broad sense, *S. longipes* is a circumpolar species, occurring in North America through most of Canada and ranging south in the United States to New England, the Upper Midwest, and south in western states through the Rocky Mountains. It is considered rare in Minnesota, New Brunswick, and New York (NatureServe 2006).

State distribution: This species is known from nearly 20 localities, occurring primarily in the coastal dunes of the central and eastern Upper Peninsula in Alger, Chippewa, Luce, Mackinac, and Schoolcraft counties. It is also know from one site in the Lower Peninsula in Charlevoix County, where it has been observed on High Island in the Beaver Island archipelago. Mackinac and Schoolcraft counties alone account for the vast majority of sites (14).

Recognition: *Stellaria longipes* is a relatively low, somewhat delicate perennial species arising from rhizomes, ranging from a few centimeters up to 20-30 cm in height, the stems terminated by **sparse, umbel-like inflorescences (cymes) composed of few flowers**. The stems are leafy, with **stalkless, linear, and strongly ascending leaves that taper from the base to the tip**

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and may be somewhat crowded on the stem. Within the inflorescence, the white, five-petaled flowers, which commonly number from 1-5 (and occasionally to as many as 10), are borne on long stalks (pedicels), with **small bracts that are thin, dry, and paper-like in texture (scarious)**. *S. longipes* is superficially similar to *S. longifolia* and *S. graminea*, both of which are unlikely to occur with it. *S. longifolia* is a native species found in association with wetlands and swamps and the latter is a non-native weed found mostly in disturbed ground and moist, grassy habitats; both of these species are much larger plants with strongly divergent or reflexed inflorescences (at maturity), and tend to have leaves that are spreading and less ascending.

Best survey time/phenology: This species is best sought when flowering or fruiting, which based on observation and collection records, occurs from approximately early June through early September.

FQI Coefficient and Wetland Category: 10, OBL

Habitat: Stitchwort is a plant of open dunes and beaches, occurring almost exclusively in Great Lakes coastal dune systems and principally on the shores of Lake Michigan and Lake Superior. Typical associates include the many common and characteristic species of these shoreline communities, such as *Ammophila breviligulata* and *Calamovilfa longifolia* (dune grasses), *Lathyrus japonicus* (beach pea), *Artemisia campestris* (wormwood), the state threatened *Tanacetum huronense* (Lake Huron tansy), *Asclepias syriaca* (common milkweed), the state threatened *Cirsium pitcheri* (Pitcher's thistle), *Solidago simplex* (Gillman's goldenrod), *Arabis lyrata* (lyre-leaved rock-cress), *Salix myricoides* and *S. cordata* (dune willows), *Arctostaphylos uva*-ursi (bearberry), *Juncus balticus* (rush), and *Zigadenus glaucous* (white camass), among many other typical and expected associates of Michigan's extensive coastal dune complexes. Elsewhere within its circumboreal range, stitchwort occurs in grassy sites along streams, in moist gravels and sands (Gleason and Cronquist 1991), and especially in western North America on stony alpine slopes as well as tundra habitats in Alaska (Flora of North America 2005, Hultén 1968).

Biology: *S. longipes* is a rhizomatous perennial. With respect to sexual reproduction, Chinnappa and Morton (1984) found in a comprehensive biosystematic study that all populations examined were self-compatible, yet most required insects for successful pollination. This species is thus a facultative outbreeder (Macdonald and Chinnappa 1988). Despite being a well-known polyploid species (i.e. having populations with multiple sets of chromosome numbers), researchers have found no relationship between chromosome level, morphological variations, and taxonomic classification (Macdonald and Chinnappa 1988). As indicated by the number of different temperate habitats occupied throughout its range, including open dunes, prairie, alpine, and tundra communities, *S. longipes* is adapted to relatively harsh environments with climatic extremes and natural disturbance, the latter including wildfire and significant soil movement through a variety of mechanisms such as slope erosion, excavation, and also deposition through wind and water action.

Conservation/management: Several localities occur on public land, including state designated critical dune areas, state forest, national forest, one environmental area, and also within a national lakeshore, where occurrences are protected along with their rare associates, including several federally listed plant and animal species. Sites should be carefully monitored for excessive recreational activities and incursions by illegal off-road-vehicles (ORVs). Invasive plants also comprise a significant threat, particularly such species as *Centaurea maculosa* (spotted knapweed), *Gypsophila paniculata* (baby's breath), and *Saponaria officinalis* (soapwort), among others, including several species well-known to migrate along roads and other rights-of-way corridors into vulnerable natural habitats.

Research needs: *S. longipes* has been the object of a considerable number of comprehensive taxonomic, genetic, breeding system, and physiology studies (see citations below), with additional studies currently in press (see comments in Macdonald and Chinnappa 1988). Basic population data, however, are lacking for most of Michigan's populations, and thus more detailed inventory is suggested to address this information gap as well as to survey for additional localities. In addition, long-term population monitoring is also desirable to help guide future management activities and also determine the response of populations to artificial disturbance and particularly the prolonged lowering of Great Lakes levels due to cyclical or human-induced climate change.

Related abstracts: open dunes, Caspian tern, common tern, dune cutworm, Lake Huron locust, piping plover, prairie warbler, acute-leaved moonwort, calypso, dwarf lake iris, Houghton's goldenrod, Lake Huron tansy, prairie moonwort, Pumpelly's brome grass, ram's head orchid, Western moonwort.

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Abstract citation:

Penskar, M.R. 2009. Species plant abstract for stitchwort (*Stellaria longipes*). Michigan Natural Features Inventory, Lansing, MI. 3 pp.

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MSU Extension is an affirmative-action, equal-opportunity organization.

Funding for abstract provided by the Michigan Department of Transportion.