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THE VASCULAR FLORA AND PLANT COMMUNITIES OF
SEWARD COUNTY, NEBRASKA

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A recent botanical survey of Seward County in southeastern Nebraska recognizes ten representative plant communities including four major vegetation zones (tall-grass prairie, eastern deciduous forest, floodplain woodland and lowland [floodplain] prairie), and a total of 599 species of vascular plants representing 324 genera in 95 families. Three hundred seventy-five species were not previously reported for the county. Although the study area includes an interesting topographic and perhaps physiographic boundary formed by the terminal moraine of the Kansan glaciation, no evidence supporting an analogous floristic boundary was found.

INTRODUCTION

The foremost objective of this study was to compile as complete a list as possible of all species of seed-bearing plants and ferns, native and introduced, that were not under cultivation within Seward County, Nebraska, and to document these with voucher specimens. In addition, the habitat of each species was observed and recorded, with information about habit, provenance, and frequency of occurrence, to gain a better understanding of the distribution of each plant in its environment and of the overall character of the flora. From this information, the plant communities or species associations occurring in the county were described. Furthermore, it is hoped that the study will provide incentive for further floristic and ecological studies in this area.

This is the first published botanical survey of a southeastern Nebraska county, and only the third published county flora survey for the state, the others being that of Urbatsch and Eddy (1973) for Dawes County in northwestern Nebraska, and Churchill (1977) for Cuming County in northeastern Nebraska. My study was conducted over the flowering seasons of 1983–1988. About 100 sites throughout the county, representing all possible vegetation zones, were studied, and a dozen were sampled throughout the growing season. In addition, surveys of the herbaria of the University of Nebraska–Lincoln (NEB); Concordia Teachers College, Seward; and the Seward Senior High School were undertaken, and information from several collections at the herbarium of the University of Kansas (KANU), Lawrence, is included. A total of 599 species and 12 subspecies or varieties, representing 324 genera in 95 families, is reported, along with four plants new to the State (Arabidopsis thaliana, Fumaria vaillentii, Leonurus sibiricus, and Potentilla argentea). Several rare species and noteworthy range extensions are reported, including Acorus calamus, Agrimonia pubescens, Carya cordiformis, Cassia marilandica, Clematis terniflora, Cryptotaenia canadensis, Delphinium tricorne, Echinodorus rostratus, Elymus virginicus var. glabiflorus, Erechtites hieracifolia, Habenaria leucophaea, Haplopappus ciliatus, Leonurus marrubiastrum, Lespedeza cuneata, Mentha spicata, Penstemon cobaea, Pilea fontana, and Rorippa austriaca. Many of these are accounted for in detail in Sutherland and Kaul (1986), Rolfsmeier et al. (1987), and Rolfsmeier et al. (1988). All voucher specimens from this study are deposited at the University of Nebraska–Lincoln Herbarium (NEB) unless otherwise noted.

The earliest known botanical records from Seward County are several collections now in NEB made by Samuel Aughey in the fall of 1873; two (Agalinis aspera and Mirabilis cf. albida) have never been recollected in the county. The earliest published record of plants in the county was that of H. L. Webber (1890), which indicated 22 species based on Aughey’s specimens and his own collections. N. F. Petersen (1923) noted 12 species, including four not published by Webber, based on material in NEB at that time. The flora was sporadically collected for the next 65 years, the most active collectors being, chronologically,
LOCATION AND SIZE

Seward County is in southeastern Nebraska, in the third tier of counties north of the Kansas border, and in the third tier west of the Missouri River (Fig. 1). It is bordered on the south by Saline County, on the west by York County, by Butler County to the north, and by Lancaster County to the east. The county is approximately 38.6 km (24 miles) square, with a total area of 148,262 ha (366,080 acres) (Quandt, 1974).

Physiographically, the county is situated in the vast “Interior Plains” of central North America at the transition between the Central Lowlands of the east and the Great Plains, this vaguely-defined boundary being formed in part by the Big Blue River (Fenneman, 1931).

The advent of continental glaciers during the Pleistocene Epoch had a much more profound effect upon Seward County’s present topography. The east-central portion of the county was covered by the earliest (Nebraskan) glaciation, and the entire county was covered by the maximum advance of the succeeding glaciation (Kansan). The final advance of the Kansan covered the eastern one-fifth of the county and resulted in formation of drift hills in this area. The terrain from this portion of the county west to the Blue River consists of glacial till overlain by Love-land loams and Peoria loess. West of the Blue River, the material above the bedrock is primarily glacial outwash (Pleistocene sand and gravel), also covered by loam and loess. The exact sequence of sedimentary deposition during the melting of the glaciers, which is quite complicated and not fully understood, is hypothesized by Goll (1961) and Wayne (1981).

Six major soil associations are recognized in the county, coinciding approximately with the major vegetation zones: Pawnee-Sharpsburg and Burchard-Steinauer soils (silt and loam, mantled by loess and glacial till) are associated with upland tall-grass prairie and oak woodland in the extreme eastern portion; Hastings-Wymore (silty soil covered by loess) occurs in the moderately rolling prairie between the glacial moraine and the Blue River; Hastings-Fillmore-Butler (silty, loess-mantled soil) is found in the high, nearly level plain in the western half; and Hastings-Geary and Hobbs-Hall silty soils comprise most of the river and creek bottoms and floodplains (Quandt, 1974).

TOPOGRAPHY AND DRAINAGE

The highest elevation in Seward County is 445 m near the northwest corner of the county; the lowest is 378 m along the south branch of Middle Creek northeast of Pleasant Dale, giving a total relief of 67 m. The landscape slopes generally to the southeast, the uplands consisting of somewhat steep to moderately rolling drift hills in the east, and high, nearly level loess plains in the west half of the county (Fig. 1 [adapted after Dreeszen, 1973]). Lowlands, consisting of bottomlands and stream terraces associated with floodplain of the Blue River and its tributaries, separate the two landscape types, and are also interspersed throughout the uplands elsewhere in the county.

The glacial till ridge in the eastern part of the county is the major stream divide. Streams west of this divide flow eastward and southward into the Blue River; those to the east continue eastward, eventually draining into Salt Creek in Lancaster County; and those between the moraine and the Blue River flow to the south and west (Fig. 2). Most of the county is well drained, except portions of the level loess plains in the west-central part, where several large seasonal marshes and basins are found. Two large, natural rainwater basins are north of Utica; these appear to have been formed by wind erosion during the late Pleistocene or more recently (Goll, 1961).
FIG. 2  POLITICAL MAP OF SEWARD COUNTY, NEBR.
WITH FREQUENTED COLLECTING SITES
CLIMATE

Seward County, and Nebraska as a whole, are typified as having a continental climate, characterized by warm summers punctuated by intermittent thundershowers, and cold, dry winters (U.S. Department of Commerce, 1963). The long-term mean temperature reported for Seward from 1891 to 1960 was 11.1°C, and the mean annual precipitation for this same period was 68.20 cm (Goll, 1961). Table 1 provides average monthly temperatures and precipitation totals for Seward.

The average dates of the last 0-degree frost in Spring and the first in Fall are 30 April and 12 October, giving a frost-free growing season of 164 days.

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Precipitation (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>-5.4</td>
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<tr>
<td>February</td>
<td>-2.3</td>
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<tr>
<td>March</td>
<td>3.5</td>
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<td>11.1</td>
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<tr>
<td>May</td>
<td>16.9</td>
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<tr>
<td>June</td>
<td>22.4</td>
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<td>July</td>
<td>25.6</td>
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<td>24.2</td>
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<tr>
<td>September</td>
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<tr>
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<td>12.9</td>
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<tr>
<td>November</td>
<td>4.0</td>
</tr>
<tr>
<td>December</td>
<td>-2.1</td>
</tr>
<tr>
<td>Annual mean</td>
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</tbody>
</table>

*Compiled from climatological summaries (U.S. Dept. of Commerce, 1963 and 1980)

PLANT COMMUNITIES

The native plant communities of Seward County can be divided into three broad categories: wetlands, prairie, and woodlands. Each of these vegetation zones has a considerable amount of species diversity influenced by such factors as slope, drainage, soil type, water level, and degree of disturbance. This variability is taken into account by delineating these vegetational types into more specific, workable associations based on species composition. Since many species occur along gradual environmental gradients, the boundaries of these habitat associations are not always well-defined (particularly in the wetlands category), and a single species may be common in several communities.

Ten representative plant communities are described here, based upon dominant species and other associated plants. These include four major "vegetation zones" (tall-grass prairie, floodplain prairie/meadow, eastern deciduous forest, and floodplain woodland) that once covered major portions of the county, as indicated by the vegetation map (Fig. 3). These zones generally coincide with those indicated by the vegetation map of Nebraska (Kaul, 1975).

Wetland communities

Aquatic community

The aquatic habitat includes vegetation of standing water that remains throughout the growing season, such as lakes and ponds, and consists of rooted or free-floating, submerged and floating-leaved plants. The most common are the submerged, rooted plants, such as pondweeds (Najas guadalupensis, Potamogeton folius, P. nodosus, P. pectinatus, P. pusillus, and Zannichellia palustris) and the submersed, free-floating Ceratophyllum demersum. Free-floating, non-submersed plants such as the duckweeds (Lemna minor, L. perpusilla, Spirodela polyrhiza, and Wolffia columbiana) are often abundant, particularly in still water of quiet bays. In addition, some normally emergent plants may grow submersed, where they remain sterile; Echinodorus rostratus, which produces linear submersed leaves and large, heart-shaped floating leaves in deep water, is a good example of this.

Seepage community

The seepage area is permanent wetland associated with spring beds or ponds in wooded areas or prairie ravines. It is characterized by saturated, springy soil and cold, clear, often running water. Several aquatic species, particularly Lemna minor and Potamogeton folius, may be present here, along with several hydrophytic herbs that are unique to this community in the county, such as Cyperus strictus, Glyceria striata, Pilea fontana, and Veronica catenata. A number of plants that are encountered occasionally along the margins of ponds and marshes may occur more commonly in the seepage habitat: Carex stipata, Cicutta maculata, Epilobium coloratum, Equisetum arvense, Lobelia siphilitica, Lysimachia ciliata, Mimulus ringens, Penthorum sedoides, and Sagittaria latifolia.

Marsh/riparian community

This habitat consists of seasonally flooded streambanks, temporary ponds, and somewhat saturated flatlands that contain standing water for part of the growing season. This is a rather broad designation that could perhaps be better treated as separate associations based on more specific vegetational and hydrologic characteristics; however, it is treated here as a single entity because of a general similarity in overall species composition.

The array of species is highly dependent on the water level and frequency of flooding, and different dominant species may form distinct zones representing various degrees of succession, the species makeup of each being determined by underlying
environmental conditions (Mitsch and Gosselink, 1986). A few aquatic plants are likely to occur in marshes that remain saturated through much of the growing season, but emergent hydrophytes are the most common constituents of this community.

Freshly-exposed mud at the edge of ponds and shallow marshes often abounds with annual emergents. The most common are Allopecurus carolinianus, Ammannia coccinea, Bidens cernua, Cyperus erthrorhizos, C. odoratus, Eleocharis obtusa, Lindernia dubia, Myosurus minimus, Ranunculus sceleratus, and Sagittaria calycina. Perennial emergent herbs may also be found here, but are more common in shallow water or on less freshly-exposed mud farther from the shore. This group is dominated by a number of monocot species, including Agrostis hyemalis, Alisma triviale, Eleocharis eurythropoda, E. macrostachya, Leersia oryzoides, Sagittaria brevior, and Sparganium eurycarpum. A number of dicot herbs are often scattered through this zone as well, such as Asclepias incarnata, Lycopus americanus, Mentha arvensis, Polygonum hydropiper, P. amphibium, P. lapathifolium, P. punctatum, Rorippa palustris, Rumex stenophyllus, Scutellaria lateriflora, and others.

Areas along marshes and particularly shorelines that have been free of substantial flooding for several years are likely to be invaded by aggressive perennial species that push out competitors almost completely. The most common are Phalaris arundinacea, Typha angustifolia, T. latifolia, and Salix exigua. Lythrum salicaria, a very aggressive, recently-introduced wetland invader that is becoming a major weed in some parts of the state, is known from just outside the county at Branched Oak Lake in northwestern Lancaster County (Sutherland and Kaul, 1986), but has not yet been found in Seward County.

Prairie communities

Tall-grass prairie community

The tall-grass prairie is an upland community dominated by the warm-season grass Andropogon gerardii, which in drier uplands and hilltops may be occasionally codominant with Andropogon scoparius or Sporobolus heterolepis. Other major grasses in this community include Agropyron smithii, Bouteloua curtipendula, Dichanthelium oligosanthes, Elymus canadensis, Koeleria pyramidata, Panicum virgatum, Sorghastrum nutans, and Stipa spartea. Other grass-like plants (sedges and rushes) which are sometimes common in the prairie include Carex brevior, C. gradata, C. meadii, and Juncus interior. Equisetum laevigatum, which may appear grass-like, is the only peridophyte common to prairies in the county.

Other species associated with tall-grass prairie in the county include a number of important leguminous plants, the most common of which are Amorpha canescens, Dalea candida, D. purpurea, Desmodium illinoense, Lespedeza capitata, Psoralea argophylla, and P. tenuiflora.

Forb species from a variety of families occur throughout the year in the tall-grass prairie, and the major forb constituents appear to vary throughout the growing season. In the spring (late March through May), Antennaria neglecta, Astragalus crassicarpus, Comandra umbellata, Lithospermum incisum, Lomatium foeniculaceum, Oxalis violacea, Senecio platensis, Sisyrinchium campestre, and Viola pedatifida may be commonly found in flower in various upland prairies in the county. In early to mid-summer (June–July), most of the aforementioned legume species may be found in full bloom, along with a variety of other forbs such as Allium canadense, Asclepias viridiflora, Astragalus canadensis, Cacalia plantaginea, Calystegia macrophylla, Delphinium virescens, Echinacea angustifolia, Eriogonum artemisiaefolium, Euphorbia dentata, E. maculata, E. nutans, Lepidium virginicum, Liatris punctata, and Rudbeckia hirta. Late summer and fall forbs (those that may begin to flower in July, but reach a flowering peak in August and September) are predominately composites. Goldrods are usually the most common wildflowers in the tall-grass prairie uplands of Seward County at this time of the year; the most common species are Solidago canadensis, S. gigantea, S. missouriensis, S. rigida, and S. speciosa. Other common composite species include Ambrosia psilostachya, Artemisia ludoviciana, Aster ericoides, Cirsium flodmani, Helianthus rigidus, Heliopsis helianthoides, Hieracium longipilum, Kuhnia eupatorioides, and Liatris punctata. Non-composite forbs are not as floriferous at this time of the year, but Salvia azurea is commonly found. Others, such as Desmodium canadensis, Gaura longiflora, Gentiana puberulenta, and Lotus purshianus, may be locally common.

In addition to herbaceous forbs, several woody species may be found in the prairie, particularly when a site has been free of fire for a number of years. Juniperus virginiana is the only native tree found commonly in many prairies, particularly in areas where grazing is frequent. Rhus glabra is usually the most common shrub, often forming a broad transition zone between prairie and adjacent woodlands. Symphoricarpus occidentalis and S. orbiculatus are other common constituents of this zone of shrubby plants. Several shrub-like plants are also found in the prairie proper — Amorpha canescens, Ceanothus herbaceus, and Rosa arkansana — though they rarely attain the size of their transition zone counterparts. Toxicodendron radicans is an example of a woody vine found in prairies bordering woodlands, but it occasionally assumes a more upright habit in this community.

Disturbed areas in prairies, such as gopher mounds, exposed ridgetops, and cowpaths, tend to have a flora somewhat distinct from their surroundings, and form a somewhat separate community within this habitat. Annual and biennial “fugitive species” make up the bulk of this vegetation, which includes more-or-less weedy species such as Cassytha chamaecrista, Cymose canadensis, Euphorbia dentata, E. maculata, E. nutans, Lepidum
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Woody vines are best represented in the oak woodland community and occasionally make up the greater part of the ground cover. *Parthenocissus vitacea* is particularly abundant, along with *Celastrus scandens, Menispermum canadense, Smilax hispida,* and *Toxicodendron radicans.*

Grasses and sedges are not major components of the woodland floor vegetation. *Carex cf. aggregata, C. amphibola, C. blanda, Elymus villosus, Festuca obtusa,* and *Muhlenbergia mexicana* are a few of the more common of this group, but none is ever found in particular abundance.

The forb flora of the eastern deciduous forest, on the other hand, is quite rich and diverse. In the early spring, *Dicentra cucullaria* and *Erythronium albidum* occasionally form an extensive ground cover on deep woodland slopes. *Arisaema triphyllum, Osmorhiza longistylis, Polygonatum biflorum, Smilacina stellata,* and *Viola sororia* are other frequently-found constituents of the spring woodland flora. Late spring to early summer brings a peak in flowering plants in the oak woodland. Along with most of the shrubs and vines, a number of herbaceous species, including *Botrychium virginianum, Cryptotaenia canadensis, Desmodium glutinosum, Galium circaeaeans, Phryma leptostachya,* *Sanicula canadensis, Teucrium canadense,* *Silene stellata,* *Smilax herbacea,* *Teucrium canadense var. canadense, Thalictrum dasycaarpum* and *Triosteum perfoliatum* may be found in flower at this time. In the late summer and fall, the understory flora becomes relatively sparse, with a few sturdy herbaceous forbs such as *Agastache nepetoideae, Agrimonia pubescens, Campanula americana, Laportea canadensis, Scrophularia marilandica* and *Verbesina alternifolia* present, along with more delicate annuals such as *Acalypha rhomboidea, Amphicarpaa bracteata,* and *Chenopodium pteris.*

**Floodplain forest community**

Floodplain woodlands occur in poorly drained lowlands along streams and creeks throughout the county, and are subject to seasonal flooding. The dominant trees in this community include *Acer negundo, Acer saccharinum, Celtis occidentalis, Fraxinus pennsylvanica*; occasional stands of *Gleditsia triacanthos, Juglans nigra, Ulmus americana,* and the introduced *Morus alba* are also present. In particularly low, disturbed places closer to the water’s edge, *Populus deltoids, Salix amygdaloidea,* and *S. exigua* may be common or even dominant. Other typical woody vegetation includes shrubby plants such as *Euonymus atropurpureus, Prunus virginiana, Ribes missouriense,* and *Sambucus canadensis,* along with vines such as *Parthenocissus vitacea* and *Vitis riparia.*

Grasses and sedges are far better represented in this community than in the previous one. In some floodplain forests, *Leersia virginica* forms a thick and extensive ground cover. Other frequent species include *Carex amphibola, C. blanda, C. davisi,* *Cinna arundinacea, Elymus virginicus var. virginicus, Muhlenbergia bushii,* *Muhlenbergia frondosa,* and *Muhlenbergia racemosa.*

As floodplain forests are characterized by a great degree of disturbance, much of the understory forb flora is typified by weedy annual and biennial species of shaded places, such as *Acalypha rhomboidea, A. virginica, Chenopodium giganteospermum, Hackelia virginiana, Pilea pumila, Ranunculus abortivus,* and *Sicyos angulatus.* Perennial, non-weedy herbs are well-represented in this community too, and include *Eupatorium rugosum, Leonurus cardiaca, Rudbeckia laciniata, Teucrium canadense var. canadense, Verbena urticifolia* and *Viola pratincola.* *Urtica dioica* is a very aggressive weedy perennial that is often found in more mesic bottoms.

The floras of the floodplain and eastern deciduous forests frequently intergrade. Patches of oak often occur on high bluffs above floodplain woodland along the Blue River and its west fork, particularly in sites associated with glacial till. In other better-drained riparian woodlands, oak and hickory may be absent, yet many of the oak understory components are present. Additionally, the bottomlands of oak woodland often contain a flora typical of less-disturbed riparian woodlands. If a particular plant is found frequently in both habitats, it is included in oak forest (OF) in Table II if it is most frequently encountered on upland banks or slopes, or in floodplain forest (FF) if it is usually found in more mesic bottoms.

**“Man-made” habitats (disturbed ground)**

“Disturbed ground” includes all areas in which the ground cover has been primarily affected by human activity. This is an extremely broad designation including roadside ditches, lawns, gardens, abandoned fields, feedlots, pastures, overgrazed range-land, thickets, shelterbelts, waste areas, and the like.

Many plants typical of prairie habitats occur commonly in these areas, particularly in roadside ditches that bordered prairies at one time. In many cases, the adjacent prairie may have been destroyed or become overgrazed, and these ditches are the only clue as to what the native vegetation in the area was like. In cases such as this, a species occurring in a relatively undisturbed roadside ditch is recorded as a member of the natural habitat from which it originated. All other species of disturbed places are designated by “DG” in the annotated list.

The ground cover of most disturbed habitats is typically seeded grasses such as *Agropyron intermedium* or *Bromus inermis* and/or a bevy of native and introduced, annual and perennial grasses and “weeds.” The range of vegetation types and species common to each type of disturbance is extensive and therefore, aside from the following category, no attempt has been made to provide more than a general description of this community, which presently characterizes the vast majority of the land in Seward County.
Prairie restorations

Three small (several-hectare) prairie re-seedings are known in the county (SE ¼ S34, T11N R3E; NW ¼ S8, T10N R4E; and NW ¼ S22, T10N R4E). The first two are on private land and are approximately 30 years old. The forb flora of the two is very similar, and has spread to a limited degree outside the bounds of these restorations. The third is at the Twin Lakes Wildlife Management Area and is apparently younger, with a more limited array of forb species.

Some species known infrequently elsewhere in the county, such as Desmodium canadense, Lotus purshianus, and Rudbeckia hirta, are common in some of the restorations. Other species are found here that are native to the Great Plains, but are not known to occur naturally in the county. Baptisia lactea, Eryngium yuccifolium, Helianthus mollis, Liatris pycnostachya, and Penstemon digitalis are among the most conspicuous examples. The two older restorations appear to be wildflower-rich native prairie remnants upon first glance, but a closer examination reveals large populations of cultivated legumes such as Lotus corniculatus and Trifolium pratense. Nevertheless, because the species of these tracts are likely to persist and even spread, and could be mistaken for relicts by those not familiar with the flora of the county, they are afforded a separate category here.

ASSESSING THE VEGETATION

Because no botanical records have been kept for Seward County, the original flora is not easily determined. A few old collections have given a very sketchy picture of what flora was here before the advent of European settlers, but the record is far from complete. The vegetation map (Fig. 3, page 111) is an attempt to present the flora of the county as it was prior to the arrival of the early settlers, and is based on the remaining natural flora and on accounts by the early surveyors from about 1850 (on microfilm at the Nebraska State Historical Society). The modern flora of this map differs from the original flora in that the zone of floodplain woodland was probably less extensive and the oak woodlands were probably more widespread. The surveyors’ reports indicate that certain stretches of the Blue River and its tributaries were at one time virtually treeless. Most of this area is bordered by floodplain woodland today, due no doubt to the absence of prairie fires in recent times. A large amount of lumbering apparently occurred in the oak woodlands in the county, particularly those near Garland, from which firewood was taken for use at the salt works in Lincoln one hundred years ago (Olney, 1887). Despite this, much of the original woodland remains intact, though the ratio of oak to hickory is presently much greater than the 3:1 suggested by Weaver (1965) for typical, undisturbed oak-hickory woodlands. A small area of uncut gallery forest is known from S28, T12N R4E. Several old-growth hickories are found nearby.

As noted earlier, the vast majority of the native vegetation in Seward County, particularly the prairies, has disappeared as a result of agriculture. The Nebraska Conservation Needs Committee (1969) reported 14,859 ha, or about 10% of the county, was in native grass (rangeland) in 1967, but over 12,000 of these were noted as having a plant composition “in need of improvement.” Only about 12% of the native grassland in the county was reported as undisturbed or grazed in accordance with good range management practices. The inventory also reported 2436 ha (ca 1.6% of the county) in woodland, about a third of which was grazed. All in all, representative stands of native vegetation in Seward County, as in much of southeastern Nebraska, are few and far between.

The majority of the remaining native stands of grassland and oak forest in the county are located in the loess hills east of the glacial moraine, where the topography often makes farming unsuitable. Virtually all native prairie in the relatively flat loess plain west of the Blue River has been annihilated. Consequently, most of the habitat descriptions and the species list in this paper are compiled from collections of the eastern half of the county.

Though few data are available for the western half of Seward County, it is assumed that the prairie that existed there was not appreciably different in species composition from the prairie remnants in the eastern part. A small prairie remnant in S17, T11N R2E is being studied, and so far no species that are unknown in the eastern half of the county have been found. Because few suitable relicts have been located west of the Blue River, no indices of similarity have yet been calculated to compare the flora of these two halves, though sampling is currently being carried out in several prairies in hope of resolving this problem. Edaphic differences may be responsible for a few differences observed in the flora of the two halves, such as the presence of Buchloe dactyloides, a species of western phytoecologic affinity, in only the west half of the county, where it is apparently native and was probably quite extensive at one time. Two prairie remnants just over the county line in southeastern York County have a forb composition similar to that of several prairies in eastern Seward County.

The wetland flora of the western half of county, on the other hand, is far better represented than in the county as a whole. Collections from marshes and other wetlands throughout the county indicate a stronger separation between east and west than is evident in the prairie flora, though this may be due to topographic rather than biogeographic factors.

East of the Blue River, the wetland flora is basically riparian, and its components are those described in the marsh/riparian section of this paper. Most of these plants are also present in two marshes studied near Goehner and Utica, in addition to a number of species not present in the eastern wetlands. This may be due to the fact that extensive marshland is found only in the most poorly drained parts of the county (i.e., in the western half), and many wetland habitats in the eastern half are man-made and
relatively young. The additional species in the western half include *Bacopa rotundifolia*, *Elatine triandra*, *Elycharis acicularis*, *Heteranthera limosa*, *Marsilea vestita*, *Sagittaria graminea*, *Stachys palustris*, and *Teucrium canadense* var. boreale. Additionally, several collections made from the Utica site in the early 1950’s document that *Sagittaria rigidula* and *Utricularia vulgaris* were once components of this flora. Despite this, there is no conclusive evidence that supports a natural west-east phytogeographic separation of the wetland flora, even though some of these species (*Marsilea vestita*, *Sagittaria graminea*) appear nearly restricted in range in Nebraska to marshes of the loess plain region.

Lacking substantial specimen evidence for the west half of the county, it is difficult to determine whether a floristic boundary exists that is analogous to the physiographic boundary proposed by Fenneman (1931), but it is likely that there is not. It is not difficult, however, to assess the future of native vegetation tracts in Seward County. Several sites have been destroyed since the beginning of this study, and others continue to lose species due to poor management. The county’s spraying program has caused some roadside prairie refugia to disappear. Attempts have been made to preserve some habitats; the State Game and Parks Commission has purchased a large tract of oak woodland north of Garland and a portion of the Utica rainwater basins within the last five years (Fig. 2). Despite these efforts, the native flora is disappearing. It is hoped that this paper will serve as a record of the vegetation of Seward County as it once existed, and will assist in future studies of the changes in the vegetation zones of this area and their components.

**THE VASCULAR FLORA OF SEWARD COUNTY, NEBRASKA**

The following list (Table II) contains all species of vascular plants occurring in Seward County, except for cultivated species that do not escape or reproduce significantly in the wild. Plants are arranged alphabetically by family and species, and are grouped according to division. Nomenclature conforms to Great Plains Flora Association (1986), referred to as “Flora GP” from here on. Subspecies and varieties are included where these entities are considered distinct by the author.

Along with the species name, information concerning collection status, habit, provenance, flowering phenology, habitats, and abundance within the habitat is included. To conserve space, a series of symbols has been employed for each of these categories. Categories and their symbols are explained below:

**Name**

When available, common names are included after the Latin name for each species in the list, and are taken from the Great Plains Flora Association (1977) (“Atlas”). *Flora GP* and other regional keys. If a plant in the list appears under a different name than that given in the *Atlas*, the *Atlas* synonym is provided in parentheses.

**Collection Status (S)**

1. Species reported for Seward County in the *Atlas* and recollected by the author.
2. Species not reported for Seward County, but collected by author and specimen deposited at NEB.
3. Species reported in the *Atlas*, not recollected by author.
4. Species not reported for Seward County in the *Atlas*, or reported under an erroneous name, collected by someone other than the author.

**Habit (H)**

A Annual herb
B Biennial herb
P Perennial herb
T Tree
S Shrub
V Woody Vine

**Provenance (P)**

N Native
I Introduced

**Flowering phenology (Fl)**

This is represented by two numbers, indicating months in which the plant begins to flower (or bear reproductive structures in the case of non-flowering plants) and ends flowering. The months of February through September are represented by the numerals 2-9; October is “0” and November “1”, hence “71” is interpreted as “plant flowering July through November.” Anthesis data is from the *Flora GP* and other regional floras, and is modified, when possible, to fit local field observations.

**Habitat (Hbtat)**

AQ Aquatic
SA Seepage Area
MR Marsh/Riparian
TP Tall-grass Prairie
SP Sandy Prairie
FM Floodplain Prairie
OF Eastern Deciduous (Oak) Forest
FF Floodplain Forest
DG Disturbed Ground
PR Prairie Restoration

**Abundance (ab)**

This follows the primary habitat designation in the list, and indicates the frequency of occurrence for this plant in this particular habitat.

c Common, relatively abundant in most of the appropriate sites in the county.
o Occasional, may be locally common in some sites, but not all sites in the county.
i Infrequent, known to occur sporadically at a few sites in the county, or rarely encountered in the study but possibly more widespread and overlooked.
r Rare, known only from one or two stations in the county and likely not much more widespread.

Other habitats in which a plant is frequently found are included after the primary habitat in the list. If habitat data was not provided for a plant of status 3 or 4, the most likely habitat is given, followed by a question mark.

(TABLE II on next page)  (TEXT continued on page 112)
# TABLE II. Vascular flora of Seward County, Nebraska

<table>
<thead>
<tr>
<th>Division</th>
<th>Family</th>
<th>Genus and Species</th>
<th>Common Name</th>
<th>S</th>
<th>H</th>
<th>Pr</th>
<th>Fl</th>
<th>Hbtar/ab</th>
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<td>Equisetaceae (Horsetail Family)</td>
<td><em>Equisetum arvense</em> L.</td>
<td>field horsetail</td>
<td>2</td>
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<td><em>Equisetum hyemale</em> L.</td>
<td>common scouring rush</td>
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<tr>
<td></td>
<td><em>Equisetum laevidatum</em> A. Br.</td>
<td>smooth scouring rush</td>
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<td>N</td>
<td>58</td>
<td>TPc, FM, DG</td>
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<td><strong>DIVISION PTERIDOPHYTA</strong></td>
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<td><em>Marsilea vestita</em> Hook. &amp; Grev.</td>
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<td>80</td>
<td>MRr</td>
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<td>T</td>
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<td>Aceraceae (Maple Family)</td>
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<td>2</td>
<td>T</td>
<td>N</td>
<td>45</td>
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<td>P</td>
<td>N</td>
<td>69</td>
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<td>P</td>
<td>N</td>
<td>69</td>
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<td><em>Sagittaria brevirostra</em> Mack, &amp; Bush</td>
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<td>1</td>
<td>P</td>
<td>N</td>
<td>69</td>
<td>MRe</td>
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<tr>
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<td>2</td>
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<td>69</td>
<td>Sao, MR</td>
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<td></td>
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<td>N</td>
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<td>DGe, MR</td>
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<td><em>Lomatium foeniculaceum</em> (Nutt.) Coult. &amp; Rose var. daucifolium (T. &amp; G.) Cronq., wild parsley</td>
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<td><em>Osmorhiza longistylis</em> (Torr.) DC. var. longistylis, anise root</td>
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<td><em>Pastinaca sativa</em> L.</td>
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<td><em>Acorus calamus</em> L.</td>
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<td><strong>Cichorium intybus</strong> L., chicory</td>
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<td><strong>Cirsium alantifolium</strong> (L.) Spreng., tall thistle</td>
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<td><strong>Cirsium arvense</strong> L., Scop., Canada thistle</td>
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<td><strong>Dysphodia papposa</strong> (Vent.) Hitchc., feathery marigold</td>
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<td><strong>Echinacea angustifolia</strong> DC., purple coneflower</td>
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**ASTERACEAE (Sunflower Family)—(Continued on page 102)**
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<td><em>Triodanis leptocarpa</em> (Nutt.) Nieuw.</td>
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<td><em>Triodanis perforata</em> (L.) Nieuw., Venus' looking glass</td>
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<td><strong>CANNABACEAE</strong> (Hemp Family)</td>
<td><em>Cannabis sativa</em> L., hemp, marijuana</td>
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<td><em>Humulus lupulus</em> L., var. pubescens E. Small</td>
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<td><strong>CAPRIFOLIACEAE</strong> (Honeysuckle Family)</td>
<td><em>Sambucus canadensis</em> L., common elderberry</td>
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<td><em>Symphoricarpos occidentalis</em> Hook., wolfberry</td>
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<td><em>Symphoricarpos orbiculatus</em> Moench, coralberry, buckbrush</td>
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<td><em>Triosteum perfoliatum</em> L., horse gentian</td>
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<td><strong>CARYOPHYLLACEAE</strong> (Pink Family)</td>
<td><em>Arenaria serpyllifolia</em> L., thyme-leaved sandwort</td>
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<td><em>Cerastium vulgatum</em> L., mouse-ea chickweed</td>
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<td><em>Dianthus armeria</em> L., Deptford pink</td>
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<td><em>Holosteum umbellatum</em> L., jagged chickweed</td>
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<td><em>Silene antirrhina</em> L., sleepy catchfly</td>
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<td><em>Silene pratensis</em> (Rafn.) Godr. &amp; Gren. (Lychinis alba), white campion</td>
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<td><em>Celastrus scandens</em> L., American bittersweet</td>
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<td><em>Euonymus arropurpureus</em> Jacq., wahoo, burning bush</td>
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<td><strong>CERATOPHYLLACEAE</strong> (Hornwort Family)</td>
<td><em>Ceratophyllum demersum</em> L., hornwort</td>
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<td><strong>CHENOPODIACEAE</strong> (Goosefoot Family)</td>
<td><em>Atriplex subspicata</em> (Nutt.) Rydb., spearscale</td>
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<td><em>Chenopodium berlandieri</em> Moq., pitted goosefoot</td>
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<td><em>Chenopodium gigantospermum</em> Aellen (C. hybridum, misapplied),</td>
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<td><strong>CLUSIACEAE</strong> (St. John's-wort Family)</td>
<td><em>Hypericum perforatum</em> L.,</td>
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<td><strong>COMMELINACEAE</strong> (Spiderwort Family)</td>
<td><em>Commelina communis</em> L., dayflower</td>
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<td><em>Tradescantia bracteata</em> Small, spiderwort</td>
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<td><strong>CONVOLVULACEAE</strong> (Morning Glory Family)</td>
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<td><em>Calystegia sepium</em> (L.) Br. ssp. <em>angusta</em> Brummitt (Convulcus sepium, in part)</td>
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<td><em>Convulvaria arvensis</em> L., field bindweed</td>
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<td><em>Ipomoea hederacea</em> Jacq., ivyleaf morning glory</td>
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<td><em>Ipomoea purpurea</em> (L.) Roth, common morning glory</td>
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<td><strong>CORNACEAE</strong> (Dogwood Family)</td>
<td><em>Cornus drummondii</em> C. A. Mey., gray dogwood</td>
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<td><strong>CRASSULACEAE</strong> (Stonecrop Family)</td>
<td><em>Penthorum seloides</em> L., ditch stonecrop</td>
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<td><strong>CUCURBITACEAE</strong> (Cucumber Family)</td>
<td><em>Echinocystis lobata</em> (Michx.) T. &amp; G., mock cucumber</td>
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<td><em>Sicyos angulatus</em> L., bur cucumber</td>
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TABLE II—(Continued from page 103)

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<th>SCICUTACEAE (Dodder Family)</th>
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<td><em>Cuscuta polygonorum</em> Engelm.,</td>
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<td><em>Carex</em> cf. aggregata* Mack.,</td>
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<td><em>Carex amphibia</em> Steud. var.</td>
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<td><em>Carex atherodes</em> Spreng. slough</td>
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<td><em>Carex bicknellii</em> Brit.,</td>
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<td><em>Carex blanda</em> D.ew., woodland</td>
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<td><em>Carex brevier</em> (Dew.) Mack.</td>
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<td><em>Carex cristatella</em> Brit.</td>
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<td><em>Carex davisi</em> Schwein. &amp; Torr.</td>
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<td><em>Davis' sedge</em></td>
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<td><em>Carex eleocharis</em> Bailey</td>
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<td><em>Carex gravia</em> Bailey var.</td>
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<td><em>Carex heliophila</em> Mack.</td>
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<td><em>Carex laevicoma</em> Dew., smoothcone sedge</td>
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<td><em>Carex lanuginosa</em> Mich.,</td>
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<td><em>Carex meadii</em> D.ew., Mead's sedge</td>
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<td>Prunella vulgaris L., self-heal</td>
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<td>Salvia azuerae Lam.</td>
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**POACEAE (Grass Family)**—(Continued)

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<td>Festuca obusa Biehler, sodding fescue</td>
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TABLE II—(Continued from page 107)

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**POACEAE (Grass Family)—(Continued)**

* Festuca octoflora* Walt., sixweeks fescue 2 A N 46 SPc, TP
* Glyceria striata* (L.) Hitchc., foul mannagrass 2 P N 57 SAo
* Hordeum jubatum* L., foxtail barley 2 P N 68 DGc
* Hordeum pusillum* Nutt., little barley 1 A N 56 DGo
* Koeleria pyramidalata* (Lam.) Beauv., junegrass 1 P N 58 TPo
* Leersia mayi* (Schult.) Chase, fall witchgrass 2 P N 50 SPc, TP
* Lolium perenne* L. var. aristatum Willd., ryegrass 2 P I 57 DGi
* Lolium perenne* L. var. perenne 2 P I 47 DGi
* Muhlenbergia bushii* R. Pohl 2 P N 80 FFo
* Muhlenbergia cespitosa* (Torr.) Rydb., plains muhly 2 P N 60 TPr
* Muhlenbergia frondosa* (Poir.) Fern., wirestem muhly 2 P N 71 FFc, DG
* Muhlenbergia mexicana* (L.) Muhlenbergia schreberi 2 P N 80 OFi
* Muhlenbergia racemosa* (Michx.) B.S.P., marsh muhly 1 P N 70 FFo, MR
* Phalaris canariensis* L., reed canary grass 1 P N 57 MRe, FM
* Phleum pratense* L., timothy 1 P I 67 DGi
* Poa annua* L., annual bluegrass 2 A I 40 DGi
* Poa compressa* L., Canada bluegrass 2 P I 68 TPr
* Poa palustris* L., fowl bluegrass 2 P I 58 OFr
* Poa pratensis* L., Kentucky bluegrass 1 P I? 58 DGc, TP, FM, SP
* Schenardera paniculata* (Nutt.) Trel., tumbledrop 2 P N 68 DGi, TP
* Setaria faberi* Herrm., Chinese foxtail 2 A I 70 DGi
* Setaria glauca* (L.) Beauv., yellow foxtail 1 A I 79 DGr
* Setaria verticillata* (L.) Beauv., bristly foxtail 4 A I 79 DGr
* Setaria viridis* (L.) Beauv., green foxtail 2 A I 79 DGc
* Sorostrum nutans* (L.) Nash *(S. avenaceum)*, Indian grass 1 P N 80 TPo, SP
* Spartina pectinata* Link, prairie cordgrass 1 P N 79 FMc
* Sphenopholis obtusata* (Michx.) Scribn. var. obtusata, prairie wedgegrass 2 P N 58 TPo, MR
* Sporobolus asper* (Michx.) Kunth var. asper, tall dropseed 2 P N 80 TPr, DG

**POACEAE (Grass Family)—(Continued):**

* Sporobolus cryptandrus* (Torr.) A. Gray, sand dropseed 2 P N 79 TPi
* Sporobolus heterolepis* (A. Gray) A. Gray, prairie dropseed 2 P N 70 TPo
* Sporobolus neglectus* Nash *(S. vaginiflorus var. neglectus)*, poverty grass 2 A N 80 DGc
* Sporobolus vaginiflorus* (Torr.) Wood, poverty grass 2 A N 90 SPi, DG
* Stipa scabra* Trin., porcupine grass 1 P N 67 TPo
* Tridens flavus* (L.) Hitchc., purpletop 1 P N 80 DGi, TP

**POLEMONIACEAE (Polemoniaceae Family)**

* Phlox divaricata* L. ssp. laphamii (Wood) Wherry, blue phlox 4 P I 46 DGi

**POLYGALACEAE (Milkwort Family)**

* Polygala verticillata* L., whorled milkwort 2 A N 50 MRe

**POLYGONACEAE (Buckwheat Family)**

* Polygonum achoreum* Blake, knotweed 2 A I 79 DGo
* Polygonum amphibium* L. var. emersum Michx. *(P. coccineum)*, swamp smartweed 1 P N 79 MRe, FM, DG
* Polygonum artemisia* L. var. ex Bor., knotweed 1 A I 60 DGe
* Polygonum bicornium* Raf., pink smartweed 1 A N 70 DGe, MR
* Polygonum convolvulus* L., black bindweed 2 A I 69 DGo
* Polygonum hydropiper* L., water pepper 2 A I 80 MRo
* Polygonum lapathifolium* L., nodding willow weed 1 A N 70 MRe, DG
* Polygonum pensylvanicum* L., Pennsylvania smartweed 1 A N 70 DGe, MR
* Polygonum persicaria* Ledeb. lady's thumb 2 A I 70 MRe, DG
* Polygonum punctatum* Ell., water smartweed 1 P N 70 MRe, SA
* Polygonum ramosissimum* Michx., knotweed 2 A N 79 DGo, MR, TP
* Polygonum scandens* L., false buckwheat 1 P N 60 DGo
* Polygonum virginianum* L. 2 P N 89 FFi
* Rumex acetosella* L., sheep sorrel 2 P I 48 SPc, DG
* Rumex alpinus* Lam., pale dock 2 P N 47 MRe, DG
* Rumex crispus* L., curly dock 2 P I 47 DGe, MR
* Rumex stenostachys* L., woolly
dock 2 P I 58 MRi

**PONTEDERIACEAE (Pickerel-Weed Family)**

* Heteranthera limosa* (Sw.) Willd., mud plantain 1 P N 50 MRe

**PORTULACACEAE (Portulacaceae Family)**

* Portulaca oleracea* L., common purslane 1 A I 51 DGo
### TABLE II—(Continued from page 108)

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<thead>
<tr>
<th>Family</th>
<th>Species</th>
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<td><em>Androsace occidentalis</em> Pursh.</td>
<td>western rock jasmine</td>
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<td>candle anemone</td>
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<td>A</td>
<td>N</td>
<td>79</td>
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<td>B</td>
<td>I</td>
<td>68</td>
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<td>N</td>
<td>56</td>
<td>MRc, FF</td>
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<td>SIMAROUBACEAE (Quassia Family)</td>
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<td>(P. Mill.) Swingle, tree of heaven</td>
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<td>SMILACACEAE (Cathrib Family)</td>
<td>Smilax herbacea</td>
<td>L. var. lasioneuron (Small) Rydb., carrion flower</td>
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<tr>
<td></td>
<td>Smilax hispida</td>
<td>Muhl., bristly greenbriar</td>
<td>1 V N 56 OFo, FF, DG</td>
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<td>SOLANACEAE (Nightshade Family)</td>
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<td>L., Jimson weed</td>
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<td></td>
<td>Physalis heterophylla</td>
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<td>Physalis longifolia</td>
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<td>Physalis virginiana</td>
<td>P. Mill., ground cherry</td>
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<td>Dun. ex DC. (S. americanum), black nightshade</td>
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<td>Solanum rostratum</td>
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<td>Engelm., bur-reed</td>
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<td>TYPHACEAE (Cat-tail Family)</td>
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<td>Typha latifolia</td>
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<td>Ulmus pumila</td>
<td>L., Siberian elm</td>
<td>2 T 1 3 DGc</td>
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<td>Ulmus rubra</td>
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<tr>
<td>URTICACEAE (Nettle Family)</td>
<td>Laportea canadensis</td>
<td>(L.) Wedd., wood nettle</td>
<td>2 P N 79 OFo</td>
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<td>Parietaria pensylvanica</td>
<td>Muhl. ex Willd., Pennsylvanica ellitogy</td>
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<tr>
<td>URTICACEAE (Nettle Family)—(Continued)</td>
<td>Pilea fontana</td>
<td>(Lunell) Rydb., clearweed</td>
<td>2 A N 79 SA</td>
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<td></td>
<td>Pilea pumila</td>
<td>L. (Lunell) Rydb., clearweed</td>
<td>2 A N 79 FFo, OF, SA</td>
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<td></td>
<td>Urtica dioica</td>
<td>L. ssp. gracilis (Ait.) Seland., stinging nettle</td>
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<td>VERBENACEAE (Vervain Family)</td>
<td>Lippia lanceolata</td>
<td>Michx.) Greene, northern fog fruit</td>
<td>2 P N 59 MRa</td>
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<td></td>
<td>Physimia leptostachya</td>
<td>L., lopseed</td>
<td>2 P N 69 OFo</td>
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<td></td>
<td>Verbena bipinnatifida</td>
<td>Nutt., Dakota vervain</td>
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<td>Verbena bracteata</td>
<td>Lag. &amp; Rodr., prostrate vervain</td>
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<td>L. Brit., rose vervain</td>
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<td>VIOLACEAE (Violet Family)</td>
<td>Viola pedatifida</td>
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<td>Viola pratina</td>
<td>lcela Greene, meadow violet</td>
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<td></td>
<td>Viola rafinesquii</td>
<td>Greene, Johnny jump-up</td>
<td>2 A N 37 TP</td>
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<td>Viola sororia</td>
<td>Willd., downy blue violet</td>
<td>1 P N 46 OFc, FF</td>
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<td>VITACEAE (Grape Family)</td>
<td>Parthenocissus vitacea</td>
<td>(Knerr) Hitchc., woodbine</td>
<td>2 V N 57 OFc, FF, DG</td>
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<td>Vitis riparia</td>
<td>Michx., riverbank grape</td>
<td>1 V N 79 FFo</td>
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<td>ZANNICHELLIACEAE (Horned Pondweed Family)</td>
<td>Zannichellia palustris</td>
<td>L., horned pondwee</td>
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<td>ZYGOPHYLLACEAE (Caltrop Family)</td>
<td>Tribulus terrestris</td>
<td>L., puncture vine</td>
<td>2 A L 50 DG</td>
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</table>
FIG. 3 Vegetation Map of Seward County, Nebraska

- TALL-GRASS PRAIRIE
- FLOODPLAIN PRAIRIE AND MEADOW
- EASTERN DECIDUOUS FOREST
- FLOODPLAIN FOREST
- FLOODPLAIN FOREST WITH SCATTERED OAK

GLACIAL TILL RIDGE
W: LOESS PLAINS
E: LOESS DRIFT HILLS
TEXT—(Continued from page 99)

Species reported in Atlas, not collected by author (collection status = 3)

Agalinis aspera (Aughey s.n., 28 August 1873, NEB); Alisma cf. subcordatum (Kiener 25992, NEB); Amaranthus hybridus (Meyer 43, NEB); Ammannia auriculata (Kiener 25994; G. Imig 35, NEB); Azotopila mexicana (Tolstead 41586, NEB; Hedyotis nigricans (Magrath and Hays 5620, KANU); Ipomoea hederacea (Koch 4282, NEB; Sagittaria rigida (Kiener 24086, 25988, NEB); Strophostyles helvula (Aughey s.n., 28 August 1873, NEB); Utricularia vulgaris (Kiener 23950, NEB).

Species new to Seward County, not collected by author (collection status = 4)

Aquilegia canadensis (Warner 62, NEB); Aristida purpurea (Brandhorst s.n., August 1958, Concordia); Brassica kaber (Schmersal 12, NEB); Centaurea cyanus (Groathaus 39, Concordia); Delphinium tricorne (Dede 68110, Concordia); Dracophyllum parviflorum (Groathaus 44, Concordia); Euphorbia cyparissias (Gundell 16, Concordia); Euphorbia serpens (Hafer 49, NEB) Eustoma grandiflorum (Landon 14, NEB); Fumaria vaillentii (Gundell 15, Concordia); Helenium autumnale (Tolstead 9754, NEB); Lamium purpureum (Keller 140, NEB); Leonurus marrubiastrum (Varner 28, Ringerle 69, NEB); Mentha spicata (Barry 61, NEB); Mirabilis albida (Aughey s.n., 28 August 1873, NEB); Mirabilis hirsuta (Keller 296, NEB); Phlox divaricata ssp. laphamii (Wolters 88-37, Concordia); Physostegia virginiana (Hackbart 12, NEB); Ratibida pinnata (Held 140, Concordia); Setaria verticillata (Keller 51, NEB).

Excluded species

The following species were reported from Seward County in the Atlas, but were based upon misidentifications or lack known voucher specimens: Aster praetulatus Poir. var. praetulatus, Carduus acanthoides L., Chenopodium album L., Elodea canadensis Michx., Lechea mucronata Raf., Mirabilis linearis (Pursh) Heimerl., Oenothera biennis L., Phaseolus polystachios (L.) B.S.P., Prunus serotina Ehrh., Rumex orbicularus A. Gray, Sagittaria cuneata Sheld., Sorghum halepense (L.) Pers.

Additionally, specimens of the four following species of grasses collected by C. T. Brandhorst (moist fertile roadside, Seward County, August 1942) are in the Concordia College Herbarium but are of doubtful provenance in the county: Agrostis scabra Wild.; Sitanion hystrix (Nutt.) J. G. Sm. var. brevifolium (J. G. Sm.) C. L. Hitchc.; Sporobolus airoides Torr.; Stipa viridula Trin.

In addition, Anemone caroliniana, Nasturtium officinale, and Spiranthes cernua have been seen but not collected in the county by a reliable observer. The following species are known from surrounding counties (some very close to the county line) and continuing field work is likely to reveal their presence in Seward County: Carex hysterica, Carex burchiopodium, Chenopodium album, Cyperus acuminatus, Cyperus arista, Erythronium mesochorum, Euthymia gymnospereoides, Lappula echinata, Lithospermum arvense, Lycopus virginicus, Mirabilis linearis, Polygonum erectum, Potamogeton crispus, Rotala ramosior, Sorghum halepense, Typha domingensis.

Campsis radicans (L.) Seem., Populus alba L., and Rhus typhina L. have been introduced as ornamentals and have spread vegetatively. They do not reproduce by seed here and are not included in Table II.

Major floristic representation

Table III shows the ten families with the largest number of species in Seward County.

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<th>Family</th>
<th>Genera</th>
<th>Species</th>
<th>Entities</th>
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ACKNOWLEDGEMENTS

The following people contributed data and advice and are gratefully acknowledged: Ralph Brooks, Joe Gubanyi, Robert Kaul, Jon Keller, Jim Landon, Clarence Mertens, Anne Warner, and numerous student collectors at Concordia College and Seward Senior High School. David Sutherland identified several difficult grasses.

REFERENCES


Kaul, R. B. 1975. Vegetation of Nebraska (Circa 1850). Map 1:1,000,000. Conservation and Survey Division, University of Nebraska.


