



Best Survey Period



Status: Special concern

Global and state rank: G5/S3

Family: Cardinalidae (grosbeaks, tanagers, buntings)

Total range: The dickcissel has a broad breeding range from southern Canada to the Gulf of Mexico, roughly bounded west and east by the Rocky Mountains and the Appalachian foothills, respectively. The core breeding range is centered on the Great Plains states of Oklahoma, Nebraska, Kansas, Iowa and Missouri. It is occasionally known to breed as far east as eastern Pennsylvania and as far west as central Montana. A highly adaptable species, the dickcissel is known to shift its breeding range from year to year depending on local weather conditions (Temple 2002). More dramatic changes have also been documented, such as a semi-permanent shift in breeding range due to a several-year drought in the plains states (Temple 2002). Its core wintering range is centered in the Los Llanos region of Venezuela (historically, a seasonally flooded grassland which has largely been converted to agriculture; Basili and Temple 1999a). There are also records of dickcissels wintering as far north as central Mexico and to the southeast in central Colombia.

State distribution: Because Michigan is on the periphery of the dickcissel range, the species is less common here than in the Great Plains states. Temple (2002) maps the periphery of the dickcissel's breeding range as including the southern tip of the Upper

Peninsula south through the Lower Peninsula. Breeding records from the eastern side of the state are quite sporadic. Birds have been detected statewide (Gibson 2011; MNFI 2014), but are much less commonly detected in the Upper Peninsula, particularly in the east. It is unknown whether those observed are breeding birds or vagrants.

Recognition: The dickcissel is a relatively large sparrow-like bird with distinctive plumage. Total length ranges from 14-16 cm (5.5-6.2 in.) with males being 10-20% larger than females. Males have a bright yellow breast with a black 'V' across the throat, white chin, and gray on the cheek, crown and back of the neck. The area above the eye and behind the lower mandible on either side of the throat is yellow. Rufous shoulders are visible while birds are both perched and in flight. Females have a duller facial and head pattern with no black throat patch, a faint throat stripe and dull yellow breast with a light gray belly, brown-streaked back and dark tail and wing. Immature individuals of both sexes are similar in appearance to house sparrows (*Passer domesticus*) but are sleeker with more pointed wings, a longer, paler bill, and streaked thighs (Temple 2002). The call varies among populations, but typically is phonetically described as "see, see, dick, dick, ciss, ciss, ciss." The introductory two notes are usually followed by a brief pause, the second two notes are given more distinctly, and the ending notes are rapidly sung. Males usually sing on elevated song perches in their breeding territories (poles, shrubs, fence posts, and tall forbs).



Best survey time: The best time to survey for dickcissels in Michigan begins in late April and continues through mid-August. Survey time for breeding birds is best between early May and late June.

Habitat: Dickcissels are found in wide variety of habitats, including old fields, grasslands, hay fields, cultivated row crops and many other open habitat types. They prefer dense cover, moderately tall vegetation (25-150 cm), moderately deep litter (5-15 cm) and many elevated song perches (Dechant et al. 2002). Restored grasslands and fallow fields are ideal habitat, but hay fields, native grasslands, old fields in early stages of succession, and lightly grazed pastures are also highly suitable (Zimmerman 1982; Best et al. 1997; and Klute et al. 1997). Fallow areas in agricultural landscapes and no-till crop fields, along with fencerows and roadsides are also utilized for breeding habitat (Basore et al. 1986; Bryan and Best 1994). Patterson and Best (1996) found that a high percentage of legumes is an important feature, as these provide song perches, increased nesting cover, and an increased abundance of invertebrate prey. In areas with high densities of dickcissels, later arriving males are forced into less suitable areas. Early arriving males select hayfields and fallow fields first, suggesting that those habitats are preferred over native grasslands and prairies, which are selected by later arriving males (Zimmerman 1993). Generally, open areas over 10 ha (25 ac) are preferred, and birds occur at higher densities in large areas (Winter 1999).

Winter habitat in the Los Llanos region of Venezuela is somewhat similar to the breeding habitat in North America. Open grasslands, savannas and croplands are preferred as winter habitat. Because dickcissels winter in large flocks, their requirements are somewhat different than during the breeding season. Large foraging areas are required for wintering birds and usually cultivated fields of rice and sorghum are selected. Loafing areas consisting of fallow, bushy vegetation are also required by wintering birds along with roosting sites (usually sugar cane plantations or densely vegetated marshes) (Basili and Temple 1999b).

Biology: Dickcissels are long distance migrants who arrive on their breeding grounds in late April or early May. Males arrive five to ten days before females and defend territories that contain both nesting and foraging areas (Fretwell 1986). These territories range from 0.3-1.1 ha (0.75-2.75 ac), and an individual male's territory can vary in size throughout the breeding season. Dickcissels are polygynous (males breed with multiple females), and males with high quality territories attract more mates than males who defend territories of lesser quality. Females prefer territories with better nest sites and better foraging areas. High quality territories

can support up to six nesting females, and males defending poor quality territories may attract no females (Zimmerman 1966).

Nest formation usually begins one or two days after a female has settled on a territory, and nests are built solely by the female in two to four days. Nests are built in dense vegetation with nearly complete overhead cover. Nests are not placed directly on the ground, but rather elevated off the ground in low vegetation (Harrison 1975). Three to six eggs are laid within two days of nest completion and are pale blue in color with no other markings. One egg is laid daily until the clutch is complete (Harrison 1975). Renesting occurs among only 27% of females if the original nest fails (Zimmerman 1982). Eggs are incubated by the female for at least 11 days. Young dickcissels remain in the nest for eight to ten days before fledging and are cared for solely by the female. Chicks are predominantly fed insect larvae (Gross 1921). After fledging, young dickcissels join premigratory flocks consisting of both adults and sub-adults (Zimmerman 1993). Fall migration occurs in mid-August when large, gregarious flocks form. Most migratory movements occur at night, but large flocks will feed together during the day in the southern U.S. and northern Mexico before migrating farther south (Temple 2002).

Conservation/management: In the past 30 years, dickcissel populations have stabilized after an approximately 30% reduction in the overall population in the late 1960s and early 1970s (Sauer et al. 2014). Because Michigan is on the periphery of the dickcissel's range, they are uncommon throughout the state, and there are concerns about the long-term viability of the Michigan population. The U.S. Fish and Wildlife Service identified the dickcissel as a migratory nongame bird of conservation concern in seven North American regions, including Region 23, which includes part Michigan (U.S. Fish and Wildlife Service 2008). The dickcissel is also on the National Audubon Society's Blue List, which notes birds with declining populations (Arbib 1971). Dickcissels often prefer hay fields and CRP (Conservation Reserve Program) lands for nesting. Because standard mowing practices on hay fields occur during the breeding season, high nest failure rates and heavy chick mortality occur in hay field habitats. Herbicides diminish abundance of food sources for young, and overgrazing can decrease the suitability of sites due to a lack of high density grass and forb cover. Dickcissels are susceptible to brown-headed cowbird parasitism, and experience high parasitism rates when nesting in low densities (Zimmerman 1983). Dickcissels can be multiply-parasitized and are known to occasionally abandon parasitized nests (Shaffer et al. 2003). These high rates of parasitism



can lower productivity (Winter 1999). Dickcissels also face challenges in their wintering grounds. Many farmers view them as a pest species, and while there is a movement towards non-lethal methods of control, many are still illegally killing birds with chemicals, at times killing thousands of birds at one location (Temple 2002).

Because of the dramatic decline in the dickcissel population in the 1960s and 1970s, there was heightened concern for dickcissels throughout their breeding range and its extinction was even predicted by the year 2000, although this prediction has proven inaccurate (Fretwell 1979). Nomadic year-to-year changes in the densities of the dickcissel population make stable population estimates difficult in a given area. However, with decreased habitat due to the conversion of old fields and hay fields to row crops and increased grazing and mowing pressure, it is certain that habitat loss is negatively impacting dickcissel populations. As with managing any grassland bird species, there are several options for improving habitat quality and ensuring nesting birds are not negatively impacted by management practices. One of the most deleterious impacts to dickcissel in North America is untimely mowing of hay fields. Because hay fields are actively selected by dickcissel for breeding purposes, sometimes over native grasslands, **it is important for managers specifically concerned with managing for grassland birds not to mow during the breeding season.** Untimely mowing is particularly detrimental because females are unlikely to make a second nesting attempt after their original nests have failed (Klute et al. 1997). It is preferable to mow after fall migration rather than before birds arrive in the spring. This allows for more time for plants to recover after mowing takes place.

Burning can also be an effective tool in managing for dickcissel, although the benefits of burning are not as dramatic with the dickcissel as they are with other grassland bird species, such as the Henslow's sparrow (*Ammodramus henslowii*). Burning aids in the removal of woody vegetation and maintaining open habitat. However, dickcissels are not known to actively select recently burned areas over unburned areas (Zimmerman 1992). **Fall mowing is a more effective form of management for dickcissel, as it increases litter cover and provides better nesting habitat.** Implementing multiple management techniques in one year is not advisable (e.g., mowing along with burning) as dickcissel productivity and density can be negatively affected (Swengel 1996). If burning is elected, managers should burn no more than 20-30% of a given area to retain litter for nesting areas (Winter 1999). In any management scenario, the removal of woody vegetation will aid in discouraging forestation of open habitats.

Research needs: A greater understanding of dickcissel breeding habits and breeding range in Michigan is needed. The impacts of wintering habitat practices on the breeding population are poorly understood, and research is merited, especially with the increased concern of haying and conversion to row crops in the breeding grounds. Implications of different management practices on breeding success and site fidelity could aid in designing effective management plans for dickcissel. Finally, the genetic differences and similarities among dickcissel populations are poorly understood and should be studied in further detail.

Related abstracts: Dry-mesic prairie, dry sand prairie, mesic prairie, mesic sand prairie, oak-pine barrens, oak barrens, oak openings, bur oak plains, Henslow's sparrow, grasshopper sparrow.

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