

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: Regal fritillary (*Speyeria idalia*)

Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	B	The species occurs in all states of Region 2.  Confidence in Rank: <b>High</b> or <b>Medium</b> or <b>Low</b>	•
2 Distribution outside R2	C	Historically the range extended from New Brunswick across all New England states, New York, extreme southern Ontario (resident?), southern lower Michigan and northwest into Manitoba, and apparently eastern Montana; in the east south at least to the Ohio Valley and down the Appalachians to northern Georgia. Drastic loss of range since 1980, especially since 1987. Southwestern limit was and still is eastern Colorado, Kansas and extreme northeastern Oklahoma. Now (1999) historic or extirpated in all six New England States, eastern Canada (Ontario, New Brunswick), New York, New Jersey, Maryland, Delaware, West Virginia, Ohio, Indiana, and Michigan. The Georgia records are from the 1800s. A large population in central Pennsylvania is (1999) and two (one metapopulation) in Virginia are the only actually located occurrence east of Illinois, in the 1990s; also one apparently reliable observation in western North Carolina in 1994. It is quite possible that eastern occurrences resulted from land clearing soon after European settlement, since east of Indiana the species was overwhelmingly found in pastures, hay meadows and other unnatural situations in the 1800s and 1900s. However populations were found in a few seemingly more natural prairie like landscapes along the coast and on the islands off Massachusetts and on eastern Long Island, New York. The southern limits coincided quite well with a January mean isotherm of about 36 F (2 C).  Confidence in Rank <b>High</b> or <b>Medium</b> or <b>Low</b>	• <a href="http://www.natureserve.org">www.natureserve.org</a>
3 Dispersal Capability	B	Confidence in Rank <b>High</b> or <b>Medium</b> or <b>Low</b>	•

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<p><b>4</b> Abundance in R2</p>	<p><b>D</b></p>	<p>There is no abundance data specific to Region 2. Most breeding populations probably average approx. 100 individuals, or more, and isolated ones are probably mostly vulnerable to loss in catastrophic events such as storms, droughts, floods, accidental or inappropriate fires. Can fluctuate drastically from year to year.</p> <p>Confidence in Rank <b>High</b> or <b>Medium</b> or <b>Low</b></p>	<ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>5</b> Population Trend in R2</p>	<p><b>A</b></p>	<p>This species cannot be considered secure, even though there may be more than 100 extant populations, because of its very recent large scale decline and range contraction, resulting a recent loss of approximately thirty percent of historic range, and on-going decline is some or possibly all other parts of its range. The species is imperiled or worse in at least Wisconsin, Illinois, Indiana, Pennsylvania and Virginia. It is probably extirpated in about 15 other states. It is likely the species is declining in Iowa (Schlicht and Orwig, 1998; Kelly and Debinski, 1999; Williams, 1999), which is often considered a global stronghold. While the species is still extant in many prairie remnants it does appear to be excluded or threatened in some remnants by excessive prescribed burning and to be held at low numbers at many or most occurrences by rotational burning. Strong metapopulations are probably very few, unless possibly in Missouri, There may be few or possibly no B-RANK EOs, but almost certainly several easily restorable high C quality sites exist (see Kelly and Debinski, 1999 for some examples in Iowa, also Rowe Sanctuary, Nebraska may have B-Rank potential). No suspected A quality examples are known. There are almost certainly still well over 20 C-RANK occurrences but most occurrences are rather isolated and therefore vulnerable to long term loss from natural factors including drought, flood, and unnatural factors such as too much fire, biocides, and habitat fragmentation. There is no convincing evidence the species is stable anywhere although westward it does not appear to be crashing as rapidly as happened eastward from about 1970-1991. To whatever extent the decline in places like Iowa is due to management practices, it should still be to some substantial extent reversible.</p> <p>Dramatically declining east of the Mississippi River; declining elsewhere in the midwest because of loss of habitat and, in the opinion of several experts,</p>	<ul style="list-style-type: none"> <li>• <a href="http://www.natureserve.org">www.natureserve.org</a></li> </ul>

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		<p>fire. In some parts of Midwest, e.g. Illinois and Wisconsin, now absent on most prairie remnants. Has reportedly disappeared or greatly declined from some preserves, perhaps due to prescribed burning in some cases. In other states such as Iowa occupancy rate appears higher and it is very high in parts of Missouri. The species is viewed as critically imperiled in Colorado, vulnerable in South Dakota and Nebraska, apparently secure in Kansas, and a migratory transient in Wyoming.</p> <p>Confidence in Rank <b>High</b> or <b>Medium</b> or <b>Low</b></p>	
<p><b>6</b> Habitat Trend in R2</p>	<p><b>A</b></p>	<p>Grassland areas in Region 2 continue to decline in quantity and quality through conversion to cropland and fragmentation.</p> <p>Confidence in Rank <b>High</b> or <b>Medium</b> or <b>Low</b></p>	<ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>7</b> Habitat Vulnerability or Modification</p>	<p><b>A</b></p>	<p>Conversion of tallgrass prairies, hayfields, heavily grazing lands, development, reforestation, and inappropriate and/or overuse of fire. Overcollecting is a threat with small occurrences, including all from Illinois eastward. Extreme overcollecting eradicated at least one, reportedly two, populations in Maryland.. Dramatically declining in east of the Mississippi River; declining elsewhere in the midwest because of loss of habitat and, in the opinion of several experts, fire. In some parts of Midwest, e.g. Illinois and Wisconsin, now absent on most prairie remnants. Has reportedly disappeared or greatly declined from some preserves, perhaps due to prescribed burning in some cases. In other states such as Iowa occupancy rate appears higher and it is very high in parts of Missouri.</p> <p>Confidence in Rank <b>High</b> or <b>Medium</b> or <b>Low</b></p>	<ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>8</b> Life History and Demographics</p>	<p><b>A</b></p>	<p>May be unable to persist long term as isolated colonies due to frequent large fluctuations in numbers. Apparently densities of adults seldom reach 5 per acre over any large area. Normal population structure was metapopulations composed of often short lived demes with frequent recolonization. Serious concern about break down of metapopulation dynamics rangewide since most colonies are now isolated on preserves, which are often too small and sometimes inappropriately managed for Lepidoptera for this species. Metapopulation collapse seems to have been the cause of the massive recent decline eastward, that is colonization could not keep up with local extirpation rates.</p>	<ul style="list-style-type: none"> <li>•</li> </ul>

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Initial Evaluator(s): John Sidle			Date: 7/13/01

**National Forests in the Rocky Mountain Region where species is KNOWN (K) or LIKELY(L)<sup>1</sup> to occur:**

<u>Colorado NF/NG</u>		<u>Kansas NF/NG</u>		<u>Nebraska NF/NG</u>		<u>South Dakota NF/NG</u>		<u>Wyoming NF/NG</u>					
Known	Likely	Known	Likely	Known	Likely	Known	Likely	Known	Likely				
	L	Cimmaron NG		L	Samuel R.McKelvie NF		L	Black Hills NF		L	Shoshone NF		
White River NF					Halsey NF	K		Buffalo Gap NG		L	Bighorn NF		
Routt NF					Nebraska NF		L	Ft. Pierre NG	K		Black Hills NF		
Grand Mesa, Uncompahgre, Gunnison NF					Ogalala NG		L				Medicine Bow NF		
San Juan NF											Thunder Basin NG		
Rio Grande NF													
Pike-San Isabel NF													
Comanche NG													
	L												

<sup>1</sup> Likely is defined as more likely to occur than not occur on the National Forest or Grassland. This generally can be thought of as having a 50% chance or greater of appearing on NFS lands.

## References

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