

VI.11 Major Grasshopper Species of the Western Rangeland States and Alaska

R. Nelson Foster

On rangeland, the number of grasshopper species that occur across an area of several thousand acres typically ranges from about 15 to 40. Assemblages of grasshopper species in each of the western rangeland States can differ considerably. The makeup of these assemblages also can vary between locations within a State and from year to year at the same location.

To make wise management and treatment decisions requires a knowledge of the species that make up the populations of concern. To aid land managers and pest managers in making their decisions, the Animal and Plant Health Inspection Service plant health directors in the rangeland States recently provided a listing of major grasshopper species in the States.

The listing is a combination of responses to two questions asked of each plant health director on separate occasions: (1) What are the 10 most important grasshopper species in your State? and (2) what are the top 10 pest species of grasshoppers in your State? Species are listed alphabetically in table VI.11–1 with full names, and listed by occurrence in States in table VI.11–2. The listings will be especially useful in combination with Pfadt’s “Field Guide to Common Western Grasshoppers” (described in VI.5) and Hopper Helper (VI.7).

The two species that occurred most frequently (16 out of 18 States) in responses are *Ageneotettix deorum* and *Melanoplus sanguinipes*. Next in terms of frequency are *Aulocara elliotti* (in 14 out of 18 States) and *Camnula pellucida* (13 out of 18 States). Four other species—*Melanoplus bivittatus* and *Melanoplus femurrubrum* (both 11 out of 18 States) and *Amphitornus coloradus* and *Phlibostroma quadrimaculatum* (both 10 out of 18 States)—are of concern in a majority of rangeland States. All other species in these surveys were of concern in fewer than 10 States.

The lists are not limited to species that cause economically unacceptable levels of damage. Grasshoppers noted on the lists include the most commonly encountered species in each State, some of which may not be considered economically damaging to rangelands.

Some species usually considered nonpests are included because they may occur in significant numbers at some

Table V.11–1—Grasshopper species most frequently encountered and pest species (with full names), listed alphabetically

<i>Aeropedellus clavatus</i> (Thomas)
<i>Ageneotettix deorum</i> (Scudder)
<i>Amphitornus coloradus</i> (Thomas)
<i>Arphia conspersa</i> Scudder
<i>Aulocara elliotti</i> Thomas
<i>Aulocara femoratum</i> (Scudder)
<i>Camnula pellucida</i> Scudder
<i>Campylacantha olivacea</i> (Scudder)
<i>Conozoa sulcifrons</i> Scudder
<i>Cordillacris crenulata</i> (Bruner)
<i>Cordillacris occipitalis</i> (Thomas)
<i>Eritettix simplex</i> (Scudder)
<i>Hesperotettix viridis</i> (Scudder)
<i>Melanoplus angustipennis</i> (Dodge)
<i>Melanoplus bivittatus</i> (Say)
<i>Melanoplus borealis</i> (Fieber)
<i>Melanoplus confusus</i> Scudder
<i>Melanoplus cuneatus</i> Scudder
<i>Melanoplus devastator</i> Scudder
<i>Melanoplus differentialis</i> (Thomas)
<i>Melanoplus femurrubrum</i> (DeGeer)
<i>Melanoplus foedus</i> Scudder
<i>Melanoplus gladstoni</i> Scudder
<i>Melanoplus infantilis</i> Scudder
<i>Melanoplus marginatus</i> (Scudder)
<i>Melanoplus occidentalis</i> (Thomas)
<i>Melanoplus packardii</i> Scudder
<i>Melanoplus rugglesi</i> Gurney
<i>Melanoplus sanguinipes</i> (Fabricius)
<i>Mermiria bivittata</i> (Serville)
<i>Metator pardalinus</i> (Saussure)
<i>Oedaleonotus enigma</i> (Scudder)
<i>Oedaleonotus pacificus</i> (Scudder)
<i>Opeia obscura</i> (Thomas)
<i>Orphulella speciosa</i> (Scudder)
<i>Phlibostroma quadrimaculatum</i> (Thomas)
<i>Phoetaliotes nebrascensis</i> (Thomas)
<i>Psoloessa delicatula</i> Scudder
<i>Schistocerca emarginata</i> (Scudder)
<i>Syrbula admirabilis</i> Uhler
<i>Trachyrhachys kiowa</i> Thomas
<i>Xanthippus corallipes</i> Haldeman

Table VI.11–2—Major grasshopper species of the western rangeland States and Alaska

Species	AK	AZ	CA	CO	ID	KS	MT	NB	NV	NM	ND	OK	OR	SD	TX	UT	WA	WY
Gomphocerinae																		
<i>Aeropedellus clavatus</i>											X							
<i>Ageneotettix deorum</i>		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Amphitornus coloradus</i>		X				X	X			X	X	X		X	X		X	X
<i>Aulocara elliotti</i>		X			X	X	X		X	X	X	X	X	X	X	X	X	X
<i>Aulocara femoratum</i>			X	X		X				X		X			X			
<i>Cordillacris crenulata</i>				X						X								
<i>Cordillacris occipitalis</i>				X						X								X
<i>Eritettix simplex</i>		X						X			X							
<i>Mermiria bivittata</i>		X																
<i>Opeia obscura</i>				X		X		X			X			X				
<i>Orphulella speciosa</i>						X												
<i>Phlibostroma quadrimaculatum</i>				X	X	X	X	X		X	X			X	X			X
<i>Psoloessa delicatula</i>		X						X										
<i>Syrbula admirabilis</i>						X												
Oedipodinae																		
<i>Arphia conspersa</i>			X															
<i>Camnula pellucida</i>	X	X	X	X	X		X		X	X	X		X			X	X	X
<i>Conozoa sulcifrons</i>																	X	
<i>Metator pardalinus</i>		X																
<i>Trachyrhachys kiowa</i>				X			X				X	X		X				X
<i>Xanthippus corallipes</i>			X													X		
Melanoplinae																		
<i>Campylacantha olivacea</i>								X										
<i>Hesperotettix viridis</i>										X			X					
<i>Melanoplus angustipennis</i>								X										
<i>Melanoplus bivittatus</i>			X	X	X		X		X	X		X	X		X	X	X	
<i>Melanoplus borealis</i>	X																	
<i>Melanoplus confusus</i>											X							
<i>Melanoplus cuneatus</i>		X								X								
<i>Melanoplus devastator</i>			X															
<i>Melanoplus differentialis</i>			X		X							X			X	X		
<i>Melanoplus femurrubrum</i>	X		X		X			X	X			X	X	X	X	X	X	
<i>Melanoplus foedus</i>					X							X	X		X		X	
<i>Melanoplus gladstoni</i>								X										
<i>Melanoplus infantilis</i>					X		X				X			X				X
<i>Melanoplus marginatus</i>			X															
<i>Melanoplus occidentalis</i>																		X
<i>Melanoplus packardii</i>			X		X	X	X		X	X			X			X	X	
<i>Melanoplus rugglesi</i>									X									
<i>Melanoplus sanguinipes</i>	X	X	X	X	X		X		X	X	X	X	X	X	X	X	X	X

Table VI.11–2—Major grasshopper species of the western rangeland States and Alaska (Continued)

Species	AK	AZ	CA	CO	ID	KS	MT	NB	NV	NM	ND	OK	OR	SD	TX	UT	WA	WY
<i>Oedaleonotus enigma</i>			X		X				X				X			X	X	
<i>Oedaleonotus pacificus</i>			X															
<i>Phoetaliotes nebrascensis</i>						X		X						X				
Cyrtacanthacridinae																		
<i>Schistocerca emarginata</i>			X															

Note: The importance of some species in some States has changed over the years. For a comparison with a 1969 listing of species and their potential for damage by State, see: Grasshopper Survey: A Species Field Guide, published in 1969 by the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine unit. Copies of the 1969 publication are available from the National Technical Information Service, U.S. Department of Commerce, P.O. Box 1425, Springfield, VA 22151. The publication, number P95241436, is available in print for \$19.50 and on microfiche for \$9.00.

sites during survey. For example, overwintering species such as *Psoloessa delicatula*, *Eritettix simplex*, *Xanthippus corallipes*, and *Arphia conspersa*—which rarely if ever cause concern—may occur in significant numbers late in the summer. The early hatching species, *Aeropedellus clavatus* and *Melanoplus confusus*, feed at a time of year when forage removal is generally irrelevant. These two species are included because they are common in some areas and signal the awakening of the grasshopper season.

Hesperotettix viridis, which feeds on broom snakeweed and burrowweed, is considered a beneficial species but is included because it can occur in high numbers at some locations. In addition, some species usually considered to be cropland species—such as *Melanoplus bivittatus*,

M. differentialis, *M. femurrubrum*, and *M. packardii*—are frequently found on rangeland and hence are included.

The circumstances under which a species or a combination of species occurs is what determines the economic importance of a particular species at a particular time. By themselves, many of the species listed here would not be economic pests, but together with other species, the population may cause damage.

A knowledge of the most commonly encountered species in each State will promote a better understanding of the grasshopper populations and will provide the foundation for making good management and pest treatment decisions involving rangeland grasshoppers.