

Part IV. Plant Assessment Form

For use with “Criteria for Categorizing Invasive Non-Native Plants that Threaten Colorado’s Wildlands and Agriculture”

By the Colorado Noxious Weed Advisory Committee

Electronic version: December 4, 2008

Table 1. Species and Evaluator Information

Species name (Latin binomial):	Hirpicium armeriodes
Synonyms:	Hirpicium armeriodes v. armeriodes
Common names:	Grass leaf matt daisy
Evaluation date (mm/dd/yy):	4/8/10
Evaluator #1 Name/Title:	Ryan Edwards, Masters research assistant
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Evaluator #2 Name/Title:	enter text here
Affiliation:	enter text here
Phone numbers:	enter text here
Email address:	enter text here
Address:	enter text here

Section below for list committee use—please leave blank

List committee members:	enter text here
Committee review date:	enter text here
List date:	enter text here
Re-evaluation date(s):	enter text here

General comments on this assessment:

Little to no information is available on this plant. It appears that it will grow at lower elevations of our state (USDA growing zones 5-8), we have zones 4-6. Readily available to the public for purchase, and at a minimum it should go on a watch list due to the suitable climatic zones.

Table 2. Criteria, Section, and Overall Scores

1.1	Impact on abiotic ecosystem processes	U	No Information	<p>Impact</p> <p>Enter four characters from Q1.1-1.4 below:</p> <p>UUUU</p> <p>Using matrix, determine score and enter below:</p> <p>U</p>	
1.2	Impact on plant community	U	No Information		
1.3	Impact on higher trophic levels	U	No Information		
1.4	Impact on genetic integrity	U	No Information		
2.1	Role of anthropogenic and natural disturbance	U (0 pts)	No Information	<p>Invasiveness</p> <p>Enter the sum total of all points for Q2.1-2.7 below:</p> <p>0</p> <p>Use matrix to determine score and enter below:</p> <p>U</p>	<p>Wildlands Plant Score</p> <p>Using matrix, determine Overall Score and Alert Status from the first, second, and third section scores and enter below:</p> <p>Not listed</p> <p>No Alert</p>
2.2	Local rate of spread with no management	U (0 pts)	Observational		
2.3	Recent trend in total area infested within state	U (0 pts)	No Information		
2.4	Innate reproductive potential Wksht A	U (0 pts)	No Information		
2.5	Potential for human-caused dispersal	U (0 pts)	Anecdotal		
2.6	Potential for natural long-distance dispersal	U (0 pts)	No Information		
2.7	Other regions invaded	U (0 pts)	No Information		
3.1	Ecological amplitude/Range	U	No Information	<p>Distribution</p> <p>Using matrix, determine score and enter below:</p> <p>U</p>	
3.2	Distribution/Peak frequency Wrksht B	U	No Information		

4.1	Poisonous to livestock	U (0 pts)	No Information
4.2	Detrimental to economic crops	U (0 pts)	No Information
4.3	Detrimental to management of agricultural system, rangeland and pasture	U (0 pts)	No Information
4.4	Human impacts Wrksht C	U (0 pts)	No Information

Agricultural / Human Impact

Enter the sum total of all points for Q4.1-4.4 below:

0

Use matrix to determine score and enter below:

U

Agricultural Plant Score

Using matrix, determine Overall Score and Alert Status from the second, third and fourth section scores and enter below:

Not listed

No Alert

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes	U No Information back
Identify ecosystem processes impacted: There is no information in the literature describing the effects of Grass leaf mat daisy on the abiotic community.	
Rationale: Exhaustive searches of the literature turned up very limited information on Grassleaf mat daisy.	
Sources of information: enter text here	
Question 1.2 Impact on plant community composition, structure, and interactions	U No Information back
Identify type of impact or alteration: There is no information in the literature describing the effects of Grassleaf mat daisy on the surrounding plant community.	
Rationale: Exhaustive searches of the literature turned up very limited information on Grassleaf mat daisy. Several sites on the internet sell Grassleaf mat daisy and say it does well with other planted flower species (1).	
Sources of information: (1) High Country Gardens: Hirpicium armeriodes v. armeriodes, Grassleaf mat daisy. Available at http://www.highcountrygardens.com/catalog/product/57852/ .	
Question 1.3 Impact on higher trophic levels	U No Information back
Identify type of impact or alteration: There is no information in the literature describing the effects of Grassleaf mat daisy on the higher trophic levels.	
Rationale: Exhaustive searches of the literature turned up very limited information on Grassleaf mat daisy.	
Sources of information: enter text here	
Question 1.4 Impact on genetic integrity	U No Information back
Identify impacts: There is no information in the literature describing the genetic integrity of Grassleaf mat daisy.	
Rationale: Exhaustive searches of the literature turned up very limited information on Grass leaf mat daisy.	
Sources of information: enter text here	
Question 2.1 Role of anthropogenic and natural disturbance in establishment	U No Information back
Describe role of disturbance: There is no information in the literature describing the role of disturbance on Grassleaf mat daisy.	

Rationale: Exhaustive searches of the literature turned up very limited information on Grassleaf mat daisy.	
Sources of information: enter text here	
Question 2.2 Local rate of spread with no management	U Observational back
Describe rate of spread: There is no information in the literature describing the spread of Grassleaf mat daisy.	
<p>Rationale: There was a unconfirmed posting on a forum in which Kit Cassingham of Ridgway, CO, told a story of her troubles with Grassleaf mat daisy. She writes, " Last year I planted a beautiful flowering ground cover that fit the bill for my garden's needs: it was xeric, evergreen, and low growing. It turned out to also be deer- and rabbit-resistant, which is important in my high mesa location. The cheery white flowers with yellow centers opened and closed daily as the sun came and went, and it bloomed from late spring through the fall. I was so thrilled with its performance during its first year in my garden that I ordered more the second year.</p> <p>I had found two seedlings that I transplanted to the location I felt they would work well and then planted my new babies. Then I started noticing that I was finding more and more seedlings all over the place, even 100' from the garden where they were planted. A comment from the person taking my order came to mind: he'd found them growing everywhere in a mountain area he'd just hiked in. I realized this beautiful plant was an invasive species!</p> <p>Once I realized what I had done, introducing a plant that would probably spread all over my mesa, I ranked those wonderful flowers out of the ground, and have spent the past month pulling all the seedlings I could find. Yesterday I spent two hours hunting them down and raking them out of the ground. I had memories of an old Japanese sci-fi flick where you miss the one invasive plant and the next time you turn around they are everywhere. I'm sure I will be hunting them down weekly the rest of the growing season (which this year seems to be like the Energizer Bunny, it keeps going, and going), and going. I'll have another search party next spring, hoping to get the last of the garden vixens. I have scoured the land right around the house and garden, but how far do I have to go to find others?</p> <p>If you are tempted to buy <i>Hirpicium armeriodes</i> v <i>armerouides</i>, aka Grassleaf Mat Daisy, *DON'T*!!! Who knows what environmental damage can be done in your area by introducing it. Here in western Colorado I see it depriving deer and rabbit of food because it will squeeze out the grasses and flowers they can and do eat. I don't want to kill off, or chase away, the local wildlife. I don't want the vegetation to become one of a monospecies either.</p> <p>If you want to see the garden vixen, visit the Drakensberg Mountains in South Africa where it hails from. The Grassleaf Mat Daisy is beautiful, but oh the environmental damage it will cause, at least around here, is unsettling. "</p>	
Sources of information:	
(2) ECONomically sound forum: Garden Vixen. available at: http://forum.economicallysound.com/viewtopic.php?t=45&sid=ab05e9c500cccc42ed1247fd64c68a22	
Question 2.3 Recent trend in total area infested within state	U No Information back
Describe trend: There is no information in the literature describing the spread of Grassleaf mat daisy.	

Rationale: The USDA PLANTS database does not even list Grassleaf mat daisy, and there are no other sources of information listing the plant as an invasive species.	
Sources of information: enter text here	
Question 2.4 Innate reproductive potential	U No Information back
Describe key reproductive characteristics: There is no information in the literature describing the reproductive potential of Grassleaf mat daisy.	
Rationale: Grassleaf mat daisy are sold online. Plants can be purchased for \$5.99 a plant at the High Country Gardens website(1).	
Sources of information: (1) High Country Gardens: Hirpicium armeriodes v. armeriodes, Grassleaf mat daisy. Available at http://www.highcountrygardens.com/catalog/product/57852/ .	
Question 2.5 Potential for human-caused dispersal	U Anecdotal back
Identify dispersal mechanisms: Grassleaf mat daisy are sold online. Plants can be purchased for \$5.99 a plant at the High Country Gardens website(1).	
Rationale: Following the example of Kit Cassingham, populations of Grassleaf mat daisy can be introduced to the state through indirect purchases from nurseries and before long that plants have escaped from the planters.	
Sources of information: (1) High Country Gardens: Hirpicium armeriodes v. armeriodes, Grassleaf mat daisy. Available at http://www.highcountrygardens.com/catalog/product/57852/ .	
Question 2.6 Potential for natural long-distance dispersal	U Observational back
Identify dispersal mechanisms: There is no information in the literature describing the reproductive potential of Grassleaf mat daisy.	
Rationale: From the experience of Kit Cassingham, it appears that the seeds are wind dispersed, similar to a dandelion, and germinate the following year. It appears from her accounts that the seed production must be large to have the population so widespread within a couple of years (2). However, this report is not confirmed and it is an objective view taken by this assessment.	
Sources of information: (2) ECONomically sound forum: Garden Vixen. available at: http://forum.economicallysound.com/viewtopic.php?t=45&sid=ab05e9c500cccc42ed1247fd64c68a22	

Question 2.7 Other regions invaded	U No Information back
Identify other regions: There is no information in the literature describing the distribution of Grassleaf mat daisy.	
Rationale: Exhaustive searches of the literature turned up very limited information on Grassleaf mat daisy. The only report of Grassleaf mat daisy in Colorado, comes from Kit Cassingham. That report is unconfirmed, and has been left out of the regions invaded.	
Sources of information: (2) ECONomically sound forum: Garden Vixen. available at: http://forum.economicallysound.com/viewtopic.php?t=45&sid=ab05e9c500cccc42ed1247fd64c68a22	
Question 3.1 Ecological amplitude/Range	U No Information back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: There is no information in the literature describing the distribution of Grassleaf mat daisy.	
Rationale: Exhaustive searches of the literature turned up very limited information on Grassleaf mat daisy. The only report of Grassleaf mat daisy in Colorado, comes from Kit Cassingham. That report is unconfirmed, and has been left out of the regions invaded.	
Sources of information: enter text here	
Question 3.2 Distribution/Peak frequency	U No Information back
Describe distribution: There is no information in the literature describing the distribution of Grassleaf mat daisy.	
Rationale: Exhaustive searches of the literature turned up very limited information on Grassleaf mat daisy. The only report of Grassleaf mat daisy in Colorado, comes from Kit Cassingham. That report is unconfirmed, and has been left out of the regions invaded.	
Sources of information: enter text here	
Question 4.1 Poisonous to Livestock	U No Information back
Describe impacts in terms of high probability of death, long-term health impacts, or short-term health impacts: There is no information in the literature describing the poisonous of Grassleaf mat daisy.	
Rationale: Exhaustive searches of the literature turned up very limited information on Grassleaf mat daisy.	
Sources of information: enter text here	

Question 4.2 Detrimental to Economic Crops	U No Information back
Describe impacts to all aspects of cropping systems (see guidelines): There is no information in the literature describing the impacts of Grassleaf mat daisy.	
Rationale: Exhaustive searches of the literature turned up very limited information on Grassleaf mat daisy.	
Sources of information: enter text here	
Question 4.3 Detrimental to Mgmt of Agricultural System, Rangeland and Pasture	U No Information back
Describe impacts to water diversion systems, increased water use, reduced forage for livestock: There is no information in the literature describing the poisonous of Grassleaf mat daisy.	
Rationale: There is no information in the literature describing the impacts of Grassleaf mat daisy.	
Sources of information: enter text here	
Question 4.4 Human Health Impacts	U No Information back
Describe key human impacts such as; irritants, property values, recreational values, and industry impacts: There is no information in the literature describing the poisonous of Grassleaf mat daisy.	
Rationale: There is no information in the literature describing the impacts of Grassleaf mat daisy.	
Sources of information: enter text here	

Worksheet A

[back](#)

Reaches reproductive maturity in 2 years or less	Unknown: 0 pts
Dense infestations produce >1,000 viable seed per square meter	Unknown: 0 pts
Populations of this species produce seeds every year.	Unknown: 0 pts
Seed production sustained over 3 or more months within a population annually	Unknown: 0 pts
Seeds remain viable in soil for three or more years	Unknown: 0 pts
Viable seed produced with <i>both</i> self-pollination and cross-pollination	Unknown: 0 pts
Has quickly spreading vegetative structures (rhizomes, roots, etc.) that may root at nodes	No: 0 pt
Fragments easily and fragments can become established elsewhere	Unknown: 0 pts
Resprouts readily when cut, grazed, or burned	Unknown: 0 pts
	Total Pts 8 unknowns
	U (3+ unknowns)

Note any related traits: There is no information in the literature describing the life history of Grassleaf mat daisy.

Worksheet B - Colorado Ecological Types and Land Use

[back](#)

Major Ecological and Land Use Types	Minor Ecological and Land Use Types	Code*
Freshwater and Aquatic Systems	lakes, ponds, reservoirs	Unknown
	rivers, streams, canals	Unknown
Riparian and wetlands	Riparian forest	Unknown
	Riparian shrublands	Unknown
	Wet meadows	Unknown
Grasslands	Shortgrass prairie	Unknown
	Tallgrass prairie	Unknown
	Sandsage prairie	Unknown
	Montane meadows	Unknown
Irrigated Agriculture	Hay meadows	Unknown
	Irrigated crops (alfalfa, corn, sugar beets)	Unknown
Dryland Agriculture	Dryland crops (wheat, corn, millet, dryland grass hay, sunflowers, mustard for biodiesel)	Unknown
Developed Lands	Urban, exurban, industrial	Unknown
Arid Shrublands	Sagebrush shrublands	Unknown
	Foothills shrublands	Unknown
	Gambel oak shrublands	Unknown
Woodlands	Pinyon - juniper	Unknown
	Ponderosa pine	Unknown
	Limber pine	Unknown
Forest	Lodgepole pine	Unknown
	Spruce-fir	Unknown
Alpine	Boulder and rock fields	Unknown
	Dwarf shrublands	Unknown
	Tundra	Unknown
Barrens (lower elevation)	Dunes	Unknown
	Rock outcrops	Unknown
	Canyonlands	Unknown

* A. means >50% of type occurrences are invaded; B means >20% to 50%; C. means >5% to 20%; D. means present but ≤5%; U. means unknown (unable to estimate percentage of occurrences invaded).

Worksheet C – Human Impacts

Human health impacts; irritants (sap), spines, poisonous, and/or smoke impacts	No: 0 pt
Property values are decreased due to increased risk of fire	Unknown: 0 pts
Decreased property value due to moderate to heavy infestations	Unknown: 0 pts
Decreased land value for recreational use; boating, fishing, camping, etc.	Unknown: 0 pts
Impact of listing detrimental to industry; agriculture, horticulture, nursery, and/or seed	Unknown: 0 pts
	Total Pts 4 unknowns
	U (2+ unknowns)
Note any related traits: There is no information in the literature describing the impacts of Grassleaf mat daisy.	