Field Release of *Bradyrrhoa gilveolella* (Lepidoptera: Pyralidae), for Biological Control of Rush Skeletonweed, *Chondrilla juncea* (Asteraceae)

Environmental Assessment

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Proposed Action:	The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS) is proposing to issue a permit for the release of the non-indigenous root-moth, *Bradyrrhoa gilveolella* (Treitschke) (Lepidoptera: Pyralidae). The agent would be used by the permit applicant for the biological control of rush skeletonweed, *Chondrilla juncea* L. (Asteraceae).
Type of statement:	Environmental Assessment
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1. Purpose and Need for the Proposed Action

1.1 The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), is proposing to issue a permit for release of a nonindigenous insect, *Bradyrrhoa gilveolella* (Treitschke) (Lepidoptera: Pyralidae). The agent would be used by the applicant for the biological control of rush skeletonweed, *Chondrilla juncea* L.

The applicant's purpose for releasing *B. gilveolella* is to reduce the severity and extent of rush skeletonweed in the continental United States. Rush skeletonweed is a widely distributed, non-indigenous weed. Native to Eurasia, this invasive weed has become established in California, Delaware, Georgia, Idaho, Indiana, Maryland, Michigan, Montana, New Jersey, New York, Oregon, Pennsylvania, Virginia, Washington, Washington D.C. and West Virginia (USDA, NRCS 1999). The weed causes losses in infested grain fields, reduces rangeland forage production and reduces plant and animal diversity. Infested land types include roadsides, railways, rangelands, pastures, grain fields, coastal sand dunes, and shaley hillsides in mountainous regions. Native stands of vegetation in good conditions are seldom invaded by rush skeletonweed although grasses are poor competitors once the weed is established.

Several biological control (biocontrol) agents have been released previously for the control of rush skeletonweed, including *Aceria chondrillae* (a mite), *Puccinia chondrillae* (a rust fungus), and *Cystiphora schmidti* (a gall midge). However, these organisms have been successful only in certain locations. A scientist at the University of Montana has applied to APHIS for a permit to release *B. gilveolella*, another agent with the potential to suppress rush skeletonweed populations in the United States.

The proposed biocontrol agent, *Bradyrrhoa gilveolella* is a moth in the family Pyralidae. It is present in Southern Russia from Kazakstan to the Ukraine, south to central Iran, extending westward into Turkey, Romania, Bulgaria, Yugoslavia, Macedonia, Greece and Sicily. The moth has overlapping generations, one from May/June to September and the other from late July, early September until May/June. The larva of the winter generation remains dormant from November to March. Larval development and pupation take place entirely beneath the soil surface within a feeding tube that is attached to the root of rush skeletonweed. The feeding tube is made of loosely spun silk to start, but later is covered with latex (from the plant), root fragments, frass and soil particles. Larvae of *B. gilveolella* feed on the outer cortical portion of the rootstock, cutting cortical vessels and interrupting the flow of nutrients. The eventual damage to the root and plant is dependent upon the size of the root relative to the number of larvae feeding. The roots may be substantially cut by larval feeding resulting in death of the plant. Larger plants with larger roots are more tolerant of larval feeding although feeding damage does makes the root more susceptible to pathogenic fungi. Pupation occurs within the feeding tube and adults emerge from these tubes. Dispersal of moths is by flight but may be aided by air movements. Two to eight days after adult emergence the females will lay eggs at the base of rush skeletonweed plants. Newly emerged larvae will descend to the soil by a silk thread and crawl across the surface until a plant is encountered. The larvae will feed briefly on the stem before attaching to the root.

Before a permit is issued for release of *B. gilveolella*, APHIS needs to analyze the potential effects of the release of this agent into the continental United States.

1.2 APHIS must decide among the following alternatives:

A. To deny the permit application (no action)
B. To issue the permit as submitted
C. To issue the permit with management constraints or mitigation measures.

1.3 Issues arising from the field release of *B. gilveolella* are:

A. Will *B. gilveolella* attack non-target plants within and outside of the area infested with *C. juncea*?

B. Will *B. gilveolella* affect any federally listed threatened or endangered species or other species of special concern?

1.4 The pending application for release of this biocontrol agent into the environment was submitted in accordance with the provisions of the Plant Protection Act of 2000 (7 USC 7701 *et seq*.). This environmental assessment (EA) was prepared by APHIS in compliance with the National Environmental Policy Act (NEPA) (42 USC 4321 *et seq.*) as prescribed in implementing regulations adopted by the Council on Environmental Quality (40 CFR 1500-1509), by USDA (7 CFR 1b), and by APHIS (7 CFR 372).

2. Alternatives Including the Proposed Action

2.1 This chapter will explain the alternatives available to APHIS. Although APHIS' alternatives are limited to a decision whether to issue a permit for release of *B. gilveolella*, other methods available for control of rush skeletonweed are also described. These control methods are not decisions to be made by APHIS and may continue whether or not a permit is issued for environmental release of *B. gilveolella*. These are methods presently being used to control rush skeletonweed by public and private concerns and are presented to provide information to the reader.

2.2 Description of APHIS' alternatives.

2.2.1 Alternative 1 - No Action: Under this alternative, APHIS would not issue a permit for the field release of *B. gilveolella* for the control of rush skeletonweed. The release of this biocontrol agent would not take place.

2.2.2 Alternative 2 - Issue the Permit: Under this alternative, APHIS would issue a permit for the field release of *B. gilveolella* for the control of rush skeletonweed. This permit would contain no special provisions or requirements concerning release procedures or mitigating measures.

2.2.3 Alternative 3 - Issue the Permit with Specific Management Constraints and Mitigating Measures: Under this alternative, APHIS would issue a permit for the field release of *B. gilveolella* for the control of rush skeletonweed. However, the permit would contain special provisions or requirements concerning release procedures or mitigating measures.

2.3 The following alternatives are presently being used to control rush skeletonweed. These controls will continue under the "No Action" alternative but may continue even if a permit is issued for release of *B. gilveolella*.

2.3.1 Chemical Control: Rush skeletonweed is difficult to control with herbicides. Historically, picloram (Tordon 22K®) has been applied at 2 quarts per acre to rosettes. 2,4-D amine at a rate of 2 quarts per acre may also provide some control. Successful control of this weed depends on the specific conditions of the site and usually requires reapplication on an annual basis. Although the expense of repeated application may be justifiable on high return cereal crops, it is unlikely to be cost effective in range situations.

2.3.2 Mechanical Control: Mechanical control practices have also been used to control rush skeletonweed in selected infestations. Hand pulling or grubbing provides effective control of small infestations, but must be repeated several times during the growing season over a several year period. Mowing does not affect carbohydrate reserves, although it may limit seed production. Low level cultivation may increase infestations by creating and spreading root fragments but cultivation every 6 to 8 weeks may effectively eliminate the weed. Proper grazing by sheep may reduce or prevent production of rush skeletonweed. Continuous rather than rotational grazing produces the lowest weed densities. Moderate grazing is as effective as heavy grazing in decreasing the competitive ability of desired species.

2.3.3 Cultural Control: The effect of rush skeletonweed on wheat and pasture yields may be minimized by increasing competition by the addition of high rates of nitrogen fertilizer. The planting of competitive legumes, such as alfalfa, increases soil fertility and effectively reduces populations of rush skeletonweed in crop-pasture rotations. However, the high level of pasture management needed for effective control is difficult to achieve.

2.3.4 Biological Control: Three biological control agents have been released on rush skeletonweed in North America. A rust, *Puccinia chondrillina*, causes pustules that erupt through the leaf and stem surfaces which dessicate the leaves and reduce the plant's ability to photosynthesize. Severe rust infections can control rush skeletonweed under certain conditions, whereas light infections may reduce seed production and viability. A gall mite, *Aceria chondrillae*, induces the vegetative and floral buds to form leafy galls. Severe galling may cause stunting of the plant and greatly reduces seed production. A gall midge, *Cystiphora schmidti*, feeds on the rosettes, stem leaves and stems, deforming plants and reducing seed production. Gall midges have less impact than either the rust or mites and are subjected to a high level of parasitism. Although the effectiveness of individual biocontrol agents may vary depending on local conditions, in California the rust appears to be more effective whereas in eastern

Washington the mite appears to be more important.

2.4 Summary of Consequences

Table 1. Summary of Consequences

Consequences	No Action	Issue Permit	Issue Permit with conditions
Effects on non-target organisms	Use of non-selective herbicides would cause harm to native plants and cause water quality to be threatened.	None expected	None expected
Effects on threatened and endangered species	Would expose T&E species to the effects of herbicides and disturbance of critical habitat from mechanical controls.	None expected	None expected

3. Affected Environment

3.1 Evidence of host specificity of *B. gilveolella*

Host specificity data are summarized here from a petition that was submitted to the Technical Advisory Group (TAG) for Biological Control Agents of Weeds (Littlefield et al. 2000).

Field observations: Under field conditions, *B. gilveolella* has only been found to infest other *Chondrilla* species (L'Homme 1935, Caresche and Wapshere 1975). It is found on *C. juncea, C. juncea* form *intybacea* (=*C. latifolia*), *C. brevirostris, C. ambigua, C. kossinskyi,* (=*C.pauciflora*), *C. kusnezovii* and *C. mujunkumensis* in southern Russia (Sakharov 1930, Kozulina and Rudakova 1932, Dirsch 1933). Caresche and Wapshere (1975) found *B. gilveolella* on *C. juncea, C. juncea* form *acantholepis* (=*C. acantholepis*) and *C. ramosissima* in Greece.

Laboratory host specificity tests: Rush skeletonweed belongs to the plant family Asteraceae. Twenty-five Asteraceae species were tested in the United States, including 11 native species (Appendix 1). In these tests, no larval feeding or development was observed on any species other than rush skeletonweed. Although one small feeding tube was observed on *Lygodesmia juncea*, no feeding was associated with it. This probably occurred because, although *L. juncea* is very similar morphologically to rush skeletonweed, it differs in its biochemistry.

Caresche and Wapshere (1975) tested plants from 21 different families, including agricultural crops and plants closely related to rush skeltonweed (Appendix 2) in both “no choice” and “choice tests. In “no choice” tests, larvae fed on roots of *Taraxacum officinale*, although at a much slower rate compared to rush skeletonweed. However, in “choice” tests, no feeding occurred on any other plant than rush skeletonweed. To determine if possible feeding on *T. officinale* occurred under field conditions in Greece, 250 plants in the vicinity of infested rush skeletonweed plants were dug and inspected. None of the rootstock showed indications of feeding by *B. gilveolella* larvae (Caresche and Wapshere 1975).

Field observations, host specificity tests on 37 species from within the Asteraceae, and additional tests on non-Asteraceae species, present solid evidence that *B. gilveolella* is unlikely to present a risk to any species, native or introduced, other than *Chondrilla*.

3.1.2 The Asteraceae is one of the largest plant families in North America and, accordingly, has a high number of threatened, endangered, and sensitive species (TES). With threatened and endangered species in more than 20 genera and sensitive species in over 70 additional genera, the number of potential test species is prohibitively large. Therefore, testing was limited to those species most closely related to rush skeletonweed, members of the plant tribe Lactuceae. In North America, there are seven subtribes of Lactuceae with native species; five of these subtribes contain TES species. Because obtaining seeds and/or plant material of TES species can be difficult and may further decimate populations, species of concern were not tested. Instead, substitute species were selected for each from the same genera, except *Microseris* where an *Agoseris* species was tested (Table 2). The species selected were similar to the TES species and also similar to rush skeletonweed. The criteria used for selection of substitutes was that the species be perennial so that larvae might complete their development by overwintering, have a taproot large enough for feeding tube formation, and have a similarly shaped rosette that might attract an ovipositioning female.

The two species considered to be most at risk and that received highest attention because they fall in the same subtribe as rush skeletonweed are *Taraxacum californicum* and *T. carneocoloratum*. *T. californicum* is found in California, possibly within the range of rush skeletonweed, and is listed as endangered (USFWS 1999). *Taraxacum carneocoloratum*, historically found in Alaska and the Yukon, outside the current range of rush skeletonweed, was formerly listed as a Category 2 species (USFWS 1993). (Note - In 1996, the U. S. Fish and Wildlife Service discontinued the use of this category, but remains concerned about and acknowledges the need for further study of these sensitive species (USFWS 1996).

Because there was no larval feeding or development on any substitute TES species (other than the small tube on *L. juncea* previously described), *B. gilveolella* does not present any risk to listed or non-listed taxa other than *Chondrilla* species.

Table 2. TES species in the Lactuceae tribe and their substitute species for host specificity tests.

Subtribe	TES Species	Status[a]	Substitute Species

Crepidinae	*Taraxacum californicum*	E	*Taraxacum eriophorum*
	Taraxacum carneocoloratum	S	*Taraxacum laevigatum*
			Taraxacum officinale
			T. officinale ssp. *ceratophorum*
Hieraciinae	*Hieracium pringlei*	S	*Hieracium albertinum*
	Hieracium robinsonii	S	"
Lactucinae	*Prenanthes barbata*	S	*Prenanthes sagittata*
	Prenanthes boottii	S	"
Microseridinae	*Microseris decipens*	S	*Agoseris aurantiaca*
	Microseris howellii	S	"
Stephanomeriinae	*Lygodesmia dolorensis*	S	*Lygodesmia juncea*
	Stephanomeria blairii	S	*Stepahomeria tenuifolia*
	Stephanomeria malheurensis	E	"

[a] E = Endangered; S = Sensitive species formerly listed as Category 2 by the USFWS.

3.1.3 No minority, low income populations, or children should be negatively impacted due to the proposed action. Potential reductions in herbicide usage to control rush skeletonweed may even be beneficial to human populations.

4.0 Environmental Consequences

4.1 This chapter will analyze the potential environmental consequences of each alternative on the resources described in Chapter 3.

4.2 Effects of Alternative 1 - No Action

4.2.1 Effects on Non-Target Organisms: The continued use of chemical herbicides, mechanical, cultural and existing biological controls at current levels would be a result if the "no action" alternative is chosen. Conventional measures such as herbicides are non-selective and affect non-target plants. For example, picloram, when used to control rush skeletonweed, can severely injure or kill many desirable non-target plants, including trees. Because picloram is relatively persistent, it may injure plants for several growing seasons. When used improperly, picloram can also leach through sandy soils or be lost in surface water runoff, contaminating streams and groundwater. Mechanical controls are also non-selective and impact non-target plants. Cultural and mechanical controls modify site characteristics and conditions potentially resulting in soil erosion and fertilizer run-off. No negative impacts have been reported with the use of the existing established biocontrol agents and these are successful in some locations.

4.2.2 Effects on Threatened and Endangered Species: Impact on threatened and endangered species as a result of mechanical, cultural and existing biocontrol would be similar to effects on non-target species and habitats described in section 4.2.1.

4.3 Effects of Alternative 2 - Issue Permit

4.3.1 Effects on Non-Target Organisms: Several lines of evidence indicate that *B. gilveolella* is highly host-specific and will not have negative impacts on native plant species:

- *Surveys.* Under field conditions, *B. gilveolella* has only been found to infest other *Chondrilla* species (L'Homme 1935, Caresche and Wapshere 1975).

- *Laboratory tests of host specificity.* Laboratory tests conducted in the United States using 21 plant species resulted in no feeding on any test plants except rush skeletonweed.

- *Literature records.* *B. gilveolella* was tested against 77 plant species in 21 families by Caresche and Wapshere (1975) in Australia and demonstrated that *B. gilveolella* is highly host specific.

4.3.2 Effects on Threatened and Endangered Species: The petition prepared by Dr. Jeff Littlefield (Littlefield *et al.* 2000) for the Technical Advisory Group for Biological Control Agents of Weeds (TAG) was submitted to Dr. John Fay, Staff Biologist, U.S. Fish and Wildlife Service, Branch of Consultation and HCPs, Arlington, VA, in compliance with the Endangered Species Act of 1973. On November 11, 2001, Dr. Fay issued a verbal concurrence with APHIS' determination of "no effect" on threatened and endangered species or designated critical habitat by the release of *B. gilveolella*.

4.4 Effects of Alternative 3 - Issue the Permit with Specific Management Constraints and Mitigating Measures

4.4.1 Effects on Non-Target Organisms: No specific management constraints or mitigating measures have been recommended for this species. Therefore, under this alternative, impacts on non-target organisms would be identical to those described in 4.3.1.

4.4.2 Effects on Threatened and Endangered Species: No specific management constraints or mitigating measures have been recommended for this species. Therefore, under this alternative, impacts on threatened and endangered organisms would be identical to those described in 4.3.2.

4.5 No disproportionate effects are expected to impact low income or minority populations or pose undue risks for children.

4.6 An unavoidable effect of the proposed action would be the lack of complete control of the target pest. The success rate of biological control of weeds is approximately 30%. Should the proposed action be unsuccessful, the present chemical, biological control and mechanical control activities would continue. Rush skeletonweed would continue to expand into areas presently uninfested.

4.7 Once a biological control agent such as *B. gilveolella* is released into the environment and it becomes established, it could move from the target plant to non-target plants and itself become a pest. If a host shift does take place, the resulting effects could result in environmental impacts that may not be easily reversed. Biological control agents such as *B. gilveolella* generally spread even without the agency of man. In principle, therefore, release of these insects at even one site must be considered equivalent to release over the entire area in which potential host plants occur and in which the climate is suitable for reproduction and survival.

5.0 List of Preparers

This environmental assessment was prepared by Dr. Jeffrey Littlefield, Research Entomologist, University of Montana and Dr. Tracy Horner, Entomologist, USDA-APHIS-Plant Protection and Quarantine (PPQ).

6.0 List of Agencies Consulted

Dr. John Fay, Fish and Wildlife Biologist, U.S. Fish and Wildlife Service was consulted under Section 7 of the Endangered Species Act.

The Technical Advisory Group for the Biological Control Agents of Weeds (TAG) recommended the release of *Bradyrrhoa gilveolella* on August 15, 2000. TAG members that reviewed the release petition (Littlefield *et al.* 2000) included representatives from the United States Department of the Interior (Bureau of Land Management and Bureau of Reclamation), USDA (Agricultural Research Service, APHIS and the Cooperative State Research, Education, and Extension Service), the Environmental Protection Agency, the Weed Science Society of America and the National Plant Board.

7.0 List of Reviewers

This document was reviewed by Dr. Robert Flanders, USDA-APHIS-PPQ, Charles Bare, USDA-APHIS-PPQ and Dr. Michael Firko, USDA-APHIS-PPQ.

8.0 References Cited

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9.0 Appendices

Appendix 1. U.S. host specificity testing - plants tested

Appendix 2. Host test plant list - Testing by Caresche and Wapshere (1975)

Appendix 1. U.S. host specificity testing - plants tested

Fabaceae			*Vigna radiata*	Mung bean
Asteraceae				
	Arctoteae		*Gazania splendens* x *rigens*	(Harlequin hybrid)
	Cardueae		*Cirsium undulatum*	Wavy-leaf thistle
	Mutisieae		*Gerbera jamesonii*	African daisy
	Vernonieae		*Stokesia laevis*	Stoke's aster
	Lactuceae			
		Crepidinae	*Chondrilla juncea*	Rush skeletonweed
			Crepis acuminata	
			C. atribarba	
			C. elegans	
			C. runcinata	
			Taraxacum officinale	Dandelion
			T. officinale ssp. *ceratophorum*	
			T. eriophorum	
			T. laevigatum	
		Microseridinae	*Agoseris aurantiaca*	
		Catananchinae	*Catananche caerulea*	
		Not assigned	*Cichorium intybus*	Chicory
		Hieraciinae	*Hieracium albertinum*	
		Lactucinae	*Lactuca sativa*	Romaine lettuce
			L. sativa	Grand Rapids lettuce
			L. sativa	Iceberg lettuce
			L. serriola	Prickly lettuce
			L. tartarica var. *pulchella*	Stebbins-blue lettuce
			L. virosa	
			Prenanthes sagittata	
		Stephanomeriinae	*Lygodesmia juncea*	Skeleton-weed
			Stephanomeria tenuifolia	Slender wire-lettuce
		Sonchinae	*Sonchus oleraceus*	Sow-thistle
			S. uliginosus	

Appendix 2. Host test plant list - Testing by Caresche and Wapshere (1975)

Asteraceae					
	Cichorioideae				
		Lactuceae			
			Crepidinae	*Chondrilla juncea*	Rush skeletonweed
				Taraxacum officinale	Dandelion
			Lactuicinae	*Lactuca sativa*	Lettuce
			Scorzonerinae	*Scorzonera hispanica*	
			Sonchinae	*Sonchus arvensis*	Corn sowthistle
				S. oleraceus	
			unassigned	*Cichorium endivia*	Endive
		Cardueae		*Carthamus tinctorius*	Safflower
				Cynara scolymus	Artichoke
	Asteroideae				
		Anthemideae		*Chrysanthemum indicum*	
				C. leucanthemum	
		Helenieae		*Tagetes* sp.	
		Heliantheae		*Helianthus annuus*	Sunflower
				H. tuberosus	Jerusalem artichoke
				Dahlia sp.	
				Zinnia sp.	
		Calenduleae		*Calendula* sp.	
Brassicaceae				*Brassica oleracea*	Cabbage
				B. rapa	Turnip
Chenopodiaceae				*Beta vulgaris*	Beet
Convolvulaceae				*Ipomoea batatas*	Sweet potato
Cucurbitaceae				*Cucurbita maxima*	Pumpkin
				Cucmis sativus	Cucumber
				C. melo	Rock melon
				Citrullus vulgaris	Water melon
Fabaceae				*Pisum sativum*	Garden pea
				Phaseolus vulgaris	French bean
				Vicia faba	Broad bean
				Glycine hispida	Soy bean
				Medicago sativa	Lucerne
				Trifolium subterraneum	Subterranean clover
				T. repens	White clover
				Acacia dealbata	Wattles
				A. floribunda	
				Medicago tribuloides	Barrel medic
				M. littoralis	Strand medic
Juglandaceae				*Juglans regia*	Walnut
Liliaceae				*Asparagus offinalis*	Asparagus

	Allium cepa	Onion
Linaceae	*Linum usitatissimum*	Linseed, flax
Malvaceae	*Gossypium* spp.	Cotton
Moraceae	*Ficus carica*	Fig
Myrtaceae	*Eucalyptus globulus*	Gum
	E. camaldulensis	Gum
Oleaceae	*Olea europaea*	Olive
Pinaceae	*Pinus radiata*	Monterey pine
Poaceae	*Triticum* spp.	Wheat
	Hordenum vulgare	Barley
	Avena sativa	Oats
	Secale cereale	Rye
	Oryza sativa	Rice
	Zea mays	Maize
	Sorghum vulgare	Sorghum
	Saccharum officinarum	Sugar cane
	Lolium perenne	Perennial ryegrass
	Phalaris tuberosa	Phalaris
Rosaceae	*Malus sylvestris*	Apple
	Pyrus communis	Pear
	Prunus domestica	Plum
	P. persica	Peach, nectarine
	P. armeniaca	Apricot
	P. cerasus	Cherry
	P. amygdalus	Almond
	Cydonia vulgaris	Quince
	Fragaria vesca	Strawberry
	Rosa spp.	Garden rose
Rutaceae	*Citrus sinensis*	Orange
	C. limonia	Lemon
	C. paradisi	Grapefruit
Solanaceae	*Solanum tuberosum*	Potato
	Lycopersicum esculentum	Tomato
	Nicotiana tabacum	Tobacco
	Capsicum annuum	Capsicum
Umbeliferae	*Daucus carota*	Carrot
	Pastinaca sativa	Parsnip
	Apium graveolens	Celery
Urticaceae		*Humulus lupulus* Hop
Vitaceae	*Vitis vinifera*	Grape

Decision and Finding of No Significant Impact
for
Field Release of *Bradyrrhoa gilveolella* (Lepidoptera: Pyralidae), for Biological Control of Rush Skeletonweed, *Chondrilla juncea* (Asteraceae)
Environmental Assessment
August 2002

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), is proposing to issue a permit to a researcher at Montana State University for the field release of a nonindigenous insect (*Bradyrrhoa gilveolella*). The insect would be used by the applicant for the biological control of rush skeletonweed (*Chondrilla juncea*) in the continental United States.

The alternatives available to APHIS are No Action, Issue Permit, and Issue Permit with Management Constraints or Mitigating Measures. Because of the action being proposed by APHIS, the Issue Permit and the Issue Permit with Management Constraints or Mitigating Measures alternatives will result in the release of the biological control agent into the environment. APHIS has therefore analyzed the potential effects of the release of the agent into the environment. The No Action alternative, as described in the environmental assessment (EA), would result in the continued use at the current level of chemical, mechanical, cultural and existing biological control methods for the management of rush skeletonweed. These control methods described are not alternatives for decisions to be made by APHIS, but are presently being used to control rush skeletonweed in the United States and may continue regardless of issuance of a permit for field release for *B. gilveolella*.

I have decided to issue the permit for the field release of *B. gilveolella* without management constraints or mitigating measures. The reasons for my decision are:

- This biological control agent is sufficiently host specific and poses little, if any, threat to the biological resources of the United States
- This species will not disproportionately affect minority or low- income populations, nor will they disproportionately affect children or result in any environmental health risks or safety risks to children.
- *B. gilveolella* poses no threat to the health of humans or wild or domestic animals.
- *B. gilveolella* is not likely to adversely affect endangered or threatened species or their habitat.
- While there is not total assurance that the release of *B. gilveolella* into the environment will be reversible, there is no evidence that this organism will cause any adverse environmental effects.

Based on the analysis found in the EA, I find that issuance of a permit for the field release of *B. gilveolella* without management constraints or mitigating measures will not have a significant impact on the quality of the human environment.

/s/

August 26, 2002

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Michael J. Firko
Assistant Director
APHIS Plant Health Programs
Plant Protection and Quarantine

Date