Field Release of the Nonindigenous Gorse Spider Mite, *Tetranychus lintearius* Dufour (Acari: Tetranychidae), for Biological Control of Gorse, *Ulex europaeus* L. (Leguminosae (=Fabaceae))

Revised[1] Environmental Assessment

October 1994

Agency Contact:

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[1] This revised environmental assessment (EA) supersedes an EA with the same title dated May 1994. The revisions do not affect the findings of the May 1994 EA.

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Finding of No Significant Impact

I. Introduction

The Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture (USDA) is considering issuing permits for release in the U.S. of a nonindigenous mite, *Tetranychus lintearius* Dufour (Acari: Tetranychidae). The applicants wish to release *T. lintearius* so that it can contribute to biological control of the nonindigenous weed, gorse (*Ulex europaeus* L.). Permits for release of *T. lintearius* would be issued by the Biological Assessment and Taxonomic Support (BATS) staff within Plant Protection and Quarantine (PPQ).

APHIS prepared this environmental assessment (EA) in compliance with the National Environmental Policy Act (NEPA). The proposed authorization by APHIS for interstate movement and release of *T. lintearius* into the environment comprises a federal action that is not classified by APHIS for the purposes of the NEPA process (42 U.S.C. 4321 *et seq*) (regulations for implementing NEPA have been established by the Council on Environmental Quality (CEQ) (40 CFR 1500-1509), USDA (7 CFR 1b), and APHIS (44 FR 50381-50384 and 44 FR 51272-51274). Under the CEQ implementing regulations (40 CFR § 1501.4(b) (1992), an EA must be prepared for an action that is not classified for the purposes of NEPA. An EA is a concise public document that must include brief discussions of the need for the proposed action, alternatives to the proposed action, the environmental impacts of the proposed action and alternatives, and a list of individuals or groups consulted during its preparation. Typically, EAs are developed to lead to one of two conclusions: either an environmental impact statement (EIS) is needed or a finding of no significant impact (FONSI) can be supported.

II. Proposed Action

A. Summary

APHIS is currently considering permit applications from Oregon and California for release of gorse spider mite, *T. lintearius*. The mite is native to Europe (Appendix 3; Hill and O'Donnell, 1991a) and does not occur naturally in North America (i.e., releases in North America constitute releases of a nonindigenous species). Oregon and California State officials have already authorized releases (Appendices 1 and 2). *T. lintearius* would be released as a biological control agent against gorse, *U. europaeus*, an introduced weed native to western Europe. Pest populations of gorse have severe negative economic (e.g., control costs, loss of rangeland) and environmental (e.g., use of toxic pesticides to control gorse, loss of biodiversity) impacts. The applicants would collect *T. lintearius* from New Zealand where it was introduced previously to control gorse. Standard quarantine procedures will be used to process the mites (Appendix 3, p. 11). Populations of *T. lintearius* in New Zealand were established from collections of *T. lintearius* made in England, Spain, and Portugal. Initially, 100–10,000 gorse spider mites would be released in Oregon, and 10,000 mites in California. The intention is to establish *T. lintearius* in North America wherever gorse is a problem. Because the applicants have suggested that permits may be sought for other States, and because mites released into the environment have dispersal potential, this EA covers release anywhere in the U.S. Although this EA covers releases anywhere in the U.S., a separate permit would be required for each State in which releases are made. Thus, State officials would have the opportunity to review applications for releases in their State.

B. Relevant Federal Regulations

Under the Federal Plant Pest Act (FPPA) as amended 1957 (7 U.S.C. 150aa *et seq.*) and the Plant Quarantine Act of 1908 as amended 1967 (7 U.S.C. 151 *et seq.*), USDA has broad authority to regulate the importation, interstate movement, and release into the environment of organisms that may directly or indirectly injure, cause disease, or damage plants. Biological control organisms are regulated by APHIS under the FPPA and involve a permitting process (7 CFR 330).

IV. Environmental Consequences of the Proposed Action

A. Summary

Although the permit applications currently being reviewed by APHIS are for release of *T. lintearius* in California and Oregon, APHIS anticipates requests from other States. As such, this EA considers environmental consequences resulting from release of *T. lintearius* anywhere in the U.S. where gorse has become, or may become established. Potential impacts fall into two general categories, direct and indirect effects.

B. Direct Effects

Direct effect refers to injury or mortality to target or nontarget species caused by *T. lintearius*. Direct effects are expected to be limited in scope because *T. lintearius* has such a narrow host range (Appendix 3, p. 6). As recently introduced weed, gorse does not play a natural role in North American ecosystems. Instead, because of its weedy and aggressive nature, gorse is having a significant, negative effect on the environment in North America, including loss of biodiversity. Direct effects should occur only where gorse has become established as a pestiferous weed. Indeed, the purpose of the proposed releases is to cause direct effects on populations of gorse. Except for the intended direct impacts of *T. lintearius* on populations of gorse, the direct effects of releasing *T. lintearius* for biological control of gorse are not expected to result in significant environmental impacts.

C. Indirect Effects

Indirect effects are those that would be caused by injury or mortality of gorse resulting from attack by *T. lintearius*. Indirect effects include competition between *T. lintearius* and other natural enemies of gorse. However, because the direct effects of *T. lintearius* are not expected to extend beyond populations of gorse, and because native organisms do not depend on gorse (e.g., Appendix 3, p. 4), indirect effects are not expected to extend beyond populations of gorse. None of the indirect effects are expected to be significant.

D. Endangered and Threatened Species

Program activities, including release of *T. lintearius*, are not expected to have any direct impact on endangered or threatened species. No members of the genus *Ulex* are listed by the Federal government as endangered or threatened (there are no native *Ulex* in North America). But because there are listed species in the same Tribe as gorse (i.e., *Lupinus* spp., see Appendix 3), and because some native *Lupinus* occur in North America in areas infested with gorse, several *Lupinus* species were tested during host specificity tests of *T. lintearius* (see Appendix 3, p. 7). These tests provided no evidence that *T. lintearius* would be capable of surviving on any native

The original EA was reviewed by other units within APHIS:

Robert Flanders, Ph.D., National Biological Control Institute

Dale Meyerdirk, Ph.D., Biological Control Operations, PPQ.

The original EA was reviewed by other technical specialists:

Jack R. Coulson, B.S., USDA, Agricultural Research Service

A. C. Schmidt, M.S., Agriculture Canada

The following technical specialists reviewed the petition (Appendix 3).

Alfred F. Cofrancesco, Ph.D., U.S. Army Corps of Engineers

Jack R. Coulson, B.S., USDA, Agricultural Research Service

A. C. Schmidt, M.S., Agriculture Canada

Evert E. Lindquist, Ph.D., Agriculture Canada

Janine Powell, Ph.D., USDA, Forest Service

Jeffrey Littlefield, Ph.D., Montana State University

C. W. Crompton, Ph.D., Agriculture Canada

Peter Harris, Ph.D., Agriculture Canada

B. D. Wright, Ph.D., National Plant Board and Oregon Dept. of Ag.

James Krysan, Ph.D., USDA, Agricultural Research Service

James G. Saulman, Ph.D., U.S. Environmental Protection Agency

Louis H. Waters, Ph.D., U.S. Department of the Interior

David Sisneros, Ph.D., U.S. Bureau of Reclamation

The original EA was reviewed by other technical specialists:

Jack R. Coulson, B.S., USDA, Agricultural Research Service

A. C. Schmidt, M.S., Agriculture Canada

Revisions to the original EA used to produce this revised EA were reviewed by:

Dennis Isaacson, Ph.D., Oregon Department of Agriculture

Charles Turner, Ph.D., USDA, Agricultural Research Service

ion is received (7 CFR 330 (live plant pests) or 7 CFR 360 (noxious weeds)).

FORM APPROVED - OMB NO. 0579-0054

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE
BIOLOGICAL ASSESSMENT SUPPORT STAFF
HYATTSVILLE, MARYLAND 20782

APPLICATION AND PERMIT TO MOVE LIVE PLANT PESTS AND NOXIOUS WEEDS

SECTION A - TO BE COMPLETED BY THE APPLICANT

1. NAME, TITLE, AND ADDRESS (Include Zip Code)

Eric M. Coombs, Entomologist
Oregon Department of Agriculture
635 Capitol Street N.E.
Salem, OR 97310

2. TELEPHONE NO. (503) 378-4987 FAX 503-373-1479

TYPE OF PEST TO BE MOVED
☒ Arthropods ☐ Noxious Weeds
☐ Pathogens ☐ Other (Specify)

SCIENTIFIC NAMES OF PESTS TO BE MOVED	B. CLASSIFICATION (Orders, Families, Races or Strains)	C. LIFE STAGES IF APPLICABLE	D. NUMBER OF SPECIMENS OR UNITS	E. SHIPPED FROM (Country or State)	F. ARE PESTS ESTABLISHED IN U.S.	G. MAJOR HOST(S) OF THE PEST
Tetranychus lintearius	Tetranychidae	all	100-10000	New Zeland	NO	Ulex europaeus

WHAT HOST MATERIALS WILL ACCOMPANY WHICH PESTS (Indicate by line number)
stems, leaves

8. DESTINATION	9. PORT OF ARRIVAL	10. APPROXIMATE DATE OF ARRIVAL OR INTERSTATE MOVEMENT
OREGON	Salem	

11. NO. OF SHIPMENTS	12. SUPPLIER	13. METHOD OF SHIPMENT
1-20	R. Hill, DSIRO - New Zealand	☒ Air Mail ☒ Air Freight ☐ Baggage ☐ Auto

INTENDED USE (Be specific, attach outline of intended research)
Field release as a biological control agent for:
Gorse, Ulex europaeus

14. METHODS TO BE USED TO PREVENT PLANT PEST ESCAPE	15. METHOD OF FINAL DISPOSITION
Double walled escape proof containers during transit.	Field release.

Applicant must be a resident of the U.S.A. I/We agree to comply with the safeguards printed on the reverse of this form, and understand that a permit may be subject to other conditions specified in Section B and C.

SIGNATURE OF APPLICANT (Must be person named in Item 1) — 18. DATE: 2-8-93

SECTION B - TO BE COMPLETED BY STATE OFFICIAL

STATUS
☒ Approve ☐ Disapprove
☐ Accept USDA Decision

20. CONDITIONS RECOMMENDED
Pending approval by TAG.

SIGNATURE — 22. TITLE: Administrator — STATE: Oregon — 23. DATE: 2/22/93

SECTION C - TO BE COMPLETED BY FEDERAL OFFICIAL

PERMIT

24. PERMIT NO. 931229

(Permit not valid unless signed by an authorized official of the Animal and Plant Health Inspection Service)

Under authority of the Federal Plant Pest Act of May 23, 1957 or the Federal Noxious Weed Act of 1974, permission is hereby d to the applicant named above to move the pests described, except as deleted, subject to the conditions stated on, or attached application. *(See standard conditions on reverse side).*

See attached:

"SUPPLEMENTAL PERMIT CONDITIONS"

OR WR

SIGNATURE OF PLANT PROTECTION AND QUARANTINE OFFICIAL	26. DATE	27. LABELS ISSUED	28. VALID UNTIL	29. PEST CATEGORY
M. D. Fuiko	May 13, 1994	20 PPQ 599	REVOKED	B2

Appendix 1

No permit can be issued to move live plant pests or noxious weeds until an application is received (7 CFR 330 *(live plant pests)* or 7 CFR 360 *(noxious weeds)*).

FORM APPROVED - OMB NO. 0579-0055

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE
BIOLOGICAL ASSESSMENT SUPPORT STAFF
HYATTSVILLE, MARYLAND 20782

APPLICATION AND PERMIT TO MOVE LIVE PLANT PESTS AND NOXIOUS WEEDS

SECTION A - TO BE COMPLETED BY THE APPLICANT

1. NAME, TITLE, AND ADDRESS *(Include Zip Code)*

Dr. Charles E. Turner
USDA-ARS
Western Regional Research Center
Albany, CA 94710

2. TELEPHONE NO. 510-559-5975; FAX 510-559-5777

3. TYPE OF PEST TO BE MOVED
☒ Arthropods ☐ Noxious Weeds
☐ Pathogens ☐ Other *(Specify)*

A. SCIENTIFIC NAMES OF PESTS TO BE MOVED	B. CLASSIFICATION *(Orders, Families, Races or Strains)*	C. LIFE STAGES IF APPLICABLE	D. NUMBER OF SPECIMENS OR UNITS	E. SHIPPED FROM *(Country or State)*	F. ARE PESTS ESTABLISHED IN U.S.	G. MAJOR HOST(S) OF THE PEST
4. Tetranychus lintearius	Acari:	Eggs,	10,000	New Zealand	no	gorse -
5. Dufour	Tetranychi-	Larvae,				Ulex europaeus
6.	dae	Adults				

7. WHAT HOST MATERIALS WILL ACCOMPANY WHICH PESTS *(Indicate by line number)*
gorse

8. DESTINATION	9. PORT OF ARRIVAL	10. APPROXIMATE DATE OF ARRIVAL OR INTERSTATE MOVEMENT
USDA-ARS-WRRC, Albany, CA	SFO	1993 (any month)

11. NO. OF SHIPMENTS	12. SUPPLIER	13. METHOD OF SHIPMENT
12	Dr. Richard Hill, DSIR, New Zealand	☒ Air Mail ☒ Air Freight ☐ Baggage ☐ Auto

14. INTENDED USE *(Be specific, attach outline of intended research)*
Field release for biological control of gorse

15. METHODS TO BE USED TO PREVENT PLANT PEST ESCAPE	16. METHOD OF FINAL DISPOSITION
Escape-proof containers in transit; standard protocol in quarantine	Field release and voucher specimens

17. *Applicant must be a resident of the U.S.A. I/We agree to comply with the safeguards printed on the reverse of this form, and understand that a permit may be subject to other conditions specified in Section B and C.*
SIGNATURE OF APPLICANT *(Must be person named in Item 1)* C. Turner

18. DATE 4/19/93

SECTION B - TO BE COMPLETED BY STATE OFFICIAL

19. STATUS
☒ Approve ☐ Disapprove
☐ Accept USDA Decision

20. CONDITIONS RECOMMENDED
SEE ATTACHED

21. SIGNATURE	22. TITLE	STATE	23. DATE
Barbara Hass	Special Assistant	California	4-29-93

SECTION C - TO BE COMPLETED BY FEDERAL OFFICIAL

PERMIT 24. PERMIT NO. 939212

(Permit not valid unless signed by an authorized official of the Animal and Plant Health Inspection Service) 01-07-93

Under authority of the Federal Plant Pest Act of May 23, 1957 or the Federal Noxious Weed Act of 1974, permission is hereby granted to the applicant named above to move the pests described, except as deleted, subject to the conditions stated on, or attached to this application. *(See standard conditions on reverse side)*

See attached:

"SUPPLEMENTAL PERMIT CONDITIONS"

A WR

25. SIGNATURE OF PLANT PROTECTION AND QUARANTINE OFFICIAL	26. DATE	27. LABELS ISSUED	28. VALID UNTIL	29. PEST CATEGORY
M. D. Fuller	May 13, 1994	12 PPQ 599	REVOKED	B2

PQ FORM 526 (MAY 84) *Previous edition obsolete.*

Appendix 2

SUPPLEMENTAL PERMIT CONDITIONS (Section C, PPQ Form 526)

Permit Number: 939212

Permittee: Turner, Charles E.

Organism: Gorse Spider Mite, *Tetranychus lintearius* Dufour (Acari: Tetranychidae)

State: CA

1. Note conditions specified by California officials.

2. This permit authorizes release into the environment as per the Environmental Assessment dated May 1994 and the Finding of No Significant Impact dated May 12, 1994.

3. The applicant will provide to the Organism Permitting and Risk Analysis (OPRA) branch of Biological Assessment and Taxonomic Support (BATS, PPQ, APHIS, USDA) a list of counties where the permitted organism was actually released into the environment.

4. This permit authorizes release of *T. lintearius* collected in New Zealand with the understanding that the source material was collected in a variety of areas including Great Britain, Spain, and Portugal.