



The Exotic Forest Pest Website

- Risk information for North America
- Contains apx. 150 Invasive Pest Records

Sponsored by:

- North American Forest Commission (NAFC)
- North American Plant Protection Organization (NAPPO)

URL <http://www.spfnic.fs.fed.us/exfor/>



Pest Records

Documentation

- pest identification
- detection and control methods
- biology

Risk Assessment

- potential to establish and spread
- propensity to cause economic and environmental harm

Risk Rating

- 1 = Very Low 9 = Very High



HOME

Scope
Definitions
References
Participants
Guidelines

Welcome to the
**North American Forest Commission
Exotic Forest Pest Information System**
(NAFC-ExFor)

Anyone is welcome to use the ExFor site, and to view the information contained within the database. To prepare or review a pest record, you must become a registered user of the system. To become a registered user, please fill out the [access form](#).

Please note: Due to system resource use requirements, users will have to log in to use the Potential Distribution Mapping Tool.

Navigate the ExFor system by using the links across the top of this page.

Home: Returns to this page.

Pests: Access a searchable database that provides fact sheets on pests that are a threat to North American forests. From this menu, you can view a variety of reports, add or update the pest information, or provide comments regarding an existing pest information sheet in the database.

Contacts: A list of people to contact regarding the Exotic Forest Pest Information System for North America.

Admin: Reserved for administrative users of the ExFor system.

Exit: Returns to the login page for ExFor.

ExFor is a joint project of the member organizations of the Insect and Disease Study Group of the North American Forest Commission (NAFC). These organizations include the Canadian Forest Service, the Canadian Food Inspection Agency, SEMARNAT (Sanidad Forestal, Mexico), the United States Department of Agriculture (USDA) Forest Service, and the USDA Animal and Plant Health Inspection Service.

Note: Check the [Guidelines](#) for instructions

Risk Rating Report -- [ExFor Database](#)

LAST UPDATED: 2/28/2008

EXFOR

EXOTIC FOREST PEST INFORMATION SYSTEM FOR NORTH AMERICA



HOME | PEST SEARCH | ADMIN | PREFERENCES | CONTACTS | PRODUCTS/TOOLS

Pest Type:

Pest Genus:

Pest Species:

Host Genus:

Host Species:

Geographic Regions:

Risk Ratings:

Authors:



SEARCH BY:

- Pest or Host Taxonomy
- Geographic Region
- Risk Rating
- Author

SUMMARY REPORTS:

- Risk Rating -- All Pests
- Review Comments -- All Pests
- Record Status -- All Pests

Phytophthora alni

IDENTITY

Name: *Phytophthora alni*
 Pest Authorities: Brasier et al.
 Taxonomic Position: Stramenopila: Pythiales: Pythiaceae
 Sub-specific Taxon:
 Pest Type: Fungus or fungus-like
 Common Name(s):
 Phytophthora disease of alders
 Synonym(s):

RISK RATING SUMMARY

Numerical Score: 6
 Relative Risk Rating: High Risk
 Uncertainty: Very Uncertain
 Uncertainty in this assessment results from: The susceptibility of North American *Alnus* species is unknown.

RISK RATING DETAILS

Establishment Potential Is Moderate Risk

The relevant criteria chosen for this organism are:

- Suitable climatic conditions and suitable host material coincide with ports of entry or major destinations.
- Organism has high inoculum potential or high likelihood of reproducing after entry.

Justification: Potential host are abundant throughout much of North America particularly in regions that are climatically similar to the host range in Europe.

Spread Potential Is Moderate Risk

The relevant criteria chosen for this organism are:

- Organism is capable of dispersing more than several km per year through its own movement or by abiotic factors (such as wind, water or vectors).
- Newly established populations may go undetected for many years due to cryptic nature, concealed activity, slow development of damage symptoms, or misdiagnosis.
- Eradication techniques are unknown, infeasible, or expected to be ineffective.

Justification: Like many other species of *Phytophthora*, spores are soil borne and could be transported both long and short distances by infected soil during operations of vehicles and feet of animals, by wind-blown soil and by

INPUT STEPS

- Initial Screening
- Pest Identification**
- Hosts
- Distribution
- Biology
- Economic Impacts
- Environmental Impacts
- Control Measures
- Symptoms
- Morphology
- Identification Tests
- Movement
- Bibliography
- Establishment Potential
- Spread Potential
- Economic Impact Potential
- Environmental Impact Potential
- Final Evaluations
- Pest Record Status

Pest Species:

* *Required Fields*

* Genus: *

* Species: *

Sub-specific Taxon (if available):

Authorities of pest's scientific name:

Select Author to Add:

Type a Synonym to Add:

Type a Common Name to Add:

Taxonomic Classification:

Class

Order

Family

Pest Type:

EXFOR

EXOTIC FOREST PEST INFORMATION SYSTEM FOR NORTH AMERICA



HOME | PEST SEARCH | ADMIN | PREFERENCES | CONTACTS | PRODUCTS/TOOLS Create/Update/Review Pest Records

INPUT STEPS

- Initial Screening
- Pest Identification
- Hosts
- Distribution
- Biology
- Economic Impacts
- Environmental Impacts
- Control Measures
- Symptoms
- Morphology
- Identification Tests
- Movement
- Bibliography
- Establishment Potential
- Spread Potential
- Economic Impact Potential

Search:

Host Type	Genus	Species	Subspecies	CommonName
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Calophyllum	cholobtaches		calophyllum
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Calophyllum	inophyllum		Alexandrian laurel
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Camellia	japonica		camellia
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Camellia	reticulata		to-tsubaki
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Camellia	sasanqua		Sasanqua camellia
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Camellia	sinensis		tea
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Camellia	vernalis		
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Caragana	arborescens		Siberian peashrub
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Caragana	aurantiaca		dwarf peashrub
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Caragana	boisii		Siberian pea-tree
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Caragana	brevispina		
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Caragana	camilli-schneideri		
<input type="radio"/> Primary <input type="radio"/> Secondary <input checked="" type="radio"/> N/A	Caragana	decorticans		

INPUT STEPS

- Initial Screening
- Pest Identification
- Hosts
- Distribution
- Biology
- Economic Impacts
- Environmental Impacts
- Control Measures
- Symptoms
- Morphology
- Identification Tests
- Movement
- Bibliography
- Establishment Potential
- Spread Potential
- Economic Impact Potential
- Environmental Impact Potential
- Final Evaluations
- Pest Record Status

Deselect	Location Type	Region
	<input type="radio"/> Invasive <input type="radio"/> NonInvasive <input checked="" type="radio"/> Both <input checked="" type="radio"/> N/A	Northern Europe
	<input type="radio"/> Invasive <input type="radio"/> NonInvasive <input checked="" type="radio"/> Both <input checked="" type="radio"/> N/A	Polynesia
	<input type="radio"/> Invasive <input type="radio"/> NonInvasive <input checked="" type="radio"/> Both <input checked="" type="radio"/> N/A	South America
	<input type="radio"/> Invasive <input type="radio"/> NonInvasive <input checked="" type="radio"/> Both <input checked="" type="radio"/> N/A	Southeastern Asia
	<input type="radio"/> Invasive <input type="radio"/> NonInvasive <input checked="" type="radio"/> Both <input checked="" type="radio"/> N/A	Southern Africa
1 2 3 4 5		

Deselect	Location Type	Country
	<input type="radio"/> Invasive <input type="radio"/> NonInvasive <input checked="" type="radio"/> Both <input checked="" type="radio"/> N/A	Timor Leste
	<input type="radio"/> Invasive <input type="radio"/> NonInvasive <input checked="" type="radio"/> Both <input checked="" type="radio"/> N/A	Vietnam
1 2 3		

Deselect	Location Type	State
	<input type="radio"/> Invasive <input type="radio"/> NonInvasive <input checked="" type="radio"/> Both <input checked="" type="radio"/> N/A	An Giang
	<input type="radio"/> Invasive <input type="radio"/> NonInvasive <input checked="" type="radio"/> Both <input checked="" type="radio"/> N/A	Ba Ria-Vung Tau
	<input type="radio"/> Invasive <input type="radio"/> NonInvasive <input checked="" type="radio"/> Both <input checked="" type="radio"/> N/A	Bac Thai
	<input type="radio"/> Invasive <input type="radio"/> NonInvasive <input checked="" type="radio"/> Both <input checked="" type="radio"/> N/A	Ben Tre
	<input type="radio"/> Invasive <input type="radio"/> NonInvasive <input checked="" type="radio"/> Both <input checked="" type="radio"/> N/A	Binh Dinh
1 2 3 4 5 6 7 8 9 10 ...		

Submit

EXFOR

EXOTIC FOREST PEST INFORMATION SYSTEM FOR NORTH AMERICA



HOME | PEST SEARCH | ADMIN | PREFERENCES | CONTACTS | PRODUCTS/TOOLS Create/Update/Review Pest Records

INPUT STEPS

- Initial Screening
- Pest Identification
- Hosts
- Distribution
- Biology
- Economic Impacts
- Environmental Impacts
- Control Measures
- Symptoms
- Morphology
- Identification Tests
- Movement
- Bibliography
- Establishment Potential
- Spread Potential
- Economic Impact Potential

Pest Species:
marla marla

BIOLOGY

Type a new Biology paragraph:

[Insert](#)

Pest Population Limiting Temperature

	Minimum Temperature	Maximum Temperature
Egg:	<input type="text"/>	<input type="text"/>
Adult:	<input type="text"/>	<input type="text"/>
Emergence from Egg:	<input type="text"/>	<input type="text"/>

Pest Dispersal

	Minimum Temperature	Maximum Temperature
Dispersal:	<input type="text"/>	<input type="text"/>
Period:	<input type="text"/>	
Average Distance:	<input type="text"/>	
Maximum Distance:	<input type="text"/>	
Dispersal Method:	<input type="checkbox"/> Waterborne	
	<input type="checkbox"/> Airborne	

Pest Population

	Male	to Female
Ratio:	<input type="text"/>	<input type="text"/>
Number of individuals required for population survival (Allee effect):	<input type="text"/>	
Fecundity:	<input type="text"/>	
Generation frequency:	<input type="text"/>	

Optimum Site Conditions

Slope:

Aspects:

Topography:

Topographic Position:

Curvature:

Radiation:

Tree Size:

Overstocked Stand:

- Tree Stress:
- Drought
 - Flood
 - Lightning strike
 - Disease
 - Broken limbs

Tree stress other (Please identify):

- Soil Texture:
- Sand
 - Silt
 - Clay

EXFOR

EXOTIC FOREST PEST INFORMATION SYSTEM FOR NORTH AMERICA



HOME | PEST SEARCH | ADMIN | PREFERENCES | CONTACTS | PRODUCTS/TOOLS Create/Update/Review Pest Records

INPUT STEPS

- Initial Screening
- Pest Identification
- Hosts
- Distribution
- Biology
- Economic Impacts
- Environmental Impacts
- Control Measures
- Symptoms
- Morphology
- Identification Tests
- Movement
- Bibliography
- Establishment Potential
- Spread Potential
- Economic Impact Potential
- Environmental Impact Potential

Pest Species:
marla marla

SYMPTOMS

Type a new Symptoms paragraph:

[Insert](#)

EXFOR

EXOTIC FOREST PEST INFORMATION SYSTEM FOR NORTH AMERICA



HOME | PEST SEARCH | ADMIN | PREFERENCES | CONTACTS | PRODUCTS/TOOLS Create/Update/Review Pest Records

INPUT STEPS

- Initial Screening
- Pest Identification
- Hosts
- Distribution
- Biology
- Economic Impacts
- Environmental Impacts
- Control Measures
- Symptoms
- Morphology
- Identification Tests
- Movement
- Bibliography
- Establishment Potential
- Spread Potential
- Economic Impact Potential
- Environmental Impact Potential

Pest Species:
marla marla

Bibliography

Type a new Bibliography Entry:

Brasier, C.M.; Kirk, S.A.; Delcan, J.; Cooke, E.L. Jung, T.; Man In't Veld, W.A. 2004. *Phytophthora alni* sp. nov. and its variants: designation of emerging heteroploid pathogens spreading on Alnus trees. *Mycological Research* 108 (10): 1172-1184

[Insert](#)

Existing Bibliography Entry(ies):

[Edit](#) [Delete](#) Erwin, D.C.; Ribeiro, O.K. 1996. *Phytophthora Diseases Worldwide*. American Phytopathological Society Press, St. Paul, Minnesota, USA. 562 pp.

- INPUT STEPS**
- Initial Screening
- Pest Identification
- Hosts
- Distribution
- Biology
- Economic Impacts
- Environmental Impacts
- Control Measures
- Symptoms
- Morphology
- Identification Tests
- Movement
- Bibliography
- Establishment Potential
- Spread Potential
- Economic Impact Potential
- Environmental Impact Potential
- Final Evaluations
- Pest Record Status

Pest Species:
marla marla

Establishment Potential

Likelihood that the plant pest will successfully colonize once it has entered North America. Some characteristics of this element include the number and life stage of the pest translocated, host specificity, and likelihood of encountering a suitable environment in which pest can reproduce.

- Organism has successfully established in location(s) outside its native distribution
- Suitable climatic conditions and suitable host material coincide with ports of entry or major destinations.
- Organism has demonstrated ability to utilize new hosts
- Organism has active, directed host searching capability or is vectored by an organism with directed, host searching capability.
- Organism has high inoculum potential or high likelihood of reproducing after entry.

Type a new Justification paragraph:

[Insert](#)

No Changes will be saved if Close Button is selected.

INPUT STEPS

- Initial Screening
- Pest Identification
- Hosts
- Distribution
- Biology
- Economic Impacts
- Environmental Impacts
- Control Measures
- Symptoms
- Morphology
- Identification Tests
- Movement
- Bibliography
- Establishment Potential
- Spread Potential
- Economic Impact Potential
- Environmental Impact Potential
- Final Evaluations
- Pest Record Status

Pest Species:
marla marla

Spread Potential

Likelihood that the plant pest spreading beyond and colonized area. Factors to consider include the pests capability for natural dispersal, ability to use human activity for dispersal, ability to develop races or strains, the distribution and abundance of suitable hosts, and the estimated range of the potential spread.

- Organism is capable of dispersing more than several km per year through its own movement or by abiotic factors (such as wind, water or vectors).
- Organism has demonstrated the ability for redistribution through human-assisted transport.
- Organism has a high reproductive potential
- Potential hosts have contiguous distribution.
- Newly established populations may go undetected for many years due to cryptic nature, concealed activity, slow development of damage symptoms, or misdiagnosis.
- Eradication techniques are unknown, infeasible, or expected to be ineffective.
- Organism has broad host range.

Type a new Justification paragraph:

[Insert](#)

No Changes will be saved if Close Button is selected.

- INPUT STEPS**
- Initial Screening
- Pest Identification
- Hosts
- Distribution
- Biology
- Economic Impacts
- Environmental Impacts
- Control Measures
- Symptoms
- Morphology
- Identification Tests
- Movement
- Bibliography
- Establishment Potential
- Spread Potential
- Economic Impact Potential
- Environmental Impact Potential
- Final Evaluations
- Pest Record Status

Pest Species:
marla marla

Economic Damage Potential

Estimate of the potential economic impact if the pest were to become established. Factors to consider include: economic importance of hosts, crop loss, effects in subsidiary industries, and availability of eradication or control methods.

- Organism attacks hosts or products with significant commercial value (such as for timber, pulp, or wood products).
- Organism directly causes tree mortality or predisposes host to mortality by other organisms.
- Damage by organism causes a decrease in value of the host affected, for instance, by lowering its market price, increasing cost of production, maintenance, or mitigation, or reducing value of property where it is located.
- Organism may cause loss of markets (domestic or foreign) due to presence and quarantine significant status.
- Organism has demonstrated ability to develop more virulent strains or damaging biotypes.
- No effective control measure exists.
- Organism has potential to be a more efficient vector of a native or introduced pest.

Type a new Justification paragraph:

Insert

Submit

No Changes will be saved if Close Button is selected.

- INPUT STEPS**
- Initial Screening
- Pest Identification
- Hosts
- Distribution
- Biology
- Economic Impacts
- Environmental Impacts
- Control Measures
- Symptoms
- Morphology
- Identification Tests
- Movement
- Bibliography
- Establishment Potential
- Spread Potential
- Economic Impact Potential
- Environmental Impact Potential
- Final Evaluations
- Pest Record Status

Pest Species:
marla marla

Environmental Damage Potential

Estimate of the potential environmental impact if the pest were to become established in the North America Factors to consider include: potential for ecosystem destabilization, reduction in biodiversity, reduction or elimination of keystone species, reduction or elimination of endangered/threatened species, and non target effects of control measures.

- Organism is expected to cause significant direct environmental effects, such as extensive ecological disruption or large scale reduction of biodiversity.
- Organism is expected to have direct impacts on species listed by Federal, Provincial, or State agencies as endangered, threatened, or candidate. An example would be insuring a listed plant species.
- Organism is expected to have indirect impacts on species listed by Federal, Provincial, or State agencies as endangered, threatened, or candidate. This may include disruption of sensitive or critical habitat.
- Organism may attack host with small native range.
- Introduction of the organism would likely result in control/eradication programs that may have potential adverse environmental affects.
- Organism has demonstrated ability to develop more virulent strains or damaging biotypes.

Type a new Justification paragraph:

[Insert](#)

No Changes will be saved if Close Button is selected.

EXFOR

EXOTIC FOREST PEST INFORMATION SYSTEM FOR NORTH AMERICA



HOME | PEST SEARCH | ADMIN | PREFERENCES | CONTACTS | PRODUCTS/TOOLS Create/Update/Review Pest Records

INPUT STEPS

- Initial Screening
- Pest Identification
- Hosts
- Distribution
- Biology
- Economic Impacts
- Environmental Impacts
- Control Measures
- Symptoms
- Morphology
- Identification Tests
- Movement
- Bibliography
- Establishment Potential
- Spread Potential
- Economic Impact Potential
- Environmental Impact Potential

Pest Species:
marla marla

FINAL EVALUATION (Calculated automatically)

*Numerical Risk Rating Calculation Formula:
Minimum(Establishment Potential, Spread Potential) * Maximum(Economic Damage Potential, Environmental Damage Potential)*

Numerical Risk Rating = To Be Determined
Relative Risk Rating = To Be Determined

Estimate of Uncertainty

- Very Uncertain
- Certain
- Very Certain

Type a new Uncertainty Results From paragraph:

[Insert](#)