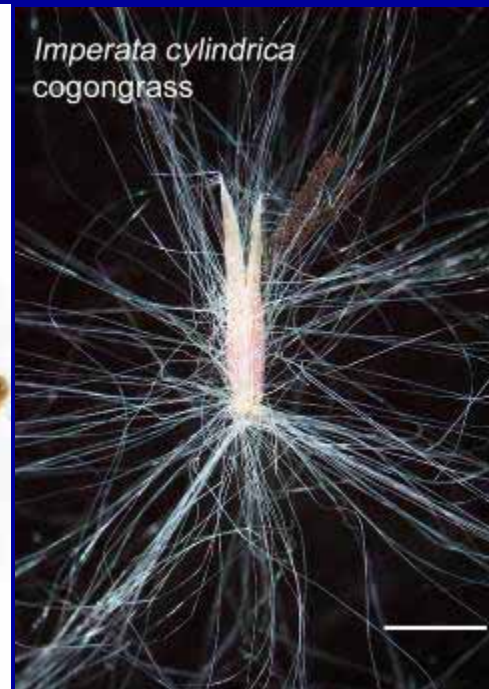
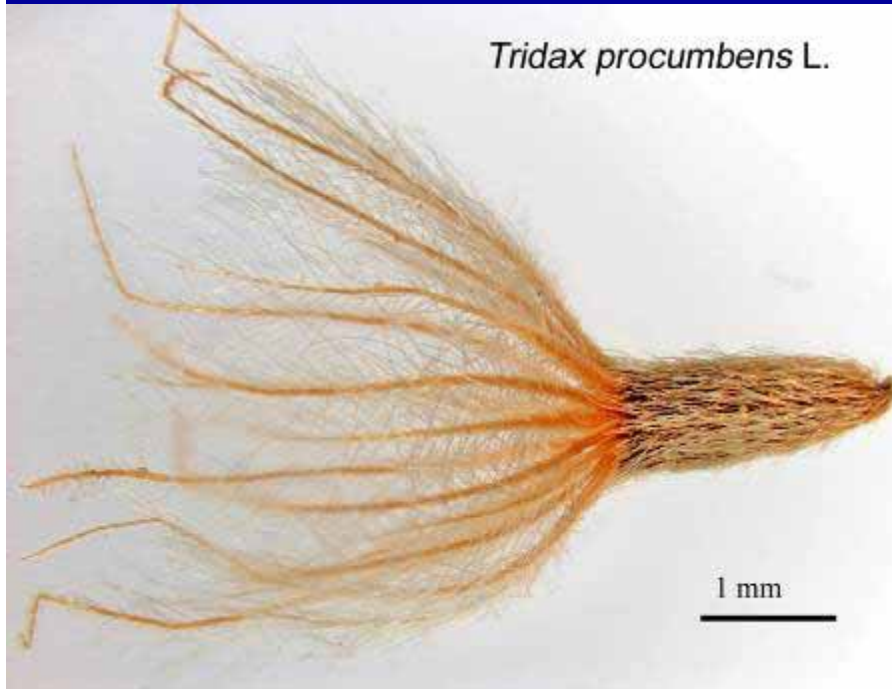




# The First Line of Defense: Interceptions of Federal Noxious Weed Seeds in Washington.

Margaret L. Smither-Kopperl  
USDA-APHIS-PPQ





# Aims

- Provide an overview of systems in place to prevent the entry of noxious weeds into the US.
- Agencies:
  - USDA-APHIS-PPQ (United States Department of Agriculture – Animal and Plant Health Inspection Service – Plant Protection and Quarantine)
  - DHS-CBP (Department of Homeland Security – Customs and Border Protection)
- Give examples of interceptions of Federal Noxious Weeds (FNW) into Washington during 2005-2006, and show patterns that demonstrate the risk pathways.



# Laws and Regulations

- Plant Protection Act 2000.
  - gives authority to APHIS to regulate noxious weeds.
- Federal Seed Act.
  - Regulates interstate and foreign commerce in seeds, and addresses "noxious weed seeds" that may be present in agricultural or vegetable seed.



# Noxious Weeds

- Definition “Noxious weeds”
  - A noxious weed is defined as “any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment”.
- Noxious Weeds may be designated as either “Federal” or “State” Noxious Weeds.
- APHIS regulates only Federal Noxious Weeds (FNW).
- There is zero tolerance for seeds of FNW, if a seed is found, entry of the associated commodity is prohibited.
  - Exceptions for mitigating the risk of noxious weed contamination.
  - Only If the commodity can be freed from the seed contaminants:
    - the contaminants can be devitalized by an appropriate treatment.
    - if grinding is appropriate, this method may be used.
  - The importer must be in agreement and pays for the treatment.
- This results in a significant cost to the importer, and acts as a deterrent.

Movement of Federal Noxious Weed species into the US or within states is allowed under permit (PPQ form 526).



# Separation of Responsibility Memorandum of Agreement .

<http://www.aphis.usda.gov/ppq/moa-dhs.html>

## USDA-APHIS-PPQ

- Inspect all permit propagative material entering the US.
- Identify pests intercepted by PPQ and CBP.
- Recommends treatment, and applies or monitors treatment if applicable.

## DHS-CBP

- Inspects international aircraft, vessels, and vehicles and passengers.
- Inspects air and marine cargo.
- Refers intercepted pest species to PPQ for identification and treatment recommendations.



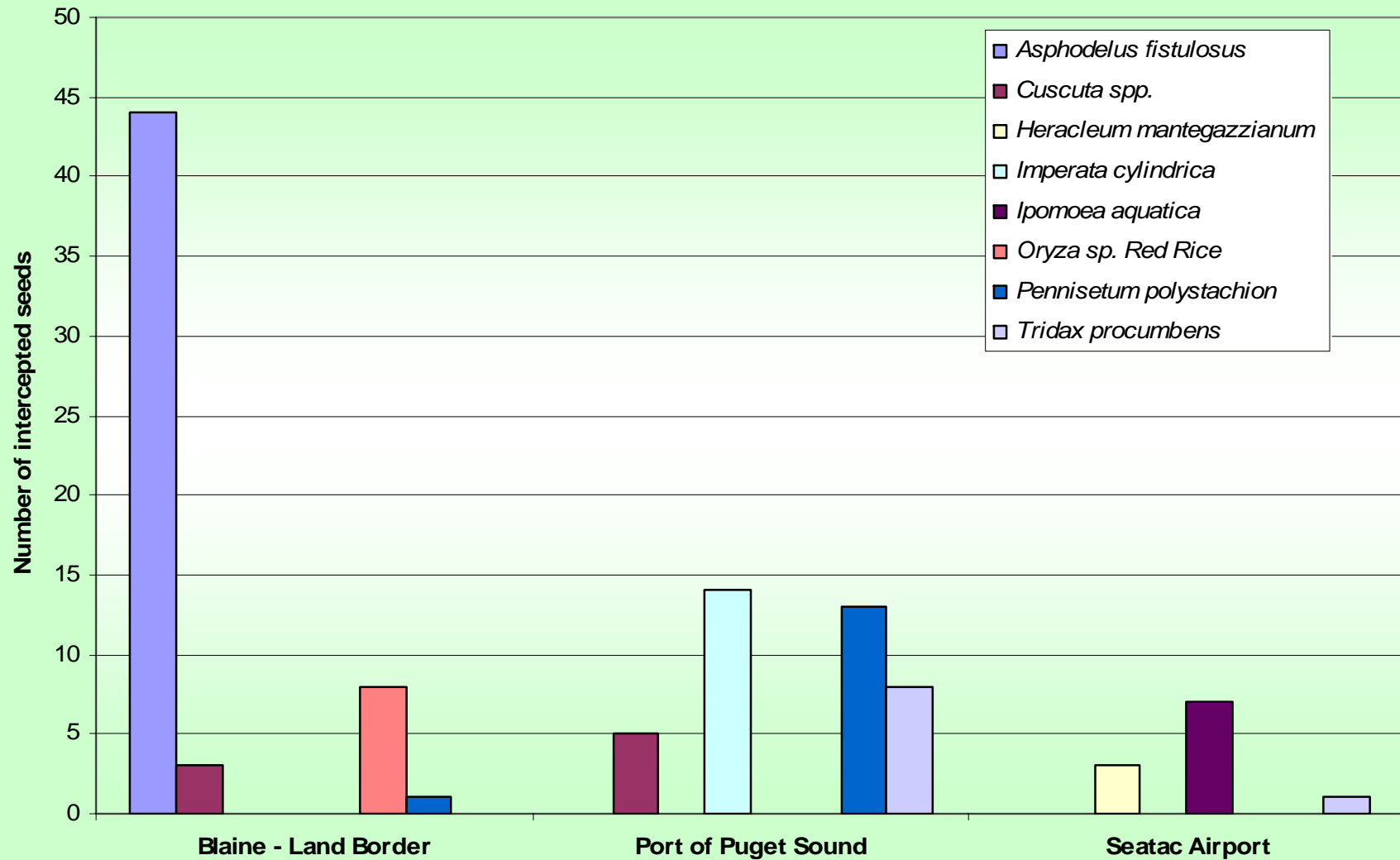
## Interception Sites in Washington

- PPQ - Seattle Plant Inspection Station
  - Identifications are conducted.
  - Propagative material is inspected here.
- CBP turns in interceptions from:
  - Port of Puget Sound – Seattle and Tacoma.
  - Seatac Airport –
    - Air Cargo
    - Passengers.
  - Blaine – Land border.
- Also, plant material from Alaska, Colorado, Idaho, Montana, Oregon, Utah, and Wyoming.

# Interceptions of FNW in Washington July 2006

Port Location	Organism	Country of Origin	Commodity
Port of Puget Sound	<i>Imperata cylindrica</i> cogongrass	Vietnam Australia China Philippines Japan	Pottery Machinery Housewares Vehicle Used tires
Port of Puget Sound	<i>Pennisetum polystachion</i> mission grass	Vietnam Turkey	Pottery Marble
Port of Puget Sound	<i>Saccharum spontaneum</i> wild sugarcane	Turkey	Marble
Port of Puget Sound	<i>Tridax procumbens</i> Coat buttons	Vietnam Thailand	Pottery Military vehicles
Seattle PIS	<i>Alternanthera sessilis</i> sessile joyweed	Singapore	Aquatic plants
Seattle PAX	<i>Ipomoea aquatica</i> Water spinach	Cambodia	Baggage
Blaine	<i>Asphodeus fistulosus</i> Onion weed	Canada	Cumin seed
Blaine	<i>Oryza</i> sp. Red Rice	Canada	Rice - <i>Oryza sativa</i>

## Interceptions of Federal Noxious Weed Seeds in Washington 2005-2006





# *Asphodelus fistulosus* L.

## Onionweed

Most frequently intercepted FNW in Washington (Land border). These seeds are frequent contaminants in shipments and samples of cumin from Asia.

*A. fistulosus* is native to the Mediterranean area, North Africa and Southern Europe. It has become naturalized to tropical Asia, Australia and South America.

Once introduced to pasture, the plant quickly becomes established and reduces the quality of the grazing because it is unpalatable to cattle.



# *Cuscuta* spp.

## Dodders

- Pathways are as seed contaminants, and in herbal medicine.
- There are ~ 170 species worldwide.
- All species are regulated most are FNW with the exception of some native and introduced but widely distributed species.
- These are obligate parasitic weeds, seedlings must attach to a suitable host within a few days of germination then they twine around and produce haustoria, which penetrate the stems to extract water and nutrients.
- Each plant produces thousands of hard seeds that can remain dormant in the soil for years.
- Control is difficult or impossible through cultural or chemical practices.



*Cuscuta* sp. Chris Evans, The University of Georgia,  
[www.forestryimages.org](http://www.forestryimages.org)



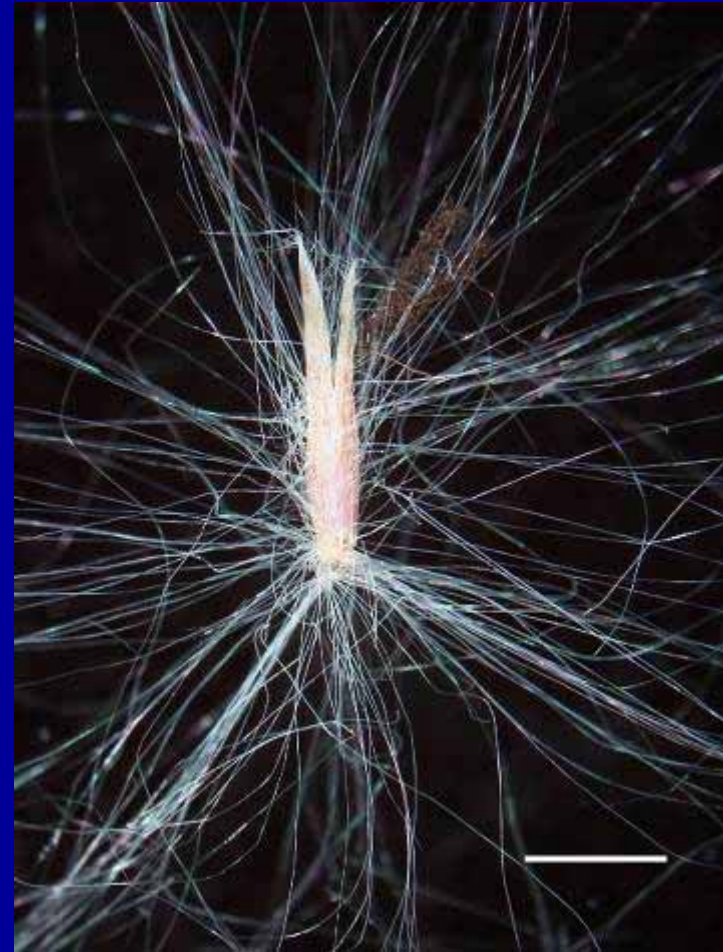
# *Heracleum mantegazzianum* Somm.& Lev. Giant Hogweed

- Most seizures are of small bags of seeds in baggage in passengers originating in the Middle East and particularly Iran, where the seeds are used as a spice.
- Giant hogweed originated in the region adjacent to the Black Sea. It has a world wide distribution, but is more limited in the US although it grows well in moist habitats such as along waterways and streams.
- The plant's leaves and particularly stem exude a clear, watery sap that causes photodermatitis. Animals do not graze on this weed so this increases its competitive ability to displace native vegetation.



# *Imperata cylindrica* (L.) P. Beauv. cogongrass

- Intercepted as a contaminant in cargo in the marine port, also frequently found on the exterior of containers.
- Cogongrass is one of the “World’s 10 worst weeds”.
- Widely distributed throughout the eastern hemisphere, South America and the SE US.
- Seeds are prolifically produced and wind dispersed.
- The plant grows to 1 m and produces tough rhizomes which make it extremely difficult to eradicate.

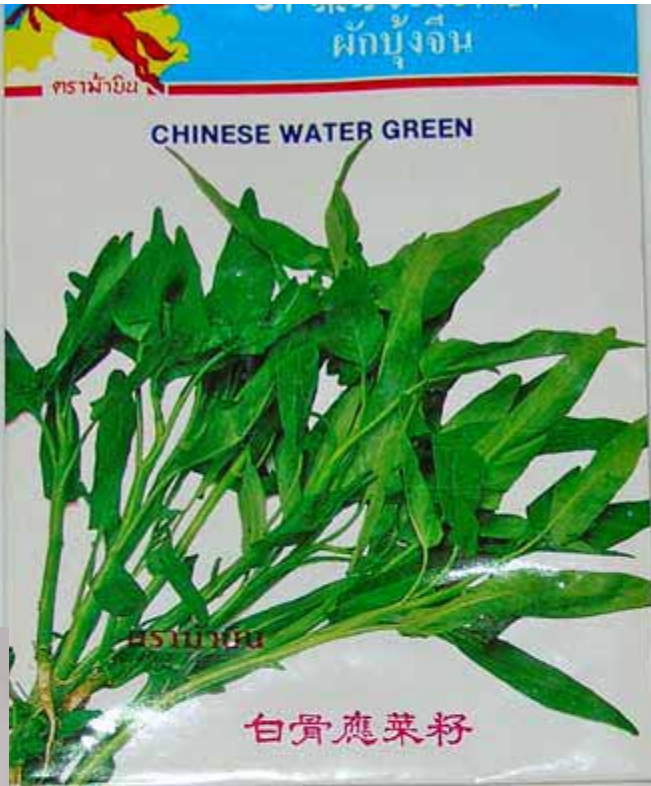


## *Ipomoea aquatica* Forss.

water spinach, swamp morning glory, Chinese water spinach, Chinese water green, kang kong

- *Ipomoea aquatica* is frequently found in Passenger Baggage at the Airport in flights originating in the Far East.
- The species is cultivated as a green vegetable in China, India and tropical Asian countries. In the U.S., it is eaten by Asian Americans and can be found for sale as seeds or leafy greens.
- *Ipomoea aquatica* is an aquatic, semiaquatic or terrestrial trailing vine, up to 3 m long.
- It is invasive as it competes with native vegetation, its long, floating stems form dense mats which may impede water flow, and interfere with fisheries. It is considered a serious threat to Florida's waterways and wetlands.
- It is cultivated under permit in California for sale for human consumption.





## Oryza spp. Red rice

- “Red rice” is frequently intercepted in samples of rice (*Oryza sativa*) brought into the country for consumption from Asian countries, with most seizures at Blaine.
- Three species *O. longistaminata*, *O. punctata* and *O. rufipogon* are serious weeds in rice cultivation and are designated as FNW.
- In addition, entry of rice, *Oryza* spp., is regulated through Agricultural Quarantine regulations to prevent the entry of fungal and bacterial diseases of rice.



*Oryza longistaminata* A.  
Cheval. & Roehr.



# *Pennisetum polystachion* (L.) Schultes mission grass

- Intercepted as a seed contaminant and also in cargo, such as pottery planters and ceramic tile.
- A widely distributed weed in tropical Africa, Asia, Australia and the Pacific Islands.
- Seeds are produced prolifically and dispersed by water and animals.



UGA1195025



Julia Scher, USDA APHIS PPQ,  
[www.forestryimages.org](http://www.forestryimages.org)



## *Tridax procumbens* L. coat buttons

Native to Mexico and tropical South America, this weed now has a global distribution in the tropics and subtropics.

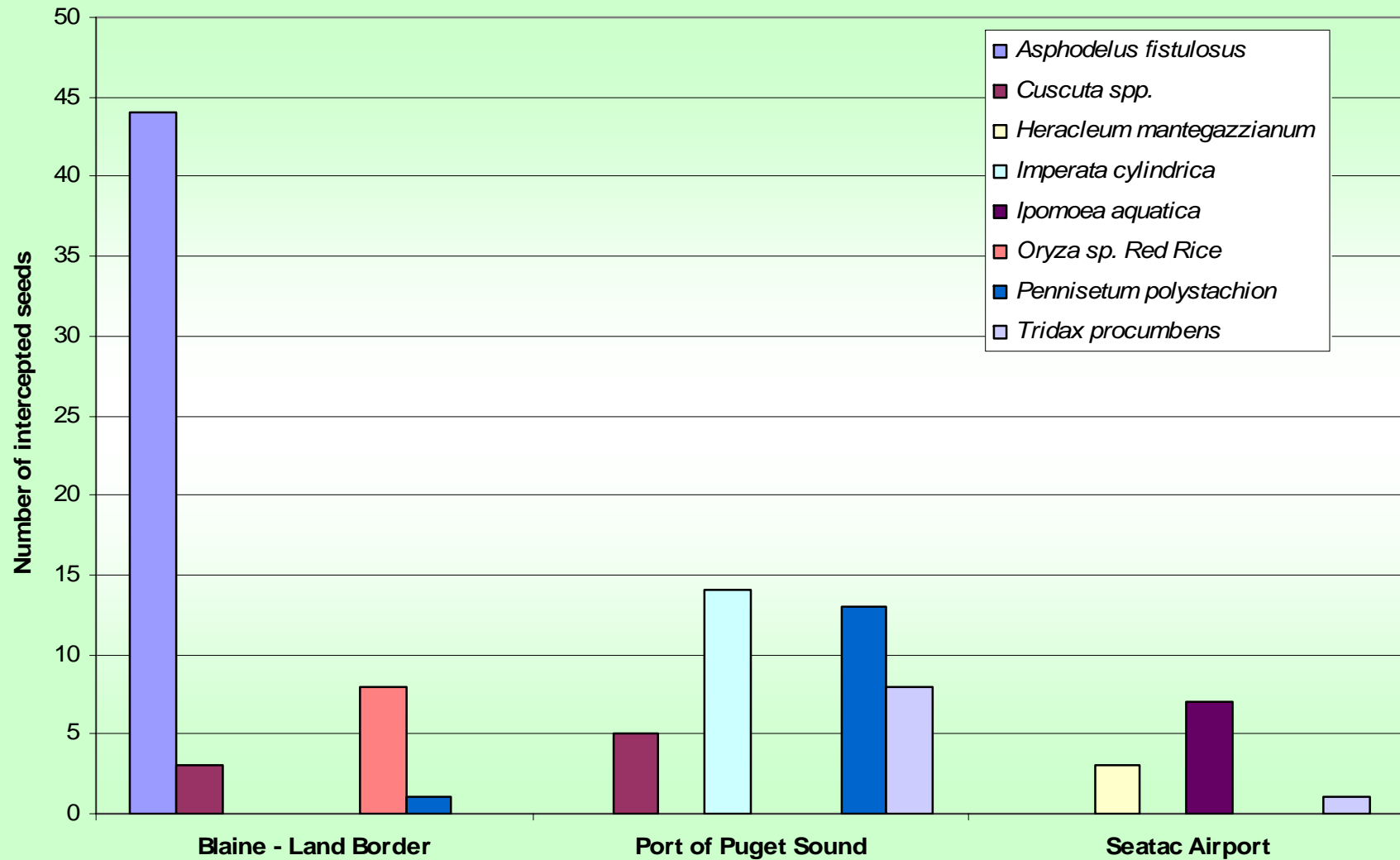
It is a persistent weed on fallow land, disturbed areas and fields.

The seeds are wind dispersed and distinctive.

Most of the interceptions at the Port of Seattle were from shipments of ceramics from the Far East.



## Interceptions of Federal Noxious Weed Seeds in Washington 2005-2006





# Risk Pathways

- FNW seeds intercepted in passenger baggage at Blaine and SeaTac Airport are mainly intended for personal consumption. In the case of *Ipomoea aquatica* for propagation and then consumption. **These seeds are confiscated and destroyed.**
- At the Port of Puget Sound, from Sept 2005 through Aug 2006, a total of 799 plant interceptions were processed. Of these 44 or 5.5% of the total number of plant interceptions were FNW. These were primarily wind dispersed seeds in a variety of cargo types. Quarry products, tiles and pottery were high risk.
- **FNW intercepted in cargo at the Port of Puget Sound are prohibited entry. They must be removed or treated. The cost of this is borne by the importer and this acts as a significant deterrent. It is in their interests to ensure that their shipments are clean and free of FNW.**



# Conclusion

The combined activity of CBP and USDA acts to prevent entry of FNW into the United States.

Websites: <http://www.aphis.usda.gov/>  
<http://www.aphis.usda.gov/ppq/>