# Invasive Species in Oregon Report Card, 2003

# Prepared by: Oregon Invasive Species Council

Mark Systma, Chair Center for Lakes & Reservoirs Portland State University Portland, OR 97207-0751

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#### Introduction

This year the Oregon Invasive Species Council gives Oregon a grade of "B" for success at excluding invasive species in 2003. This is an improvement from last year's grade of "C+."

Oregon continues to be bombarded with undesirable invasive species. Many are intercepted, some incipient populations are discovered and eradicated and a few escape and become permanently established. The creation of Oregon's Invasive Species Council in 2002 gave Oregonians a new vehicle for addressing issues in this area. This report card is a product of that Council. Its purpose is to summarize current efforts to exclude undesirable invasive species from Oregon. The Council hopes that an annual report card will help raise awareness of invasive species issues among all Oregonians and lead to more success at excluding them.

The body of this report is divided into four sections: background on the Council, activities of the Council in its second year, report on exclusion of the top 100 most dangerous species threatening to invade the State, and a review of significant incidents from 2003.

# **Invasive Species Council Background**

## **Formation**

Oregon's Invasive Species Council was created by the Oregon legislature on January 1, 2002. The statute (ORS 561.685) identifies four main functions for the Council. First, the Council is directed to create and publicize a system for reporting sightings of invasive species and referring those reports to the appropriate agency. Second, the Council is directed to undertake educational activities to increase awareness of invasive species issues. Third, the statute directs the Council to develop a statewide plan for dealing with invasive species. Finally, the Council is authorized to administer a trust account for funding eradication and education projects.

# Membership

The Council consists of twelve members. There are four *ex officio* members representing the agencies with a lead role in invasive species management: Oregon Department of Agriculture, Portland State University, Oregon Department of Fish & Wildlife, and the Sea Grant College of Oregon State University. The *ex officio* members appoint eight at large members for 2-year terms. The members may represent federal, state, and local governments, universities, industry and other groups having an interest in invasive species. A list of current members is found at the end of this report.

Mark Systma, Director of the Center for Lakes and Reservoirs at Portland State University, was elected chair for 2003. The Chair is supposed to rotate to Oregon Department of Fish and Wildlife in 2004, but at the request of that agency, Mark will continue as Co-Chair in 2004 along with Co-Chair Dan Hilburn, Administrator, Plant Division, Oregon Department of Agriculture until ODF&W hires a new invasive species specialist.

#### 2003 Council Activities

## Meetings

The Invasive Species Council met this year in Keizer (January), Diamond Lake (June), and Newport (September). Minutes from these meetings are available on the Council webpage. For information on future meetings, contact the current chairperson.

## **Reporting Hotline**

The Council supports a centralized, toll-free number (1866-INVADER) to encourage sightings of all types of invasive species. Information received from calls to the hotline is referred to the appropriate agency for any necessary follow-up. The number of calls received varies with the season and amount of publicity about invasive species. For example, 15 calls were received in March, 86 in August. These numbers are very close to last year's. Perhaps the most important call of the year was a sighting of decollate snail being sold at a garden center in Eugene.

# Webpage

The Council maintains a webpage connected to the Oregon Department of Agriculture website where information about Council activities is available. The address is: <oda.state.or.us/Plant/Inv\_spp>.

# **Information Sharing Network**

The Council also maintains an information-sharing network to connect people and organizations in the state that have an interest in invasive species. Short documents are sent out via FAX, longer ones via regular mail. In the future most information will be forwarded electronically. Anyone interested in invasive species in Oregon is invited to join the network by contacting: Dan Hilburn, ODA Plant Division, 635 Capitol St. NE, Salem, OR 97301; 503-986-4663; <dhilburn@oda.state.or.us>.

#### **Awards**

In an effort to recognize people and organizations that are making outstanding contributions to protecting the state from invasive species the Council has created four awards:

<u>Eagle Eye Awards</u> -- presented to the person or persons reporting the most important sighting(s) of an invasive species. 2003 winner(s): [Nick Otting and Danna Lytjen for discovering barbed goat grass, a species on the 100 Most Dangerous Invaders List, near Cave Junction. Pat Patterson for reporting

decollate snail, a potential pest of plants and native snails, for sale at a Eugene area garden center. **Gary Weaver** for reporting a weed called Patterson's curse from a field border near Lebannon.

Outstanding Defender Award -- presented to the person(s)/organization (non-government) making the most outstanding contribution to protecting Oregon from invasive species. 2004 winner(s): [Mandy Tu of The Nature Conservancy for her work on invasive plants including promotion of Codes of Conduct for the nursery industry to minimize the danger of escape of invasive ornamentals. Project YESS, this highly motivated crew, lead by Andy Kerr, provided exceptional service clearing invasive plants from key preserves in the Sandy River Watershed.]

<u>Ten Fingers in the Dike Awards</u> -- presented to the person(s) or unit in a government agency going above and beyond the call of duty to keep new invaders out of the state. 2004 winner(s): [Mary Pfauth, Vanessa Howard (PSU) and Dennis Isaacson (ODA retired) for development of the Spartina Action Plan and completion of the most extensive Spartina survey ever conducted in Oregon. Jack Wylie (DEQ) for his efforts to support Oregon's new ballast water regulations.]

<u>Invader Crusader Award</u> -- presented to the Oregon student(s) making a difference in protecting Oregon from invasive species. 2004 winner(s): [<del>Kim</del> **Powell**, outstanding student participant in Project YESS. Kim worked tirelessly clearing invasive plants at several sites on the Clackamas and Sandy Rivers. She learned to identify over 40 plants and discriminate between valuable natives and harmful invaders.]

<u>OISC Service Award</u> -- presented to members of the Oregon Invasive Species Council who are leaving after having completed at least one two-year term: **Keith Warren**, council member 2002-4; **Blaine Parker**, 2002-4; **Paul Heimowitz**, 2002-4; and **Richard Mishaga**, 2003-4.

These awards will be presented at a banquet held in conjunction with the winter meeting of the Council on January 21, 2004 at the Wittenberg Inn in Keizer.

#### **Educational Materials**

The Council made progress toward developing an educational/outreach strategy in 2003. An education/outreach subcommittee was created and a draft plan was prepared concentrating on aquatic nuisance species. This plan will serve as a model for a comprehensive invasive species education/outreach plan for the state.

Pencils advertising the toll-free hotline number (1-866-INVADER) are available. Approximately 1,500 have been distributed so far.

#### **Action Plan**

The invasive species council statute directed the Council to "develop a statewide plan for dealing with invasive species." A first edition of the plan was completed in early 2003. The Council is in the process of reviewing and updating the Plan. This will be an annual process. An updated version will be considered at the January 2004 Council meeting, and will be available online shortly thereafter. The most up-to-date version will be available at: www.oda.state.or.us/Plant/Inv\_spp/OISCActionPlan\_2=03.pdf

Exclusion, early detection and rapid response are by far the most cost-effective ways of dealing with undesirable invaders. The goal of the Action Plan is to facilitate efforts to keep invasive species out of the state, find invasions before they establish permanent footholds, and do whatever it takes to eradicate incipient populations of undesirable species. Education and cooperation are key components to an effective strategy.

# 100 Most Dangerous Invaders Threatening Oregon in 2003

The Council developed the following list of least wanted species for 2003. These organisms threaten to invade at any time and available information allows us to predict that they would have a serious negative economic or ecological impact if they were to become established in the State. Eradication should be seriously considered if incipient populations are found. The costs of eradication are likely to be much less than the impacts associated with permanent establishment. This list is updated annually by the Council and our record of success or failure at exclusion of these species is tracked in these annual report cards and by the Oregon Progress Board.

#### Micro-Organisms

alder root rot brown root rot cherry leaf roll chronic wasting disease elm yellows golden nematode

hazelnut bacteria canker infectious salmon anemia virus

oak wilt pear trellis rust Pierces's disease plum pox poplar canker

potato cyst nematode potato tuber necrosis potato wart

Sheep pen hill virus sudden oak death whirling disease

willow watermark disease

Phytophthora sp. Phellinus noxious

cherry leaf roll nepovrius (CLRV)

CWD prion

elm yellows phytoplasma Globodera rostochiensis Pseudomonas avellanae

**ISAV** 

Ceratocystis fagacearum Gymnosporangium fuscum

Xylella fastidiosa

plum pox potyvirus (PPV) *Xanthomonas populi* 

Globodera pallida

NTN strain of potato virus y Synchytrium endobioticum carlavirus (BBScV-NJ) Phytophora ramorum\*\* Myxobolus cerebralis\*\*

Erwinia salicis

#### **Aquatic Plants**

African waterweed

Lagarosiphon major

caulerpa seaweed cordgrasses

dead man's fingers European water chestnut giant salvinia golden algae hydrilla toxic cyanobacteria

#### **Land Plants**

African rue camelthorn cape ivy coltsfoot (not *Petasities frigidus*) giant hogweed giant reed grass goatgrasses (barbed, ovate) hawkweeds (king-devil, meadow, mouse-ear, orange, yellow)

kudzu
matgrass
mile-a-minute weed
Paterson's curse
Portugese broom
purple nutsedge
silverleaf nightshade
skeletonleaf bursage
squarrose knapweed
starthistles (Iberian, purple)
Syrian bean-caper
Texas blueweed
thistles (plumless, smooth
distaff, woolly distaff)

#### **Aquatic Invertebrates**

Asian clam
Asian tapeworm
fishhook waterflea
Japanese shore crab
Japanese oyster drill
Leidy's comb jelly
mitten crabs
New Zealand isopod
New Zealand sea slug
rusty crayfish
spiny waterflea
veined rapa whelk
zebra mussel

#### **Land Invertebrates**

Africanized honey bee Argentine ant Asian longhorned beetles blueberry maggot brown spruce longhorn beetles decollate snail Caulerpa taxifolia
Spartina alterniflora\*, S. densiflora,
S. anglica
Codium fragile tomentosoides
Trapa natans
Salvinia molesta
Prymnesium parvum
Hydrilla verticillata
Cylindrospermopsis raciborskii

Peganum harmala\*\* Alhagi pseudalhagi Senecio mikanioides\*\* Tussilago farfara\*\* Heracleum mantegazzianum\*\* Arundo donax\*\* Aegilops triuncialis, A. ovata Hieracium piloselloides, H. pratense\*\*, H. pilosella, H. aurantiacum\*\*, H. floribundum Pueraria lobata\*\* Nardus stricta\*\* Polygonum perfoliatum\* Echium plantagineum\*\* Cytisus striatus\*\* Cyperus rotundus Solanum elaegnifolium Ambrosia tomentosa Centaurea virgata\* Centaurea iberica\*\*, C. calcitrapa\*\* Zygophyllum fabago Helianthus ciliaris Carduus alanthoides\*\*, Carthamus baeticus, Carthamus lanatus\*\*

Potamocorbula amurensis
Bothriocephalus acheilognath
Cercopagis pengoi
Hemigrapsus sanguineus
Ceratostoma inornatum
Mnemiopsis leidyi
Eriocheir spp.\*
Sphaeroma quoyanum
Philine auriformis
Orconectes rusticus
Bythotrephes cederstroemi
Rapana venosa
Dreissena polymorpha

Apis mellifera scutellata Linepithema humile\* Anoplophora glabripennis, A. chinensis Rhagoletis mendax Tetropium fuscum, T. castaneum\* Rumina decollata emerald ash borer European chafer European corn borer European woodwasp glassy-winged sharpshooter

gypsy moths (European, Asian, pink,

nun moth)

imported fire ants (red, black)

Japanese beetle

Japanese cedar longhorned beetles

khapra beetle Mexican bean beetle old world bollworm Oriental beetle plum curculio

pine shoot beetle red haired pine bark beetle

sawyers Siberian moth silver Y moth spruce bark beetle

Fish

Asian carp (bighead, silver)

Atlantic salmon black carp

muskellunge, northern pike,

tiger muskie round goby ruffe

Shimofuri goby snakeheads

**Birds** 

Eurasian collared dove

mute swan

**Mammals** 

feral swine

Agrilus planipennis Rhizotrogus majalis Ostrinia nubilalis Sirex noctilio

Homalodisca coagulata\*

Lymantria dispar\*, L. mathura\*, L.

monacha

Solenopsis invicta\*, S. richteri

Popillia japonica\*

Callidiellum rufipenne, C. villosulum\*

Trogoderma granarium Epilachna varivestis Helicoverpa armigera Anomala orientalis Conotrachelus nenuphar Tomicus piniperda Hylurgus ligniperda

Monochamus urussovi\*, M. alternatus\*

Dendrolimus superans Autographa gamma Ips typographus

Hypophthalmichthys nobilis, H. molitrix

Salmo salar

Mylopharyngodon piceus

Esox spp.\*

Neogobius melanostomas Gymnocephalus cernuus Tridentiger bifasciatus

Channa spp.

Streptopelia decaocto

Cygnus olor

Sus scrofa\*\*\*

\*Detected previously in Oregon, but eradicated or did not establish.

\*\*Currently under eradication or restricted to a small area in Oregon.

## Changes from 2002:

#### **Deletions**

crayfish plague, *Aphanomyces astaci* (invasive and damaging in Europe but ubiquitous in North America where native species are resistant, should not have been listed)

viral hemorragic necrosis viris, VHSV European form (a fish disease, not enough information available to assess the level of risk)

bulbed goatgrass, *Aegilops ventricosa* (removed from the State's "A" list of noxious weeds by the Oregon State Weed Board, not enough information available to assess the level of risk)

New Zealand mud snail, *Potamopyrgus antipodarum* (permanently established in several watersheds in Oregon, eradication/containment no longer feasible)

#### Additions

<sup>\*\*\*</sup>In danger of becoming permanently established.

chronic wasting disease, CWD prion (a fatal neurological disease of farmed and wild deer and elk, established in the mid-West)

cape ivy, *Senecio mikanioides* (a South African weed spreading in coastal California, three small infestations are known from southwestern Oregon)

giant reed grass, *Arundo donax* (a large bamboo-like weed, now problematic in California)

mile-a-minute weed, *Polygonum perfoliatum* (a fast growing vine spreading in mid-Atlantic states, one early record from Oregon did not lead to an established population)

Portugese broom, *Cytisus striatus* (similar to Scotch broom but grows larger in Oregon, populations in Douglas Co. have been put under a containment/eradication treatment program)

Paterson's curse, *Echium plantagineum* (native to the Mediterranean region and western Europe, a problematic weed in Australia, discovered in a roadside wildflower planting near Lebanon in 2003)

decollate snail, *Rumina decollata* (a polyphagous species that consumes both plant material and other snails, promoted as a biological control agent in areas heavily infested with European brown garden snail in California, reported for sale in a Eugene garden center in 2003)

emerald ash borer, *Agrilus planipennis* (an Asian wood borer that attacks ash trees, now established in Michigan)

imported fire ants, *Solenopsis invicta*, *S. richteri* (South American species established in the Southeast and southern California, damaging to agriculture, wildlife and human health)

Japanese cedar longhorned beetles, *Callidiellum rufipenne*, *C. villosulum* (Asian wood-boring species thought to be transported in solid wood packing material)

Oriental beetle, *Anomala orientalis* (Asian pest species established in the eastern U.S.)

sawyers, *Monochamus urussovi*, *M. alternatus* (Asian longhorned beetles that attack conifers, intercepted at the Port of Portland)

silver Y moth, Autographa gamma (European pest of many crops)

black carp, *Mylopharyngodon piceus* (introduced from China, feed on mollusks, used in aquaculture ponds in Arkansas and Mississippi)

tiger muskie, Esox hybrid (introduced elsewhere as a game fish, predacious)

Eurasian collared dove, *Steptopelia decaocto* (native to India, Sri Lanka and Myanmar, first confirmed in Florida in 1986 and now reported in 36 states)

#### Combined or Expanded

goatgrasses (barbed, ovate), *Aegilops triuncialis*, *A. ovata* (Eurasian species that readily cross with wheat causing lowered quality)

hawkweeds (king-devil, meadow, mouse-ear, orange, yellow), *Hieracium piloselloides*, *H. pratense*, *H. pilosella*, *H. aurantiacum*, *H. floribundum* (complex of invasive species native to Europe, problematic in mountain meadows, pastures and abandoned farm land)

starthistles (Iberian, purple), Centaurea iberica, C. calcitrapa

thistles (plumless, smooth, distaff, woolly distaff), *Cardius alanthoides*, *Carthamus baeticus*, *Carthamus lanatus* (exotic species know to be weeds elsewhere, distaff thistle populations in southwestern Oregon are under eradication)

gypsy moths (European, Asian, pink, nun moth), *Lymantira dispar*, *L. mathura*, *L. monacha* (Eurasian species known to be pests elsewhere including the northeastern U.S.)

Asian longhorned beetles (Asian, citrus), *Anoplophora glabripennis*, *A. chinensis* (Asian pests of trees introduced via solid wood packing material, infestations in N.Y, IL, N.J. and Toronto)

Asian carp (bighead, silver), *Hypophthalmichthys nobilis*, *H. molitrix* (introduced for aquaculture, now established in rivers in the central U.S.)

Snakeheads, Channa spp. (Asian species sold live in ethnic food markets)

## Report Card Grade -- How Did We Do?

Ecologically and economically, it would be desirable to keep all of the organisms on the 100 Most Dangerous Invaders list out of the state. Realistically, 100% success is not feasible; the "ambitious but realistic" target set for our state by the Oregon Progress Board is 99% success each year. Benchmark #89 measures the "Number of most threatening invasive species not successfully

excluded or contained since 2000." If Oregon does a good job at exclusion, we'll meet the target of five or fewer species from the annually updated list of 100 Most Dangerous Invaders becoming permanently established by 2005, the next grading period. In this case Oregon's grade will be an "A."

There is often a lag time of at least a year or two before it can be determined whether an eradication or containment program has succeeded or failed. Where no effort is made, permanent establishment is probable. Last year, three of the 2002 Most Dangerous Invaders were identified as being in danger of becoming permanently established: New Zealand mud snail, meadow hawkweed, and feral swine. This year, New Zealand mud snail was de-listed because it has established several permanent populations, a treatment program was initiated to deal with meadow hawkweed, and the status of feral swine remained unchanged. No new species from the 2003 list are thought to be in danger of becoming permanently established. Surveys for many of the 100 Most Dangerous Invaders were completed and eradication projects against eight species were carried out: sudden oak death, giant hogweed, meadow hawkweed, kudzu, Patterson's curse, purple starthistle, gypsy moth and Japanese beetle.

Given the fact that one target species was not successfully excluded or contained, but only one other species from the list of 100 worst threats is in danger of becoming permanently established, Oregon's grade for 2003 is a "B."

# Significant Incidents in 2003

The annual grade recognizes our collective success at excluding the most dangerous invasive species threats to Oregon. This is important; however, it is not the whole story. One shortcoming of this simple measure is that it does not reflect the rate at which the state is challenged with new invasions, nor does it reflect the effort many people put in to survey and eradication efforts for invasive species. Many of these people deserve "A's." The following list documents important invasive species interceptions and actions taken in 2003. Twenty-five similar incidents were documented in the 2002 Report Card.

#### January

- 1. An Oregon seed company imports 39,000 lbs of "tiger nuts" from Spain. They were subsequently identified as bulbs of yellow nutsedge, *Cyperus esculentus*, a noxious weed. Precautions were taken to ensure that the bulbs were not distributed in Oregon.
- 2. A Bostrichid beetle, *Dioderus minutus*, was intercepted in bamboo stakes from China.

#### February

- 3. A pest risk assessment for monk parakeet, *Myiopsitta monachus*, was completed. Control/eradication of this species was not recommended.
- 4. Chinese water spinach, *Ipomea aquatica*, was intercepted at an Asian market in Portland.
- 5. A Spartina Action Plan for Oregon was completed.

6. Southern bacterial wilt, *Ralstonia solanacearum* race 3, biovar 2, was discovered in geraniums imported from Kenya in greenhouses in several states. Two Oregon greenhouses received material from the implicated supplier; both were inspected and found to be clean.

#### March

- 7. A pest risk assessment for apple leafcurling midge, *Dasineura mali*, was completed. Additional exclusionary measures were recommended.
- 8. Decollate snail, *Rumina decollata*, was reported for sale at a garden store in Eugene. The supplier recalled all snails.

## April

- 9. Questionable algae at Hatfield Marine Science Center was confirmed to be native, not the feared invasive *Codium fragile tomentosoides*.
- 10. Chrysanthemum white rust, *Puccinia horiana*, was discovered at a nursery in Woodburn. All plants were destroyed.
- 11. Hop powdery mildew, *Sphaerotheca humuli*, was found on hops in post-entry quarantine at USDA Germplasm Repository in Corvallis. All plants were destroyed.

#### May

- 12. Bronze birch borer, *Agrilus anxius*, was discovered in Corvallis. This species is native to eastern Oregon, but had never been found west of the Cascades before.
- 13. Sudden oak death, *Phytophthora ramorum*, was discovered at a nursery in Clackamas County. All plants were burned and the infestation eradicated.
- 14. A weed risk assessment for Chinese water spinach was completed. Lifting of the ban on permits for this plant was recommended. USDA followed the recommendation and importation for consumption is now allowed.
- 15. A pest risk assessment for vine mealybug, *Planococcus ficus*, a grape pest was completed. Additional exclusionary measures were recommended.

#### June

- 16. Italian thistle, *Carduus pycnocephalus*, was discovered in eastern Oregon for the first time.
- 17. Sudden oak death was discovered at a nursery with outlets in Ashland and Medford on Camellias imported from California. All plants in the shipment were destroyed.
- 18. Barbed goatgrass, *Aegilops triuncialis*, was discovered by an ODOT consultant near a bridge construction project in Cave Junction. The plants were treated.

#### July

- 19. Diamond Lake was closed to swimming, wading and water-skiing from July 1st to August 12th due to a bloom of toxic algae, *Anabaena flos-aquae*. Algal blooms in Diamond Lake have been linked to ecosystem dynamics affected by introduction of Tui chub, *Gila bicolor*.
- 20. Eastern filbert blight, *Anisogramma anomala*, was discovered in the southern Willamette Valley. Previously, the southern most infestation was in Keizer.

- 21. Five Japanese beetles were caught in the vicinity of the cargo terminals at PDX. Turf areas nearby were treated.
- 22. Sudden oak death was discovered at a nursery with five outlets in Portland on Camellias imported from California. All plants in the shipment still at the nurseries were destroyed. A public "recall" located approximately 100 of the 300 plants that had previously been sold. One of the "recalled" plants sold to the public was positive for the disease.

## August

- 23. Patterson's curse, *Echium plantagineum*, was reported from a field border in Lebanon. A wildflower mix had been planted there previously. The site was treated.
- 24. Seventeen gypsy moths, *Lymantria dispar*, were trapped in a Eugene neighborhood. A 2002 move-in from Connecticut was determined to be the source. The statewide total gypsy moth catch was 27.
- 25. Sudden oak death was detected infecting an additional 6 acres of Curry County woodlands. An eradication program involving cutting and burning host material has brought the affected acreage down from 40 acres in 2001 and 8 acres in 2002.

## September

- 24. Green crab surveys were conducted in Tillamook, Yaquina and Netarts Bays. The catch averaged 0.07 green crabs/trap/day, a level similar to 2002. Circumstantial evidence indicates these estuaries harbor small, self-sustaining populations not dependent on a larval source from California.
- 25. Goldfish, *Carassius auratus auratus*, and brown bullhead, *Ameiurus nebulosus*, illegally introduced to Chickahominy reservoir, are eliminated by draining the reservoir to dead pool, then pumping it dry.

#### October

- 26. Two kudzu eradication sites in Portland retreated after surviving plants discovered during routine monitoring.
- 27. A European aphid, *Corylobium avellanae*, was discovered on filbert trees in the north Willamette Valley. This is the first record for this species in the U.S.

#### November

28. An exotic bark beetle, *Scolytus schevyrewi*, was discovered in Oregon. Native to Asia, this newly discovered species is attacking elms in several western states.

### Major Incidents Elsewhere with Implications for Oregon

29. The emerald ash borer, *Agrilus planipennis*, infestation in Michigan and Ontario, Canada was determined to be more extensive than previously thought. Eradication seems unlikely. Infested nursery stock was discovered in Ohio and Maryland. This insect is expected to spread to most regions of North America where ash trees occur.

30. Asian longhorned beetle, *Anoplophora glabripennis*, was discovered in Toronto. All host trees in the infested area will be destroyed. Earlier infestations in New York, Illinois and New Jersey have proven to be difficult to eradicate.

#### 2003 Oregon Invasive Species Council Members

#### Ex Officio Members

Mark Sytsma, Director Center for Lakes & Reservoirs Portland State University Portland, OR 97207-0751 (503) 725-3833 FAX: (503) 725-3834 sytsmam@pdx.edu

Dan Hilburn, Administrator Oregon Dept of Agriculture, Plant Division 635 Capitol Street NE Salem, OR 97301-2532 (503) 986-4663 FAX: (503) 986-4786 dhilburn@oda.state.or.us Bob Malouf, Director OSU Extension Sea Grant 200 Warner-Milne Rd. Oregon City, OR 97045 (503) 722-6718 FAX: (503) 655-8636 robert.malouf@oregonstate.edu

Martin Nugent, Wildlife Diversity Coordinator Oregon Department of Fish & Wildlife PO Box 59 Portland, OR 97207 (503) 872-5260 x5346 FAX: (503) 872-5269 martin.nugent@state.or.us

#### At Large Members

Blaine Parker Columbia River Inter-Tribal Fish Commission 729 NE Oregon, Suite 200 Portland, OR 97232 (503) 238-0667 FAX: (503) 235-4228 parb@critfc.org

Keith Warren J. Frank Schmidt & Son Co. PO Box 189 Boring, OR 97009 (503) 663-4128 FAX: (503) 663-2121 keithw@jfschmidt.com

Richard Mishaga Port of Portland P.O. Box 3529 Portland, OR 97009 (503) 944-7353 mishar@portptld.com

Paul Heimowitz Aquatic Invasive Species Coordinator U.S. Fish & Wildlife, Region 1 911 NE 11<sup>th</sup> Ave., 6E Portland, OR 97232-4128 503-872-2763 Paul\_Heimowitz@fws.gov **Term Expires** 

January 1, 2005

January 1, 2005

January 1, 2005

January 1, 2005

Suzanne Cudd Whiskey Creek Shellfish Hatchery 2975 Netarts Bay Road W. Tillamook, OR 97141 (503) 815-8323 FAX: (503) 842-6426 suecudd@aol.com January 1, 2006

Risa Demasi Grassland Oregon P.O. Box 21630 Keizer, OR 97307 (503) 566-9900 FAX: (503) 566-9901 risarue@aol.com January 1, 2006

Kev Alexanian Crook County Weed Department 1306 N. Main St. Prineville, OR 97754 (541) 447-7958 FAX: (541) 447-2977 penny.keller@co.crook.or.us January 1, 2006

Mandy Tu The Nature Conservancy 821 SE 14th Avenue Portland, OR 97214-2537 (503) 230-0707 Ext. 350 FAX: (503) 230-9639 imtu@tnc.org January 1, 2006