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Ms Margot Kerley
Secretary
Joint Committee of Public Accounts and Audit
Parliament House
Cabnerra ACT 2600

Dear Ms Kerley

QUESTION ON NOTICE-REVIEW OF AUSTRALIA'S QUARANTINE FUNCTION

At the hearing of the JCPAA Review of Australia's Quarantine Function on 16 July 2002 the Chairman asked the following, during the presentation of Environment Australia's submission to the Review:

"You go on and say that hull fouling may account for up to 60 per cent of introduced marine pest introductions. What marine pests? I wish you would take that on notice and come back to us."

I am able to provide the following answer.

This information is extracted from the CSIRO National Introduced Marine Pests Information System (NIMPIS), which is an on-line data base containing 83 species. (Reference: Hewitt C.L., Martin R.B., Sfwa C, McFnnulty, F.R., Murphy, N.E., Juries '. T. & Cooper, S. 2002. Editors. National Introduced Marine: Pest Information System. Web publication <http://crimp.marine.csiro.au/nimpis>, Date of access: 1-Aug-2002).

"This vector [biofouling] can introduce species through a variety of means. Three examples are: (1) The spawning of a fouling species on a vessel in port and its successful.': settlement and establishment of a reproductive population; (2) The dislodgment of fouling species from a vessel in pod through abrasion with: wharf structures, ropes, etc., or through in water vessel hull cleaning (banned in Australia) or through high vessel speeds, etc.; and (3) The sinking of fouled vessels either deliberately or accidentally can introduce new species to a location."

Species which may have been introduced by biofouling, according to NIMPIS, are listed below. Note that some of these species may be introduced by other vectors as well, such' as ships' ballast water or deliberate introduction.

Species	Common name	Australian Distribution	Impacts (if known)
Amathm distans	Bryozoan	QLD, NSW, VIC.	None recorded
Anteaeolidiella Indica	Japanese aeolid	QLD	Unknown
Antennella secundaria[*]	Knotted thread hydroid	VIC, SA S-W WA	Not recorded
Ascidiella aspersa	Solitary ascidian	VIC, TAS, SA, S-W WA	Fouls structures and vessel hulls
Asterias amurensis	Northern Pacific seastar	TAS, Port Philip Bay VIC	Voracious predator, including on shellfish
Barentsia benedeni	Nodding head	Southern NSW,SA	Fouls living and non living substrates
Boccardia polydorid	Californian polydorid	WA, SA, VIC	Burrows into shells of important fishery species
Botryllus schlosseri	Star ascidian	All States, NT	Nuisance fouling and overgrows native fouling organisms
*Bortypides leachi**	Colonial ascidian	All States, NT	Dominant competitor to native species
Bugula flabellata	Bryozoan	QLD, NSW, VIC,SA S-W WA	None recorded
Bugula neritina	Bryozoan	QLD, NSW, VIC, SA WA	Abundant fouling South
Carcinus maenas	European shore crab	NSW, VIC, TAS, SA S-W WA	Voracious predator
Chimn	New Zealand Chiton	Tasmania	May potentially displace

(Amaurochiton) glaucus			native species
Ciona intestinalis	Solitary ascidian	QLD, NSW, TAS, SA, S-W WA	Out-competes native species
Cirolana harfordi	Speckled pill bug	VIC, S-W WA	None recorded
Codium fragile subspecies tomentosoides	Dead Man's fingers	VIC, TAS	Fouls nets, settles on native algae and shellfish
Corbula gibba	European Clam	NSW, VIC, TAS	Competes with native species including commercial species
Cordylophora caspia	Hydroid	NSW,VIC	Clogging of saltwater power plant intakes (Europe, US), changes to native species composition
Corophium acherusicum	Mediterranean corophiid	VIC, TAS, 5-W WA	Fouls harbour structures, buoys
Corophium baconi	North American Pacific Corophiid	Southern NSW	May displace native species
Corophium insidiosum	English corophiid	VIC, TAS, S-W WA	Fouls harbour structures, buoys
Corophium sextonae	Corophiid amphipod	VIC, TAS, S-W WA	Fouls harbour structures, Buoys
Cryptosula pallasiana	Bryozoan	QLD, VIC, SA, Southern WA	None recorded
Ectopleura crocea	Hydroid	VIC, S-W WA	None recorded

*Euylana arcuata**:	Cirolanid isopod	Southern NSW to SA	None recorded
Godiva quadricolor	Sea slug	S-W WA	None recorded
*Halecium delicatulum**	Hydroid	QLD, NSW, VIC, TAS Southern WA..	Possible fouling of structures
Hopkinsia plana	Sea slug	All Eastern waters except TAS	None recorded
*Hydroides elegans**	Fouling serpulid	QLD, NSW, VIC, TAS Southern WA	Heavy fouling of structures
Megabalanus rosa	Acorn barnacle	Southern NSW N-W WA	None are known
*Megabalanus tintinnabulum**	Acorn barnacle	All except great Australian Bight	Very common barnacle on vessels
Mytilopsis sallei	Black striped mussel	Darwin (eradicated)	Massive fouling of wharves, marinas, seawater pumping stations, vessel ballast and cooling systems
Mytilus galloprovincialis	Mediterranean blue mussel	NSW, VIC, TAS, SA, Southern WA	Accumulates toxins water, leading to human health problems
Obetia dichotoma	Hydroid	QLD, NSW VIC, TAS	Non-serious fouling
Paracereis sculpta:	Spongeisopod	Eastern Australia Cape from York to SA, S-W	None recorded
Paradella dtanae	Sphaeromatic isopod	QLD, SW WA	None recorded
Plumularia setacea	Hydroid	All States and NT	None recorded

Polycera capensis	Conspicuous polycem	NSW	None recorded
Polycera hedgpethi	Hedgpeth's florid	NSW, VIC, SA, WA	None recorded
Polysiphonia brodiei	Red macroalga	VIC,TASSA	Hull fouling, nuisance fouling of ropes, buoys, harbour structures
Pseudopolydora paucibranchiata	Japanese polydorid	NSW, VIC, SA	Alters habitat and faunal composition
Sabella spallanzanii	European fan worm	NSW, VIC, S-W WA	Little known. May alter nutrient cycling. May reduce density of natives
*Sarsia eximia**	Hydroid	NSW, VIC, S-W WA	None recorded
Schizoporella unicornis	Lace coral	QLD, NS W, VIC, S-W WA	None recorded
Sphaeroma walkeri	Marine pill bug	QLD, NSW	None recorded
Styela clava	Leathery sea squirt	VIC	Competition with native and aquaculture species Fouling of vessels, structures aquaculture and fishing equipment
Styela plicata	Solitary ascidian	QLD, NSW, VIC, SA WA	compets with native and aquaculture species
Teredo navalis	Naval shipworm	NSW, VIC, TAS, SA WA.	Long history of damage to shipping industry and harbour structures
*Thecacera pennigera**	Winged thecacera	NSW	None known

*Ulva fasciata**	Sea lettuce	QLD, NSW, VIC, SA WA	None known but could become a fouling Nuisance
Undaria pinnatifida	Wakame (Japanese)	VIC, TAS	Overgrows and excludes native algal species
Watersipora arcuata	Lace coral	QLD, NSW, VIC, S-W WA	Abundant fouling; resistant to antifouling Paints

* Possible introduction to Australia -the natural range of some species is not known with certainty, hence the Introduction status is also uncertain

I trust that this will answer the question raised by the Chairman.

If more information is required, the contact officer on this matter is Mr Warren Geeves on telephone 6274 1453 and email warren.geeves@ea.gov.au

Yours sincerely

Alison Russell-French
Assistant Secretary
Marine, Coasts and Wetlands Branch
26 August 2002