



Overview of preparatory work on risk assessments

**1st meeting of the Scientific Forum on
Invasive Alien Species
(item 6 of agenda: for information)**

Brussels, 21 April 2015

Art.5(1) Risk assessment

Art.5(1) For the purposes of Article 4, a **risk assessment** shall be carried out in relation to the current and potential range of invasive alien species, having regard to the following elements:

- a description of the **species** with its taxonomic identity, its history, and its natural and potential range;
- a description of its **reproduction and spread patterns and dynamics** including [...];
- a description of the **potential pathways** of introduction and spread of the species, both [...];
- a thorough assessment of the **risk of introduction**, establishment [...];
- a description of the **current distribution** of the species, including [...], and a projection of its **likely future distribution**;
- a description of the **adverse impact on biodiversity and related ecosystem services**, including [...], **as well as on human health, safety, and the economy** including an assessment of the potential future impact having regard to available scientific knowledge;
- an assessment of the **potential costs of damage**;
- a description of the **known uses** for the species and **social and economic benefits** deriving from those uses.

Preparatory work

1. Study 1 - Framework for the identification of invasive alien species of Union concern
2. Workshop completing risk assessments
-> feed into first list of IAS of Union concern
3. Study 2 - Horizon scanning
-> feed into future risk assessments, and future updates of list of IAS of Union concern

Study 1



Framework for the identification of invasive alien species of EU concern

- Review of existing risk assessment methodologies
- Development of minimum standards
 - **Elements in Art.5(1)**
 - **Risk assessment practices**
 - **Literature**
- Peer review of minimum standards



Study 1



Minimum Standards (1)

- 1. Description (Taxonomy, invasion history, distribution range (native and introduced), geographic scope, socio-economic benefits)*
- 2. Includes the likelihood of entry, establishment, spread and magnitude of impact*
- 3. Includes description of the actual and potential distribution, spread and magnitude of impact*
- 4. Has the capacity to assess multiple pathways of entry and spread in the assessment, both intentional and unintentional*
- 5. Can broadly assess environmental impact with respect to biodiversity and ecosystem patterns and processes*
- 6. Can broadly assess environmental impact with respect to ecosystem services*



Study 1



Minimum Standards (2)

7. *Broadly assesses adverse socio-economic impact*
8. *Includes status (threatened or protected) of species or habitat under threat*
9. *Includes possible effects of climate change in the foreseeable future*
10. *Can be completed even when there is a lack of data or associated information*
11. *Documents information sources*
12. *Provides a summary of the different components of the assessment in a consistent and interpretable form and an overall summary*
13. *Includes uncertainty*
14. *Includes quality assurance*



Study 1



Framework for the identification of invasive alien species of EU concern

- Assessment of compliance of RA with minimum standards
- **Result:**
 - **51 risk assessments nearly compliant with minimum standards (from which Pacific oyster and Canada goose excluded)**
- Cannot be in any way regarded as the list that the Commission will be proposing





Scientific workshop to complete risk assessments

- Analyse gaps in $51 + 5 = 56$ nearly compliant risk assessments
- Complete gaps
- Assessment of compliance with minimum standards
- **Result:**
 - **52 risk assessments compliant (from which Pacific oyster and Canada goose excluded)**
 - **4 risk assessments still not compliant**
- Cannot be in any way regarded as the list that the Commission will be proposing



Workshop



Risk assessments compliant with minimum standards

<i>Ambrosia artemisiifolia</i>	<i>Common ragweed</i>
<i>Azolla filiculoides</i>	<i>Water fern</i>
<i>Baccharis halimifolia</i>	<i>Eastern Baccharis</i>
<i>Callosciurus erythraeus</i>	<i>Pallas's squirrel</i>
<i>Cabomba caroliniana</i>	<i>Fanwort</i>
<i>Caprella mutica</i>	<i>Japanese Skeleton Shrimp</i>
<i>Cervus nippon</i>	<i>Sika deer</i>
<i>Corvus splendens</i>	<i>Indian house crow</i>
<i>Crassula helmsii</i>	<i>Australian swamp stonecrop</i>
<i>Crepidula fornicata</i>	<i>Slipper Limpet</i>
<i>Didemnum vexillum</i>	<i>Carpet Sea-squirt</i>
<i>Eichhornia crassipes</i>	<i>Water hyacinth</i>
<i>Eriocheir sinensis</i>	<i>Chinese mitten crab</i>
<i>Fallopia japonica</i>	<i>Japanese knotweed</i>
<i>Fallopia sachalinensis</i>	<i>Japanese knotweed</i>
<i>Heracleum persicum</i>	<i>Persian hogweed</i>
<i>Heracleum sosnowskyi</i>	<i>Sosnowski's hogweed</i>



Workshop



Risk assessments compliant with minimum standards

<i>Hydrocotyle ranunculoides</i>	<i>Floating pennywort</i>
<i>Lagarosiphon major</i>	<i>Curly waterweed</i>
<i>Lithobates (Rana) catesbeianus</i>	<i>North American bullfrog</i>
<i>Ludwigia grandiflora</i>	<i>Water-primrose</i>
<i>Ludwigia peploides</i>	<i>Floating primrose-willow</i>
<i>Lysichiton americanus</i>	<i>American skunk cabbage</i>
<i>Muntiacus reevesii</i>	<i>Muntjac deer</i>
<i>Myocastor coypus</i>	<i>Coypu</i>
<i>Myiopsitta monachus</i>	<i>Monk parakeet</i>
<i>Myriophyllum aquaticum</i>	<i>Parrot's feather</i>
<i>Orconectes limosus</i>	<i>Spiny-cheek Crayfish</i>
<i>Orconectes virilis</i>	<i>Virile Crayfish</i>
<i>Oxyura jamaicensis</i>	<i>Ruddy duck</i>
<i>Pacifastacus leniusculus</i>	<i>Signal Crayfish</i>
<i>Parthenium hysterophorus</i>	<i>Whitetop Weed</i>
<i>Persicaria perfoliata (Polygonum perfoliatum)</i>	<i>Asiatic tearthumb</i>
<i>Potamopyrgus antipodarum</i>	<i>New Zealand Mudsnail</i>
<i>Procambarus clarkii</i>	<i>Red Swamp Crayfish</i>



Risk assessments compliant with minimum standards

<i>Procambarus spp.</i>	<i>Marbled Crayfish</i>
<i>Procyon lotor</i>	<i>Raccoon</i>
<i>Pseudorasbora parva</i>	<i>Stone moroko</i>
<i>Psittacula krameri</i>	<i>Rose-ringed parakeet</i>
<i>Pueraria lobata</i>	<i>Kudzu Vine</i>
<i>Rapana venosa</i>	<i>Rapa Whelk</i>
<i>Sargassum muticum</i>	<i>Japweed, wireweed</i>
<i>Sciurus carolinensis</i>	<i>American Grey Squirrel</i>
<i>Senecio inaequidens</i>	<i>Narrow-leaved ragwort</i>
<i>Sicyos angulatus</i>	<i>Star-cucumber</i>
<i>Solanum elaeagnifolium</i>	<i>Silver-leaved Nightshade</i>
<i>Solidago nemoralis</i>	
<i>Tamias sibiricus</i>	<i>Siberian chipmunk</i>
<i>Threskiornis aethiopicus</i>	<i>Sacred ibis</i>
<i>Vespa velutina</i>	<i>Asian hornet</i>



Study 2



Horizon scanning study

- Screening for potential future IAS
- Prioritisation for future risk assessments
- Species not (or hardly) present in the EU
- **Results expected after summer**



Preliminary feedback on list of Risk Assessments with minimum standards

Clarifications

- The list will be dynamic
 - **Art 4(2): update the list as appropriate, adding or removing species**
- The list can include widely spread IAS, provided that:
 - **Art 4(3)e: listing will effectively prevent, minimise or mitigate adverse impact**
 - **Art 4(6): there has been due consideration to implementation cost for MS and cost-effectiveness**

Preliminary feedback on list of Risk Assessments with minimum standards

Clarifications

- Excluded from listing:
 - **Pests and diseases addressed through animal or plant health regimes**
 - Varroa, long horned beetle, Chytrid fungus
 - **Species native somewhere in the EU**
 - Spanish slug, Zebra mussle
 - **Species approved under Regulation 708/2007**
 - Pacific oyster
 - **Species protected through the Birds Directive**
 - Canada goose





Preliminary feedback on list of Risk Assessments with minimum standards

Needs for further support on RA:

- **Validation of additional RA**
- **Guidance on quality assurance of RA (later)**
- **Guidance on upscaling national RA (later)**

Needs for further support in the listing process

- **Information on cost-effectiveness of measures (prevention, rapid eradication, management)**

Needs for further support in the implementation

- **Guidance on surveillance (later)**
- **Guidance on management (later)**



Validation of additional RAs

Step 1: Validation of risk assessment (Scientific Forum)

- **MS proposes IAS and submits RA (and information on cost-effectiveness of measures)**
- **Commission checks proposal and RA**
- **Commission forwards RA to scientific forum for written review procedure**
- **Commission forwards comments to submitting MS**
- **MS repropose IAS and resubmits RA**

Step 2: Assessment of compliance with criteria (Committee)

- **Commission forwards proposal, RA and possibly additional information on the cost-effectiveness of measures to Committee**





Preliminary summary of preliminary feedback

Art 4(3)(a-b) - compliant, no further check

- (a) Alien to EU
- (b) capable of establishing

Art 4(3)(c-d) – to be checked

- (c) Adverse impact on biodiversity or related ecosystem services **(A)**, and may also have adverse impact on human health or economy **(B)**
- (d) concerted action at EU-level required

Art 4(3)(e) – to be checked

- Listing will effectively prevent, minimise or mitigate adverse impacts **(C)**

Art 4(6) – to be checked

- Due consideration to implementation cost for MS and cost effectiveness **(D)**
- Due consideration to socio-economic aspects **(E)**
- Due consideration to cost of inaction (included in 4(3)(c))



WORKING MATERIAL!

		A Art 4.3.c-d Impact BD / ESS	B Art 4.3.c-d Impact Health / econ	C Art 4.3.e Effective measures	D Art 4.6 Cost- effective Measures	E Art 4.6 Socio- economic benefits
<i>Ambrosia artemisiifolia</i>	Common ragweed		Allergy Agriculture	Control	No	-
<i>Azolla filiculoides</i>	Water fern	Biodiversity Recreation	-	Control	No	Feed Bio-energy?
<i>Baccharis halimifolia</i>	Eastern Baccharis	Biodiversity	Allergy	Control	Yes	-
<i>Callosciurus erythraeus</i>	Pallas's squirrel	Biodiversity	-	Control	Yes	-
<i>Cabomba caroliniana</i>	Fanwort	Biodiversity Recreation Drainage	-	Control	Yes	Horticulture
<i>Caprella mutica</i>	Japanese Skeleton Shrimp	Biodiversity	-	?	?	-
<i>Cervus nippon</i>	Sika deer	Biodiversity		No (hybrids)	No	Pet trade Zoos
<i>Corvus splendens</i>	Indian house crow	Biodiversity	Agriculture Electric wires	Control	Yes	-
<i>Crassula helmsii</i>	Australian swamp stonecrop	Biodiversity	-	?	?	Horticulture
<i>Crepidula fornicata</i>	Slipper Limpet	Biodiversity	-	?	?	-

WORKING MATERIAL!

		A Art 4.3.c-d Impact BD / ESS	B Art 4.3.c-d Impact Health / econ	C Art 4.3.e Effective measures	D Art 4.6 Cost- effective Measures	E Art 4.6 Socio- economic Benefits
<i>Didemnum vexillum</i>	Carpet Sea-squirt	Biodiversity	-	Biofouling ? meas.?	-	-
<i>Eichhornia crassipes</i>	Water hyacinth	Biodiversity Drainage (biodiversity)	-	Control	Yes	Horticulture
<i>Eriocheir sinensis</i>	Chinese mitten crab	Biodiversity	Fishing equipment Infrastructure	Control	?	Consumption
<i>Fallopia japonica</i>	Japanese knotweed	Biodiversity	Infrastructure	pathway mgt	?	Horticulture
<i>Fallopia sachalinensis</i>	Japanese knotweed	Biodiversity	Infrastructure	Pathway mgt	?	Horticulture
<i>Heracleum persicum</i>	Persian hogweed	Biodiversity, Erosion	Skin irritation	Control	Yes	Horticulture
<i>Heracleum sosnowskyi</i>	Sosnowski's hogweed	Biodiversity Erosion	Skin irritation	Control	Yes	Horticulture
<i>Hydrocotyle ranunculoides</i>	Floating pennywort	Biodiversity Recreation Drainage	-	Control	Yes	Horticulture
<i>Lagarosiphon major</i>	Curly waterweed	Biodiversity Recreation Drainage	-	Control	Yes	Horticulture

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		A Art 4.3.c-d Impact BD / ESS	B Art 4.3.c-d Impact Health / econ	C Art 4.3.e Effective measures	D Art 4.6 Cost- effective Measures	E Art 4.6 Socio- economic Benefits
<i>Lithobates catesbeianus</i>	North American bullfrog	Biodiversity	-	Control	Yes	-
<i>Ludwigia grandiflora</i>	Water-primrose	Biodiversity Recreation Drainage	-	Control	Yes	Horticulture
<i>Ludwigia peploides</i>	Floating primrose-willow	Biodiversity Recreation Drainage	-	Control	Yes	Horticulture
<i>Lysichiton americanus</i>	Am. skunk cabbage	Biodiversity	-	Control	Yes	Horticulture
<i>Muntiacus reevesii</i>	Muntjac deer	Biodiversity	-	Control	Yes	-
<i>Myocastor coypus</i>	Coypu	Biodiversity	Agriculture	Control	Yes	-
<i>Myiopsitta monachus</i>	Monk parakeet	(biodiversity)	Agriculture Electr. wires	Control	Yes	Pet trade
<i>Myriophyllum aquaticum</i>	Parrot's feather	Biodiversity Recreation Drainage	-	Control	Yes	Horticulture
<i>Orconectes limosus</i>	Spiny-cheek Crayfish	Biodiversity Fisheries	Fishing equipment	Control	?	Consumption
<i>Orconectes virilis</i>	Virile Crayfish	Biodiversity Fisheries	Fishing equipment	Control	Yes	Consumption

WORKING MATERIAL!

		A Art 4.3.c-d Impact BD / ESS	B Art 4.3.c-d Impact Health / econ	C Art 4.3.e Effective Measures	D Art 4.6 Cost-effective Measures	E Art 4.6 Socio-economic Benefits
<i>Oxyura jamaicensis</i>	Ruddy duck	Biodiversity	-	Control	Yes	Pet trade
<i>Pacifastacus leniusculus</i>	Signal Crayfish	Biodiversity Fisheries	Fishing equipment	Control	?	Consumption
<i>Parthenium hysterophorus</i>	Whitetop Weed	Biodiversity	Skin irritation	Pathway mgt	Yes	-
<i>Persicaria perfoliata</i>	Asiatic tearthumb	Biodiversity	-	Pathway mgt	Yes	-
<i>Potamopyrgus antipodarum</i>	New Zealand Mudsnail	Biodiversity	-	Pathway Ballastw Aquacult	?	-
<i>Procambarus clarkii</i>	Red Swamp Crayfish	Biodiversity Fisheries	Fishing equipment	Control	?	Consumption
<i>Procambarus spp.</i>	Marbled Crayfish	Biodiversity Fisheries (biodiversity)	Fishing equipment	Control	Yes	Consumption
<i>Procyon lotor</i>	Raccoon		Disease transmission	Control	?	-
<i>Pseudorasbora parva</i>	Stone moroko	Biodiversity	-	Locally	?	Pet trade
<i>Psittacula krameri</i>	Rose-ringed parakeet	(biodiversity)	Agriculture Disease	Control	Yes	Pet trade Zoos
<i>Pueraria lobata</i>	Kudzu Vine	Biodiversity		Control	Yes	Horticulture

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		A <i>Art 4.3.c-d Impact BD / ESS</i>	B <i>Art 4.3.c-d Impact Health / econ</i>	C <i>Art 4.3.e Effective measures</i>	D <i>Art 4.6 Cost- effective measures</i>	E <i>Art 4.6 Socio- economic benefits</i>
<i>Rapana venosa</i>	<i>Rapa Whelk</i>	<i>Biodiversity</i>		<i>Pathway</i>	<i>?</i>	<i>-</i>
<i>Sargassum muticum</i>	<i>Japweed, wireweed</i>	<i>Biodiversity Recreation</i>	<i>Fishing equipment</i>	<i>Pathway mgt</i>	<i>No</i>	<i>-</i>
<i>Sciurus carolinensis</i>	<i>American Grey Squirrel</i>	<i>Biodiversity Forestry</i>		<i>Control</i>	<i>Yes</i>	<i>-</i>
<i>Senecio inaequidens</i>	<i>Narrow-leaved ragwort</i>		<i>Animal husbandry</i>	<i>?</i>	<i>No</i>	
<i>Sicyos angulatus</i>	<i>Star-cucumber</i>		<i>Agriculture</i>	<i>Control</i>	<i>?</i>	<i>-</i>
<i>Solanum elaeagnifolium</i>	<i>Silver-leaved Nightshade</i>		<i>Agriculture</i>	<i>Control</i>	<i>No</i>	<i>-</i>
<i>Solidago nemoralis</i>		<i>(biodiversity)</i>	<i>Agriculture</i>	<i>Control</i>	<i>No</i>	<i>-</i>
<i>Tamias sibiricus</i>	<i>Siberian chipmunk</i>	<i>(biodiversity)</i>	<i>-</i>	<i>Control</i>	<i>Yes</i>	<i>Pet trade</i>
<i>Threskiornis aethiopicus</i>	<i>Sacred ibis</i>	<i>(biodiversity)</i>	<i>-</i>	<i>Control</i>	<i>Yes</i>	<i>Zoos Pet trade</i>
<i>Vespa velutina</i>	<i>Asian hornet</i>	<i>Biodiversity Beekeeping</i>	<i>Stinging</i>	<i>?</i>	<i>?</i>	<i>-</i>



WORKING MATERIAL!

		A Art 4.3.c-d Impact BD / ESS	B Art 4.3.c-d Impact Health / econ	C Art 4.3.e Effective measures	D Art 4.6 Cost- effective measures	E Art 4.6 Socio- economic benefits
<i>Chrysemys picta</i>	Painted turtle	Biodiversity	-	yes	yes	Pet trade
<i>Egeria densa</i>	Brazilian waterweed	Biodiversity Recreation Drainage	-	yes	yes	Aquaria
<i>Homarus americanus</i>	American lobster	Biodiversity Fisheries	Fishing equipment infrastructure	yes	yes	Consumption
<i>Orconectes rusticus</i>	Rusty crayfish	Biodiversity Fisheries	Fishing equipment infrastructure	yes	yes	Aquaria
<i>Perccottus glenii</i>	Chinese sleeper (fish)	Biodiversity	-	yes	yes	-
<i>Sciurus niger</i>	fox squirrel	Biodiversity Forestry	-	yes	yes	Pet trade
<i>Trachemys scripta elegans</i>	red-eared slider	Biodiversity		yes	yes	Pet trade
etc	etc					

