



Convention on the conservation of European wildlife and natural habitats - 36th meeting of the Standing Committee - Strasbourg, 15-18 November 2016



Code of Conduct for Planted Forest and Invasive Alien Trees

Giuseppe Brundu & David M. Richardson

Department of Agriculture, University of Sassari, Italy

Centre for Invasion Biology, Department of Botany & Zoology, Stellenbosch University, South Africa

1. The revised 3rd version of the Code;
2. The definitions used in the Code;
3. The aims ad principles of the Code

1. The revised 3rd version of the Code;
2. The definitions used in the Code;
3. The aims and principles of the Code



Strasbourg, 8 October 2015
[Inf01e_2015.docx]

T-PVS/Inf (2015) 1

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

35th meeting
Strasbourg, 1st-4 December 2015

CODE OF CONDUCT ON PLANTATION FORESTRY AND INVASIVE ALIEN TREES

- SECOND DRAFT -

*Document prepared by
Mr Giuseppe Brundu & Mr David M. Richardson
(Department of Agriculture, University of Sassari, Italy - Centre for Invasion Biology, Department of
Botany & Zoology, Stellenbosch University, South Africa)
on behalf of the Bern Convention*

This document will not be distributed at the meeting. Please bring this copy.
Ce document ne sera plus distribué en réunion. Prière de vous munir de cet exemplaire.



Strasbourg, 27 September 2016
[Inf15e_2016.docx]

T-PVS/Inf (2016) 15

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

36th meeting
Strasbourg, 15-18 November 2016

CODE OF CONDUCT FOR PLANTED FOREST AND INVASIVE ALIEN TREES

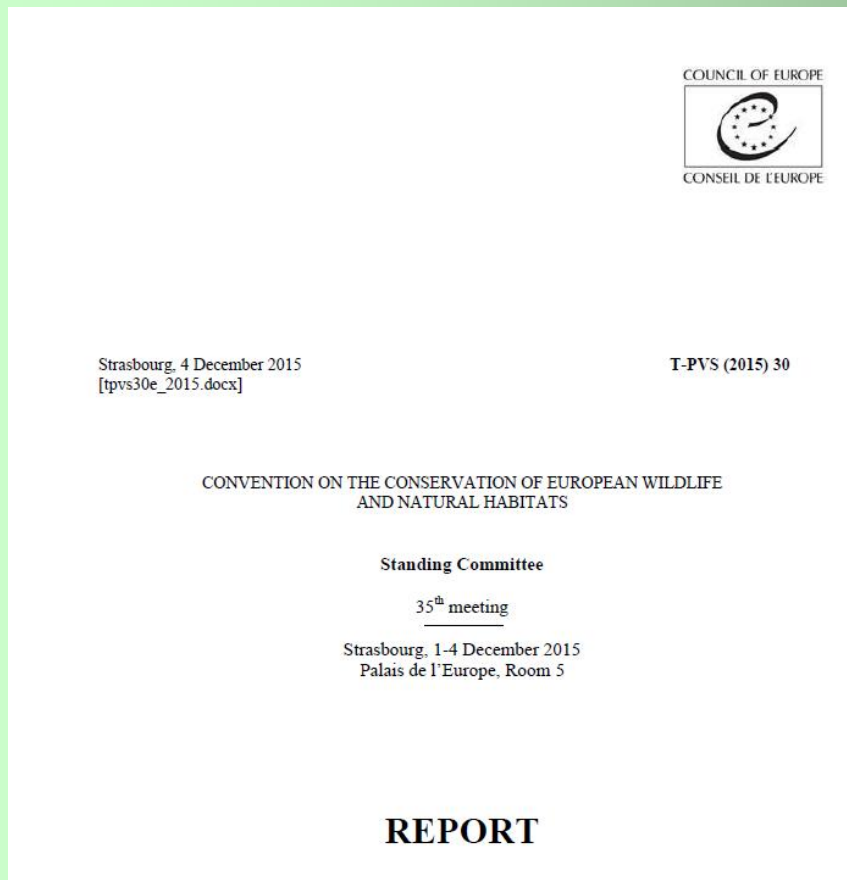
- FINAL DRAFT -
September 2016

*Document prepared by
Mr Giuseppe Brundu & Mr David M. Richardson
(Department of Agriculture, University of Sassari, Italy - Centre for Invasion Biology, Department of
Botany & Zoology, Stellenbosch University, South Africa)
on behalf of the Bern Convention*

This document will not be distributed at the meeting. Please bring this copy.
Ce document ne sera plus distribué en réunion. Prière de vous munir de cet exemplaire.

Code of Conduct for Planted Forest and Invasive Alien Trees

Moreover, following a presentation of the Code of conduct on plantation forestry and IAS by the author, Dr Giuseppe Brundu, and taking note of the comments of the EU and its Member States highlighting some gaps to be addressed, as well as the suggestion of using the words “planted forests” instead of “plantation forestry”, the Committee decided to recirculate the document for additional comments by Parties and to present a new amended draft at its next meeting for possible endorsement.



Belgium
France
United Kingdom
Slovak Republic
Ireland
Belgium
Austria

Code of Conduct for Planted Forest and Invasive Alien Trees

Plantation forestry - **Planted Forest** (FAO FRA 2015);

Verification of a correct use throughout the text of FAO, CBD, Bern Convention **terminology** on invasive alien species;

More information and reference of beneficial effects from non-native trees

More information on **Sustainable Forest Management**;

Simplification and reorganisation of the **structure** of the Code (separation between principles and background information);

More references to the **Regulation (EU) no. 1143/2104**;

Editorial comments and suggested **references**, updates on **national legislation** and national lists.

1. The revised 3rd version of the Code;
2. The definitions used in the Code;
3. The aims ad principles of the Code

1. The revised 3rd version of the Code;
2. The definitions used in the Code;
3. The aims and principles of the Code

ALIEN species (**CBD**, IUCN, UNEP-WCMC, **European Strategy CoE**, EU Biodiversity Strategy, Regulation EU No. 1143/2014, IPPC/EPPO, WTO, CITES);

NON-Native species (e.g., NN Species Secretariat in the UK; Art 11 of the Convention on the Conservation of European Wildlife and Natural Habitats, Bern, 19.IX.1979; Council Directive 92/43/EEC of 21 May 1992);

INTRODUCED Tree (FAO 2012, i.e. FRA 2015 terms & definitions, FOREST EUROPE, 2015: State of Europe's Forests 2015);

EXOTIC tree (FAO 2002);

NON-AUTOCHTHONOUS/NON-INDIGENOUS (Council Directive 1999/105/EC of 22 December 1999);

UK	Alien species	Invasive alien species
BG	чужди видове	инвазивен чужд вид
ES	especie exótica	especie exótica invasora
CS	nepůvodními druhy	invazním nepůvodním druhem
DA	ikkehjemmehørende art	invasiv ikkehjemmehørende art
DE	gebietsfremde Art	invasive gebietsfremde Art
ET	võõrliik	looduslikku tasakaalu ohustav võõrliik
EL	ξένα είδη	χωροκατακτητικά ξένα είδη
FR	espèce exotique	espèce exotique envahissante
GA	speiceas coimhthíoch	speiceas coimhthíoch ionrach
HR	strana vrsta	invazivna strana vrsta
IT	specie esotica	specie esotica invasiva
LV	svešzemju suga	invazīva svešzemju suga
LT	svetimos rūšys	invazinės svetimos rūšys
HU	idegenhonos faj	idegenhonos inváziós faj
MT	speci aljena	speci aljena invażiva
NL	uitheemse soort	invasieve uitheemse soort
PL	gatunek obcy	inwazyjny gatunek obcy
PT	Espécie exótica	Espécie exótica invasora
RO	specie alogenă	specie alogenă invazivă
SK	nepôvodný druh	invázny nepôvodný druh
SL	tujerodna vrsta	invazivna tujerodna vrsta
FI	vieraslajilla	haitallisella vieraslajilla
SV	främmande art	invasiv främmande art

Reg. 1143/2014
Article 3 –
Definitions

'invasive alien species' means an alien species whose introduction or spread has been found to threaten or adversely impact upon **biodiversity** and **related ecosystem services** (Reg. EU 1143/2014).

3.3 “Invasive alien species”

<i>CBD definition</i>	<i>Explanation in IPPC context</i>
An alien species whose introduction and/or spread threaten ⁹ biological diversity ^{10, 11}	An invasive¹² alien species (CBD) is an alien species (CBD) that by its establishment or spread has become injurious to plants¹³ , or that by risk analysis (CBD)¹⁴ is shown to be potentially injurious to plants

Are there Invasive Alien Tree species in Europe?

Unfortunately yes:

Scientific evidence of negative impacts; e.g.: *Acacia* spp.

National legislation (black list etc.); e.g.: *Leucena leucocephala*

Risk Assessment documents; e.g.: *Prunus serotina*

Proposal of including *Acer negundo* in the list of IASUC;

LIFE projects on invasive alien trees eradication and control. e.g.: *Ailanthus altissima*, *Acacia* spp.

1. The revised 3rd version of the Code;
2. The definitions used in the Code;
3. The aims ad principles of the Code

1. The revised 3rd version of the Code;
2. The definitions used in the Code;
3. The aims and principles of the Code

1. Rationale and aims of the Code of Conduct	4
2. Code of Conduct.....	5
2.1 Focus of the Code of Conduct: Planted Forests of (Invasive) Alien Trees	5
2.2 Audience and aims of the Code of Conduct	6
2.3 A voluntary tool.....	7
2.4 Implementing, monitoring and evaluating the Code of Conduct	7

The Code of Conduct is addressed to all relevant stakeholders and decision makers in the **47 Member States of the Council of Europe**. It is intended to provide **guidance for sustainable use** of alien (non-native, exotic, introduced) tree species in planted forests and to reduce the negative impacts that might originate from the unregulated use of invasive alien trees.

Well-managed planted forests of alien tree species can be useful in providing various forest goods and services and helping to reduce the pressure on natural forests (FAO 2015b).

Globally, natural forest area is decreasing and the area of planted forests is increasing. Planted forest area increased by over 110 million ha since 1990 and accounts for 7 percent of the world's forest area (FAO 2015b). Although there are marked differences between and within regions, between 18 % and 19 % of planted forests have been estimated to comprise alien tree species (Payn et al. 2015; FAO 2015a, 2015b).

However, a small number of alien forestry trees are invasive or might become invasive – i.e. they spread from planting sites into adjoining areas, and sometimes cause substantial damage.

The challenge is to manage existing and future planted forests of alien trees to maximize current benefits, while minimising risks and negative impacts, without compromising future benefits and land uses.

AWARENESS

3.1 Awareness..... 7

3.1.1 *Be aware of regulations concerning invasive alien trees* 7

3.1.2 *Be aware of which alien tree species are invasive or that have a high risk of becoming invasive, and of the invasion debt* 8

PREVENTION & CONTAINMENT

3.1.3 *Develop systems for information sharing and training programmes* 10

3.2 Prevention & Containment 10

3.2.1 *Promote – where possible – the use of native trees*..... 10

3.2.2 *Adopt good nursery practices* 13

3.2.3 *Modify plantation practices to reduce problems with invasive alien tree species* 13

3.2.4 *Revise general land management practices in landscapes with planted forests* 16

3.2.5 *Adopt good practices for harvesting and transport of timber* 17

3.2.6 *Adopt good practices for habitat restoration* 18

EDRR

3.3 Early Detection & Rapid Response 19

3.3.1 *Promote and implement early detection & rapid response programmes* 19

3.3.2 *Establish or join a network of sentinel sites* 20

OUTREACH

3.4 Outreach..... 21

3.4.1 *Engage with the public on the risks posed by invasive alien trees, their impacts and on options for management* 21

FORWARD PLANNING

3.5 Forward Planning 21

3.5.1 *Consider developing research activities on invasive alien trees species and becoming involved in collaborative research projects at national and regional levels* 21

3.5.2 *Take global change trends into consideration* 22

AWARENESS

- 1.1 Be aware of **regulations** concerning invasive alien trees;
- 1.2 Be aware of which alien tree species are **invasive** or that have a high risk of becoming invasive, and of the invasion debt;
- 1.3 Develop systems for **information sharing** and training programmes;

According to Richardson et al. (2015) the invasion debt is composed by four main components: (1) the number of species not yet introduced but likely to be introduced in the future given current levels of introduction/propagule pressure; (2) the establishment of introduced species; (3) the potential increase in area invaded by established species (including invasive species); (4) and the potential increase in impacts.

PREVENTION & CONTAINMENT

- 2.1 Promote – where possible – the use of **native trees**;
- 2.2 Adopt good **nursery** practices;
- 2.3 Modify **plantation practices** to reduce problems with invasive alien tree species;
- 2.4 Revise general land **management practices** in landscapes with planted forests;
- 2.5 Adopt good practices for **harvesting** and **transport** of timber;
- 2.6 Adopt good practices for habitat **restoration**

PREVENTION & CONTAINMENT

- 2.1 Promote – where possible – the use of **native trees**;

The use of native species **or** non-invasive alien **or** less-invasive alien tree species as alternatives for highly invasive alien species in planted forests **should be always considered**, as should the precise provenance of seeds and germplasm

A Code of Conduct for Planted Forest and Invasive Alien Trees

• 2.1 Promote – where possible – the use of native trees;



19. Native tree species, provenances and varieties or ecotypes that are well adapted to site conditions should be used for afforestation and reforestation where appropriate.
20. The need to consider adaptation to climate change should be taken into account when choosing species, provenances and varieties or ecotypes for afforestation and reforestation.
21. Species, provenances, varieties or ecotypes outside their natural range should only be used where their introduction would not endanger important and/or valuable indigenous ecosystems, flora and fauna. Those that are likely to be invasive should be avoided by using the CBD Guiding Principles for the Prevention, Introduction, and Mitigation of Impacts of Alien Species That Threaten Ecosystems, Habitats or Species.

Adopted by the MCPFE Expert Level Meeting on 12-13 November, 2008 and by the PEBLDS Bureau on behalf of the PEBLDS Council on 4 November, 2008

*Pan-European Guidelines for
Afforestation and Reforestation
with a special focus on the provisions
of the UNFCCC*

Modify plantation practices to reduce problems with invasive alien tree species: (1/2):

- Research findings on (invasive) alien trees should be applied to identify the most appropriate sites for their cultivation within landscapes;
- Biodiversity issues must be considered in planted forest design (COP 11 Decision XI/19.8 - 19 October 2012 - Hyderabad, India);
- Avoid converting natural habitats for cultivation;
- Restrict planted forest to areas where alien tree species are already present;
- Limit the total allowable area of planted forests, aggregate planting sites, and reduce the total boundary length;
- Save or plant 2-3 rows of native and/or less invasive alien tree species around external boundaries of the planted forest with alien trees or along margins of unplanted reserve areas inside planted forests;

A Code of Conduct for Planted Forest and Invasive Alien Trees

- Whenever possible, use mixed-species planted forests and encourage structural diversity through different age classes;
- Encourage the establishment of representative natural forest within the planted forest and, where possible, restore natural forests on appropriate sites (Secretariat of the Convention on Biological Diversity 2009);
- Prevent plantings at sites most favourable for long-distance dispersal of seed or pollen (hill tops, ridges);
- Prevent plantings and minimize disturbance near wetlands, rivers and streams and create buffer zones;
- Prevent plantings near “Natura 2000” sites and other protected areas or endangered habitats;
- Minimize soil movement, transport and disturbance in or around planted areas;
- Stabilise disturbed soils as soon as possible.

EARLY DETECTION & RAPID RESPONSE

- 3.1 Promote and implement **early detection & rapid response** programmes;
- 3.2 Establish or join a network of **sentinel sites**;



International Plant
Sentinel Network



OUTREACH

- 4.1 Engage with the **public** on the risks posed by invasive alien trees, their impacts and on options for management;

Combining methodologies to increase public awareness about invasive alien plants in Portugal

Elizabete Marchante¹, Hélia Marchante², Maria Morais¹ & Helena Freitas¹

Oral presentations

2nd Workshop on Invasive alien plants in Mediterranean type regions of the world



dgav
Centre for Functional Ecology
UFE
ESAC

EPP0/CoE/ IUCN ISSG
International Workshop

How to communicate on pests and invasive alien plants?

Oeiras (PT), 2013-10-08/10

Programme
Description of thematic workshops
Abstracts
List of participants



FORWARD PLANNING


- 5.1 Consider developing **research activities** on invasive alien trees species and becoming involved in collaborative research projects at national and regional levels;
- 5.2 Take **global change** trends into consideration.

FORWARD PLANNING

- 5.1 Consider developing **research activities** on invasive alien trees species and becoming involved in collaborative research projects at national and regional levels;
- Great Britain, for instance, with its long history of tree introductions and large plantings of many alien tree species (e.g. *Picea sitchensis*, the commonest British tree; Peterken 2001), is a good natural laboratory for studies of the determinants of naturalization and invasion in conifers and its consequences (Richardson & Rejmánek 2004).
- It would also be very informative to revisit as many sites as possible in Europe where many alien tree species were planted long ago, e.g. the experimental plantings of many conifers in Italy (Nocentini 2010), Portugal and Spain, and abandoned plantations (Richardson & Rejmánek 2004).

A Code of Conduct for Planted Forest and Invasive Alien Trees

In plantation forestry, climate change could affect the dynamics of alien tree invasions in many interacting ways, for example: (a) by causing modification in the native ecosystems **promoting range changes**, naturalisation and spread of both native and alien trees (e.g., Iverson et al. 2008; McKenney et al. 2011); (b) by **favouring individual traits** of particular alien trees (e.g. Capdevila-Argüelles & Zilletti 2008; Kawaletz et al. 2013; Castro-Díez et al. 2014); and (c) by **modifying introduction pathways** and promoting a larger use of certain alien trees (Courbet et al. 2012; Lindenmayer et al. 2012) including a process of **re-thinking the importance of “always choosing native species” principle** (UK Forestry Commission). Also **assisted migration** has been proposed as a means to maintain forest productivity, health, and ecosystem services under rapid climate change (e.g., Gray et al. 2011; Kreyling et al. 2011; Pedlar et al. 2012).



1 Introduction and key messages

The purpose of this pack

This pack presents the Forestry Commission's key messages on climate change. It draws together the information available from the Forestry Commission, Forest Research and other relevant organisations, to explain in one document the role of trees, woods and forests in tackling climate change.

Who is this pack aimed at?

The pack is primarily aimed at Forestry Commission staff, so that they are able to communicate the Forestry Commission's key climate change messages to the public.



Key messages: a summary

- Trees, woods and forests can provide part of the solution to limiting climate change, and to helping society to adapt to the changes that we all face. We must help our trees, woods and forests to adapt and become resilient to the changing climate.
- Climate change resulting from human activity is a reality. Forests and forestry can be an important and attractive part of the solution.
- On a global scale, we must protect and manage the woods and forests that we already have as well as planting new forests, to “mitigate” climate change.
- Cutting down trees is not always bad for the environment. As long as woodlands are managed in a sustainable way, there can be a multitude of benefits: for the climate, for people and for wildlife.

- Wood is a smart choice. Timber is renewable and can replace other materials that require much larger fossil fuel inputs for their production. It can also replace fossil fuels directly in the form of renewable energy, or wood fuel.
- Trees can help us to adapt to a changing climate. They provide shade, alleviate flooding, and create a valuable wildlife habitat.
- Our forests are changing due to climate change and we need to plan ahead to help them adapt.

The Forestry Commission is working to provide the answers and best practical solutions based on sound evidence. Through its management of the public forest estate, and its research and promotional work, the Forestry Commission is already playing an important role in combating climate change, and in helping our forests adapt to the changing climate.

This pack provides more information about each of the six key messages.

4. Background information: a knowledge basis for the Code of Conduct	24
4.1 Benefits arising from planted forests and planted forests of alien trees.....	24
4.2 Alien tree species in Planted Forests: historical and recent pathways of introduction	26
4.2.1 <i>General aspects</i>	26
4.2.2 <i>Alien conifers</i>	30
4.2.3 <i>Alien eucalypts</i>	30
4.2.4 <i>Alien acacias</i>	31
4.2.5 <i>Alien poplars and willows</i>	31
4.2.6 <i>Alien trees and plantations on disturbed land</i>	32
4.2.7 <i>Alien trees in Short-Rotation Forestry, Short-Rotation Coppice</i>	33
4.2.8 <i>Alien trees in agroforestry</i>	34
4.2.9 <i>Alien trees in Mediterranean planted forests and sand dune stabilisation</i>	34
4.2.10 <i>Alien trees in arid zones: preventing and combating desertification</i>	35
4.2.11 <i>Genetically improved and genetically modified alien trees</i>	36
4.5 The negative impacts of invasive alien trees	38
4.5.1 <i>Generalities and key examples</i>	38

4.6 International initiatives and legislation on invasive alien species and invasive alien trees	44
4.6.1 <i>The Convention on Biological Diversity</i>	44
4.6.2 <i>The Council of Europe and the Bern Convention</i>	45
4.6.3 <i>The International Plant Protection Convention</i>	45
4.6.4 <i>The European and Mediterranean Plant Protection Organisation (EPPO)</i>	46
4.6.5 <i>The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)</i>	46
4.6.6 <i>Sustainable forest management and forest certification</i>	47
4.7 European initiatives and legislation	52
4.7.1 <i>Habitat Directive – Natura 2000</i>	52
4.7.2 <i>The Plant Health Regime in the European Union</i>	53
4.7.3 <i>The Biodiversity Strategy of the European Union</i>	54
4.7.4 <i>The EU Regulation on invasive alien species</i>	54
4.7.5 <i>Forest policies in the European Union</i>	54
4.7.6 <i>The EU Energy Policy</i>	56
5. References.....	58
6. Annexes	76
6.1 Definitions – Glossary	76
6.2 The most frequently listed alien tree species in Europe.....	80

A Code of Conduct for Planted Forest and Invasive Alien Trees

The authors gratefully acknowledge all the colleagues and experts that have provided useful information on invasive alien trees, national black lists, forestry management issues and on other parts of the Code of Conduct, and in particular, Paulina Anastasiu, Trausti Baldursson, Linda Berglund, Urszula Biereźnoj-Bazille, Etienne Branquart, Sarah Brunel, Wim Buysse, Ignazio Camarda, Thomas Campagnaro, Paulo Carmo, María Amparo Carrillo-Gavilán, Alberto Del Lungo, Pierre Ehret, René Eschen, Franz Essl, Astra Garkaje, Quentin Groom, Richard Howe, Melanie Josefsson, Marion Karmann, Frank Krumm, Sandrine Liegeois, Merike Linnamagi, Cristina Máguas, Elizabete Marchante, Hélia Marchante, Mariam Mironova, Andrei Orlinski, Gerardo Sánchez Peña, Ewa Pisarczyk, Peter Roberntz, Helen Roy, Joaquim Sande Silva, Lisa Schembri, Tommaso Sitzia, Wojciech Solarz, Øystein Størkersen, Rob Tanner, Teodora Trichkova, Margarida Tomé, Maurits Vandegheuchte, Lucie Vitkova, Vladimir Vladimirov, Gian-Reto Walther and Pawel Wasowicz.



Thank YOU!