



**TRADE IN *DALBERGIA NIGRA*
AND THE
EUROPEAN UNION**

**VICTORIA TAYLOR, KATALIN KECSE-NAGY
AND THOMAS OSBORN**

A TRAFFIC REPORT

TRAFFIC
the wildlife trade monitoring network



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Victoria Taylor, Katalin Kecse-Nagy and Thomas Osborn



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I. EXECUTIVE SUMMARY

Native to the eastern parts of Brazil, the Brazilian Rosewood *Dalbergia nigra* is one species of a genus comprising more than 100 species. The wood of *D. nigra* is very **valuable** and highly priced, being used for **luxury furniture**, in cabinet making, cutlery handles, etc. Owing to its attractive appearance and high resonance, it is also highly-sought after **for the manufacture of musical instruments**, particularly top of the range guitars as well as mandolins, castanets, pianos and violins.

Populations of *D. nigra* have been subjected to extremely high levels of deforestation in the past (Anon., 2012d). Following an assessment in 1998, *D. nigra* was listed as Vulnerable on the IUCN Red List, although some regard an IUCN category of Endangered to be more appropriate (Anon., 2001). *Dalbergia nigra* was listed in **Appendix I** of CITES on 11 June **1992** and in **Annex A** of the EU Wildlife Trade Regulations on 20 July 1992.

In June 2011, a German Customs agency began an investigation into the import of more than 460 electric guitars with fingerboards made of *D. nigra* into the EU in 2010 and 2011. The investigation revealed: (i) the absence of necessary import permits for the import of these shipments into the EU; and (ii) the failure by the companies involved to obtain EC certificates required for commercial trade within the EU. With authorities concerned that this was unlikely to be an isolated case, TRAFFIC was requested by the European Commission (EC) to prepare the present report to facilitate a greater understanding of the international trade in *D. nigra* (with particular reference to the EU) and to provide a preliminary assessment of whether EU trade in *D. nigra* was an issue warranting further attention.

Data from the CITES Trade Database were used to analyse reported international trade in *D. nigra*. *Dalbergia nigra* material acquired before the provisions of CITES applied to the species ("**pre-Convention**" material) was found to **dominate reported international trade**. The potential for ongoing legal trade in *D. nigra* presents challenges for those involved in monitoring, control and enforcement of trade restrictions. The **EU** was identified as an **important destination** for pre-Convention *D. nigra* material exported for commercial purposes, particularly **from the USA**, and also the **leading re-exporter** of *D. nigra* material. For such instances of trade to have been permitted under EU law, they would have had to fall under one of the exemptions for commercial imports and re-exports contained in the EU Wildlife Trade Regulations (Council Regulation 338/97). However, the present report indicates that these provisions might not be implemented in a uniform manner by all Member States.

Re-exports of *D. nigra* from the EU were observed to be considerably higher than quantities imported. Possible explanations include: (i) a significant amount of pre-Convention *D. nigra* material in stockpiles across the EU, imported into the EU prior to 1992; and/or (ii) material entering the EU by illegal or unreported means before being re-exported as "pre-Convention" material. In addition, quantities of trade in *D. nigra* reported by importing countries were found to be considerably lower than quantities reported by exporting countries: while such discrepancies may be attributable to (amongst other things) differences in reporting between importing and exporting Parties (for example, the treatment of unused permits in reporting), they may also indicate that imports of pre-Convention specimens have taken place without the requisite import permits.

Information on seizures and prosecutions, and gathered from internet sources, indicated that the illegal trade in *D. nigra* may be significant; although the scale of the problem is not known. With sectors known to use precious woods such as *D. nigra* (e.g. the luthier/guitar community) observed to be generally aware of restrictions on the trade in *D. nigra*, it was surmised that those wishing to circumvent CITES/EU trade restrictions may undertake this trade out of the public eye. This limits the amount of quantitative information that may be obtained on levels of illegal trade. That being said, *D. nigra* commodities appeared to be widely advertised and sold throughout the EU; in many cases offered for sale without any mention of EC certificates or the source of the material being sold. Furthermore, information on *D. nigra* seizures and an investigation launched in 2007 by Brazilian authorities into illegal logging of *D. nigra* indicated that the species continues to be harvested illegally in Brazil. There is also evidence to suggest that some *D. nigra* commodities advertised for sale on the internet may contain/comprise wood from ongoing illegal logging activities.

This report identified the following key enforcement issues: (i) the need to monitor this trade further, e.g. sales/offers for sale (including on the internet); (ii) a lack of information about quantities, descriptions and locations of stockpiled, pre-Convention wood to assist enforcement authorities in monitoring and controlling the trade; and (iii) difficulties associated with visually identifying *D. nigra* timber with the naked eye or a hand lens (which may in part be due to a lack of training on identification tools). This latter issue facilitates concealment of illegal imports/exports of *D. nigra* amongst similar woods and mis-labelling of *D. nigra* material as species not subject to regulation, which create further challenges for those involved in monitoring and controlling trade in this species.

The following **recommendations** are suggested to address the EU trade in *D. nigra* and issues of monitoring and control:

International co-operation

1. In order to **find out more about the extent of illegal logging** of *D. nigra*, including whether targeted illegal logging and/or more general illegal logging constitutes an immediate threat to *D. nigra* populations in the wild, the European Commission and the EU Member States are encouraged
 - a. to establish contacts with **Brazil** bilaterally and/or via CITES channels and to find out what the situation is regarding this;
 - b. to share relevant information (e.g. significant seizures, investigations) with Brazil to inform the authorities of on-going trade trends.
2. The European Commission and EU CITES authorities are recommended to work closely with key EU trade partners, especially the **USA**
 - a. to understand better their permitting procedures (e.g. the US system of pre-issued or partially completed CITES documents for the export of pre-Convention *D. nigra* specimens);
 - b. to request **export documents** (for example from the US Fish and Wildlife Service) to be reviewed to confirm that import permits have in previous years been issued when legally required for imports into the EU (M. Müller-Boge, German CITES MA, *in litt.*, 13.03.12);
 - c. to share relevant information, for instance regarding seizures, smuggling techniques and investigations;
 - d. to consider joint awareness raising of trade restrictions and permit requirements in the USA and in the EU targeting relevant traders;
 - e. to carry out a similar study in the USA, the most important EU trade partner, to gain a better understanding of the trade in the USA.
3. The European Commission and the EU Member States should consider taking some **key findings of this report** forward to **relevant international fora, such as CITES, the World Customs Organization (WCO) and WCO Regional Intelligence Liaison Offices (RILO) (e.g. in Europe)** to encourage international co-operation and information sharing related to trade in *D. nigra*, including on issues such as identification methods and **guidelines for the accurate reporting** of *D. nigra* and other CITES-listed timber species (to address, for example, the preferred units to be used for specimens in trade).

EU issues

4. Most importantly, EU Member States and the European Commission are recommended to discuss the **interpretation of the EU Wildlife Trade Regulations regarding restrictions of imports into the EU for commercial purposes for pre-Convention specimens** at the next meeting of the Committee on Trade in Wild Fauna and Flora to ensure that the regulations are implemented in a **uniform** manner across the EU.
5. In order to address non-compliance with permit requirements, EU Member States are recommended to **raise awareness of the relevant industries** of restrictions on trade in *D. nigra* and associated document requirements. Member States are encouraged to disseminate information through, for instance, luthier associations and timber trade federations.
6. In order to ensure improved controls of trade in *D. nigra*, it is recommended that:
 - a. CITES authorities in the EU consider producing **inventories and registers of stockpiles** of pre-Convention timber, which could provide a sound basis for monitoring, commercialisation and,

most likely, re-export of legally acquired pre-Convention stocks. These could also include descriptive information, for example, on the form and size of stockpiles, to help in monitoring and identifying avenues for illegal trade.

- b. Those Member States that have already registered their stockpiles **share their experiences and lessons learnt** with those just planning to start this procedure.
- c. EU CITES authorities regularly **monitor sales** and offers for sale (including on the internet) and **inspect** the premises of traders **both as part of joint EU-wide enforcement actions** and unilaterally.
- d. Before such actions take place, CITES enforcement agencies in the EU organize **awareness raising** activities for CITES enforcement officers and **training** events focusing on use of available **age determination** and **species identification techniques and tools** presented in this report, in order to avoid mis-declaration of *D. nigra* material.
- e. **Available factsheets and guidance documents** covering issues of monitoring and control **are shared** by Member States and translated/adapted by those that do not yet have such materials.
- f. Member States (especially CITES SAs and research institutes) **share identification techniques and tools** to assist in identifying *D. nigra* timber. These may include morphological tests that allow identification of *D. nigra* to species level, as well as chemical and microscopic tests.
- g. EU CITES authorities include in their risk assessment and guidance documents some of the **methods of smuggling/concealment** identified in this report.

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3. ACRONYMS AND ABBREVIATIONS

CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
EC	European Community
EU	European Union
EUR	Euro
EU-TWIX	EU Trade in Wildlife Information eXchange
GBP	British Pounds
IUCN	International Union for the Conservation of Nature
MA	Management Authority
RBG Kew	Royal Botanic Gardens, Kew
SA	Scientific Authority
UK	United Kingdom
UNEP-WCMC	United Nations Environment Programme World Conservation Monitoring Centre
US	United States
USA	United States of America
USD	United States Dollars
USDA-APHIS	US Department of Agriculture Animal and Plant Health Inspection Service
VAT	Value Added Tax
WCO	World Customs Organization

4. INTRODUCTION

This report was prepared at the request of the European Commission, in response to concerns expressed by Germany in respect of the illegal trade in the tree species, Brazilian Rosewood *Dalbergia nigra*, listed in Appendix I of CITES since 1992.

These concerns arose as a result of an investigation by a German Customs agency into the trade of more than 460 electric guitars with fingerboards made of *D. nigra* in 2010 and 2011. The guitars entered the European Union (EU) via the Netherlands from the USA and were imported by a US musical instrument manufacturer with a branch in Germany and European headquarters in the Netherlands. The investigation revealed the following: (i) the absence of necessary import permits for the import of these shipments into the EU; and (ii) the failure by the relevant EU companies to obtain EC certificates required for commercial trade within the EU. Relevant authorities were concerned that this was unlikely to be an isolated case.

The aim of this report is to facilitate a greater understanding of the international trade in *D. nigra*, with particular reference to the EU, and to provide a preliminary assessment of whether the EU trade in *D. nigra* is an issue warranting further attention. Recommendations are also made to address some of the problems identified.

5. METHODS

The information for this report was gathered from a number of sources. Details of seizures, investigations and prosecutions were obtained from the EU-TWIX database, the *TRAFFIC Bulletin*, CITES Biennial Reports and through contact with CITES authorities in the EU. Internet searches were carried out in several European languages (English, French, German, Dutch and Spanish), for offers for sale of *D. nigra* on online shopping websites such as eBay and for relevant discussions in online forums. Finally, contact was made with select EU Member States, experts in Brazil (the sole range State of *D. nigra*), timber trade federations, luthiers (people who make or repair lutes and other string instruments) and guitar traders to obtain an overview of the trade in this species and the key issues surrounding the trade.

CITES trade data (data provided by CITES Parties in their CITES annual reports) were used to analyse reported international trade. Data were extracted for the period 1992-2010, inclusive (as 2010 was the most recent year for which comprehensive data were available at the time of writing). The data were downloaded from the CITES Trade Database in February 2012. Comparative tabulations, which compare the imports and exports by individual CITES Parties, were used.

The analysis looked at trade at the species level, i.e. in *D. nigra*, to ensure trade in any Appendix III-listed *Dalbergia* species was excluded. Nevertheless, a quick review of the genus level data was carried out to ensure any trade in *D. nigra* that may have taken place under "*Dalbergia* spp." was not missed. No relevant trade records were found.

Both importing and exporting Parties reported data were considered in the analysis. Although trade reported by importing and exporting Parties should be comparable, in practice these can differ and totals according to importers and exporters often do not match (see in Tables 2-4 and 6-7). Such discrepancies may be attributable to (amongst other things) differences in reporting by importing and exporting Parties, for example, the treatment of unused permits in reporting (as trade is sometimes reported by exporting Parties on the basis of permits issued rather than used), the time lag between when a permit is issued and when it is used, and the inconsistent use of codes in the database (with respect to the source of specimens, purpose of trade, etc.).

Data were divided by source into pre-Convention, wild and source "unknown" to investigate further trade characteristics. Specimens of "unknown" source are likely to be of wild origin therefore it is prudent to include them in any analysis.

6. SPECIES DISTRIBUTION

Dalbergia nigra is one species of a genus comprising more than 100 species. The species is native to the eastern parts of Brazil (Vales *et al.*, 1999), being found in the Brazilian states of Bahia, Espírito Santo, Minas Gerais, Rio de Janeiro and São Paulo (Varty, 1998). In geographical terms, the highest concentrations of *D. nigra* are associated with the rich soils located in southern Bahia and northern Espírito Santo (Varty, 1998).

According to the proposal for listing of *D. nigra* in Appendix I of CITES, prior to listing there were no commercial plantations of this species (Anon., 1986, cited in Anon., 1992a). Research carried out in preparation for this report did not indicate a change in this situation.

7. NAMES

Common names for *D. nigra* in English, Dutch, French, German, Portuguese and Spanish are set out in Table 1.

Table 1
Common names for *Dalbergia nigra*

Language	Common names
English	Brazilian Rosewood, Bahia Rosewood, Rio Rosewood, Rosewood, Pianowood
Dutch	Rio Palissander
French	Palissandre du Brésil, Palissandre de Rio
German	Rio Palisander, Brasilianisches Rosenholz,
Portuguese	Jacaranda da Bahia, Jacaranda do Brasil
Spanish	Acaranda preto, Jacarandá de Bahía, Jacarandá de Brasil, Jacarandá de indios, Jacarandá negro, Palissandro de Brasil, Palisandro del Rio, Palo de rosa, Saborana

Source: Affre *et al.* (2004); Anon (1998); Anon (2012a); Varty (1998); UNEP-WCMC EU Wildlife Trade Regulation database (accessed 12 March 2012).

8. CHARACTERISTICS AND USES

Dalbergia nigra is considered one of the most valuable trees in Brazil. Among the hardest and heaviest high quality wood species in use, the timber is extremely strong and highly resistant to insect attack and decay. *Dalbergia nigra* heartwood is oily or waxy in appearance and rather variable in colour, ranging from shades of brown or chocolate to red and violet and is irregularly streaked with black. The demarcation line between heartwood and white sapwood¹ is sharp. The grain is usually straight and the texture medium to coarse. *Dalbergia nigra* heartwood has a distinct rose-like fragrance. Old stems yield the most attractive wood (Affre *et al.*, 2004; Anon., 2012b).

Owing to the above properties, the wood of *D. nigra* is very valuable and highly priced. Restrictions on the trade in *D. nigra* timber have increased the value of material still available for use (Anon., 2012c). *Dalbergia nigra* timber is used for/in:

- luxury furniture
- cabinet-making
- cutlery handles
- tools and hilts of weapons
- billiard cue butts
- parquet flooring
- veneer
- decorative plywood
- panels and doors

¹ Sapwood is the soft wood just beneath the bark in tree trunks that consists of living tissue. Heartwood is the older, non-living central wood of a tree or woody plant, usually darker and harder than the sapwood.

The wood machines and veneers well, although the oily characteristics of its heartwood mean it can be difficult to glue (Anon., 2012b).

As noted by Affre *et al.* (2004), *D. nigra* timber is also popular for making **sculptures** and, due to its high resonance, is highly sought-after for the manufacture of musical instruments such as:

- guitars
- mandolins
- castanets
- pianos
- violins

There is much debate, however, surrounding the need to use *D. nigra* for the making of musical instruments, given that there are other woods with a similar efficacy that are not restricted for international trade. Some guitarists and luthiers consider *D. nigra* necessary for the overall tone of the instrument; others say it is more a mark of status rather than standard of sound, especially as there are similar “sounding” woods.

In the EU, *D. nigra* is used for a number of the above purposes. For example, contact between the Swedish CITES Management Authority (hereafter “MA”) and around 10 guitar manufacturers revealed that *D. nigra* is relatively widely used in guitar-making in Sweden. Swedish manufacturers were open to discussing the use of *D. nigra* in guitar-making, which generally involves the re-working of old veneer sheets from the furniture or flooring industries (A. Ljung, Swedish CITES MA, pers. comm., 07.03.12). In the UK, *D. nigra* is widely found in “retro” furniture (from the 1950s, 1960s and 1970s) and continues to be used in guitar-making (M. Groves, RBG Kew, pers. comm., 02.03.12). Products made from/comprising *D. nigra* were offered for sale on several of the EU-based websites reviewed when preparing this report (see below at section 11(b)(ii)).

Note: Rosewood oil is not derived from *D. nigra*, but rather is obtained from an Amazonia species of the genus *Aniba* (Anon., 1995).

9. CONSERVATION STATUS AND THREATS

Dalbergia nigra was listed as Vulnerable on the IUCN Red List following an assessment in 1998 (Varty, 1998); however, a re-assessment of this status is currently underway (M. Groves, RBG Kew, pers. comm., 02.03.12). As noted in a document prepared by the Netherlands’ CITES Scientific Authority (hereafter “SA”) for the Eleventh Meeting of the CITES Plants Committee, an IUCN category of Endangered may be considered more appropriate (Anon., 2001).

Rates of decline of *D. nigra* have been extremely high in the past (Anon., 2012d). Excessive and indiscriminate exploitation and devastation of the Atlantic forest habitat have been the major contributors to the species’ demise (Anon., 2001). Low population densities were already exhibited in the 1920s and the species continued to become increasingly rare up to the 1990s (Anon., 2001). Populations of *D. nigra* are now highly fragmented across its range and trees with thick trunks are now rare, as most have been logged (Hildyard, 2001, cited in Anon., 2012d). Regeneration rates among existing populations also appear to be poor, possibly because of heavy seed predation by rodents (Varty, 1998).

As a result of high market prices for *D. nigra*, some suppliers now focus on recycling timber of this species, as noted above. A further example is a US company, which claims to supply CITES-certified salvaged Brazilian Rosewood, primarily wholesale to major guitar manufacturers and luthiers (Anon., 2012e). In addition, since the mid-1990s, “fresh” *D. nigra* material has entered the market from the harvest of stumps and taproots of *D. nigra* trees cut before the CITES trade restrictions came into effect in 1992 (see section 10 below), as well as off-fall recovered from past logging operations (Anon., 2012f). For example, a company with branches in the USA and Brazil, claims it is the only licensee authorized and certified to harvest the stumps remaining from pre-CITES logging operations (Anon., 2012g). Material sourced in this way has found a market in the guitar manufacturing industry (Jacobson, 2012); although many luthiers consider it lacks the physical stability of *D. nigra* material available prior to the CITES ban

(Anon., 2012f). Furthermore, the costs involved in extracting wood from reclaimed stumps of the quality necessary for guitar-making are considered prohibitively high, resulting in a decrease in the supply of such material to the market (Jacobson, 2012).

Internet research indicates that the illegal logging of *D. nigra* remains a problem to this day. Comments by one source in relation to the guitar industry suggest that the mis-labelling of illegally felled material as material from reclaimed stumps is relatively widespread (or at least has been so in the past) (Anon., 2012f). Guitar sets (guitar backs and sides requiring further working by a luthier) made of new-growth sapwood material have, at times, even superseded old-growth sets in popularity among guitar purchasers and commanded higher price on sites such as eBay (Anon., 2012f). This is despite claims made by some that it is possible for a trained eye to determine that any particular guitar set has been made from the poached timber of immature trees, in light of sapwood characteristics such as wide grain lines, fair colour and having been slab cut (Anon., 2012f).

Another way in which illegally harvested *D. nigra* timber may enter the market is through fraudulent labelling as other species (e.g. Cocobolo *Dalbergia retusa* or Amazon Rosewood *Dalbergia spruceana*), the trade of which is not controlled under CITES (or, at least, not the trade in certain populations of these species – see section 10 below) (Johnston, 2011). It was for this reason that one well-known US guitar manufacturing company decided to cease offering *D. nigra* for sale in 2000 (Johnston, 2011). The difficulties associated with distinguishing *D. nigra* from other similar species, such as other *Dalbergia* species, are discussed further below in section 12(a).

Data on seizures of *D. nigra* shipments from Brazil (see section 11(a)(ii) below), as well as arrests made in connection with the illegal harvesting of *D. nigra* in Brazil in 2007, also suggest that illegal logging may pose a continued threat to the conservation of this species. In-country reports provide further support for such a conclusion (M. Groves, RBG Kew, *in litt.*, 02.03.12).

10. CITES LISTING/LEGAL PROTECTION

Dalbergia nigra was the first tree species to be listed in Appendix I of CITES (on 11 June 1992) and is the only *Dalbergia* species currently listed in this Appendix. A number of other *Dalbergia* species have been listed in **Appendix III** of CITES, including

- populations of *Dalbergia retusa* located in Guatemala and Panama (listed in 2008);
- the population of Honduran Rosewood *Dalbergia stevensonii* in Guatemala (listed in 2008); and
- *Dalbergia xerophila* in Madagascar (listed in 2011).

Since 20 July 1992, *D. nigra* has been included in Annex A of the EU Wildlife Trade Regulations (*Council Regulation (EC) No. 338/97 of 9 December 1996*) (hereafter “Council Regulation 338/97”).

In Brazil, *D. nigra* was included in the Official List of Threatened Brazilian Plants in 1992 (Anon., 1992b). *Dalbergia nigra* is banned from being harvested in the wild under Brazilian law (Resolução Conama nº 278/2001 of 24 May 2001) and any timber of this species must be accompanied by a certificate of origin.

The following sections on the EU regulation of the trade in *D. nigra* are based on information provided by Germany’s CITES MA to the European Commission in October 2011. References to Articles are to the provisions of Council Regulation 338/97. It must be noted here, however, that these provisions might not be implemented in a uniform manner by all Member States.

a) Import into the EU

With regard to the import of *D. nigra* specimens into the EU, an **import permit generally cannot be issued for commercial purposes** (Art. 4(1)(d)). Importation for commercial purposes can **only** be authorized for the following specimens:

- (i) Specimens which had previously been legally introduced into or acquired in the Community and are, modified or not, being **reintroduced** in to the Community, or
- (ii) **Worked specimens** that were **acquired before 3 March 1947** (Art. 4(5)).

It is noted that the EU does not implement the full range of CITES exemptions in relation to the commercial import of Appendix I-listed species. Article VII(2) of CITES, for example, provides an exemption to the requirement for an import permit for so-called “pre-Convention” specimens (i.e. specimens acquired before the provisions of the Convention applied to that specimen). This exemption is not included in Council Regulation 338/97; therefore, even the import of pre-Convention specimens into the EU is not permitted for commercial purposes. As a result, the import of specimens deriving from *D. nigra* material obtained prior to 20 July 1992, and which do not fall within the above exemptions contained in Council Regulation 338/97, can only be permitted for non-commercial purposes under EU law. Accordingly, even material harvested legally in Brazil from the stumps and taproots of *D. nigra* trees cut before the CITES trade restrictions came into effect in 1992 (see section 9) cannot be imported into the EU for commercial purposes.

b) Re-export from the EU

Regarding re-export from the EU, an EU re-export certificate for *D. nigra* for commercial purposes can be issued for worked specimens that were acquired before 3 March 1947 or for dead specimens and parts and derivatives thereof that were acquired prior to 11 June 1992 (Art. 5(6)). In addition, the country of import may also have implemented stricter requirements than under CITES, for example, in terms of requiring an import permit for pre-Convention specimens.

c) Commercial activities within the EU

Generally, it is not permitted to use specimens of Annex A-listed species for primarily commercial purposes. This includes (Art. 8(1)):

- purchase
- offer to purchase
- acquisition for commercial purposes
- display to the public for commercial purposes
- use for commercial gain, sale
- keeping for sale
- offering for sale
- transporting for sale

In exceptional cases, however, commercial activities with Annex A specimens may be permitted with an adequate EC certificate. For instance, a certificate for the trade of guitars containing *D. nigra* may be issued if the specimens were acquired in the EU or imported into the EU before the species was listed in Annex A, i.e. prior to 20 July 1992 (Art. 8(3)(a)).

II. INTERNATIONAL TRADE AND THE EU

Since its listing in CITES Appendix I in 1992, the international trade in *D. nigra* has declined (Affre *et al.*, 2004). *Dalbergia nigra* is traded as “timber”, veneer and timber carvings, a large part of which is declared as “pre-Convention”. The following section provides an insight into the international trade in *D. nigra*, including key patterns, trends and characteristics that may be discerned from the trade information available.

a) Reported trade

A preliminary review of the data found that several different units have been used to describe *D. nigra* commodities in trade since 1992. Commodities reported in cm², m, m², pairs, sets and shipments were disregarded as they were considered to represent an insignificant proportion of overall trade records (less than 2.5% of total trade records).

The analysis therefore focused on commodities reported in kg or m³ and records where no units were specified. In accordance with the CITES Trade Database Interpretation Guide, commodities with no units specified (more than 85% of records) were assumed to represent individual “pieces” of *D. nigra* (Anon., 2004). The term “pieces” must, however, be interpreted with caution, given the wide variety of sizes of specimen, and therefore volumes, this may represent.

Unfortunately, due to the range of units used to report *D. nigra* trade, a realistic quantification of trade in *D. nigra* commodities was not possible. Applying one or more conversion factors to the data could have provided a more uniform set of units: however, no reliable conversion factors were available for the variety of generic terms (“timber pieces”, “carvings”, etc.) used to describe *D. nigra* commodities. Nevertheless, the information provided allows the most important countries involved in the *D. nigra* trade to be identified, and general trade trends to be revealed.

For the purpose of the following sections, a country’s “importance” with respect to imports/(re-)exports of *D. nigra* is defined in terms of “pieces” of *D. nigra* material imported/(re-)exported. The discussion mainly focuses on quantities of *D. nigra* reported by exporting countries, as these are generally the higher figures. However, quantities reported by importing countries are highlighted at several points to draw attention to particularly interesting trade trends/instances of trade.

i) Imports of *Dalbergia nigra* and general characteristics of trade

Over the years since the listing of *D. nigra* in Appendix I of CITES, the reported trade has shifted from timber to processed or pre-processed commodities such as veneer, furniture and, above all, carvings. This shift may be explained by the increasing scarcity of stocks of pre-Convention raw material, with trade progressively becoming focused on available pre-processed *D. nigra* units (Affre *et al.*, 2004).

Table 2 displays reported imports of pre-Convention *D. nigra* specimens for all purposes during the period 1992-2010. It can be seen that exporter reported quantities greatly exceeded importer reported quantities across all units of measurement: for example, in the case of “pieces” of *D. nigra*, exporter reported quantities were more than double importer reported quantities. As noted in the Methods section (see section 5), such discrepancies may be attributable to differences in reporting by importing and exporting Parties (amongst other things); however, discrepancies may also indicate that imports of specimens are taking place without the necessary import permits. This was one of the concerns raised by the German CITES MA in relation to the case which prompted this research.

Japan was the most important reported importer of pre-Convention specimens during the period 1992-2010 with: (i) 39 127 “pieces”; (ii) 2883.64 kg; and (iii) 137.13 m³ of *D. nigra* imported (according to exporting countries’ reports) (Table 2). Other key importers in order of importance were the USA, the EU and Canada. When imports in kg were considered, Malaysia was found to be the leading importer of *D. nigra* material during the period 1992-2010: however, Malaysia’s total is primarily made up of one shipment of 11 410 kg from Germany in 2004, with just four other imports to Malaysia recorded during this period, each concerning small quantities of carvings. The EU was the destination for 3084 *D. nigra* “pieces” of a total of 74 065 exported worldwide; the leading EU importer being Spain with 2207 “pieces” imported (Table 2). After Spain, the second most important EU importer was the Netherlands, followed by the UK, Italy and Germany.

When importers’ reports are considered (Table 2), Austria may also be regarded as an important importer of *D. nigra* on the basis of “pieces” imported: the Rest of EU total of 728 “pieces” includes 250 timber pieces and 436 pieces of veneer imported into Austria from Switzerland in 2000 (A. Engl, *in litt.*, 13.03.12). It is, however, noted that these were the only two imports of *D. nigra* into Austria for the period 1992-2010. In addition, the Rest of EU total measured in terms of volume, i.e. 17.42 m³, comprises a single shipment of veneer imported into Sweden from Switzerland for commercial purposes in 2001 (according to importing countries’ reports). Sweden was not considered a particularly significant importer of *D. nigra* material during the period 1992-2010 with just three other imports of *D. nigra*, each involving a single carving. It is interesting to note that in these cases, neither the export(s) to Austria nor to Sweden were reported by the exporting country, Switzerland.

Table 2
Major importers of pre-Convention *Dalbergia nigra* specimens for all purposes (1992-2010)

	Pieces (no unit specified)		kg		m ³	
	Imp rep	Exp rep	Imp rep	Exp rep	Imp rep	Exp rep
Spain	1251	2207		4.00		
Netherlands	3	573				
UK	92	180	6.00		3.53	3.40
Italy	22	47				
Germany	15	32	22.32	434.00		0.01
Rest of EU	728	45		1.00	17.42	2.89
Total EU	2101	3084	28.32	439.00	20.95	6.30
Japan	27 437	39 127	1831.33	2883.64	3.73	137.13
USA	7342	28 343	1060.00	4942.01	3.64	6.12
Canada	351	2230	2245.00	928.00		1.38
Malaysia		7		11 410.00		
Rest of the world	164	1274	239.00	1576.14	1.2	6.20
Total	37 395	74 065	5403.65	22 178.79	29.52	157.13

Source: CITES trade statistics derived from the *CITES Trade Database*, UNEP-WCMC, Cambridge, UK. Downloaded 24 February 2012. Information from the Finnish CITES MA.

Abbreviations: Imp rep – importers' reports, exp rep – exporters' reports, UK – United Kingdom.

Virtually all of reported trade in *D. nigra* is in pre-Convention material. However, since the listing of *D. nigra* in Appendix I of CITES, a small amount of trade has occurred in pieces of *D. nigra* reported as wild or of unknown source. Table 3 shows that, in reported trade, the EU is not a particularly important destination for *D. nigra* pieces reported as other than pre-Convention. The leading importer in terms of “pieces” of *D. nigra* material reported as of wild source was Japan, with 502 “pieces” imported between 1992 and 2010, followed by the USA with 55 “pieces” of *D. nigra* material imported (according to exporting countries' reports). With regard to specimens reported as of “unknown” source, the USA was the most important destination for exports, importing 434 of a total of 503 “pieces” between 1992 and 2010, followed by Japan with 26 “pieces”.

Table 3
Major importers of *Dalbergia nigra* specimens reported as other than pre-Convention for all purposes (1992-2010)

	Pieces (no unit specified)		kg		m ³	
	Imp rep	Exp rep	Imp rep	Exp rep	Imp rep	Exp rep
REPORTED WITH SOURCE CODE “W” (WILD)						
Japan	754	502	0.72			
USA	1	55	20.00	600.00		
EU	17	21			0.01	3.00
Canada	7	1				
Rest of the world	25	1	7.00			
Total	804	580	27.72	600	0.01	3.00
REPORTED WITH SOURCE CODE “U” (UNKNOWN)						
USA	2	434		20.00		
Japan	4	26				
EU	27	9				
Canada	5	7		1.00		
Rest of the world	3	27				
Total	41	503		21.00		

Source: CITES trade statistics derived from the *CITES Trade Database*, UNEP-WCMC, Cambridge, UK. Downloaded 24 February 2012.

Abbreviations: Imp rep – importers’ reports, exp rep – exporters’ reports.

Despite there being some trade in specimens of declared wild and unknown source, it is clear from Tables 2 and 3 that the trade in pre-Convention material dominated trade in *D. nigra* for the period 1992-2010. The importance of pre-Convention specimens is a relatively unique characteristic of the international trade in *D. nigra* (compared to other Appendix I-listed flora (Anon., 2006a)), allowing significant volumes of “legal” commercial trade to have continued since its listing in 1992. Nevertheless, the question remains as to whether all material traded and declared as “pre-Convention” is correctly declared. In 1994, the CITES Plants Committee mentioned this problem and urged Parties to report to the CITES Secretariat all data available on pre-Convention stocks (Anon., 1994).

An examination of the purpose of international trade transactions is important in light of stricter EU import requirements for *D. nigra* commodities. Most of the international trade in *D. nigra* commodities between 1992 and 2010 was carried out for commercial purposes, with other purposes including personal use (~10% of total trade records), education, enforcement, science and exhibitions (together ~2.5% of total trade records). Therefore, patterns of commercial trade in *D. nigra* reflect the same patterns and key players both globally and in the EU as trade for all purposes (see Table 4 for further details). As discussed at section 10(a), imports for commercial purposes are not generally permitted into the EU, unless they fall within one of the exemptions in Council Regulation 338/97. However, commercial imports presented in Table 4 suggest that some Member States may interpret these provisions differently. This has been confirmed by at least one Member State.

Table 4
Reported imports of pre-Convention *Dalbergia nigra* specimens for commercial purposes (1992-2010)

	Pieces (no unit specified)		kg		m ³	
	Imp rep	Exp rep	Imp rep	Exp rep	Imp rep	Exp rep
Spain	1248	2204				
Netherlands	2	573				
UK	82	179			3.53	3.40
Italy	22	47				
Germany	4	32	21.32			0.01
Rest of EU	710 ¹	41			17.42 ²	2.89
Total EU	2068	3076	21.32		20.95	6.30
Japan	27 345	39 030	1831.33	2883.64	3.73	137.13
USA	7267	28 267	1060.00	4938.52	3.65	1.62
Canada	341	2228	2245.00	928.00		1.38
Malaysia		7		11 410.00		
Rest of the world	138	1245	239.00	1576.14	1.19	6.20
Total	37 159	73 853	5 396.65	21 736.30	29.52	152.63

Source: CITES trade statistics derived from the *CITES Trade Database*, UNEP-WCMC, Cambridge, UK. Downloaded 24 February 2012. Information from the Finnish CITES MA.

Abbreviations: Imp rep – importers' reports, exp rep – exporters' reports, UK – United Kingdom.

¹ Includes 250 timber pieces and 436 pieces of veneer imported into Austria from Switzerland in 2000 (A. Engl, *in litt.*, 13.03.12). These were the only two imports into Austria for the period 1992-2010.

² Single shipment of 17.42 m³ of veneer from Switzerland to Sweden in 2001.

Records of some of the more significant commercial imports to EU countries (1992-2010) were extracted from the CITES Trade Database (Table 5). The USA was the exporter in several of these records. Included in Table 5 are an import of 545 carvings into the Netherlands from the USA in 2010 and 1250 carvings from the USA to Spain in 2002.

Table 5
Records of significant commercial *Dalbergia nigra* imports into the EU (1992-2010), exporting countries' reports

Year	Importer	Exporter	Origin	Reported quantity	Units	Type	Source
1996	Spain	USA	Unknown	68.0		timber	pre-Convention
1996	Spain	USA	Brazil	674.0		timber	pre-Convention
1998	Spain	USA	Unknown	208.0		timber p.	pre-Convention
1999	Cyprus	Brazil		2.9	m ³	veneer	pre-Convention
2001	Sweden	Switzerland		17.4	m ³	veneer	pre-Convention
2001	UK	USA	Unknown	31.0		carvings	pre-Convention
2002	Spain	USA	Unknown	1250.0		carvings	pre-Convention
2002	UK	USA	Unknown	26.0		carvings	pre-Convention
2006	UK	Brazil		3.1	m ³	sawn wood	pre-Convention
2007	Germany	Japan	Brazil	20.0	kg	timber	pre-Convention
2010	Netherlands	USA	Unknown	545.0		carvings	pre-Convention

Source: CITES trade statistics derived from the *CITES Trade Database*, UNEP-WCMC, Cambridge, UK. Downloaded 24 February 2012.

Abbreviations: Imp rep – importers' reports, exp rep – exporters' reports, UK – United Kingdom, timber p. – timber pieces.

ii) (Re-)exports of *Dalbergia nigra*

The EU was the most important re-exporter of pre-Convention specimens during the period 1992-2010 with: (i) 58 640 “pieces”; (ii) 20 092.50 kg; and (iii) 134.20 m³ of *D. nigra* exported (according to exporting countries’ reports) (Table 6). Of the total number of “pieces” of pre-Convention *D. nigra* exported from the EU, nearly all (58 476 “pieces” or over 99%) were exported for commercial purposes. Other key re-exporters of *D. nigra* material in order of importance were the USA, Japan and Canada (according to “pieces” exported) (Table 6). Brazil, the only known range State for *D. nigra*, was also involved in the export of pre-Convention material between 1992 and 2010.

Table 6
Major (re-)exporters of pre-Convention *Dalbergia nigra* specimens for all purposes (1992-2010)

	Pieces (no unit specified)		kg		m ³	
	Imp rep	(Re-)exp rep	Imp rep	(Re-)exp rep	Imp rep	(Re-)exp rep
EU	27 088	58 640	3 161.15	20 092.50	4.69	134.20
USA	8 238	11 412	615.18	47.00		5.00
Japan	42	2 917	21.32			
Canada	1 951	990		1 600.00		
Australia	5	43	6.00	1.00		
Switzerland	28	28		434.00	17.42	
Brazil	15	2	1 600.00 ¹	4.29	7.41	13.43
Rest of the world	28	33				4.51
Total	37 395	74 065	5 403.65	22 178.79	29.52	157.14

Source: CITES trade statistics derived from the *CITES Trade Database*, UNEP-WCMC, Cambridge, UK. Downloaded 24 February 2012. Information from the Finnish CITES MA.

Abbreviations: Imp rep – importers’ reports, exp rep – exporters’ reports, USA – United States.

¹One export to Canada of 1600 kg *D. nigra* timber in 2004.

Among EU Member States, the most important source of re-exports of pre-Convention specimens (1992-2010) was Spain, with 53 077 “pieces” and 5044 kg of *D. nigra* material exported (Table 7). The other main EU Member States involved in re-exporting *D. nigra* in order of importance (according to “pieces” exported) were the UK and Germany. At first glance, Germany’s re-exports of pre-Convention *D. nigra* material reported in kg would appear to place it as a leading re-exporter; however, this total is primarily made up of a single shipment of 11 410 kg timber to Malaysia in 2004.

Table 7**Main EU Member States involved in re-export of pre-Convention *Dalbergia nigra* specimens for all purposes (1992-2010)**

	Pieces (no unit specified)		kg		m ³	
	Imp rep	Exp rep	Imp rep	Exp rep	Imp rep	Exp rep
Spain	16 679	53 077	410.00	5044.00	3.46	
UK	8631	4442	817.00	590.00	0.03	132.00
Germany	1659	1015	1554.15	14 072.00	1.20	2.20
France	46	83	380.00	7.50		
Netherlands	1	11		178.20		
Rest of EU	72	12		200.80		
Total	27 088	58 640	3161.15	20 092.50	4.69	134.20

Source: CITES trade statistics derived from the *CITES Trade Database*, UNEP-WCMC, Cambridge, UK. Downloaded 24 February 2012. Information from the Finnish CITES MA.

Abbreviations: Imp rep – importers' reports, exp rep – exporters' reports.

A relatively small number of trade records involved (re-)exports of *D. nigra* of reported wild source for the period 1992-2010. The EU was responsible for the majority of these re-exports, with 396 “pieces” of wild *D. nigra* material re-exported during this period. However, this total largely reflects one record of trade, namely the re-export of 384 *D. nigra* carvings for commercial purposes from the UK to Japan in 2006. The re-export of specimens reported as wild (as opposed to pre-Convention) from the EU has therefore been relatively infrequent during the period 1992-2010. The USA was the second highest re-exporter of *D. nigra* specimens reported as wild during the period 1992-2010 (90 “pieces”), followed by Canada (62 “pieces”) and Japan (13 “pieces”).

The EU was also the most important re-exporter of *D. nigra* specimens of reported “unknown” source for the period 1992-2010 with 481 “pieces” of *D. nigra* material re-exported (of the overall total of 503 “pieces”). The USA was the only other significant re-exporter of such specimens, with 21 “pieces”. Of the EU Member States, the UK was the principal re-exporter of such commodities during this period, exporting 480 “pieces” and all 21 kg of the EU total. Of these UK re-exports, 84.0% of “pieces” and all 21 kg were exported for commercial purposes and in all but one instance in the form of *D. nigra* carvings. The USA was the country of import in half of these cases.

iii) Discussion

The expected predominance of material in international trade in *D. nigra* reported as pre-Convention is confirmed by the trade data. However, there is a question as to the extent to which specimens are being correctly declared as pre-Convention: as one source notes with regard to the quantities of pre-Convention material offered for sale, it seems unlikely that such large volumes of *D. nigra* were stockpiled prior to the CITES listing in 1992 (Anon., 2012h). This could indicate that trade restrictions are being circumvented (Anon., 2012h).

With regard to imports of *D. nigra* specimens reported as pre-Convention, the trade data showed significant discrepancies in trade volumes as reported by exporting and importing countries. Across the units of measurement studied (“pieces”, m³ and kg), exporter reported quantities were more than twice importer reported quantities. Although potentially arising from differences in reporting between importing and exporting Parties (amongst other things), the higher quantities reported by exporters may indicate that imports of pre-Convention specimens are taking place without the requisite import permits. As suggested by the German CITES MA, reviewing export documents obtained from the CITES authorities of EU trade partners (such as the US Fish and Wildlife Service) could help to clarify the extent to which this is an issue in the EU. Export documents could be requested for the preceding three to five-year period, or otherwise in accordance with the relevant limitation periods for trade offences (M. Mueller-Boge, German CITES MA, *in litt.*, 13.03.12).

The analysis shows that the **EU plays a key role in the international trade** in *D. nigra*, being an **important destination for exports (including re-exports) from countries such as the USA**. The EU was also found to be the **leading re-exporter** of *D. nigra* commodities (declared as pre-Convention, wild and of “unknown” source), **with Spain, the UK and Germany the main players** in this regard.

Re-exports of *D. nigra* from the EU during the period 1992-2010 were shown to be considerably higher than quantities imported into the EU. This may suggest a significant amount of pre-Convention *D. nigra* material in stockpiles across the EU, imported into the EU prior to 1992. This conclusion is supported by reports from CITES MAs (UK CITES MA, *in litt.*, 03.01.12; A. Ljung, Swedish CITES MA, pers. comm., 07.03.12) and other sources (e.g. luthier websites – see Anon. (2012i)). It is also possible that some material is entering the EU by illegal or unreported means (discussed further in section below on “Illegal and unreported trade”) before being re-exported as “pre-Convention” material.

Imports and re-exports of pre-Convention *D. nigra* material have taken place into and out of the EU during the period 1992-2010 for commercial purposes. It is again noted that, for these instances of trade to be permitted under EU law, they would have to fall under one of the exemptions for commercial imports and re-exports contained in Council Regulation 338/97. However, trade data suggests that some Member States may follow different interpretations of these provisions, which has been confirmed by at least one Member State.

The significance of the USA as a re-exporter of *D. nigra* material (and in particular its trade links with the EU) highlights the importance of close involvement of US authorities in any steps taken to address issues relating to the trade in *D. nigra*.

b) Illegal and unreported trade

Illegal trade in *D. nigra* is not well-documented and, as such, its current extent is largely unknown. Research carried out in preparation for this report found that, in general, there is a high level of awareness, particularly among luthiers, of the existence of trade restrictions relating to *D. nigra* (Anon., 2009a; J. Fleeting, luthier, pers. comm., 13.03.12). As such, it can be surmised that the actual trade in wood of this species is likely to take place out of the public eye, suggesting it would be less easy to “see” wood from this species being sold openly on the market (including in Europe). The view of one UK-based luthier provides support for this suggestion: he notes that *D. nigra* generally comes onto the market following the retirement or death of a luthier in possession of a stockpile, with suppliers tending to contact luthiers directly when such supplies become available (J. Fleeting, luthier, pers. comm., 13.03.12). This places a key limitation on the amount of trade information that may be gathered through publicly-accessible sources and databases.

i) Seizures, investigations and prosecutions

The following section provides details of *D. nigra* seizures that took place in both EU and non-EU countries during the period 1992-2010.

Table 8 contains a list of reported seizures of *D. nigra* specimens from the CITES Trade Database for the period 1992-2010. These records are those reported with source code “I”, describing “confiscated or seized specimens” according to the CITES Trade Database Interpretation Guide (Anon., 2004), albeit having been variously interpreted by CITES Parties in the past (e.g. whether referring to actual seized specimens, or seized specimens re-entering trade). Of particular note is a record of 160 000 kg of *D. nigra* carvings imported into the USA from Germany for commercial purposes in 2010. Further information on this seizure was requested from the German CITES MA and no record of this seizure was found (M. Müller-Boge, German CITES MA, *in litt.*, 13.03.12). However, the German CITES MA noted that this record may actually concern a guitar of weight 1.6 kg, being a reporting error arising out of differences in the use of decimal points/commas between countries. This guitar was re-exported from Germany with a re-export certificate, but was refused entry into the USA in April 2010 as there was no Customs endorsement

at the point of exportation. A second attempt to re-export this guitar to the USA was successful: a new re-export certificate was issued and the guitar re-exported in May 2010 (M. Müller-Boge, German CITES MA, *in litt.*, 13.03.12).

A search of the EU-TWIX database revealed the seizure of only one stem of *D. nigra* in Denmark in 2001. The country of origin, source and purpose were all recorded as unknown.

Table 8
Reported seizures of *D. nigra* specimens upon import (1992-2010), importing countries' reports

Year	Importer	Exporter	Origin	Reported Quantity	Units	Type	Purpose
2003	Portugal	Brazil		1.0		carvings	
2005	USA	Rep. of Korea	Unknown	113.0		carvings	Commercial
2005	Portugal	Unknown		2.0	kg	timber	
2007	USA	Unknown		4.0		carvings	Commercial
2009	USA	Brazil		0.2	m ³	veneer	Commercial
2010	USA	Brazil		310.0	cm ²	veneer	Commercial
2010	USA	Germany	Brazil	160 000.0 ¹	kg	carvings	Commercial

Source: UNEP-WCMC CITES Trade Database.

¹ Information on this seizure was requested from the German CITES MA and no record of the seizure was found. It seems likely that this is a reporting error – see above.

From a search of previous issues of the *TRAFFIC Bulletin*; a review of reports available on the CITES website (www.cites.org), including Biennial Reports; and contact with selected CITES MAs, a number of other seizures of *D. nigra* specimens also came to light as follows:

The Netherlands

- In 2009, 249 veneer sheets made from *D. nigra* were seized in the Netherlands. The seizures were from two companies based in Rotterdam and 's-Gravendeel. Neither company had been able to provide documentation to prove the wood had been legally imported or that it had been legally obtained (Anon., 2009b).
- In 2010, 12 kg of *D. nigra* was seized by Team IBG (Seizure of CITES-goods) of the National Service for the Implementation of Regulations in the Netherlands (Anon., 2010).

Portugal

- In 2005, Portugal seized 2 kg of *D. nigra* timber of unknown origin (Anon., 2006b).
- In 2007, Portugal reported the seizure of three *D. nigra* carvings from Brazil (Anon., 2008a).

Spain

- Seizures in 2005 included 960 kg and 7 m³ of *D. nigra* (Anon., 2006c). These seizures were among a number that took place in Spain between 2003 and 2006; the result of an investigation carried out by Spain's enforcement authorities, who were alerted about the possibility of *D. nigra* being illegally imported from South America under certain common names (e.g. Cocobolo), or sold with these names inside the country (M. Lasso Liceras, Spanish CITES MA, *in litt.*, 12.03.12). A number of these seizures led to cases before the Spanish court (see below). Several cases did not result in convictions, however trade was not allowed to continue in respect of the *D. nigra* timber concerned (M. Lasso Liceras, Spanish CITES MA, *in litt.*, 12.03.12).

Sweden

- 705 pieces of sawn *D. nigra* material were seized from a factory in Sweden in 2010. The company involved argued that the timber was imported into Sweden before CITES applied to *D. nigra* (i.e. "pre-Convention"). The prosecutor closed the case and no fine was issued. The company continues to sell

D. nigra via the internet (A. Ljung, Swedish CITES MA, pers. comm., 07.03.12; A. Ljung, Swedish CITES MA, *in litt.*, 14.03.12 and 16.03.12).

USA

- In 2007, two shipments of *D. nigra* were seized: one shipment imported from Brazil, containing 20 kg of sawn wood; and one shipment imported from an unknown country, containing four wood products (Anon., 2009c).
- In 2009, the US Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS) seized one shipment of *D. nigra* imported from Brazil, containing 0.19 m³ of veneer (Anon., 2011a).
- In 2010, USDA-APHIS seized two shipments of *D. nigra*: one shipment imported from Brazil, containing 310 cm³ of veneer; and one shipment of Brazilian origin, imported from Germany, containing 160 000 kg of wood product (however, note the above discussion regarding the possible misunderstanding in reporting) (Anon., 2011a).

A number of investigations and prosecutions have also taken place in recent years concerning trade in *D. nigra*.

In October 2007 Brazilian police launched an operation in six States in Brazil to dismantle a gang alleged to have illegally harvested *D. nigra* and to have exported at least 13 t of the wood over a four-year period, principally to the USA. Around 350 federal officers, backed by State police and government environmental agents, were reported to have arrested at least 23 people, and a number of search and seizure warrants were also served for the illegal extraction of the wood. The rosewood was concealed amid cheaper wood, and false export licences had been used. Reports released at the time stated that the suspects would be charged with using false documents, criminal association and smuggling contraband. The US Fish and Wildlife Service worked alongside Brazilian police to investigate the alleged illegal trade (Anon., 2008b).

As mentioned above, since June 2011, a German Customs agency has been investigating a case concerning the trade of more than 460 electric guitars with fingerboards made of *D. nigra* in 2010 and 2011. The case concerns a US company with a branch in Germany. The company's headquarters for the EU are located in the Netherlands where import into the EU took place. Enquiries by Germany's CITES MA, consulting also with the Netherlands' CITES MA, revealed no import permits for the import into the EU had been issued. However, 26 US pre-Convention certificates for import into the Netherlands could be presented. Thus it appears that the US CITES MA is using pre-issued or "partially completed" CITES documents for the export of pre-Convention *D. nigra* plant specimens. In addition, the EU companies did not apply for EC certificates which are required for the commercial trade within the Community. The German CITES MA has contacted the US CITES MA for further information on this issue, but at the time of writing, it is not known whether a response has been received.

Criminal prosecutions were initiated by Spain in respect of 53 080 kg of *D. nigra* seized in 2003 and 1 000 kg in 2004, in two different Spanish provinces (Anon., 2007).

ii) Internet advertisements, discussions and contact with selected stakeholders

Internet research was carried out to obtain information on patterns and levels of intra-EU trade in *D. nigra*. Sources included: (i) websites for the manufacture and supply of musical instruments (mostly guitars) and other commodities; (ii) online discussion forums, particularly discussions between luthiers; and (iii) online auction and shopping websites (eBay.com; Alibaba.com). Searches were conducted in English, French, German, Dutch and Spanish. Where offers for sale of *D. nigra* were found, these were scrutinised for mention of EC certificates/CITES documentation, as a valid EC certificate is a legal requirement for the commercial trade in *D. nigra* within the EU (see section 10(c) above).

There are a number of difficulties associated with using internet research to build up a picture of the market situation with respect to intra-EU trade in *D. nigra*. These can be summarised as follows:

- Difficulties in quantifying how much wood is offered for sale. This may be due to the variety of names used to describe the wood (see Table 1); with sources indicating that *D. nigra* is sold under general names such as rosewood (a term which could encompass several species of the genus *Dalbergia*) or mis-labelled as other woods to avoid trade regulations. This is a problem identified by the German CITES MA, as traders have become more cautious following recent investigations (M. Müller-Boge, German CITES MA, *in litt.*, 13.03.12).
- A single trader could be selling the same wood under several species names.
- In many cases, it is difficult to ascertain the exact location of the wood offered for sale: even in cases where the location of the wood is specified, it is not possible to verify from internet research alone that the wood is actually there. It is also possible that certain traders may advertise *D. nigra* for sale even though they have no *D. nigra* in hand (for example, they may store the wood with an associate or use their network to obtain the wood once an order has been placed).
- Even where *D. nigra* wood or products are purportedly being sold with an EC certificate, it is impossible to tell whether this documentation is actually available and/or whether it is genuine.
- Trade in *D. nigra* may take place outside of the public marketplace. As one luthier notes, given the rarity and price of *D. nigra*, a piece acquired by a luthier (see section 11(b) above) would likely be offered off-market to an established client and destined for use in a “one-off”, “special-commission” guitar (J. Fleeting, luthier, pers. comm., 13.03.12).

As guitar making appears to be the most important industry for using the wood of *D. nigra*, and in view of the above potential limitations of relying on internet research alone, contact was also made with two UK-based luthiers and one guitar trader based in the Netherlands, with the aim of obtaining a further insight into *D. nigra* trade in the EU and verifying any trade patterns that were revealed through internet-based research. Findings of these contacts are presented below together with the findings of internet research.

Offers for sale—price, origin and mention of necessary documentation

Pieces of *D. nigra* advertised for sale on the internet are generally relatively small. However, larger pieces do come onto the market: a search of Alibaba.com, for example, revealed a Brazilian supplier advertising 100 m³ of “fully legal” Brazilian Rosewood logs at a price of USD7100 – 7200 per cubic metre. Internet research suggests that larger pieces of *D. nigra* tend to be from pre-CITES stockpiles, some of which have not been used previously due to concerns over the legality of trade.

Semi-finished/finished products containing or made from *D. nigra* command very high prices. According to one UK-based luthier, an acoustic guitar set (guitar back and sides requiring further working by a luthier) made from this wood can fetch a sum of around GBP2000, compared to GBP75 for a set made from Indian Rosewood *Dalbergia latifolia* (J. Fleeting, luthier, pers. comm, 13.03.12). Guitars with *D. nigra* backs and sides are generally among the most expensive on offer. For example, a Northern Ireland-based luthier with dealers across the EU (Austria, France, Germany, Italy and the Netherlands), advertises such guitars at a price of EUR6895, while other guitars on the same website range from EUR2500 to EUR4500. As one US website also notes:

“It has gotten to the point that this wood is so highly touted that wood suppliers are buying the stump wood of Dalbergia nigra. Still bringing a price anywhere from \$350 to \$2000 a set, the cost of the wood is passed on to the end consumer, usually a collector of guitars, as a professional musician cannot afford a \$12,000 price tag.” (Anon., 2012j).

As regards the origin of *D. nigra* material, one source recalled hearing of stockpiles in Eastern Europe, particularly in the Czech Republic, Slovakia and former East Germany, some dating back over 100 years and most lacking necessary documentation (R. Bults, guitar trader, pers. comm., 13.03.12). However, searches of the US and UK versions of eBay (February 2012) found that most available and advertised *D. nigra* products derive from the USA. Sources suggest there are considerable quantities of pre-Convention *D. nigra* in stockpiles across the USA (L. Backshall, luthier, pers. comm., 12.03.12); as reportedly held by one of the leading US guitar manufacturers which

still offers guitars with *D. nigra* back and sides on its website. Several Chinese companies also offer veneers and concert guitars made from *D. nigra* for sale through the UK and US versions of Alibaba.com, often claiming to ship internationally.

Searches of EU websites found that *D. nigra* is offered for sale across the EU and a variety of industries. Guitar making appears to be the most important industry involved; however, *D. nigra* is also offered for sale in the form of veneers, chipboard and plywood, as well as furniture. The high quality knife industry is also believed to use this species in production (A. Ljung, Swedish CITES MA, *in litt.*, 15.01.12). Below is a list of selected examples of *D. nigra* offers for sale within the EU:

- UK:
 - Rio Rosewood veneered chipboard offered for sale in various sizes and thicknesses by a UK-based company. Veneered Rio Rosewood panels offered by another UK-based company. Prices and availability not specified. No mention of trade restrictions or the need for documentation.
 - Rio Rosewood furniture (includes 1930s inspired Art Deco desks) advertised for order by a furniture merchants based in England. No mention of trade restrictions or the need for documentation.
 - Classical guitars with Brazilian Rosewood back and sides advertised for order by a UK-based guitar manufacturer – Rosewood model (also includes Indian Rosewood) priced at GBP6900. Another UK-based musical instrument specialist advertises guitar(s) with “reclaimed” Brazilian Rosewood back and sides: price GBP6600, shipping to the EU, USA, Canada, Australia and Japan. No mention of trade restrictions or the need for documentation.
- Netherlands:
 - Several luthiers/websites offer guitars made using Rio Palissander. Most make no mention of trade restrictions or the need for documentation.
- Germany:
 - German company offering 210 m² Brazilian Rosewood veneer for sale: advertised as “old stock” with EC certificate.
 - Rio Palisander, *D. nigra*, Brazilian Rosewood features on the website of a German luthier as a type of wood offered for the construction of their guitars. The website contains a number of pictures of the *D. nigra* timber they have in stock.
 - Searches conducted by the German CITES MA found a considerable quantity of musical instruments, especially high valued and prestigious acoustic and electric guitars, manufactured with *D. nigra* and offered for sale in the EU, apparently without any documents (M. Müller-Boge, German CITES MA, *in litt.*, 11.10.11).
- France:
 - *Dalbergia nigra* offered for sale on French version of Alibaba.com by a Belgian company (advertisement taken down by the time of writing).
- Spain:
 - One Spanish guitar manufacturing company uses *D. nigra* in the manufacturer of their guitars. Their website specifies they have provided an inventory of their stocks to the Spanish CITES MA (879 sets of *D. nigra* at the time of inventory, with 22 guitars in the process of being made). Each time a guitar is made, they claim to submit a form to the authority to record this.

In addition, the Swedish CITES MA informed us of one case recently referred to a Swedish local authority of a trader in tropical woods openly advertising *D. nigra* for sale through the internet (A. Ljung, Swedish CITES MA, pers. comm., 07.03.12). Poland’s CITES MA have also noted the presence of *D. nigra* in many internet offers on Polish websites in the form of wood and musical instruments (K. Wolnicki, Polish CITES MA, *in litt.*, 20.01.12).

General discussions about the illegal trade in Dalbergia nigra and awareness of trade restrictions

Websites selling instruments or pieces of *D. nigra* in many cases indicate that the wood being advertised dates from pre-Convention times. This is corroborated by reports from a UK-based luthier that on the rare occasion that *D.*

nigra is used in guitar making, it tends to be old stock held for some time (e.g. 20-30 years old) or recycled wood from old furniture (L. Backshall, luthier, pers. comm., 12.03.12).

Nevertheless, it is widely recognised that official documentation (e.g. EC certificates/CITES documentation) is often lacking both for stockpiles of *D. nigra* and for many guitars made from *D. nigra* in circulation, for example due to lost sales receipts (Anon., *in litt.*, 11.12.05). One guitar enthusiast posting in a UK forum recalls how he purchased three *D. nigra* guitars from well-known luthiers in the UK and USA, none of which were accompanied by the requisite documentation (Anon., *in litt.*, 18.01.12).

Information received from the UK-based luthiers and a guitar trader in the Netherlands suggests a high-level of awareness of trade restrictions being in place for *D. nigra*, among the luthier community, traders and end-purchasers of guitars (L. Backshall, luthier, pers. comm., 12.03.12; J. Fleeting, luthier, pers. comm., 13.03.12; R. Bults, guitar trader, pers. comm., 13.03.12). Discussions in online forums support this suggestion, although awareness of what the restrictions exactly entail may be lacking or misunderstood (Anon., 2012k).

A number of sources in the guitar industry consider that enforcement in relation to *D. nigra* is stricter now than in the past (Anon., *in litt.*, 18.01.12). Nevertheless, the illegal trade in *D. nigra* timber and products is still the subject of considerable discussion on the internet, for example:

- One luthier points to a lack of enforcement in the industry and the ease of obtaining illegal wood species (Anon., 2012j).
- One source posting in an international guitar forum recalled instances of guitar makers and dealers circumventing CITES regulations by saying their products were made from “caviuna” (a more general term used in respect of a number of different rosewoods) (Anon., *in litt.*, 11.12.05). In the same discussion, another source with experience of the Spanish trade claimed that most “real Brazilian or Rio Rosewood” was imported and distributed under the general name *Dalbergia* to avoid documentation requirements (Anon., *in litt.*, 11.12.05); however, this practice may be less common nowadays following the listing in Appendix III of certain other species of the genus *Dalbergia*.
- Another source notes that Brazilian suppliers have posed as US companies on sites such as eBay, misrepresenting to potential purchasers that the *D. nigra* they are supplying is exempt from CITES requirements (hence explaining the lack of documentation) (Anon., 2012m).
- Guitar manufacturers also refer to the prevalence of forged CITES permits in circulation (Thomas, 2008): one US manufacturer states that many lack the knowledge to distinguish legitimate from illegitimate CITES documentation, with suppliers exploiting this fact by copying old CITES documents and passing them onto unsuspecting purchasers (Johnston, 2011).

Another concern expressed by one guitar trader is that most products originating from the US are now accompanied by claims that they are “legal”; making it difficult for purchasers to know the actual status of the products they are buying (R. Bults, guitar trader, pers. comm., 13.03.12). According to another source, certain US traders sell guitars with *D. nigra* back and sides labelled as “CSA rosewood” (Central South American Rosewood), possibly in order to avoid trade regulations.

Alternatives to Dalbergia nigra in the guitar-making industry

In light of the price of *D. nigra* and widespread awareness of the illegal nature of trade in the species, the search for the “new Brazilian Rosewood” appears to be underway within the luthier community (L. Backshall, luthier, pers. comm., 13.03.12). Sources indicate that luthiers are open to using alternatives to *D. nigra*; the issue is whether there is sufficient demand for these woods among end-purchasers of guitars (L. Backshall, luthier, pers. comm., 13.03.12). Other tropical hardwoods used regularly by luthiers include: African Blackwood *Dalbergia melanoxylon*; Wenge or Congolese Rosewood *Millettia laurentii*; Madagascar Rosewood *Dalbergia baronii*; and Indian or Sonokeling Rosewood *D. latifolia* (none of which are currently controlled by CITES).

iii) Discussion

Information from seizures, prosecutions and internet research, indicates that illegal trade in *D. nigra* is taking place. However, it is not possible to estimate the volume of this trade from this information alone and therefore the scale of the problem is largely unknown. It may be surmised, however, that: (i) given the practice of concealing *D. nigra* specimens amidst timber of other *Dalbergia* species (for example, see above discussion of an investigation carried out in Brazil into the illegal harvesting of *D. nigra*); and (ii) the difficulties of distinguishing *D. nigra* from similar woods (Gasson *et al.*, 2010; see below at section 12(a)), a significant proportion of the illegal trade in *D. nigra* could go undetected. The actual levels of illegal trade in *D. nigra* may therefore be considerably higher than indicated by these seizures.

A key concern is the extent to which the illegal trade in *D. nigra* may be impacting wild *D. nigra* populations; that is to say, involving newly harvested wood – the unsustainable element of the illegal trade. While seized specimens and *D. nigra* commodities advertised online may be derived from stockpiles of wood harvested prior to 1992, such cases could also involve wood from ongoing illegal logging activities. From the observation that several seizures involved imports of *D. nigra* from Brazil (and, in some cases, raw timber products), it may be inferred that illegal logging continues to occur. This conclusion, however tentative, is supported by the investigation launched by Brazilian authorities in October 2007 into the illegal harvesting of *D. nigra* and arrests of gang members allegedly involved in the illegal trade. Differentiated strategies will be required to address this problem depending on whether illegal logging is targeting *D. nigra* or is part of general illegal logging in Brazil.

Another aspect of the illegal trade is the trade in pre-Convention wood without the documentation required by law. Internet research found that *D. nigra* commodities appear to be widely advertised and sold throughout the EU: in some cases, the wood is specifically described as pre-Convention (though potentially lacking an EC certificate); in other cases, the source of the wood is not specified at all. Discussions among luthiers suggest a high level of awareness of trade restrictions being in place for *D. nigra* in the guitar industry, although knowledge of what the restrictions exactly entail may be lacking or misunderstood. Internet sources indicate the following potentially key issues:

- a lack of awareness within sectors known to use precious woods such as *D. nigra* (e.g. the luthier/guitar community) of the precise documentation requirements under CITES and the EU Wildlife Trade Regulations;
- the existence of unknown quantities of pre-Convention *D. nigra* material in stockpiles across the EU, e.g. in Eastern Europe, with many stockpiles lacking CITES documentation or necessary EC certificates for internal trade within the EU;
- potentially forged CITES documentation in circulation;
- difficulties in distinguishing *D. nigra* from other species, which makes it possible for the wood to be traded under different names and alongside similar species not subject to regulation;
- challenges for those involved in enforcement, for example, due to complexities of identification and the amount of pre-Convention material in trade.

12. IDENTIFICATION AND STOCKPILES

a) Identification

A key enforcement issue in the regulation of trade in *D. nigra* concerns difficulties in species identification, particularly in terms of distinguishing it from other species of *Dalbergia* not subject to regulation. Our research suggests that even the most experienced luthiers encounter difficulties in identifying *D. nigra* (Anon., *in litt.*, 11.12.05). Enforcement officers may also lack the necessary knowledge and training for species identification.

Gasson *et al.* (2010) found that, although wood anatomy alone cannot distinguish *D. nigra* from all other commercially important *Dalbergia* species likely to be encountered by Customs officials, it can be used as a relatively inexpensive way of reducing the number of specimens that would need more comprehensive inspection.

Characteristics which can be observed or perceived with the unaided eye and a hand lens of approximately 10-fold magnification may allow identification using the following references:

- CITESwoodID version 2.0 (Richter *et al.*, 2008) developed in Germany: it serves as a visual (illustrations) and textual (descriptions) identification aid to all institutions and persons involved in controlling the import as well as export of wood and wood products under particular consideration of CITES regulations.
- “CITES Identification Guide – Tropical Woods” produced by Environment Canada (Miller and Wiedenhoft, 2002).

Microscopic and chemical analyses have also been developed to aid Customs officers in *D. nigra* identification. For example, a team of scientists at Royal Botanic Gardens, Kew, UK (RBG Kew) has discovered a way to distinguish *D. nigra* from other similar timbers traded as “rosewoods”, through the presence of one particular phenolic compound named *dalnigrin*. Other woods with a similar wood anatomy to *D. nigra* have been found not to contain this compound. The test costs approximately GBP150 plus VAT² per sample. For macroscopic and microscopic analysis, a sample of at least 1 cm³ of the specimen concerned is required. However, for chemical analysis, smaller samples including scrapings may be sufficient (M. Groves, RBG Kew, pers. comm., 02.03.12).

Recent research in the USA suggests that mass spectrometry may constitute a useful chemical method of analysis for distinguishing *D. nigra* from other closely related *Dalbergia* taxa seen in commercial trade. Lancaster and Espinoza (2012) used Direct Analysis in Real Time (DART) ionization coupled with Time-of-Flight (TOF) Mass Spectrometry (MS) to analyse selected *Dalbergia* and common trade species. Each of the 13 species was classified statistically using principal components analysis and linear discriminant analysis (LDA). The results showed that statistical classification allowed for the correct assignment (and thus identification) of unknown wood samples. Particular advantages of this method include the possibility of analysing many samples in a short time frame, given the ease of operating the DART-TOFMS instrument and the limited sample preparation that is required.

In Germany, the establishment of a CITES timber enforcement subcommittee has resulted in the creation of a database and network of experts in the identification of tropical timber, and the development of guidelines for enforcement authorities concerning the trade in CITES protected timber and its derivatives. These guidelines address issues including how to undertake controls of traders, construction warehouses, wholesale shops and furniture producing companies that trade in or process CITES protected timber. Factsheets and guidance documents were also produced with the aim of improving controls (for example, by providing information on pre-Convention timber) and enforcement of national book-keeping obligations among manufacturers and traders (M. Müller-Boge, German CITES MA, *in litt.*, 13.03.12).

b) Pre-Convention stocks

Information from the Swedish and UK CITES MAs indicates potentially significant volumes of *D. nigra* material in stockpiles across the EU, an assertion supported by information obtained from internet research and discussions with luthiers. The UK CITES MA notes that traders are often unable to indicate the source of timber when questioned.

Claims by traders that *D. nigra* timber or products are derived from pre-Convention *D. nigra* stockpiles can confound attempts at establishing the extent of possible illegal trade in this species. For this reason the CITES Plants Committee in 1994 encouraged CITES Parties to establish records of stockpiles of pre-Convention timber within their territories, in view of the limited amount of information available regarding pre-Convention stocks (Anon., 1994). The UK CITES MA has also advocated the tracking of stockpiles to help authorities gain a better picture of the trade in *D. nigra* and to determine whether or not that trade is legal.

²Approximately GBP180 in total.

Several Member States are already tracking stockpiles within their territories, or plan to do so in the near future:

i) UK

The UK reported that traders in the UK are required to make an initial declaration of their stocks (when applying for certificates or through an inspection) and to report to the Animal Health and Veterinary Laboratories Agency (AHVLA) the amount of timber used, and wasted, in production each time an article is made. Much of the pre-Convention *D. nigra* material in the UK has its origins in the 1950s-1970s furniture making industry. In many cases, *D. nigra* material in the UK is either un-worked or is being re-worked (e.g. floorboards to guitars).

ii) Sweden

Sweden reported that they are planning a campaign during 2012 with the purpose of registering all stocks of pre-Convention *D. nigra* that are still available in Sweden. In Sweden, *D. nigra* was a popular timber species in the 1960s, with old residuals (e.g. veneer sheets) from furniture production being re-worked into musical instruments. The Swedish CITES MA is in contact with the University of Lund, Sweden, regarding the use of carbon-14 dating to assist in age determination of stockpiles. They are also planning to inform the producers of quality knives; a sector also known to use high quality timber species.

Key problems envisaged in registering stockpiles include: (i) difficulties in judging how much *D. nigra* is used in, for example, the manufacture of one guitar to track how much remains in a particular stockpile; and (ii) complexities in age determination, for example, due to several ages of timber originating from a single tree (older stems and younger branches); or timber of various sources, and hence ages, within one stockpile. There is also the question of who should fund the cost of age determination (EUR280 approx. per sample) (A. Ljung, Swedish CITES MA, pers. comm., 07.03.12).

iii) Spain

In 1994, Spain adopted a regulation pursuant to which importers and traders were requested to register their stockpiles of *D. nigra* timber. Several enterprises communicated their stockpiles and provided documentation to prove their legal origin. Stockpiles were then inspected. On 23 May 1995, Spain's CITES MA informed the CITES Secretariat of the outcomes of the registration procedure (M. Lasso Licerias, Spanish CITES MA, *in litt.*, 12.03.12). The Spanish CITES MA has since monitored the control of pre-Convention stocks of *D. nigra*, testing samples with several identification techniques (Anon., 2008c). Registration of stockpiles post-1995 has been permitted provided the legal origin of the wood can be demonstrated.

13. CONCLUSIONS AND RECOMMENDATIONS

Key conclusions that may be derived from this research are as follows:

Reported trade

- Reported international trade in *D. nigra* is dominated by material declared as pre-Convention. A key concern is the extent to which specimens are being correctly declared as pre-Convention; with the potential for legal trade in pre-Convention *D. nigra* offering a possible avenue for illegal trade to take place. This creates a challenge for those involved in controlling the illegal trade in this species.
- The EU is a globally important destination for pre-Convention *D. nigra* material exported for commercial purposes, particularly from the USA. For these instances of trade to be permitted under EU law, they would have to fall under one of the exemptions for commercial imports contained in Council Regulation 338/97. However, the present research indicates that those provisions might not be implemented in a uniform manner by the Member States.

- The EU is the leading re-exporter of *D. nigra* material globally, with Spain, the UK and Germany the main players in this regard. The vast majority of re-exports from the EU are commercial in nature.
- Re-exports of *D. nigra* from the EU during the period 1992-2010 were considerably higher than quantities reported as imported, an observation that may be explained by: (i) a significant amount of pre-Convention *D. nigra* material in stockpiles across the EU, imported into the EU prior to 1992; and/or (ii) material entering the EU by illegal means before being re-exported as “pre-Convention” material.
- Importer reported quantities of trade in *D. nigra* were observed to be considerably lower than exporter reported quantities. While discrepancies may be due, for example, to differences in reporting between importing and exporting countries (amongst other things), they may also indicate that imports of pre-Convention specimens are taking place without the requisite import permits.
- Trade data reveal the global nature of trade in *D. nigra*, with the USA, EU and Japan all being major players. Japan is the most important end-consumer of *D. nigra* commodities; while the USA is a significant re-exporter of *D. nigra* material and a key trade partner of the EU for this species. This highlights the importance of close involvement between EU and US authorities, as well as authorities of other key players in the international *D. nigra* trade, in addressing issues of enforcement, monitoring and control relating to this trade.

Illegal and unreported trade

- Information on seizures and prosecutions, and from internet sources, indicates that the illegal trade in *D. nigra* may be significant. The scale of the problem, however, is unknown.
- High levels of awareness of the existence of restrictions on the trade in *D. nigra* (e.g. among the luthier community) suggest that those wishing to circumvent CITES/EU trade restrictions may carry out trade in *D. nigra* out of the public eye. This limits the amount of quantitative information that may be obtained on levels of illegal trade. Nevertheless, there is a lack of awareness within some sectors of the precise documentation requirements under CITES and the EU Wildlife Trade Regulations.
- *Dalbergia nigra* commodities appear to be widely advertised and sold throughout the EU. In many cases, *D. nigra* is advertised for sale without any mention of necessary documentation, e.g. EC certificates for internal trade within the EU, and the source of the wood is not specified.
- Information on *D. nigra* seizures and an investigation launched in 2007 by Brazilian authorities into illegal logging of this species indicate that *D. nigra* continues to be harvested illegally in Brazil. There is evidence to suggest that some *D. nigra* commodities advertised for sale on the internet could also contain/comprise wood from ongoing illegal logging activities.

Enforcement issues

- There is a lack of information about quantities, descriptions and locations of stockpiled wood to assist enforcement authorities in monitoring and controlling the trade. Many stockpiles lack the necessary EC certificates/CITES documentation required for intra-EU trade and re-export.
- Difficulties associated with visually identifying *D. nigra* timber with the naked eye or a hand lens (which may in part be due to a lack of training on identification tools). This facilitates concealment of illegal imports/exports of *D. nigra* amongst similar woods and mis-labelling of *D. nigra* material as species not subject to regulation, which create further challenges for those involved in monitoring and controlling trade in this species. Forged CITES documentation may also be an issue.

Accordingly, it is concluded that the trade in *D. nigra* is an issue warranting further attention. The following **recommendations** are suggested to address the EU trade in *D. nigra* and issues of monitoring and control:

International co-operation

1. In order to **find out more about the extent of illegal logging** of *D. nigra*, including whether targeted illegal logging and/or more general illegal logging constitutes an immediate threat to *D. nigra* populations in the wild, the European Commission and the EU Member States are encouraged
 - a. to establish contacts with **Brazil** bilaterally and/or via CITES channels and find out what the situation is regarding this;
 - b. to share relevant information (e.g. significant seizures, investigations) with Brazil to inform the authorities of on-going trade trends.
2. The European Commission and EU CITES authorities are recommended to work closely with key EU trade partners, especially the **USA**
 - a. to understand better their permitting procedures (e.g. the US system of pre-issued or partially completed CITES documents for the export of pre-Convention *D. nigra* specimens);
 - b. to request **export documents** (for example from the US Fish and Wildlife Service) to be reviewed to confirm that import permits have in previous years been issued when legally required for imports into the EU (M. Müller-Boge, German CITES MA, *in litt.*, 13.03.12);
 - c. to share relevant information, for instance regarding seizures, smuggling techniques and investigations;
 - d. to consider joint awareness raising of trade restrictions and permit requirements in the USA and in the EU targeting relevant traders;
 - e. to carry out a similar study in the USA, the most important EU trade partner, to gain a better understanding of the trade in the USA.
3. The European Commission and the EU Member States should consider taking some **key findings of this report** forward to **relevant international fora, such as CITES, the World Customs Organization (WCO) and WCO Regional Intelligence Liaison Offices (RILO) (e.g. in Europe)** to encourage international co-operation and information sharing related to trade in *D. nigra*, including on issues such as identification methods and **guidelines for the accurate reporting** of *D. nigra* and other CITES-listed timber species (to address, for example, the preferred units to be used for specimens in trade).

EU issues

4. Most importantly, EU Member States and the European Commission are recommended to discuss the **interpretation of EU Wildlife Trade Regulations regarding restrictions of imports into the EU for commercial purposes for pre-Convention specimens** at the next meeting of the Committee on Trade in Wild Fauna and Flora to ensure that the regulations are implemented in a **uniform** manner across the EU.
5. In order to address non-compliance with permit requirements, EU Member States are recommended to **raise awareness of the relevant industries** of restrictions on trade in *D. nigra* and associated document requirements. Member States are encouraged to disseminate information through, for instance, luthier associations and timber trade federations.
6. In order to ensure improved controls of trade in *D. nigra*, it is recommended that:
 - a. CITES authorities in the EU consider producing **inventories and registers of stockpiles** of pre-Convention timber, which could provide a sound basis for monitoring, commercialisation and, most likely, re-export of legally acquired pre-Convention stocks. These could also include descriptive information, for example, on the form and size of stockpiles, to help in monitoring and identifying avenues for illegal trade.
 - b. Those Member States that have already registered their stockpiles **share their experiences and lessons learnt** with those just planning to start this procedure.
 - c. EU CITES authorities regularly **monitor sales** and offers for sale (including on the internet) and **inspect** the premises of traders **both as part of joint EU-wide enforcement actions** and unilaterally.
 - d. Before such actions take place, CITES enforcement agencies in the EU organize **awareness raising** activities for CITES enforcement officers and **training** events focusing on use of available

- age determination and species identification techniques and tools** presented in this report, in order to avoid mis-declaration of *D. nigra* material.
- e. **Available factsheets and guidance documents** covering issues of monitoring and control **are shared** by Member States and translated/adapted by those that do not yet have such materials.
 - f. Member States (especially CITES SAs and research institutes) **share identification techniques and tools** to assist in identifying *D. nigra* timber. These may include morphological tests that allow identification of *D. nigra* to species level, as well as chemical and microscopic tests.
 - g. EU CITES authorities include in their risk assessment and guidance documents some of the **methods of smuggling/concealment** identified in this report.

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TRAFFIC, the wildlife trade monitoring network, is the leading non-governmental organization working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.

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