Inclusion of Brazilian Rosewood *Aniba rosaeodora* in Appendix II with annotation #11 “Designates logs, sawn wood, veneer sheets, plywood and essential oil"

Proponent: Brazil

Summary: Brazilian Rosewood *Aniba rosaeodora* (also known as Rosewood, Pau-rosa and Palo de Rosa) is a slow-growing hardwood tree reaching a height of up to 30 m and trunk diameter at breast height (DBH) of two metres. It is one of about 40 members of the Neotropical genus *Aniba* and occurs in dense primary wet tropical rainforest at medium and high altitudes in Brazil, Colombia, Ecuador, French Guyana, Guyana, Peru, Suriname and Venezuela. The tree has been extensively felled to harvest its wood which is rich in linalool oil, valued as a fragrance in top-of-the-range perfumes, as a component in a wide range of scents and in aromatherapy. *A. rosaeodora* wood can also be used in furniture and in canoe manufacturing, but is rarely used for these purposes because of the high commercial value of its essential oil.

The species grows at low densities and discontinuously. Little detailed information exists on its current status as there are virtually no known forest inventories. The highest density population is believed to be in the central Amazon predominantly in the state of Amazonas, Brazil. In this area there are reported to be usually fewer than two trees per ha, but locally densities may be higher: in one, unexploited population in a 10 000-ha forest reserve in the Manaus region of Amazonas, there are three to four adult trees per hectare. Accessible stocks are believed to have been largely exhausted through overexploitation in French Guyana, Guyana and Peru, as well as Amapá, Pará and a significant area of Amazonas in Brazil. It is included in lists of threatened tree species of Colombia and Suriname. Remaining stands are reportedly in remote forest areas where access is difficult. Evidence of natural regeneration has been found recently, but it takes place slowly, irregularly and infrequently.

Brazil is now apparently the only producer of *A. rosaeodora* essential oil, which is derived almost entirely from natural stands. Although all parts of the tree are oil rich, the oil is extracted almost entirely from the wood as this is the most valued for the fragrance industry and in aromatherapy. Current extraction methods require the tree’s destruction. Typically trees over 30 cm diameter at breast height and on average 30 to 35 years old are cut down, due to the higher quality aroma allegedly obtained from older trees. Now smaller trees are also being harvested because of the shortage of readily accessible older *A. rosaeodora* trees.

It is estimated that between 1937 and 2002, a large number (825 000) of trees were logged, believed to correspond to harvest from more than four million ha of forest. The harvesting and distillation processes are highly inefficient, partly because very old equipment is used. Some illegal mobile distilleries may still be operating, although most or all may have been recently closed by the Brazilian Institute of Environment and Natural Resources (IBAMA).

It is estimated that 15% of oil is used in the perfume industry in Brazil, with the remainder exported. There is some disagreement about recent oil production volumes; figures from the 1990s and early 2000s varied from 38 t per year to 100-130t per year. It appears that since 2000 export has been less than 39 t and has reportedly failed to meet demand, in spite of increasing prices.

A comparison of the volume of logs authorized for extraction (equivalent to between 1000 and 2000 trees annually) and the quantity of oil exported between 2003 and 2008 indicates that a large proportion of the oil exported must have come from unauthorized felling. Over five times more raw material than was legally harvested would be needed for the total level of export reported in the period (although the annual discrepancy between recorded oil export and authorized volume of logs has been much less since 2006). In recent years the USA has been the chief international buyer of oil. In the period 2000–2003, it accounted for just under half of reported exports, with France, Belgium and the UK accounting for almost all the remainder. The oil is expensive, with advertised retail prices of up to ca USD2 per ml in importing countries.

Cheaper, synthetic linalool oil, and Ho wood *Cinnamomum camphora* and Ho leaf oils are substitutes for that obtained from *A. rosaeodora* in low price and mid-range perfumes, but *A. roseaodora* oil is still much in demand for fine perfumes because of its superior aroma. Adulteration or substitution of A. *rosaeodora* oil with oil from other *Aniba* species, synthetic linalool, Ho wood and Ho leaf oils, and linalyl acetate is reported to occur. However, the extent of this, and the extent to which other *Aniba* species (none of which is listed in the CITES Appendices) are harvested for oil extraction, remains the subject of controversy. Adulteration can only be detected by chemical analysis.

The Brazilian Government has many laws and general measures designed to help conserve the species, and while there has been some success, there are difficulties in enforcing the regulations. In 2006 an electronic Document of Forest Origin system was introduced which is necessary for the domestic transport of the oil.

Only a small number of plantations of *A. rosaeodora* exist and it is likely to take a few decades for these to produce oil acceptable to the market. There is high potential for the sustainable production of oil from *A. rosaeodora* leaves and stems. Two drums of oil from this source were exported in 2008, but it will be an estimated six to eight years before substantial quantities are available for export and widespread approval from the fragrance industry of oil from this source is still needed.

A. rosaeodora was assessed by IUCN as Endangered (A1d+2d) in 1998; this assessment is regarded as in need of updating. It was listed as endangered in Brazil in 1992.

The proponent seeks to list *A. rosaeodora* in Appendix II, in accordance with Article II, paragraph 2a) of the Convention and *Resolution Conf. 9.24* Annex 2a, Paragraph A, with Annotation #11 designating logs, sawn wood, veneer sheets, plywood and essential oil. However the current annotation #11 lists "powder and extracts" and not "essential oil".

Analysis: *Aniba rosaeodora* is a wide-ranging, heavily exploited and slow-growing tree known to be depleted in many parts of its range. Exploitation is very largely driven by export trade, although this trade, as far as is known, is now confined to one country—Brazil—albeit the one where most of the surviving population is found.

The species certainly does not have a restricted range or a small population under the guidelines for inclusion in Appendix I provided in *Resolution Conf. 9.24 (Rev. CoP14)*. There is insufficient information on historical trends to determine whether the overall population has undergone a marked recent decline or not. There is therefore insufficient information to determine whether regulation in trade is needed to ensure that the species does not meet the biological criteria for inclusion in Appendix I in the near future (Criterion Annex 2 a A).

While harvesting for trade has certainly depleted accessible populations, it is not evident that regulation is required to ensure that harvest is not reducing the total wild population to a level at which its survival might be threatened by continued harvesting or other influences (Criterion Annex 2 a B).

Supporting Statement (SS)	Additional information

Taxonomy

Supporting Statement (SS)	Additional information
Synonym *Aniba duckei*	*There is some disagreement as to the exact botanical status of* A. rosaeodora *and* A. duckei*. In Brazil, where most of the research on* Aniba *has been carried out, some groups regard* A. rosaeodora *as a synonym of* A. duckei *while others take the opposite view. A third opinion holds that morphological differences that exist within the genus are insufficient to justify separation of the two species. Oil producers themselves recognize two plant sources, but make no attempt to keep the distilled oils separate (Coppen, 1995).*
Range	
Recorded in Brazil, Colombia, Ecuador, French Guyana, Guyana, Peru, Suriname and Venezuela.	
IUCN Global Category	
Listed as Endangered	*Assessed in 1998 as Endangered A1d+2d; assessment in need of updating (IUCN, 2009).*

Biological and trade criteria for inclusion in Appendix II (*Resolution Conf. 9.24 (Rev. CoP14)* Annex 2 a)

A) Trade regulation needed to prevent future inclusion in Appendix I	
	The supporting statement does not provide any quantitative indications that the species may meet the biological criteria for inclusion in Appendix I in the future. *Santos* et al. *(2008), citing Leite* et al. *(1999), May and Barata (2004) and Loureiro* et al. *(1979) report that the highest density population is found in the central Amazon, predominantly in the State of Amazonas, and usually comprises fewer than two trees per hectare.* *A 1978 survey in the 10 000-ha Adolphe Ducke Forest Reserve in Manaus found between three and four adult trees per hectare (Alencar and Fernandes, 1978, cited in Santos* et al.*, 2008).*
B) Regulation of trade required to ensure that harvest from the wild is not reducing population to level where survival might be threatened by continued harvest or other influences	
A. rosaeodora is heavily exploited and in international trade for its essential oil with high prices on the international market promoting the exploitation of the species. The oil, which is chiefly extracted from the wood, is rich in linalool, and used as a fragrance in fine perfumes and as a perfume fixative.	*In addition* A.rosaeodora *is used in aromatherapy (e.g. Aroma Medical, undated; Falsetto, 2008).*

Supporting Statement (SS)	Additional information
A. roseaodora is now included in the official extinct species lists for Colombia and Suriname.	*According to the Spanish version of the proposal as submitted the species is included in the official extinct species lists for Colombia and Suriname. This appears to be in error and these lists are in fact of endangered species in these countries. In Colombia there are only three locations recorded with actual occurrence of* A. roseadora *(Cárdenas. D.* et al., *2006). Freyre (2003) reports for Peru that* A. roseadora *is rare or its distribution restricted due to historical exploitation.*
Natural regeneration of *A. rosaeodora* is slow.	
In Brazil it is present in the Estados Federados de Amazonas (federated States of Amazonas), Pará and Amapá. At present, rosewood can be found in the interior of Amapá, close to the Guyana border. The highest concentration of trees is found in the strip that stretches from the source of the river Curua-Una to the border with Peru, on the south, and from the river Trombetas to Colombia in the north.	*It grows mainly in upland forests in the Amazon, although in Venezuela it has also been recorded in lowland forests of white sand. It has been found associated with clay soils and forest clearings. Recently it has documented the strong fruit predation by wild parrots during harvest time (Varty 1996).*
There are no known forest inventories for *A. rosaeodora*. It is estimated that between 1937 and 2002, a minimum of 825 000 trees were logged, which amounts to over 4 million hectares of forests exploited. This estimate is based on the following data. Almost 13 000 t of rosewood essential oil were exported during the period. In order to produce a drum of oil (180 kg), 18–20 t of wood are needed. An average tree extracted weighs approximately 1.75 t and the diameter at breast height ranges from 30 to 60 cm. Oil yield estimates vary between 0.7% and 0.1% of the weight of trunk wood. Therefore one tonne of rosewood trunk is needed to produce 10 kg of its essential oil.	*Varty (1998) reported that populations throughout the species' range have seriously declined because of rosewood oil extraction. The species is considered endangered throughout its range in the Guiana Shield which extends from eastern Venezuela, to north-eastern Brazil (covering parts of Colombia and Venezuela, the whole of Guyana, Suriname, French Guiana, and the states of Roraima, Amapá, and parts of Amazonas and Pará in Brazil (van Andel* et al.*, 2002). No further details on the decline of* A. rosaeodora *in Ecuador or Venezuela or the current status of the species in these countries could be located.*
Exhaustive extraction severely depleted populations of the species in the Guyanas. In Peru the species was exploited later, during the 1940s and 1950s, but efforts halted due to the lack of available material, suggesting that stocks in Peru are also depleted.	*There is little rosewood remaining in easily exploitable areas up to two km from riverbanks in most of Amazonia. Nowadays scout units who precede harvesting units often must penetrate four hours into the forest to locate suitable* A. rosaeodora *trees for extraction. Researchers at the Agricultural and Forestry Sciences Faculty of Para´ (FCAP) found there are still considerable populations of the species in areas more distant from streams, and from the existing distillation industry, such as in the Tapajo and Xingu river basins. (May and Barata, 2004).*
Brazil is now the only producer of *A. rosaeodora* oil. By the 1960s, extraction methods had led to the exhaustion of the most accessible and productive stocks of the species. From the 1970s the introduction of the chain saw and the creation of new roads allowed access to areas which had previously been inaccessible. In the 1980s the increase of forest clearing for agriculture made new populations vulnerable to extraction. Intensive exploitation has led to the loss of natural populations from Amapá, Pará and also a significant portion of Amazonas, where there is a greater presence of the species. Extraction formerly took place in Pará until the 1980s and Amazonas, but nowadays remaining populations in Pará are in inaccessible areas and extraction is restricted to Amazonas. The current species status in Amapá is unknown. Now *A. rosaeodora* is located in the most "central" regions of the forest which are preserved due to their difficult access. Mature trees of the species, which are the most highly prized for extraction, are found at increasing distances from rivers. There are indications that small trees are being logged in	*There is some disagreement regarding total production volume. Barata (2007) gives a figure of 38 t per year, with gross sales of USD2.8 million. Mitja and Lescure (1996) in May and Barata (2004) suggest the oil production level may be 100–130 t per year. May and Barata (2004) calculated the number of trees harvested per year averages 1700, based on current oil production levels. The Brazilian Institute of Environment and Natural Resources (IBAMA) has accepted an annual extraction rate of 1000–2000 trees (IBAMA, 1997 in May and Barata, 2004). The industry suggests that total consumption is only 1000–1500 trees and asserts a need for restraint on extraction of younger trees, indicating that this has occurred (May and Barata, 2004).*
	Today the only port of export is that of Manaus in the State of Amazonas, Brazil (May and Barata, 2004). Osava (1998) maintains that illegal export of the oil occurs via a

Supporting Statement (SS)	Additional information
previously exploited areas. During the 1960s production of rosewood oil was around 500 t per year. With the introduction of cheaper synthetic linalool the demand decreased as synthetic linalool substituted rosewood's oil in the low-cost perfume industry. In the 1980s there was a further fall in demand due to the introduction of cheaper Ho *Cinnamomum camphora* oil into the market which replaced rosewood as a natural source of linalool in the mid-range-price perfume industry. Since then the use of *A. roseaodora* oil has been restricted to top-of-the-range perfumes. During the1980s extraction matched demand of around 100 t of oil per year. Subsequently extraction decreased again and for the first time did not meet demand. Since 2000, export has been less than 39 t. In recent years, in spite of increasing prices, there are only seven working distilleries in Amazonas and extraction has continued to be smaller than demand, due to the depletion of stocks. The proponent therefore considers that the conservation of this species is necessary and urgent, in order to avoid further genetic erosion and population reductions. The proponent is of the opinion that there may be intact populations of *A. rosaeodora* still to be discovered in inaccessible areas of the Amazon forest, far from navigable rivers. This hypothesis is yet to be verified. It is estimated that 15% of *A. rosaeodora* oil extracted is used in the perfume industry in the southern states of Brazil, and the remaining 85% is exported. There is also a small traditional market for "baths" and "aromas" in northern Brazil, selling pieces of rosewood cork and wood. Recently the leaves and sprouts of adult trees and young plants have been used for oil extraction; almost two drums of essential oil from the leaves were exported in 2008. A comparison of the volume of logs authorized for extraction and the quantity of oil exported between 2003 and 2008 revealed a large discrepancy, even without taking into account the oil extracted which is used internally. The following data were used in the calculations: conversion factor of one tonne of wood per 10 kg of oil, wood density of 850 kg per m^3, and oil density 0.87 g per cm^3. Even if the possible existence of stocks is taken into consideration, the magnitude of the discrepancy—around 513% on average—suggests that some of the oil exported was derived from illegally felled trees.	*variety of unknown routes.* *Historically trade in Brazil also originated from Amapá [as well as Pará and Amazonas] (May and Barata, 2004), but has been virtually wiped out there by intensive exploitation (Barata, 2005).* *The USA was the chief international buyer of rosewood oil between 1987 and 2003, accounting for 65% of exports from 1985–1987, 75% from 1997–1999 and 47.5% from 2000–2003. The other three main international buyers between 2000 and 2003 were France (17.8% of exports), Belgium (16.8%) and the UK (10.9%) (May and Barata, 2004). Major purchasers of rosewood oil are believed to be local representatives of fragrance sector multinationals. Fragrance launches have continued to feature* A. rosaeodora *e.g. Presence d'une Femme by Mountblanc, 2002, and Trussadi Skin by Trussadi, 2002. Successful Brazilian companies such as Natura have featured traditional Brazilian ingredients, such as rosewood oil in developing home-market cosmetic product ranges (Burfield, 2009). The principal Brazilian buyer, Firmenich, produces compositions for the food and cosmetics industry for sale in São Paulo; a share of these compositions is exported (May and Barata, 2004). The UK cosmetics company "Lush" used over 500 kg of rosewood oil in 2008 at a cost of GBP50–80 per kg (Anon., 2009).* *The online Chemical Industry Purchasing News (ICIS), lists 31 suppliers of rosewood oil internationally. The oil is advertised online at USD1.51–USD1.55 per ml in the USA (Aroma-pure, 2009; Maya-Ethnobotanicals, 2009); GBP0.22–GBP1.33 per ml in the UK (Holistic Living, 2009; Natural Touch Aromatherapy, 2009; Twenga, 2009) and GBP0.12–GBP0.4 per ml on Amazon. However there is no guarantee of the purity of these products.* *Samples derived from oil of distinct populations have shown a substantial range in the fragrance of the oil obtained, suggesting substantial genetic variation in the raw material, and/or adulteration of the oil with other species of* Aniba*. This variation has been recently verified through gas chromatography-mass spectrometry (CG-MG) analysis of samples of rosewood leaves obtained from distinct populations (May and Barata, 2004). Several sources e.g. Coppen (1995) suggest that other* Aniba *species are being used by industry to "increment" their oil sales. In a producer's opinion this practice is not widespread. It is possible that other* Aniba *species are being used to produce rosewood oil of inferior quality, but this would not be easily saleable as pure rosewood due to the latter's distinctive bouquet (May and Barata, 2004).* *Producers and technicians agree that the aroma of rosewood oil can vary from batch to batch, although they disagree on the reasons for this variation. Producers argue that buyers mix pure rosewood oil with the inferior synthetic linalool. Technicians infer that the species is nearing extinction, thus making it necessary for producers to exploit*

Supporting Statement (SS)	Additional information
	other species or to adulterate the oil to meet demand (May and Barata, 2004). *Typically only trees over 30 cm diameter at breast height (dbh) are cut, due to the higher quality aroma, as alleged by the industry, obtained from older trees; although trees over 20 dbh may also be harvested (see Conservation and legislation section for more details) (May and Barata, 2004). Coppen (1995) reports that trees as small as 15 cm dbh are (illegally) harvested and occasionally branches over four cm thick may be collected. Shawe (2002) also observes that smaller trees than before are being harvested, as well as other* Aniba *species that were previously left untouched.* *Some 60% of the wood biomass is left on site and therefore wasted. Young branch wood provides the highest oil yields, but is rejected on site in favour of the more readily portable trunk wood. At the distillery, significant losses occur in sawing and chipping wood prior to distillation, and owing to a lack of investment in equipment (now mostly very old) oil recoveries are sub-optimal (Shawe, 2002). Yields of oil vary according to the quality of the wood feedstock (collection area and species mix) and its moisture content (Coppen, 1995).*

Inclusion in Appendix II to improve control of other listed species

A) Specimens in trade resemble those of species listed in Appendix II under *Resolution Conf. 9.24 (Rev. CoP14)* Annex 2 a or listed in Appendix I

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B) Compelling other reasons to ensure that effective control of trade in currently listed species is achieved

Other information

Threats

Extraction of the best phenotypes from natural populations for essential oils has led to a negative selection pressure on the species.	*Santos* et al. *(2008) found populations of the species in central Amazonia to be genetically diverse. Polymorphism was highest in the unexploited population in the Adolphe Ducke Forest Reserve, but differences between this and other (exploited) populations were not statistically significant.*
The growth of large-scale economic activities based on the resources of the Brazilian Amazon has caused a population reduction of *A. rosaeodora.* Vast areas of the Amazonian forest are degraded by habitat fragmentation, selective logging, fires, spread of agriculture, mining and road building.	*In 1992 the Natural Resource Institute, UK, published a survey showing that illegal crude stills for rosewood extraction were being floated down rivers on rafts in order to access remote jungle areas where immature trees were being cut and the oil distilled on site (Green, 1992).* *Rosewood extraction has a low impact on the overall local ecosystem because it is carried out by manual labour, and individual trees are dispersed. The volume of*

Supporting Statement (SS)	Additional information
	A. rosaeodora *wood extracted is only about 0.03% of total wood extracted in the Amazon in recent years (May and Barata, 2004).*
Similar species	
A.fragrans and *A. parviflora*, also aromatic, are occasionally confused with *A. rosaeodora* but there is still no certainty as to whether they are in commercial use or not.	*Van der Werff (2009) believes that* Aniba *species are difficult to identify due to their small and uniform flowers and identification is scarcely possible without flowers. He considers that as these species also have fragrant oils, such species will be harvested as well. However Shawe (2002) points out that the scouts who are sent out to locate* A. rosaeodora *for harvesting in the forest are very experienced in identifying and distinguishing the various* Aniba *species by their appearance and odour.*
Captive breeding/artificial propagation	
Studies have been carried out on the artificial propagation of the species since the 1960s, but field development has been considered slow. Seedlings can be produced by seeds, cuttings and natural regeneration. Seed germination occurs at five to eight weeks and the rate is generally low. The species propagates well by cuttings especially when these come from forests and are transplanted on rainy days. Scattered plantations of *A. rosaeodora* are found all around the Brazilian Amazon, but currently they do not contribute to oil extracted from wood. Experiments demonstrated that rosewood trees showed high numbers of buds/trunk after the tree tops were pruned. The capacity of sprout reappearance, together with the greater oil productivity of sprouts and leaves compared with wood of the trunk indicated that *ex situ* plantations could be managed by pruning. There is an incipient trade of the oil extracted from leaves and young shoots produced by pruning, thus removing the need to cut down the tree. Although there are good prospects for this trade, oil from the leaves cannot be considered a direct substitute of oil from the wood, since they have different olfactory characteristics.	*The FCAP recently identified specific evaluation needs for formal cultivation, including the selection of superior germplasm and management regimes (Burfield, 2003).* *May and Barata (2004) describe several attempts that have been made to plant rosewood in homogenous stands. However there is insufficient knowledge of genetic variation to assist in selection and yield improvement; research is needed to correlate oil characteristics with source material. Significant variation has been found in the percentage and aroma of oil from different plantations, reaffirming the chemical variability of the species. Production systems organized around plantations could be feasible but would take several decades to yield a product currently acceptable to the market (May and Barata, 2004).* *In 1998 the State University of Campinas (UNICAMP) began to develop a project for the extraction of oil from rosewood leaves; this project has resulted in yield and quality similar to that obtained from wood (Barata, 2005; Ereno, 2005). UNICAMP has created a plantation consisting of 10 000 rosewood seedlings intercropped with other aromatic species in an area of 30 ha. Production is expected to yield 1000 L (=945 kg) of rosewood leaf oil, with sales of USD50 000 (Barata, 2007). Chemical profile definition and sensorial evaluation of oil derived from wood and leaf sources confirmed that the leaves are a potential substitute for wood in the extraction of rosewood essential oil, representing a sustainable natural source of natural linalool (Zellner* et al., *2006). Barata (2009) believes it will take six to eight years to supply rosewood oil from leaves if conditions remain the same as today. This time period is much shorter than that needed to extract oil from plantations for wood, enhancing the attractiveness of rosewood leaf oil plantations to investors. If such plantations could be established as intercrops with shorter cycle crops such as cassava or other aromatic plants, the basis exists for a diversified community enterprise (May and Barata, 2004). WWF AVIVE in the Silves area of Brazil is another rosewood leaf oil*

Supporting Statement (SS)	Additional information
	project (Cavaliere, 2007; Wildwood, 2002). *Opinions vary on the attractiveness of the oil to perfumists. Barata (2007) believes that rosewood leaf oil will replace the wood oil in fragrance creation eventually. Some perfumists consider this oil much more fragrant than oil from the wood, although physio-chemical and sensorial experiments are needed to confirm the quality and character of the leaf oil (L.E.S. Barata, 2009). However Burfield (2004) commented "it remains to be seen whether the oil will be attractive to essential oil buyers". Wildwood (2002) reports that some aromatherapists regard its fragrance as inferior.*
	Other comments
All range States of this species were consulted. Colombia, Ecuador and Peru have expressed their support. Others have not yet responded to the consultation.	Aniba *species in general are known to have aromatic characteristics. Due to depletion of accessible rosewood trees by exploitation, other* Aniba *species may have been substituted for rosewood. Field studies have found that various species are "confused" with rosewood and extracted in its place, whether purposefully or by accident. A purported decline in quality of oil due in all probability to increased usage of different species, younger trees and mixing with synthetic linalool attest to the over-exploitation of* A. rosaeodora *(May and Barata, 2004).* *Burfield (2003) considers that wholesale adulteration of rosewood oil occurs; adulterated oils being termed "US quality" in the trade. Aroma Medical (undated) believes that it is easy to manufacture a fake oil by mixing rosewood oil with linalool and that only analysis done by an expert could detect this adulteration. Choices (2009) notes that rosewood is often adulterated with Ho wood, Ho leaf oil, synthetic linalool and linalyl acetate.* *A new commercial substitute for rosewood essential oil has been discovered: Basil* Ocimum basilicum *which is easier to cultivate and propagate than several other species tested (Anon., 2003; Maia* et al., *2004).* *Coppen (1995) reported that where there has been exploitation, the population is devoid of mature trees and significant signs of regeneration are absent. However, more recent field studies made by the National Institute for Amazonian Research (INPA) and the Center for Agroforestry Research of Amazonas (EMBRAPA-CPAA) found evidence of natural regeneration (May and Barata, 2004); although it is irregular and infrequent (Sampaio* et al., *2003).* *It is proposed that* A. rosaeodora *be included in Appendix II with the following annotation:* *#11 Designates logs, sawn wood, veneer sheets, plywood and* ***essential oil.*** *However the current annotation #11 reads as follows:* *#11 Logs, sawn wood, veneer sheets, plywood,* ***powder and extracts.***

Supporting Statement (SS)	Additional information
	Therefore the annotation proposed by Brazil would need to bear a different number if the purpose of the proposal is to cover 'essential oil' and not 'powder and extracts' and therefore essential oils would be covered as "extracts".

Reviewers: Sara Oldfield and Belinda Hawkins, Botanic Gardens Conservation International, TRAFFIC South America

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