CONVENTION SUR LE COMMERCE INTERNATIONAL DES ESPECES
DE FAUNE ET DE FLORE SAUVAGES MENACEES D'EXTINCTION

Dix-septième session de la Conférence des Parties
Johannesburg (Afrique du Sud), 24 septembre – 5 octobre 2016

Questions spécifiques aux espèces

TORTUES TERRESTRES ET TORTUES D'EAU DOUCE (TESTUDINES SPP.)

1. Le présent document a été préparé par le Secrétariat.

Historique

2. À sa 16e session (CoP16, Bangkok, 2013), la Conférence des Parties a adopté les décisions 16.109 à 16.124, *Tortues terrestres et tortues d'eau douce (Testudines spp.)*, comme suit :

À l'adresse du Secrétariat

16.109 Sous réserve de fonds externes, le Secrétariat engage des consultants indépendants chargés d'entreprendre une étude, en tenant compte des conclusions de l'atelier de Cancún sur les avis de commerce non préjudiciable et d'autres sources d'information pertinentes, pour identifier et discuter les facteurs particulièrement pertinents dans le cas d'avis de commerce non préjudiciable pour les tortues terrestres et les tortues d'eau douce. Ces facteurs doivent inclure, sans toutefois s'y limiter, les dynamiques et l'état des populations de tortues terrestres et de tortues d'eau douce, les dynamiques du commerce, les systèmes de production et le commerce de parties et de produits. Cette étude devrait fournir des orientations sur la réalisation d'avis de commerce non préjudiciable pour les tortues terrestres et les tortues d'eau douce.

16.110 Le Secrétariat met les résultats de l'étude mentionnée dans la décision 16,109 à la disposition du Comité pour les animaux pour examen, si possible, à sa 27e session.

À l'adresse du Comité pour les animaux

16.111 Le Comité pour les animaux examine l'étude entreprise conformément à la décision 16,109 et fait des recommandations, s'il y a lieu et si possible, à sa 27e session, pour examen par le Comité permanent et les Parties.

À l'adresse du Comité permanent

16.112 Le Comité permanent examine l'étude entreprise conformément à la décision 16.109 et les recommandations du Comité pour les animaux, et prépare ses propres recommandations, s'il y a lieu, pour communication aux Parties ou pour examen à la 17e session de la Conférence des Parties.

À l'adresse des Parties

16.113 Les Parties, en particulier celles de la région Asie, devraient réunir des données sur les saisies de tortues terrestres et de tortues d'eau douce vivantes appartenant à des espèces inscrites aux annexes CITES et communiquer ces données chaque année au Secrétariat, ainsi que des informations sur

l'utilisation des spécimens. Les Parties devraient fournir les données avec leur rapport annuel. Les données concernant les confiscations devraient être signalées jusqu'à la fin de 2019.

Les Parties devraient faire rapport, si possible, sur les paramètres suivants: espèces, nombre de spécimens, pays de destination (pour les exportations) ou pays d'origine/de réexportation (pour les importations) et utilisation des animaux conformément à la résolution Conf. 10.7 (Rev. CoP15), Utilisation des spécimens vivants confisqués appartenant à des espèces inscrites aux annexes.

16.114 Les Parties sont encouragées à réunir et communiquer volontairement des données comme indiqué dans la décision 16.113, sur les confiscations d'envois internationaux d'espèces de tortues d'eau douce non inscrites aux annexes CITES, de sorte que ces données puissent éclairer les méthodes de commerce illégal et fournir des informations utiles aux autorités chargées de la lutte contre la fraude et aux organes de gestion.

16.115 Les Parties sont encouragées à réunir et communiquer volontairement des données comparables sur les confiscations de spécimens de tortues terrestres et de tortues d'eau douce inscrites ou non aux annexes CITES et commercialisées au plan national. Les Parties sont encouragées à fournir les données chaque année en réponse à l'invitation du Secrétariat.

À l'adresse du Secrétariat

16.116 Le Secrétariat invite les Parties à fournir les informations précisées dans les décisions 16.114 et 16.115, examine l'information soumise au titre de la décision 16.113, fait rapport sur son évaluation des données reçues au Comité permanent, à sa prochaine session ordinaire, et fait des recommandations pour la mise en œuvre et le respect de la Convention.

À l'adresse du Comité permanent

16.117 Le Comité permanent examine les rapports soumis par le Secrétariat et ses recommandations et fait toute recommandation qu'il juge appropriée.

À l'adresse des Parties

16.118 Considérant l'échelle importante du commerce illégal et non documenté de parties et de produits de tortues terrestres et de tortues d'eau douce inscrites aux annexes CITES, les Parties devraient:

a) prendre note de ce problème et prendre, dans le cadre de leurs systèmes nationaux, des mesures pour y remédier, afin de veiller à ce que des permis CITES soient dûment délivrés et que la Convention soit pleinement mise en œuvre et appliquée;

b) examiner leurs efforts en matière de lutte contre la fraude concernant le commerce de ces parties et produits et prendre les mesures qui s'imposent pour dissuader et détecter le commerce illégal et non documenté;

c) mener des actions d'éducation et de sensibilisation auprès des établissements qui se consacrent à l'élevage en ferme de tortues, des acheteurs et des vendeurs de carapaces, d'os et de cartilage (calipée) de tortues, ainsi que d'autres parties, des fabricants de médicaments et des transporteurs, courtiers et autres acteurs clés, afin de s'assurer que les parties et produits de tortues sont commercialisés conformément aux législations nationales et aux exigences CITES; et

d) faire rapport sur leurs progrès dans ces domaines, par l'entremise du Secrétariat, à la 65e session du Comité permanent.

À l'adresse du Secrétariat

16.119 Le Secrétariat :

a) communique au Comité permanent les rapports fournis conformément à la décision 16.118, en faisant toute recommandation qu'il juge appropriée.

b) cherche à obtenir un financement pour établir et réunir une équipe spéciale CITES sur les tortues terrestres et les tortues d'eau douce qui serait chargée de mettre en place l'échange de renseignements et d'élaborer des stratégies de lutte contre le commerce illégal. Les membres de l'équipe spéciale pourraient comprendre le Réseau ASEAN de lutte contre la fraude concernant les espèces sauvages, les membres du Consortium international de lutte contre la criminalité liée aux espèces sauvages et les Parties d'Asie les plus touchées par le commerce illégal de tortues terrestres et de tortues d'eau douce ainsi que de leurs parties et produits; et

c) fait rapport sur les travaux de l'équipe spéciale aux 65e et 66e sessions du Comité permanent et fait toute recommandation qu'il juge appropriée.

À l'adresse du Comité permanent

16.120 Le Comité permanent examine, à ses 65e et 66e sessions, toutes les informations et recommandations soumises par le Secrétariat conformément à la décision 16.119 et fait toute recommandation qu'il juge appropriée.

À l'adresse des Parties

16.121 Les Parties, en particulier celles de la région Asie, sont encouragées à :

a) renforcer leurs activités de lutte contre la fraude pour dissuader, détecter et agir contre le commerce illégal et non documenté d'espèces de tortues terrestres et d'eau douce vivantes inscrites aux annexes CITES, ainsi que de leurs parties et produits, notamment en dispensant la formation pertinente aux autorités nationales chargées de la lutte contre la fraude, en renforçant l'application et le respect de la Convention pour ces espèces, en diffusant des matériels d'identification et en améliorant la sensibilisation de l'appareil judiciaire; et

b) fournir au Secrétariat des informations pertinentes sur leurs progrès réalisés dans ces domaines pour qu'il puisse faire rapport à la 65e session du Comité permanent.

À l'adresse du Secrétariat

16.122 Le Secrétariat :

a) reconnaissant la prévalence d'un commerce illégal persistant de tortues terrestres et de tortues d'eau douce vivantes pour le commerce médicinal, de l'alimentation et des animaux de compagnie qui menace la survie de certaines espèces dans la nature et porte atteinte à l'intégrité de la Convention, cherche un financement externe et, sous réserve de ce financement, engage un consultant chargé d'analyser les données communiquées, d'identifier les espèces prévalant dans le commerce illégal et de documenter les incidents de commerce illégal, les routes du commerce (y compris le commerce basé sur l'internet), les méthodes de dissimulation et d'autres aspects relevant des dispositions d'application de la CITES concernant le commerce des tortues terrestres et des tortues d'eau douce;

b) sous réserve d'un financement externe, engage un consultant chargé d'identifier et d'évaluer les matériels d'identification des tortues terrestres et des tortues d'eau douce et de renforcement des capacités et d'aider à élaborer des matériels supplémentaires s'il y a lieu, y compris la préparation et la distribution de matériels d'identification multilingues [anglais, bahasa d'Indonésie, bahasa de Malaisie (melayu), bengali, birman, chinois, hindi, khmer, lao, ourdou, thaï, vietnamien et autres

langues au besoin] axés sur les carapaces et morceaux de carapaces de tortues terrestres et de tortues d'eau douce; et

c) fait rapport sur les progrès de la décision 16.121, paragraphe b) et des paragraphes a) et b) ci-dessus, avec ses recommandations, aux 65e et 66e sessions du Comité permanent.

À l'adresse du Comité permanent

16.123 Le Comité permanent examine à ses 65e et 66e sessions toute l'information soumise par le Secrétariat au titre de la décision 16.122 et fait toute recommandation qu'il juge appropriée.

À l'adresse du Comité pour les animaux

16.124 Le Comité pour les animaux inclut, à titre prioritaire, *Cuora galbinifrons* et *Mauremys annamensis* dans son examen périodique des annexes.

3. Ces décisions concernent: des études sur la formulation des avis de commerce non préjudiciable; le commerce illégal; le matériels d'identification; la collecte de données sur les saisies et les confiscations; le renforcement des capacités et la formation; la lutte contre la fraude; l'établissement d'une équipe spéciale CITES sur les tortues terrestres et les tortues d'eau douce; et l'examen périodique des annexes. À sa 66e session (SC66, Genève, janvier 2016), le Comité permanent a demandé au Secrétariat de faire rapport sur la mise en œuvre des décisions 16.109 à 16.124 à la présente session de la Conférence des Parties.[1]

Avis de commerce non préjudiciable: décisions 16.109 à 16.112

4. A la 27e session du Comité pour les animaux (AC27, Veracruz, avril 2014), le Secrétariat a présenté le document AC27 Doc.20, expliquant qu'il n'était pas encore en mesure de fournir l'étude demandée dans la décision 16.109, mais qu'il avait entamé des discussions avec l'UICN afin d'entreprendre cette étude dans la limite des ressources disponibles. Le Comité pour les animaux a pris note de cette explication et a établi un groupe de travail intersessions sur les tortues terrestres et les tortues d'eau douce, pour accomplir les tâches demandées dans la décision 16.111.

5. A l'issue de la 27e session du Comité pour les animaux, le Secrétariat, grâce à un financement généreux de la Suisse et de l'Union européenne, a pu confier l'étude demandée dans la décision 16.109 au Groupe CSE/UICN de spécialistes des tortues terrestres et d'eau douce. Conformément à cette décision, ledit groupe de spécialistes a élaboré des orientations à l'intention des autorités scientifiques et organes de gestion CITES portant sur les avis de commerce non préjudiciable et la gestion du commerce pour les tortues terrestres et les tortues d'eau douce.

6. Conformément à la décision 16.111, le Comité pour les animaux, à sa 28e session (AC28, Tel Aviv, août 2015), a examiné les orientations (voir l'annexe 2 du document AC28 Doc. 15).[2] Le Comité s'est félicité de l'étude et des orientations, et a fait part de ses conclusions à la 66e session du Comité permanent, dans le document SC66 Doc. 57.2.[3] Le Comité permanent a demandé que les orientations soient communiquées aux Parties.

7. L'étude, intitulée *Non-Detriment Findings and Trade Management for Tortoises and Freshwater Turtles - a guide for CITES Scientific and Management Authorities,* (Les avis de commerce non préjudiciable et la gestion du commerce des tortues terrestres et des tortues d'eau douce - Des orientations pour les autorités scientifiques et les organes de gestion de la CITES) est disponible, en anglais, sur le site web de la CITES et sera communiquée aux Parties par une notification.

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1 https://cites.org/sites/default/files/eng/com/sc/66/ExSum/E-SC66-Sum-09.pdf

2 https://cites.org/sites/default/files/fra/com/ac/28/F-AC28-15-A2.pdf

3 https://cites.org/sites/default/files/fra/com/sc/66/F-SC66-57-02.pdf

Données sur les saisies, les confiscations et l'utilisation de spécimens: décisions 16.113 à 16.117

8. Le Secrétariat a envoyé la notification aux Parties n° 2013/062, le 20 décembre 2013,[4] pour leur rappeler de soumettre les données requises dans la décision 16.113 avec leurs rapports annuels. Les rapports pour 2014 devaient être présentés au 31 octobre 2014. La notification invitait les Parties à soumettre en même temps les informations précisées dans les décisions 16.114 et 16.115. A la 65e session du Comité permanent (SC65, Genève, juillet 2014), le Secrétariat a indiqué qu'à moins qu'il n'y ait une bonne réponse globale, et que les Parties ne fournissent des informations selon les paramètres suggérés dans ces décisions, il pourrait être difficile pour lui de faire des évaluations dignes de ce nom, comme requis dans la décision 16.116 ou, pour le Comité permanent, de faire les recommandations appropriées conformément à la décision 16.117.

Commerce illégal et non documenté de parties et de produits de tortues terrestres et de tortues d'eau douce non inscrites aux annexes CITES (décisions 16.117 à 16.120)

9. La notification aux Parties n° 2013/062 invitait les Parties à soumettre un rapport au Secrétariat, conformément aux dispositions de la décision 16.118. Le Pakistan a communiqué un rapport de ce type. Conformément au paragraphe a) de la décision 16.119, le rapport a été mis à la disposition du Comité permanent dans l'annexe 1 au document SC65 Doc. 45.[5] Concernant les obligations de rapport indiquées dans le paragraphe d) de la décision 16.118, et dans le paragraphe b) de la décision 16.121, la Thaïlande a soumis, en avril 2014, des information sur les saisies de tortues terrestres et de tortues d'eau douce inscrites aux annexes CITES, couvrant la période de 2013 à avril 2014, tel que figurant dans l'annexe 2 au document SC65 Doc. 45. Le Secrétariat, lors de la 65e session du Comité permanent, a noté que l'information de la Thaïlande semblait plus en rapport avec ce qui était demandé dans la décision 16.113. En outre, le Secrétariat a noté qu'il n'y avait eu que peu de réponses des Parties à la décision 16.118, et que l'on savait peu de choses sur les progrès réalisés par les Parties en matière d'application des activités demandées dans cette décision. Le Secrétariat a également fait remarquer que les efforts du Comité permanent, lorsqu'il souhaitera faire les recommandations qu'il juge appropriées, comme demandé dans la décision 16.120, pourraient en être entravés.

Lutte contre la fraude et renforcement des capacités: décisions 16.121 à 16.123

10. La notification aux Parties n° 2013/062 invitait les Parties à soumettre leurs rapports au Secrétariat conformément aux dispositions des paragraphes a) et b) de la décision 16.121. À la 65e session du Comité permanent, le Secrétariat a noté que, comme cela avait été observé concernant la décision 16.118, il y avait eu très peu de réponses des Parties au paragraphe b) de la décision 16.121. Le Pakistan et la Thaïlande ont soumis leurs reports, comme indiqué au paragraphe 9 ci-dessus, et les États de l'Union européenne (UE) ont fourni au Secrétariat des données sur les saisies de tortues terrestres et de tortues d'eau dans les frontières de l'UE en 2012 (voir l'annexe 3 au document SC65 Doc. 45). Un résumé des données sur les saisies de l'UE, préparé par le Secrétariat, a été mis à disposition en annexe 4 au document SC65. Doc 45.

Examen périodique des annexes: décision 16.124

11. A sa 27e session, le Comité pour les animaux a retenu les espèces *Cuora galbinifrons* et *Mauremys annamensis* pour son examen périodique des annexes, et le Viet Nam a accepté de se charger de cet examen. Les résultats ont été présentés par le Viet Nam au Comité pour les animaux à sa 28e session, dans les documents AC28 Doc. 20.3.8 (examen périodique de *Cuora galbinifrons*) et AC28 Doc. 20.3.9 (examen périodique de *Mauremys annamensis*). Le Comité a souscrit aux recommandations de ces examens, demandant qu'une proposition soit faite de transférer les deux espèces à l'Annexe I.

12. Ce faisant, le Comité pour les animaux a conclu la mise en œuvre de la décision 16.124, comme l'a indiqué son président au Comité permanent dans le document SC66 Doc. 24, et décrit dans le document CoP17 Doc. 10.2.1 (rapport du président du Comité pour les animaux). Le Secrétariat note que les propositions correspondantes n'ont pas été soumises par le Viet Nam pour examen à la présente session de la Conférence des Parties.

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4 https://cites.org/sites/default/files/notif/F-Notif-2013-062.pdf

5 https://cites.org/sites/default/files/fra/com/sc/65/F-SC65-45.pdf

Mise en œuvre des décisions 16.113 à 16.123

13. À la 65e session du Comité permanent, le Secrétariat a observé que les décisions sur les tortues terrestres et les tortues d'eau douce *(Testudines spp.*) adoptées à la CoP16 complètent de manière exhaustive (et semblent parfois dupliquer) les dispositions existantes de la résolution Conf. 11.9 (Rev. CoP13), *Conservation et commerce des tortues terrestres et des tortues d'eau douce*.[6] Le Secrétariat a également observé qu'il y avait eu peu de réponses des Parties aux demandes de données ou de rapports, tout en reconnaissant que les obligations de rapport considérables dans les différentes décisions pouvaient parfois avoir été, dans une certaine mesure, dissuasives ou source de confusion (p. ex., les instructions d'établissement de rapports dans la décision 16.121 semblent partiellement recouvrir celles des décisions 16.113 et 16.118).

14. Le Comité permanent, tenant compte des avis exprimés par le Secrétariat, a conclu que la mise en œuvre des travaux décrits dans le paragraphe b) de la décision 16.119, et les paragraphes a) et b) de la décision 16.122 pouvaient compléter ou remplacer partiellement les rapports de situation et les informations que les Parties étaient censées soumettre conformément aux décisions 16.113 à 16.118, au paragraphe a) de la décision 16.119, et à la décision 16.121. Il a également conclu que la mise en œuvre du paragraphe b) de la décision 16.119, et les paragraphes a) et b) de la décision 16.122 pouvaient renforcer la mise en place d'activités ciblées, et a invité les Parties à envisager d'aider financièrement le Secrétariat à mettre en œuvre ces activités.[7]

15. En réponse à cette demande, les États-Unis d'Amérique ont fourmi au Secrétariat des fonds pour mettre en œuvre le paragraphe b) de la décision 16.119, et les paragraphes a) et b) de la décision 16.122. Le Secrétariat est très reconnaissant à ce pays de ce généreux soutien.

16. Le Secrétariat a engagé l'Union internationale pour la conservation de la nature (UICN) pour soutenir la mise en œuvre des paragraphes a) et b) de la décision 16.122. À la 66e session du Comité permanent, le Secrétariat a indiqué que les attendus de ce travail seraient un rapport sur le commerce légal et illégal de spécimens de tortues terrestres et de tortues d'eau douce, ainsi qu'un rapport sur les matériels d'identification et de renforcement des capacités portant sur ces spécimens. Ces rapports ont été achevés depuis la 66e session du Comité permanent, et sont examinés plus en détail ci-après.

17. Le Secrétariat estime que les décisions 16.113 à 16.123 ont été mises en œuvre par la production des deux rapports, et par la réunion de l'équipe spéciale CITES sur les tortues terrestres et les tortues d'eau douce prévue avant la CoP17. Il recommande de supprimer ces décisions.

Prévalence d'un commerce illégal persistant: paragraphe a) de la décision 16.122

18. Le résumé du rapport sur le commerce légal et illégal de spécimens de tortues terrestres et de tortues d'eau douce, commandé par le Secrétariat conformément aux dispositions du paragraphe a) de la décision 16.122, est disponible en français, anglais et espagnol, à l'annexe 1 au présent document. Le rapport complet n'est disponible qu'en anglais et figure à l'annexe 2.

19. Un objectif initial de l'étude était d'examiner le commerce de tortues terrestres et de tortues d'eau douce à diverses fins, spécifiquement pour le commerce médicinal, des animaux de compagnie et de l'alimentation. Toutefois, cela s'est révélé impossible dans la pratique, comme l'explique le rapport. C'est la raisons pour laquelle l'étude différencie le commerce de spécimens vivants à toutes fins du commerce de parties et produits. Elle exclut le secteur des animaux de compagnie mais couvre les spécimens commercialisés comme aliments, trophées, objets de décoration, souvenirs, et à des fins scientifiques.

20. Comme l'indique le rapport, il existe environ 320 espèces de tortues terrestres et de tortues d'eau douce, dont 168 sont inscrites aux annexes de la CITES. Ces dernières se trouvent dans 163 États ou territoires, qui sont pour la plupart Parties à la CITES.

21. Les données sur les saisies pour la période de 2000 à 2015 ont été compilées à partir de diverses sources pour l'étude, et ont révélé que des spécimens de 145 espèces de tortues terrestres et de tortues d'eau douce

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6 https://cites.org/sites/default/files/fra/com/sc/65/F-SC65-45.pdf

7 https://www.cites.org/sites/default/files/fra/com/sc/65/exsum/F-SC65-Sum-08.pdf

(représentant quasiment 45% de toutes les espèces connues) avaient fait l'objet de saisies, y compris 124 espèces inscrites aux annexes de la CITES. Sur les 21 espèces les plus fréquemment saisies, quatre sont inscrites à l'Annexe I et 15 à l'Annexe II. En outre, 15 des 21 espèces les plus fréquemment saisies sont originaires d'Asie, y compris les cinq espèces les plus fréquemment saisies.

22. Les données sur les saisies indiquent qu'entre 2000 et 2015, le nombre de saisies a augmenté, tout comme le nombre de spécimens confisqués. Ces données révèlent une diminution temporaire entre 2007 et 2011, suivie d'une montée en flèche du nombre de saisies atteignant des niveaux sans précédent.

23. Le Secrétariat aimerait souligner un certain nombre de conclusions de l'étude, à savoir:

Commerce légal de spécimens vivants

i) Les données disponibles pour la période du 1er janvier 2011 au 31 décembre 2014 ont été compilées et comparées afin de déterminer l'ampleur du commerce légal de tortues terrestres et de tortues d'eau douce. Les exportations nettes de spécimens vivants de toutes les espèces de tortues terrestres et de tortues d'eau douce enregistrées dans la base de données CITES sur le commerce, tenue par le PNUE/WCMC, ont été mises sous forme de tableau et additionnées. Il en est ressorti un volume total de commerce enregistré de 3 457 703 spécimens vivants de tortues terrestres et tortues d'eau douce pour la période quadriennale.

ii) Le commerce légal de tortues terrestres et de tortues d'eau douce vivantes couvrait 64 genres et incluait 584 spécimens d'espèces de l'Annexe I (principalement des spécimens rapatriés et d'autres transferts d'animaux vivants confisqués); 2 213 729 spécimens d'espèces de l'Annexe II; et 1 243 390 spécimens d'espèces de l'Annexe III. Cela correspond à une moyenne annuelle d'environ 865 000 tortues terrestres et tortues d'eau douce vivantes dans le commerce.

iii) La grande majorité des tortues terrestres et des tortues d'eau douce vivantes faisant l'objet d'un commerce légal proviennent d'établissements d'élevage en captivité et en ranch.

iv) On estime que près de 552 000 tortues terrestres et tortues d'eau douce vivantes présentes dans le commerce légal du 1er janvier 2011 au 31 décembre 2014 étaient d'origine sauvage, avec une moyenne de 138 000 spécimens par an.

Commerce illégal de spécimens vivants

v) Durant la période de 2000 à 2015, on a enregistré 2561 saisies d'animaux vivants, représentant 303 774 spécimens.

vi) Selon les données disponibles, les saisies de tortues terrestres et de tortues d'eau douce représenteraient environ un quart d'un pour cent (0,25%) du nombre total de tortues faisant l'objet d'un commerce légal.

vii) Fait encore plus significatif, ces données portent à croire que les tortues terrestres et les tortues d'eau douce commercialisées illégalement proviennent principalement de la nature, et que le nombre de spécimens saisis représente approximativement 19% du volume des tortues terrestres et des tortues d'eau douce d'origine sauvage entrant dans le commerce légal. Sachant que tout le commerce illégal n'est pas détecté, le commerce illégal pourrait représenter un nombre important d'animaux prélevés dans la nature, avec une incidence négative probable sur les populations sauvages.

viii) Il semblerait que les activités de prélèvement de tortues terrestres et de tortues d'eau douce dans la nature soient vastes et diffuses, et mobilisent un grand nombre de préleveurs locaux, un ou plusieurs réseaux d'individus, de taille modeste, agissant sur le plan régional en tant qu'acheteurs, grossistes, exportateurs et importateurs.

ix) La tortue étoilée d'Inde (*Geochelone elegans*, Annexe II) est l'espèce la plus fréquemment confisquée, avec 34 080 spécimens saisis entre 2000 et 2015. La suivent, par ordre d'importance: la carettochélyde d'Australasie (*Carettochelys insculpta*, Annexe II), avec 29 692 spécimens saisis; *Cuora amboinensis*,

Annexe II), avec plus de 20 000 spécimens saisis; *Nilssonia gangetica*, Annexe I), avec plus de 16 428 spécimens saisis; et la géoclemmyde d'Hamilton (*Geoclemys hamiltonii*, Annexe I), avec plus de 11 451 spécimens saisis.

x) Le nombre de spécimens vivants (147 024) originaires du pays de saisie et donc probablement protégé par les lois nationales sur la conservation des espèces sauvages) était plus de deux fois supérieur à celui de spécimens non indigènes saisis (69 216). Cela semblerait indiquer soit une probabilité de détection plus élevée pour les spécimens indigènes commercialisés illégalement, soit une plus grande connaissance, de la part des inspecteurs, des espèces indigènes et de la législation en vigueur pour les protéger et donc, un motif de saisie.

Commerce illégal de parties et produits

xi) Pour la période 2000 à 2015, 1001 saisies de parties et produits ont été enregistrées, représentant 2113 kg de matière, plus 78 818 articles.

xii) Les information sur les saisies de parties et produits de tortues terrestres et de tortues d'eau douce dans le commerce sont nettement moins complètes que pour les spécimens vivants.

Tendances du commerce illégal

xiii) De nombreuses saisies de tortues terrestres et de tortues d'eau douce semblent concerner un petit nombre de spécimens, transportés ou conservés comme animaux de compagnie ou souvenirs personnels.

xiv) Fait encore plus significatif, un petit nombre de saisies de cargaisons massives (c.-à-d., de plusieurs centaines, voire milliers de spécimens vivants) suggère l'implication de réseaux criminels bien organisés, composés de préleveurs, commerçants locaux, grossistes, exportateurs et importateurs.

xv) Les tendances présentent des différences géographiques avec, en Europe et en Amérique du Nord, un nombre relativement élevé de saisies concernant de petites quantités de spécimens par opération et, en Asie, un plus petit nombre de saisies concernant de plus grandes quantités de spécimens.

xvi) S'agissant des saisies d'espèces de l'Annexe I, il existe apparemment un important commerce illégal de géoclemmydes d'Hamilton (*Geoclemys hamiltonii*), de *Nilssonia gangetica* et de géoémydes tricarénées (*Melanochelys tricarinata*), originaires d'Asie du Sud et expédiées vers des pays d'Asie du Sud-Est et de l'Est.

xvii) Il existe des importations illégales de différentes espèces de tortues terrestres de Madagascar en Asie et, en nombre plus restreint, en Europe; la tortue d'Égypte (*Testudo kleinmanni*) en provenance d'Afrique du Nord est importée illégalement en Europe et ailleurs.

xix) Les informations disponibles suggèrent que, souvent, les cargaisons illégales de tortues terrestres et de tortues d'eau douce évitent les trajets directs et les centres de transport faciles d'accès. Il semblerait qu'elles soient acheminées intentionnellement à travers le plus grand nombre possible d'itinéraires différents, tirant parti des réseaux routiers, de lignes aériennes ou de transport maritime, effectuant souvent de longs détours et transitant délibérément par plusieurs pays.

xx) La plupart des saisies ont eu lieu aux points de passage des frontières, notamment aux aéroports, ports maritimes et postes d'inspection frontaliers terrestres, suggérant que les activités de détection et de saisies ont plus de chances de réussir en de tels points, et que ceux-ci devraient être le point de départ de toute action de lutte contre la fraude.

xxi) Dans 61% des saisies, les cargaisons illégales ne comprenaient que des tortues d'eau douce et des tortues terrestres. Ces cargaisons représentaient 77% des spécimens vivants saisis.

xxii) Internet est devenu un outil incontournable pour annoncer et organiser les ventes de tortues terrestres et de tortues d'eau douce, légales aussi bien qu'illégales.

Freins à la lutte contre la fraude

xxiii) Les efforts déployés pour lutter contre le commerce illégal de tortues terrestres et de tortues d'eau douce sont souvent freinés par le fait que les agents chargés de la lutte contre la fraude ne disposent pas des capacités requises pour identifier les espèces entrant dans le commerce, et déterminer si elles sont protégées ou inscrites aux annexes CITES.

xxiv) L'efficacité des actions menées contre le commerce illégal de tortues terrestres et de tortues d'eau douce se heurte à deux obstacles: un manque de données précises et détaillées, compliquant l'évaluation de l'importance du commerce, des saisies, des tendances et de l'évolution des caractéristiques au fil du temps; et un échange insuffisant des renseignements au niveau des autorités.

24. Comme cela a été indiqué à la 66e session du Comité permanent, les conclusions, informations et analyses contenue dans le rapport sur le commerce légal et illégal de spécimens de tortues terrestres et de tortues d'eau douce devraient être étudiées par l'équipe spéciale CITES sur les tortues terrestres et les tortues d'eau douce, qui doit être convoquée conformément au paragraphe b) de la décision 16.119. Le Secrétariat estime que l'étude vient à point nommé, qu'elle contient des renseignements précieux qui contribueront de manière significative aux travaux de l'équipe spéciale, et aidera à élaborer des stratégies de lutte contre le commerce illégal de tortues terrestres et de tortues d'eau douce.

Matériels d'identification et de renforcement des capacités: paragraphe b) de la décision 16.122,

25. Le résumé du rapport sur les matériels d'identification et de renforcement des capacités concernant les spécimens de tortues terrestres et de tortues d'eau douce dans le commerce international, commandé par le Secrétariat conformément au paragraphe b) de la décision 16.122, est disponible en français, anglais et espagnol, à l'annexe 3 au présent document. Le rapport complet n'est disponible qu'en anglais et figure à l'annexe 4.

26. Le Secrétariat souhaite attirer l'attention de la Conférence des Parties sur les principales conclusions de l'étude, à savoir:

Tortues terrestres et tortues d'eau douce

i) Des guides et autres matériels d'identification précis, détaillés et conviviaux sont disponibles sur internet pour la majorité des espèces de tortues terrestres et de tortues d'eau douce, et peuvent être aisément téléchargés.

ii) Si l'essentiel du matériel d'identification des tortues terrestres et des tortues d'eau douce vivantes a été publié en anglais, des guides appropriés, avec une couverture mondiale, sont également disponibles (en format pdf) en chinois, espagnol, français et turc; il existe en outre des guides régionaux au moins dans les langues suivantes: bahasa indonésien, bahasa melayu, birman, français, japonais, khmer, laotien, espagnol, thaïlandais et vietnamien.

iii) Une application précise et conviviale pour smartphone, couvrant toutes les espèces connues de tortues terrestres, tortues d'eau douce et tortues marines, mise à jour en 2011 et présentant plusieurs illustrations en couleur pour chaque espèce, est disponible au prix de 10 USD environ.

iv) La taxonomie des tortues terrestres et des tortues d'eau douce, y compris les espèces inscrites aux annexes de la CITES, change relativement souvent, et nombre de références disponibles utilisent une nomenclature dépassée ou des informations obsolètes sur le statut CITES. Il peut être nécessaire de consulter la base de données SpeciesPlus[8] pour vérifier le nom actuellement valide d'une espèce, et l'annexe CITES où elle figure.

v) Pour les tortues terrestres et/ou les tortues d'eau douce de certaines régions, notamment d'Amérique centrale, de Nouvelle-Guinée, d'Afrique subsaharienne (à l'exclusion de l'Afrique australe et de

[8] http://speciesplus.net/species

Madagascar) et des Caraïbes, le matériel d'identification disponible est relativement ancien et dépassé et/ou difficile à obtenir. Il existe des guides mondiaux et régionaux couvrant la plupart des espèces de ces régions, voire toutes, mais il est recommandé de les vérifier afin de déterminer la nomenclature actuelle des espèces de ces régions.

vi) Bien qu'il existe du bon matériel d'identification pour les tortues terrestres et les tortues d'eau douce vivantes, il peut être difficile de l'appliquer correctement car l'aspect de nombreuses espèces varie selon l'âge et les individus. Il pourrait se révéler plus utile d'élaborer un mécanisme permettant aux inspecteurs de confirmer leurs identifications initiales plutôt que du matériel d'identification supplémentaire présentant les mêmes informations sous une forme légèrement différente.

vii) Le matériel de renforcement des capacités spécifique au commerce de tortues terrestres et des tortues d'eau douce vivantes inclut des orientations pour la formulation des avis de commerce non préjudiciable (ACNP), des orientations pour déterminer si des spécimens entrant dans le commerce sont d'origine sauvage ou ont été élevés en captivité, ainsi que des orientations plus générales sur la mise en œuvre de la CITES.

viii) Des orientations sur les ACNP pour les tortues terrestres et les tortues d'eau douce sont disponibles, mais beaucoup peut encore être fait pour compiler et fournir des informations pertinentes aux autorités scientifiques CITES et d'autres entités. Il faudrait en particulier accorder plus d'attention aux techniques d'évaluation et de suivi des populations, ainsi qu'à la dynamique et à la structure des populations, notamment en ce qui concerne le taux de recrutement net et brut de la population par rapport au taux de prélèvement pour le commerce, et à d'autres impacts sur les populations.

ix) Il reste encore beaucoup à faire pour développer, améliorer et perfectionner le processus d'évaluation des systèmes d'élevage en captivité pour les tortues terrestres et les tortues d'eau douce (en particulier en matière d'inspection, de vérification et probablement d'enregistrement des établissements d'élevage en captivité). Le matériel et l'expertise disponibles pour différencier les spécimens commercialisés nés en captivité, élevés en captivité et d'origine sauvage pourraient également être considérablement améliorés.

Parties et produits de tortues terrestres et de tortues d'eau douce

x) Contrairement à la large gamme de matériel d'identification disponible pour les tortues terrestres et les tortues d'eau douce vivantes, le matériel permettant d'identifier leurs parties et produits est rare, incomplet et difficile d'accès.

xi) Même en disposant du meilleur matériel disponible, certains spécimens sont très difficiles à identifier et un deuxième avis est souvent nécessaire, généralement fondé sur une photographie du spécimen concerné, partagée par courriel ou téléphone mobile. Étant donné qu'il est souvent difficile d'identifier avec certitude les crânes, os et carapaces entières ou cassées au niveau de l'espèce, le recours à des spécialistes rompus aux études anatomiques, morphologiques, paléontologiques ou archéologiques est presque toujours nécessaire. L'analyse ADN constitue une autre solution possible.

xii) Il est probablement très difficile de mettre au point du matériel d'identification précis pour tous les os, fragments et produits de tortues susceptibles d'apparaître dans le commerce international et, s'il était possible de le faire, les efforts nécessaires pour y parvenir risqueraient d'être disproportionnés par rapport à leur intérêt pratique pour l'utilisateur final. Il serait probablement plus utile d'élaborer du matériel permettant d'identifier les catégories de parties et produits de tortues entrant dans le commerce pour sensibiliser les inspecteurs à ces types de spécimens et leur apprendre à les reconnaître. Sachant que l'identification exacte reste difficile, il conviendrait d'orienter les inspecteurs quant aux autres ressources et compétences disponibles en matière d'identification.

Autres questions

xiii) Il serait souhaitable d'améliorer l'accès aux textes législatifs et réglementaires à jour concernant les tortues terrestres et les tortues d'eau douce afin d'aider les autorités à évaluer le statut juridique des spécimens dans le commerce.

xiv) Il serait utile que les Parties expriment leurs besoins spécifiques en matière de renforcement des capacités s'agissant des tortues terrestres et des tortues d'eau douce par des moyens appropriés tels que les rapports annuels ou bisannuels, ou des études sur ces besoins menées par le Secrétariat et les comités permanents de la CITES.

27. Le rapport conclut par un certain nombre de recommandations. Le Secrétariat estime que la mise en œuvre de certaines d'entre elles pourrait être très bénéfique à l'application des dispositions de la CITES relatives au commerce de spécimens de tortues terrestres et de tortues d'eau. C'est dans cet esprit qu'il a préparé des projets de décisions pour examen par la Conférence des Parties, présentés à l'annexe 5 au présent document. Les répercussions en termes de budget et de charge de travail sont traitées à l'annexe 6.

28. A l'instar du rapport sur le commerce légal et illégal de spécimens de tortues terrestres et de tortues d'eau douce, le rapport sur l'identification et le renforcement des capacités sera une contribution utile aux délibérations de l'équipe spéciale CITES sur les tortues terrestres et les tortues d'eau douce.

Équipe spéciale CITES sur les tortues terrestres et les tortues d'eau douce: paragraphe b) de la décision 16.119

29. Deux versions du rapport sur le commerce légal et illégal de spécimens de tortues terrestres et de tortues d'eau douce ont été préparées. La version publique est présentée à l'annexe 2 au présent document. Une version confidentielle, destinée exclusivement à la lutte contre la fraude, sera présentée à la réunion de l'équipe spéciale CITES sur les tortues terrestres et les tortues d'eau douce.

30. Au moment de la rédaction du présent document, le Secrétariat était en train de prendre des dispositions pour convoquer l'équipe spéciale CITES sur les tortues terrestres et les tortues d'eau douce. Les deux rapports décrits plus haut seront présentés et discutés. Le Secrétariat entend organiser une réunion de l'équipe spéciale avant la CoP17 afin que ses conclusions puissent être prises en compte dans les discussions sur les tortues terrestres et les tortues d'eau douce à la présente session. Le Secrétariat fera un point oral à ce sujet lors de la CoP17.

Recommandations

31. La Conférence des Parties est invitée à :

    a) prendre note du présent document et de ses annexes;

    b) adopter les projets de décisions figurant à l'annexe 5 au présent document;

    c) prendre en considération, selon qu'il convient, les stratégies et mesures proposées suite à la réunion de l'équipe spéciale CITES sur les tortues terrestres et les tortues d'eau douce, que le Secrétariat mettra à disposition sous forme d'addendum au présent document; et

    d) accepter la suppression des décisions 16.109, 16.110, 16.111, 16.112, 16.113, 16.114, 16.115, 16.116, 16.117, 16.118, 16.119, 16.120, 16.121, 16.122, 16.123 et 16.124, lesquelles ont été mises en œuvre.

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Commerce illégal de tortues terrestres et de tortues d'eau douce

Paragraphe a) de la décision 16.122

Résume

Cette étude présente les résultats d'une analyse des données sur les saisies documentant le commerce illégal de tortues terrestres et de tortues d'eau douce dans le monde. Les données sur les saisies ont été compilées pour la période 2000-2015 à partir de diverses sources, principalement la base de données des saisies d'espèces sauvages de l'ONUDC, complétée par les saisies figurant dans le *Bulletin TRAFFIC*, dans le bulletin d'information *A LA TRACE* de Robin des Bois, et dans divers communiqués de presse, informations parues dans les médias et rapports techniques. Les données sur les saisies de tortues terrestres et de tortues d'eau douce vivantes, et de leurs parties et produits ont été prises en compte, ce qui correspond à un ensemble de données couvrant 3562 incidents uniques classés par espèce, lieu et date. Ces informations comportent 2561 données sur les saisies de spécimens vivants, couvrant 303 774 tortues terrestres et tortues d'eau douce vivantes, ainsi que 1001 saisies de parties et produits représentant au total 2113 kg de matière, et 78 818 articles.

Le volume total du commerce légal et illégal de tortues terrestres et de tortues d'eau douce vivantes a été calculé pour la période 2000-2014. En moyenne, quelque 865 000 spécimens vivants d'espèces CITES ont été enregistrés chaque année comme commercialisés; la plupart provenaient d'élevages en captivité ou en ranch, et 138 000 avaient été prélevés dans la nature. Le volume annuel total du commerce pour le principal pays d'exportation de tortues terrestres et de tortues d'eau douce du monde – les États-Unis d'Amérique – représentait environ 7,3 millions de spécimens (en grande partie élevés en captivité), avec une moyenne annuelle de 249 000 saisies. Pour la même période, 26 442 tortues terrestres et tortues d'eau douce vivantes ont été saisies en moyenne chaque année dans le monde, dont la quasi-totalité était d'origine sauvage. Ainsi, le nombre de spécimens de tortues terrestres et de tortues d'eau douce commercialisés illégalement représente au minimum un quart d'un pour cent du commerce total enregistré mais, fait encore plus significatif, environ 19% du volume de spécimens de tortues terrestres et de tortues d'eau douce d'origine sauvage commercialisés légalement.

La plus grande quantité globale de saisies concerne la tortue étoilée d'Inde (*Geochelone elegans*, Annexe II), soit 34 080 spécimens saisis, suivie par la carettochélyde d'Australasie (*Carettochelys insculpta*, Ann. II), 29 692 spécimens, *Cuora amboinensis*, (Ann. II), dépassant largement 20 000 spécimens vivants, *Nilssonia gangetica* (Ann. I), avec plus de 16 428 spécimens, et la géoclemmyde d'Hamilton (*Geoclemys hamiltonii*, Ani), avec plus de 11 451 spécimens vivants saisis entre 2000-2014. Dans l'ensemble, quelque 145 espèces de tortues terrestres et de tortues d'eau douce figurent dans les données sur les saisies de spécimens vivants, dont 4 espèces sont inscrites à l'Annexe I et 15 à l'Annexe II représentant les 21 espèces les plus importantes en termes de volumes saisis.

Sur le plan géographique, on observe différentes tendances pour les saisies, avec, en Europe et en Amérique du Nord des saisies relativement nombreuses correspondant à un nombre plus faible de spécimens saisis par opération, et en Asie, un nombre plus restreint de saisies correspondant à des quantités nettement plus importantes de spécimens. Au total, 87 pays et juridictions ont signalé des saisies de tortues terrestres et de tortues d'eau douce vivantes, plusieurs pays d'Asie, 28 pays de l'Union européenne, la Colombie et les États-Unis étant ceux qui ont saisi le plus grand nombre de spécimens vivants. Les pays asiatiques se trouvaient aussi en tête de la liste de pays de provenance des spécimens vivants saisis. Les saisies les plus importantes de tortues terrestres et de tortues d'eau douce concernaient des spécimens destinés à des pays d'Asie, à l'Union européenne et aux États-Unis. Globalement, l'origine et la destination des cargaisons illégales étaient très diverses, constituant un réseau mondial diffus; les flux commerciaux les plus importants en termes de nombre de spécimens saisis ont été documentés en Asie. Lorsqu'on se concentre sur les saisies d'espèces de tortues terrestres et de tortues d'eau douce inscrites à l'Annexe I, des tendances nettes se dégagent d'un commerce illégal intensif de *Geoclemys hamiltonii*, de *Nilssonia gangetica*, et de *Melanochelys tricarinata* (Ann. I) provenant d'Asie du Sud et destinées à l'Asie du Sud-Est et de l'Est, plusieurs espèces de tortues terrestres de Madagascar introduites illégalement en Asie et, en moindre quantité en Europe, et des spécimens de *Testudo kleinmanni* (Ann. I) en provenance d'Afrique du Nord destinés, entre autres, à l'Europe. Il semble que le transport de spécimens de tortues terrestres et de tortues d'eau douce commercialisés illégalement évite au maximum les itinéraires spécifiques ou directs et les goulets d'étranglement routiers, et

emprunte délibérément le plus grand nombre possible de voies – aériennes, maritimes et routières – souvent avec de longs détours et des transits par d'autres pays.

Les renseignements disponibles sur les circonstances et lieux particuliers des saisies ont permis d'établir que celles-ci se produisaient souvent à des postes d'inspection frontaliers (tels qu'aéroports, ports maritimes et postes frontaliers terrestres), à savoir, 897 saisies concernant plus de la moitié des spécimens vivants déclarés comme saisis (161 054 animaux) pour l'ensemble de l'analyse. En revanche, les saisies effectuées dans des lieux 'fermés', tels que boutiques, marchés, entrepôts, locaux privés, zoos et expositions représentaient moins de 9000 spécimens vivants, tandis que 6000 spécimens enregistrés comme saisis étaient liés à des activités de braconnage in situ. Ces proportions s'expliquent probablement par des modalités différenciées d'enregistrement, de transmission et de partage des données sur les saisies au sein des diverses autorités responsables; autre interprétation possible: les frontières sont les principaux lieux de lutte contre la fraude, et les spécimens de tortues terrestres et de tortues d'eau douce exportés ou importés illégalement sont peu susceptibles d'être détectés et saisis une fois qu'ils ont passé la frontière. Il a également été établi que le nombre de spécimens vivants saisis (147 024) qui étaient indigènes dans le pays de saisie (donc susceptibles d'être protégés par les lois nationales de conservation des espèces sauvages, en plus de la législation d'application de la CITES) était plus de deux fois supérieur au nombre de spécimens non indigènes saisis (69 216), ce qui indique soit une probabilité de détection plus élevée des spécimens d'espèces indigènes commercialisés illégalement, soit une tendance accrue à douter de la légalité du commerce de spécimens couverts par la législation en vigueur et, ainsi, à justifier les saisies.

Les informations sur les saisies de parties et produits de tortues terrestres et de tortues d'eau douce dans le commerce sont nettement moins complètes que pour les spécimens vivants, et les tendances de ces saisies semblent largement influencées par la qualité des données que les pays enregistrent et transmettent aux fins de leur inclusion dans la base de données de l'ONUDC. Le nombre annuel de saisies semble relativement stable pour les années où les enregistrements semblent complets, avoisinant 50 rapports détaillés, un chiffre peu élevé au regard du nombre de saisies de spécimens vivants pour la même période. Environ un tiers des saisies ont été rapportées par la Nouvelle-Zélande, et un autre tiers par les États-Unis, proportion qui s'explique par une combinaison de facteurs: des inspections intensives à l'arrivée des marchandises et des voyageurs; l'absence d'exemptions pour usage personnel; et le sérieux des rapports transmis. Le plus grand nombre de cargaisons saisies provenait de Chine, et les plus grandes quantités saisies provenaient de Chine, des États-Unis et d'Indonésie. La difficulté de convertir les quantités et les unités de parties et produits en nombre de spécimens individuels de tortues terrestres et d'eau douce empêche de procéder à une évaluation quantifiée de l'ampleur de ce commerce qui, au minimum, dépasserait largement 10 000 individus et probablement plusieurs fois ce chiffre.

Les saisies de tortues terrestres et de tortues d'eau douce concernent de nombreuses espèces dans de nombreux pays, correspondant aux flux commerciaux connus de spécimens provenant d'élevages en captivité et en ranch, et de prélèvements dans la nature dans nombre de pays de l'aire de répartition et de pays où des spécimens sont détenus en captivité à des fins de consommation, de commerce d'animaux de compagnie et d'aquaculture dans les pays de destination. Différents courants de commerce illégal sont donc imbriqués dans les flux plus larges du commerce légal. La majorité des saisies (61% des cas et 77% des spécimens) de tortues terrestres et de tortues d'eau douce vivantes concernent des envois composés exclusivement de ces espèces. D'autres saisies portent sur des envois où les tortues sont mélangées à d'autres espèces de reptiles ou à des d'amphibiens, ou encore à d'autres espèces sauvages telles que mammifères, oiseaux, poissons ou invertébrés; beaucoup plus rarement, les tortues saisies sont associées à des saisies d'armes et de munitions, de narcotiques, de produits de contrefaçon ou autres envois essayant d'éviter les droits et les taxes.

De nombreuses saisies de tortues terrestres et de tortues d'eau douce semblent concerner un petit nombre de spécimens transportés ou détenus en tant qu'animaux de compagnie ou souvenirs personnels. Toutefois, un nombre plus restreint de cargaisons massives démontre l'existence de réseaux organisés de préleveurs, de commerçants, de grossistes, d'exportateurs et d'importateurs locaux. Il existe peu d'information reposant sur des preuves tangibles de chaînes commerciales illégales, mais tout indique que les activités de prélèvement dans la nature peuvent être intensives et diffuses, et mobiliser un grande nombre de préleveurs locaux, tandis qu'un réseau d'individus, de taille modeste (ou plusieurs ensembles de réseaux) agit au niveau régional en tant qu'acheteurs, grossistes, exportateurs et importateurs. Malgré le nombre apparemment limité d'individus 'centraux', ces réseaux semblent suffisamment fluides et dynamiques pour compenser l'absence de l'une ou l'autre personne.

L'essor d'Internet facilite énormément la communication et le commerce entre les particuliers et les institutions à l'échelle mondiale. Internet est devenu un outil incontournable pour annoncer et organiser des ventes de tortues terrestres et de tortues d'eau douce, légales aussi bien qu'illégales. Ce support, ajouté aux installations de plus en

plus performantes permettant d'expédier des marchandises aux quatre coins du monde à des prix abordables et en très peu de temps, facilite l'organisation des ventes internationales, y compris, si nécessaire, sans trop se soucier de la légalité. Vendeurs et acheteurs restent néanmoins soumis aux lois en vigueur dans le pays où ils se trouvent et agissent, et les autorités chargées de la lutte contre la fraude peuvent elles aussi utiliser Internet pour rechercher et localiser les spécimens commercialisés illégalement. Détecter et intercepter les transactions individuelles constitue un véritable défi, tout comme la détection et l'interception des envois commandés sur Internet, et exige une coopération internationale accrue pour permettre aux autorités chargées de la lutte contre la fraude d'agir efficacement dans la juridiction des vendeurs aussi bien que des acheteurs.

L'efficacité de la lutte contre le commerce illégal de tortues terrestres et de tortues d'eau douce est entravée par plusieurs facteurs, notamment:

- La capacité d'identifier les spécimens dans le commerce et de déterminer leur statut au regard de la législation de protection, dans le pays de saisie et dans le pays d'origine et de provenance.
- Le placement des spécimens vivants saisis, y compris le rapatriement, le maintien à long terme en captivité, ou la destruction en tant que mesure de dernier recours.
- Le fait que le commerce illégal de tortues terrestres et de tortues d'eau douce soient perçu comme moins important que d'autres formes de criminalité, notamment liée aux espèces sauvages.
- L'ampleur et la portée des lois nationales d'application de la CITES
- La difficulté d'évaluer l'importance du commerce et des saisies en raison du caractère incomplet ou partiel de l'enregistrement ou du partage des données sur le commerce légal et illégal et sur les saisies.

Le rapport principal se termine par une liste de questions à approfondir, suivie de la liste des références et d'une série de tableaux en annexe.

Illegal Trade in Tortoises and Freshwater Turtles

CITES Decision 16.122, paragraph a)

Indian star tortoise, *Geochelone elegans*. Juvenile individual photographed in habitat in Tamil Nadu, India. The species is included in CITES Appendix II, and occurs in India, Pakistan and Sri Lankha (possibly in Bangaladesh and Myanmar). *Geochelone elegans* is legally protected India, Pakistan and Sri Lanka, and specimens from the wild cannot be collected or exported. Nevertheless, this species appears frequently in illegal international trade, and has been seized in greater numbers than any other tortoise or freshwater turtle over the past 15 years.

Prepared by IUCN SSC's Tortoise & Freshwater Turtle Specialist Group (TFTSG)
Lead writer: Peter Paul van Dijk, with input from members of the TFTSG and staff of the United States Fish and Wildlife Service, the IUCN Species Program, Education for Nature Viet Nam, and TRAFFIC. All contributors and reviewers are cordially thanked for their time, efforts and contributions to improve earlier versions and are in no way responsible for errors or omissions.

Illegal trade in Tortoises and Freshwater Turtles – an overview to implement CITES Decision 16.122, paragraph a)

Prepared by IUCN SSC's Tortoise & Freshwater Turtle Specialist Group (TFTSG)

Executive Summary

This study reports the findings of an analysis of seizure data documenting illegal trade in tortoises and freshwater turtles around the world. Seizure records were compiled for the period 2000-2015 from a variety of data sources, primarily the UNODC database of wildlife seizures, supplemented with seizure records in the *TRAFFIC Bulletin*, Robin des Bois' *On The Trail*, and a variety of press releases, media reports and technical reports. Data on seizures of live tortoises and freshwater turtles as well as their parts and derivatives were included, for a combined dataset covering 3562 unique species-location-date events. These include 2561 seizure records for live specimens, encompassing 303,774 live tortoises and freshwater turtles, as well as 1001 seizure records for parts and derivatives amounting to a total of 2113 kg of materials plus 78,818 items.

Total legal and illegal trade quantities of live tortoises and freshwater turtles were calculated for the period 2000-2014. About 865,000 live animals of CITES-listed species were recorded as traded on average per year, the majority from captive breeding and ranching sources, with about 138,000 animals sourced from the wild annually. Total annual trade volumes for the world's largest exporter of tortoises and freshwater turtles, the Unted States, amounted to about 7.3 million animals (largely captive-bred), as well as 249,000 tortoises and freshwater turtles imported annually on average. During the same period, on average 26,442 live tortoises and freshwater turtles were seized annually, nearly all originating from the wild. Detected and seized illegal trade in tortoises and freshwater turtles thus represents a minimum of a quarter of one percent of total recorded trade, but more significantly equates to some 19% of the volume of legally traded wild-sources tortoises and freshwater turtles.

The available records for seizures of live tortoises and freshwater turtles over time indicate increasing numbers of seizures and numbers of specimens seized, with a temporary decline during 2007-2011, after which seizures exceeded all preceding years.

The species seized in greatest overall quantity is the Indian Star Tortoise (*Geochelone elegans*, Appendix II), accounting for 34,080 specimens seized, followed by the Pig-nosed turtle (*Carettochelys insculpta*, App.II) at 29,692 individuals, the Asian Box Turtle (*Cuora amboinensis*, App.II) at well over 20,000 live specimens, the Indian Softshell Turtle (*Nilssonia gangetica*, App. I) represented by over 16,428 animals, and the Spotted Pond Turtle (*Geoclemys hamiltonii*, App.I) at well over 11,451 live specimens recorded seized during 2000-2014. Overall, some 145 species of tortoises and freshwater turtles featured in live seizure records, with 4 species listed in Appendix I and 15 Appendix-II listed species representing the 21 most voluminously seized species.

Geographically, there appear different trends of relatively large numbers of seizure events involving relatively smaller numbers of specimens seized per event in Europe and North America, whereas a smaller number of seizure events in Asia resulted in much greater total quantities of specimens seized. A total of 87 countries and jurisdictions reported seizures of live tortoises and freshwater turtles, with several Asian countries, the European Union' 28 countries combined, Colombia and the United States seizing the greatest numbers of live specimens. Asian countries also dominated the list of countries from which seized live specimens were shipped. The greatest quantities of seized tortoises and freshwater were destined for countries in Asia, the European Union, and the United States. Overall, illegal shipments have originated from numerous locations and were destined for numerous countries, creating a diffuse global network; greatest trade flows based on numbers of seized specimens were documented within Asia. When focusing on seizures of tortoise and freshwater turtle species listed in CITES Appendix I, clear patterns emerge of extensive illegal trade in Spotted Pond Turtles, Indian Softshell Turtles and Three-keeled Hill Turtles (*Melanochelys tricarinata*, App.I) originating from South Asia shipped to Southeast and East Asia, several tortoise species from Madagascar smuggled to Asia and in lesser quantity to Europe, and Egyptian Tortoises (*Testudo kleinmanni*, App.I) from north Africa to Europe and elsewhere. Transport of illegally traded tortoises and freshwater turtles appear to minimize use of specific, direct routes or transport bottlenecks; instead, there are consistent indications that illegal shipments are intentionally routed through the widest possible range of shipping routes permitted by airline, shipping and road networks, including extensive detours and transits through other countries.

Where information on the specific location and circumstances of seizures were available, it was determined that many seizures occurred at border inspection points (such as airports, maritime ports and land border crossings), accounting for 897 seizure events involving more than half of all live specimens (161,054 animals) recorded seized in the entire analysis. In contrast, seizures at clearly 'domestic' situations such as shops, markets, warehouses, private premises, zoos and exhibits amounted to fewer than 9000 live specimens seized, while some 6000 animals were recorded as seized from in-situ poaching activities. It is likely that these propotions are affected by differential recording, reporting and sharing of seizure data by different responsible authorities, but it can also be interpreted that border inspections are the primary enforcement location and that once past the border, illegally-sourced or illegally-imported tortoises and freshwater turtles are not likely to be detected and seized once in domestic commerce or possession. It was also determined that the number of live specimens (147,024) seized that were native in the country of seizure (and thus likely protected under domestic wildlife conservation laws in addition to CITES implementing legislation) was more than double the number of non-native specimens seized (69,216), indicating either a higher detection probablility of illegally traded native animals, or a higher confidence in the illegal status of the specimens under legislation in force, and thus justification for seizure.

Information on seizures of parts and derivatives of tortoises and freshwater turtles in trade is substantially less comprehensive than for live specimens, and patterns in such seizures appear significantly influenced by the quality of data recorded and transmitted by countries for inclusion in the UNODC database. The number of seizures per year appears relatively stable among years where records appear complete, averaging around 50 detailed records, which is low compared to numbers of live seizures during the same period. About a third of all seizures were reported by New Zealand, and another third by the United States, resulting from a combination of intensive inspections of incoming goods and travellers, an absence of personal use exemptions, and diligent reporting. The greatest number of seized shipments originated from China, while the greatest quantities seized originated from China, the United States and Indonesia. The challenges of converting quantities and units of parts and derivatives to the number of individual tortoises and freshwater turtles from which they originated preclude a quantified assessment of the size of this trade; a minimum is well over 10,000 individual animals, and likely a multiple of this.

Seizures of tortoises and freshwater turtles occur of many species in many countries, corresponding to the known trade flows from captive production facilities, ranching operations and wild collection efforts in many range countries and countries where specimens are maintained in captivity, to consumption, pet trade and aquaculture destination countries. Different strands of Illegal trade thus are entwined with the broader flows of legal trade. The majority of seizures (61% of cases, 77% of specimens) of live tortoises and freshwater turtles occur as shipments consisting exclusively of these animals. Other seizures occur as part of mixed shipments with other reptiles or with amphibians, or with other wildlife species such as mammals, birds, fish or invertebrates, while ver few cases were associated with seizures of arms and ammunition, narcotics, counterfeit goods, or shipments avoiding taxes and duties.

Many seizures of tortoises and freshwater turtles appear to involve small numbers of animals carried or kept as personal pets or souvenirs. However, a smaller number of seizures of large to very large shipments demonstrate organized networks of collectors, local traders, wholesellers, exporters and importers. Little hard evidence-based information is available on illegal trade chains, but indications are that collection efforts from the wild can be extensive and diffuse by mobilizing a large number of local collectors, while a modest-sized network (or several sets of networks) of individuals act as regional buyers, wholesellers, exporters and importers. Despite the apparently small number of core individuals involved, these networks appear fluid and dynamic enough to compensate for the absence of one or another individual.

The growth of the internet has greatly facilitated communication and commerce between individuals and institutions at a global scale, and has become a prime outlet to advertize and arrange sales of tortoises and freshwater turtles, legal as well as illegal. Combined with improvements of facilities to ship goods around the globe at affordable rates and at very short transport times, international sales can be arranged, including with little regard for legality if so desired. Nevertheless, sellers and buyers remain bound by the laws in effect for their particular location and actions, and enforcement authorities can use the internet's capacity to search for and detect illegally trade specimens as well as prospective buyers and sellers can. Detecting and intercepting individual transactions does pose challenges, just as detecting and intercepting mail order shipments does, and warrants increased international cooperation by enforcement authorities to take effective action in both the seller and buyer's jurisdictions.

Effective enforement action against illegal trade in tortoises and freshwater turtles is constrained by a range of factors, including

- Ability to identify specimens in trade and determine their status under protective legislation, in the country of seizure as well as in the country of origin and provenance.
- Placement of seized live specimens, including repatriation, long-term placement in captivity, or destruction as a measure of last resort.
- The perceived lower significance of tortoises and freshwater turtles compared to other wildlife crime, and other forms of crime.
- The scope and extent of domestic conservation legislation to implement CITES
- Partial or incomplete recording and record-sharing of legal and illegal trade, and trade seizures, making it difficult to evaluate the significance of trade and seizures.

A list of topics for further consideration concludes the main report, followed by literature cited and a series of Annex Tables.

Decision 16.122, paragraph a): Illegal trade in Tortoises and Freshwater Turtles

1. Background

At its 16th meeting (CoP16; Bangkok, 2013), the Conference of the Parties to CITES adopted Decisions 16.109 to 16.124 on *Tortoises and freshwater turtles (Testudines spp.)*, directed to the Secretariat, the Animals Committee, the Standing Committee and the Parties.

At the 65th meeting (SC65; Geneva, 2014) of the CITES Standing Committee, the Secretariat introduced document SC65 Doc. 45[9] on *Tortoises and freshwater turtles*, giving an overview of the status of the implementation of Decisions 16.109 to 16.124. The Secretariat noted that there were few responses from Parties to requests for data or reports in the context of these Decisions, recognizing that the considerable reporting requirements in different Decisions may have been to some extent dissuasive or confusing. The Secretariat expressed concern that this might impede the successful implementation of the Decisions on *Tortoises and freshwater turtles*.

The Secretariat reported that the activities and studies called for in Decision 16.119 paragraph b), and Decision 16.122 paragraphs a) and b), would be particularly important as they could complement or partially replace the progress reports and information that Parties are expected to submit in accordance with the Decisions on *Tortoises and freshwater turtles*, and consequently noted that the implementation of these Decisions could enhance the initiation of targeted activities. Strong support was expressed for the recommendation by the Secretariat to implement Decisions 16.119 paragraph b), and 16.122 paragraphs a) and b).

The purpose of this report is to assist the Secretariat in the implementation of Decision 16.122 paragraph a), which states as follows:

> ***Directed to the Secretariat***
>
> *16.122 The Secretariat shall:*
>
> *a) recognizing the ongoing prevalence of an illegal trade in live tortoises and freshwater turtles for the medicinal, food, and pet trades which is threatening the survival of some species in the wild and impacting the integrity of the Convention, seek external funding and, subject to its availability, hire a consultant to analyse reported data, identify species prevalent in illegal trade, and document illegal trade incidents, trade routes (including the Internet-based trade), methods of concealment, and other aspects relevant to enforcing CITES provisions concerning trade in tortoises and freshwater turtles;*

2. Objectives

The objective of this report is to support the implementation of CITES Decision 16.122 paragraph a) on *Tortoises and freshwater turtles*, through the completion of a wildlife trade study on the legal and illegal trade in specimens of tortoises and freshwater turtles, in accordance with the provisions of CoP Decision 16.122 paragraph a).

It is anticipated that the findings of the work will feed into the CITES Tortoises and Freshwater Turtles Task Force to be convened pursuant to Decision 16.119 paragraph b), and documentation that will be prepared for the 17th meeting of the Conference of the Parties to CITES (CoP17, Johannesburg, September 2016).

[9] *https://www.cites.org/sites/default/files/eng/com/sc/65/E-SC65-45_0.pdf*

3. Wildlife trade study: Illegal trade in Tortoises and Freshwater Turtles

Activities conducted in accordance with CITES Decision 16.122, paragraph a)

- Analyse reported data on legal and illegal trade in specimens[10] of tortoises and freshwater turtles for different types of trade, in particular medicinal, food and pet trades. The analysis should include data available in the CITES trade database and data submitted in accordance with the provisions of paragraph m) in Resolution Conf. 11.9 (Rev. CoP13)[11] on *Conservation of and trade in tortoises and freshwater turtles* and in periodic reporting under Article VIII paragraph 7 b) of the Convention submitted by range States of tortoises and freshwater turtles that authorize trade in these species.
- Identify species and specimens prevalent in different types of illegal trade.
- Examine and document illegal trade incidents, including internet-based trade, and the locations of seizures (e.g. ports, airports, markets). Maps that visually indicate where some of the biggest seizures took place, and how trade routes may operate, should be included.
- Examine illegal trade routes for different types of trade, in particular medicinal, food and pet trades, and including live animals as well as tortoise and freshwater turtle shell, bones, cartilage (calipee), and other parts and derivatives.
- Document methods of concealment used for illegal trade in tortoise and freshwater turtle specimens.
- Provide a general overview of the scale and nature of the illegal trade in specimens of tortoises and freshwater turtles in Asia.
- Document any enhanced and increased enforcement efforts especially by range States and exporting and importing States of Asian tortoises and freshwater turtles, including any international cooperation that could serve as best practice examples.
- Consider the adequacy of national legislation to effectively control the unsustainable harvest of and trade in tortoises and freshwater turtles, and to effectively conserve and manage these species.

Datasets used

Data used for this analysis originated from several sources:

- An extract of illegal trade records involving tortoises and freshwater turtles from the United Nations Office of Drugs and Crime (UNODC) Worldwide Wildlife Seizures (WorldWISE) database, made available on 30 October 2015. This comprised 2692 records, including records from national CITES Authorities and customs databases from various countries. The available UNODC dataset used spans the period from August 1998 to May 2015, but it should be noted that the great majority of records (1929) are from the period between 2005 and 2015 (inclusive). For practical reasons it was decided to restrict use of the UNODC dataset for seizures of live specimens to records from January 1st, 2000 to 2015, which resulted in the removal of 43 records, all from the United States.
  The UNODC dataset thus restricted comprises seizures of live specimens (1646 records), skeletons, shells, carapaces, plastra, skulls and other bone pieces (307 records), medicinal preparations (230), derivatives (204), bodies (46), meat (29), shell products (20), powders (18 records), eggs (17), trophies (11), soup (9), dead-on-arrival specimens (7), carvings (6), extracts (6), scientific specimens (3), calipee (2), claws (2), scales (2), jewelry (2), feet (1), leather (1), and unspecified (52 records).
  Analysis of the UNODC dataset was complicated by different data formats and near-duplicate submissions contained therein, as may be expected for an aggregated dataset combining numerous data submissions, and required significant evaluation of records. The UNODC dataset proved to be incomplete in the sense that several known large seizures are not included. This may be a result of the time period for which records were available, and/or of countries' comprehensiveness of submitting records or otherwise making records available in a manner that could be captured by the database. To address this, additional seizure

[10] *"Specimens" includes live tortoises and freshwater turtles, and their parts and derivatives (e.g. turtle shell, bones, cartilage)*

[11] *https://www.cites.org/eng/res/11/11-09R13C15.php*

records were compiled and added to create a combined dataset, which was used for an updated analysis (see below for details)

- The UNEP-WCMC CITES Trade database.
- The United States' LEMIS database, providing a total of 70,103 records of legal and 19 illegal tortoise and freshwater turtle imports into, and exports from, the United States of America during the period January 1999 to December 2015, encompassing over 191 million specimens of tortoises and freshwater turtles.
- The Wildlife Crime Incident Tracking database maintained by Education for Nature Vietnam (ENV), contributing 211 data instances from 134 separate seizures (often involving several tortoise and freshwater turtle species per seizure) during the 6 calendar years 2010 to 2015. The ENV database contributed 6 records of parts and derivatives seizures.
- The compilations of Seizures and Prosecutions reports in the TRAFFIC Bulletin from March 1997 to October 2015, adding up to several hundred data instances for live seizures and 12 seizure records for parts and derivatives.
- The 11 issues of the quarterly 'On the Trail' report published by Robin des Bois, spanning the 30-month period from April 2013 to December 2015, providing a comprehensive compilation of another several hundred seizure and prosecution records concerning over 115,000 specimens of tortoises and freshwater turtles based on press and media sources worldwide. The *On The Trail* data contributed another few hundred live seizure and 28 Parts & derivatives seizure records, several of which corresponded to UNODC and/or TRAFFIC Bulletin records.
- Additional information scattered in reports and other communications by the IUCN Tortoise and Freshwater Turtle Specialist Group (TFTSG) members, in most cases providing more detailed information on seizures already recorded by UNODC or *TRAFFIC Bulletin*.

In these databases, a 'record' or 'data point' is defined as a combination of species, event location and event date. Thus, a seizure of one specimen of Spur-thighed Tortoise (*Testudo graeca*) at a border post is a single seizure record (with a quantity of one specimen), a seizure of one hundred Spur-thighed Tortoises at a single border post in a single day is also a single seizure record but with a quantity of 100 specimens (even if it clusters several separate seizures from separate traffickers; the database resolution rarely provides this level of detail). Meanwhile, a single seized shipment containing ten different tortoise and/or freshwater turtle species represents ten different seizure records (at quantities reported for each respective species). This approach increases the number of seizure records per country compared to the actual number of seizure events that occurred; however, the greatly increased accuracy of species-specific seizure information generated this way outweighs the possible perception that countries carry out more seizures than actually occur. Moreover, the UNODC database records are at species level, and identifying possible multi-species seizures and merging those into single seizure event records would introduce uncertainty and similarly affect the perception of number of seizures actually made.

The combined dataset used for most of this analysis is formed by the UNODC WorldWISE database made available on 31 October 2015, which was then augmented by seizure data from the TRAFFIC Bulletin for the period January 2000-October 2015, the seizure data contained in the 11 issues of On The Trail (Robin des Bois) covering the period April 2013-December 2015, the ENV seizure records for Viet Nam, and turtle seizure records accumulated from various sources by the TFTSG. For practical purposes, the period of analysis was restricted to seizure events occurring between 1st January 2000 to 31st December 2015 .

The core for the combined dataset are the UNODC WorldWISE's 2692 records of tortoise and freshwater turtle seizures. Seizure records from additional sources were sequentially added to the combined dataset, by comparing for existing records on or near the same date; if additional information emerged from additional data sources this was added to the existing record, with annotation. Where discrepancies were found in quantities of specimens seized, the UNODC-reported quantity was used; where other data sources disagreed, and verification was not possible by contacting persons closely involved in the seizure, the lowest number reported was used (most conservative). Consistency checks were then carried out again to identify and delete, where necessary, duplicate records, by sorting the combined data set by species, by date, or by country. This allowed consolidation of seizure event records that were variously recorded by the exact date or by month or (part of) year only, or in some cases had no or erroneous date coding in the UNODC dataset[12]. These consistency checks also allowed elimination of a suite of duplicate records within the UNODC dataset when it became evident that two different national

[12] *such as a seizure on 27 November 2013 being coded as having occurred on 13/11/2027.*

authorities had effectively submitted records of the same seizures, but with the country of seizure variously coded as 'destination' or 'transit', creating non-identical parallel records in the UNODC database. In a number of cases, the Management Authorities of Parties were consulted by email to clarify 'odd' records, and their responses are greatly appreciated.

Incomplete reporting of the numbers of specimens per species in mixed-species seizures posed challenges for data analysis. An example would be "seizure by Country X of a shipment arriving from Country Y, consisting of 500 live turtles, including tortoise species A, freshwater turtle species B, and 3 other freshwater turtle species." To maximize accuracy in subsequent analyses by species or country, such confiscations were coded as 500 live specimens of "unidentified Tortoises & Freshwater Turtles", with separate line records of "Species A: [part of 500]" and "Species B: [part of 500]". This coding ensured that no double-counting occurs (as Excel does not recognize or count "part of 500" as a number), ensures that the total number of live specimens seized is included in the analyses for countries X and Y, and shows the seizure when examining seizures of Species A and Species B. While the actual number of Species A in the shipment cannot be determined, it allows indication whether the total number of seized live specimens for Species A is the sum of quantified records only (i.e., 5+8+12=15 specimens), or whether the quantified total is a minimum (i.e., 5+8+12+'part of 20'= > 15 specimens). For species or countries where a large number of unknown-quantity seizures occur, or where unknown-quantity seizures are part of very large shipments (100s to 1000s of specimens), are indicated with ">> xxx specimens".

In the cases of live specimen seizures, the great majority of records provided the number of individual animals as quantity, but for a number of records only a total weight was given (bulk seizures concerning Lao PDR, Thailand and Viet Nam, of turtles shipped as part of the consumption trade). Where possible, such records were not combined in the analysis, but in a limited number of situations they were combined. In such cases, one kilogram of weight was equated to one individual tortoise or freshwater turtle, which is approximately the average weight of the most frequently traded turtle species, the Asian Box Turtle (*Cuora amboinensis*) and a reasonable median between the largest individual freshwater turtle or tortoise specimens (*Manouria emys*, *Orlitia borneensis*, or large softshells) which may exceed 40 Kg, and the 15-50 gram weight of hatchling turtles.

The final combined, 'cleaned' and year-restricted dataset amounted to 3562 records, comprising 2561 live specimens seizure events (including counts for specimens that died during transport), and 1001 records concerning seizures of parts and derivatives.

An overview of tortoise and freshwater turtle smuggling cases concerning Asian jurisdictions and Asian tortoise and freshwater turtle species during the period 2000-2009 was presented in Annex C of Doc CoP15 Inf. 22.

Species were coded as listed in CITES Appendix I, II, III, or not listed; codings were assigned based on the CITES Appendix status in force at the date of seizure (so that a single species may feature in different data subsets for Appendix I or II, or other).

An original goal of this study was to examine trade of tortoises and freshwater turtles for different purposes, specifically as pets, for food and for medicinal purposes. However, this proved not feasible in practice. For one, the vast majority of trade and seizure data do not specify the ultimate purpose of the specimen to be traded, only whether trade is for commercial, scientific or other purposes. Moreover, the decision on what to do with a specimen rests with the individual purchasing that specimen: an aquaculture facility operator may well decide to acquire a shipment of hatchling turtles from a production facility primarily supplying the pet trade, but rear those hatchlings to a larger size and supply them to a consumption-oriented retailer or market, or supply the reared specimens to a processing facility using tortoise or freshwater turtle as an ingredient in medicinal preparations. Thus, the dividing lines between pet, food or medicinal trade can not be drawn with any reliability, and instead the analysis differentiates between live trade for all purposes, and trade in parts and derivatives which obviously excludes the pet sector but encompasses parts of the food, medicinal, trophy, ornament, curio, and scientific trade sectors.

Another worthwhile inquiry would be to compile observations of likely illegally sourced or traded specimens of tortoises and freshwater turtles, as recorded in market survey reports, pet shop visits and published pricelists, and the internet. However, while this remains worth doing, it quickly became clear that such an inquiry would be exceedingly laborious, and thus not feasible as part of the present study: because of the multitude of protective regulations governing possession and trade of tortoises and freshwater turtles, almost every instance would need to be verified whether the specimens concerned were recently collected specimens from the wild or pre-convention/ pre-listing wild-collected specimens (particularly pertinent to Appendix I specimens), whether they were wild-collected or captive-bred (again significant for Appendix I specimens, but also for Appendix II specimens

with zero wild quota), whether they were collected and traded with valid permits or without (any Appendix, as well as domestic legislation), and in the case of captive-bred specimens whether the parental stock was legally acquired. While in many cases assumptions can safely be made (a shipment of five hundred adult Elongated Tortoises (*Indotestudo elongata*, App.II), which take 8-15 years to reach maturity and produce 3-6 eggs per female per year, displaying burn scars and tick infestations, is unlikely to originate from a genuine captive breeding facility; Palawan Pond turtles (*Siebenrockiella leytensis*, App.II) are fully protected from exploitation under Philippines legislation and have not been legally exported since the species' rediscovery in 2004), a large degree of uncertainty affects some of the records and precludes reliable analysis without detailed investigation of every single instance. In some cases, a decisive practical evaluation of whether a specimen or shipment was legal or illegal can only be made long after the trade occurred, by evaluating whether permits for trade in the observed species or quantities were issued by the country of origin and accepted and recorded by the destination country.

Definitions and Terminology used:

Taxonomy of tortoises and freshwater turtles follows the CITES Standard Reference, Fritz & Havas (2007), and additions as listed in CoP16 Doc.43.1 Annex 6 (Rev.1) (2013). At present, about 327 valid species of living turtles are generally recognized (Fritz & Havas, 2007; TTWG, 2014). Of these, 32 are listed in CITES Appendix I, about 126 in Appendix II, about 22 in Appendix III, while the remainder are not included in the CITES Appendices. These species are taxonomically separated into 14 families: two familes (Cheloniidae, with 6 species, and Dermochelyidae with a single species, all in Appendix I) are primarily marine and excluded from this analysis; one family (Testudinidae, over 40 species, all in Appendix II or I) is primarily terrestrial; and the remaining 11 families (with about 280 species, variously in Appendices I, II, III or not listed in CITES) predominantly inhabit freshwater habitats.

Vernacular group names for turtles and tortoises differ by language and region and unfortunately rarely match taxonomic classification. For example, the words 'turtle' and 'terrapin' have different meanings and species content in the United Kingdom and the United States, while 'tortoise' refers to primarily terrestrial turtles in the UK and US but is used for the side-necked, freshwater-inhabiting species in Australia. The French language uses 'tortue' as the noun for all shelled reptiles and specifies marine, terrestrial or freshwater species with the adjectives 'marine', 'terreste' and 'd'eau douce', while Spanish uses 'tortuga' for most species, with some use of 'galapago' for tortoises. For the purposes of this report, the word 'turtle' is used for any shelled reptile belonging to the order Testudines, and encompassing freshwater, terrestrial and marine species; where categorization is appropriate, the terms 'freshwater turtle', 'marine turtle' and 'tortoise' are used to separate species groups. The word 'tortoise' is specifically used for any terrestrial turtle attributable to the Family Testudinidae; a few species classified in the generally freshwater-inhabiting families Emydidae and Geoemydidae have a primarily terrestrial lifestyle, and where necessary are referred to as 'terrestrial turtles'. Species of the Family Trionychidae are referred to as 'Softshelled Turtles' (or 'softshells') and all inhabit fresh (or brackish and inshore) water.

Turtles are anatomically unique in being the only tetrapod vertebrates to possess a bony shell surrounding their body, incorporating ribs and other bones, thus having in effect evolved to move their limb girdles inside the rib cage (as opposed to e.g. armadillos and glyptodonts, whose bony body armour consists of dermal ossifications separate from the ribs). The entire bony covering of a turtle is referred to as a shell; the upper (dorsal), generally domed, part of the shell is termed the carapace, while the lower (ventral), normally flat part of the shell is called the plastron (plural: plastra).

In this study, the words 'seize' or 'seizure' are consistently used when animals or goods are taken under legal authority, and is understood to include cases of confiscation and forfeiture. 'Parts' refers to parts of tortoises or freshwater turtles that are still recognizable as such, for example shells, carapaces, plastra/plastrons, skulls, skeletons, trophies, artifacts and some shell products. 'Derivatives' is used to mean items originating from tortoises and/or freshwater turtles but no longere readily recognizable as such, for example powders, extracts, meat, tissue samples or claws. The distinction between parts and derivatives is vague as it may depend on the degree of working or processing whether an item is still recognizable as having originated from a tortoise or freshwater turtle, and whether the packaging accurately lists its contents; examples of such ambiguity are packaged medicinal preparations purporting to contain turtle, as well as packaged soup and meat, eggs, shell products, jewelry, carvings loose and broken bones. This study primarily used the terms as entered in the UNODC database without evaluating their appropriateness or (re-)assigning records to product categories.

Where appropriate, this study uses the terms 'origin' and 'provenance' to mean the same as the UNODC WorldWISE database employs these terms. Thus, 'provenance' is used to designate the location from which a specimen was shipped before being seized, such as the airport at which a smuggler boarded a flight before any tortoises carried in his/her luggage were seized at an airport of transit or disembarkation. Where apropriate, the term 'origin' is used for the original location at which the seized specimen was originally collected from the wild or bred in captivity, or processed and produced in the case of some products and derivatives.

Illegality – when is a tortoise, freshwater turtle, or tortoise/turtle product traded illegally, and why is it seized?

Tortoises and freshwater turtles are traded domestically and internationally for a variety of purposes that can be broadly categorized as for human consumption or as pets, with a small but occasionally significant trade in curios and artefacts derived from tortoise and/or freshwater turtle shells. Large captive production facilities to supply the pet freshwater turtle trade exist in North America, and captive production and rearing facilities to meet consumption demand for freshwater turtles have been in operation in Asia for decades or longer for a few species. Smaller facilities, including private individuals and small commercial operations, additionally produce a wide range of species of tortoises and freshwater turtles in captivity for the niche collector-keeper trade, while ranching operations supply the pet trade as well. In addition, large quantities of tortoises and freshwater turtles continue to be collected from the wild and traded internationally for as pets, for consumption, and as additional stock for captive production facilities. Thus, tortoises and freshwater turtles are traded from almost anywhere to almost anywhere.

The approximately 320 species of tortoises and freshwater turtles, including 168 CITES-listed species, are native to 163 nations or territories; nearly all these tortoise and freshwater turtle range states are CITES signatories. In addition, almost every country, state, region or other administrative unit has its own laws and regulations protecting native species of tortoises and freshwater turtles, or managing their offtake and utilization. A few countries' domestic laws also regulate possession and trade of non-native species within their jurisdiction. Beyond these, adherence to industry standards like the IATA Live Animals Regulations may be required by law, or as the carrier's condition of acceptance of a shipment. Collectively, these laws, rules and regulations create a plethora of conditions governing turtle collection, production systems, and trade.

With such a wide array of countries, species and regulations concerned, opportunities abound for unknowingly or deliberately breaching applicable regulations. The result is an act of illegal possession or trade, and the detection by responsible authorities of such breaches of regulations may lead to seizure of the specimens involved and may result in judicial prosecution. This study takes as its starting point the available data set for cases where the responsible authorities have determined that collection, possession or trade regulations in force were sufficiently breached that they seized the specimens. The factors that were specifically considered at the time to represent an illegal act or situation are beyond the scope of this study. While potentially useful, it would be challenging to analyse these factors, because the UNODC WorldWISE database extract for tortoises and freshwater turtles does not provide this information, and it is provided only in some instances when seizures are reported in press releases by authorities or in the media (including subsequent compilations such as *TRAFFIC Bulletin* and *On The Trail*). Where such details were provided, they document that a wide range of conditions may lead to seizure of tortoises and freshwater turtles, for example the absence of valid CITES permits, exceeding quantities allowed to be collected, transported or traded under permit, incorrect documentation of the shipment (different species, presumed wild-sourced instead of captive-produced), collection from closed areas, collection during closed seasons, collection of specimens outside legally permitted size limits, and inappropriate or inhumane shipping conditions. This kind of information, as well as information on prosecution, conviction and sentencing of offenders, deserves compilation and analysis in a future study.

For the purposes of this analysis, a tortoise or freshwater turtle is deemed to have been collected, possessed or traded illegally when it has been seized by the responsible authorities. This study aims to elucidate patterns of species, trade routes and merchandise associations associated with seized tortoise and freshwater turtle specimens. Patterns in the rationale for seizure of the specimens must await a later data compilation and analysis.

4. Findings, part 1: Illegal Trade in live Tortoises and Freshwater Turtles

Context: the volumes of legally traded and seized illegally traded live tortoises and freshwater turtles.

No comprehensive dataset is available documenting all international trade in tortoises and freshwater turtles. However, to get some indication of the scale of legal and illegal trade, available records for the period 1 January 2011 to 31 December 2014 were compiled and compared. As the available records on dead turtles, parts and derivatives are complex, scattered and difficult to quantify to numbers of individual animals involved, this analysis was restricted to international trade in live specimens only.

At present the UNEP-WCMC database does not make it possible to query it at taxonomic levels higher than genus, so a complete tabulation of net exports of all tortoise and freshwater turtle species recorded in the UNEP-WCMC database was arrived at by adding the recorded net exports during 2011-2014 for all countries for live specimens of all 64 tortoise and freshwater turtle genera containing CITES-listed species. A total of 3,457,703 live specimens were recorded as traded in the four-year period: 584 Appendix I-listed specimens, mainly repatriations and other transfers of confiscated specimens; 2,213,729 tortoises and freshwater turtles of species listed in Appendix II, and another 1,243,390 live specimens listed in Appendix III, an annual average of about 865,000 tortoises and freshwater turtles. The large majority of these legally traded specimens originated from captive breeding and ranching facilities; an approximated 552,000 animals originated from wild sources (138,000 animals per year).

During the same period 2011-2014, the world's largest exporter of turtles, the United States, recorded a total of 11,548 live tortoise and freshwater turtle export transactions, encompassing 29,181,468 individuals (of which 4 species, *Trachemys scripta*, *Chelydra serpentina,* '*Pseudemys* species' and *Apalone ferox*, represented over 25.5 million animals). A large percentage of these exported animals were produced in registered aquaculture and captive breeding facilities. In addition, 2941 transactions of live tortoise and freshwater turtle import were recorded, representing 997,007 animals, as well as 55 transaction records of live turtles in transit concerning 3,982 animals. Thus the United States alone accounts for an annual average of 7.3 million tortoises and freshwater turtles legally exported, and nearly a quarter million tortoises and freshwater turtles imported annually. In the same four-year period, the US LEMIS database recorded 5 illegal attempts at importing live tortoises or freshwater turtles, concerning 842 animals, and no illegal exports were entered into the LEMIS database. It will be noted that there is some overlap in the numbers reported by the US LEMIS database and the UNEP-WCMC CITES Trade database, amounting to over 840,000 specimens of CITES-listed species being exported from the USA, and a significant proportion of US imports of tortoises and freshwater turtles concerning CITES-listed species whose trade is also captured in the UNEP-WCMC Cites trade database.

No figures were available at the time of analysis to quantify the volume of domestic and international trade in the widely cultured Chinese Softshell Turtle (*Pelodiscus sinensis* group) and other freshwater turtle species produced by aquaculture facilities in China; an indication can be gleaned from the reported production capacity in Chinese aquaculture operations in 2002, indicating some 30 million breeding adults producing about 285 million hatchlings per year (Shi & Fan, 2002; Shi *et al*., 2004). Nearly all of China's turtle aquaculture production is traded domestically and thus does not enter international trade, nor does it feature in seizure statistics; but it helps to understand the enormous quantities involved in global turtle aquaculture and trade.

On balance, the order of magnitude of global, international trade in live tortoises and freshwater turtles each year amounts to approximately 865,000 individuals of CITES-listed species (of which an estimated 138,000 originated from the wild), and well over 7 million animals of species not listed in the CITES Appendices, for a global minimum estimate of 8 million per year, and likely to be at 10 millions or higher once more comprehensive data for trade in non-CITES-listed species from Asia and Africa become available.

For the same four-year period 2011 to 2014, the UNODC WorldWISE database in isolation recorded 620 seizures of live tortoise and freshwater turtle species, representing 13,315 animals, an average of 3329 tortoises and freshwater turtles seized per year. The combined dataset for this study recorded a total of 1056 seizure cases, but comprising a minimum of 105,768 live specimens, or an annual average of 26,442 live animals seized. This calculates to a tiny fraction, around one-quarter of one percent, of total annual global live tortoise and freshwater turtle trade, or of total international turtle trade transactions.

However, despite the very small proportion of global turtle trade that is found to be illegal and seized, this illegal component of the trade has a disproportionate impact on tortoise and freshwater turtle conservation in the wild. The annual average of over 26,000 tortoises and freshwater turtles seized originates largely from wild populations, and compares substantively (19%) to the estimated total of 138,000 legally collected and traded wild specimens per year. Clearly, the estimate of illegal trade volume equating to some 19% of the volume of legally traded wild-sources tortoises and freshwater turtles is a minimum, as it does not include the illegal trade volume that is not detected and seized. Moreover, significant segments of the illegal trade focus on poaching and trade of the rarest

and most threatened species of tortoises and freshwater turtles. Thus, while the challenges are great to detect and enforce the small proportion of tortoise and freshwater turtle trade that is illegal, against the backdrop of voluminous legal trade, there is a clear conservation imperative to act, in addition to society's fundamental need to act against illegality.

Trends in seizures over time

The number of reported seizure events per year during the period 2000-2015 is graphed in Figure 1, while the number of live specimens seized per year during the same period is graphed in Figure 2. The actual numbers are tabulated in Annex Table 1.

Figure 1. Number of seizure records for live tortoises and freshwater turtles by year, based on the combined dataset of seizures during 2000-2015.

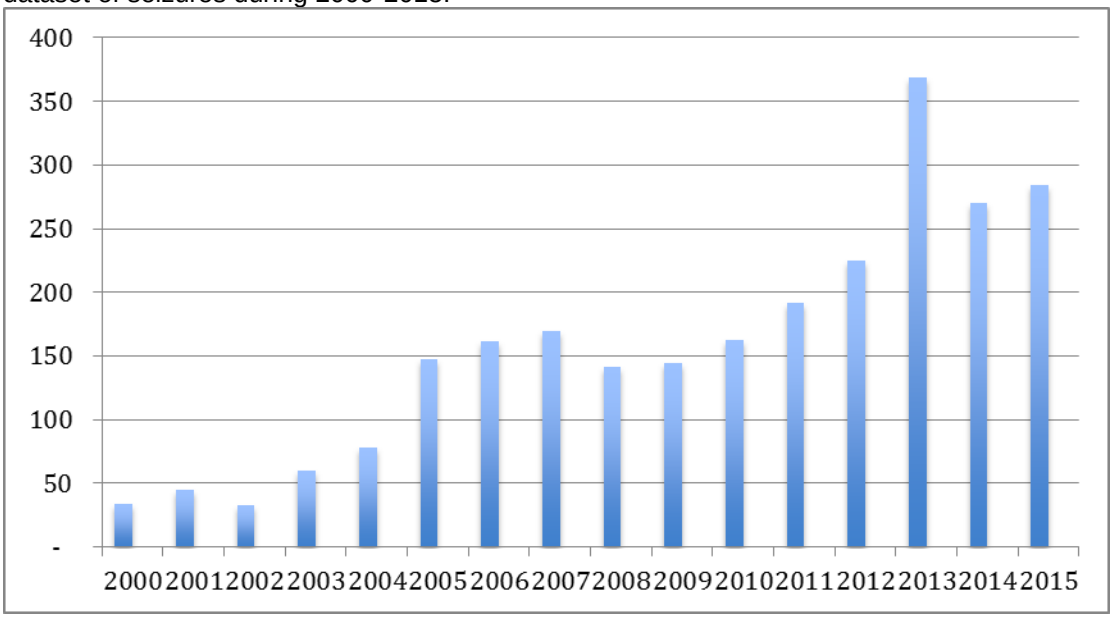
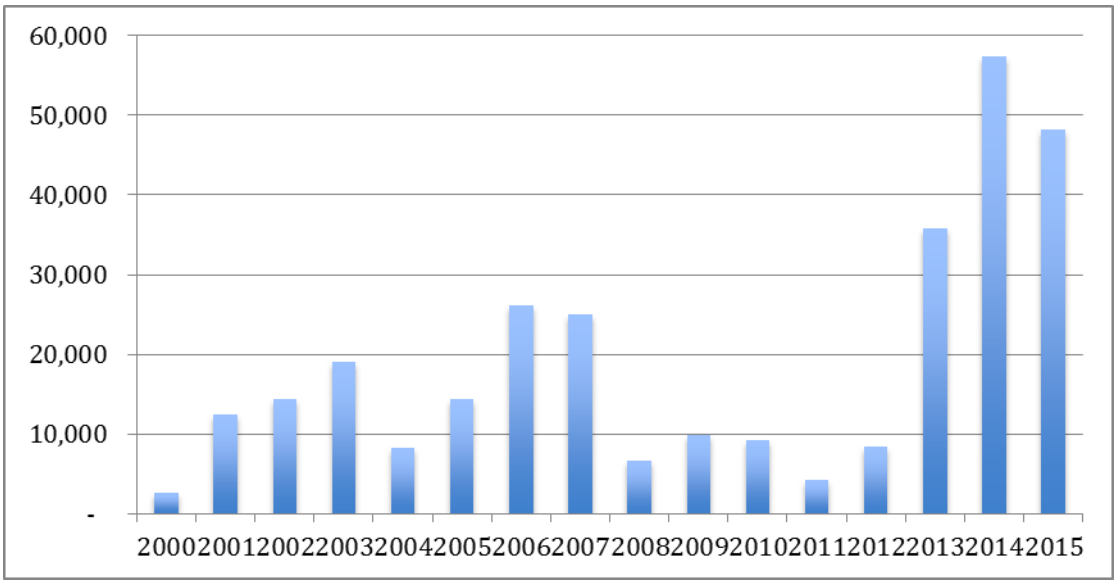


Figure 2. Number of individuals of live tortoises and freshwater turtles seized by year, based on the combined dataset of seizures during 2000-2015.



The data indicate a slight bell curve of both number of seizures and number of seized specimens during the period from 2000 to about 2010, followed by an increase in the number of seizures, and a steep increase in the number of specimens seized, from about 2010-2013 onwards. No clear explanation can be provided for these trends; but several factors likely interacted to create these trends. One factor must be the fact that during the period concerned, additional freshwater turtle species were progressively added to the CITES Appendices, thus bringing more species under the regulatory umbrella, with increased potential for shortcomings of documentation requirements. Correspondingly, Parties and State jurisdictions have over the years evaluated and updated their domestic regulations regarding wildlife offtake and trade, and in the case of tortoises and freshwater turtles such updates have frequently resulted in reduction of legal offtake volumes. Another factor conceivably could be the depletion of wild tortoise and freshwater turtle populations in traditional offtake areas supplying the trade in adult wild-collected tortoises and freshwater turtles for the retail consumption trade. The increase in particularly the number of seizures reported from 2005 onwards is likely partly an effect of the consolidated reporting by European authorities in a format that was incorporated into the UNODC database. Uneven submission of seizure events by Parties, particularly in the earlier years of the analysis period, and uneven coverage of seizure events by media, may well be contributing factors. It is possible that the dip in seizures for several years from 2008 onwards is related to reduced overall economic activity and consumers' disposable income as a result of the 'Great Recession'. The spike in trade seizures from 2012 onwards appears largely driven by the scaling up of illegal trade, and corresponding awareness and enforcement by authorities, in protected tortoise and freshwater turtle species for the pet trade in Asia, with repeat seizures of very large shipments (hundreds or thousands of animals per shipment) of hatchlings and juveniles of Indian Star Tortoises (*Geochelone elegans*, II), Pig-nosed turtles (*Carettochelys insculpta*, II), Spotted Pond Turtles (*Geoclemys hamiltonii*, I) and Radiated Tortoises (*Astrochelys radiata,* I).

At this point in the analysis it is worth reflecting on the scale of the documented seizures in recent years. Annual seizure totals in the years since CoP16 of 35,000 to 57,000 live tortoises and freshwater turtles, many of them listed in Appendix I, and nearly all poached from the wild, represent a remarkable quantity.

Species of tortoises and freshwater turtles in illegal trade

Based on records in the combined dataset for the period 2000-2015, a total of 145 species (or species groups) of live tortoises and freshwater turtles have been recorded in seizures from illegal trade or possession. Predictably, a few species constitute the majority of cases and number of specimens seized, and many species feature only occasionally in seizures. These 145 species represent substantial percentages of the world's total number of species (320, i.e. nearly 45%) and of the number of species included in the CITES Appendices (124 of 168, thus about 74%). Clearly, these numbers are minimum numbers, as additional species and specimens may have been traded illegally

but not detected, and thus not seized and not included in the data set. The 21 most frequently seized tortoise or freshwater turtle species (or genera of highly similar species subject to recent taxonomic changes) are listed in Table 1; the full species list is presented in Annex Table 2.

Table 1. Tortoise and freshwater turtle species most frequently seized as live specimens during 2000-2015, according to the combined dataset. Species are colour-coded by CITES Appendix: pink-tan = App. I, yellow = II, no colour = not listed.

Family	**species**	Number of live specimens seized	Number of live seizure cases	Number of seizure cases of parts and derivatives
Testudinidae	Indian Star Tortoise *Geochelone elegans*	> 34,080	118	2
Carettochelyidae	Pig-nosed Turtle *Carettochelys insculpta*	29,692	26	2
Geoemydidae	Asian Box Turtle *Cuora amboinensis*	>> 20,772	37	8
Trionychidae	Indian Softshell Turtle *Nilssonia gangetica*	> 16,428	19	1
Geoemydidae	Spotted Pond Turtle *Geoclemys hamiltonii*	>> 11,451	70	3
Testudinidae	Central Asian Tortoise *Testudo horsfieldii*	10,587	48	7
Emydidae	Colombian Slider Turtle *Trachemys callirostris*	10,329	3	2
Testudinidae	Radiated Tortoise *Astrochelys radiata*	> 7,973	72	6
Trionychidae	Asiatic Softshell Turtle *Amyda cartilaginea*	7,704	14	16
Podocnemididae	Yellow-spotted River Turtle *Podocnemis unifilis*	> 6,265	27	7
Chelydridae	Common Snapping Turtle *Chelydra serpentina*	6,026	2	-
Geoemydidae	Yellow-margined Box Turtle *Cuora flavomarginata*	5,232	7	-
Testudinidae	Spur-thighed Tortoise *Testudo graeca*	4,286	570	37
Geoemydidae	Palawan Pond Turtle *Siebenrockiella leytensis*	> 4,276	11	-
Testudinidae	Hermann's Tortoise *Testudo hermanni*	4,162	200	12
Geoemydidae	Black Marsh Turtle *Siebenrockiella crassicollis*	>> 3,375	12	4
Geoemydidae	Snail-eating Turtles *Malayemys macrocephala + M. subtrijuga*	> 2,707	25	2
Trionychidae	Flapshell Turtle *Lissemys punctata*	>> 2,308	13	1
Geoemydidae	Yellow Pond Turtle *Mauremys mutica*	> 2,111	7	-
Geoemydidae	Asian Leaf Turtles *Cyclemys sp.*	>> 2,048	38	-
Geoemydidae	Three-keeled Hill Turtle *Melanochelys tricarinata*	>> 1,979	15	-
Total Tortoises & Freshwater Turtles (145 species)		> 303,774	2561	1001

As Table 1 presents, the most numerously seized live species are the Indian Star Tortoise, the Pig-nosed Turtle and the Asian Box Turtle, with over 20,000 live specimens seized of each species. Remarkable in particular is that of the 21 most seized species, 15 are native to tropical Asia, including each of the five most seized species. Noteworthy in particular is that of the 21 most seized species, four are on CITES Appendix I, and have been included in that Appendix since the early years of the Convention.

Remarkable is the high number of seizures concerning the Mediterranean Spur-thighed Tortoise (*Testudo graeca*), whose 570 seizure reports represent 22 percent of all tortoise & freshwater turtle seizure events, even when the total number of individuals seized represents 'only' 1.4% of all individuals seized. A similar pattern is shown by the European Mediterranean Hermann's Tortoise (*Testudo hermanni*), accounting for 7.8% of seizures and 1.4% of specimens seized. These numbers result from the extensive traffic of persons, vehicles and goods across the Mediterranean, combined with intensive inspection and enforcement at external border crossings into the EU, at domestic shops and trader facilities, and the EU's stricter domestic measures governing private possession and trade of tortoises, against a historical / pre-CITES background of large numbers of mainly Mediterranean tortoises being privately kept, bred, and moved along as pets. Overall, tortoises occupy five of the top spots of most frequently seized species (Table 1), including the single most voluminously seized species, the Indian Star Tortoise (*Geochelone elegans*); moreover, 30 of the 45 existing tortoise species feature among seizures (Annex Table 2).

Table 2. Total numbers of live tortoise and freshwater turtle specimens seized during 1998-2015, grouped by family, based on records in the UNODC WorldWISE dataset (as of 30 October 2015), and in the combined dataset for the years 2000-2015.

	UNODC dataset 1998-2015		Combined dataset 2000-2015	
	Number of specimens	Number of seizure cases	Number of specimens	Number of seizure cases
Tortoises -- Testudinidae	31,207	1,452	> 72,296	1,663
Eurasian freshwater turtles and neotropical wood turtles -- Geoemydidae	10,805	125	>> 62,364	430
Soft-shelled Turtles -- Trionychidae	10,096	21	> 30,035	85
Pig-nosed Turtle -- Carettochelyidae	548	11	29,692	26
American freshwater turtles plus Eurasian Emys -- Emydidae	643	77	> 12,822	106
Snapping Turtles -- Chelydridae	661	5	6894	9
Side-necked River Turtles -- Podocnemididae	645	20	> 6878	45
Big-headed Turtle -- Platysternidae	30	1	1112	37
Mud Turtles -- Kinosternidae	0	0	> 1006	7
Austro-American side-necked turtles -- Chelidae	26	2	> 398	9
African Side-necked Turtles -- Pelomedusidae	0	0	50	1
Central American River Turtle -- Dermatemydidae	8	3	8	3
Unidentified tortoises or freshwater turtles			> 75,000	116
All Tortoises & Freshwater Turtles -- Order TESTUDINES minus Families Cheloniidae and Dermochelyidae	54,669	1,717	> 303,774	2,561

Table 2 summarizes the numbers of individual live tortoises and freshwater turtles seized, and number of seizure events, when combining all species within each of the different families, based on the full UNODC dataset as well as the combined dataset. In both sets of results the numerical dominance of tortoises is again apparent, particularly for the number of seizure events (65 to 85%) but also for the total number of animals seized (24 to 57%).

When comparing these percentages against legal declared trade in the UNEP-WCMC CITES trade database, the preponderance of tortoises in seizures is disproportionate: Of the total number of live traded tortoises and freshwater

turtles (3,457,703), the number of tortoises (987,542) represents only 28%. This corresponds approximately to the proportion of seized individuals in the combined dataset, but is significantly lower than the percentage of seizure events (both datasets) and of the proportion of seized individuals in the UNODC dataset. Part of the explanation for this disproportionate number of tortoise seizures may be found in the two interlinked conditions that all tortoises have been included in the CITES Appendices for some 40 years, and that all tortoise species that are native to the European Union have been trade-regulated for several decades; as such, wildlife and customs inspectors are well aware that any shipment of tortoises must be accompanied by permits, and such shipments warrant detailed inspection. In contrast, freshwater turtles are subject to a wide variety of protective and regulatory statuses varying from nearly unregulated to limited by permit to banned from commercial trade; matching the correct regulatory status to the species is challenging. Moreover, additional measures concerning protection or trade regulation of various species of freshwater turtles have been enacted in recent years, whose implementation by authorities may take some time.

Trade routes and seizures

Numbers of seizures of live tortoises and freshwater turtles by country

By examining seizure records for illegally traded tortoises and freshwater turtles, key points and routes can be identified that connect source, transit and destination countries most affected by this illegal trade. The number of seizures or confiscations occurring in a particular jurisdiction is often closely linked to the level of illegal trade and enforcement effort. The more effective the enforcement measures are, the more it would deter illegal tortoises and turtle trade. Criminal groups tend to avoid places where effective enforcement measures have been implemented, because this increases the risk of detection. For this reason even the most intensive enforcement efforts would sometimes generate no or only a limited number of seizures of illegally traded tortoises or freshwater turtles. On the other extreme, where enforcement is weak, illegal tortoises or freshwater turtle trade might be rampant, but illegal consignments will likely not be detected because enforcement effort is lacking. In this case it is likely that no or only a limited number of seizures would also take place, despite the fact that the problem might be much more severe. Where good enforcement practices are in place, more seizures and confiscations are likely to be made despite the fact that illegal trade in tortoises or turtles might not be that severe, whilst where enforcement effort is weak the problem might be much more severe, but seizures and confiscations are likely to be limited and likely do not reflect the true scale of the problem. The following summary of seizure cases and specimen numbers by country therefore reflects the interplay between illegal trade levels and enforcement effort and effectiveness, and can not be interpreted as any particular country doing a 'good' or 'sub-standard' job.

Based on the UNODC WorldWISE dataset, a total of 63 countries reported confiscating live tortoises and/or freshwater turtles from illegal trade or possession; the combined dataset documented live turtle seizures occurring in a total of 87 countries and jurisdictions. Table 3 presents the ten countries, plus the 28 European Union member countries combined, reporting the largest numbers of seized live tortoise and freshwater turtle specimens. The complete list of all countries for which seizures were reported, and the number of cases and number of specimens on record, is provided in Annex Table 3.

Table 3. Countries seizing the greatest numbers of live tortoises and freshwater turtles, arranged by number of live specimens reported seized during 2000-2015, based on the combined dataset.

	Number of live seizure cases	**Number of live specimens seized**	**Average seizure size (live specimens)**
India	189	> 74,029	401
Hong Kong	88	> 39,805	452
Indonesia	34	35,457	1043
Viet Nam	242	> 24,638	102
Thailand	85	> 19,498	229
European Union [28 Member States combined]	1,099	15,382	14
China	37	14,374	388
Colombia	10	10,122	1012
Bangladesh	25	> 8,392	336
Taiwan	25	8,006	320
United States of America	342	> 7,227	21

A tabulation was made of the largest seizures reported during the period 2000-2015, and these are listed in Table 4. Despite the great diversity of species involved and trade routes reported, it is evident that the great majority of very large seizures occur in Asia; the two very large seizures outside Asia occurred in South America. With the exception of the period 2010-2012, very large seizures have been reported nearly every year. The timing of very large seizures (December to August) may relate to collection seasonality or feasibility with regard to the wet season in much of tropical Asia, hatching season of particular species traded mainly as hatchlings for the pet trade (*Carettochelys insculpta*, *Podocnemis unifilis*), or increased demand for consumption during the cool season in East Asia.

Table 4. Summary of very large seizures (3000 animals, or 3000 Kg, and larger) of live tortoises and freshwater turtles reported world-wide during 2000-2015, based on records in the combined dataset, arranged in chronological order.

Date	**Country and location of seizure**	**Seizure contents:**	**Place and trade route:**
11 Dec. 2001	Hong Kong: Yau Ma Tei public cargo working area	10294 live and dead adult tortoises and freshwater turtles. Alive: 5 *Batagur baska* (I), 1 *Batagur borneoensis* (II), 1798 *Cuora amboinensis* (II), 200 *Cyclemys* sp., 38 *Heosemys annandalii*, 503 *H. grandis*, 524 *H. spinosa*, 15 *Malayemys subtrijuga,* 73 *Manouria emys* (II), 34 *Notochelys platynota*, 1381 *Orlitia borneensis*, 2972 *Siebenrockiella crassicollis*; 2750 unidentified dead specimens	Shipping container; arrived from Singapore, destined for China
11 March 2002	China: off Po Toi island	about 9000 live freshwater turtles, species not reported	Seized from a ship's cargo hold; shipment reportedly arrived as air cargo from Thailand into Hong Kong, shipment was handled in Wan Chai, HK, then transferred to a local vessel, then onto another vessel offshore, with reported destination Huiyang, Guangdong. Thailand issued veterinary certification, but no Hong Kong export documentation was issued.

Date	Country and location of seizure	Seizure contents:	Place and trade route:
March 2003	Viet Nam: Hanoi airport	4889 Kg of live freshwater turtles, including *Cuora amboinensis* (II), *Heosemys grandis* (II), *H. annandalii* (II), and *Siebenrockiella crassicollis* (II)	Air cargo shipment originating from Kuala Lumpur, Malaysia, declared as 1800 softshell turtles, shipment was found to contain softshells and other species; most specimens dies and were incinerated
10 July 2003	Hong Kong	10,260 *Cuora amboinensis* (II) and 17 unspecified tortoises (II), shipped alive but died in transit except 4 specimens	Container cargo shipment arriving from Malaysia
27 June 2004	Hong Kong: Kwai Chung terminal	3580 dead turtles, originally shipped alive, died in transit; included unspecified numbers of *Cuora amboinensis* (II), *Heosemys grandis* (II) and *Siebenrockiella crassicollis* (II)	Unclaimed container in port; shipped from Malaysia, destination unknown
14 March 2005	Indonesia: Surabaya, Java	7275 live *Carettochelys insculpta* (II)	Seizure of live freshwater turtles from a ship arriving from Merauke, West Papua, Indonesia; destination not stated
5 April 2005	Viet Nam: Thanh Hoa	about 3000 Kg of live and dead tortoises or freshwater turtles (species not reported), plus 2000 Kg of monitor lizards, snakes, and pangolins	seizure; 400 kg of healthy turtles released in protected areas, remainder sold locally; driver detained for questioning. Shipment reportedly originated from Long An, Viet Nam, and destined for China.
March 2006	Colombia: Sucre	about 10,000 live freshwater turtles, *Trachemys* sp. (likely the native *T. callirostris*)	Seizures from poachers and traders during concerted enforcement campaign during Easter peak consumption season; 218 persons detained; freshwater turtles captured domestically, released into suitable habitat after seizure
30 June 2006	Hong Kong	7000 live *Amyda cartilaginea* (II)	Shipment originated from Indonesia, destined for Hong Kong
24 Jan. 2007	Viet Nam: Hai Phong port	6000 kg of live freshwater turtles, including *Heosemys annandalii* (II) and *Cyclemys* sp., and 2000 kg of snakes	Live turtles being transferred from truck into container; animals stated to have originated from Thailand and transported by road through Lao PDR; container destined for China

Date	Country and location of seizure	Seizure contents:	Place and trade route:
30 Aug. 2007	Hong Kong: Lantau: Siu Ho Wan, Pak Mong	7242 live turtles: 220 *Apalone ferox,* 6020 *Chelydra serpentina*, 1002 *Sternotherus carinatus*; also counterfeit computer discs	Sea port: animals and goods being transferred from truck to speedboat, provenance not stated, destination reportedly China
22 Jan. 2009	India: Allahabad, Uttar Pradesh	3000 live freshwater turtles and/or tortoises, weighing over 5 tonnes, including *Nilssonia gangetica* (I), *Geoclemys hamiltonii* (I) and *Lissemys punctata* (II)	Seizure whlle being transported on truck; thought to have been sourced in Uttar Pradesh, destination not recorded.
7 Feb. 2009	India: Barachatti, Gaya, Bihar	about 3000 Kg of live tortoises or freshwater turtles, species not reported	Seizure of live TFT from a vehicle at a forest checkpoint; animals reportedly originating from Uttar Pradesh, destined for Kolkata
18 July 2013	India: Kolkata airport, West Bengal	10,043 hatchling turtles of different species, including freshwater turtles and sea turtles	Shipment apparently originated from Guangzhou, China, and was destined for Singapore after transit through Kolkata, India.
7 Jan. 2014	Indonesia: West Papua airport	5400 live *Carettochelys insculpta* (II)	Air cargo shipment from West Papua
3 Feb. 2014	India: Bongaon, West Bengal, near Bangladesh border	4980 live *Nilssonia gangetica* (I)	Shipment on truck, in boxes underneath crates of fish, reportedly originating from Visakhapatnam (Andhra Phradesh) and destined for Bangladesh
March 2014	India: Chennai airport	9000 live hatchling turtles, species not reported	Shipment arrived from Kuala Lumpur, Malaysia
24 Dec. 2014	Thailand: Chachoengsao	7171 live unidentified turtles and 64 pythons	Seizure from trader's premises; no information given on provenance or destination
22 Jan. 2015	Indonesia: Denpasar airport, Bali	5284 live *Carettochelys insculpta* (II)	Air cargo shipment from Timika, West Papua,
May 2015	Peru: Ucayali	3000 live *Podocnemis unifilis* (II)	Seizure from private home following tipoff; 350 animals had died, surviving animals brought to refuge and released
17 June 2015	Philippines: Bataraza, Palawan	4100 live freshwater turtles: 3907 *Siebenrockiella leytensis* (II), 168 *Cyclemys* sp.(II), 25 *Cuora amboinensis* (II)	Seized at warehouse; illegally collected on Palawan, intended for export to China

Provenance of illegally traded live tortoises and freshwater turtles

The countries in which a species is native are logically the countries of origin of specimens collected from the wild, but because a wide variety of turtle species and specimens are held and bred in captivity in a variety of countries, range countries are not necessarily the countries of origin of all traded tortoise and freshwater turtle specimens. In addition, the nature of global transport networks, with regional hubs serving a range of airports and seaports, means that shipments originating in one country do not always travel direct to their destination country, but often arrive via stop-over or transit in a third country. The origin, i.e. the location or country where a shipment of tortoises and/or freshwater turtles was originally collected or produced in captivity, is thus often difficult to establish with certainty; but the provenance, i.e. the last point of departure, of a shipment is normally available from the shipping documentation and unloading records, and is often recorded for seizures of trade shipments. For a very large number of live specimen seizures in the UNODC database, the country of provenance is not available; this includes a substantial number of seizures occurring at private collections and holdings, and other situations that do not represent commercial or personal shipments transported from provenance to destination. Similar considerations and data shortcomings apply to the seizure records in the *TRAFFIC Bulletin* and *On The Trail*. Nevertheless, with due consideration the results from analysing the records for which provenance data is available are informative. Countries of provenance for seizures in the combined dataset are provided in Table 5.

Table 5: Countries of provenance of shipments of live tortoises and freshwater turtles seized during 2000-2015 based on records in the combined dataset and arranged by approximate total number of live specimens seized.

	number of seizures	**number of specimens**	**average number of specimens per seizure**
India	88	38,018	432
Indonesia	44	32,166	731
Malaysia	24	31,556	1314
China	32	> 11,034	345
Singapore	26	10,462	402
Colombia	4	10,005	2501
Hong Kong	31	9,882	319
Thailand	48	1383, + 6000 Kg	approx. 150
Viet Nam	34	2767, + 3000 Kg	approx. 170
Philippines	13	5,272	405
Madagascar	21	> 5,017	239
Bangladesh	17	> 3,146	185
Unknown / not recorded	1,066	98,290	92

The straightforward analysis of countries of provenance of seized shipments or holdings clustered international trade shipments from known source countries for (illegal) international trade seized at the country of transit or destination, as well as seizures of domestically sourced specimens, i.e. anti-poaching enforcement activities. Further analysis would be required to tease out these different categories, (successful domestic enforcement of anti-poaching measures, failure to detect poaching and export shipments in the source country followed by seizure during transit or import at another country) and their significance for law enforcement efforts, as well as their seizures based on species protection regulations versus administrative issues with the shipment that led to seizure (for example, non-compliance with IATA regulations, or exceeding permitted shipment weight).

Destinations of illegally traded live tortoises and freshwater turtles

The intended destination of tortoise and freshwater turtle specimens shipped illegally and seized should give indications of the countries attracting shipments of illegally sourced tortoises and freshwater turtles, as it could indicate that a demand exists there for the particular species, or that such countries might be selected as a transit country for illegal shipments as a result of possible low risk of detection and/or prosecution if detected. Thus, reported destinations of shipments of live tortoises and freshwater turtles in the combined dataset were analysed, and the results presented in Table 6.

Table 6: Reported destination countries for shipments of live tortoises and freshwater turtles seized during 2000-2015, arranged by number of specimens seized, based on records in the combined dataset.

	number of seizures	number of specimens	average number of specimens per seizure
China	78	53,459	685
Hong Kong	45	14,402	320
Bangladesh	10	11,275	1,127
Malaysia	31	11,059	357
Singapore	7	10,059	1,437
Thailand	31	8,062	260
European union [28 countries]	725	7,297	10
United States	306	6,199	20
India	12	4,270	356
Japan	18	2,175	121
Indonesia	8	2,164	271
Myanmar	7	1,851	264
Russia	1	1,500	1,500
Unknown / not recorded	1,121	155,245	138

Similar to the uncertainty associated with the pathways that illegally traded tortoises and freshwater turtles may be transported along (from country of origin or provenance) before they are detected and seized, the intended destination of live shipments is often unclear or unavailable, and consequently is not recorded for a large number of cases. And logically, 'destination' is not applicable to seizures of illegally held specimens at collections or facilities. Table 6 indicates that large numbers of seized specimens are recorded as destined to the food and pet trade destination markets and transport hubs of countries in East and Southeast Asia. Meanwhile, a significant number of seizure events appears to be associated with relatively small individual shipments into the countries with extensive hobbyist communities, specifically the European Union and United States, and apparently including a significant 'living souvenir' flow of tortoises from northern African countries into the European Union. As with the compilation of countries of provenance, the analysis of reported destination countries of seized live specimens is complicated by combining the numbers for domestic seizures during anti-poaching actions and domestic pet and consumption trade with numbers of seizures of import shipments of exotic tortoise or freshwater turtle specimens intended for the local pet or food trade, as well as seized shipments in transit. Regardless of purpose and ultimate destination of seized shipments, Table 6 provides potentially useful focus for continued and intensified enforcement action.

Overall geographic patterns of seizures of live tortoises and freshwater turtles

Overall, based on where and how often live tortoises and freshwater turtles are seized, at the surface no strong patterns are evident of ilegal tortoise and freshwater turtle trade moving from one country or region to another. Instead, illegally traded live specimens are seized in most countries, originating from across the globe and destined for countries on all continents. This extensive global network of provenance and destination is Illustrated in Figure 3.

Most seizure events occur in the United States and the European Union, and many or most of these seizure cases originate from inbound travel into the US and EU from nearby countries (Mexico and North Africa, respectively, largely matching the voluminous tourist and personal travel flows between these regions). In contrast, as documented in Tables 3 and 4, when evaluating the total numbers of specimens seized, the greatest numbers are seized in Asia, where most of the very large seizures have occurred. While the available data do not provide a complete picture of illegal tortoise and freshwater turtle trade movements around the world, it appears to provide a reasonable approximation based on multiple complementary and parallel data sources; it is likely that records of smaller seizures in Africa, Asia or Central and South America have been missed for the overall dataset, but it is highly unlikely that large seizures in Europe or North America were omitted. With those caveats, the diffuse nature

of global routes for illegally traded tortoises and freshwater turtles appears to be real: seized shipments originate from around the world and are destined for much of the globe, as transit or final destination. The only indication of large-volume illegal trade trunk pathways are for Indian Star Tortoises (*Geochelone elegans*, App.II) and Spotted Pond Turtles (*Geoclemys hamiltonii*, App.I) primarily for the pet trade from South Asia to Southeast Asia, Pig-nosed Turtles (*Carettochelys insculpta*, II) from West Papua destined for East and Southeast Asia, and for Asian Softshell Turtles (*Amyda cartilaginea*, App.II), Asian Box Turtles (*Cuora amboinensis*, II) and accompanying species within and from Southeast Asia to East Asia. There do not appear to be critical trade route bottlenecks where enforcement action can be focused; illegal trade shows every indication of using the full range of transport options by land, sea and air, including the selection of indirect routes between origin and ultimate destination by transiting through one or more (air)ports.

Figure 3A. Map of transport routes, where recorded, of seized live tortoises and freshwater turtles during the period 2000-2015, based on the combined dataset. Where information is available, shipments are mapped from country of origin, to country of provenance before seizure ('exporter'), to country where the seizure occurs (coded as 'transit' in the legend), to intended country of destination ('importer'). Width of lines indicates the quantity of live specimens seized. Image prepared using TradeMapper.

Figure 3B: Zoom-in of the Asian region from Figure 3A.

Figure 3C: Zoom-in of the European region from Figure 3A.

The pattern of large numbers of relatively small seizures in the EU and US, and fewer but larger seizures in Asia, reappears even more strongly when examining the provenance, site of confiscation, and intended destination of live specimens of tortoises and freshwater turtle species included in CITES Appendix I (Fig. 4). Of particular note are the voluminous seizures of Spotted Pond Turtles (*Geoclemys hamiltonii*; see case study on later page) and to a lesser extent Three-Keeled Hill Turtles (*Melanochelys tricarinata*) in transfer between India and Bangladesh, and onwards to Southeast Asia. Also showing in the map is the generally low-volume (see Annex Table 2) smuggling of Egyptian Tortoises (*Testudo kleinmanni*, App. I) from North Africa to Europe and elsewhere.

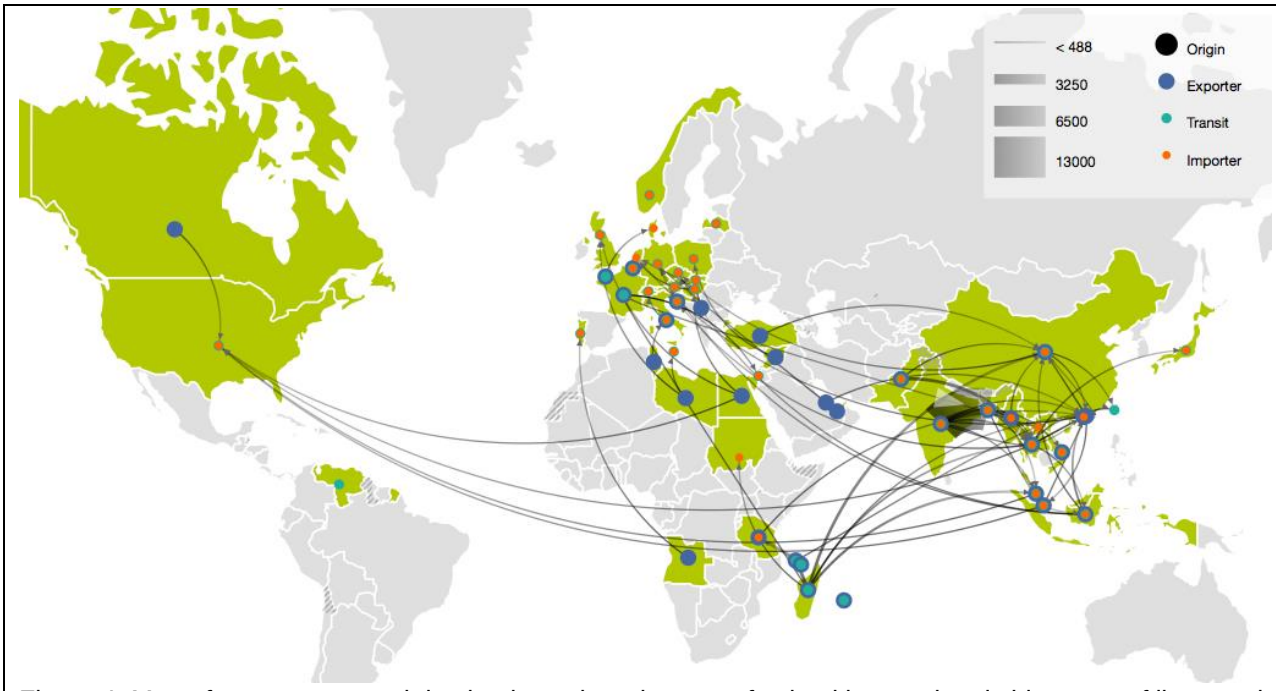


Figure 4. Map of provenance and destination, where known, of seized international shipments of live tortoises and freshwater turtles of species species listed in CITES Appendix I during the years 2000-2015, based on the combined dataset. Country where seizure occurs is listed as 'transit', intended destination is listed as 'importer'. [in cases where the country of destination seized the shipment, the orange 'importer' dot covers most of the blue-green 'transit = seizing country dot].

Place of Seizures

An analysis was made on the UNODC dataset of the types of places where live seizures of tortoises and freshwater turtles were made; results are presented in Table 7:

Table 7: Location types at which seizures of tortoises and freshwater turtles occurred during the period 2000-2015, based on the combined dataset.

	Number of seizure cases	**Number of live specimens seized**
Air traveller luggage	167	51,557
Air cargo (unaccompanied)	29	25,793
Airport (unspecified)	278	9,059
Border crossing (land)	121	5,860
Mail center / mail parcel	30	462
Maritime port (including cargo, container, fishing, and ferry ports)	291	58,523
At sea (high seas and coastal waters)	11	10,262
River boat	3	355
Railways, railway station	24	5,207
Road, road inspection point, bus stop, bus station, public parking area	159	41,283
Markets, shops including pet shops	50	1,158

	Number of seizure cases	Number of live specimens seized
Premises: warehouse	5	5,759
Premises: internet trader	16	257
Premises: zoo or wildlife institution	24	235
Fair, exhibition	6	16
Premises: private	98	1,035
Inland (unspecified)	30	501
In-situ poaching	29	6,063
Miscellaneous and unrecorded	1,190	80,389

The fact that no clear place category was recorded for nearly half of all seizures introduces a large margin of uncertainty to any analysis; but for the records where seizure place was listed, it is noteworthy that the great majority (897 cases, concerning 161,054 live specimens) of seizures occurred at (implied) border locations such as at airports, in maritime ports and at sea, and at land borders. Moreover, seizures at mail centers and railway stations may also concern points of entry into or departure from a country, or shipment from or towards a border crossing. The same is valid for seizures made from vehicles using roads and highways.

In contrast, the number of reported seizures (in the UNODC dataset as well as the combined dataset) at 'domestic' places that are not directly related to points of entry to or departure from a country, such as shops, markets, warehouses, fairs and exhibitions, zoological gardens and animal parks, and private residences, amount to 229 cases involving 8961 live tortoise and freshwater turtle specimens.

Noteworthy also is the relatively low number of reported seizures from poachers caught in the act or soon thereafter; considering that the great majority of illegally traded tortoises and freshwater turtles were initially poached from the wild (as it makes no sense for a legitimate wild offtake program or licensed captive production facility to jeopardize their merchandise by trading or shipping illegally), the low numbers of cases and specimens seized directly from poachers is remarkable: some 6000 poached animals compared to 161,000 illegally imported or exported animals detected and seized at border crossings, or over 46,000 animals detected during domestic road and rail transport. However, reporting of poaching seizures into the UNODC database or press releases may be limited, and the large number of miscellaneous and unspecified seizures contribute to the tentative nature of these proportions.

Relationship between species being illegally traded and country of seizure.

An analysis was run on the combined dataset for seized live specimens to evaluate whether seizures of live tortoises and freshwaer turtles are more likely to occur in countries in which a species is native (i.e., detection and seizure during poaching, domestic transport and holding, or prepartion for export) versus in countries where a species is not native (i.e., transit and destination countries detecting and seizing illegal shipments or illegally held exotic animals). Detailed species identity was available for 2020 seizure cases concerning 216,240 live tortoises and freshwater turtles; the results of this analysis are presented in Table 8.

Table 8: Native or non-native status of tortoises and freshewater turtles in relation to the country where the seizure occurs. Data are restricted to live specimen seizures during the period 2000-2015 for which identification to species level was provided.

	Species is <u>not native</u> to country of seizure		Species is <u>native</u> to country of seizure	
	# specimens	# cases	# specimens	# cases
Appendix I	9,132	139	30,965	112
Appendix II	45,273	616	93,995	931
Appendix II with zero quota from wild for all Range States	381	32	4,144	32
Appendix III	574	16	627	11
Not CITES-listed	13,856	46	17,844	83
Total	69,216	849	147,024	1,171

Table 8 documents that the majority of reported specimens were seized in the country in which the species was native; around two-thirds (68%) of all specimens seized were native, and about 58% of seizure cases

concerned native turtle species. These trends hold across different categories of CITES Appendix listings, and are even more extreme when looking at Appendix-I listed species, where 45% of seizure actions occur in range countries while accounting for 77% of seized specimens.

Another trend emerging from Table 8 is that the average size of seizures in range countries (127 live animals) tends to be larger than in non-range countries (82 live animals); again this trend is most extreme among Appendix I species, where seizures in range countries concern on average 276 live animals while seizures of Appendix I species outside of range countries average 66 live animals. Part of the explanation for this trend could perhaps be found in the nature of illegal trade and enforcement action, where large collected quantities of poached animals are held or shipped together in the range countries, and while large seizures occur at points of entry into non-range countries, much enforcement also occurs at retail level in destination countries, where quantities of specimens held in stock tend to be modest, thus reducing the average number of specimens seized per seizure event.

It must be emphasized that this analysis and its results in Table 8 are indicative at best, as determined enforcement effort by a few countries (and associated diligent efforts to report seizure data) may drive the total numbers for particular categories. For example, the total number of non-CITES-listed specimens seized by non-range countries (13,856 live tortoises and freshwater turtles) is greatly driven by two separate, large, multi-species seizures in Hong Kong, accounting for 12,909 live animals.

Case studies: Patterns of seizure of selected high-profile species of tortoises and freshwater turtles in international illegal trade.

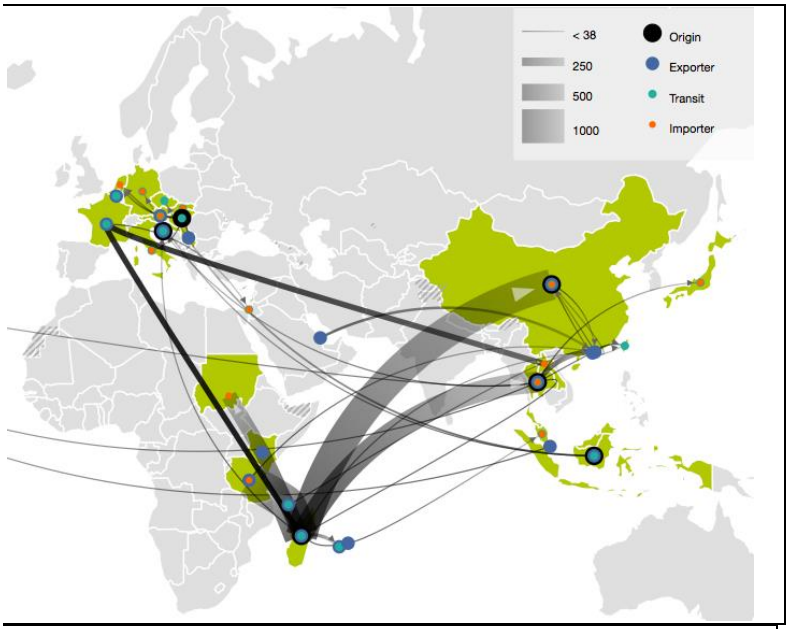
Three high-profile tortoise and freshwater turtle species that are prevalent in international trade seizures provide interesting perspectives on the challenges of detecting and addressing illegal trade, deliberately using all available transport routes to avoid detection and seizure.

Radiated Tortoise,
Astrochelys radiata
Seizure records 2000-2015

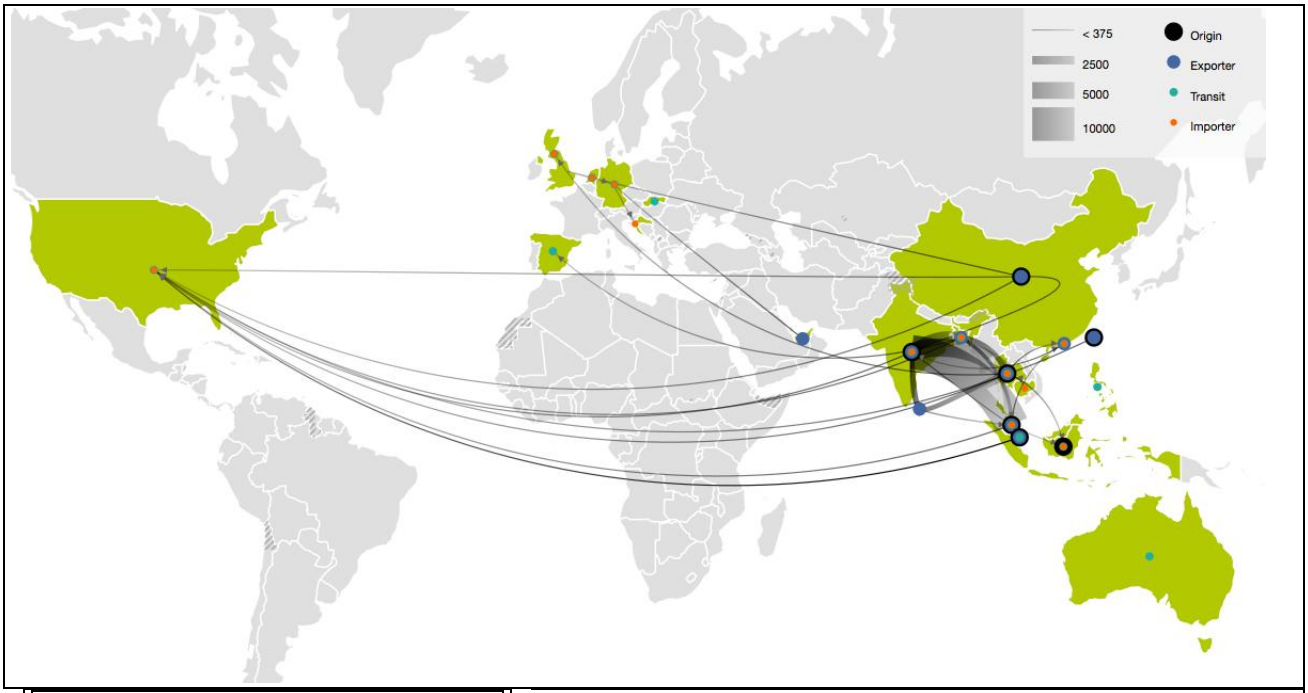
Native to Madagascar

CITES Appendix I

	specimens	cases
Total recorded	7,973	68
Madagascar	3,489	10
Thailand	1,225	8
Comoros	1,014	1
Malaysia	806	3
China	493	2
Hong Kong	277	8
France	172	2
Réunion	127	2
United States	35	8
Other countries	335	24



The Radiated Tortoise, *Astrochelys radiata*, has been listed in CITES Appendix I since 1975. It is endemic to Madagascar, where it is protected by domestic laws and community regulations and taboos. Nevertheless, exploitation of adult tortoises for bushmeat has increased in recent years (O'Brien *et al.,* 2003; Castellano et al., 2013), and so has the collection and trade of juvenile tortoises for the international pet trade. Relatively small seizures of this species have occurred for as long as seizure records are available, but large seizures of over 100 individuals per shipment have only been recorded from 2010 onwards. Medium to large shipments (over 50 live animals) have been seized in Madagascar itself, as well as in China, the Comoros, Czech Republic, France (Paris CDG airport), Réunion, Hong Kong, Malaysia, and Thailand, with seized shipments transiting through, or destined for, Indonesia, Kenya, Mauritius, Qatar, Sudan and Tanzania. The great majority of specimens were seized from the luggage of air travellers, but shipments by boat from Madagascar to the Comoros are on record, as are live specimens being express mailed from and to a wide range of locations. Thus, a diverse range of airline routings and other transport methods are used to move live specimens out of Madagascar, primarily to Asia based on the seizure records, with some animals transported onwards to Europe and North America. In the case of the Radiated Tortoise, the Party to which it is endemic, Madagascar, accounts for 44% of specimens seized at only 15% of seizure actions regarding the species; the other seizures occur at the transit or destination airports, ports and mail centers after illegal shipments have left Madagascar undetected, and in some cases in another, third, country after passing (undetected) through a transit country.



Indian Star Tortoise, *Geochelone elegans*
Seizure records 2000-2015

Native to India, Pakistan, Sri Lanka

CITES Appendix II; no range state allows exports

	specimens	cases
Total recorded	34,080	118
India	21,316	67
Pakistan	-	-
Sri Lanka	-	-
Thailand	5,008	13
Singapore	2,400	4
Malaysia	2,265	5
Bangladesh	1,859	4
United States	426	13
Germany	364	1
Hong Kong	314	2
Other countries	128	9

The Indian Star Tortoise, *Geochelone elegans*, has been included in CITES Appendix II since 1975. It inhabits India, Pakistan and Sri Lanka; none of the range countries have permitted or recorded legal exports of commercial quantities of live, wild-collected specimens since 1999. While some captive breeding occurs at zoos and private keepers, few of these are traded internationally; no large-scale commercial captive production facilities have been documented.

The Indian Star Tortoise is the single most frequently seized tortoise or freshwater turtle species during the period 2000-2015. Efforts to collect it from the wild reportedly are focused on central India (D'Cruze et al., 2015), from where they are moved to a wide spread of points of export from the country. Seizures of shipments intended for export have been seized at Mumbai airport, Bengaluru airport (Karnataka), Cochin and Thiruvanathapuram airports (Kerala), and Chennai and Madurai airports (Tamil Nadu). Detained traffickers have confirmed that they selected certain airports to avoid known enforcement efforts at other airports. In addition, large numbers of Indian Star Tortoises have been seized domestically, being transported as railway luggage or cargo, and from vehicles on the national highways. Large seizures have occurred near the land border with Bangladesh, and seizures have been reported from Dhaka airport of specimens hidden in luggage of travelers destined for Southeast Asia. Seizures have been extensive in Hong Kong, Malaysia, Singapore and Thailand, with air shipment routings either originating directly from India or Bangladesh, or after transit through Sri Lanka. Additional seizures of Indian Star Tortoises occurred in Germany, Indonesia, the Netherlands, the Philippines, Slovakia, Spain, the United Kingdom and the United States, in most cases from air travellers arriving from Asia, as well as some from express mail parcels sent from Asia. Noteworthy is that nearly two-thirds of all seized live individuals were detected and seized within India, and over half of all seizure events occurred in India.

Spotted Pond Turtle, *Geoclemys hamiltonii* Seizure records 2000-2015		
Native to Bangladesh, India, and Pakistan		
CITES Appendix I		
	specimens	cases
Total recorded	11,451	70
Bangladesh	3,186	7
India	3,557	30
Pakistan	1,082	5
Hong Kong	1,620	10
Thailand	1,372	11
Singapore	396	2
China	229	3
Other countries	9	2

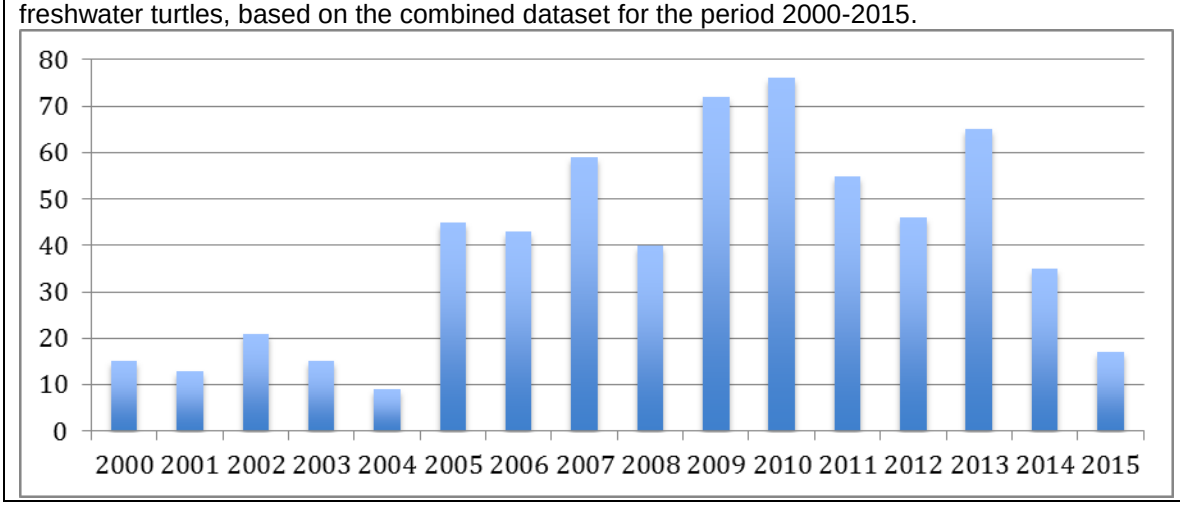
The illegal trade situation of the Spotted Pond Turtle, *Geoclemys hamiltonii*, shows extensive parallels with that of the Indian Star Tortoise. It also was included in CITES in 1975, but in Appendix I, and while pre-convention specimens have been kept and bred in zoos and private collections, these quantities do not account for anything like the numbers of illegally traded animals; legal, declared international trade during 1975-2015 amounted to about 293 live animals, of which 252 were recorded as illegally traded animals being repatriated or transferred to other countries' captive facilities. Very few seizures of the species occurred before 2009, after which the species rapidly became frequent and voluminous in seizures in the range countries Bangladesh, India, and Pakistan, as well as the main destination countries China, Hong Kong, Singapore and Thailand (see also Chng, 2014). Most specimens have been seized from the luggage of air travellers, but seizures have also occurred from cars and trucks using highway networks to move animals, most notably the seizure of over 200 specimens from Pakistan seized and repatriated by China. Similar to seizure patterns for the Indian Star Tortoise, about two-thirds of Spotted Pond Turtle specimens have been seized by the range countries Bangladesh, India and Pakistan, accounting for over half of all seizure actions involving the species since 2000.

5. Findings, part 2: Illegal Trade in Parts and Derivatives of Tortoises and Freshwater Turtles

The initial analysis of seizures of parts and derivatives of tortoises and freshwater turtles was carried out based only on the approximately 1000 records in the UNODC data set for the period 1998-2015. Compilation of the combined dataset, by adding records from the TRAFFIC Bulletin, On The Trail, and other sources added about 60 additional records. It proved not feasible to re-run all analyses of parts and derivatives seizures for this modestly expanded dataset, given the already exceeded intended submission date of the overall report. Species-specific data on tortoise and freshwater turtle parts and derivatives is much more complicated to analyse due to the wide variety of products traded, the different units of items seized, and the large proportion of cases that are reported only to family level.

Annual level of reported seizures of Parts and Derivatives involving Tortoises and Freshwater Turtles

Figure 5. Number of reported seizure cases worldwide concerning parts and derivatives of tortoises and freshwater turtles, based on the combined dataset for the period 2000-2015.



The number of seizure cases of parts and derivatives is graphed in Figure 5. The figure indicates the significantly improved recording of seizures (or at least their incorporation into the UNODC dataset) following establishment of the EU-TWIX database in 2005; assuming that record submissions for 2014 and 2015 had not been completed at the time the dataset was made available for analysis, it appears that parts and derivatives seizures are fairly stable at between 40 and 76 records per year world-wide.

Species of Tortoises and Freshwater Turtles reported seized as Parts and Derivatives

As regards the specific tortoise and freshwater turtle species involved in seizures of parts and derivatives, it should be recognized that substantial uncertainty surrounds some of the reported identifications in the data set, as at least some of the identifications make little biological sense[13]. Thus, parts and derivatives are analysed at family level only. A summary of the data is presented in Table 9. While not necessarily quantatively comparable or accurate, the sum total of parts and derivatives seized, 2113 kg plus 78,818 items, gives a remarkable perspective on the scope and extent of the trade in parts and derivatives. At a minimum, one shell, one skeleton, or one plastron OR carapace translates to one individual animal; the quantities for these in Table 9 exceed 11,000 specimens. The total quantities of parts and derivatives, in comparison with the 54,669 live tortoises and freshwater turtles recorded as seized in the UNODC dataset over the same period, hints at the trade in parts and derivatives affecting comparable numbers to the live trade. Considering the highly uneven distribution of recorded seizures of parts and derivatives (see Table 10 and associated discussion) and the relatively small quantities of turtle parts and products recorded in the UNEP-WCMC trade database, it is likely that much of this trade goes unreported and undetected, and thus any illegal component is unlikely to be seized and recorded.

[13] *Examples of questionable identifications include records of carapaces of the North American Wood Turtle (Glyptemys insculpta) reportedly brought in from Angola to Portugal, or a kilogram of meat of the South African endemic small Geometric Tortoise (Psammobates geometricus) arriving from Guinea-Bissau.*

Table 9. Number of seizure cases and summary of seized parts and derivatives of tortoises and freshwater turtles by family, based on records for the period 1998-2015 in the UNODC WorldWISE dataset (as of 30 October 2015).

	Number of cases	**Summary of seized specimens**
Testudinidae Tortoises Appendix I & II	627 cases	Derivatives: 23.5 kg + 23,453 items; medicinal preparations: 13.6 kg + 5,082 items; powder: 3.54 kg + 8 items; carapaces: 5.4 kg + 758 items; 25 shells; 4 skeletons; 3 skulls; 16 shell products; 35 bodies; 510 scientific or museum specimens; 8 trophies; 11 carvings; 7 claws; meat: 7.8 kg + 8 items; eggs: 1 kg + 72 items; soup: 1 kg + 33 items; 15 dead arrivals; 1429 unspecified items.
Geoemydidae Eurasian freshwater turtles and neotropical wood turtles App. I, II, III & not listed	168 cases	Derivatives: 1.2 kg + 1783 items; medicinal preparations: 10 kg + 16,794 items; 8.2 kg powder; shells, carapaces plastrons, or skeletons: 3.91 kg + 10,384 items; 54 bodies; 11,466 unspecified items.
Emydidae Western Hemisphere freshwater turtles plus Eurasian *Emys* App. I, II, III & not listed	86 cases	
Trionychidae Soft-shelled turtles App. I, II, III & not listed	34 cases	Derivatives: 1.5 kg; medicinal preparations: 2 kg + 1416 items; 3 kg meat; 10 bodies; 44 shells, skeletons, skulls, or carapaces; 3500 unspecified items
Podocnemididae Side-necked river turtles. App. II.	32 cases	11 carapaces, 4 skulls, 1 shell product, 3 bodies, 2 kg meat, 243 eggs, 2 scientific specimens, 2 trophies.
Dermatemydidae Central american river turtle. App. II.	21 cases	2 bodies, 7 shells or carapaces, 50 eggs, 11 kg meat
Chelydridae Snapping turtles App. III & not listed	6 cases	4 bodies, 1 shell, 14 dead arrivals
Chelidae Australian-South American side-necked turtles. App. I, II & not listed	3 cases	3 carapaces, 3 shell products
Carettochelyidae Pig-nosed turtle App. II.	2 cases	9 dead arrivals of live-shipped specimens
Platysternidae Big-headed turtle App II; App.I since 2013	1 case	1 unspecified

Countries seizing Parts and Derivatives

Available UNODC data on seizures of tortoise and freshwater turtle parts and derivatives document that distribution of seizures by country is significantly different from the pattern of live seizures made. Only 31 countries were involved in the 971 cases in the analysis; the twelve countries reporting the greatest number of seizures are listed in Table 10.

Table 10. Seizures of tortoise and freshwater turtle parts and derivatives, by country, arranged by the number of seizure cases, based on records for the period 1998-2015 in the UNODC WorldWISE dataset (as of 30 October 2015).

	# cases	**Kg**	**# items**
New Zealand	372	48	28,332
United States	365	55	17,314
European Union [28 States]	190		
Germany	33	1	125
Portugal	29	2	55
Netherlands	24	1	289
Italy	20	1	140
Spain	19		22
United Arab Emirates	16		662
Belgium	15	1	5,024
France	13		17
China	12	1	12,187
India	7		3,735

Noteworthy are the numbers of seizures made by New Zealand and the United States: their 372 and 365 respective reported seizures together represent 75% of the total number of reported seizure cases of tortoise and freshwater turtle parts and derivatives. In consultation with the MA of New Zealand (in litt, 11 Feb 2016) it was established that their remarkably high reported quantities of seized parts and derivatives were the result of a combination of factors, being a) New Zealand customs carrying out very thorough luggage checks of persons entering the country, b) the absence of 'personal exemption' regulations under New Zealand law leading to a very high number of instances at which often small quantities, intended for personal use, are seized; and c) comprehensive record-keeping and reporting of seizures into the UNODC database. This being the case, and considering that the human population size and their international travel movements, as well as gross trade volumes, are not exceptional in New Zealand's case, it suggests that many other countries may detect only a small fraction of the total quantities of parts and derivatives of tortoises and freshwater turtles entering their jurisdiction.

Provenance of seized Parts and Derivatives of Tortoises and Freshwater Turtles

Regarding countries of provenance of seized shipments, Table 11 documents that for the records where provenance information was available, Asian countries were most frequently recorded. This trend is borne out by mapping the quantities of seized parts and derivatives along the trade routes used, illustrated in Figure 6. The substantial number of cases lacking data on the country of provenance of seized tortoise and freshwater turtle parts and derivatives complicates the recognition of major source countries or other patterns. Nevertheless, the great number of seizures of item arriving as shipments from China is remarkable; closer examination of the data indicates that the great majority of these cases (293 of 356) concerns derivatives and medicinal parts or products.

Table 11. Countries and regions of provenance of seized shipments of tortoise and freshwater turtle parts and derivativess, ranked by number of seizures, based on records for the period 1998-2015 in the UNODC WorldWISE dataset (as of 30 October 2015).

	# of cases	Kg	# items
China	356	53.6	24,118
[not recorded]	82	1.53	16,968
Hong Kong	56	16.3	4,456
Viet Nam	44	5.8	8,693
Mexico	39	1.0	46
Peru	30		234
United States	27		12,236

Belize	17	12.0	55
Indonesia	14	2,000.0	10,053
Lao PDR	14	2.0	14
Taiwan	12	4.8	248
Malaysia	12	1.0	72
Thailand	12		21

Another notable feature of the Parts and derivatives seizure data is the relatively large number of countries from which a few, and usually relatively small-sized, shipments are seized: most countries of Central and South America, the Caribbean, Africa, and Asia are recorded as countries of provenance in Figure 6. While the UNODC database extract did not provide much information on the circumstances of these seizures, their predominant occurrence at international airports and relatively small quantities (a few items, or a kilogram or less of meat or other item) indicates that a large proportion of these seizures likely concern bushmeat or other items for personal consumption brough along on travel, or souvenirs and other items involving turtle parts.

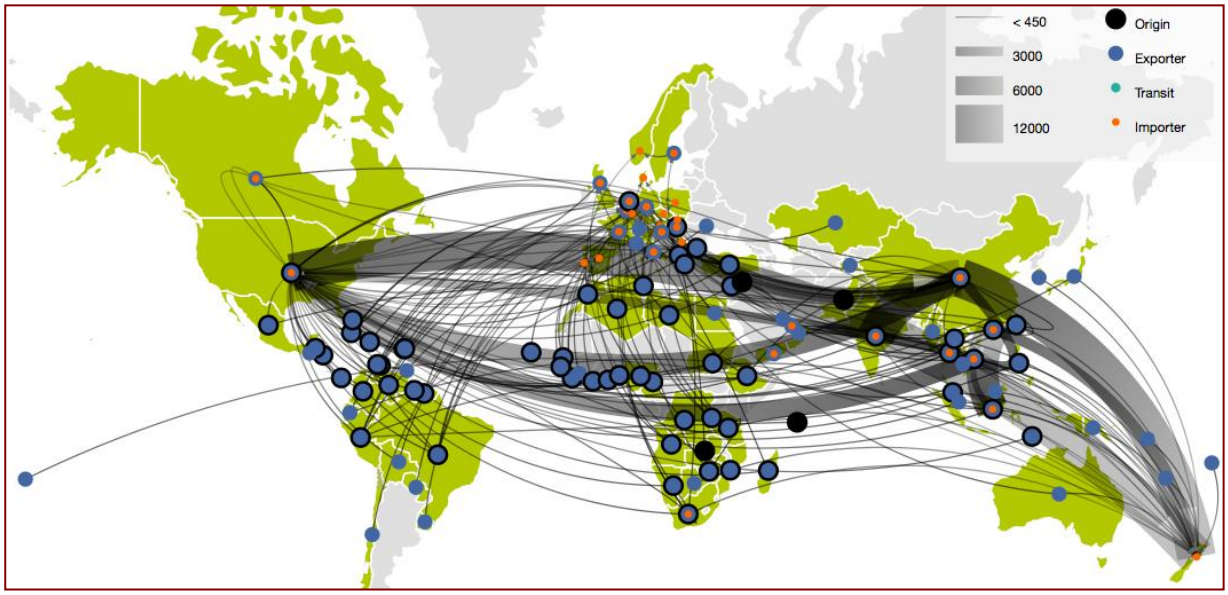


Figure 6. Map of routes by which parts and derivatives of tortoises and freshwater turtles arrived in the country of seizure (represented in this map as orange dots, labeled 'importer') as documented by data from the UNODC WorldWISE dataset for the period 1998-2015 (up to 30 October 2015). Image prepared using TradeMapper.

Under general commercial practices and regulations it can be expected that the country of production or manufacture is documented on the retail packaging of medicinal products and other prepared and processed derivatives. Thus, the UNODC dataset on parts and derivatives was analysed to examine declared origin of seized parts and derivatives. This identified that no country of origin was listed for any seized derivative, while country of origin was only listed for 69 of 230 seized shipments of medicinal parts or products. These were composed of 55 seizures of medicinal products (7,820 items) originating in China (and seized from shipments arriving from China, Hong Kong SAR, Taiwan and Viet Nam), 10 seizures of medicinal products originating from Viet Nam (1,456 items), and one case each of products originating from Hong Kong, Taiwan, Malaysia, and the Philippines. This indicates that tortoise and/or freshwater turtle-based medicinal preparations are produced primarily in mainland China and in Viet Nam.

Seizures of parts and derivatives reportedly occured largely at inward border checkpoints, and the distribution of countries of destination for seizure cases largely conforms to the distribution of countries making seizures. In other words, those countries making the most diligent inspection, enforcement and reporting efforts score highest as destination countries for illegal tortoise and freshwater turtle parts and derivatives, as exemplified by the highest-ranked destination countries being New Zealand and the United States. Even so, the observation that a large part of New Zealand's seizures concern products arriving from the United States suggests that only a part of the incoming shipments into the US, and few if any outgoing shipments of illegally traded parts and derivatives, are detected at the points of import and export.

6. Findings, Part 3: Insights into the illegal trade of tortoises and freshwater

turtles.

Seizures of illegally traded live tortoises and freshwater turtles and their parts and derivatives broadly conform to the various types of known trade in these species:

- The large-volume trade of homogenous-sized tortoises and freshwater turtles produced in captive or ranching facilities, either as animals raised to marketable size for the consumption trade within Asia, or as hatchlings (from the United States and increasingly from Asia) for the global pet trade, or to stock Asian aquaculture rearing operations. Other than occasional problems with veterinary certification or invasive species issues, this trade segment appears not to be associated with criminally illegal tortoise and freshwater turtle trade.
- The large-volume trade of wild-collected adult tortoises and/or freshwater turtles from tropical Asia, North America and Africa to East Asia for the consumption trade and medicinal use, as live specimens as well as parts and derivatives; while legal to a large extent, a significant illegal component occurs in the form of illegally acquired protected species being mixed in with legal specimens, animals being collected from protected areas or during closed seasons, quotas being exceeded, or shipments being traded with incomplete permits or documentation. In particular, it appears that a very large volume of tortoise and freshwater turtle shells (whole, plastrons, carapaces), bones and dried cartilage is traded for the medicinal trade with minimal adherence to CITES or other declaration and permitting requirements.
- The diffuse global trade of 'unusual' pet tortoises and freshwater turtles, wild-collected or captive-produced, supplied from numerous countries to many countries, but with demand centered on the European Union, United States, east and Southeast Asia. Much of this trade is legal, but significant illegal trade issues occur in the forms of protected species being traded, wild-caught animals being claimed to have been captive-bred, or animals being collected in breach of local regulations (protected areas, closed seasons, size limits, etc.) and being transported without export or import permits, veterinary certification or other documentation.
- The trade in packaged medicinal preparations, derived from tortoises and/or freshwater turtles originating from wild-collection or captive production systems. Its legal international trade component is little documented, but this product type numerically dominates the global seizures of tortoise and freshwater turtle parts and derivatives, indicating that its international trade is widespread and warrants attention with regard to effective permitting, reporting and oversight.
- The entirely illegal trade in attractive yet domestically and/or internationally protected tortoise and freshwater turtle species that are in demand as pets. Taking advantage of poverty, imperfect governance and limited enforcement capacity in some countries of origin, and imperfect legislation that allows no scope for enforcement of CITES regulations after the act of importation into the country, apparently highly organized networks have been established to collect Radiated Tortoises in Madagascar and Indian Star Tortoises and Spotted Pond Turtles from the wild in India, Pakistan and Bangladesh, and transport these by air or sea to major Southeast Asian cities and beyond to the rest of Asia and occasionally to Europe or North America.

<u>Convergence: other species and commodities associated with illegal tortoise and freshwater turtle trade shipments.</u>

Understanding whether illegal trade in tortoises or freshwater turtles is a species-specific trade segment or is part of a broader trade in illicit goods requires information on the other items that are part of a seized shipment containing tortoises or freshwater turtles. Unfortunately this information was not available in the data extract from the UNODC database that was made available, and only a part of the records from the *TRAFFIC Bulletin*, *On The Trail* and media and other seizure reports provided useable information about associated illicitly traded goods alongside tortoises and freshwater turtles. This information is summarized in Table 12. In the majority of cases where information is available on the total contents of a seized shipment, illegal trade of tortoises and/or freshwater turtles is primarily about these animals, and the entire shipment consists of one or several species of tortoise and/or freshwater turtle. In other cases, tortoises and/or freshwater turtles are shipped alongside other species or other products, as mixed shipments of various illegal items, or when using legally traded items as a means of concealment (Table 12; see also next section).

Table 12. Associations of seized live tortoises and freshwater turtles with other species or goods that are part of the same seized shipment.

	Seizure cases		Number of live TFT involved	
Turtles only in shipment	388	(61%)	159,203	(77%)
Turtles with other reptiles or amphibians	97	(15%)	19,603	(9.5%)
Turtles with other animal wildlife (mammals, birds, reptiles, amphibians, fish, invertebrates)	137	(22%)	19,618	(9.5%)
Turtles with non-wildlife goods (may include other wildlife)	15	(4%)	8,946	(4.3%)
Total cases with association data	634	(100%)	207,370	(100%)

Species and goods associated with illegal tortoise and freshwater turtle consignments usually relate to the source area or purpose for which the tortoise and/or freshwater turtles are shipped: tortoises and/or freshwater turtles collected from the wild are often shipped alongside other wildlife collected in the same area (such as snakes or pangolins), tortoises and/or freshwater turtles selected for the pet trade tend to be shipped with other pet species such as lizards, frogs, or aquarium fish, while tortoises and freshwater turtles destined for the food trade can occur in mixed shipments accompanied by pangolins, rodents, hedgehogs, birds, snakes, monitor lizards or other species. Occasionally tortoises and/or freshwater turtles are transported as part of shipments that also contain non-wildlife products: instances of tortoises or freshwater turtles being shipped with restricted or counterfeit goods, or merchandise shipped clandestinely to avoid taxes and duties, have been documented. The 15 seizure events involving non-wildlife goods seized relate to ten enforcement actions (three of which involved multiple tortoise and freshwater turtle species), of which four actions also yielded cannabis, ketamine or other controlled substances, three involved cameras, cell phones and/or counterfeit computer discs, two also involved seizure of firearms and ammunition (one also involving controlled chemicals), and one each involved alcohol and cigarettes.

Methods of Concealment

Methods of concealment of illegal tortoise and freshwater turtle shipments fall into two distinct categories:

1. Concealment that the shipment consists of tortoises and/or freshwater turtles, and

2. Concealment that a (declared or acknowledged) tortoise and/or freshwater turtle shipment includes specimens subject to additional trade limitations or restrictions.

Numerically, the first category includes the great majority of reported cases and concerns the greatest total number of specimens.

Commercial shipments of processed tortoise and freshwater turtle parts, such as carapaces, plastra/plastrons, mixed and broken bones, dried cartilage strips, or chilled or frozen meat, any unrestricted commodity resembling the actual parts being shipped may be claimed to be traded.

A particularly challenging situation exists with extracts and medicinal preparations containing tortoises and/or freshwater turtles, where the only apparent source of information on species composition would be the packaging label. At the present, DNA analysis of such preparations appears to be the only way to evaluate species content with some degree of certainty.

Traders shipping tortoise or freshwater turtle species or specimens that are subject to species-specific trade restrictions, often conceal illegal animals by 'hiding them in plain sight', in the sense that they are mixed in with shipments of similar-looking freshwater turtles that are legal to trade, or the entire shipment is declared on the accompanying documentation to contain look-alike Species A when in fact they are Species B (shipments of regulated freshwater turtle species declared as *Mauremys sinensis* [CITES III] or *Trachemys scripta* [not CITES-listed] are on record). Another option is to arrange for correct export documentation for captive-bred specimens, when in fact the shipment consists of wild-collected specimens (see review in Outhwaite et al., 2014, CITES AC27 Doc.17 (Rev.1) Annex 1[14]). In such cases, traffickers count on the high likelihood that any inspecting officers would not be able to differentiate Species A from Species B, or captive-bred from wild-collected tortoises or freshwater turtles, at least not in the short time window available for inspection and determining just cause for any decision to seize a shipment.

[14] http://cites.org/sites/default/files/eng/com/ac/27/E-AC27-17.pdf

Actors in illegal turtle trade: Collectors, Organizers and Couriers.

Few detailed descriptions are available of the structure of illegal turtle trade and its links to legal trade in tortoises and freshwater turtles and other species.

Shepherd (2000) presented a case study of a turtle trade structure in Sumatra in the late 1990s, documenting the transfer of wild-collected tortoises and freshwater turtles from independent, loosely organised groups of field collectors, through village middlemen to several large traders in the main cities. This trade chain focused on wild-collected adult tortoises and freshwater turtles to supply the consumption trade in East Asia; small juvenile tortoises and freshwater turtles that had minimal value in the consumption trade were frequently diverted into the pet trade instead (where value is generally per individual animal regardless of size). These traders accumulated large shipments (several thousand of live tortoises and freshwater turtles, amounting to several tonnes weight) which were shipped regularly (usually once a week) by air freight to importers in Hong Kong and other destinations in East Asia. This was at a time when few Asian turtle species were listed in the CITES Appendices, and shipments were generally shipped without detailed inspection or wildlife permits. Field collectors were unaware of, or at least indifferent to, the protective status of a few turtle species, and any turtle encountered was collected and entered into commercial trade. Wholesellers, middlemen, exporters and shipping agents likewise cared little about protective status of one versus another turtle species. Collectors and traders did consider different prices per turtle and different rates of survival during transit and shipment. For example, softshell turtles (mainly *Amyda cartilaginea* and *Dogania subplana*) commanded higher prices and die much more quickly after capture than tortoises or hardshelled freshwater turtles, and thus were usually shipped separately by air freight. Thus, mixed-species shipments were commonly observed within the trade, with species usually sorted in the destination markets. The most illustrative observation of such a mixed shipment was the seizure of some 9300 live tortoises and freshwater turtles in Hong Kong, which comprised 12 species including CITES Appendix I-listed *Batagur baska* (now *B. affinis*) and Appendix II-listed *Callagur* (now *Batagur*) *borneoensis*, *Cuora amboinensis*, and *Manouria emys*, as well as (then) non-listed *Cyclemys* sp., *Heosemys annandalii*, *H. grandis*, *H. spinosa*, *Malayemys* sp., *Notochelys platynota*, *Orlitia borneensis*, and *Siebenrockiella crassicollis*. Other large mixed-species shipments destined for East Asian consumption trade have been detected and seized as well (see Doc CoP15 Inf. 22, page 26).

D'Cruze and colleagues (2015) built upon earlier analyses (Shepherd et al., 2004; Anand et al, 2005) of trade in the Indian Star Tortoise (*Geochelone elegans*), a CITES Appendix II-listed species that is subject to possession and trade bans in its main range country India and whose trade from the other range countries (Pakistan and Sri Lanka) is also strongly restricted. Nevertheless, it has been widely offered for sale, mainly in southeast Asia but also elsewhere, and while modest captive breeding of pre-convention animals occurs with hobbyists, the observed trade volumes greatly exceed known captive breeding. The largely illegal scope of its international trade is not only confirmed by the fact that it is the single most numerously seized turtle (9,638 specimens in 42 seizures recorded in the UNODC wildlife seizures database; 34,080 specimens in 118 seizures in the combined dataset), but also by the detailed description of organized collecting and trade networks in India and beyond (D'Cruze et al., 2015). Rural villagers collect mainly juvenile Star Tortoises from the wild, which are then traded to a regional trade hub in Andhra Pradesh, from where they are transported by road or rail to export locations and domestic retail trade hubs. Exports were documented from Kolkata (Calcutta) by sea cargo to Malaysia, Singapore and Thailand, and by air from Begaluru (Bangalore), Chennai (Madras), Kolkata and Mumbai (Bombay) to Bangkok, Thaiand, or Kuala Lumpur, Malaysia, as well as by land into Bangladesh followed by air transport from Dhaka to Bangkok. From Bangkok, onward transports were documented to Hong Kong, Japan, Taiwan and other destinations. These trade routes are clearly reflected in the UNODC wildlife seizures database and other sources, which documents substantial seizures of Indian Star Tortoises in India, Malaysia, Singapore, Thailand, Germany and the United States (D'Cruze et al., 2015; Doc CoP15 Inf. 22 Annex C; see also case study in preceding pages).

Based on information associated with seizures, media reports and other available information sources, it is apparent that a large number, possibly the majority, of turtle seizure cases concern small-scale, casual smuggling cases of private persons traveling between countries and bringing a locally purchased pet or souvenir home with them. While such cases collectively add up to significant numbers of illegally moved animals, they represent arguably less of a priority for additional investigation and enforcement. Greater focus should be placed on addressing the larger-volume, apparently professionally organized smuggling pipelines of wild-caught adult tortoises and freshwater turtles from Asia, Africa and possibly elsewhere to the consumption trade hubs of East Asia (southern China, Hong Kong, Taiwan), and the large-scale illegal trade in protected turtle species as pets from Madagascar, South and Central Asia and New Guinea to the pet trade hubs of Bangkok, Kuala Lumpur, Jakarta, Hong Kong, Guangzhou and beyond. Indications are that these trades are coordinated by persons who operate remotely, and arrange shipments through third-party freight forwarding agents or arrange for couriers to move suitcases of tortoises and/or freshwater turtles from airport

to airport. When detected, couriers are frequently arrested and prosecuted, but rarely does the investigative trail appear to lead to prosecution of the key trade organizers.

The role of the Internet in illegal turtle trade

The Internet has in recent decades become the primary medium of communication and information exchange. In the context of turtle trade, company websites, hobbyist fora [forums] and listserves, Facebook Groups and other such platforms offer extensive opportunities to offer or seek animals for sale. Predictably, some of the specimens on offer are illegal or in the 'grey area where legal status is difficult to ascertain. Internet thus has become a primary means by which to arrange trade, or at least check stock available at 'brick and mortar' stores. In that respect, internet is the logical successor to earlier mimeographed or photocopied pricelists mailed out in envelopes, and small ads in the back of specialist magazines and newsletters. As with earlier pricelists, not every mention of a species is based on actual specimens in hand available for sale; inclusion in offer lists was sometimes used to gauge interest from potential buyers, and there is no reason to assume that all internet trade offers are genuine (at times, internet offers of rare turtle species have more in common with emailed offers to share in lottery winnings or unclaimed inheritances than with genuine animal trade). The astounding abilities of the internet to search for items, and display search results from around the world within seconds, has certainly made it easier to source unusual or rare animals of sometimes doubtful legality. Daily news or publication alerts can be set for particular species or key words, alerting interested persons automatically when a particularly rare species is being offered anywhere in the world. For traders, the ability to refresh web pages and delete ads or posts from bulletin boards reduces the risk that trade offers will be used as proof of illegal acts, compared to traditional offers distributed on printed paper. Moreover, steadily improved airline and other transportation networks, global networks of overnight parcel and courier services, and reduced inspection rates of outgoing and incoming parcels (partly due to increased overall parcel volumes, partly due to free-trade agreements) have made shipping tortoises and freshwater turtles and other species relatively easy, cheap, efficient, and with a low risk of detection of illegal transits.

The same search and communication qualities that make the internet an effective tool to offer, source and trade (illegal) turtle specimens can equally assist wildlife authorities to monitor trade and act to enforce laws and regulations where necessary. Alerts when certain species of interest are offered for sale are just as effective to inform enforcement networks. Illegal trade still takes the form of a financial transaction between two entities and the transfer of physical assets between two entities. Illegal turtle trade is not fundamentally changed by the internet; it is facilitated by it, just as much as enforcement should be and is facilitated by it. While the available data are too scattered and incomplete to allow reliable analysis at this time, it is evident from particularly the seizure and prosecution compilations in the *Traffic Bulletin* and *On The Trail* that internet traders are investigated, their premises have been searched, and where appropriate people have been indicted, tried and convicted of illegal trade in tortoises and freshwater turtles via the internet. Nevertheless, given the great volume of information on the internet, the large number of internet-mediated trade transactions, and the sometimes unclear legality of transactions where the seller and buyer are located in different jurisdictions (and legality of shipping methods employed), further consideration is warranted by key stakeholders, including Internet Service Providers, owners and moderators of internet community platforms, and wildlife regulatory authorities. Amazon and Ebay regulations prohibit vendors from offering items concerning protected species, and Facebook is working with TRAFFIC to eliminate illegal trade offers, but other platforms exist and some can easily offer a new contact venue for the semi-legal and illegal wildlife trade, alongside marketplaces for pharmaceuticals, narcotics, pirated software, music and video, and more.

7. Potential constraints to enforcement action to combat illegal turtle trade

Ability to identify specimens in trade and determine their status under protective legislation

Accurate species identification is fundamental for determining the legality and permit requirements for tortoises and freshwater turtles in trade or private possession. There is no doubt that live tortoises and freshwater turtles are often difficult to identify accurately, particularly in the case of similar and look-alike species. A wide range of identification materials exists for live tortoises and freshwater turtles, and much is available in digital format; this is reviewed in detail in the companion study commissioned under Decision 16.122 paragraph b). The same study concluded that parts and derivatives of turtles can be very difficult to identify, few identification materials are known to beavailable, and laboratory genetic analysis may be required for identification of some specimens.

Experience has learnt that even with the best identification materials at hand, some specimens are very difficult to identify, and a second opinion is often necessary, usually based on pictures of the specimens concerned shared via email or mobile phone image. Many inspecting officers can rely on extensive support and expertise

from individuals within their national Scientific, Management and Enforcement Authorities. In other cases, officers may decide to reach out by contacting subject-matter experts at universities, zoos, rescue centers or other institutions. The IUCN SSC Tortoise and Freshwater Turtle Specialist Group membership is always willing and almost always able to assist with identification. In cases where there is any doubt about a specimen's identification, enforcement officers should not hesitate to seek outside expertise.

A possible approach to connect law enforcement officers to outside species identification expertise without compromising confidentiality might be to develop a confidential identification assistance network. Enforcement officers can post pictures and tag them with group or descriptive label ("turtle", "possible turtle shell ornament"). The system would then send a message (email, sms) to one or more previously-vetted and approved specialists in the species or product category, alerting them to log in and assist with identification. Such a system could provide reliable identifications within minutes or hours (taking into account time zones and other practicalities) and assure confidentiality and greatest possible quality of evidence to be collected. Obviously such a system should not be developed for just tortoises and freshwater turtles, but could work for many wildlife species in trade, live and possibly parts and derivatives as well. Development of such a network could be led by an existing secure enforcement network such as INTERPOL or the World Customs Organization's CENComm Environet, by adapting their existing facilities to establish a closed user group for tortoise and freshwater turtle issues or similar mecahnism. Alternatively, a network for specialized identification assistance could be developed by an existing network of species specialists (such as IUCN's Species Survival Commission) although this would require significant input on the technical end to guarantee a secure communications network.

Another significant identification challenge is posed by the trade of specimens of species that have a zero quota for wild-collected specimens or other restriction/prohibition on trade in specimens from the wild, but which are known to be produced in captive production facilities. Ongoing processes in CITES are evaluating the regulatory framework for trade in captive-bred specimens following concerns that wild-collected specimens may be claimed to have originated from captive production facilities and have presented suggestions for improvement (see e.g. documents AC28 Doc.13.1[15], AC 28 Doc.13.2[16], SC66 Doc.41.1[17] and SC66 Doc.41.2[18]). Concerns about wild-collected specimens being traded as captive-bred have been documented for a range of tortoises and freshwater turtles (Outhwaite et al., 2014) and while guidance to differentiate wild from captive-bred specimens is available for some species (Benyr, 2014;), determining wild versus captive origin remains challenging and continues to offer an opportunity for illegal trade in species that are in high demand as pets and remain challenging to breed in captivity in great numbers, such as the Palawan Pond Turtle (*Siebenrockiella leytensis*), the Roti and Timor Snakenecked turtles (*Chelodina mccordi mccordi* and *C. m. timorensis*, respectively), and Pancake Tortoises (*Malacochersus tornieri*). Further work on both the evaluation and verification of captive production facilities for tortoises and freshwater turtles is needed, as is further guidance and development of additional tools to differentiate captive-bred from wild-collected specimens.

Placement of seized specimens

Seizure of illegally traded turtle specimens obliges the confiscating authority to adequately maintain and dispose of the specimens. While this is manageable for one or a few specimens in countries with adequate rescue and rehabilitation facilities and protocols, the challenge of dealing with hundreds or thousdands of live, often weakened, sick or injured, tortoises or freshwater turtles at short notice can be almost insurmountable. The perception exists that on occasion, wildlife or customs inspectors choose to disregard possible illegal aspects of live turtle (or other wildlife) trade and allow a questionable shipment to pass, rather than facing the obligation to deal with a large quantity of live animals. Thus, the availability of adequate rescue facilities to hold seized animals, and adequate guidelines and protocols to move the animals onwards, are critical to effective and comprehensive enforcement.

Guidelines for the disposal of seized live specimens of CITES-listed species are provided in the Annex of Res. Conf. 10.7 (Rev. CoP15)[19], describing the options, conditions and constraints for repatriation of the animals to

[15] https://cites.org/sites/default/files/eng/com/ac/28/E-AC28-13-01.pdf

[16] https://cites.org/sites/default/files/eng/com/ac/28/E-AC28-13-02.pdf

[17] https://cites.org/sites/default/files/eng/com/sc/66/E-SC66-41-01x.pdf

[18] https://cites.org/sites/default/files/eng/com/sc/66/E-SC66-41-02.pdf

[19] https://cites.org/eng/res/10/10-07R15.php ; *likely to be revised at CoP17, as indicated by Document SC66 Doc.32.2,* https://cites.org/sites/default/files/eng/com/sc/66/E-SC66-32-02x.pdf

their country of origin, long-term placement in captivity, sale, and/or humane killing. Similarly, IUCN is currently updating its guidelines for the placement of confiscated specimens[20], and these may be consulted as well.

With regard to tortoises and freshwater turtles, it is of particular importance to realize that many turtle species are in steep decline in the wild and that active assurance colonies are managed in captivity through networks of zoos, NGOs and dedicated private individuals. In keeping with CITES Notification 2011/029[21] on the disposal of seized live tortoise and turtle specimens, every reasonable effort should be made to contact studbook keepers or other key persons for the species to facilitate repatriation, reintroduction or suitable long-term captivity for seized tortoises and freshwater turtles.

Availability of rescue and holding facilities varies by country and species. In most cases, officers are well aware of what facilities are locally available. In addition, facilities may be available elsewhere, and logistic support and necessary funding may be available from external sources to move seized specimens to suitable facilities or reintroduction sites in the wild. The Species Survival Network maintains a global database of rescue facilities[22], which can be accessed online, and additional directories of such facilities may be available within closed enforcement information networks.

Perceived lower significance of tortoises and freshwater turtles compared to other wildlife and other crime.

Resources for wildlife trade inspection, enforcement and prosecution are rarely adequate to inspect every shipment, verify every identification, and investigate every indication of possible illegal trade. Choices are unavoidable and priorities are explicitly or implicitly set. Tortoises and freshwater turtles do not rate highly on the alert scale for agricultural, livestock and aquaculture inspectors, as they are generally perceived as having little inherent economic value, and are known to transmit only a few diseases of economic significance (e.g., as intermediate hosts for the ticks transmitting heartwater disease to cattle). Turtle trade is also generally perceived to be a relatively low-value trade, such that seizures imply much work for little return, as fines and other penalties imposed after successful prosecution (if any) tend to be low in many jurisdictions. Consequently, enforcement of illegal turtle trade may be less intensive than other wildlife crimes, and reduced enforcement combined with low penalties make the risks insignificant compared to the profits that unscrupulous traders can realize.

Scope and extent of domestic conservation legislation to implement CITES

The purpose of this study is primarily to document and analyse turtle trade that has been found by the relevant authorities to be illegal, as evidenced by their actions to seize the shipment and prosecute the perpetrator where possible. It is appropriate, however, to observe that significant turtle trade occurs that can not realistically be considered legal, yet lacks an adequate evidentiary basis for prosecution. The clearest example is trade in turtle species that are listed in CITES Appendix I, that are not known to have been legally exported from their country of origin (neither from the wild nor from approved captive breeding facilities), and for which no approved commercial breeding facilities exist outside of the range country. Examples include the Madagascar tortoise species (*Astrochelys*[23] and *Pyxis* spp.) and the Spotted Pond Turtle (*Geoclemys hamiltonii*) from South Asia. Tortoise or freshwater turtle species that have been listed in Appendix II, for which no captive production facilities are known outside the range countries, and whose country (countries) of occurrence have not allowed exports of the species also warrant close examination of legal provenance. Examples of this category of species include the Palawan Pond Turtle (*Siebenrockiella leytensis*), endemic to Palawan in the Philippines, which was included in CITES Appendix II in 2002 (at a time that it was only known from a single specimen, collected in 1988, and before its rediscovery in 2003) and for which the Philippines has never issued export permits for live specimens; the Ryukyu Leaf Turtle (*Geoemyda japonica*) endemic to Japan and prohibited from exploitation or export under Japanese domestic laws (see CoP16 Prop. 34); Indian Star Tortoise (*Geochelone elegans*, India, Pakistan, Sri Lanka)(see AC27 Doc.17 (Rev.1) Annex 1); and various South African tortoises. Any trade in commercial quantities of wild-collected specimens of these species would have a high probablility of pertaining to illegally obtained animals, and thus should be scrutinized in great detail. Domestic legislation to implement CITES may empower wildlife and/or customs authorities to seize shipments of illegal specimens at the time of export, import or re-export. However, a substantial number of CITES Parties do not have legislation in force to require proof of legal import or acquisition once the specimens are in the domestic marketplace. This poses an enforcement challenge, in particular with regard to non-native CITES-

[20] https://portals.iucn.org/library/efiles/edocs/2002-004.pdf

[21] https://cites.org/sites/default/files/eng/notif/2011/E029.pdf

[22] http://www.ssn.org/cites_rescue_intro_EN.htm

[23] *With the exception of a single registered facility for A. radiata in Mauritius.*

protected species; and in the absence of effective enforcement, domestic trade often flourishes, stimulating demand for additional specimens to be smuggled in.

Numerous market survey reports and other publications by conservation NGOs and academics have highlighted the evident commercial trade in species that are prohibited from commercial trade by being included in CITES Appendix I, or strictly protected from commercial exploitation in all range countries (e.g., Shepherd et al., 2004, 2007, 2008; Cheung & Dudgeon, 2006; Nijman & Shepherd, 2007, 2015; Gong et al., 2009; Chng, 2014). Logically, such specimens should not appear in trade, and their availability is frequently cited as indicating shortcomings in enforcement of the country's obligations under CITES. The complication arises from the way that CITES requires its signatories to implement its provisions through domestic legislation – which is frequently by means of an extension of existing laws which primarily manage and protect native wildlife species. Operational articles of domestic laws normally make the export, import and re-export of CITES-listed species subject to the appropriate permitting processes, but do not regulate domestic possession or trade. As such, once a CITES-listed specimen is inside the country, no applicable law can be enforced to justify seizing specimens that can not have been legally imported and thus could not have been legally acquired. Even when wildlife inspectors encounter specimens that can only have been sourced illegally, their ability to act and enforce is non-existent as a legal basis is lacking.

A further indication of the challenges inherent in enforcement of CITES-listed species is in the contrast between the total of over 160,000 live tortoises and freshwater turtles that were seized at border crossings during 2000-2015, while fewer than 9000 live tortoises and freshwater turtles were seized from shops, markets, warehouses and other 'domestic' locations over the same period. It is unlikely that the great majority of illegal shipments are intercepted at the border, thus it is reasonable to expect extensive retail offerings of illegally imported specimens – an expectation supported by the extensive documentation of observations of likely illegally imported specimens offered for sale (e.g., Shepherd et al., 2004, 2007, 2008; Cheung & Dudgeon, 2006; Nijman & Shepherd, 2007, 2015; Gong et al., 2009; Chng, 2014). Consideration must be given why such specimens of likely illegal origin and provenance are apparently seized in proportionally small quantities while on frequent public display in shops and markets.

Clearly, continued if not increased enforcement capacity and effort at borders and other points of entry, and exit trade may be needed by Parties to address trade in tortoises and freshwater turtles that is known or suspected to include a significant illegal component. Complementary measures are likely needed to effectively address domestic enforcement challenges. Parties may choose to enact stricter domestic legislation to increase requirements for traceability of traded and possessed specimens, recording the entire chain of legal acquisition, collection or captive production, import, export and possession of CITES-listed specimens. Alternatively, countries may wish to consider including all CITES-listed species in their domestic wildlife collection and possession legislation. For example, Thailand recently added the African Elephant as a protected species in its revised domestic wildlife legislation to enable better regulation of domestic ivory trade, and was called on to extend the same coverage to other CITES-listed species (Chng, 2014; Nijman & Shepherd, 2015). Another possible approach is domestic legislation that enables consideration of wildlife laws in effect where the animal was collected or traded, as exemplified by the United States' Lacey Act. The CITES Parties might consider expanding the scope of implementation expected from Parties, by including improved powers of management and enforcement of trade in all native and non-native CITES-listed specimens to be included in domestic implementing legislation. If this approach is chosen, the categorization of implementing legislation under the National Legislation Project will need to be adjusted and re-evaluations will need to be carried out under updated criteria. These are measures that will require extensive deliberation before they can be designed, formulated and adopted by CITES Parties to address challenges inherent in domestic trade and possession of CITES-regulated wildlife specimens.

Challenges in documenting legal and illegal trade in tortoises and freshwater turtles

In the course of this study it has been evident that seizures of illegally traded tortoises and freshwater turtles occur regularly in many of the countries with native turtle populations and countries where tortoises and freshwater turtles are traded. While the large seizures are often reported in press releases, the media and other outlets, a large number of 'small' seizures go unreported other than the official records of the seizure. In a number of countries, accurate integrated information systems are maintained to record and store such records, and making those records available in global datasharing programs (such as the UNODC wildlife trade seizures database), whereas there is little indication of similar consistent record-keeping and international record-sharing for other countries. This risks generating an uneven impression of enforcement efforts and successes that is not reflective of the actual enforcement efforts that occurred.

There are also significant challenges to quantify global trade patterns and volumes for legally traded tortoises and freshwater turtles; the best approximation could be achieved by combining CITES trade records with

declared exports of the country generally understood to be by far the largest exporter of (largely captive-produced) freshwater turtles. Updated statistics on turtle aquaculture in Asia, and perhaps elsewhere, were unavailable in the course of this analysis and warrant compilation eventually to place the illegal trade in a reasonably accurate context of legal trade.

Incomplete declaration and recording of legal and illegal trade in parts and derivatives

While it is evident from contrasting market survey data with declared international turtle trade as recorded in the UNEP-WCMC CITES trade database that not all live turtle trade is accurately declared, permitted and recorded in trade statistics, this lack of reporting is staggering in its scale when considering the international trade in turtle shells and bones. Chen et al. (2009) compiled customs statistics from Taiwan during the period 1999 to 2008 and reported a total of 1,989,248 kilos of hard-shelled turtle shells being imported from Cambodia, mainland China, Indonesia, Malaysia, Singapore, Thailand and Viet Nam. These imports consisted for about 75% of *Cuora amboinensis* (CITES Appendix II since July 2000), *Malayemys subtrijuga* (Appendix II since January 2005) and *Siebenrockiella crassicollis* (Appendix II since February 2003). Thus, while large parts of these shipments should have been traded under CITES permits and thus have been recorded in the CITES trade database, only 1191 kg of *C. amboinensis* carapaces, 374 kg of *S. crassicollis* carapaces, and a single *Malayemys* carapace, have actually been recorded in the database over the same period. Exact conversion rates (i.e. average bony shell weight per individual animal) are not available for these species, but Chen et al noted that medium-sized whole Geoemydid plastra weigh 50 to 200 grams each. Thus a rough estimate would be that these 1989 metric tonnes represented shells from between five and twenty millon adult tortoises and freshwater turtles. Not only does the shell and bone trade represent a significant illegal or at least unpermitted and unreported trade of significant value, it almost certainly also represents a massive impact on wild turtle populations that are not subject to non-detriment findings or other sustainability safeguards.

Associated with incomplete recording of trade, and seizures, of parts and derivatives of turtles is the dificulty of relating quantities and units of such specimens to the number of individual animal specimens that were needed to produce the quantity concerned. Compilation of available ‘conversion factors’ in an accessible sharing location would be useful, not only for understanding the potential impact of collection for parts and derivatives on population numbers (essential for accurate Non-Detriment Findings), but also when attempting to reconcile imports of specimens with exports of parts or derivatives of that species after processing in a country.

8. Future directions and considerations

While this analysis of illegal trade, based on available seizure records, is of necessity only a stepping stone towards a comprensive strategy to address illegal and unreported trade in tortoises and freshwater turtles, several elements emerged that warrant further consideration by the Task Force and other stakeholders in responsible and legal trade in tortoises and freshwater turtles. These include the following topics that asore in the course of this study, but are by no means limited to these.

Development of a rapid-response, secure identification network for tortoises and freshwater turtles and other wildlife in trade, using email, sms, and/or mobile phone pictures to connect wildlife inspectors to a network of vetted, trusted species identification specialists.

Increased awareness among wildlife and customs inspectors of the protective and regulatory status of freshwater turtles, domestically and under legislation in force in range and ex-situ production countries.

Increased awareness among wildlife and customs inspectors of the scope, and protective and regulatory status, of trade in parts and derivatives of tortoises and freshwater turtles.

Increased awareness among wildlife and customs inspectors of the options available to humanely dispose of seized live tortoises and freshwater turtles.

Legislative improvements regarding chain of custody or traceability documentation requirements for at least CITES Appendix I listed tortoises and freshwater turtles, and possibly Appendix II; inclusion of non-native CITES-listed species under domestic wildlife legislation; consideration of Lacey Act-type legislation.

Consideration of standardized reporting of units for parts and derivatives in a manner that 1). allows quantification of the number of animals involved in these trades (particularly relevant in the case of wild offtake subject to NDF) and 2). enables comparison of import and export volumes of the same species traded as different products.

A wide range of public and propietary sources provide information on legal and illegal turtle trade. However, as found over the course of this study, no single source captures and organizes all relevant data records. Surely combating illegal turtle trade, and wildlife trade in general, would be increased in efficiency by better, comprehensive, quantitative recording of all known and reported instances. To do this properly, however, would require a data prospecting and processing effort comparable to ETIS (Elephant Trade Information System), with dedicate manpower and resources. It is questionable whether the expected increased effectiveness of illegal turtle trade enforcement would justify the allocation of the resources required to establish a centralized, well-maintained Turtle Trade Information System.
Nevertheless, steps can be taken in the right direction with manageable effort and resources. These could include:

- Parties reporting comprehensively on seizures and prosecutions of CITES-listed, and ideally non-listed, species including tortoises and freshwater turtles in their periodic reporting.
- Continued exploration of opportunities to establish turtle-specific 'product codes' in trade and customs databases, including the WCO's Harmonized Customs Codes and the UNCTAD ASYCUDA (Automated System for Customs Data). Such codes do not necessarily need to be at species level (though that would be useful) but should allow at least the separation of tortoise, freshwater turtle, and marine turtle trade from other wildlife and commodity trades.
- The turtle conservation community might evaluate options to establish and maintain a turtle trade database founded on volunteer efforts, capturing media reports of seizures as well as annual downloads of available turtle trade statistics from customs, national wildlife trade supervisory authorities, the UNEP-WCMC CITES Trade database, and other appropriate, accessible sources.

Better understanding is needed of the organization and structure of illegal turtle trade, particularly

- Network analysis of the main organizers.
- The degree of integration and direct facilitation between legal and illegal turtle trade.
- The degree of integration and facilitation between illegal turtle trade and other illegal wildlife trade, such as Asian pangolins.

Better understanding is needed of the trade in medicinal preparations containing (or claiming to contain) turtle powders, tissues, extracts or other derivatives. In particular, independent laboratory analyses of a representative range of such preparations is needed to determine the actual species contained in those preparations, in comparison to the species listed on the packaging label, and including testing of different batches of the same product to determine whether different species are used as ingredients at different times. If such analyses find a significant occurrence of protected or trade-regulated turtle (and other) species, follow-up measures such as sharpened institutional oversight, independent product monitoring, and scheduled and surprise factory inspections, may need to be considered.

Improved evaluation, oversight, and monitoring of captive production facilities, particularly those facilities claiming to breed species that are known in the zoo community to be difficult to breed, and in situations where no records exist that document legal import or existing captive holdings of specimens of non-native, CITES-listed species at the appropriate time period.

An examination of the recommendations contained in Res. Conf. 11.9 (Rev. CoP13) on the *conservation of and trade in tortoises and freshwater turtles*[24], as well as the recommendations from the CITES Workshop the conservation of and trade in tortoises and freshwater turtles (Kunming, March 2002) and the recommendations from the IUCN and WCS co-hosted workshops on Asian turtle trade and conservation (Phnom Penh, December 1999 – van Dijk et al, 2000; Singapore, February 2011 – Horne et al., 2012), is likely to identify additional topics and possible avenues to address the topic of illegal tortoise and freshwater turtle trade in a global context.

[24] https://cites.org/eng/res/11/11-09R13C15.php

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Annexes

Annex Table 1
Annual number of seizures of live tortoises and freshwater turtles, and number of individual live tortoises and freshwater turtles seized. Based on the combined dataset for 2000-2015. Numbers presented are minimum numbers as not all events were recorded, and not all recorded events are dated or have the number of specimens included.

	Number of live individuals of tortoises and freshwater turtles seized	Number of seizure cases concerning live tortoises or freshwater turtles	Number of seizure cases concerning parts and derivatives of tortoises or freshwater turtles
2000	2,649	34	15
2001	12,404	45	13
2002	14,403	33	21
2003	19,003	60	15
2004	8,291	78	9
2005	14,337	147	45
2006	26,121	161	43
2007	22,992	169	59
2008	6,583	141	40
2009	9,874	144	72
2010	9,177	162	76
2011	4,231	192	55
2012	8,333	225	46
2013	35,843	369	65
2014	57,361	270	35
2015	48,293	284	17
no date recorded	4,887	47	375
Total	303,774	2,561	1001

Annex Table 2
Species of tortoises and freshwater turtles recorded seized, as live animals and parts and derivatives, from illegal trade or possession during the period 2000-2015, based on the combined dataset. Species and higher taxa are colour-coded to indicate CITES status when all, or the majority of, seizures occurred: pinkish tan = Appendix I, yellow = Appendix 2, pale green = Appendix III.

Species	Number of live specimens seized	Number of seizure cases: live specimens	Number of seizure cases: parts & derivatives
Family Carettochelyidae - Pig-nosed Turtle			
Carettochelys insculpta	29,692	26	2
Total Carettochelyidae	29,692	26	2
Family Chelidae - Austro-American Side-necked Turtles			
Chelodina colliei	25	2	-
Chelodina longicollis	1	1	-
Chelodina mccordi	26	2	-
Chelodina siebenrocki	unknown	1	-
Chelodina sp.	-	-	2
Chelus fimbriata	346	2	-
Mesoclemmys vanderhaegei	unknown	1	-
Unidentified Chelidae	-	-	1
Total Chelidae	> 398	9	3

Species	Number of live specimens seized	Number of seizure cases: live specimens	Number of seizure cases: parts & derivatives
Family Chelydridae - Snapping Turtles			
Chelydra serpentina	6,026	2	-
Macrochelys temminckii	868	6	4
Total Chelydridae	6,894	8	4
Family Dermatemydidae - Central American River Turtle			
Dermatemys mawii	8	3	20
Total Dermatemydidae	8	3	20
Family Emydidae - American freshwater turtles plus *Emys*			
Clemmys guttata	92	1	-
Emydoidea blandingii	> 10	2	-
Emys orbicularis	400	1	-
Glyptemys insculpta	> 100	9	3
Glyptemys muhlenbergii	-	-	1
Graptemys flavimaculata	1	1	-
Graptemys geographica	3	2	4
Graptemys pseudogeographica	171	8	-
Graptemys sp.	3	2	1
Malaclemys terrapin	> 830	5	-
Terrapene carolina	> 82	12	3
Terrapene coahuila	4	1	-
Terrapene ornata	16	11	4
Terrapene sp.	81	13	57
Trachemys callirostris	10,329	3	2
Trachemys dorbigni	7	2	-
Trachemys scripta	> 642	9	-
Trachemys venusta group	6	4	-
Unidentified Emydidae	45	20	11
Total Emydidae	> 12,822	106	86
Family Geoemydidae - Eurasian freshwater turtles and neotropical wood turtles			
Batagur baska + affinis	139	6	3
Batagur borneoensis	81	2	-
Batagur dhongoka	1	1	-
Cuora amboinensis	>> 20,772	37	8
Cuora flavomarginata	5,232	7	-
Cuora galbinifrons group	> 284	21	-
Cuora mouhotii	> 354	37	-
Cuora sp.	> 21	5	56
Cuora trifasciata	-	-	12
Cyclemys sp.	>> 2,048	38	-
Geoclemys hamiltonii	>> 11,451	70	3
Geoemyda, G. japonica + G. spengleri	144	10	3
Hardella thurjii	7	2	-
Heosemys annandalii	>> 353	22	2
Heosemys grandis	>> 1,292	29	7
Heosemys spinosa	709	7	-
Leucocephalon yuwonoi	26	2	-
Malayemys macrocephala + M. subtrijuga	> 2,707	25	2
Mauremys annamensis	91	7	-
Mauremys japonica	> 1	2	-

Species	Number of live specimens seized	Number of seizure cases: live specimens	Number of seizure cases: parts & derivatives
Mauremys mutica	> 2,111	7	-
Mauremys nigricans	21	2	1
Mauremys reevesii	691	4	61
Mauremys sinensis	14	3	3
Mauremys sp.	12	4	1
Melanochelys tricarinata	>> 1,979	15	-
Melanochelys trijuga	1	1	1
Morenia ocellata	19	1	-
Morenia petersi	24	4	-
Notochelys platynota	>> 58	3	-
Orlitia borneensis	1,385	4	3
Pangshura smithii	92	2	-
Pangshura sylhetensis	2	2	-
Pangshura tecta	> 783	8	2
Pangshura tentoria	> 52	3	-
Rhinoclemmys areolata	70	3	-
Rhinoclemmys sp.	> 1	2	-
Sacalia quadriocellata	54	6	-
Siebenrockiella crassicollis	>> 3,375	12	4
Siebenrockiella leytensis	> 4,276	11	-
Unidentified Geoemydidae	1,003	2	4
Total Geoemydidae	>> 62,364	430	176
Family Kinosternidae - Mud Turtles			
Kinosternon sp.	> 2	4	-
Staurotypus triporcatus	4	2	-
Sternotherus carinatus	1,002	1	-
Total Kinosternidae	> 1,006	7	-
Family Pelomedusidae - African Side-necked Turtles			
Pelusios gabonensis	50	1	-
Total Pelomedusidae	50	1	-
Family Platysternidae - Big-headed Turtle			
Platysternon megacephalum	> 1,112	37	2
Total Platysternidae	> 1,112	37	2
Family Podocnemididae - Side-necked river turtles			
Erymnochelys madagascariensis	8	1	1
Peltocephalus dumerilianus	11	1	2
Podocnemis erythrocephala	18	1	-
Podocnemis expansa	493	10	11
Podocnemis sextuberculata	56	2	1
Podocnemis sp.	22	2	14
Podocnemis unifilis	> 6,265	27	7
Podocnemis vogli	5	1	-
Total Podocnemididae	> 6,878	45	36
Family Testudinidae - Tortoises			
Aldabrachelys gigantea	7	4	1
Astrochelys radiata	> 7,973	72	6
Astrochelys yniphora	146	18	2
Chelonoidis carbonaria	465	50	1
Chelonoidis chilensis	116	7	-
Chelonoidis denticulata	197	21	5

Species	Number of live specimens seized	Number of seizure cases: live specimens	Number of seizure cases: parts & derivatives
Chelonoidis nigra	-	-	1
Chelonoidis sp.	28	1	5
Chersina angulata	160	7	-
Geochelone elegans	> 34,080	118	2
Geochelone platynota	> 39	8	-
Geochelone sp.	22	5	8
Geochelone sulcata	344	31	5
Gopherus agassizii group	103	55	15
Gopherus berlandieri	11	4	1
Gopherus flavomarginatus	-	-	1
Gopherus polyphemus	11	1	-
Gopherus sp.	3	1	1
Homopus areolatus	-	-	1
Indotestudo elongata	> 918	20	4
Indotestudo forstenii	126	4	-
Indotestudo sp.	-	-	4
Kinixys belliana	275	9	2
Kinixys erosa	30	5	2
Kinixys homeana	671	15	3
Kinixys sp.	44	4	7
Kinixys spekii	4	1	-
Malacochersus tornieri	370	13	-
Manouria	-	-	1
Manouria emys	507	7	2
Manouria impressa	47	8	6
Psammobates geometricus(?)	1	1	27
Psammobates tentorius	-	-	1
Pyxis arachnoides	> 208	9	1
Pyxis planicauda	74	3	-
Stigmochelys pardalis	1,825	47	19
Testudo graeca	4,286	570	37
Testudo hermanni	4,162	200	12
Testudo horsfieldii	10,587	48	7
Testudo kleinmanni	93	19	3
Testudo marginata	153	24	1
Testudo sp.	925	15	28
Unidentified tortoises	3,324	237	399
Total Testudinidae	> 74,312	1,664	621
Family Trionychidae - Soft-shelled Turtles			
Amyda cartilaginea	7,704	14	16
Apalone ferox	507	3	-
Apalone sp.	40	3	3
Apalone spinifera	209	4	2
Chitra indica	> 619	5	-
Chitra sp.	-	-	1
Cycloderma frenatum	-	-	1
Lissemys punctata	>> 2,308	13	1
Lissemys scutata	187	2	-
Nilssonia gangetica	> 16,428	19	1
Nilssonia hurum	unknown	1	-
Palea steindachneri	23	3	-
Pelochelys sp.	3	2	2
Pelodiscus sp.	11	3	5

Species	Number of live specimens seized	Number of seizure cases: live specimens	Number of seizure cases: parts & derivatives
Unidentified softshells	> 1,996	13	4
Total Trionychidae	> 30,035	85	36
Unidentified Tortoises and Freshwater Turtles			
Unidentified TFT	about 75,000	116	21
Total Tortoises & Freshwater Turtles	> 305,432	2561	1002

Annex Table 3
Countries reporting turtle seizures, both live and of parts and derivatives, arranged by the total number of seizures during the period 2000-2015 of illegally held or traded tortoises and freshwater turtles, based on the combined dataset.

	Number of live specimens seized	Number of live seizure cases	Number of seizures of parts and derivatives	Number of all seizure cases combined
Argentina	79	4	4	8
Australia	30	5	-	5
Austria	105	13	-	13
Bangladesh	> 8,392	25	-	25
Belgium	744	42	15	57
Benin	34	1	-	1
Bolivia	366	5	1	6
Brazil	> 967	39	2	41
Bulgaria	51	2	-	2
Cambodia	> 932	24	3	27
Cameroon	> 24	3	2	5
Canada	> 432	18	1	19
Chile	97	6	-	6
China	14,374	37	15	52
Colombia	10,122	10	3	13
Comoros	1,014	1	-	1
Croatia	1,207	23	-	23
Czech Republic	174	14	6	20
D.R. Congo	unknown	1	-	1
Denmark	101	6	2	8
Ecuador	33	6	-	6
El Salvador	4	1	-	1
Estonia	1	1	-	1
European Union [28 member states combined]	15,382	1,099	190	1,289
Finland	3	1	-	1
France	1,707	172	13	185
France - French Guiana	1	1	-	1
France - Martinique	10	1	-	1
France - Réunion	122	3	-	3
Germany	749	100	43	143
Greece	170	2	-	2
Guatemala	8	2	-	2
Guinea	61	2	-	2
Guyana	52	1	-	1
Hong Kong SAR	> 39,805	88	4	92

	Number of live specimens seized	Number of live seizure cases	Number of seizures of parts and derivatives	Number of all seizure cases combined
Hungary	2,106	43	1	44
India	> 74,029	188	9	198
Indonesia	35,457	34	3	37
Israel	2	1	-	1
Italy	> 1699	212	20	232
Japan	919	6	-	6
Jersey	1	1	-	1
Jordan	40	1	-	1
Kazakhstan	2,134	2	-	2
Kenya	24	1	-	1
Kuwait	36	3	-	3
Latvia	12	5	-	5
Luxembourg	5	3	1	4
Macao	50	1	-	1
Madagascar	>> 4,681	22	2	24
Malawi	-	-	1	1
Malaysia	6,960	27	3	30
Malta	88	5	-	5
Mexico	> 170	30	1	31
Myanmar	35	1	-	1
Nepal	7	3	-	3
Netherlands	222	50	25	75
New Zealand	-	-	372	372
Norway	28	7	2	9
Pakistan	1,700	9	2	11
Peru	> 5,561	10	2	12
Philippines	6,497	25	-	25
Poland	1,694	17	2	19
Portugal	95	4	30	34
Qatar	3	1	-	1
Romania	2	1	-	1
Russia	> 2,716	3	-	3
Serbia	181	1	1	2
Singapore	5,962	12	-	12
Slovakia	230	9	2	11
Slovenia	61	13	3	16
South Africa	291	45	2	47
Spain	1,503	300	17	317
Sweden	3	2	4	6
Switzerland	23	3	-	3
Taiwan	8,006	25	-	25
Tanzania	201	1	-	1
Thailand	> 19,498	85	2	87
Togo	93	4	1	5
Turkey	2	2	-	2
Ukraine	810	4	-	4
United Arab Emirates	679	20	14	34
United Kingdom	2,746	62	7	69
United States of America	> 7,227	342	348	690
Uzbekistan	2,350	3	-	3
Venezuela	51	8	-	8
Viet Nam	> 24,638	242	10	252
Yemen	1	1	1	2

Annex Table 4

Numbers of seizures of live tortoises and freshwater turtles and numbers of specimens seized during the period 2000-2015, for which a particular country was recorded as the country of provenance, or the destination country, based on the combined dataset.

	as country of provenance		as country of destination	
	# seizures	# specimens	# seizures	# specimens
Albania	22	152	-	-
Algeria	145	457	1	1
Angola	1	1	-	-
Antigua & Barbuda	1	1	-	-
Argentina	2	51	1	100
Armenia	1	1	-	-
Australia	1	24	-	-
Austria	-	-	8	63
Azerbaijan	3	6	-	-
Bangladesh	17	> 3,146	10	11,275
Belarus	1	1	-	-
Belgium	2	21	38	604
Benin	4	129	-	-
Bolivia	1	41	1	41
Bosnia-Herzegovina	5	197	-	-
Brazil	10	532	-	-
British Virgin Islands	1	1	-	-
Bulgaria	1	1	2	51
Burundi	1	1	-	-
Cambodia	8	265	3	19
Cameroon	1	24	-	-
Canada	2	5	13	152
Chile	2	23	3	67
China	32	> 11,034	78	53,459
Colombia	4	10,005	-	-
Croatia	9	80	2	374
Cyprus	1	1	-	-
Czech Republic	3	57	16	224
D.R. Congo	1	50	-	-
Denmark	1	1	10	164
Ecuador	1	1	-	-
Egypt	14	127	-	-
Estonia	-	-	1	1
Ethiopia	1	200	-	-
EU-28 combined	82	667	725	7,297
Finland	1	1	1	3
France	5	205	193	1,281
Georgia	1	2	1	42
Germany	13	42	88	360
Ghana	12	421	-	-
Greece	6	12	-	-
Guyana	16	199	-	-
Hong Kong	31	9,882	45	14,402
Hungary	2	183	2	28
India	87	36,002	12	4,270
Indonesia	44	32,166	8	2,164
Iran	3	5	-	-
Israel	1	1	1	2
Italy	11	64	120	835
Japan	8	61	18	2,175
Jersey	1	1	-	-
Jordan	8	565	-	-
Kazakhstan	4	638	-	-
Kenya	3	22	-	-
Korea (South)	2	2	2	101

	as country of provenance		as country of destination	
	# seizures	# specimens	# seizures	# specimens
Kuwait	-	-	3	36
Lao PDR	15	1047 kg	12	1,268
Latvia	-	-	5	13
Lebanon	7	16	-	-
Libya	3	43	-	-
Luxembourg	-	-	1	2
Macao	5	92	5	375
Macedonia	7	236	-	-
Madagascar	21	> 5,017	-	-
Malaysia	24	31,556	31	11,059
Mali	1	150	-	-
Malta	-	-	5	88
Mayotte	1	10	-	-
Mexico	114	241	3	291
Mongolia	1	29	-	-
Montenegro	1	3	-	-
Morocco	218	1,073	1	1
Mozambique	1	4	-	-
Myanmar	7	433	7	1,851
Netherlands	5	13	54	564
Nicaragua	1	100	-	-
Nigeria	2	2	1	24
Norway	1	14	7	16
Oman	-	-	1	10
Pakistan	4	1,232	2	1,054
Peru	11	2,962	1	3
Philippines	13	5,272	1	14
Poland	1	2	15	847
Portugal	-	-	3	5
Qatar	3	128	1	3
Réunion	2	188	-	-
Romania	4	57	1	2
Russia	11	720	1	1,500
Saudi Arabia	1	1	-	-
Serbia	24	803	1	181
Singapore	26	10,462	7	10,059
Slovakia	-	-	2	12
Slovenia	3	37	1	9
South Africa	4	22	-	-
Spain	10	39	109	394
St. Vincent and Grenadines	1	10	-	-
Sudan	-	-	1	453
Suriname	6	46	-	-
Sweden	1	6	5	19
Switzerland	3	20	9	219
Syria	12	665	-	-
Taiwan	7	2,648	1	4
Tanzania	12	352	2	1,014
Thailand	48	1383 + 6000Kg	31	8,062
Togo	13	477	-	-
Tunisia	128	816	1	710
Turkey	20	80	-	-
Uganda	1	1	-	-
Ukraine	19	2,110	-	-
United Arab Emirates	5	400	3	136
United Kingdom	5	33	50	1,401
United States	61	2,612	306	6,199
Uzbekistan	4	2,357	1	634
Venezuela	10	110	5	44

	as country of provenance		as country of destination	
	# seizures	# specimens	# seizures	# specimens
Viet Nam	34	2767 + 3000Kg	24	946 + 485Kg
Yemen	1	1	-	-
Zambia	12	1,158	-	-
Zimbabwe	1	2	-	-
Unknown / not recorded	1,066	98,290	1,121	155,245

Annex Table 5

Quantities of seizures of turtle parts and derivatives during the period 1998-2015, arranged by the number of cases reported per country, based on the UNODC WorldWISE database as of 30 October 2015.

Country reporting seizure	Number of seizure cases	Kg	Number of items
New Zealand	372	48	28,332
United States	365	55	17,314
Germany	33	1	125
Portugal	29	2	55
Netherlands	24	1	289
Italy	20	1	140
Spain	19		22
United Arab Emirates	16		662
Belgium	15	1	5,024
France	13		17
China	12	1	12,187
India	7		3,735
United Kingdom	6	2	322
Czech Republic	5		7
Hong Kong	5		10,005
Austria	4	1	6
Sweden	4		5
Slovenia	3		4
Denmark	2		2
Norway	2		3
Poland	2		2
Slovakia	2		3
South Africa	2		13
Thailand	2		8
Canada	1		11
Hungary	1		2
Indonesia	1		10

Luxembourg	1		2
Serbia	1		510
Viet Nam	1	2000	
Yemen	1		1
Total	971		

Matériels d'identification des tortues terrestres et les tortues d'eau douce dans le commerce international et de renforcement des capacités paragraphe b) de la décision CITES 16.122

Résumé

Sur la base du paragraphe b) de la décision 16.122, cette étude vise à recenser et évaluer les matériels d'identification existants pour les tortues terrestres et les tortues d'eau douce dans le commerce international (tant les spécimens vivants que les parties et produits), et à examiner les matériels disponibles de renforcement des capacités intéressant le commerce international de ces espèces.

Une gamme étendue de matériels d'identification et de renforcement des capacités a été examinée, en insistant sur les ressources téléchargeables gratuitement sur Internet. Cette étude a amené à conclure que des matériels d'identification précis et simples sont disponibles et accessibles dans diverses langues pour les tortues terrestres et tortues d'eau douce vivantes dans le commerce international, mais que les matériels permettant d'identifier les parties et produits sont rares, incomplets et difficiles d'accès. Il est recommandé d'élaborer un guide permettant de reconnaître et de recenser de tels matériaux dans le commerce et les dispositions relatives aux permis y afférentes, et d'établir un réseau d'experts pour une assistance en matière d'identification.

Le matériel disponible pour le renforcement des capacités, spécifique au commerce des tortues terrestres et des tortues d'eau douce, inclut des orientations pour la formulation des avis de commerce non préjudiciable, et pour l'évaluation des spécimens commercialisés d'origine sauvage ou élevés en captivité, et du matériel plus général sur la mise en œuvre de la CITES. Il est encore possible de développer et d'améliorer le matériel permettant d'évaluer les établissements d'élevage en captivité de tortues terrestres et d'eau douce, de reconnaître les spécimens de tortues terrestres et de tortues d'eau douce provenant de différents systèmes de production, et d'étudier, de compiler et de fournir des données sur l'histoire naturelle et la dynamique des populations afin de faciliter la formulation des ACNP.

En outre, il est souhaitable d'améliorer l'accès aux textes de lois et de législations nationales à jour concernant les tortues terrestres et les tortues d'eau douce dans les pays de l'aire de répartition afin d'aider les autorités CITES à évaluer le statut juridique des spécimens commercialisés. Enfin, il est recommandé que l'équipe de renforcement des capacités du Secrétariat CITES et les groupes de travail du comité examinent les possibilités d'intégrer des questions intéressant spécifiquement les tortues terrestres et les tortues d'eau douce dans les études des besoins des Parties en matière de matériel d'identification et de renforcement des capacités.

Identification and Capacity Building Materials for Tortoises and Freshwater Turtles in International Trade

– an overview to implement CITES Decision 16.122 paragraph b)

Executive Summary

Based on CITES Decision 16.122, paragraph b), this study aims to identify and evaluate available identification materials for tortoises and freshwater turtles in international trade (live as well as parts and derivatives), and to review available capacity-building materials relevant to the international trade in these animals.

An extensive selection of available identification and capacity building materials were reviewed, with emphasis on freely downloadable resources on the internet. It was concluded that reliable, accurate and easy-to-use identification materials are available and accessible in a variety of languages for live tortoises and freshwater turtles in international trade, but materials to identify parts and derivatives are scarce, incomplete and difficult to access. The development of a guide to recognize and identify such materials in trade and their permit requirements, as well as the development of an expert identification assistance network, are recommended.

Available capacity building materials specific to tortoise and freshwater turtle trade include guidance on making Non-Detriment Findings and guidance on evaluating the wild or captive-raised origin of traded specimens, as well as more general materials on implementation of CITES. There remain opportunities for expansion and improvement of materials to evaluate captive production facilities for tortoises and freshwater turtles, to recognize tortoise and freshwater turtle specimens originating from different production systems, as well as to research, compile and provide data on natural history and population dynamics to assist in making NDFs.

In addition, improved and up-to-date access to the text of domestic laws and regulations concerning tortoises and freshwater turtles in range countries is desirable to assist CITES Authorities in the evaluation of the legal status of specimens in trade. Finally, it is recommended that the Capacity Building team at the CITES Secretariat and Committee Working Groups explore options to incorporate tortoise and freshwater turtle-specific items in surveys of the Parties' needs for identification materials and capacity building efforts.

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Lead writer: Peter Paul van Dijk, with input from members and staff of the TFTSG, the United States Fish and Wildlife Service, and the IUCN Species Program. All contributors and reviewers are cordially thanked for their time, efforts and contributions to improve earlier versions and are in no way responsible for errors or omissions.

Decision 16.122, paragraph b) concerning identification and capacity building materials

1. Background

At its 16th meeting (CoP16; Bangkok, 2013), the Conference of the Parties to CITES adopted Decisions 16.109 to 16.124[25] on *Tortoises and freshwater turtles (Testudines spp.)*, directed to the Secretariat, the Animals Committee, the Standing Committee and the Parties.

At the 65th meeting (SC65; Geneva, 2014) of the CITES Standing Committee, the Secretariat introduced document SC65 Doc. 45[26] on *Tortoises and freshwater turtles*, giving an overview of the status of the implementation of Decisions 16.109 to 16.124. The Secretariat noted that there were few responses from Parties to requests for data or reports in the context of these Decisions, recognizing that the considerable reporting requirements in different Decisions may have been to some extent dissuasive or confusing. The Secretariat expressed concern that this might impede the successful implementation of the Decisions on *Tortoises and freshwater turtles*.

The Secretariat reported that the activities and studies called for in Decision 16.119 paragraph b), and Decision 16.122 paragraphs a) and b), would be particularly important as they could complement or partially replace the progress reports and information that Parties are expected to submit in accordance with the Decisions on *Tortoises and freshwater turtles*, and consequently noted that the implementation of these Decisions could enhance the initiation of targeted activities. Strong support was expressed for the recommendation by the Secretariat to implement Decisions 16.119 paragraph b), and 16.122 paragraphs a) and b). The purpose of this study is to assist the Secretariat in the implementation of Decision 16.122 paragraph b), which states:

> ***Directed to the Secretariat***
>
> *16.122 The Secretariat shall:*
>
> *b) subject to external funding, contract a consultant to identify and evaluate tortoises and freshwater turtle identification and capacity-building materials, and assist with developing additional materials as deemed necessary, including the preparation and distribution of multilingual [Bahasa Indonesia, Bahasa Malaysia (Melayu), Bengali, Burmese, Chinese, English, Hindi, Khmer, Lao, Thai, Urdu, Vietnamese and other languages as appropriate] identification materials focused on the shells and shell pieces of Asian tortoises and freshwater and terrestrial turtles;*

2. Objectives

The objective of this study is to support the implementation of CITES Decisions on tortoises and freshwater turtles, through the completion of a review of identification and capacity-building materials available for tortoises and freshwater turtles, in accordance with the provisions of CoP Decision 16.122, paragraph b).

The findings of the work conducted should feed into the CITES Tortoises and Freshwater Turtles Task Force to be convened pursuant to Decision 16.119, paragraph b) and documentation for the 17th meeting of the CITES Conference of the Parties (CoP17, Johannesburg, September 2016).

3. Activities: Review of identification and capacity-building materials: activities to be conducted in accordance with Decision 16.122 b)

- Identify and evaluate tortoise and freshwater turtle identification materials available at a global level, including identification materials focusing on the shells and shell pieces of Asian tortoises and freshwater and terrestrial turtles. The evaluation should consider issues such as the accessibility, quality and quantity of the materials, and the distribution, uptake and utilization of available materials.
- Identify and evaluate available capacity-building materials at a global level relevant to the international trade in tortoises and freshwater turtles. The evaluation should consider issues such as the accessibility, quality and quantity of the materials, and the distribution, uptake and utilization of available materials.

[25] https://cites.org/eng/dec/valid16/223

[26] https://www.cites.org/sites/default/files/eng/com/sc/65/E-SC65-45_0.pdf

- Evaluate the need for the development of additional identification materials globally, including the need for the preparation and distribution of multilingual (e.g. Bahasa Indonesia, Bahasa Malaysia (Melayu), Bengali, Burmese, Chinese, English, Hindi, Khmer, Lao, Thai, Urdu, Vietnamese and other languages as appropriate) materials.
- Evaluate the need for the development of additional capacity-building materials, including the need for the preparation and distribution of multilingual (e.g. Bahasa Indonesia, Bahasa Malaysia (Melayu), Bengali, Burmese, Chinese, English, Hindi, Khmer, Lao, Thai, Urdu, Vietnamese and other languages as appropriate) materials.
- Provide recommendations on the development of additional identification and capacity-building materials and/or the enhancement of existing materials as appropriate.

4. Findings: Identification Materials

Available identification materials for tortoises and freshwater turtles: Live specimens

Annex 1 to this report lists the most readily available and recent identification guides for live tortoises and freshwater turtles, broadly grouped by global coverage and CITES geographic region.

On balance, accurate and detailed identification guides and other materials for the great majority of tortoise and freshwater turtle species are freely available by downloading from the internet. All these identification materials are reasonably easy to use by people with basic knowledge of biology in general, and tortoises and freshwater turtles in particular, that could be expected of people working professionally with wildlife trade. While most tortoise and freshwater turtle identification materials are available in English, suitable guides with global coverage are available in pdf format in French, Spanish, Chinese and Turkish, with regional guides available in at least French, Spanish, Bahasa Indonesia, Bahasa Melayu, Burmese, Japanese, Khmer, Laotian, Thai and Vietnamese.

An equally accurate and easy to use smartphone app is available for a modest purchase price (about 10 US Dollars) covering all known species of tortoises, freshwater turtles and marine turtles, up to date to 2011, featuring several colour pictures per species.

Nevertheless, two shortcomings among available identification materials must be noted:

1) Taxonomy of tortoises and freshwater turtles, as well as the species included in the CITES Appendices, change relatively frequently, and many of the available references use outdated nomenclature and/or CITES Appendix listing status. Consulting the SpeciesPlus[27] database may be needed to double-check a species' currently valid name and/or CITES Appendix listing.
2) Available identification materials are relatively old and outdated, or hard to obtain, or both, for the tortoises and/or freshwater turtles of a few regions, particularly Central America, New Guinea, Sub-Saharan Africa (excluding Southern Africa and Madagascar), and the Caribbean. Global and regional guides covering most or all of the species of these regions exist, but double-checking is recommended to determine the current nomenclature of tortoise and freshwater turtle species of these regions.

Available identification materials for tortoises and freshwater turtles: Parts and derivatives

In contrast to the wide range of identification materials for live tortoises and freshwater turtles, identification resources for tortoise and freshwater turtle shells, bones, parts and derivatives are scarce and difficult to access.

Whole shells, carapaces and plastrons / plastra can be identified with reasonable reliability by using identification materials for live tortoises and freshwater turtles, especially if the scutes still adhere to the shells. The colouration and pattern of scutes, particularly of the plastron, is often quite diagnostic for species and many shells, and in some cases even shell pieces and fragments, can be identified to species with a high degree of confidence.

[27] http://speciesplus.net/species

Turtle shells, carapaces (upper shells) and plastrons/plastra (lower shells) without scutes still attached are challenging to identify, and require specialist examination and evaluation. The location and proportions of the lost scutes can usually still be determined by the presence of the sulcus, a distinct groove in the bone where the overlying scutes make contact, and the sutures between the individual bones are visible, which can also be of assistance for identification.

Skulls, limb bones, skulls and individual or broken shell bones are decidedly challenging to identify to species with confidence, and almost always will require examination by specialists with extensive experience with turtle anatomy, morphology, palaeontology and/or archaeology. One or two specialist publications exist for the identification of tortoise and freshwater turtle bones and fragments from archaeological deposits, but these publication are difficult to obtain and likely of limited practical use for officials inspecting wildlife shipments. In most such cases, identification assistance can best be obtained by contacting local or global specialists and sharing pictures of the specimens concerned. An alternative identification method would be to carry out DNA analysis of representative bone specimens if there are no clear indications that any DNA in the specimens has been degraded beyond recovery, by boiling or other heat treatments or by chemical means.

Cartilage from the shell of soft-shelled turtles (family Trionychidae) has come into trade over the past decade or so, being used as an ingredient in the food, traditional medicinal and cosmetics trades as a source of collagen. It is known to be collected and prepared in some countries of South Asia and Africa, and possibly elsewhere; it is normally traded in its dried form, when it appears as twisted hard dark strips of material. It is frequently falsely labelled as buffalo horn, which it resembles. Based on available information, no guidance exists for the identification of turtle cartilage and distinguishing it from look-alike materials.

Tortoises and freshwater turtles feature in the bushmeat trade of West and Central Africa and occasionally are exported beyond this region. Pictorial identification guidance and useful information is provided in the Bushmeat Information and Identification Guide prepared by Switzerland (2015[28]).

Identification of medicinal and other preparations containing tortoise and freshwater turtle materials or derivatives is extremely challenging. At the present, DNA analysis of such preparations appears to be the only way to evaluate and verify species content with some degree of certainty, though not all preparations yield viable DNA (Lo *et al*., 2006[29]).

Additional identification materials and resources needed

Based on the preceding review of available identification materials for tortoises and freshwater turtles, accurate identification materials for live specimens exist for all species world-wide (though noting that taxonomic changes may have occurred after their publication), and adequate identification material for most species can be consulted online, as a smartphone app, downloaded as pdf's, or obtained in book or printed form. With the exponential growth of publishing as a result of digital evolution and increased access to published and online resources on the internet, it is questionable whether there is great merit in updating the traditional CITES identification sheets and materials such as the identification WIKI, or whether external avenues to identification can be developed or adopted for CITES purposes.

In contrast, there is a clear need for guidance on identification of tortoise and freshwater turtle parts and derivatives in trade, such as shells, bone pieces, dried cartilage, meat, eggs, powders and packed processed products. These are product categories where it is unlikely that adequate identification materials will be produced by the usual sources of identification guides for live tortoise and freshwater turtle specimens, i.e. the academic, field conservation and/or hobbyist communities. It will be highly challenging to develop accurate identification materials for all bones, fragments and products, and if such detailed materials could be developed, the effort required may outweigh the practical utility for trade and wildlife inspectors. More likely, identification materials may need to be developed for categories of turtle parts & derivatives in trade, so that inspectors are made aware of the trade in these types of products, recognize such products in trade, and receive guidance for further identification resources and expertise that can be consulted. The Swiss bushmeat guide (Switzerland, 2015[30]) offers a useful model how the trade in tortoise and freshwater turtle parts and derivatives can be presented to wildlife and customs inspectors and officers. The guide could be a stand-alone document, or could be structured as a supplement to the CITES Identification Guide for Turtles and Tortoises prepared by Environment Canada. Preparation of such a guide could be sought from Parties, inter-

[28] https://cites.unia.es/cites/file.php/1/files/bushmeat-FSVO.pdf

[29] *Lo, C.F., Y.R. Lin, H.C. Chang, and J.H. Lin. 2006. Identification of Turtle Shell and its Preparations by PCR-DNA Sequencing Method. Journal of Food and Drug Analysis 14(2):153-158.*

[30] : https://cites.unia.es/cites/file.php/1/files/bushmeat-FSVO.pdf

governmental and/or non-governmental organizations, with input from Parties, species specialists, and the Secretariat throughout the process.

As regards different languages, there is no doubt that identification materials in national languages in East and Southeast Asia have been helpful for many officials, scientists and conservationists. At the same time, the absence of local-language tortoise and freshwater turtle identification materials has not emerged from Periodic Reports, surveys or other feedback to represent a critical impediment to trade management or enforcement. CITES being a treaty implemented in English, French and Spanish, and international tortoise and freshwater turtle trade being largely conducted and documented in these three languages, the great majority of inspectors and officers are able to use identification materials in these languages, or the available Chinese-character publications. Local-language identification materials will likely have particularly high value for offtake management and trade regulation at local and domestic levels.

Overall, it appears that the main challenge is not so much in obtaining tortoise and freshwater turtle identification materials, but in accurately applying them, given the variability of many species with age and between individuals. As such, the primary need is for a mechanism to confirm initial identifications made by wildlife inspectors, rather than additional materials that present the same information in a slightly different manner. In the companion study on illegal tortoise and freshwater turtle trade, the concept of a secure species identification assistance network is proposed. This would connect law enforcement officers to outside species identification expertise without compromising confidentiality. Enforcement officers can post pictures into a restricted-access online system and tag them with group or descriptive labels ("turtle", "possible turtle shell ornament"). The system would then send a message (email, sms) to one or more previously-vetted and approved specialists in the species or product category, alerting them to log in and assist with identification. Such a system could provide reliable identifications within minutes or hours (taking into account time zones and other practicalities) and assure confidentiality and greatest possible quality of evidence to be collected. For greatest efficiency, simple guidance on the key aspects to photograph of a tortoise or freshwater turtle (whole animal, plastron view, close-up of head if possible) should be included as part of the network resources; the guidance for digital vouchering provided by Bender (2001) and Lehn et al (2007) would be good starting points. Obviously such a system should not be developed for just tortoises and freshwater turtles, but could work for many wildlife species in trade, live and possibly parts and derivatives as well.

In cases where DNA analysis of specimens, parts or derivatives is needed to determine or verify species identity, contact details for molecular laboratories with capacity to analyse wildlife samples will be needed. At the time of writing, the Secretariat in cooperation with the UNODC has concluded a survey of wildlife forensic laboratory capacity (Notification 2015/061[31]); the results of this effort will be directly pertinent to any needs for molecular analysis of tortoise and freshwater turtle samples.

At the risk of burdening Parties with additional reporting expectations, it will be interesting to survey their (perceived) needs for tortoise and freshwater turtle identification materials, possibly in the context of broader surveys of identification materials and capacity building needs concerning CITES-listed species.

5. Findings: Available capacity building materials relevant to international trade in tortoises and freshwater turtles

Identification materials are the foundation of regulated management, trade and enforcement regarding tortoises and freshwater turtles and have been reviewed in the preceding section, but additional aspects deserve guidance and capacity building attention.

Implementation of the CITES convention in general is a broad subject that is extensively covered by existing training and capacity building materials for officers of Management, Scientific and Enforcement Authorities, as well as traders and the general public. Capacity building materials for general CITES implementation are beyond the scope of this study.

Non-Detriment Findings (NDFs) represent the scientific risk assessment upon which to evaluate the sustainability of trade on the survival of the wild population from which offtake occurs, and may be extended to evaluate the potential impact of trade on other populations and species. Extensive guidance on the NDF process and case studies for a variety of species (groups) have been developed for CITES Authorities over the past decade or longer. Recently (2015) NDF guidance for tortoises and freshwater turtles was prepared and made available (see Annex 2 of AC28 Doc. 15[32]). While the tortoise and freshwater turtle NDF guidelines

[31] https://cites.org/sites/default/files/notif/E-Notif-2015-061.pdf

[32] https://cites.org/sites/default/files/eng/com/ac/28/E-AC28-15-Annex2.pdf

include reference to useful sources describing methodology and biological information, however, it is clear that further information compilation and provision, and capacity building in the effective and accurate sourcing and use of this information, will be needed.

Establishing quotas is an extension of the NDF process that is used by a number of Parties to manage tortoise and freshwater turtle offtake and trade. There have on occasion been issues with quotas being exceeded, and monitoring the fulfilment of an annual or provincial quota in the course of the year is a task for the management authority. This task is likely to become more efficient as more and more Parties gradually move towards e-permitting systems, which have the inherent ability to provide real-time data on the number of permits issued at any given moment, and the number of specimens covered by these permits. While significant for a number of tortoise and freshwater turtle species, this is a general development beyond the scope of this report.

Knowledge of species protection status in CITES, domestic law and foreign jurisdictions is essential for adequate offtake and trade management and enforcement. In the great majority of situations, MA, SA and enforcement officers are well aware of the applicable laws and species status. In some situations, such as under the Lacey Act of the United States, wildlife protective legislation in the country of origin of traded specimens remains effective and enforceable in a different country. For breaches of wildlife law in one jurisdiction to be effectively enforced in another jurisdiction, it is essential that officers have access to foreign wildlife laws and regulations. The ECOLEX database[33] provides access to numerous environmental laws of the world's countries, though it is often not easy to find the specific applicable laws and regulations concerning a species-country combination, as many are in the form of scans of photocopies and not searchable or keyword-indexed. It might be helpful to many institutions and individuals to encourage ECOLEX to gradually replace scanned image documents with searchable digital text versions of laws and regulations, with text and advanced search capabilities, so that it would be relatively simple to find the laws of a particular country that mention a specific species or keyword. Beyond this, a summary overview of pertinent laws per country (similar to the overview of Legal Authority concerning Reptiles and Amphibians (Nanjappa and Conrad, 2011) available for the United States) would be exceedingly useful, but would require extensive efforts to produce.

As noted in the studies on illegal tortoise and freshwater turtle trade and on Non-Detriment Findings for tortoises and freshwater turtles, for several of these species the international trade is restricted to (or subject to different regulations for) specimens originating from captive production facilities. Guidance is available to assist authorities to evaluate the likely wild or captive origin of tortoise and freshwater turtle specimens in trade (Benyr, 2014; also briefly discussed in Annex 2 of AC28 Doc. 15[34]). In addition, guidance for the inspection and validation of captive breeding facilities for reptiles in Southeast Asia has been prepared (TRAFFIC, 2013b) and additional guidance for captive facility inspection is in development (e.g., see SC66 Doc. 41.1[35]) and will likely be of great value.

Additional capacity building materials needed

At present, it appears that there are no glaring absences of critical capacity building and training materials that are specific to trade in tortoises and freshwater turtles. Their trade is an integral part of the overall trade in CITES-listed species and relies to a large extent on adequate implementation of the CITES Convention by all Parties.

While guidance for Non-Detriment Findings for tortoises and freshwater turtles are available, much more can be done to compile and provide pertinent information to SA staff and others. In particular, population assessment and monitoring techniques warrant additional attention, as do population dynamics and population structure, specifically aspects of gross and net population recruitment rates in relation to offtake rates, for trade and other impacts on populations.

Correspondingly, extensive scope remains for expansion, improvement and refinement of evaluation processes for captive production systems for tortoises and freshwater turtles, in the areas of inspection, verification and possibly registration of captive breeding facilities, as well as in improving the available materials and expertise to differentiate between captive-born, captive-reared, and wild-sourced specimens in trade or held in captive facilities.

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[33] *http://www.ecolex.org/start.php*

[34] *https://cites.org/sites/default/files/eng/com/ac/28/E-AC28-15-Annex2.pdf*

[35] https://cites.org/sites/default/files/eng/com/sc/66/E-SC66-41-01x.pdf

The international trade in tortoises and freshwater turtles has been found to have potentially significant impacts on wild populations (AC25 Doc.19 Annex, 2011[36]) and to have a significant illegal or semi-legal trade component (see companion report on Decision 16.122, paragraph a)). Thus, it is recommended that tortoises and freshwater turtles can be emphasized appropriately in current and future capacity building efforts by the CITES Secretariat and Parties. In addition, it will be helpful if specific capacity building needs regarding tortoise and freshwater turtles can be articulated by Parties through an appropriate avenue, such as the Annual or Biannual Reports or through surveys of capacity building needs conducted by the CITES Secretariat and Committee Working Groups.

6. Recommendations

From the analysis of existing and needed identification and capacity building materials for tortoises and freshwater turtles, it is recommended to:

- Develop an introductory guide to the recognition and general identification of tortoise and freshwater turtle parts and derivatives in (international) trade, to enable inspectors to recognize tortoise and freshwater turtle parts and derivatives in general, enable identification of specific diagnostic items, appreciate the permit requirements for such shipments, and receive guidance for further identification assistance and resources.

- Establish a rapid-response secure identification network for tortoises and freshwater turtles (and other wildlife) in trade, using email, sms, and/or mobile phone pictures to connect wildlife inspectors to a network of trusted species identification specialists.

- Develop simple guidance for wildlife inspectors (and others) on how to photograph a tortoise or freshwater turtle specimen, part or derivative, for identification by external specialists.

- Encourage ECOLEX to progressively replace scanned image versions of laws and regulations with searchable digital text versions, and provide text-search and advanced search capabilities, so that it will be relatively simple to find the laws of a particular country that mention a specific species or keyword.

- Develop further guidance concerning tortoises and freshwater turtles on aspects of population survey and monitoring, population dynamics in relation to offtake rates, inspection of captive breeding facilities, and differentiation of specimens originating from the wild from those from captive production systems.

- Explore options for the Capacity Building team at the CITES Secretariat and Committee Working Groups to incorporate specific items concerning tortoises and freshwater turtles in surveys of the Parties' needs for identification materials and capacity building efforts.

- Encourage the private sector to produce an updated turtle identification app for all smartphone platforms and available in multiple languages.

ANNEX

Identification Resources for Tortoises and Freshwater Turtles - Global

CITES WIKI Identification Guide http://www.cites.org/eng/resources/wiki_id.shtml and mirrored at http://citeswiki.unep-wcmc.org

CITES Identification Guide – Turtles and Tortoises: Guide to the Identification of Turtles and Tortoises Species Controlled under the Convention on International Trade in Endangered Species of Wild Fauna and Flora / An initiative of Environment Canada and PROFEPA (SEMARNAP). Ottawa: Environment Canada, 1999. 232 pp. Trilingual pdf in English, French and Spanish: https://cites.unia.es/cites/file.php/1/files/CAN-CITES_Turtle_Guide.pdf

Turkish edition: https://cites.unia.es/cites/file.php/1/files/turtles-tortoises-TR.pdf

Chinese edition: Guide to the Identification of Turtles and Tortoises Species Controlled under CITES. (1999). Edited by Tien-Hsi Chen, Vincent Y. Chen. 64pp plus indexes. In collaboration with: CITES Secretariat, Geneva, Switzerland, TRAFFIC North America, Commission for Environmental Cooperation, Biodiversity

[36] *https://cites.org/sites/default/files/eng/com/ac/25/E25-19.pdf*

Convention Office, Environment Canada. PDF, 9.3 MB: http://www.traffic.org/species-reports/traffic_species_reptiles15.pdf

Species accounts of the *Conservation Biology of Freshwater Turtles and Tortoises* series http://www.iucn-tftsg.org/toc/

Vetter, H. 2011. *Terralog: Turtles of the World Vol.1 – Africa, Europe, and Western Asia.* 2nd Edition. Edition Chimaira, Frankfurt am Main. 152 pp. ISBN 978-3-930612-27-7.

Vetter, H. 2004. *Terralog: Turtles of the World Vol.2 – North America*. Edition Chimaira, Frankfurt am Main, and Verlag ACS GmbH, Rodgau. 127 pp. ISBN 3-930612-57-7.

Vetter, H. 2005. *Terralog: Turtles of the World Vol.3 – Central and South America.* Edition Chimaira, Frankfurt am Main, and Verlag ACS GmbH, Rodgau. 129 pp. ISBN 3-930612-82-2.

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SEATURTLE.ORG. 2005. Sea Turtle Identification Key. 2 pp. [in English]. http://www.seaturtle.org/documents/ID_sheet.pdf and http://www.reef.org/reef_files/TurtleID.pdf

McCloud, K. 2008. A Photographic Identification Guide to Star-Patterned Tortoises. Identification Guides for Wildlife Law Enforcement No.12. USFWS, National Fish and Wildlife Forensics Laboratory, Ashland, OR. http://www.asianturtleprogram.org/pages/resources/May2008-McCloud_Star_Tortoise_patterns/McCloud_2008_Star_tortoise_patterns.pdf

Shi, H.T., M. Hou, P. Pritchard, M. Lau, J.C. Wang, Y.-X. Liu, and F. Yeh (eds). 2013. Identification Manual for the Conservation of Turtles in China. Encyclopedia of China Publishing House, Beijing, China. 174 pp. ISBN 978-7-5000-9246-9. https://cites.unia.es/cites/file.php/1/files/Identification_manual_conservation_turtles-china1.pdf

ETI BioInformatics. 2011. *Turtles of the World*. Smartphone version of the DVD-ROM "Turtles of the World" by C.H. Ernst, R.G.M. Altenburg and R.W. Barbour published by ETI, Netherlands, ISBN: 90-75000-82-0, republished for use on iPhone, iPad and iPod touch. USD 9.99. [apparently no Android version available] https://itunes.apple.com/us/app/turtles-of-the-world/id424806942?mt=8

Identification resources - Africa

Branch, B. 2008. *Tortoises Terrapins & Turtles of Africa*. Struik Publishers, Capetown. 128 pp. ISBN 978 77007 463 7.

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Leuteritz, T.E., J. Gerlach, R.A. Mittermeier, A.G.J. Rhodin, P.P. van Dijk, R. Lewis, and H. Randriamahazo. 2007/2008. Turtles and Tortoises of Madagascar and Adjacent Indian Ocean Islands – Pocket Identification Guide. Conservation International, Arlington, VA. ISBN 978-1-934151-15-0. http://www.chelonian.org/wp-content/uploads/file/Leuteritz_etal_2008_Madagascar.pdf

Pauwels, O.S.G., and J.P. Vande Weghe. 2008. Les Reptiles du Gabon. Smithsonian Institution Press, Washington DC, USA. 298 pp. ISBN 978-1893912014.

Spawls, S., K. Howell, R. Drewes and J. Ashe. 2002. *A Field Guide to the Reptiles of East Africa*. Academic Press, London & San Diego. 543 pp. ISBN 0-12-656470-1.

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Identification resources - Asia:

Vetter, H. 2011. *Terralog: Turtles of the World Vol.1 – Africa, Europe, and Western Asia.* 2nd Edition. Edition Chimaira, Frankfurt am Main. 152 pp. ISBN 978-3-930612-27-7.

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Shi, H.T., M. Hou, P. Pritchard, J.J. Peng, Z. Fan, & F. Yin (eds). 2008. Identification Manual for Traded Turtles in China. China Encyclopedia Press, Beijing, China. 168 pp. ISBN 978-7-5000-7937-8. [in Chinese].

Shi, H.T., M. Hou, P. Pritchard, M. Lau, J.C. Wang, Y.-X. Liu, and F. Yeh (eds). 2013. Identification Manual for the Conservation of Turtles in China. Encyclopedia of China Publishing House, Beijing, China. 174 pp. ISBN 978-7-5000-9246-9. https://cites.unia.es/cites/file.php/1/files/Identification_manual_conservation_turtles-china1.pdf

ESIEMO PR China (Endangered Species Import and Export Management Office of the People's Republic of China). 2002a. *Identification Manual for Common Turtles and Tortoises*. China Forestry Publishing House, Beijing, China. 174 pp. ISBN 7-5038-3022-0.

Purkayastha, J., I. Das, and S. Sengupta. 2015. Freshwater Turtles & Tortoises of South Asia. Bhabani Books, Guwahati, India. 138 pp. ISBN 978-93-81139-83-7. Pdf file available from first author free of charge for CITES authorities, contact <mail.jayaditya[at]gmail.com>

Das, I. 1991. *Colour Guide to the Turtles and Tortoises of the Indian Subcontinent.* R & A Publishing Ltd, Portishead, Avon, England, 133 pp. ISBN 1-872688-02-0.

TRAFFIC. 2013a. *Identification sheets for wildlife traded in South-East Asia.* Second edition, 98pp. TRAFFIC Southeast Asia, Petaling Jaya, Malaysia. English version (PDF, 10 MB): http://www.traffic.org/id-reports/traffic_pub_identification4.pdf . Versions in the languages of Brunei Darussalam, Cambodia, China, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, Philippines (Tagalog), Singapore (English), Thailand and Viet Nam available at http://www.esabii.biodic.go.jp/training/

Platt, K., S. Platt, Win Ko Ko, Khin Myo Myo, Kyaw Moe and Me Me Soe. 2014. *Photographic Guide to the Freshwater Turtles and Tortoises of Myanmar*, second edition. Turtle Conservation Team (MOECAF, WCS, TSA), Yangon, Myanmar. 56 pp. Bilingual Burmese and English.

Stuart, B.L., P.P. van Dijk and D.B. Hendrie. 2002 "2001". *Photographic Guide to the Turtles of Thailand, Laos, Vietnam and Cambodia*. Four bilingual versions, Thai/English (ISBN 0-9632064-8-6), Laotian/English (ISBN 0-9632064-7-8), Vietnamese/English (ISBN 0-9632064-9-4), & Khmer/English (ISBN 0-9632064-6-X); each 84 pp. Wildlife Conservation Society Asia Program, Wetlands International, TRAFFIC and The World Bank, July 2002.

Hendrie,, D.B., B.D. Phong, T. McCormack, H.V. Ha and P.P. van Dijk. 2010. *Identification guide for law enforcement officers to the tortoises and freshwater turtles of Vietnam*. ENV, Humane Society International, Cuc Phuong Turtle Conservation Center, and the Asian Turtle Program. 66 pp.
Vietnamese version: http://www.asianturtleprogram.org/pages/resources/New-Turtle-ID-book-20Sep10/Turtle ID book 2011.pdf

Auliya, M. 2007. *An Identification Guide to the Tortoises and Freshwater Turtles of Brunei Darussalam, Indonesia, Malaysia, Papua New Guinea, Philippines, Singapore and Timor Leste*. TRAFFIC Southeast Asia, Petaling Jaya, Malaysia. 100 pp. ISBN 978-983-3393-10-7.

Lim, Boo Liat, and Indraneil Das. 1999. *Turtles of Borneo and Peninsular Malaysia*. Natural History Publications (Borneo), Kota Kinabalu. x + 151 pp. ISBN 983-812-039-1.

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Rueda-Almonacid, J.V., J.L. Carr, R.A. Mittermeier, J.V. Rodríguez-Mahecha, R.B. Mast, R.C. Vogt, A.G.J. Rhodin, J. De La Ossa-Velásquez, J.N. Rueda, and C.G. Mittermeier. 2007. *Las tortugas y los cocodrilianos de los países andinos del trópico*. (The turtles and crocodilians of the countries of the Tropical Andes.) [In Spanish]. Bogotá, Colombia: Editorial Panamericana, Formas e Impresos, Serie de guías tropicales de campo No. 6, Conservación Internacional, 538 pp. http://www.chelonian.org/wp-content/uploads/file/Rueda-Almonacid_etal_2007

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Buhlmann, K., T. Tuberville and W. Gibbons. 2008. Turtles of the Southeast. University of Georgia Press, Athens, GA, USA. 252 pp. ISBN 978-0-8203-2902-4.

Meylan, P.A. (Ed.). 2006. *Biology and Conservation of Florida Turtles*. Chelonian Research Monographs, Number 3. Chelonian Research Foundation, Lunenburg, MA, USA. 376 pp. ISBN 0-9653540-4-0. http://www.chelonian.org/crm-3/

Identification resources - Oceania

Cann, J. 2008. *Freshwater Turtles*. Steve Parish Publishing Pty Ltd, Archerfield, Australia. 96 pp. ISBN 9781741934120.

Identification resources – parts & derivatives

Switzerland. 2015. Federal Food and Safety and Veterinary Office, Tengwood Organisation *Bushmeat: Information and identification guide*. A collaboration of the Federal Food Safety and Veterinary Office and Tengwood Organisation. [Bern, Switzerland: FSVO, 2015. Available in English and French: https://cites.unia.es/cites/file.php/1/files/bushmeat-FSVO.pdf

WCS Vietnam Wildlife Trade identification website [in Vietnamese]: http://www.giamdinhloai.vn/Desktop.aspx/Home/

Pendry, S., C. Allen, J. Wu and G. Cameron. 2004. Traditional Asian medicine identification guide for law enforcers: version II). Her Majesty's Customs and Excise, London and TRAFFIC International, Cambridge, UK. A guide to assist enforcers to determine which medicines and ingredients are legal or illegal. 322pp. http://www.traffic.org/medicinalreports/ traffic_pub_medicinal5.pdf

Guidelines to photographically document turtles:

Bender, C. 2001. Photodocumentation of Protected Reptiles. German Society for Herpetology and Terrarium Keeping (DGHT) e.V.,, Rheinbach. 28 pp. ISBN 3-9806577-2-8.

Lehn, C., I. Das, M.R.J. Forstner and R.M. Brown. 2007. Responsible Vouchering in Turtle Research: An Introduction and Recommendations. In: Shaffer, H.B., FitzSimmons, N.N., Georges, A., and Rhodin, A.G.J. (Eds.). *Defining Turtle Diversity: Proceedings of a Workshop on Genetics, Ethics, and Taxonomy of Freshwater Turtles and Tortoises*. Chelonian Research Monographs No. 4, pp. 147-156. http://www.chelonian.org/wp-content/uploads/file/CRM%204/CRM_4_2007_Shaffer_FitzSimmons_Georges_Rhodin_Defining_Turtle_Diversity.pdf

Nomenclature, synonyms, and distribution of turtles:

Standard Reference for Nomenclature of turtles: Fritz, U., & P. Havaš. 2007. Checklist of Chelonians of the World (including Appendix). *Vertebrate Zoology*, Vol. 57 (2): 149-368. http://www.senckenberg.de/files/content/forschung/publikationen/vertebratezoology/vz57-2/57-2_fritz_149-368.pdf

SpeciesPlus website: http://speciesplus.net/species

Turtle Taxonomy Working Group (TTWG) annual *Checklist*: http://www.iucn-tftsg.org/checklist/ [documenting recent scientific literature on turtle taxonomy, not always consistent with adopted CITES nomenclature].

Non-Detriment Findings

CITES. 2015. Non-Detriment Findings and Trade Management for Tortoises and Freshwater Turtles-a guide for CITES Scientific and Management Authorities. Annex 2 of AC28 Doc. 15 : https://cites.org/sites/default/files/eng/com/ac/28/E-AC28-15-Annex2.pdf

NDF section on CITES virtual college website: https://cites.unia.es/mod/resource/view.php?id=57&lang=en#ID-manuals

CITES. 2011. Document AC25 Doc.19 Annex: A study of progress on conservation of and trade in CITES-listed tortoises and freshwater turtles in Asia. https://cites.org/sites/default/files/eng/com/ac/25/E25-19.pdf

Captive breeding facilities inspection and differentiation of wild-collected from captive-raised turtles

Benyr, G. 2014. Die Unterscheidung von Wildfangen und Nachzuchten bei Reptilien: Bedeutung für den Artenschutz. Bundesministerium für ein lebenswertes Österreich, [in German]. 182 pp. http://www.bmlfuw.gv.at/umwelt/natur-artenschutz/cites/berichte/citeswildentnahme.html

TRAFFIC. 2013b. *Inspection Manual for use in Commercial Reptile Breeding Facilities in Southeast Asia*. Report prepared by TRAFFIC. Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Geneva, Switzerland. 81 pages. https://cites.unia.es/cites/file.php/1/files/cb-captive-breeding-manual-en.pdf or https://cites.org/sites/default/files/eng/com/ac/27/E-AC27-Inf-17_0.pdf

Wildlife Legislation resources

FAO, IUCN and UNEP. ECOLEX – the gateway to environmental law. http://www.ecolex.org/start.php [in English, French and Spanish].

Nanjappa, P., and P.M. Conrad (eds.). 2011. State of the Union: Legal Authority over the Use of Native Amphibians and Reptiles in the United States. Version 1.03. Association of Fish and Wildlife Agencies, Washington DC. 225 pp. http://www.fishwildlife.org/files/SOU_FULL-lo-res.pdf

Contact details for Expert consultation

CITES Nomenclature Specialist – Zoology: see the CITES Website -> Animals Committee members: http://www.cites.org/eng/com/ac/member.php

IUCN SSC Tortoise & Freshwater Turtle Specialist Group: http://www.iucn-tftsg.org/contact/

Studbook Keepers for Tortoises and Freshwater Turtles:

- European Studbook Foundation (ESF): http://www.studbooks.eu. List of studbook keepers by species (click on name of species' studbook keeper to email): http://www.studbooks.eu/index.php?option=com_content&view=article&id=244&Itemid=343
- American Zoo Association Animal Programs: https://www.aza.org/animal-programs/ ; email <conservation[at]aza.org>

Rescue facilities and assistance with placement of seized turtles:

- Species Survival Network directory of Wildlife Rescue Facilities: http://www.ssn.org/cites_rescue_intro_EN.htm
- Turtle Survival Alliance: http://www.turtlesurvival.org/contact

PROJETS DE DÉCISIONS A ÊTRE EXAMINÉ À LA COP17
TORTUES TERRESTRES ET TORTUES D'EAU DOUCE (TESTUDINES SPP.)

À l'adresse du Secrétariat

17.A Le Secrétariat, sous réserve de fonds externes :

a) en collaboration avec les Parties demandant une assistance, et avec des experts compétents, fournit ou élabore des orientations pour les organes scientifiques et les autorités de gestion CITES concernant:

i) les techniques de surveillance et de suivi des populations sauvages de tortues terrestres et de tortues d'eau douce, afin d'évaluer les effets des prélèvements, et de mettre en œuvre des programme de gestion évolutive dans le contexte des avis de commerce non préjudiciable; et

ii) la différentiation des spécimens sauvages des spécimens élevés en captivité ou en ranch;

b) engage des consultants pour élaborer, en collaboration avec les Parties concernées, des experts et l'ICCWC, un guide sur les catégories de parties et produits de tortues dans le commerce, pour les organismes nationaux responsables de l'application de la législation relative aux espèces sauvages, afin de les sensibiliser au commerce de ces types de spécimens, de leur permettre une reconnaissance initiale de tels spécimens, et de fournir des orientations sur d'autres ressources et compétences qui peuvent être consultées en matière d'identification; et

c) en collaboration avec l'ICCWC, les parties concernées et des experts, établit un réseau d'identification et de réaction rapide afin de permettre aux inspecteurs d'entrer en contact avec des spécialistes confirmés de l'identification des espèces, en prévoyant une phase pilote portant sur les tortues terrestres et les tortues d'eau douce, susceptible d'être étendue à d'autres espèces, si nécessaire.

17.B Le Secrétariat fait rapport sur la mise en œuvre de la décision 17.A à la 18e session de la Conférence des Parties.

À l'adresse du Comité pour les animaux

17.C Le Comité pour les animaux examine les orientations fournies ou élaborées conformément aux paragraphes a) et b) de la décision 17.A, et fait des recommandations pour examen par le Secrétariat.

BUDGET ET SOURCE DE FINANCEMENT PROVISOIRES
POUR LA MISE EN ŒUVRE DES PROJETS DE RESOLUTIONS OU DÉCISIONS

D'après la Résolution Conf. 4.6 (Rev. CoP16) sur la *Soumission des projets de résolutions et autres documents destinés aux sessions de la Conférence des Parties*, la Conférence des Parties décide que tout projet de résolution ou de décision soumis à une session de la Conférence des Parties, s'il a des conséquences sur le budget et la charge de travail du Secrétariat ou des comités, doit inclure un budget couvrant le travail qu'il implique, avec indication de la source du financement.

La mise en œuvre des projets de décisions présentés à l'annexe 5 comporte des répercussions sur le budget du Secrétariat, ainsi que sur sa charge de travail et celle du Comité pour les animaux et du Comité permanent, à savoir:

Décisions 17.A à 17.B

La mise en œuvre du projet de décision 17.A serait dépendante de financement externe et ne nécessiterait pas de fonds du budget principal. La supervision du travail et le recours à des consultants, aux Parties intéressées et aux partenaires de l'ICCWC pourrait demander du temps du Secrétariat mais devrait faire partie intégrante du travail du Secrétariat et s'intégrer dans son programme de travail courant

Décision 17.C

Les tâches attribuées au Comité pour les animaux dans le projet de décision 17.C pourraient nécessiter des travaux intersessions du Comité et du temps lors de ses sessions. Toutefois, le Secrétariat estime que ces travaux peuvent faire partie du programme de travail courant du Comité, sans nécessiter de financement supplémentaire.