

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

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Interpretation and Implementation of the Convention

REPORT ON NATIONAL REPORTS UNDER ARTICLE VIII,
PARAGRAPH 7, OF THE CONVENTION

Attached is a document prepared on behalf of the Secretariat by the Wildlife Trade Monitoring Unit (WTMU) on the implementation of CITES in 1981, 1982 and 1983 as demonstrated by the trade statistics in the annual reports submitted by the Parties. This report presents the results of a continuation of the work initiated in 1982 which was presented in document Doc. 4.18 at the fourth meeting of the Conference of the Parties (Gaborone, 1983). Some of the implications of this report, together with additional issues, are discussed also in document Doc. 5.18.

THE IMPLEMENTATION OF CITES
IN 1981, 1982 AND 1983 AS DEMONSTRATED BY THE TRADE STATISTICS IN
THE ANNUAL REPORTS SUBMITTED BY THE PARTIES

A report prepared for the CITES Secretariat

by

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INTRODUCTION

This report was prepared by the Wildlife Trade Monitoring Unit under the CITES Secretariat/CMC consultancy contracts for 1984 and 1985. It examines the effectiveness of the implementation of the Convention as shown by the Annual Reports submitted by the Parties for the years 1981, 1982 and 1983. It is intended to update a previous report (Doc. 4.18) which dealt with the years 1979 and 1980, to see if there has been any improvement in the quality of reporting by Parties and to provide a more detailed analysis of the discrepancies between Reports.

The means by which this was achieved was to compare reported exports/re-exports from one country with imports reported by the receiving country. Ideally these should be equal, and so the degree of discrepancy can be used to indicate how much trade is either not reported at all or is wrongly reported.

In the previous report (Doc. 4.18) the analysis was simplified by bulking together all reported records of trade in each taxon between two countries and comparing the totals. This is not an ideal technique as such bulked totals can represent a hundred or so individual shipments. Consequently in the present report individual shipments were considered separately wherever possible. Unfortunately some countries do not report shipments but only total trade in each taxon. To allow comparison with Doc 4.18 the present report examines the same taxa, which were chosen to represent a geographical and systematic broad range of organisms, and manufactured goods were excluded.

METHODS

This report is based on the Annual Reports by CITES Parties for the years 1981, 1982 and 1983 which had been received before 1 March 1985. The numbers of Parties and of Reports submitted are shown in Table 1. All records of transactions in the specimens indicated of the following taxa were selected :

Fauna

Arctocephalus spp. - whole skins and furskin plates only
All Crocodylia - whole skins and sides only
All Falconiformes - live only
Appendix I Felidae - whole skins and furskin plates only
Appendix II Felidae - whole skins and furskin plates only
Appendix I Primates - live only
Varanus spp. - whole skins only
Tupinambis spp. - whole skins only

Flora

Aloe spp. - all transactions
Cycadaceae - all transactions
Encephalartos spp. - all transactions
Pachypodium spp. - all transactions

Some of the reported trade was with non-Party states (or unknown countries), or with Parties which did not submit Annual Reports. The remaining reported exports should, theoretically, correlate with reported imports and the minimum number of "potentially correlating transactions" was calculated for each taxon. Some transactions correlated perfectly in all details reported by both the importer and the exporter, while others showed a partial degree of correlation.

These were divided into various categories depending on the type of discrepancy:-

1. Country of origin omitted or incorrectly reported by one Party.
2. Incorrect units used to describe the transaction by one Party.
3. Incorrect or insufficient taxonomic nomenclature used by one Party.
4. Incorrect or different terms used to describe the commodity by one Party.

These four types of error could occur in all possible combinations. Partial correlation was inferred when the importer, exporter and the numbers of items in the shipment were identical and the taxonomic nomenclature used by both Parties was either compatible or likely to have been confused. Thus "150 Alligatoridae skins" would correlate with "150 Caiman crocodilus skins" but not with "150 Crocodylus niloticus skins". In rare instances it was possible to infer that taxonomic confusion had occurred, for instance where it seemed likely that a shipment of 2484 Varanus salvator skins had been described as "2484 Tupinambis teguixin skins originating in Indonesia" by the importer.

In all cases of complete or partial correlation two "records", one by the importer and one by the exporter, were deemed to represent one "transaction". Where no correlation could be inferred, each "record" was taken to represent one transaction.

A further systematic error which had to be accounted for occurred where one Party did not report individual shipments but only the total quantities of each commodity traded with each country during the year. Thus, the exporter might report ten shipments of single plants of Aloe compressa while the importer simply reported importing ten Aloe compressa. More usually, the sum of the individually reported shipments did not equal the bulk total reported by the other Party, and there were often other discrepancies, such as differing countries of origin. All such discrepancies were collectively called "summing errors" and the minimum number of transactions was taken to be the number of shipments reported by the Party which reported the most.

RESULTS

The numbers of records located for each taxon and the inferred minimum number of transactions that these represent are given in Table 2. The percentages of these transactions which involved non-Parties or Parties which had failed to submit an Annual Report are also given. There is a wide variation in these percentages between the different taxa, reflecting different patterns and volumes of trade. 21-28% of all the transactions involved non-Party states and 9-18% involved non-reporting Parties. In 1983 the proportion of non-reporting Parties was higher because fewer Annual Reports have so far been received for 1983 including, in particular, that for South Africa, one of the chief exporters of plants.

The numbers of transactions which could potentially correlate (i.e. those between CITES Parties which submitted Annual Reports) are shown in Table 3. Of these, for all taxa studied, only 4-8% showed perfect correlation, 61-71% showed no correlation at all, and the remainder showed partial correlation. The proportions varied widely between the different taxa, the highest correlation being found in 1982 for Encephalartos spp., of which 36% of potential correlations matched perfectly. The majority of these were exports from South Africa to the U.S.A. In general, the proportion of transactions which showed no correlation was higher for plants than for animals. Of the transactions listed in Table 3 as showing no correlation, the great majority were caused by one Party failing to record the transaction at all.

SYSTEMATIC ERRORS

Of transactions which failed to correlate perfectly, many were not caused by accidental but by systematic errors, directly resulting from shortcomings in the policy of the Management Authorities when compiling their Annual Reports. These can be divided into several general groups:

Incomplete Annual Reports

Some countries do not report all trade, omitting, as with France, imports of Appendix II species, or, as with F.R. Germany, all trade in plants. Others omit reports of certain products on the grounds that they are not readily recognizable.

Reporting on permits issued

Some errors are probably due to one Party specifying quantities on the basis of permits issued while its trading partner reports the quantities actually traded. If the numbers in each record were different, the present analysis would not have selected them as partial correlations.

Summing errors

These constituted the largest class of transactions which showed partial correlation, and were caused by the practice of some Parties summing all records of trade in each species rather than reporting them individually. This was particularly marked in the case of the animal taxa studied where 21-30% of all potentially correlating transactions appeared to have been summed by one Party. The reduction in the number of summing errors involving Tupinambis in 1983 and the corresponding increase in the number of perfect matches compared with 1982 can largely be attributed to Italy having started to report individual transactions in 1983.

Country of origin

Some countries consistently fail to report countries of origin, and others erroneously report intermediate countries of consignment as the origin. Discrepancies accounted for 2-5% of potential correlations for all taxa.

Nomenclature

Some of the nomenclature used is not adequate to identify the item traded. In 1981 and 1982, for example, Japan reported all exports of Varanus skins as "Varanus spp." and of crocodilian skins as Alligatoridae or Crocodylidae spp. In 1983, full specific names were mostly given, which explains much of the fall in nomenclatural errors in these groups from 1982 to 1983 (see Table 3). Tupinambis skins, similarly, were reported as Tupinambis spp. by Argentina in 1981 and 1982, but as Tupinambis teguixin in 1983.

Terms

A further instance of improvement in systematic technique is apparent in 1982 when South Africa started to report exports of Encephalartos spp. as "artificially propagated", which caused a dramatic increase in the proportion of perfect correlations in this group in that year. Another important source of confusion involves Caiman skins which are often described as "flanks" or "skins", apparently interchangeably.

ACCIDENTAL ERRORS

The majority of transactions which showed no correlation were attributable to the lack of any record from one Party. In many cases this is likely to have been due to a simple omission.

Other instances of failure of transactions to correlate perfectly are attributable to accidental errors. Not surprisingly, these are more random and more difficult to generalize. Common ones include: omitting or confusing units, for example reporting "150 skins" instead of 150 kg of skins; confusing single furskins with "plates"; reporting an incorrect country of origin or none for re-exports; confusing similar species; and purely typographical errors. The latter were almost impossible to identify if they involved the quantity of items traded or the importer or exporter.

OTHER ERRORS

Time lags

It has been pointed out (Doc. 4.18) that some of the failure to correlate may be due to transactions being recorded in the Annual Report of one year by the exporter and in that of the following year by the importer. The magnitude of this error was investigated for Varanus and Tupinambis skins. It was found that, out of totals for the three years of 2965 and 1427 records, maxima of 5 and 12 transactions could possibly correlate from one year to the next for the two genera respectively. This represents maximum annual average overlaps of 0.25% and 1.26%.

Transit trade

A further source of error is that an export from one country to another may not be imported by the country of destination but pass, in transit, through a third. This is known to be a problem in the case of Arctocephalus skins passing through freeports in F.R. Germany. The importance of this factor in precluding correlations has not been quantified.

COMPARISON WITH EARLIER YEARS

The analysis carried out for 1979 and 1980, detailed in Doc. 4.18, used a slightly less sophisticated technique than the present analysis, and so close comparison of the results must be approached with care. In order to check the validity of such a comparison, the new technique was used to compare the reported imports and exports of Appendix II Felidae and Appendix I Primates in 1980. The results are shown in Table 4 and are compared with the corresponding data which were presented in Doc. 4.18. It can be seen that, while there are some differences of detail, the overall results are broadly comparable. The chief discrepancy being for the trade involving non-reporting Parties for Appendix II Felidae. This may be because additional Annual Reports have been obtained since the previous analysis was carried out.

In 1979 and 1980 the percentage of trade involving non-Parties was 32-33%, while from 1981 to 1983 it was 21-28%. This may reflect the fact that more countries have become Parties. Over the same period the percentage of trade involving non-reporting Parties has risen from 4-9% in 1979 and 1980 to 9-19% in the years 1981 to 1983. There is no obvious explanation of this, but it may be an artefact of the slightly different analysis techniques.

In 1979 and 1980 it was found that about 70% of animal transactions and 90% of plant transactions showed no correlation, while from 1981 to 1983 the corresponding figures were 60-69% and 73-84%. It therefore appears that there may have been a slight improvement.

It was found that the highest percentage of perfect correlations in 1979 and 1980 was in Appendix I primates, followed by Falconiformes and Arctocephalus spp. The primates maintained their prominence in this respect in 1982, but were overtaken by Tupinambis spp. in 1983. The Falconiformes and Arctocephalus spp. retained a relatively high level of correlation, and were joined by the Crocodylia and Varanus spp. which showed marked improvements in 1983.

Other consistent improvements from 1981 to 1983 are difficult to discern, the most obvious being in the case of plants where the percentage of transactions showing no correlation fell from 84% to 73%. Other instances of improvements in reporting technique were discussed earlier (in the section on systematic errors), but these do not appear to have caused obvious reductions in the proportions of transactions showing no correlation. There is some evidence that the overall percentage of perfect correlations may be increasing, owing largely to the figures of 28% for Tupinambis in 1983 and of 36% for Encephalartos in 1982. The latter was not repeated in 1983 as South Africa's Report for that year had still to be received.

CALCULATION OF "HIDDEN TRADE"

Given the inadequacies and omissions in the Annual Reports, discussed earlier, there is clearly some trade which is never reported by either the importer or the exporter. In Doc. 4.18 a technique was suggested whereby the magnitude of this "hidden trade" could be estimated. It was shown that, as 72% of all transactions in animals reported between Parties submitting Annual Reports in 1979 and 1980 was reported by only one Party, then approximately 31% of all trade between these Parties was reported by neither Party. Using the same calculation for 1983, when 60% of all such transactions in animals showed no correlation, it is estimated that the percentage of unreported trade in animals between reporting Parties had fallen to 18% in 1983.

This is a straightforward mathematical relationship, which can be expressed by the equation:

$$r = 100b / ((b/20) + 5)^2$$

where

r is the percentage of all trade between reporting Parties which is reported by at least one Party (i.e. "hidden trade" = 100 - r), and

b is the percentage of all reported trade between reporting Parties which is reported by both Parties.

This equation is plotted in Fig. 1. It shows that as the percentage of trade reported by both Parties rises towards 100%, then the expected proportion of the total trade which is reported by at least one Party also approaches 100%. The positions of the percentage of trade reported for animals and plants in 1979 and 1983 are shown on the curve, and it can be seen that both showed marked improvements over this period. Because of the asymptotic nature of the curve, when the percentage of trade reported by both Parties exceeds 50% any further improvements in reporting only have a minor effect on the total accuracy of reporting all trade.

SUMMARY AND CONCLUSIONS

1. Of all trade in selected taxa reported to CITES from 1981 to 1983, 21-28% involved non-Parties (or unidentified countries) and 9-18% involved Parties which had not submitted Annual Reports.
2. The remaining 61-65% of trade could be expected to show correlation between reported imports and reported exports, but 61-71% of this showed no detectable correlation.
3. Perfect correlation occurred in only 4-8% of cases, and a further 24-31% showed some degree of partial correlation.
4. The chief cause of lack of correlation was the failure of one Party to record the transaction.
5. Some of the lack of correlation appears to be due to accidental errors and unavoidable discrepancies, but a large part is attributable to systematic errors in compiling the Annual Reports.
6. The amount of "hidden trade" which is reported by neither the importer nor the exporter can be estimated from the percentage of all reported trade which is recorded by both Parties. When the degree of correlation rises above 50% little additional trade is recorded by improved reporting.
7. From 1979 to 1983 the apparent maximum percentage of trade between reporting Parties which has been reported by at least one Party increased from 69% to 82% for animals and from 18% to 67% for plants.
8. Although the number of Parties has increased since 1980, the percentage of these submitting Annual Reports has, if anything, decreased.
9. Substantial improvements could be made to the effectiveness of monitoring CITES trade if Parties were to adhere to the guidelines for the compilation and submission of Annual Reports.

Table 1. Number of Parties to CITES and of Annual Reports submitted up to the time of writing this report for the years 1981 to 1983.

	1981	1982	1983
No. of Parties	74	77	81
No. of Reports	39	41	34
% submitting Reports	53%	53%	42%

Table 2. Total number of records of trade in the selected taxa, and the minimum number of transactions that these are estimated to represent. The number of records relating to trade with non-Parties (including unknown countries) and with Parties which did not submit an Annual Report are expressed as a percentage of the number of transactions.

	<u>Crocodylia</u>	<u>Felidae A I</u>	<u>Felidae A II</u>	<u>Varanus</u>	<u>Tupinambis</u>	<u>Primates A I</u>	<u>Arctocephalus</u>	<u>Falconiformes</u>	<u>TOT. ANIMALS</u>	<u>Aloe</u>	<u>Pachypodium</u>	<u>Cycadaceae</u>	<u>Encephalartos</u>	<u>TOT. PLANTS</u>	<u>TOTAL</u>
<u>1981</u>															
Total records	885	138	1300	1124	677	163	47	249	4583	398	107	148	360	1013	5596
Total transactions	808	130	1224	989	562	145	46	231	4135	375	104	148	295	922	5057
Non-Party (%)	16	38	18	43	21	25	15	32	26	43	13	53	8	30	26
Non-reporting (%)	15	22	10	2	17	11	7	13	10	1	9	2	2	3	9
<u>1982</u>															
Total records	970	207	1180	886	435	208	57	341	4284	394	77	157	350	978	5262
Total transactions	870	202	268	836	373	171	51	296	3067	388	71	157	264	880	3947
Non-Party (%)	13	23	75	35	16	27	8	29	28	38	6	59	6	30	28
Non-reporting (%)	19	25	38	2	11	11	10	7	14	2	3	4	3	3	11
<u>1983</u>															
Total records	1359	150	1097	955	615	251	45	265	4737	268	104	121	89	582	5319
Total transactions	1355	145	1053	876	506	188	44	240	4407	263	99	121	89	572	4979
Non-Party (%)	10	34	18	33	19	40	5	21	20	26	4	60	0	25	21
Non-reporting (%)	22	29	14	8	11	19	20	19	16	16	23	20	100	31	18

Table 3. The number of transactions in selected taxa which potentially correlate, and the percentage of these showing different categories of correlation between reported exports and reported imports (- denotes < 0.5%).

	Crocodylia	Felidae A I	Felidae A II	Varanus	Tupinambis	Primates A I	Arctocephalus	Falconiformes	TOT. ANIMALS	Aloe	Pachypodium	Cycadaceae	Encephalartos	TOT. PLANTS	TOTAL
<u>1981</u>															
Pot. correlations	561	52	875	507	287	93	36	128	2539	210	81	66	265	622	3161
Perfect matches %	2	13	4	3	8	9	3	4	4	3	1	0	1	2	4
Co. of origin wrong %	2	0	2	22	4	2	0	2	6	0	0	0	0	0	5
Units wrong %	0	0	1	-	1	0	0	0	-	0	0	0	0	0	-
Nomenclature wrong %	1	0	1	12	22	1	-	1	6	1	0	0	-	-	5
Terms wrong %	-	0	1	0	0	8	0	5	1	8	1	0	24	13	3
Summing errors %	45	4	35	13	24	10	6	37	30	0	6	0	0	1	24
No correlation %	51	83	58	69	58	73	92	52	60	89	91	100	75	84	65
<u>1982</u>															
Pot. correlations	592	105	830	526	272	107	42	187	2661	232	65	59	238	594	3255
Perfect matches %	2	4	3	2	-	16	10	7	3	-	0	0	36	14	5
Co. of origin wrong %	5	1	1	10	3	3	2	3	4	0	0	0	0	0	3
Units wrong %	1	0	0	0	0	0	0	0	-	0	0	0	0	0	-
Nomenclature wrong %	5	0	1	4	19	7	0	4	5	2	2	0	0	1	4
Terms wrong %	1	0	-	0	0	13	0	2	1	2	8	0	0	2	1
Summing errors %	26	0	29	10	27	5	26	12	21	0	8	0	4	3	18
No correlation %	66	95	68	78	53	63	62	73	69	97	85	100	60	81	71
<u>1983</u>															
Pot. correlations	925	53	712	515	351	108	33	144	2841	151	72	25	0	248	3089
Perfect matches %	9	4	-	6	28	14	3	6	8	1	3	0		1	8
Co. of origin wrong %	5	0	1	8	-	5	0	1	4	0	0	0		0	3
Units wrong %	1	0	0	3	0	0	0	0	1	0	0	0		0	1
Nomenclature wrong %	1	0	1	-	1	5	0	3	1	0	0	0		0	1
Terms wrong %	3	0	1	0	0	7	0	1	2	0	1	0		-	1
Summing errors %	23	23	46	23	8	5	6	22	26	32	19	0		25	26
No correlation %	61	74	51	64	62	67	91	67	60	67	76	100		73	61

Table 4. Comparison of present analysis technique with that used in the previous report (Doc. 4.18), for Appendix II Felidae and Appendix I Primates in 1980.

	App. II Felidae		App. I Primates	
	From Doc. 4.18	Present analysis	From Doc. 4.18	Present analysis
Total records	441	592	114	145
% with non-Party	38	35	18	21
% with non-reporting Party	13	7	14	14
% matching perfectly	4	4	10	9

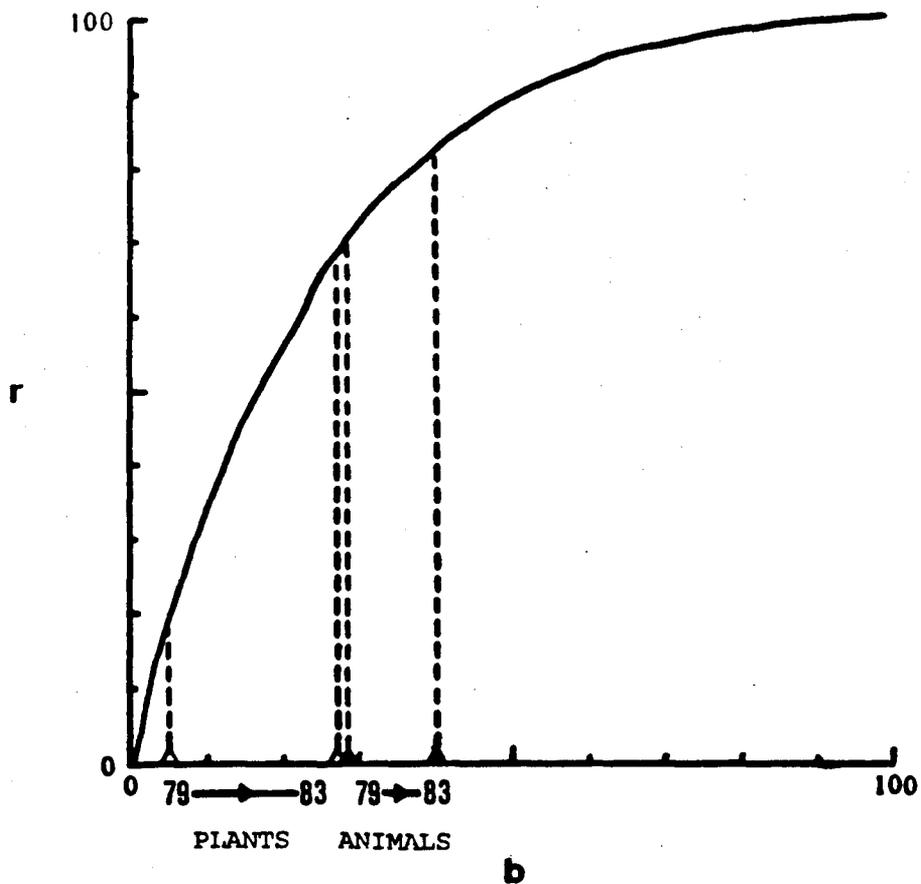


Figure 1. Theoretical calculation of the amount of "hidden trade", expressed by the equation:

$$r = 100b / ((b/20) + 5)^2$$

where

\bar{r} is the estimated percentage of all trade between reporting Parties which is recorded by at least one Party, and

\underline{b} is the observed percentage of all recorded trade between reporting Parties which is recorded by both Parties.

The values of \underline{b} for plants and animals in 1979 and 1983 are indicated.