GALLIFORM CONSERVATION ASSESSMENT

FIRST REVIEW DRAFT

20 November 1994

Report from the workshop held
1-3 February 1993

Edited by
PHILIP J. MCGOWAN, JOHN CARROLL, AND SUSIE ELLIS

A Collaborative Workshop

World Pheasant Association
BirdLife International
Megapode Specialist Group
Partridge, Quail and Francolin Specialist Group
Pheasant Specialist Group
IUCN/SSC Conservation Breeding Specialist Group

A Publication of the IUCN/SSC Conservation Breeding Specialist Group
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SPECIES SURVIVAL COMMISSION

A contribution of the IUCN/SSC Conservation Breeding Specialist Group, the World Pheasant Association, Birdlife International, the Megapode Specialist Group, Partridge, Quail, and Francolin Specialist Group, and the Pheasant Specialist Group.

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1 November 1994

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EXECUTIVE SUMMARY

Two hundred and forty-seven galliform taxa (subspecies, groups, or species) were considered by the Galliform Conservation Assessment workshop. Two extinct taxa were not considered. Of the 247 taxa, 91 (37%) were assigned to one of three categories of threat, based on the Mace-Lande criteria:

Critical	5 taxa
Endangered	26 taxa
Vulnerable	60 taxa
Secure	145 taxa
Unknown	11 taxa

Three of the 247 taxa (1%) were recommended for Population and Habitat Viability Assessment (PHVA) workshops.

Recommendations for future action were made for 168 taxa in the following categories:

Stopping the bird trade	7 taxa
Intensive management of the existing captive population	20 taxa
Education	9 taxa
Eradicate predators	3 taxa
Extensive survey	99 taxa
Habitat protection	38 taxa
Both habitat protection and management	29 taxa
Intensive research	20 taxa
Monitoring	22 taxa
Designate protected areas	40 taxa
Population management	2 taxa
Stop hunting	26 taxa
Sustainable sport hunting	5 taxa
Taxonomic clarification	58 taxa

For many taxa, more than one type of research and/or management was recommended.

The Conservation Assessment workshop report also formed the basis for Action Plans to be produced by the 3 Specialist Groups that participated in this workshop. These will appear in a series (already numbering some 25) being published and distributed under the auspices of the IUCN/SSC. In addition, the Captive Breeding Advisory Committee of WPA-International will be producing a Captive Breeding Action Plan based on the captive breeding recommendations made in this report.

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SECTION 1

WORKSHOP SUMMARY AND RECOMMENDATIONS

GALLIFORM CONSERVATION ASSESSMENT

Introduction

Reduction and fragmentation of wildlife populations and habitat are occurring at a rapid and accelerating rate. For an increasing number of taxa, this has resulted in small and isolated populations which are at risk of extinction. A rapidly expanding human population, now estimated at 5.25 billion, is expected to increase to 8 billion by the year 2025. This expansion and the concomitant increased utilization of resources has momentum that cannot be stopped, the result being a decreased capacity for all other species to simultaneously exist on the planet.

As wildlife populations diminish in their natural habitat, wildlife managers realize that management strategies must be adopted that will reduce the risk of extinction. These strategies will be global in nature and will include habitat preservation, intensified information gathering, and in some cases, scientifically managed captive populations that can interact genetically and demographically with wild populations.

The successful preservation of wild species and ecosystems necessitates development and implementation of active management programs by people and governments living within the range area of the species in question. The recommendations contained within this document are based on conservation need only; adjustments for political and other constraints are the responsibility of regional governmental agencies charged with the preservation of flora and fauna within their respective countries.

Conservation Assessment Workshops

Within the Species Survival Commission (SSC) of IUCN-The World Conservation Union, the primary goal of the Conservation Breeding Specialist Group (CBSG) is to contribute to the development of holistic and viable conservation strategies and management action plans. Toward this goal, CBSG is collaborating with agencies and other Specialist Groups worldwide in the development of scientifically-based processes, on both a global and regional basis, with the goal of facilitating an integrated approach to species management for conservation. One of these tools is called Conservation Assessment.

Conservation Assessments provide strategic guidance for the application of intensive management techniques that are increasingly required for survival and recovery of threatened taxa. Conservation Assessments are also one means of testing the applicability of the Mace-Lande criteria for threat as well as the scope of its applicability. Additionally, CAMPs are an attempt to produce ongoing summaries of current data for groups of taxa, providing a mechanism for recording and tracking of species status.

In addition to management in the natural habitat, conservation programs leading to viable populations of threatened species may sometimes need a captive component. In general, captive populations and programs can serve several roles in holistic conservation: 1) as genetic and demographic reservoirs that can be used to reinforce wild populations either by revitalizing populations that are languishing in natural habitats or by re-establishing,

through translocation, populations that have become depleted or extinct; 2) by providing scientific resources for information and technology that can be used to protect and manage wild populations; and 3) as living ambassadors that can educate the public as well as generate funds for *in situ* conservation.

It is proposed that, when captive populations can assist species conservation, captive and wild populations should, and can be, intensively and interactively managed with interchanges of animals occurring as needed and as feasible. Captive populations should be a support, not a substitute for wild populations. There may be problems with interchange between captive and wild populations with regard to disease, logistics, and financial limitations. In the face of the immense extinction crisis facing many taxa, these issues must be addressed and resolved immediately.

The Galliform Conservation Assessment Process

The Conservation Assessment process assembles expertise on wild and captive management for the taxonomic group under review in an intensive and interactive workshop format. The purpose of the Galliform Conservation Assessment workshop was to assist in the further development of a conservation strategy for Galliformes, and to continue to test the applicability of the Mace-Lande criteria.

Conservation Assessment workshops on bird groups have recently included those on waterfowl, pigeons and doves, and parrots. A similar workshop for most of the Galliformes was held at Antwerp Zoo in Belgium during 1 - 3 February 1993, with World Pheasant Association (WPA)-International, BirdLife International, the Galliformes Specialist Groups, and CBSG as the main participating organizations. Workshop participants are listed in Section 5, Appendix I.

The Galliformes groups covered have recently become the responsibility of 3 of the 5 Specialist Groups now operating with WPA as their parent body: the Specialist Groups for Pheasants; Partridges, Quails, Francolins & Guineafowl; and Megapodes. Cracids and Turkeys and the Grouse were not included in this workshop and, therefore, are not covered here. The Galliformes workshop differed from its predecessors in several ways. This workshop was designed to assess the conservation status of the groups covered and perhaps is described most accurately as a Conservation Assessment, rather than a Conservation Assessment and Management Plan (CAMP) workshop. This is because the workshop only assessed conservation status - it did not make management proposals for wild or captive populations. Detailed action planning, which may include management proposals (both captive and wild) is being undertaken by the three Specialist Groups concerned. In addition, WPA's Captive Breeding Advisory Committee is working towards a Captive Breeding Action Plan.

Preparations for the Galliform Conservation Assessment Workshop

To date, most Conservation Assessment workshops have started with the task of completing a computer spreadsheet, each line of which summarizes what is known about a particular species or subspecies under a series of column headings for particulars such as native range size, population size (in the wild and in captivity), population trends and perceived threats. Only after this task is completed is it possible to assign an objective threat category and specify any future action required for conservation in each case (See Section 3).

In the case of this Conservation Assessment, the active nature of the WPA/BirdLife International/SSC Specialist Groups made it possible to collect many of the data required for the spreadsheet in advance of the workshop itself. Information of the type required was sought for every species, and usually from all its range countries, by asking a national expert to fill in a standard questionnaire. These were distributed in September/October 1992 to about 80 people, and 60 were returned by the end of January.

The data from these questionnaire returns were entered onto the spreadsheet prior to the workshop, without amalgamating information supplied from several range countries on the same species. Provisional decisions about which subspecies, or subspecies clusters, would be considered as distinct taxa were also made at this stage, and each was given a separate line in the spreadsheet. Island subspecies, and other geographically isolated races or parapatric clusters of them, were given this status, subject to discussion at the Conservation Assessment workshop itself.

The Antwerp Workshop

For many species the only data that were required for the spreadsheet by the start of the workshop related to the total known captive populations of each. Following work done at the meeting, figures from the 1992 WPA census and the 1992 ISIS records, have been entered. The other main tasks undertaken during the workshop in Antwerp were to amend and further complete the spreadsheet by:

(i) reviewing the spreadsheet information and its reliability, including the division of species into subspecies or groups of them;

(ii) amalgamating information (e.g., on population size) supplied from different range countries for any one race recognized in (i);

(iii) dividing information provided on one species that was subdivided as a result of (i);

(iv) assigning a threat category on the basis of the Mace-Lande criteria to each recognized race;

(v) making recommendations for future action for all cases adjudged to be not safe from extinction (i.e., of questionable safety, vulnerable, endangered or critical), and for some others, including the need for taxonomic clarification of specific or subspecific status.

Assignment to Mace-Lande Categories of Threat

As noted above, all Galliformes taxa were evaluated on a taxon-by-taxon basis in terms of their current and projected status in the wild to assign priorities for conservation action or information-gathering activities. The workshop participants applied the criteria proposed for the redefinition of the IUCN Red Data Categories proposed by Mace and Lande in their 1991 paper (Section 5, Appendix II). The Mace-Lande scheme assesses threat in terms of a likelihood of extinction within a specified period of time (Table 1). The system defines three categories for threatened taxa:

Critical 50% probability of extinction within five years or two generations, whichever is longer.

Endangered 20% probability of extinction within 20 years or 10 generations, whichever is longer.

Vulnerable 10% probability of extinction within 100 years.

Definitions of these criteria are based on population viability theory. To assist in making recommendations, participants in the workshop were encouraged to be as quantitative or numerate as possible for two reasons: 1) conservation assessments ultimately must establish numerical objectives for viable population sizes and distributions; 2) numbers provide for more objectivity, less ambiguity, more comparability, better communication, and, hence, cooperation. During the workshop, there were many attempts to estimate if the total population of each taxon was greater or less than the numerical thresholds for the three Mace-Lande categories of threat. In many cases, current population estimates for Galliformes taxa either were unavailable or only available for species/subspecies within a limited part of their distribution. In all cases, conservative numerical estimates were used. **When population numbers were estimated, these estimates represented first-attempt, order-of-magnitude educated guesses that were hypotheses for falsification. As such, the workshop participants emphasized that these estimates should not be authoritative for any other purpose than was intended by this process.**

In assessing threat according to Mace-Lande criteria, workshop participants also used information on the status and interaction of habitat and other characteristics (Table 1). Information about population trends, fragmentation, range, and stochastic environmental events, real and potential, were also considered.

Numerical information alone was not sufficient for assignment to one of the Mace-Lande categories of threat. For example, based solely on numbers, a taxon might be assigned to the Vulnerable or Secure category. Knowledge of the current and predicted threats or fragmentation of remaining natural habitat, however, may lead to assignment to a higher category of threat.

Table 1. MACE-LANDE CATEGORIES AND CRITERIA FOR THREAT

POPULATION TRAIT	CRITICAL	ENDANGERED	VULNERABLE
Probability of extinction	50% within 5 years or 2 generations, whichever is longer	20% within 20 years or 10 generations, whichever is longer	10% within 100 years
	OR	OR	OR
	Any 2 of the following criteria:	Any 2 of following criteria or any 1 CRITICAL criterion	Any 2 of following criteria or any 1 ENDANGERED criterion
Effective population N_e	$N_e < 50$	$N_e < 500$	$N_e < 2{,}000$
Total population N	$N < 250$	$N < 2{,}500$	$N < 10{,}000$
Subpopulations	≤ 2 with $N_e > 25$, $N > 125$ with immigration < 1/generation	≤ 5 with $N_e > 100$, $N > 500$ or ≤ 2 with $N_e > 250$, $N > 1{,}250$ with immigration < 1/gen.	≤ 5 with $N_e > 500$, $N > 2{,}500$ or ≤ 2 with $N_e > 1{,}000$, $N > 5{,}000$ with immigration < 1/gen.
Population Decline	$> 20\%$/yr. for last 2 yrs. or $> 50\%$ in last generation	$> 5\%$/yr. for last 5 years or $> 10\%$/gen. for last 2 years	$> 1\%$/yr. for last 10 years
Catastrophe: rate and effect	$> 50\%$ decline per 5-10 yrs. or 2-4 generations; subpops. highly correlated	$> 20\%$ decline/5-10 yrs, 2-4 gen $> 50\%$ decline/10-20 yrs, 5-10 gen with subpops. highly correlated	$> 10\%$ decline/5-10 yrs. $> 20\%$ decline/10-20 yrs. or $> 50\%$ decline/50 yrs. with subpops. correlated
OR			
Habitat Change	resulting in above pop. effects	resulting in above pop. effects	resulting in above pop. effects
OR			
Commercial exploitation or Interaction/introduced taxa	resulting in above pop. effects	resulting in above pop. effects	resulting in above pop. effects

Mace-Lande categories of threat for the 247 taxa examined during this exercise are presented in Table 2. Taxa within each of the categories are presented in Tables 4-8 in Section 2. Table 9 in Section 2 shows Mace-Lande categorization and recommendations for all Galliformes taxa.

Table 2. Threatened Galliformes Taxa - Mace-Lande Categories of Threat.

MACE-LANDE CATEGORY	NUMBER OF TAXA	PERCENT OF TOTAL
Critical	5	2%
Endangered	26	11%
Vulnerable	60	24%
Secure	145	59%
Unknown	11	4%
TOTAL	247	100%

Discussions at the workshop were organized on a regional basis, with groups of participants concentrating on: S.E. Asia and Australasia; China & South Asia; Europe, the Middle East & Africa; and the Americas. A number of species occurred in 2 of these regions, and some even in 3: these were discussed jointly.

As a result of general discussions in the course of this whole procedure, some threat and action categories were deleted and others added (e.g., monitoring added as a future action). Two updates of the spreadsheet were produced and checked for errors during the workshop, and there has been some further editing since by many correspondents.

During the regional group discussions, notes were entered onto standardized Conservation Assessment Taxon Sheets stored on portable computers. These contain further explanation for why certain spreadsheet entries were made, and other comments of relevance to future conservation action, either globally or nationally, for each distinct taxon. Further comments have been made by the network of WPA correspondents and members of the three Specialist Group on the data, threat category and recommendations for future action specified on the Conservation Assessment spreadsheet, and the texts of the Conservation Assessment Taxon Sheets.

Recommendations for Future Action

Workshop participants attempted to develop an integrated approach to future action needed for the conservation of Galliformes taxa. In all cases, an attempt was made to make future action recommendations based on the various levels of threat impinging on the taxa. For the purposes of the workshop process, threats were defined as "immediate or predicted events that are or may cause significant population declines."

For all taxa, recommendations were generated for the kinds of future action felt to be necessary. These recommendations, summarized in Table 3, were: stopping the bird trade (BT); intensive management of the existing captive population (CM); education (E); eradicate predators (EP); extensive survey (ES); habitat protection (HP); both habitat protection and management (H); intensive research (IR); monitoring (M); designate protected areas (PA); population management (PM); stop hunting (SH); sustainable sport hunting (SS); and taxonomic clarification (TC). Conducting Population and Habitat Viability Assessment (PHVA) workshops also was considered and was recommended for 3 species. PHVA workshops provide a means of assembling available detailed biological information on the respective taxa, evaluating the threats to their habitat, development of management scenarios with immediate and 100-year time-scales, and the formulation of specific adaptive management plans with the aid of simulation models.

Table 3. Future actions recommended for Galliformes by Mace-Lande category of threat.

MACE-LANDE	BT	CM	E	EP	ES	HP	HM	H	IR	M	PA	PM	SH	SS	TC
Critical	0	1	0	0	4	1	0	2	0	0	2	0	0	0	2
Endangered	3	4	5	1	14	6	0	8	10	6	12	1	6	0	12
Vulnerable	2	11	4	1	39	22	3	13	5	9	21	1	14	0	17
Secure	2	2	0	1	35	8	0	6	4	7	3	0	5	4	22
Unknown	0	2	0	0	7	1	0	0	1	0	2	0	1	1	5
TOTAL	7	20	9	3	99	38	3	29	20	22	40	2	26	5	58

Action Planning: building on the Galliform Conservation Assessment workshop

The Conservation Assessment Workshop report also formed the basis for Action Plans to be produced by the 3 Specialist Groups that participated in this workshop. These will appear in a series (already numbering some 25) being published and distributed under the auspices of the IUCN/SSC. In addition, the Captive Breeding Advisory Committee of WPA-International will be producing a Captive Breeding Action Plan based on the captive

breeding recommendations made in this report.

The SSC Action Plans will outline the general conservation issues facing the species in each of these 3 groups of Galliformes species, and identify the threatened or insufficiently-known species or subspecies. All lines from the Conservation Assessment spreadsheet relevant to these Galliformes groups will be included in the relevant Action Plan.

The main purpose of the Action Plans is to give detailed outlines of Action Plan Projects: urgent programs requiring execution within the period 1995-99, that might involve taxonomic investigation, distributional surveys, intensive research, monitoring, conservation management or education.

Action Plan Projects may be species-, habitat- or locality-specific. Projects will whenever possible relate closely to the BirdLife International Conservation Program, and in particular to its continuing work on the 221 Endemic Bird Areas (EBAs) identified through the Biodiversity Project, and its efforts to identify a global set of Important Bird Areas (IBAs). Through detailed consultations with other SSC Specialist Groups and their various parent bodies, it is expected that some regional field projects, that address several urgent conservation cases simultaneously (and therefore economically), will emerge.

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REPORT FROM THE WORKSHOP HELD
1-3 FEBRUARY 1993

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SECTION 2

SPREADSHEET CATEGORY DEFINITIONS
AND SPREADSHEET FOR ALL GALLIFORMES TAXA

GALLIFORM CONSERVATION ASSESSMENT
SPREADSHEET CATEGORIES
1 FEBRUARY 1993

The Conservation Assessment spreadsheet is a working document that provides information that can be used to assess the degree of threat and recommend conservation action. The first part of the spreadsheet summarizes information on the status of the wild and captive populations of each taxon. It contains taxonomic, distributional, and demographic information useful in determining which taxa are under greatest threat of extinction. This information can be used to identify priorities for intensive management action for taxa.

TAXON

Names of all taxa that are considered. In most cases these are at the species level. In some cases, however, subspecies or subspecies-groups are considered. These are cases where subspecies vary greatly, either in their biology (morphology, ecology etc) or in their conservation status.

Often they are geographically isolated forms. The groups are arranged in accordance with the Specialist Group in under which they fall in the order Megapodes; Partridge, Quail, Francolin and Guineafowl; and Pheasants. Hence, the New world quail (Odontophoridae) have been placed next to Old world quail (Phasianidae, Perdicinae), even though this does not follow the Sibley and Monroe (1990) treatment. Within groups, however, the species list largely follows Sibley and Monroe (1990) which has been adopted by BirdLife International as the list of the world's birds. Taxonomic clarification may be a prerequisite for establishing conservation prioirities for some listed taxa.

SS

The number of subspecies. Sibley and Monroe do not include subspecies in their list and therefore the following sources were used as starting points.

Megapodes - Jones et al. (in press);

PQF&G - Johnsgard (1988), except for African species which is after Tim Crowe in Urban et al. (1986).

This is a more thoroughly worked treatment of Francolinus and other African species;

Pheasants - after Johnsgard (1986).

AREA

This indicates the extent of the geographical area that the range of the taxa covers. An asterisk (*) indicates that the total extent of suitable habitat only is given. The coding follows the existing CAMP convention.

Is = Island less than 50,000 sq.km (smaller than Bhutan)

A = Continental range less than 50,000 sq.km (smaller than Bhutan)

B = Continental range between 50,000 and 100,000 sq.km (between Bhutan and Mollucan Islands)
C = Continental range between 100,000 and 500,000 sq.km (between Mollucan Isls and Thailand)
D = Continental range between 500,000 and 1,000,000 sq.km (betweenThailand and Indonesia)
E = Continental range greater than 1,000,000 sq.km (between Thailand and Indonesia)

Species coded 'A' and 'Is' are mostly coded from the BirdLife International Biodiversity project (unpub. list). Other species' range are coded from published sources. These are range maps in Johnsgard (1986 & 1988) and Urban et al. (1986) which have been compared with country area statistics given in Collins Atlas of the world 2nd edition (1991).

RANGE
Geographical description of the range. This follows the description given in Sibley and Monroe (1990) for taxa considered in that treatment.

POP. EST
An estimate of the number of individuals of the taxon in the wild. The validity of this column has provoked considerable discussion. Several participants in the workshop and correspondents commenting upon the outputs have expressed scepticism at the attempt to make quantitative statements based on so few (or no) data for many of the taxa. Estimates are as narrow as possible. The most realistic estimates for many species, however, will be Order of magnitude estimates, as follows.

REL
An indication of the reliability of the information presented. This follows the codes proposed in the Parrot Action Plan.
These are;

1 = Recent census or population monitoring
2 = Recent general fieldwork on the taxon
3 = Recent anecdotal field information
4 = Indirect evidence (e.g. trade volume, habitat quality, range area, information implied from congeners etc.).

TRND
A qualitative assessment of the current change in global population size.
I = Increasing
S = Stable
D = Decreasing

THRTS
Current causes for the decline in species numbers. Coded from the questionnaire sent to SG correspondents. The list is designed to be as detailed as possible so that the Action Plans can be specific.

BT = Live bird trade; D = Clear felling only (as opposed to logging leading to habitat degradation); Fr = habitat fragmentation, leading to population fragmentation; Gm = Granite mining; Ha = Habitat loss to agriculture; Hu = Habitat loss to urban development; Hd = Habitat degradation; H = if all three habitat loss categories above are relevant; Hy = Hybridisation with released stock; In = Inbreeding; Ip = Introduced predators; M = mining; Mf = Harvesting of non-timber forest products; Of = Over-exploitation for food; Os = Over-exploitation for sport; Oe = both forms of over-exploitation; P = Poisoning by pesticides; Op = Other pollution effects; VL = volcanic activity.

'?' = correspondents have no idea of any specific threats and no identified threats mentioned in published accounts seen. 'None known' = the species is not known to be threatened.

(M-L STS)
Assignment of Mace-Lande threat category. ? = unknown but lack of knowledge is cause for concern.

CAP POP EST
Estimate of the number of individuals in captivity. Data are from the ISIS and WPA-International databases of captive Galliformes.

FUTURE ACTION
Proposed conservation measures. Most of these are coded from the questionnaire that was sent out to correspondents, but several additional measures have been suggested by the respondents. The list is designed to be as detailed as possible so that the Action Plans can be specific.

BT = Stop the bird trade; CM = Intensive management of existing captive population; E = Education; EP = Eradicate predators; ES = Extensive survey; HP = Habitat protection; HM = Habitat management; H = Both habitat protection and management; IR = Intensive research; M = Monitoring; PA = Designate protected areas; PM = Population management; SH = Stop hunting; SS = Sustainable sport hunting; TC = Taxonomic clarification. 'None needed' = no conservation action is required at present.

Conducting Population and Habitat Viability Assessments (PHVA) should also be considered.

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Table 4. Spreadsheet for Critical taxa according to Mace-Lande criteria

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Arborophila	charltonii	atjehensis	-	A	Sumatra	?10-100	3/4	D	Ha	?C	-	ES,H
Dendrortyx	barbatus		-	A	NE Mexico	<1,000	3	D	H,Oe	C	0/0	ES
Lophura	edwardsi		-	A	C Vietnam	0-1,000	2/4	D	H	C/EX	133/418	PA,ES,HP,TCCM
Polyplectron	schleiermacheri		-	B	W, N, SE Borneo	100-1,000	3/4	D	H	C	0/0	ES,PA,H

Table 5. Spreadsheet for Endangered taxa according to Mace-Lande criteria

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
SCIENTIFIC NAME			SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Aepypodius	bruijnii		-	Is	Waigeo Island	100-2,500	3/4	?	?	?E	0/0	ES,H
Eulipoa	wallacei		-	Is(B)	N, C Mollucas + Misol	10,000	2/3/4	D	Of,H	E/C	0/0	M,ES,IR,E
Megapodius	pritchardii		-	Is	N.Tonga (Niuafo'ou only)	400 - 800	1	S	Of,Ip	E	2/0	PM,IR,EP,E
Megapodius	laperouse											
Megapodius	laperouse	laperouse	-	Is	Mariana Isls	1,000-2,500	1/2	?S	Ip,Hu	E	0/0	M
Megapodius	geelvinkianus		-	Is	Geelvink Bay Isls	<5,000	3/4	D	Of,Ip,H	E	0/0	PA
Francolinus	bicalcaratus	ayesha	-	A	Morocco	100-1,000	2	I	Hd,Of	E	0/0	TC,HP,IR,PA PHVA,ES
Francolinus	ochropectus		-	A	Djibouti	<1,000	2	D	Hd,Oe, Fr	E	0/0	IR,ES,PA,IR PHVA,SH
Perdicula	manipurensis		2	A	NE India	100-10,000	4	D	H,Of,Fr	?E	0/0	ES,IR
Arborophila	rufipectus		1	A	SW China	±1,000	2/3	D	H,Fr	E/C	0/0	ES,M,IR,PA, E
Arborophila	davidi		-	A	S Vietnam	100-1,000	3/4	?D	Hd,Ha	E	0/0	ES,H
Arborophila	cambodiana	diversa	-	A	SE Thailand	100-1,000	3/4	?D	H,Of	E	-	SH,HP
Numida	meleagris	sabyi	-	A	Morocco	0-100	4	D	?	?E		ES,PHVA

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
SCIENTIFIC NAME			SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Odontophorus	strophium		-	A	C Colombia	<2,500	2	D	H,Hd, Oe,Fr	E	0/0	PA,ES,HP
Tragopan	blythii	blythii	-	A	India,China,Burma	500-5,000	3	D	Of,H,Fr	E	32	ES,PA,CM, SH,HP,E
Tragopan	caboti	guangxiensis	-	A	SE China	?100-1,000	4	D	H,Fr,Of	?E	10	ES
Lophura.	nycthemera	annamensis	-	A	Vietnam	500-5,000	3/4	D	Of,H	?E	-	ES,PA
Lophura	nycthemera	engelbachi	-	A	Boloven plat.,Laos	500-5,000	4	D	Of,H	E	-	PA,ES
Lophura	imperialis		-	A	Vietnam	100-10,000	3/4	D	H,Of	E	0/4	PA,ES,HP,TC
Lophura	hatinhensis		-	A	NC Vietnam	100-10,000	2/4	D	H,Of	E	0/0	PA,ES,HP,TC
Crossoptilon	mantchuricum		-	A	NE China	1,000-5,000	2	S	H,In,Fr	E	67/399	H,IR,CM,M
Syrmaticus	reevesi		-	A*	C.China	2,000-5,000	2	D	H,Oe,Fr	E	286/908	ES,H,SH,PA, M,E
Polyplectron	bicalcaratum	katsumatae	-	Is	Hainan	100-1,000	3/4	D	H	E	-	H,ES,M
Polyplectron	emphanum		-	A	Palawan	1,000-5,000	2/4	D	H,Bt,Of	E	439/ 429	PA,H,BT,CM
Pavo	muticus	muticus	-	B	Java	<1,000	1/2/3	D	Oe,Bt In,Hy,H	E	25/ 802	H,SH,BT,IR
Pavo	muticus	spicifer	-	B	S Asia	100-1,000	4	D	Bt,H,Oe	E/C	0/8	ES,BT,SH

Table 6. Spreadsheet for Vulnerable taxa according to Mace-Lande criteria

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Aepypodius	arfakianus	misoliensis	-	Is	Misol	100-10,000	3/4	?	?D	?V		ES,CM
Aepypodius	cuvieri		2	A/B	New Guinea + isls	1,000-100,000	4	?D	Hd	?V	0/0	RS
Leipoa	ocellata		-	D	S. mainland Australia	1,000-10,000	1/2	D	Ip,Fr, Ha,Hd	V	0/33	CM,H,EP,ES, M
Macrocephalon	maleo		-	C	Sulawesi + isls	1,000-10,000	2	D	Of,H, Ip,Fr	V/E	6/0	PM,H,E,ES
Megapodius	laperouse	senex	-	Is	Palau Isls	1,000-10,000	2/4	?S	None known	V	-	M
Megapodius	nicobariensis	nicobariensis	-	Is	N + Mid Nicobar Isls	100-10,000	4	?	None known	V	0/0	ES
Megapodius	cumingii		7	C	Sulawesi, N. Borneo + Philippines	?10,000-100,000?	3/4	D	Of,Ip,H	V	0/0	ES,HM,E,PA
Megapodius	bernsteinii		-	Is	Sula Is, Banggai Isls	10,000	2/4	S/D	Of,Ip, Hd	V	0/0	PA
Megapodius	tenimberensis		-	Is	Tanimbar Island	1,000-10,000	3/4	S/D	Of,IP,H	V	0/0	PA
Megapodius	layardi		-	Is	Vanuatu	±10,000	3/4	S/D	Of,H,Ip	V	0/0	PA
Tetraogallus	caspius		3	A	SW Asia	2,000-5,000	3	D	H	V	0/0	ES
Francolinus	pictus	watsoni	-	Is	E.Sri Lanka	1,000-10,000	3	D	H,Of	?V	0/0	ES
Francolinus	gularis		-	A*	S Asia	1,000-10,000	2	D	H,?P,Fr	V	0/2	IR,HP

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Francolinus	camerunensis		-	A	SW Cameroon	±2,000	2	?S	VL	V	0/0	HP,ES
Francolinus	swierstrai		-	A	CW, SW Angola	5,000-50,000	4	D	H,Fr	V	0/0	HP,ES
Rhizothera	longirostris		2	D	SE Asia	>1,000	3/4	?D	Hd,Of, Ha	V	0/0 [<10]	PA,HP
Margaroperdix	madagascarensis		-	C	Madagascar	10,000-100,000	3/4	D	Of,Hd	?V	0/80 [<250]	ES,CM,HM
Melanoperdix	nigra		2	D	SE Asia	>1,000	3/4	?D	Hd,Ha,D	V	0/4	ES,PA,HP,CM
Arborophila	mandellii		-	A	S Asia	?1,000-100,000	4	?D	H, Fr	?V	0/0	ES
Arborophila	orientalis	orientalis	-	A	E.Java	1,000-10,000	3/4	?D	Hd,Bt, Of	V	-	HP,BT,SH
Arborophila	javanica		3	A	W, C Java	>10,000	3/4	?D	Bt,Hd	V	21/26	BT,HP
Arborophila	gingica		-	A	SE China	?100-10,000	4	D	H,Fr	V/E	0/0	ES,PA,HP
Arborophila	ardens		-	Is	Hainan	?100-10,000	4	D	H,Fr	V/E	0/0	ES,PA,HP
Arborophila	merlini		-	B	C.Vietnam	>100	3/4	D	Ha,Hd	V/E	0/0	H,ES
Arborophila	charltonii	graydoni	-	A	NE Borneo	>100	3/4	D	Ha	V/E	-	ES,H
Arborophila	charltonii	charltonii	-	A	Malay Pen.	100-10,000	3/4	D	H	V/E	-	ES,H
Haemotortyx	sanguiniceps		-	A	NE Borneo	?1,000-10,000	3/4	D	H	V	0/0	ES,H
Rollulus	rouloul		-	D	SE Asia	1,000-100,000	3/4	D	H,Bt,Of	V	608/297	SH,HP,CM
Galloperdix	bicalcarata		-	Is	Sri Lanka	?1,000-10,000	4	D	H,Fr	V	0/0	ES

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Tanzanian	francolin	(new)	-	A	Tanzania	1,000-10,000	2	S	None Known	V	0/0	ES,M,PA,TC
Agelastes	meleagrides		-	C	W Africa	>58,000	2	D	H,Of,Fr	V	0/0	ES,PA,SH,M
Odontophorus	atrifrons		3	A	NW South America	?<10,000	4	D	D,?Oe, Fr	?V	0/0	ES
Odontophorus	hyperythrus		-	A	Colombia	<10,000	4	D	H,?Oe, Fr	V	0/0	ES,TC
Odontophorus	melanonotus		-	A	NW South America	?<10,000	4	?	?H,?Oe	?V	0/0	ES,TC
Odontophorus	columbianus		-	A	W,N Venezuela	?<10,000	4	D	H,Hu, Oe,Fr	?V	0/0	ES,HP,TC
Tragopan	melanocephalus		-	A	S Asia	±5,000	1/2/3/4	D	H,?Mf, Fr	V	0/0	PA,IR,HP,E
Tragopan	satyra		-	B	S Asia	5,000-20,000	2/3	D	H,Fr,Of	V	175/583	ES,PA,HP, SH,CM,E
Tragopan	caboti	caboti	-	A	SE China	±5,000	1/2/3	D	H,Fr,Of	V	11/126	PA,H, SH,M, CM
Pucrasia	macrolopha	joretiana/ darwini	2	A	SE China	1,000-10,000	4	D	Of,H	V	0/0	ES,TC
Lophophorus	clateri		2	B	S Asia	1,000-10,000	4	S/D	H,Of	V/E	0/0	ES,SH,HP
Lophophorus	lhuysii		-	B/C	C China	10,000-20,000	2/4	D	Hd,Of	V	2/0	ES,HP,SH
Lophura	nycthemera	whiteheadi	-	Is	Hainan	100-10,000	4	D	H,Fr,Of	V/E	-	H,SH,M

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Lophura	nycthemera	lewisi	-	A	?S Cambodia, ?S Thailand	1000-10,000	4	D	H	V	-	ES,M,H
Lophura	hoogerwerfi		-	A	N Sumatra	100-10,000	3/4	?S	?	V	0/0	TC,ES,H
Lophura	erythropthalma	erythropthalma	-	C	Malay Pen., Sumatra	1,000-10,000	3/4	D	H,Fr	V(M) E(S)	18/115	ES,H,IR,CM
Lophura	erythropthalma	pyronota	-	B	Borneo	100-5,000	3/4	D	H,Fr	V/E	0/33	ES,PA,IR, CM
Lophura	ignita		4	D	SE Asia	?100,000	3/4	D	Ha,Fr	V	6/0	ES,HP
Lophura	diardi		-	D	SE Asia	5,000-100,000	3/4	D	H,Oe	V	88/650	HP,SH
Lophura	bulweri		-	B	Borneo	1,000-10,000	3/4	S/D	H,Of	V	54/11	HP
Crossoptilon	harmani		1	A	China,India	1,000-10,000	4	S/D	Of,H,Fr	V/E	-	PA,SH,ES,TC
Crossoptilon	crossoptilon		4	D*	SC China	>10,000	2	D	Fr,Of, Hd	V	163/355	PA,SH,ES,HP
Catreus	wallichi		-	B	Indian subcontinent	1,000-10,000	1/2/3/4	S/D	Ha,Of	V	170/363	HM,SH,M
Syrmaticus	ellioti		-	A	E China	5,000-10,000	2	D	H,Of	V/E	217/482	H,M,PA,CM
Syrmaticus	humiae	humiae		B	India,Burma	1,000-10,000	4	D	Of,H	V	39/340	ES,SH,HP, IR,CM
Syrmaticus	humiae	burmannicus	-	B	SW Yunnan, N.Burma, N.Thailand	1,000-10,000	3/4	?D	H,Of	V	0/0	ES,PA,IR
Polyplectron	germaini		-	A	S Vietnam	?1,000-10,000	3/4	D	Ha,Of	V	23/194	PA,HP

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Polyplectron	malacense		-	A	Pen. Malaysia	1,000-10,000	2/3/4	D	H	V	189	HP,CM
Rheinardia	ocellata	ocellata	-	A	Indochina	1,000-10,000	2/4	D	H,Of	V	0/0	PA,ES
Rheinardia	ocellata	nigrescens	-	A	Pen. Malaysia	200-2,000	2/4	?D	H	V/E	0/0	H
Argusianus	argus		2	E	SE Asia	>100,000	2/3/4	D	H,Oe	V	136/172	H,SH
Pavo	muticus	imperator	-	D	SE Asia	1,000-10,000	2/4	D	Of,Bt,H	V/E	2/59	ES,PA

Table 7. Spreadsheet for Secure taxa according to Mace-Lande criteria

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Alectura	lathami		2	D	E.Australia	>100,000	2/4	S	Hd	S	247/2	None needed at present
Aepypodius	arfakianus	arfakianus	-	C	New Guinea + isls	10,000-1,000,000	3/4	?S	None	S	8/4	None needed at present
Talegalla	fuscirostris		4	C	New Guinea + isls	10,000-1,000,000	3/4	D	H	S	0/0	None needed at present
Talegalla	jobiensis		2	C	New Guinea + isls	10,000-1,000,000	3/4	D	H	S	0/0	PA
Megapodius	nicobariensis	abbotti	-	Is	Gt + Little Nicobar Isls	2,000-8,000	2	S	Ip	S/V		EP
Megapodius	freycinet		3	Is	N.Moluccas + isls off NW New Guinea	10,000-100,000	3/4	S/D	Ip,Of	S	0/0	None needed at present
Megapodius	forstenii		2	Is	Ceram,Buru + other isls	10,000-100,000	3/4	?S	None known	S	0/0	None needed at present
Megapodius	eremita		-	Is	E.New Guinea isls	10,000-1,000,000	2/4	?D	Of,H,Ip	S	0/0	None needed at present
Megapodius	affinis		-	C	N.New Guinea	10,000-1,000,000	3/4	S/D	H	S	0/0	None needed at present
Megapodius	reinwardt		5	D/E	E.Indonesia, N.Australia,S.New Guinea	100,000-1,000,000	3/4	S	None known	S	0/0	None needed at present
Lerwa	lerwa		-	C*	S Asia	100,000-1,000,000	3/4	D	Hd,Oe	S	0/0	None needed at present
Ammoperdix	heyi		4	D	NE Africa, Arabia	>100,000	2	S	None known	S	77/19	None needed at present

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Tetraogallus	caucasicus		-	A	S Russia	>400,000	2	S	None known	S	0/0	None needed at present
Tetraogallus	tibetanus		4	D	C Eurasia	100,000-1,000,000	2,4	S	None	S	0/0	None needed at present
Tetraogallus	altaicus		2	B	C.Eurasia	50,000-150,000	2	S/D	Oe,H	S	0/0	ES
Tetraogallus	himalayensis		5	E	SC Eurasia	10,000-100,000	2/4	S	None	S	48/32	None needed at present
Alectoris	graeca		3	C	C,S,SE Europe	30,000-70,000	2	D	Hd,Os, Hy	S	54/22	H,IR
Alectoris	chukar		14	E	S.Eurasia, E Arabia	>1,000,000	3	S	Hd	S	78/572	None needed at present
Alectoris	philbyi		-	A	SW Arabia	5,000-50,000	2	?S	None known	S	128/222	None needed at present
Alectoris	magna		-	A	NC.China	±100,000	2/4	S/D	H,P,Of	S	0/0	None needed at present
Alectoris	barbara		4	E	N.Africa, S.Europe	>500,000	4	D	Of,Ha	S	9/112	None needed at present
Alectoris	rufa		3	D	W. Europe	>1,000,000	2	S/D	Hy,Hd	S	6/211	IR
Alectoris	melanocephala		2	C	SW, E Arabia	50,000-500,000	2	S	None known	S	37/94	None needed at present
Francolinus	pondicerianus		3	E	E. Arabia, S Asia	100,000->1,000,000	2/4	S/D	P,H	S	23/60	None needed at present
Francolinus	pintadeanus		2	E	S, SE Asia	>100,000.	3/4	S	None known	S	26/0	None needed at present

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Francolinus	francolinus		6	E	S Asia	100,000-1,000,000	2/4	S/D	H,P	S	6/251	None needed at present
Francolinus	pictus	pictus/ pallidus	-	E	S India	10,000-1,000,000	1/3	D	H	S	0/0	None needed at present
Francolinus	lathami		2	E	W,C,E Africa	>100,000	4	?S	H	S	0/0	None needed at present
Francolinus	coqui		4	E	Subsaharan Africa	>1,000,000	4	?	Hd	S	0/2	None needed at present
Francolinus	albogularis		3	E	S, W Africa	>100,000	4	?	None known	S	0/0	None needed at present
Francolinus	streptophorus		-	C	E, W Africa	100,000-500,000	4	?	None known	S	0/0	None needed at present
Francolinus	finschi		-	C	WC Africa	10,000-100,000	4	?	None known	S	0/0	ES
Francolinus	africanus		-	D	S Africa	>500,000	2	D	H	S	0/0	None needed at present
Francolinus	levaillantii		2	D	C, E, S Africa	>1,000,000	2	?	H	S	0/0	None needed at present
Francolinus	levaillantoides		4	E	NE, S Africa	>1,000,000	4	I/S	None known	S	0/0	None needed at present
Francolinus	psilolaemus		2	C	NE, E Africa	50,000-500,000	4	?	None known	S	0/0	None needed at present
Francolinus	shelleyi		2	E	E, SE Africa	>1,000,000	4	?	H	S	0/0	None needed at present
Francolinus	sephaena		5	E	E, S Africa	>1,000,000	2	S	None known	S	0/7	None needed at present
Francolinus	ahantensis		-	C	W Africa	10,000-50,000	4	S/D	Ha,Of	S	0/0	SH,HP,ES

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Francolinus	squamatus		-	E	C, E Africa	>1,000,000	4	D	None known	S	0/0	Not needed
Francolinus	hartlaubi		-	C	SW Africa	50,000-500,000	4	S/D	Gm,Hd	S	0/0	ES
Francolinus	hildebrandti		-	E	E Africa	500,000-1,000,000	4	?	None known	S	0/25	None needed at present
Francolinus	natalensis		-	E	SE Africa	>1,000,000	4	S	None known	S	2/2	None needed at present
Francolinus	bicalcaratus	bicalcaratus	-	E	W.Africa	>1,000,000	4	?S	None known	S	-	None needed at present
Francolinus	clappertoni		-	E	C African highlands	>1,000,000	4	S/D	Ha,Hd, Of	S	0/0	None needed at present
Francolinus	icterorhynchus		-	E	EC Africa	1,000,000	4	S	None known	S	0/5	None needed at present
Francolinus	harwoodi		-	A	C Ethiopia	?2,000-20,000	4	?	None known	S	0/0	ES
Francolinus	capensis		-	C	SW Africa	50,000-500,000	4	?S	None known	S	0/4	None needed at present
Francolinus	adspersus		-	D	SC Africa	>1,000,000	4	S	H,Hd	S	0/0	None needed at present
Francolinus	erckelii		-	C	NE Africa	5,000-50,000	2	S/D	H	S	8/153	ES,CM
Francolinus	castaneicollis		2	C	NE Africa	100,000-500,000	4	S	None known	S	0/0	None needed at present
Francolinus	nobilis		-	A	EC Africa	2,000-20,000	4	?S	Fr	S	0/0	ES
Francolinus	jacksoni		-	A	Uganda, Kenya	5,000-50,000	4	?D	Of,Fr,H	S	0/0	ES

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Francolinus	leucoscepus		-	E	NE Africa	500,000-1,000,000	4	D	Of	S	5/13	SH,H,ES
Francolinus	rufopictus		-	A	NW Tanzania	10,000-100,000	4	D	?Hd	S	0/0	ES
Francolinus	afer		7	E	C, E, S Africa	>1,000,000	4	S	None known	S	1/1	None needed at present
Francolinus	swainsonii		3	E	SC, S Africa	>1,000,000	4	I	None known	S	0/0	None needed at present
Perdix	perdix		8	E	Eurasia	>1,000,000	1	D	Hd,P	S	35/233	IR,SS
Perdix	dauuricae		2	E	C Asia	100,000->1,000,000	2/4	S/D	None known	S	0/11	None needed at present
Perdix	hodgsoniae		3	?D	S Asia	100,000-1,000,000	4	?S	?Hd	S	2/0	ES
Coturnix	coturnix		?5	E	Palearctic + E.Africa	>1,000,000	3	S/D	H,Os	S	55/97	TC,SS
Coturnix	japonica		-	D	E.Asia	>10,000	3/4	?S	?	S	0/4975	None needed at present
Coturnix	pectoralis		-	D	Australia	>100,000	3/4	S	None known	S	0/0	None needed at present
Coturnix	coromandelica		-	E	S Asia	100,000-1,000,000	3/4	S	H,P	S	1/105	None needed at present
Coturnix	delegorguei		3	E	Subsaharan Africa	>1,000,000	4	S	None known	S	11/33	None needed at present
Coturnix	ypsilophora		12	E	Lsr Sundas, Irian Jaya, Australia	>1,000,000	3/4	S	None known	S	0/25	None needed at present

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Coturnix	adansonii		-	E	Subsaharan Africa	>1,000,000	4	S	None known	S	0/0	TC
Coturnix	chinensis		10	E	S, SE Asia, Australasia	>1,000,000	3/4	S	H,P	S	75/496	TC
Anurophasis	monorthonyx		-	A	C.Irian Jaya	<10,000	4	S	None known	S	0/0	None needed at present
Perdicula	asiatica		4	D	Indian subcontinent	100,000->1,000,000	3	S/D	None known	S	0/30	TC
Perdicula	argoondah		3	E	India	>100,000	3/4	S/D	H,Of	S	0/0	None needed at present
Perdicula	erythrorhyncha		2	D	Pen. India, Bangladesh	>100,000	4	S	None known	S	0/0	None needed at present
Arborophila	torqueola		4	D	S, SE Asia	100,000-1,000,000	3/4	D	H	S	9/72	None needed at present
Arborophila	rufogularis		6	D	S, SE Asia	10,000-100,000	3/4	D	H	S	0/0	None needed at present
Arborophila	atrogularis		-	C	S Asia	10,000-100,000	4	?D	H,?Of	S	0/0	ES
Arborophila	crudigularis		-	Is	Taiwan	?1,000-10,000	4	D	Ha,?P, Fr	S/V	0/0	ES
Arborophila	brunneopectus	albigula/ heniriki	2	A*	S.China, Vietnam	1,000-100,000	3/4	D	H,Of	S/V	0/0	ES,PA
Arborophila	brunneopectus	brunneopectus	-	C	E Asia	100,000-1,000,000	3/4	D	H,Of	S	-	None needed at present
Arborophila	orientalis	rolli/ sumatrana/ campbelli	3	C	Sumatra, Malaya	10,000-100,000	3/4	?D	Ha,Hd	?S	-	HP
Arborophila	cambodiana	cambodiana	-	A	SW Cambodia	>100	3/4	?D	H	S/V	-	ES

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Arborophila	rubrirostris		-	B	Sumatra	>10,000	3/4	?S	Hd	?S	0/0	HP,M
Arborophila	hyperythra		2	B	NE, C Borneo	>10,000	4	?S	Hd	?S	0/0	HP,M,TC
Arborophila	chloropus		4	D	SE Asia	10,000-1,000,000	3/4	D	H,D	S	0/0	None needed at present
Caloperdix	oculea		3	D	SE Asia	1,000-10,000	3/4	D	Of,H	S/V	17/59	H
Ptilopachus	petrosus		5	E	W, C Subsah-aran Africa	>1,000,000	4	S	None known	S	0/0	None needed at present
Bambusicola	fytchii		2	B	S, SE Asia	1,000-100,000	3/4	D	Of,H	?S	7/46	ES
Bambusicola	thoracica		2	C	S China	?100,000->1,000,000	4	S	Ha,Hu	S	178/113	None needed at present
Galloperdix	spadicea		3	D	India	?10,000-100,000	4	S/D	None known	S	53/0	None needed at present
Galloperdix	lunulata		-	D	Peninsular India	?10,000-100,000	4	S/D	Hd	S	1/0	None needed at present
Agelastes	niger		-	D	WC Africa	100,000-500,000	4	?D	H,Of	S	0/0	PA,HP,ES,SH
Numida	meleagris	see [1]	8	E	W, NE, S Africa	>1,000,000	2	?S	None known	S	411/8	None needed at present
Guttera	plumifera		2	D	WC Africa	10,000-100,000	4	?D	H,Of	S	0/0	ES,HP
Guttera	pucherani		5	E	W,C,E Africa	>100,000	4	?S	None known	S	97/0	None needed at present

1 = meleagris, galeata, somaliensis, reichenowi, mitrata, marungensis, damarensis, coronata.

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Acryllium	vulturinum		-	E	NE Africa	>1,000,000	4	S?	None known	S	277/30	None needed at present
Dendrortyx	macroura		6	A	C.Mexico	20,000-200,000	3	?D	H	S	0/0	ES
Dendrortyx	leucophrys		2	A	C.Middle America	20,000-200,000	4	?D	H	S	0/0	ES
Oreortyx	pictus		5	E	W.North America	>1,000,000	1	S	H,Hu,Hd	S	1/164	None needed at present
Callipepla	squamata		4	E	SW Nearctic	>1,000,000	1	D	Ha,Hd	S	27/370	None needed at present
Callipepla	douglasii		5	C	W.Mexico	50,000-100,000	4	?S	?Hd	S	1/36	None needed at present
Callipepla	californica		8	E	W North America	>1,000,000	1	?S	Hd	S	118/736	None needed at present
Callipepla	gambelii		7	E	SW Nearctic	>1,000,000	1	S	Hd	S	131/288	None needed at present
Philortyx	fasciatus		-	A	C.Mexico	?<100,000	4	S	None known	S	0/0	None needed at present
Colinus	virginianus		22	E	CE Nearctic	>20 million	1	D	H,P	S	87/1649	None needed at present
Colinus	nigrogularis		4	A	C.Middle America	100,000-1,000,000	3	?S		S	0/0	TC
Colinus	leucopogon		6	A	W Central America	<500,000	4	?S		S	0/0	TC
Colinus	cristatus		14	E	Central & N Sth America	>1,000,000	4	S	?Hd, Of	S	0/29	TC,?SU
Odontophorus	gujanensis		8	E	S Central & S America	>1,000,000	3	?D	H,Oe	S	0/0	None needed at present

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Odontophorus	capueira		2	C	E South America	<50,000	4	D	H,Oe,Fr	S	0/26	ES,HP
Odontophorus	melanotis		2	B	Central America	< 50,000	4	D	H,?Oe	?S	0/0	ES,TC
Odontophorus	erythrops		2	B	NW South America	<500,000	4	?D	?H,?Oe	S	0/0	ES,TC
Odontophorus	speciosus		3	D	WC South Amercia	>500,000	4	?S	?	S	0/0	TC
Odontophorus	dialeucos		-	A	E Panama & NW Colombia	< 50,000	4	?H	?H	?S	0/0	ES,TC
Odontophorus	leucolaemus		-	A	S Central America	< 50,000	4	?D	?H,?Ha	?S	0/0	ES
Odontophorus	balliviani		-	A	SW South America	< 50,000	4	?D	?Ha, ?Hu,?Fr	?S	0/0	ES
Odontophorus	stellatus		-	E	WC South America	>750,000	4	?S	None known	S	0/0	None needed at present
Odontophorus	guttatus		-	C	Middle America	?<500,000	4	?D	?H,?Ha, Fr	S	0/0	None needed at present
Dactylortyx	thoracicus		17	C	Middle America	100,000-500,000	3	?S	?	S	0/10	ES
Cyrtonyx	montezumae		5	C	SW U. States & Mexico	>500,000	3	?S	Hd	S	6/61	None needed at present
Cyrtonyx	ocellatus		-	A	C.Middle America	< 50,000	4	D	H,Hd	?S	0/16	ES
Rhynchortyx	cinctus		3	D	Central & NW Sth America	<500,000	3	?D	H,Oe	S	0/0	ES

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Ithaginis	cruentus	see [2]	8	D	S Asia	1,000-100,000	2/3	S/D	-	S	-	
Ithaginis	cruentus	kuseri/rocki/ marionae/ holoptilus/ clarkei	5	A	India,China	1,000-10,000	4	?D	Of	S/V	-	ES
Tragopan	temminckii		-	D	S Asia	>100,000	2/3	S/D	H,Fr,Of	S	372/ 562	SH
Pucrasia	macrolopha	nipalensis/ macrolopha/ castanea/ biddulphi	4	B	Indian subcontinent	100,000-1,000,000	1/2	D	H	S	33/0	HP,TC
Pucrasia	macrolopha	meyeri/ ruficollis/ xanthospila	3	C	S. Asia	1,000-100,000	3/4	D	H,Of	S/V	0/0	TC,ES
Lophophorus	impeyanus		-	C	S. Asia	100,000-1,000,000	2/3	S/D	H,Of	S	315/ 798	None needed at present
Gallus	gallus		5	E	S, SE Asia	100,000-1,000,000	2/3/4	S/D	Hy,H	S	83/ 651	None needed at present
Gallus	sonneratii		-	D/E	Peninsular + W India	10,000-100,000	2/4	S/D	H,Of,Fr	S/V	188/ 231	ES,IR,SH
Gallus	lafayetii		-	Is	Sri Lanka	10,000-100,000	4	S/D	H,Bt	S	87/77	ES,BT
Gallus	varius		-	C	Java + Lsr Sundas	>50,000	3/4	D	Bt,Hy	S	-	BT

2 = cruentus/tibetanus/geoffroyi/berezowski/beicki/michaelis/sinensis/annae

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Lophura	leucomelanos	see [3]	5	E	S Asia	100,000-1,000,000	2/3	S/D	H	S	46/680	
Lophura	leucomelanos	oatesi/ lineata/ crawfurdi	3	B	S Burma & W Thailand	1,000-100,000	3/4	?D	H	S/V	10/238	H
Lophura	nycthemera	see [4]	11	D*	S Asia	10,000-1,000,000	3/4	D	H	S	-	
Lophura	swinhoii		-	Is	Taiwan	10,000-15,000	2/4	S/D	H,Fr	S	200/802	M
Lophura	inornata		-	A	C, S Sumatra	1,000-10,000	3/4	S/D	H	S/V	50/0	TC,ES,H
Lophura	erythropthalma		2									TC
Crossoptilon	auritum		-	C	NC China	10,000-1,000,000	4	S	H	S	177/439	None needed at present
Syrmaticus	mikado		-	Is	Taiwan	10,000-20,000	2	S	H	S	195/471	M
Phasianus	colchicus	see [5]	30	E	S, C Eurasia	>1,000,000	3	S/D	P,Ha	S	168/8	M

3 = hamiltoni, leucomelana, melanota, lathami, williamsi.

4 = beli, berliozi, rufipes, ripponi, jonesi, rongjiangensis, omeiensis, occidentalis, beaulieui, fokiensis, nycthemera.

5 = colchicus, septentrionalis, talischensis, persicus, shawi, chrysomelas, bianchii, zerafschanicus, zarudnyi, principalis, mongolicus, turcestanicus, tarimensis, vlangalii, elegans, rothschildi, sohokotensis, kiangsuensis, alaschanicus, decollatus, strauchi, satscheuensis, edzinensis, formosanus, torquatus, takatukasae, pallasi, hagenbecki, karpowi.

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Phasianus	colchicus	versicolor/ robustipes/ tanensis	3	C	Japan	1,000-100,000	4	D	Ip,H	S	33/277	M,SS
Chrysolophus	pictus		-	C	C, S China	>300,000	2/3	D	H,Fr,Oe	S	689/7488	M,SS
Chrysolophus	amherstiae		-	C	S Asia	10,000-100,000	2/3	D	H,Fr,Oe	S	328/2128	M,SS
Polyplectron	chalcurum		2	B	Sumatra	10,000-100,000	3/4	S/D	Oe,H	?S	14/71	ES,H
Polyplectron	inopinatum		-	A	Pen. Malaysia	1,000-10,000	3/4	?S	H	?S	111	CM
Polyplectron	bicalcaratum	bicalcaratum/ bakeri/bailyi/ghigii	4	E	S Asia	10,000-1,000,000	3/4	D	D,H	S	-	None needed at present
Pavo	cristatus		-	E	Indian subcontinent	100,000->1,000,000	2/4	S/D	D,H,P, Fr	S	1325/3422	None needed at present

Table 8. Spreadsheet for Unknown taxa according to Mace-Lande criteria

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Tetraophasis	obscurus		-	?C	W.China	?		D	Hd	?	0/0	ES,TC
Tetraophasis	szechenyii		-	?C	SW China, NE India	?		?	?	?	0/0	ES,TC
Francolinus	schlegelii		-	C	Central Africa	50,000-500,000	4	?	None known	?	0/0	None needed at present
Francolinus	griseostriatus		-	A	W Angola	5,000-50,000	4	D	None known	?	0/0	ES
Francolinus	nahani		-	B	EC Africa	5,000-20,000	4	?D	H,Fr	?	0/0	ES,PA,HP
Tragopan	blythii	molesworthi	-	A	Bhutan	3 skins	?	?	?	?	-	ES
Lophura	leucomelanos	moffiti	-	A	NE Indian subcontinent	?	?	?	?	?	2/34	ES,CM
Syrmaticus	soemmerringii		5	C	Japan	1,000-100,000	4	D	H,Os,lp	?	23/208	TC,?SS
Syrmaticus	soemmerringii	soemmerringi/ ijimae	2		Kyushu island	?		?	?	?	-	?
Syrmaticus	soemmeringii	scintillans/ intermedius/ subrufus	3		Honshu and Shikoko island	?		?	lp	?		?
Afropavo	congensis		-	C	Congo Basin	50-50,000	4	D	H,Of	?	97	ES,PA,SH, IR,CM

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Table 9. Spreadsheet for all Galliformes taxa

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
MEGAPODIDAE												
Alectura	lathami		2	D	E.Australia	>100,000	2/4	S	Hd	S	247/2	None needed at present
Aepypodius	arfakianus											
Aepypodius	arfakianus	arfakianus	-	C	New Guinea + isls	10,000-1,000,000	3/4	?S	None	S	8/4	None needed at present
Aepypodius	arfakianus	misoliensis	-	Is	Misol	100-10,000	3/4	?	?D	?V		ES,CM
Aepypodius	bruijnii		-	Is	Waigeo Island	100-2,500	3/4	?	?	?E	0/0	ES,H
Aepypodius	cuvieri		2	A/B	New Guinea + isls	1,000-100,000	4	?D	Hd	?V	0/0	RS
Talegalla	fuscirostris		4	C	New Guinea + isls	10,000-1,000,000	3/4	D	H	S	0/0	None needed at present
Talegalla	jobiensis		2	C	New Guinea + isls	10,000-1,000,000	3/4	D	H	S	0/0	PA
Leipoa	ocellata		-	D	S. mainland Australia	1,000-10,000	1/2	D	Ip,Fr, Ha,Hd	V	0/33	CM,H,EP,ES, M
Macrocephalon	maleo		-	C	Sulawesi + isls	1,000-10,000	2	D	Of,H, Ip,Fr	V/E	6/0	PM,H,E,ES
Eulipoa	wallacei		-	Is(B)	N, C Mollucas + Misol	10,000	2/3/4	D	Of,H	E/C	0/0	M,ES,IR,E
Megapodius	pritchardii		-	Is	N.Tonga (Niuafo'ou only)	400 - 800	1	S	Of,Ip	E	2/0	PM,IR,EP,E
Megapodius	laperouse											

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Megapodius	laperouse	laperouse	-	Is	Mariana Isls	1,000-2,500	1/2	?S	Ip,Hu	E	0/0	M
Megapodius	laperouse	senex	-	Is	Palau Isls	1,000-10,000	2/4	?S	None known	V	-	M
Megapodius	nicobariensis		2									
Megapodius	nicobariensis	nicobariensis	-	Is	N + Mid Nicobar Isls	100-10,000	4	?	None known	V	0/0	ES
Megapodius	nicobariensis	abbotti	-	Is	Gt + Little Nicobar Isls	2,000-8,000	2	S	Ip	S/V		EP
Megapodius	cumingii		7	C	Sulawesi, N. Borneo + Philippines	?10,000-100,000?	3/4	D	Of,Ip,H	V	0/0	ES,HM,E,PA
Megapodius	bernsteinii		-	Is	Sula Is, Banggai Isls	10,000	2/4	S/D	Of,Ip, Hd	V	0/0	PA
Megapodius	tenimberensis		-	Is	Tanimbar Island	1,000-10,000	3/4	S/D	Of,IP,H	V	0/0	PA
Megapodius	freycinet		3	Is	N.Moluccas + isls off NW New Guinea	10,000-100,000	3/4	S/D	Ip,Of	S	0/0	None needed at present
Megapodius	geelvinkianus		-	Is	Geelvink Bay Isls	<5,000	3/4	D	Of,Ip,H	E	0/0	PA
Megapodius	forstenii		2	Is	Ceram,Buru + other isls	10,000-100,000	3/4	?S	None known	S	0/0	None needed at present
Megapodius	eremita		-	Is	E.New Guinea isls	10,000-1,000,000	2/4	?D	Of,H,Ip	S	0/0	None needed at present
Megapodius	layardi		-	Is	Vanuatu	±10,000	3/4	S/D	Of,H,Ip	V	0/0	PA
Megapodius	affinis		-	C	N.New Guinea	10,000-1,000,000	3/4	S/D	H	S	0/0	None needed at present

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Megapodius	reinwardt		5	D/E	E.Indonesia, N.Australia,S.New Guinea	100,000-1,000,000	3/4	S	None known	S	0/0	None needed at present
PHASIANIDAE	(PERDICINAE)											
Lerwa	lerwa		-	C*	S Asia	100,000-1,000,000	3/4	D	Hd,Oe	S	0/0	None needed at present
Ammoperdix	griseogularis		-	D	SW Asia						4/68	
Ammoperdix	heyi		4	D	NE Africa, Arabia	>100,000	2	S	None known	S	77/19	None needed at present
Tetraogallus	caucasicus		-	A	S Russia	>400,000	2	S	None known	S	0/0	None needed at present
Tetraogallus	caspius		3	A	SW Asia	2,000-5,000	3	D	H	V	0/0	ES
Tetraogallus	tibetanus		4	D	C Eurasia	100,000-1,000,000	2,4	S	None	S	0/0	None needed at present
Tetraogallus	altaicus		2	B	C.Eurasia	50,000-150,000	2	S/D	Oe,H	S	0/0	ES
Tetraogallus	himalayensis		5	E	SC Eurasia	10,000-100,000	2/4	S	None	S	48/32	None needed at present
Tetraophasis	obscurus		-	?C	W.China	?		D	Hd	?	0/0	ES,TC
Tetraophasis	szechenyii		-	?C	SW China, NE India	?		?	?	?	0/0	ES,TC
Alectoris	graeca		3	C	C,S,SE Europe	30,000-70,000	2	D	Hd,Os, Hy	S	54/22	H,IR
Alectoris	chukar		14	E	S.Eurasia, E Arabia	>1,000,000	3	S	Hd	S	78/572	None needed at present
Alectoris	philbyi		-	A	SW Arabia	5,000-50,000	2	?S	None known	S	128/222	None needed at present

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Alectoris	magna		-	A	NC.China	±100,000	2/4	S/D	H,P,Of	S	0/0	None needed at present
Alectoris	barbara		4	E	N.Africa, S.Europe	>500,000	4	D	Of,Ha	S	9/112	None needed at present
Alectoris	rufa		3	D	W. Europe	>1,000,000	2	S/D	Hy,Hd	S	6/211	IR
Alectoris	melanocephala		2	C	SW, E Arabia	50,000-500,000	2	S	None known	S	37/94	None needed at present
Francolinus	pondicerianus		3	E	E. Arabia, S Asia	100,000->1,000,000	2/4	S/D	P,H	S	23/60	None needed at present
Francolinus	pintadeanus		2	E	S, SE Asia	>100,000	3/4	S	None known	S	26/0	None needed at present
Francolinus	francolinus		6	E	S Asia	100,000-1,000,000	2/4	S/D	H,P	S	6/251	None needed at present
Francolinus	pictus											
Francolinus	pictus	pictus/ pallidus	-	E	S India	10,000-1,000,000	1/3	D	H	S	0/0	None needed at present
Francolinus	pictus	watsoni	-	Is	E.Sri Lanka	1,000-10,000	3	D	H,Of	?V	0/0	ES
Francolinus	gularis		-	A*	S Asia	1,000-10,000	2	D	H,?P,Fr	V	0/2	IR,HP
Francolinus	lathami		2	E	W,C,E Africa	>100,000	4	?S	H	S	0/0	None needed at present
Francolinus	coqui		4	E	Subsaharan Africa	>1,000,000	4	?	Hd	S	0/2	None needed at present
Francolinus	albogularis		3	E	S, W Africa	>100,000	4	?	None known	S	0/0	None needed at present

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Francolinus	schlegelii		-	C	Central Africa	50,000-500,000	4	?	None known	?	0/0	None needed at present
Francolinus	streptophorus		-	C	E, W Africa	100,000-500,000	4	?	None known	S	0/0	None needed at present
Francolinus	finschi		-	C	WC Africa	10,000-100,000	4	?	None known	S	0/0	ES
Francolinus	africanus		-	D	S Africa	>500,000	2	D	H	S	0/0	None needed at present
Francolinus	levaillantii		2	D	C, E, S Africa	>1,000,000	2	?	H	S	0/0	None needed at present
Francolinus	levaillantoides		4	E	NE, S Africa	>1,000,000	4	I/S	None known	S	0/0	None needed at present
Francolinus	psilolaemus		2	C	NE, E Africa	50,000-500,000	4	?	None known	S	0/0	None needed at present
Francolinus	shelleyi		2	E	E, SE Africa	>1,000,000	4	?	H	S	0/0	None needed at present
Francolinus	sephaena		5	E	E, S Africa	>1,000,000	2	S	None known	S	0/7	None needed at present
Francolinus	ahantensis		-	C	W Africa	10,000-50,000	4	S/D	Ha,Of	S	0/0	SH,HP,ES
Francolinus	squamatus		-	E	C, E Africa	>1,000,000	4	D	None known	S	0/0	Not needed
Francolinus	griseostriatus		-	A	W Angola	5,000-50,000	4	D	None known	?	0/0	ES
Francolinus	nahani		-	B	EC Africa	5,000-20,000	4	?D	H,Fr	?	0/0	ES,PA,HP
Francolinus	hartlaubi		-	C	SW Africa	50,000-500,000	4	S/D	Gm,Hd	S	0/0	ES

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Francolinus	hildebrandti		-	E	E Africa	500,000-1,000,000	4	?	None known	S	0/25	None needed at present
Francolinus	natalensis		-	E	SE Africa	>1,000,000	4	S	None known	S	2/2	None needed at present
Francolinus	bicalcaratus											
Francolinus	bicalcaratus	bicalcaratus	-	E	W.Africa	>1,000,000	4	?S	None known	S	-	None needed at present
Francolinus	bicalcaratus	ayesha	-	A	Morocco	100-1,000	2	I	Hd,Of	E	0/0	TC,HP,IR,PA PHVA,ES
Francolinus	clappertoni		-	E	C African highlands	>1,000,000	4	S/D	Ha,Hd, Of	S	0/0	None needed at present
Francolinus	icterorhynchus		-	E	EC Africa	1,000,000	4	S	None known	S	0/5	None needed at present
Francolinus	harwoodi		-	A	C Ethiopia	?2,000-20,000	4	?	None known	S	0/0	ES
Francolinus	capensis		-	C	SW Africa	50,000-500,000	4	?S	None known	S	0/4	None needed at present
Francolinus	adspersus		-	D	SC Africa	>1,000,000	4	S	H,Hd	S	0/0	None needed at present
Francolinus	camerunensis		-	A	SW Cameroon	±2,000	2	?S	VL	V	0/0	HP,ES
Francolinus	swierstrai		-	A	CW, SW Angola	5,000-50,000	4	D	H,Fr	V	0/0	HP,ES
Francolinus	erckelii		-	C	NE Africa	5,000-50,000	2	S/D	H	S	8/153	ES,CM
Francolinus	ochropectus		-	A	Djibouti	<1,000	2	D	Hd,Oe, Fr	E	0/0	IR,ES,PA,IR PHVA,SH
Francolinus	castaneicollis		2	C	NE Africa	100,000-500,000	4	S	None known	S	0/0	None needed at present

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Francolinus	nobilis		-	A	EC Africa	2,000-20,000	4	?S	Fr	S	0/0	ES
Francolinus	jacksoni		-	A	Uganda, Kenya	5,000-50,000	4	?D	Of,Fr,H	S	0/0	ES
Francolinus	leucoscepus		-	E	NE Africa	500,000-1,000,000	4	D	Of	S	5/13	SH,H,ES
Francolinus	rufopictus		-	A	NW Tanzania	10,000-100,000	4	D	?Hd	S	0/0	ES
Francolinus	afer		7	E	C, E, S Africa	>1,000,000	4	S	None known	S	1/1	None needed at present
Francolinus	swainsonii		3	E	SC, S Africa	>1,000,000	4	I	None known	S	0/0	None needed at present
Perdix	perdix		8	E	Eurasia	>1,000,000	1	D	Hd,P	S	35/233	IR,SS
Perdix	dauuricae		2	E	C Asia	100,000->1,000,000	2/4	S/D	None known	S	0/11	None needed at present
Perdix	hodgsoniae		3	?D	S Asia	100,000-1,000,000	4	?S	?Hd	S	2/0	ES
Rhizothera	longirostris		2	D	SE Asia	>1,000	3/4	?D	Hd,Of, Ha	V	0/0 [<10]	PA,HP
Margaroperdix	madagascarensis		-	C	Madagascar	10,000-100,000	3/4	D	Of,Hd	?V	0/80 [<250]	ES,CM,HM
Melanoperdix	nigra		2	D	SE Asia	>1,000	3/4	?D	Hd,Ha,D	V	0/4	ES,PA,HP,CM
Coturnix	coturnix		?5	E	Palearctic + E.Africa	>1,000,000	3	S/D	H,Os	S	55/97	TC,SS
Coturnix	japonica		-	D	E.Asia	>10,000	3/4	?S	?	S	0/4975	None needed at present

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Coturnix	pectoralis		-	D	Australia	>100,000	3/4	S	None known	S	0/0	None needed at present
Coturnix	coromandelica		-	E	S Asia	100,000-1,000,000	3/4	S	H,P	S	1/105	None needed at present
Coturnix	delegorguei		3	E	Subsaharan Africa	>1,000,000	4	S	None known	S	11/33	None needed at present
Coturnix	ypsilophora		12	E	Lsr Sundas, Irian Jaya, Australia	>1,000,000	3/4	S	None known	S	0/25	None needed at present
Coturnix	adansonii		-	E	Subsaharan Africa	>1,000,000	4	S	None known	S	0/0	TC
Coturnix	chinensis		10	E	S, SE Asia, Australasia	>1,000,000	3/4	S	H,P	S	75/496	TC
Anurophasis	monorthonyx		-	A	C.Irian Jaya	<10,000	4	S	None known	S	0/0	None needed at present
Perdicula	asiatica		4	D	Indian subcontinent	100,000->1,000,000	3	S/D	None known	S	0/30	TC
Perdicula	argoondah		3	E	India	>100,000	3/4	S/D	H,Of	S	0/0	None needed at present
Perdicula	erythrorhyncha		2	D	Pen. India, Bangladesh	>100,000	4	S	None known	S	0/0	None needed at present
Perdicula	manipurensis		2	A	NE India	100-10,000	4	D	H,Of,Fr	?E	0/0	ES,IR
Arborophila	torqueola		4	D	S, SE Asia	100,000-1,000,000	3/4	D	H	S	9/72	None needed at present
Arborophila	rufogularis		6	D	S, SE Asia	10,000-100,000	3/4	D	H	S	0/0	None needed at present

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Arborophila	atrogularis		-	C	S Asia	10,000-100,000	4	?D	H,?Of	S	0/0	ES
Arborophila	crudigularis		-	Is	Taiwan	?1,000-10,000	4	D	Ha,?P, Fr	S/V	0/0	ES
Arborophila	mandellii		-	A	S Asia	?1,000-100,000	4	?D	H, Fr	?V	0/0	ES
Arborophila	brunneopectus											
Arborophila	brunneopectus	albigula/ heniriki	2	A*	S.China, Vietnam	1,000-100,000	3/4	D	H,Of	S/V	0/0	ES,PA
Arborophila	brunneopectus	brunneopectus	-	C	E Asia	100,000-1,000,000	3/4	D	H,Of	S	-	None needed at present
Arborophila	rufipectus		1	A	SW China	±1,000	2/3	D	H,Fr	E/C	0/0	ES,M,IR,PA, E
Arborophila	orientalis											
Arborophila	orientalis	orientalis	-	A	E.Java	1,000-10,000	3/4	?D	Hd,Bt, Of	V	-	HP,BT,SH
Arborophila	orientalis	rolli/ sumatrana/ campbelli	3	C	Sumatra, Malaya	10,000-100,000	3/4	?D	Ha,Hd	?S	-	HP
Arborophila	javanica		3	A	W, C Java	>10,000	3/4	?D	Bt,Hd	V	21/26	BT,HP
Arborophila	gingica		-	A	SE China	?100-10,000	4	D	H,Fr	V/E	0/0	ES,PA,HP
Arborophila	davidi		-	A	S Vietnam	100-1,000	3/4	?D	Hd,Ha	E	0/0	ES,H
Arborophila	cambodiana											
Arborophila	cambodiana	cambodiana	-	A	SW Cambodia	>100	3/4	?D	H	S/V	-	ES
Arborophila	cambodiana	diversa	-	A	SE Thailand	100-1,000	3/4	?D	H,Of	E	-	SH,HP
Arborophila	rubrirostris		-	B	Sumatra	>10,000	3/4	?S	Hd	?S	0/0	HP,M

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Arborophila	hyperythra		2	B	NE, C Borneo	>10,000	4	?S	Hd	?S	0/0	HP,M,TC
Arborophila	ardens		-	Is	Hainan	?100-10,000	4	D	H,Fr	V/E	0/0	ES,PA,HP
Arborophila	chloropus		4	D	SE Asia	10,000-1,000,000	3/4	D	H,D	S	0/0	None needed at present
Arborophila	merlini		-	B	C.Vietnam	>100	3/4	D	Ha,Hd	V/E	0/0	H,ES
Arborophila	charltonii											
Arborophila	charltonii	atjehensis	-	A	Sumatra	?10-100	3/4	D	Ha	?C	-	ES,H
Arborophila	charltonii	graydoni	-	A	NE Borneo	>100	3/4	D	Ha	V/E	-	ES,H
Arborophila	charltonii	charltonii	-	A	Malay Pen.	100-10,000	3/4	D	H	V/E	-	ES,H
Caloperdix	oculea		3	D	SE Asia	1,000-10,000	3/4	D	Of,H	S/V	17/59	H
Haemotortyx	sanguiniceps		-	A	NE Borneo	?1,000-10,000	3/4	D	H	V	0/0	ES,H
Rollulus	rouloul		-	D	SE Asia	1,000-100,000	3/4	D	H,Bt,Of	V	608/297	SH,HP,CM
Ptilopachus	petrosus		5	E	W, C Subsah-aran Africa	>1,000,000	4	S	None known	S	0/0	None needed at present
Bambusicola	fytchii		2	B	S, SE Asia	1,000-100,000	3/4	D	Of,H	?S	7/46	ES
Bambusicola	thoracica		2	C	S China	?100,000->1,000,000	4	S	Ha,Hu	S	178/113	None needed at present
Galloperdix	spadicea		3	D	India	?10,000-100,000	4	S/D	None known	S	53/0	None needed at present
Galloperdix	lunulata		-	D	Peninsular India	?10,000-100,000	4	S/D	Hd	S	1/0	None needed at present

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Galloperdix	bicalcarata		-	Is	Sri Lanka	?1,000-10,000	4	D	H,Fr	V	0/0	ES
Ophrysia	superciliosa		-	?A	N India	?0-100	4	?Ext	None known	C/EX	0/0	ES
Tanzanian	francolin	(new)	-	A	Tanzania	1,000-10,000	2	S	None Known	V	0/0	ES,M,PA,TC
NUMIDIDAE												
Agelastes	meleagrides		-	C	W Africa	>58,000	2	D	H,Of,Fr	V	0/0	ES,PA,SH,M
Agelastes	niger		-	D	WC Africa	100,000-500,000	4	?D	H,Of	S	0/0	PA,HP,ES,SH
Numida	meleagris											
Numida	meleagris	see [6]	8	E	W, NE, S Africa	>1,000,000	2	?S	None known	S	411/8	None needed at present
Numida	meleagris	sabyi	-	A	Morocco	0-100	4	D	?	?E		ES,PHVA
Guttera	plumifera		2	D	WC Africa	10,000-100,000	4	?D	H,Of	S	0/0	ES,HP
Guttera	pucherani		5	E	W,C,E Africa	>100,000	4	?S	None known	S	97/0	None needed at present
Acryllium	vulturinum		-	E	NE Africa	>1,000,000	4	S?	None known	S	277/30	None needed at present
ODONTOPHORIDAE												
Dendrortyx	barbatus		-	A	NE Mexico	<1,000	3	D	H,Oe	C	0/0	ES
Dendrortyx	macroura		6	A	C.Mexico	20,000-200,000	3	?D	H	S	0/0	ES

6 = meleagris, galeata, somaliensis, reichenowi, mitrata, marungensis, damarensis, coronata.

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Dendrortyx	leucophrys		2	A	C.Middle America	20,000-200,000	4	?D	H	S	0/0	ES
Oreortyx	pictus		5	E	W.North America	>1,000,000	1	S	H,Hu,Hd	S	1/164	None needed at present
Callipepla	squamata		4	E	SW Nearctic	>1,000,000	1	D	Ha,Hd	S	27/370	None needed at present
Callipepla	douglasii		5	C	W.Mexico	50,000-100,000	4	?S	?Hd	S	1/36	None needed at present
Callipepla	californica		8	E	W North America	>1,000,000	1	?S	Hd	S	118/736	None needed at present
Callipepla	gambelii		7	E	SW Nearctic	>1,000,000	1	S	Hd	S	131/288	None needed at present
Philortyx	fasciatus		-	A	C.Mexico	?<100,000	4	S	None known	S	0/0	None needed at present
Colinus	virginianus		22	E	CE Nearctic	>20 million	1	D	H,P	S	87/1649	None needed at present
Colinus	nigrogularis		4	A	C.Middle America	100,000-1,000,000	3	?S		S	0/0	TC
Colinus	leucopogon		6	A	W Central America	<500,000	4	?S		S	0/0	TC
Colinus	cristatus		14	E	Central & N Sth America	>1,000,000	4	S	?Hd, Of	S	0/29	TC,?SU
Odontophorus	gujanensis		8	E	S Central & S America	>1,000,000	3	?D	H,Oe	S	0/0	None needed at present
Odontophorus	capueira		2	C	E South America	<50,000	4	D	H,Oe,Fr	S	0/26	ES,HP
Odontophorus	melanotis		2	B	Central America	< 50,000	4	D	H,?Oe	?S	0/0	ES,TC
Odontophorus	erythrops		2	B	NW South America	<500,000	4	?D	?H,?Oe	S	0/0	ES,TC

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Odontophorus	atrifrons		3	A	NW South America	?<10,000	4	D	D,?Oe, Fr	?V	0/0	ES
Odontophorus	hyperythrus		-	A	Colombia	<10,000	4	D	H,?Oe, Fr	V	0/0	ES,TC
Odontophorus	melanonotus		-	A	NW South America	?<10,000	4	?	?H,?Oe	?V	0/0	ES,TC
Odontophorus	speciosus		3	D	WC South Amercia	>500,000	4	?S	?	S	0/0	TC
Odontophorus	dialeucos		-	A	E Panama & NW Colombia	< 50,000	4	?H	?H	?S	0/0	ES,TC
Odontophorus	strophium		-	A	C Colombia	<2,500	2	D	H,Hd, Oe,Fr	E	0/0	PA,ES,HP
Odontophorus	columbianus		-	A	W,N Venezuela	?<10,000	4	D	H,Hu, Oe,Fr	?V	0/0	ES,HP,TC
Odontophorus	leucolaemus		-	A	S Central America	< 50,000	4	?D	?H,?Ha	?S	0/0	ES
Odontophorus	balliviani		-	A	SW South America	< 50,000	4	?D	?Ha, ?Hu,?Fr	?S	0/0	ES
Odontophorus	stellatus		-	E	WC South America	>750,000	4	?S	None known	S	0/0	None needed at present
Odontophorus	guttatus		-	C	Middle America	?<500,000	4	?D	?H,?Ha, Fr	S	0/0	None needed at present
Dactylortyx	thoracicus		17	C	Middle America	100,000-500,000	3	?S	?	S	0/10	ES
Cyrtonyx	montezumae		5	C	SW U. States & Mexico	>500,000	3	?S	Hd	S	6/61	None needed at present
Cyrtonyx	ocellatus		-	A	C.Middle America	< 50,000	4	D	H,Hd	?S	0/16	ES

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Rhynchortyx	cinctus		3	D	Central & NW Sth America	<500,000	3	?D	H,Oe	S	0/0	ES
PHASIANIDAE	(PHASIANINAE)											
Ithaginis	cruentus											
Ithaginis	cruentus	see [10]	8	D	S Asia	1,000-100,000	2/3	S/D	-	S	-	
Ithaginis	cruentus	kuseri/rocki/marionae/holoptilus/clarkei	5	A	India,China	1,000-10,000	4	?D	Of	S/V	-	ES
Tragopan	melanocephalus		-	A	S Asia	±5,000	1/2/3/4	D	H,?Mf,Fr	V	0/0	PA,IR,HP,E
Tragopan	satyra		-	B	S Asia	5,000-20,000	2/3	D	H,Fr,Of	V	175/583	ES,PA,HP,SH,CM,E
Tragopan	blythii											
Tragopan	blythii	blythii	-	A	India,China,Burma	500-5,000	3	D	Of,H,Fr	E	32	ES,PA,CM,SH,HP,E
Tragopan	blythii	molesworthi	-	A	Bhutan	3 skins	?	?	?	?	-	ES
Tragopan	temminckii		-	D	S Asia	>100,000	2/3	S/D	H,Fr,Of	S	372/562	SH
Tragopan	caboti											
Tragopan	caboti	caboti	-	A	SE China	±5,000	1/2/3	D	H,Fr,Of	V	11/126	PA,H,SH,M,CM
Tragopan	caboti	guangxiensis	-	A	SE China	?100-1,000	4	D	H,Fr,Of	?E	10	ES

10 = cruentus/tibetanus/geoffroyi/berezowski/beicki/michaelis/sinensis/annae

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Pucrasia	macrolopha											
Pucrasia	macrolopha	nipalensis/ macrolopha/ castanea/ biddulphi	4	B	Indian subcontinent	100,000-1,000,000	1/2	D	H	S	33/0	HP,TC
Pucrasia	macrolopha	joretiana/ darwini	2	A	SE China	1,000-10,000	4	D	Of,H	V	0/0	ES,TC
Pucrasia	macrolopha	meyeri/ ruficollis/ xanthospila	3	C	S. Asia	1,000-100,000	3/4	D	H,Of	S/V	0/0	TC,ES
Lophophorus	impeyanus		-	C	S. Asia	100,000-1,000,000	2/3	S/D	H,Of	S	315/ 798	None needed at present
Lophophorus	clateri		2	B	S Asia	1,000-10,000	4	S/D	H,Of	V/E	0/0	ES,SH,HP
Lophophorus	lhuysii		-	B/C	C China	10,000-20,000	2/4	D	Hd,Of	V	2/0	ES,HP,SH
Gallus	gallus		5	E	S, SE Asia	100,000-1,000,000	2/3/4	S/D	Hy,H	S	83/ 651	None needed at present
Gallus	sonneratii		-	D/E	Peninsular + W India	10,000-100,000	2/4	S/D	H,Of,Fr	S/V	188/ 231	ES,IR,SH
Gallus	lafayetii		-	Is	Sri Lanka	10,000-100,000	4	S/D	H,Bt	S	87/77	ES,BT
Gallus	varius		-	C	Java + Lsr Sundas	>50,000	3/4	D	Bt,Hy	S	-	BT
Lophura	leucomelanos											

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Lophura	leucomelanos	see [8]	5	E	S Asia	100,000-1,000,000	2/3	S/D	H	S	46/680	
Lophura	leucomelanos	moffiti	-	A	NE Indian subcontinent	?	?	?	?	?	2/34	ES,CM
Lophura	leucomelanos	oatesi/ lineata/ crawfurdi	3	B	S Burma & W Thailand	1,000-100,000	3/4	?D	H	S/V	10/238	H
Lophura	nycthemera	see [9]	11	D*	S Asia	10,000-1,000,000	3/4	D	H	S	-	
Lophura.	nycthemera	annamensis	-	A	Vietnam	500-5,000	3/4	D	Of,H	?E	-	ES,PA
Lophura	nycthemera	whiteheadi	-	Is	Hainan	100-10,000	4	D	H,Fr,Of	V/E	-	H,SH,M
Lophura	nycthemera	engelbachi	-	A	Boloven plat.,Laos	500-5,000	4	D	Of,H	E	-	PA,ES
Lophura	nycthemera	lewisi	-	A	?S Cambodia, ?S Thailand	1000-10,000	4	D	H	V	-	ES,M,H
Lophura	imperialis		-	A	Vietnam	100-10,000	3/4	D	H,Of	E	0/4	PA,ES,HP,TC
Lophura	edwardsi		-	A	C Vietnam	0-1,000	2/4	D	H	C/EX	133/418	PA,ES,HP,TC CM
Lophura	hatinhensis		-	A	NC Vietnam	100-10,000	2/4	D	H,Of	E	0/0	PA,ES,HP,TC

8 = hamiltoni, leucomelana, melanota, lathami, williamsi.

9 = beli, berliozi, rufipes, ripponi, jonesi, rongjiangensis, omeiensis, occidentalis, beaulieui, fokiensis, nycthemera.

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Lophura	swinhoii		-	Is	Taiwan	10,000-15,000	2/4	S/D	H,Fr	S	200/802	M
Lophura	hoogerwerfi		-	A	N Sumatra	100-10,000	3/4	?S	?	V	0/0	TC,ES,H
Lophura	inornata		-	A	C, S Sumatra	1,000-10,000	3/4	S/D	H	S/V	50/0	TC,ES,H
Lophura	erythropthalma		2									TC
Lophura	erythropthalma	erythropthalma	-	C	Malay Pen., Sumatra	1,000-10,000	3/4	D	H,Fr	V(M) E(S)	18/115	ES,H,IR,CM
Lophura	erythropthalma	pyronota	-	B	Borneo	100-5,000	3/4	D	H,Fr	V/E	0/33	ES,PA,IR, CM
Lophura	ignita		4	D	SE Asia	?100,000	3/4	D	Ha,Fr	V	6/0	ES,HP
Lophura	diardi		-	D	SE Asia	5,000-100,000	3/4	D	H,Oe	V	88/650	HP,SH
Lophura	bulweri		-	B	Borneo	1,000-10,000	3/4	S/D	H,Of	V	54/11	HP
Crossoptilon	harmani		1	A	China,India	1,000-10,000	4	S/D	Of,H,Fr	V/E	-	PA,SH,ES,TC
Crossoptilon	crossoptilon		4	D*	SC China	>10,000	2	D	Fr,Of, Hd	V	163/355	PA,SH,ES,HP
Crossoptilon	mantchuricum		-	A	NE China	1,000-5,000	2	S	H,In,Fr	E	67/399	H,IR,CM,M
Crossoptilon	auritum		-	C	NC China	10,000-1,000,000	4	S	H	S	177/439	None needed at present
Catreus	wallichi		-	B	Indian subcontinent	1,000-10,000	1/2/3/4	S/D	Ha,Of	V	170/363	HM,SH,M
Syrmaticus	ellioti		-	A	E China	5,000-10,000	2	D	H,Of	V/E	217/482	H,M,PA,CM

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Syrmaticus	humiae		2								81/0	
Syrmaticus	humiae	humiae		B	India,Burma	1,000-10,000	4	D	Of,H	V	39/340	ES,SH,HP, IR,CM
Syrmaticus	humiae	burmannicus	-	B	SW Yunnan, N.Burma, N.Thailand	1,000-10,000	3/4	?D	H,Of	V	0/0	ES,PA,IR
Syrmaticus	mikado		-	Is	Taiwan	10,000-20,000	2	S	H	S	195/471	M
Syrmaticus	soemmerringii		5	C	Japan	1,000-100,000	4	D	H,Os,Ip	?	23/208	TC,?SS
Syrmaticus	soemmerringii	soemmerringi/ ijimae	2		Kyushu island	?		?	?	?	-	?
Syrmaticus	soemmeringii	scintillans/ intermedius/ subrufus	3		Honshu and Shikoko island	?		?	Ip	?		?
Syrmaticus	reevesi		-	A*	C.China	2,000-5,000	2	D	H,Oe,Fr	E	286/908	ES,H,SH,PA, M,E
Phasianus	colchicus	see [10]	30	E	S, C Eurasia	>1,000,000	3	S/D	P,Ha	S	168/8	M
Phasianus	colchicus	versicolor/ robustipes/ tanensis	3	C	Japan	1,000-100,000	4	D	Ip,H	S	33/277	M,SS
Chrysolophus	pictus		-	C	C, S China	>300,000	2/3	D	H,Fr,Oe	S	689/7488	M,SS

10 = colchicus, septentrionalis, talischensis, persicus, shawi, chrysomelas, bianchii, zerafschanicus, zarudnyi, principalis, mongolicus, turcestanicus, tarimensis, vlangalii, elegans, rothschildi, sohokotensis, kiangsuensis, alaschanicus, decollatus, strauchi, satscheuensis, edzinensis, formosanus, torquatus, takatukasae, pallasi, hagenbecki, karpowi.

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Chrysolophus	amherstiae		-	C	S Asia	10,000-100,000	2/3	D	H,Fr,Oe	S	328/2128	M,SS
Polyplectron	chalcurum		2	B	Sumatra	10,000-100,000	3/4	S/D	Oe,H	?S	14/71	ES,H
Polyplectron	inopinatum		-	A	Pen. Malaysia	1,000-10,000	3/4	?S	H	?S	111	CM
Polyplectron	germaini		-	A	S Vietnam	?1,000-10,000	3/4	D	Ha,Of	V	23/194	PA,HP
Polyplectron	bicalcaratum		5								168/729	
Polyplectron	bicalcaratum	bicalcaratum/ bakeri/bailyi/ghigii	4	E	S Asia	10,000-1,000,000	3/4	D	D,H	S	-	None needed at present
Polyplectron	bicalcaratum	katsumatae	-	Is	Hainan	100-1,000	3/4	D	H	E	-	H,ES,M
Polyplectron	malacense		-	A	Pen. Malaysia	1,000-10,000	2/3/4	D	H	V	189	HP,CM
Polyplectron	schleiermacheri		-	B	W, N, SE Borneo	100-1,000	3/4	D	H	C	0/0	ES,PA,H
Polyplectron	emphanum		-	A	Palawan	1,000-5,000	2/4	D	H,Bt,Of	E	439/429	PA,H,BT,CM
Rheinardia	ocellata		2		Indochina, Pen. Malaysia							
Rheinardia	ocellata	ocellata	-	A	Indochina	1,000-10,000	2/4	D	H,Of	V	0/0	PA,ES
R.	ocellata	nigrescens	-	A	Pen. Malaysia	200-2,000	2/4	?D	H	V/E	0/0	H
Argusianus	argus		2	E	SE Asia	>100,000	2/3/4	D	H,Oe	V	136/172	H,SH
Afropavo	congensis		-	C	Congo Basin	50-50,000	4	D	H,Of	?	97	ES,PA,SH, IR,CM

TAXON			WILD POPULATION								CAPTIVE POP EST #	FUTURE ACTION
	SCIENTIFIC NAME		SS	AREA	RANGE	POP EST	RELIAB	TRND	THRTS	M/L	ISIS/WPA	
Pavo	cristatus		-	E	Indian subcontinent	100,000->1,000,000	2/4	S/D	D,H,P, Fr	S	1325/3422	None needed at present
Pavo	muticus		3								43/0	TC
Pavo	muticus	muticus	-	B	Java	<1,000	1/2/3	D	Oe,Bt, In,Hy,H	E	25/802	H,SH,BT,IR
Pavo	muticus	imperator	-	D	SE Asia	1,000-10,000	2/4	D	Of,Bt,H	V/E	2/59	ES,PA
Pavo	muticus	spicifer	-	B	S Asia	100-1,000	4	D	Bt,H,Oe	E/C	0/8	ES,BT,SH

GALLIFORM CONSERVATION ASSESSMENT

FIRST REVIEW DRAFT

20 November 1994

Report from the workshop held
1-3 February 1993

Edited by
Philip J. McGowan, John Carroll, and Susie Ellis

SECTION 3

TAXON DATA SHEETS FOR ALL TAXA

TAXON REPORT

SPECIES: WATTLED BRUSH-TURKEY *Aepypodius arfakianus misoliensis*

STATUS:
Mace-Lande: ?VULNERABLE
CITES: Not listed

Taxonomic status: Subspecies of *Aepypodius arfakianus.*

Distribution: Misol Is. (New Guinea), where it is probably restricted to higher altitudes; not in the coastal zone.

Wild population: 100-10,000 but this is an uncertain figure.

Field studies: No fieldwork conducted so far.

Threats: Logging is occurring on the island which may threaten the species in the future. It is felt that this species should be categorized as vulnerable due to the small population size and the possible threat imposed by logging. The small population size is consequence of the restricted range of the species.

Comments: None.

Recommendations:
Wild management: Not indicated at this time
Research: Remote sensing - to determine the extent of habitat degradation.
PHVA: No

Captive population: There is a small captive population of less than 50 specimens which derive, largely, from a single pair which were kept in Walsrode Bird Garden.

Captive program recommendation: Due to the uncertain status of the wild population it would be prudent to assess the status of the captive population pedigree and consider establishing a management plan to ensure the long term viability of the species
in captivity.

TAXON REPORT

SPECIES: BRUIJN'S BRUSH-TURKEY *Aepypodius bruijnii*

STATUS:
Mace-Lande: ?ENDANGERED
CITES: Not listed

Taxonomic status: Monotypic species.

Distribution: Waigeo Is. (New Guinea) where it inhabits hill forest.

Wild population: No observations of live birds have been made. No field research to base population estimate on but based on available habitat population may number 100-2,500 specimens. The species is probably secure as the terrain prevents logging on any scale. Presumably would be vulnerable to introduced predators or feral dogs, but the extent of this threat on Waigeo is not known.

Field studies: No field studies conducted so far.

Threats: No obvious threats but possibly hunting and egg collecting by indigenous people.

Comments: Considered endangered due to the limited extent of its habitat. This species is only known from 14 specimens collected at the end of the last century and one in 1938. A survey is urgently needed to determine the current status of this species. A large reserve already exists on Waigeo (Cagar Alam Waigeo Barat) which comprises almost half the island, however, the degree of protection provided by the reserve is unknown. It is suggested that any survey include Batanta Is. as there is a recent report of a 'large' megapode from this island. A Restricted Range Species, occurring in EBA E26 which is the West Papuan Islands and Vogelkop lowlands and is a Priority II EBA.

Recommendations:
Wild management: Habitat protection.
Research: Field survey.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: RED-BILLED TALEGALLA *Talegalla cuvieri*

STATUS:
Mace-Lande: ?VULNERABLE
CITES: Not listed

Taxonomic status: Polytypic; two subspecies (Jones et al. in press).

Distribution: New Guinea and the islands of Salawati and Misol, where it inhabits lowland and hill forest. Range overlaps with *T. fuscirostris* (which extends west to the Utakwa river) in west Irian Jaya; segregation is probably altitudinal.

Wild population: The amount of available habitat would appear to indicate a population of 1,000-100,000, but this estimate is not reliable. It is unknown whether the current population is stable or declining.

Field studies: No field studies conducted so far.

Threats: Logging could threaten this species through loss or degradation of habitat. There may also be a threat from hunting and egg collecting.

Comments: Considered vulnerable due to the presence of logging. A Restricted Range Species, occurring in EBA E26 which is the West Papuan islands and Vogelkop lowlands and is a Priority II EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Remote sensing to determine the extent of available habitat.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: MALLEEFOWL *Leipoa ocellata*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed
Other: RAOU/ANPWS: Vulnerable

Taxonomic status: Monotypic. DNA studies of disjunct populations currently underway.

Distribution: Southern mainland Australia.

Wild population: Population based on recent census of large parts of species current distribution is approx. 1,000-10,000 individuals. Population is declining.

Field studies: The following are in progress; i) monitoring of population trends in Victoria, South Australia and New South Wales; ii) monitoring of population demography in New South Wales; iii) assessment of diet and potential resources; and iv) development of rapid broad-scale survey techniques.

Threats: Threats from predators (Red fox), loss of habitat to agriculture and degradation of habitat by stock and feral herbivores, particularly goats and herbivores. Fires are also a major problem rendering habitat unsuitable for many years.

Comments: Several pairs introduced over a number of years on Kangaroo Is. but species now extinct on this island. National recovery plan currently being prepared by the Australian National Parks and Wildlife Service (ANPWS).

Recommendations:
Wild management: Predator and fire control as well as habitat management.
Research: Monitor population trends and demography. Develop broad-scale survey technique. Determine habitat requirements and optimal habitat.
PHVA: No
Other: Reintroduce captive-bred animals into areas managed specifically against foxes.

Captive population: Only in Australia, in a number of zoos. Breeding is successful with a reintroduction already underway. ISIS records no individuals and the WPA-International census, 33.

Captive program recommendation: See above.

TAXON REPORT

SPECIES: MALEO *Macrocephalon maleo*
STATUS:
Mace-Lande: VULNERABLE/ENDANGERED
CITES: Appendix I

Taxonomic status: A monotypic species.

Distribution: Occurs on Sulawesi (including Lembeh) where it has been recorded from the northern, eastern and south-eastern peninsulas and central Sulawesi. Not known from the south-western peninsula (may or may not have occurred formerly). Buton is believed to hold a population based on villager's statements and the sale of eggs in local markets. Inhabits forest up to 1200m and comes down to sea-level in the breeding season. It is dependent on volcanically heated soils and sun exposed beaches for incubation. Much of the coastline of Sulawesi seems suitable for Maleo nesting sites.

Wild population: A total of 85 nesting grounds are known (48 coastal and 37 inland), including 22 sites now abandoned (19 coastal and 3 inland). Of the remaining 63 there are no data available for 12 sites while 51 are still in use, though all but a couple are severely threatened. Population estimates in 1978 were 5-10,000 (MacKinnon, 1978) though this figure was based on an annual egg production of 30 eggs per bird; productivity is now known to be 8 - 12 eggs per bird.

Field studies: Dekker (1985/6) has assessed the distribution and status of nesting grounds on Sulawesi (Phase I) and Argeloo (Phase II) has researched the species' ecology with the end goal of sustainable exploitation of Maleo nesting grounds in Dumoga-Bone. This was collaborative work between ICBP/WWF and the Indonesian PHPA.

Threats: Habitat destruction and egg harvesting. Forest destruction reduces the available habitat and also isolates remaining forest from nesting grounds. This is believed to be the cause of the high incidence of abandonment of coastal nesting grounds noted above. Egg collection can eliminate local populations, though local and long established villages can harvest sustainably. Coastal human populations are higher and more volatile making sustainable harvesting much more difficult to achieve. Village dogs harry and kill Maleo at egg-laying grounds.

Comments: The species is a symbol of the Indonesian fauna (e.g., it graces the cover of the journal of the Indonesian Ornithological Society Kukila). The sustainable use of eggs is of economic importance and visiting the nesting grounds is a tourist attraction. A Restricted Range Species, occurring in EBA E21 which is the Sulawesi lowlands and is a Priority II EBA.

Recommendations:

Wild management: Phase III of the project has yet to be worked out.
Research: Not indicated at this time
PHVA: No

Captive population: NYZS have 8 individuals. Most effort has gone into semi-captive breeding in which communal nesting sites are protected and monitored; such programs operate at volcanic sand sites in Dumoga-Bone National Park. ISIS records 6 individuals and the WPA-International census, 0.

Captive program recommendation: None.

TAXON REPORT

SPECIES: MOLUCCAN MEGAPODE *Eulipoa wallacei*

STATUS:
Mace-Lande: CRITICAL/ENDANGERED
CITES: Not listed

Taxonomic status: Monotypic.

Distribution: North and central Moluccan Islands and Misol Is., where it inhabits forest, probably hill and mountain forest though its altitudinal distribution is not known. The forest habitat and nocturnal behavior of the species make it difficult to detect and this may be responsible for the small number records.

Wild population: Census of a recently discovered nesting site and data from other localities indicate a population of approx. 10,000 individuals. Population appears to be declining. Recent discovery of an egg-laying site on Haruku provides the first quantitative data. Based on the assumption that one female lays 10 eggs per year and that the communal site on Haruku, composed of four sub-sites and totalling about 1.5ha., produces 40,000 - 50,000 eggs per year, there may be 4 - 5,000 pairs using this site. 100 - 200 birds visit each night, whereas only 10 - 20 birds visit a second site at Amahai on Seram each night.

Field studies: Project planned for late 1993-4 based on results of surveys conducted in 1991/2. This will include monitoring of the nesting ground, surveys of other sites (from old literature sources) and research.

Threats: Loss of habitat. Main nesting site is highly susceptible to disturbance and the loss of this site could result in the extinction of this species. Concentration of birds drawn to specific egg-laying sites (especially if hereditary and birds persist in visiting same site whatever its condition) from large areas of forest puts local populations at great risk.

Comments: Due to the vulnerability of the single nesting site which may offer nesting facilities to the majority of the remaining population of birds this species is considered to be in serious threat of extinction. The Mace-Lande criteria are difficult to apply to this species as the population is reasonably large but is likely to be dependent mainly on a single nesting site. Other nesting sites are known to exist but the status of these sites is unknown. It is strongly suggested that these sites are assessed and any viable nesting sites should then be protected and predator control implemented where necessary. A Restricted Range Species (as *Megapodius wallacei),* occurring in EBAs E23, E24, E25 and E26 which are Buru (Priority I), Seram (Priority I), North Moluccas (Priority I) and West Papuan Islands and Vogelkop lowlands (Priority II) respectively.

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Recommendations:

Wild management: Ensure long term protection of nesting site. Upgrade and protect other nesting grounds elsewhere (e.g., on Buru or Seram).

Research: Attempt to identify nesting sites on other islands and determine the numbers of individuals using these.

PHVA: No

Captive population: 1 individual (Jakarta).

Captive program recommendation: None.

TAXON REPORT

SPECIES: POLYNESIAN MEGAPODE OR MALAU *Megapodius pritchardii*

STATUS:
Mace-Lande: ENDANGERED
CITES: Not listed

Taxonomic status: Monotypic.

Distribution: Niuafo'ou (N. Tonga), where it inhabits forested slopes and uses volcanically heated sand for incubation.

Wild population: 400 - 800. Total number in pre-human times was, presumably, much higher on Niuafo'ou as well as occurring on other Tongan islands.

Field studies: The following are currently underway; i) research and conservation by Dr. Dieter Rinke (Brehm Fund South Sea Expedition) and students (Goth and Vogel) from the Ruhr Universitat Brochum (October 1991 - April 1993).

Threats: Collection of eggs for food and predation by introduced (feral) cats. Threat from development of the island as an oil storage terminal (resulting in large scale habitat loss) no longer considered.

Comments: Translocation ongoing - two transfers of eggs to Late island in 1992, further transfers of chicks and/or eggs to Late and Fonualei in 1993/4. A Restricted Range Species, occurring in EBA f16 which is not a highlighted EBA.

Recommendations:
Wild management: Translocation program has just been initiated. A long-term, conservative, translocation and monitoring program seems necessary but results from the ongoing project are awaited. An education program is required and has been initiated. Both translocation and education should be continued and expanded.
Research: Intensive research on behavior and ecology has already started. Monitoring on Niuafo'ou, Late and Fonualei should be started.
PHVA: No

Captive population: Four adults in the Brehm Fund bird station on Tongatapu. ISIS records 2 individuals and the WPA-International census, 0.

Captive program recommendation: None.

TAXON REPORT

SPECIES: MICRONESIAN MEGAPODE *Megapodius laperouse laperouse*
STATUS:
Mace-Lande: ENDANGERED
CITES: Not listed

Taxonomic status: One of two subspecies. The other subspecies *M. l. senex* is found on Palau Is.

Distribution: Found on nine of the largely uninhabited northern islands of the Mariana chain (including Guguan, Uracas, Pagan), four of which have been declared wildlife sanctuaries. Rare or extinct in the five southern coral islands (Guam, Rota, Saipan, Tinian and Aguiguan), where it has possibly been introduced and extirpated. Incubation pits are only recorded from black sand and volcanic cinder in the northern islands, which are of volcanic origin.

Wild population: Population survey indicates 1,000-2,500. This is based on surveys carried out on all islands but some of this information was qualitative rather than quantitative. The population appears to be stable, but the populations are not evenly distributed across all islands. This is possibly due to the lack of suitable nesting sights on some islands.

Field studies: All islands have been surveyed for this species.

Threats: No apparent threats, although on the more densely populated southern Marianas poaching may be a problem.

Comments: Reintroduced on Saipan possibly by local people to provide eggs for food. At present the population is comprised of <25 individuals. A reintroduction program has been proposed for the species by an American team. It is suggested, however, that more research into the reproductive biology of the species be conducted and that the causes of extinction on these islands be identified before birds are reintroduced. The species is a Restricted Range Species and this subspecies occurs in EBA F01, the Mariana Islands which is a Priority I EBA.

Recommendations:
Wild management: Continuation of survey and monitoring by US Fish and Wildlife Service.
Research: Not indicated at this time
PHVA: No

Captive population: None.
Captive program recommendation: None.

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TAXON REPORT

SPECIES: MICRONESIAN MEGAPODE *Megapodius laperouse senex*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: One of two subspecies. The other subspecies is found on Mariana Is.

Distribution: Palau Islands, where it is common on the coral islands south of Koror, Arakabesan and Badeboab. In the Ngerukewid Islands Preserve megapodes were found on nine islands, each of which was larger than 2ha. Incubation mounds are built along beaches and are constructed of sand. Inland mounds made of leaf litter have also been recorded. Each mound is used by 10 - 15 birds.

Wild population: Population is distributed over a large number of very small islands and is estimated at 1,000-10,000 individuals. Population is probably stable. Estimates of population are 69 - 103 birds per sq. km. which gives a total population of 50 - 80 birds in the Ngerukewid Islands Preserve. In the Kmekumer Islands, the four largest islands carry 7 - 15 birds.

Field studies: A survey was conducted in the 1980s.

Threats: None known. The concentration of egg-laying in communal mounds presumably means that the introduction of predators would be catastrophic, given the absence of mound-building megapodes on carnivore inhabited islands elsewhere.

Comments: Due to the species distribution over very small islands it is thought to be vulnerable. The species is a Restricted Range Species and this subspecies occurs in EBA F03, the Palau Islands which is a Priority II EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Monitoring.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: NICOBAR MEGAPODE *Megapodius nicobariensis nicobariensis*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: One of two subspecies, the other is *M.n. abbotti.*

Distribution: North and middle Nicobar Islands (north of the Sombrero channel), where it inhabits forest.

Wild population: Little is known of this subspecies. Indirect evidence (i.e., assuming the same density of mounds as found on Great Nicobar for *M.n. abbotti)* suggests a population estimate of 100-10,000. The condition of the north and middle Nicobar islands is not known.

Field studies: None so far.

Threats: Not known, but deforestation of the islands (with an increasing human population) and introduced predators (cats and dogs) are potential dangers. Predation of eggs by local people and animals (e.g., the Monitor lizard *Varanus salvator)* occurs on a local and small scale and probably does not have a great impact on the megapode population.

Comments: Reports from early this century mention megapodes (this species, possibly this subspecies) on islands north of the Nicobars; on Little Andaman in the Andaman group and even Coco Island in the Birma chain in the far north of the Andaman and Nicobar archipelago. A Restricted Range Species, occurring in EBA D18, which is the Nicobar Islands and is a Priority II EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Survey of this species is needed to clarify its status.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: NICOBAR MEGAPODE *Megapodius nicobariensis abbotti*
STATUS:
Mace-Lande: SECURE/VULNERABLE
CITES: Not listed

Taxonomic status: One of two subspecies, this occurs on the southernmost islands in the Nicobar group. It builds mounds inland, but the density is highest close to the shoreline. Each mound is used, on average, by two pairs.

Distribution: Southernmost islands of the Nicobar chain; Great and Little Nicobar plus satellite islands.

Wild population: Dekker surveyed 26km of coastline on Great Nicobar in 1992 and found 1.6 active mounds per km. It is estimated that there is about 250km of forested shoreline that is suitable for megapode mounds, which may suggest 800 pairs breeding along the coastline in one month. Extrapolating further, this may indicate a total population of at least 2,000 birds (bearing in mind that juveniles as well as birds laying away from the coast and in other months will not have been surveyed). Population was thought to be declining but on Great Nicobar it appears to be stable. The status on Little Nicobar is not known. Total population estimated at 2,000 - 8,000 birds.

Field studies: Partial survey of Great Nicobar conducted by Dekker (1992). Research by the Salim Ali Institute of Conservation and Ornithology (SACON) is ongoing.

Threats: Introduced predators (cats) but the extent of this problem is unknown.

Comments: Great Nicobar is approximately 2,100 sq. km. and two reserves are being established: Campbell Bay covering the entire northern tip of the island encompasses 426 sq. km. and Galathea in the central part of the island covers 110 sq. km. A Restricted Range Species, occurring in EBA D18, which is the Nicobar Islands and is a Priority II EBA.

Recommendations:
Wild management: Attempt to eliminate introduced predators (cats).
Research: Not indicated at this time
PHVA: No

Captive population: None.
Captive program recommendation: Because of the establishment of the two national parks on Great Nicobar and the subsequent protection of the habitat, semi-captive breeding is not recommended.

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TAXON REPORT

SPECIES: PHILIPPINE MEGAPODE *Megapodius cumingii*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: A polytypic species, comprising 7 subspecies

Distribution: Occurs on Sulawesi, N. Borneo and Philippines and the range includes many small islands. Most of the subspecies are endemic to islands in the Philippines.

Wild population: Extent of the population is unknown but it has been conservatively estimated at 10,000-100,000. On Sulawesi the species is widespread. Islands north of Borneo densities of approx 200/km have been suggested. Locally common on Palawan (1981). Species is rare on a number of islands in the Philippines. At present population appears to be declining.

Field studies: The only known research on this species is some work carried out on Pulau Tiga, a small island off N Borneo, in 1984-85.

Threats: Introduced predators, hunting and egg collection, habitat degradation.

Comments: The species as a whole appears secure but some of the endemic island subspecies are probably vulnerable. Populations on the Philippine islands appear to be most threatened due to expanding human population (pirates & squatters).

Recommendations:
Wild management: Establish new protected areas and ensure maintenance of current protected areas.
Research: Survey islands containing the Philippine subspecies.
PHVA: No
Other: Initiate an education program.

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: SULA MEGAPODE *Megapodius bernsteinii*
STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: Monotypic
Distribution: Occurs on Sula and Banggai Islands, where it inhabits a variety of forest types including primary lowland and dry coastal scrub up to 450m. Recorded from seven of eight islands in the Banggai group in 1991. Locally common in secondary lowland and coastal forest on Taliabu in the Sula group during 1991 but not found in primary montane forest.

Wild population: Two recent surveys suggest that the population is locally common throughout the islands but numbers are unknown. A population of around 10,000 birds seems a realistic estimate.

Field studies: Two surveys in 1991 on Taliabu (University of East Anglia [UK] Taliabu Expedition) and Banggai islands (Indrawan, 1992).

Threats: Destruction of habitat is probably the most serious threat, given that the species seems to have an upper altitude limit that is fairly low. On Sanana (in the Sula group) there is a road running along the east coast and all forest has been logged or cleared for cultivation. Birds are caught with baited hooks on Mangole (in the Sula group); five reported in a single day at one timber camp. On Taliabu, snares are set, but villagers reputedly keep only fully grown birds for consumption. Hunting and egg collecting, predation by cats (introduced) and habitat degradation (logging).

Comments: Species appears to be able to adapt to degraded habitat but it is unknown to what extent. Andrew suggests that in logged or secondary forest the carrying capacity might be low and mounds may be more exposed to predators and birds more easily trapped than in undisturbed habitats. A survey has recently been carried out on Taliabu and a protected area proposed based on its findings. In the Banggai group, the Cagar Alam Perairan Pulau Peleng (proposed) includes the small islands of Labobo and Bangkulo; no reserves are currently proposed on the main islands of Banggai or Peleng. A Restricted Range Species, occurring in EBA E22, which is Banggai and Sula Islands and is a Priority I EBA.

Recommendations:
Wild management: Designate protected areas, predator control.
Research: Not indicated at this time
PHVA: No
Captive population: None.
Captive program recommendation: None.

TAXON REPORT

SPECIES: TANIMBAR MEGAPODE *Megapodius tenimberensis*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: A monotypic species, which was formerly considered a subspecies of *M. reinwardt.*

Distribution: Tanimbar Island (very restricted range).

Wild population: Has restricted range but during a recent survey it was seen regularly along trails. The population is estimated at 1,000 - 10,000 and may be declining.

Field studies: None so far.

Threats: Predation by introduced predators, hunting, egg collection and habitat degradation by humans.

Comments: A proposed nature reserve covers approximately half of the island and may or may not presently exist. The current status of this reserve needs clarification. A survey within the proposed nature reserve as well as on some of the surrounding small islands is needed. Split from *M. reinwardt* since the Biodiveristy Project was completed. It does, however, have a restricted range and occurs in EBA E18, which is Tanimbar and associated islands and is a Priority I EBA.

Recommendations:
Wild management: Establishment of protected area (clarify legal status of proposed reserve).
Research: A baseline survey is needed.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: BIAK MEGAPODE *Megapodius geelvinkianus*

STATUS:
Mace-Lande: ENDANGERED
CITES: Not listed

Taxonomic status: Monotypic, formerly considered a subspecies of *M. freycinet.*

Distribution: Geelvink Bay Islands off northern New Guinea.

Wild population: Only occurs on the smaller islands in this group. Population stable or declining. The population size is estimated at less than 5,000.

Field studies: None so far.

Threats: Habitat degradation, predation by introduced species and hunting and egg collection.

Comments: Larger islands in this group are heavily deforested or degraded and the species has been relegated to small islands. A survey of the populations on these smaller islands needs to be undertaken and a suitable site for the establishment of a protected area(s) identified. Split from M. freycinet since the Biodiveristy Project was completed. It does, however, have a restricted range and occurs in EBA E28, which is Geelvink Bay islands and is a Priority I EBA.

Recommendations:
Wild management: Establishment of protected areas.
Research: A poorly known species which needs baseline survey work.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: VANUATU MEGAPODE *Megapodius layardi*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: Monotypic.

Distribution: Vanuatu, where its ecological distribution is unknown.

Wild population: Reported as widespread and common in 1977. Population is probably stable and currently estimated at about 10,000 from extent of habitat and anecdotal information.

Field studies: None so far.

Threats: Over-exploitation for food, habitat degradation, introduced predators.

Comments: A Restricted Range Species, occurring in EBA F13, which is the Solomon Islands and is a Priority I EBA.

Recommendations:
Wild management: A protected area should be established.
Research: Baseline survey needed.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: CASPIAN SNOWCOCK *Tetraogallus caspius*

STATUS:
Mace-Lande: VULNERABLE
CITES:

Taxonomic status: One of five species in the genus, this species has three subspecies *T.c. tauricus, T.c. caspius, T.c. semenowtianschankii.* Taxonomy not disputed.

Distribution: Transcaucasia. *T.c. caspius* is known from N. Iran and Turkmenia, *T.c. tauricus* from Turkey and the Transcaucasus and *T.c. semenowtianschankii* from W. Iran. Inhabits mountain slopes from 2400/2500m up to the tops of ridges.

Wild population: The transcaucasus - (Armenia and Azerbaijan) has eleven populations totalling less than 850 individuals in 1978; Turkmenia - 350 in 1986; in Turkey it is found in scattered high mountains where its status is uncertain, but it may be locally numerous; the ICBP dispersed species project estimated 200-2000 individuals; NW Iran - 7,000 - 8,000, giving a total of 8550 - 11310. Strong decline within Armenia, Azerbaijan and Turkmenia at least. Based on the known range and abundance in some areas, the population is estimated at 5000-15,000.

Field studies: Population estimates by Roald Potapov.

Threats: Overgrazing.

Comments: Protected areas - found in the Kafar and Dilijan Reservations in Armenia and Kopetdag Reservation in Turkmenia. Seems to be poorly known.

Recommendations:
Wild management: Habitat protection is needed.
Research: Extensive survey aiming to locate strong populations in Iran and Turkey and assess threats and protected area status.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: VERREAUX'S MONAL PARTRIDGE *Tetraophasis obscurus*

STATUS:
Mace-Lande: Unknown (Insufficient information).
CITES: Not listed

Taxonomic status: Unclear. This species may be conspecific with *T. schenyii.* Cheng Tso-hsin regarded them as conspecific. There are no subspecies.

Distribution: W. China, where they are found between 3000 and 4100m in upper coniferous forest, rhododendron shrubs and alpine meadow. There are 13 localities in Qinghai, Gansu and Sichuan.

Wild population: Still quite common but declining slightly.

Field studies: None so far.

Threats: Habitat degradation.

Comments: Almost nothing known about this species.

Recommendations:
Wild management: Not indicated at this time
Research: Baseline survey needed.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: SZECHENYI'S MONAL PARTRIDGE *Tetraophasis szechenyii*

STATUS:
Mace-Lande: Unknown (Insufficient information).
CITES: Not listed

Taxonomic status: Unclear. This species may be conspecific with *T. obscurus.* Cheng Tso-hsin regarded them as conspecific. There are no subspecies.

Distribution: N.E. India (limited); widespread in high forest at altitude in W China, where it is found between 3000 and 4300m in upper coniferous forest and rhododendron shrubs. There are 14 localities in Qinghai, Xizang (Tibet), Sichuan and Yunnan.

Wild population: Apparently widely distributed, but may be very fragmented because of topography in known range.

Field studies: None so far.

Threats: Not known.

Comments: Almost nothing known about this species.

Recommendations:
Wild management: Not indicated at this time
Research: Survey needed.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: SRI LANKAN PAINTED FRANCOLIN *Francolinus pictus watsoni*

STATUS:
Mace-Lande: ?VULNERABLE
CITES: Not listed

Taxonomic status: One of two subspecies, this one occurring in Sri Lanka.

Distribution: Sri Lanka, restricted to the East.

Wild population: Reported as 'rare' and declining in Johnsgard (1988).

Field studies: None so far.

Threats: Hunting for food & habitat destruction.

Comments: Dr. Kotagama is the ICBP representative in Sri Lanka.

Recommendations:
Wild management: Not indicated at this time
Research: Survey needed.
PHVA: No

Captive population: None

Captive program recommendation: None.

TAXON REPORT

SPECIES: SWAMP FRANCOLIN *Francolinus gularis*
STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: Monotypic.
Distribution: North India, Bangladesh and Nepal. Terai grassland (tall grasses and swamps from 50 - 200m). Highly fragmented due to specific habitat requirements. Reported from 12 localities in northern India and three in Nepal where there is now little suitable habitat.

Wild population: Locally common, 1,000 - 10,000 in total. Definitely declining outside protected areas due to habitat destruction. Known to use sugar cane plantations around marshes adjacent to its natural habitats.

Field studies: Recent surveys in part of the species' range in India by S. Javed and A.R. Rahmani and by R. Kaul and R. Kalsi. Ongoing studies in and around Dudhwa National Park (S. Javed & A. R. Rahmani). Observations in Nepal - Kosi Barrage, Nepal (T. K Shrestha). Feasibility of intensive study assessed (S. Javed, A. R. Rahmani and P.J.K. McGowan) and project proposed.

Threats: Habitat destruction from development of plantations. Likely to be subjected to pesticides from run-off.

Comments: Protected areas - currently known from 12 protected areas in India (Wildlife Reserves, Reserve Forests, and National Parks), ranging in area from 11 sq. km. to 614 sq. km. although the extent of utilized habitat within these areas is unknown. Restricted to grasslands around marshes which are interspersed among extensive tracts of Sal Shorea woodland. Dependent upon protected areas where management is focussed on habitat management for ungulates. In Nepal, recently recorded at Royal Sukla Phanta and Kosi Tappu Wildlife Reserves and Royal Bardia National Park.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive quantitative survey to assess distribution within and without protected areas, to investigate use of sugar cane plantations by the swamp francolin and propose management in protected areas.
PHVA: No
Captive population: The species does appear in markets in Lucknow from time to time and is a popular pet in some parts of India. ISIS records 0 individuals and the WPA-International census, 2.
Captive program recommendation: None.

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TAXON REPORT

SPECIES: SCHLEGEL'S FRANCOLIN *Francolinus schlegelii*

STATUS:
Mace-Lande: Unknown (Insufficient information).
CITES: Not listed

Taxonomic status: Forms a superspecies with *F. coqui* and *F. albogularis.*

Distribution: Endemic resident from the Adamawa Plateau in west-central Cameroon through north Central African Republic and southern Chad to south-western Sudan. Occurs in well grassed wooded savannahs in close association with 'Ka' tree Isoberinia doka.

Wild population: No surveys conducted, but generally regarded as uncommon to rare and local.

Field studies: None so far.

Threats: Not known.

Comments: A very poorly known species.

Recommendations:
Wild management: Not indicated at this time
Research: Not indicated at this time
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: GREY-STRIPED FRANCOLIN *Francolinus griseostriatus*

STATUS:
Mace-Lande: Unknown (Insufficient information).
CITES: Not listed

Taxonomic status: Monotypic. Forms a superspecies with *F. squamatus* and *F. ahatensis.*

Distribution: W. Angola.

Wild population: Not seen since 1954.

Field studies: Only as quoted by Urban et al. *Birds of Africa Vol II* (1986).

Threats: None described due to lack of information, but possibly forest destruction. Range in war zone.

Comments: Status unknown, not recorded since 1954. Needs urgent emergency strategy. Is it present in any protected areas? A Restricted Range Species, occurring in EBA C08 which is Angola and is a Priority II EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive survey to assess status and recommend actions.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: NAHAN'S FOREST FRANCOLIN *Francolinus nahani*

STATUS:
Mace-Lande: Unknown (Insufficient information)
CITES: Not listed

Taxonomic status: Monotypic.

Distribution: Endemic resident in NE Zaire (between Aruwimi, Nepoko and Semliki Rivers) and W and S Uganda (Budongo, Bugoma and Mabira Forests) where it is locally distributed and rare. Inhabits forest from 1000 - 1400m.

Wild population: Presumed declining from loss of habitat. Very poorly known with little recent information.

Field studies: None. Only what is reported in Urban et al (1986).

Threats: Loss of tree cover for timber production and over-exploitation for food are possible threats.

Comments: Protected areas - present in Bugoma Forest Reserve (365 sq. km.), Kibale Forest Reserve (560 sq. km.) and Mabira Forest Reserves (306 sq. km.). Also, the population in the Semliki Valley is within the Virunga National Park and would be best protected if the Park were to be extended to include the E. Ituri Forest.

Recommendations:
Wild management: Possible inclusion of Ituri as a protected area.
Research: Extensive survey to assess status in Uganda - Bugoma, (Kibale?), Mabira and Zaire (?).
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: MOROCCAN DOUBLE-SPURRED FRANCOLIN
Francolinus bicalcaratus ayesha

STATUS:
Mace-Lande: ENDANGERED
CITES: Not listed

Taxonomic status: One of two accepted subspecies.

Distribution: Morocco, where it is found in cork-oak forests.

Wild population: Only one known and one possible location - Sidi Bettache and Moulay Bouazza respectively. No more than a few hundred in 1988 the population is believed to have increased in numbers between 1982 and 1988. Current status unknown.

Field studies: Only that reported in Cramp and Simmons (1980) and also by de la Perche (1992).

Threats: Habitat degradation and over-exploitation for food.

Comments: Protected areas - Sidi Bettache

Recommendations:
Wild management: Not indicated at this time
Research: Clarify taxonomic status. Research to identify habitat requirements and management options plus continued population monitoring. Survey of other possible areas for protection.
PHVA: No

Captive population: A few in captivity in Morocco where successful captive breeding was achieved in 1989. ISIS and the WPA-International census do not record any birds.

Captive program recommendation: None.

TAXON REPORT

SPECIES: CAMEROON MOUNTAIN FRANCOLIN *Francolinus camerunensis*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: Monotypic. With *F. swierstrai* comprises a superspecies.

Distribution: Restricted to 200 sq. km. on SE slopes of Mount Cameroon, where it inhabits primary and secondary montane forest between 850 and 2100m.

Wild population: Density of perhaps 10 birds per sq. km and said to be locally common. No evidence of a marked population decline.

Field studies: None known.

Threats: Risk of volcanic destruction of habitat in small range. Possibly over-harvested for food?

Comments: Protected areas - Mount Cameroon is protected. A Restricted Range Species, occurring in EBA C04 which is the Cameroon mountains and is a Priority I EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive survey to diagnose requirements and possible methods for habitat protection.
PHVA: No

Captive population: ISIS and the WPA-International census do not record any birds.

Captive program recommendation: None.

TAXON REPORT

SPECIES: SWIERSTRA'S FRANCOLIN *Francolinus swierstrai*

STATUS:
Mace-Lande: VULNERABLE
CITES: Appendix II

Taxonomic status: Monotypic. With *F. camerunensis* comprises a superspecies.

Distribution: C. Angola, where it is an endemic resident in the woodlands and forests of the highlands, especially where there are thick clumps in gullies and on cliffs. Probably restricted to a few relict patches of forest a few square kms. in extent.

Wild population: Small range and apparently rare within it. A few remnant forest blocks still persist on, for example, Mt. Moco and Mt. Sogue. Probably declining in view of habitat destruction.

Field studies: None known.

Threats: Forest destruction.

Comments: Some conservation underway (Urban et al. *Birds of Africa Vol II* 1986), but no details. A Restricted Range Species, occurring in EBA C08, which is Angola and is a Priority II EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive survey to identify status, threats and actions for habitat protection.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: DJIBOUTI FRANCOLIN *Francolinus ochropectus*

STATUS:
Mace-Lande: ENDANGERED
CITES: Appendix II

Taxonomic status: Monotypic. Forms a superspecies with *F. erckelli, F. castaneicollis, F. jacksoni* and *F. nobilis.*

Distribution: Very limited range in the Foret du Day in the Goda Mountains and in the Mabla Mountains of Djibouti. 3,500ha of habitat is known at two sites and there is a slender possibility of it occurring elsewhere. Found in primary and secondary forest (mainly *Juniperus procera, Buxus hildebrandtii, Ficus sp., Acacia seyal* and *Acacia etbaica)* areas above 700m.

Wild population: Less than 1000 birds, though possibly 5000 in 1986 (Urban et al. *Birds of Africa Vol II* 1986), so decline inferred. Its main site is the Foret du Day which is now about 1400 -1500ha. in extent. The amount of available habitat was halved between 1977 and 1983.

Field studies: Surveys by Geoff and Hilary Welch in 1984.

Threats: Habitat degradation from grazing and collection of firewood; over-exploitation (eggs and some birds are taken for food, but the extent of this is unknown). Range in war zone.

Comments: Protected areas - Foret du Day National Park (~100 sq. km.). A Restricted Range Species, occurring in EBA c18 which is not a highlighted EBA.

Recommendations:
Wild management: Mabla Mountain PA required with appropriate management arrangements, education etc. and strengthen Foret du Day.
Research: Extensive survey of known and possible range for exact numbers. Research into ecological requirements to guide management strategies.
PHVA: Yes

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: LONG-BILLED PARTRIDGE *Rhizothera longirostris*

STATUS:
Mace-Lande: VULNERABLE
CITES: Appendix III (Malaysia)

Taxonomic status: Monotypic genus. Species comprises two subspecies *R. l. longirostris* and *R.l. dulitensis* which are treated together here.

Distribution: Thailand, Burma (?), Malaysia and Indonesia (Sumatra and Kalimantan). In Thailand it may be limited to the lowlands and foothills of peninsular Thailand, where the mountains are very steep, but it is presumed to ascend higher than this at Kaeng Krachen in SW Thailand. It is found in primary lowland, hill dipterocarp and upper dipterocarp forest in Malaysia from near sea level to 1500m. In Indonesia it occurs in forest from sea level to 1000m including high level tea estates on Sumatra and favoring limestone in Kalimantan.

Wild population: No recent record from any protected area in Thailand (population estimate for the country is in the low hundreds, but it may be extinct), known from several sites in Malaysia (East and Peninsular) and recently confirmed in Gunung Leuser on Sumatra, Indonesia (a report from Ulu Barito was not re-confirmed by survey, although calling is very sporadic; it may call for one or two days and then not for months at one site). Most historical sites in Kalimantan are now largely deforested (this is probably also true for Sumatra and the peninsula). Montane habitats (the species does occur in lower montane forest, but the bulk of its range is in lowland forest) are widespread on Sumatra and in Peninsular Malaysia where the species is sparsely distributed. Presumed declining in Thailand (if it still occurs) and Malaysia, but may now be stable in Indonesia (i.e., most sites already lost). Based on habitat area and anecdotal information, it is estimated that there are over 1,000 individuals overall.

Field studies: Nothing specifically on this species.

Threats: Mainly loss and alteration of habitat; clear-felling of forest for timber, loss of forest to agriculture and habitat degradation. Some over-exploitation for food also occurs in Thailand and possibly Indonesia.

Comments: Protected areas - not recorded from any in Thailand, although it may occur in Kaeng Krachen National Park and Bung Kroeng Kavia Non Hunting Area. In Peninsular Malaysia it is known from Krau Wildlife Reserve (530 sq. km.), Taman Negara National Park (4343 sq. km.) and Fraser's Hill Wildlife Sanctuary (30 sq. km.) and also from Danum Valley Research Centre in Sabah, East Malaysia. Recently recorded in Gunung Leuser National Park (7927 sq. km.) on Sumatra, but no records from any protected areas in Kalimantan.

Recommendations:
Wild management: Habitat protection
Research: Surveys of protected areas in Thailand and elsewhere to determine existence and habitat limits.
PHVA: No

Captive population: ISIS and the WPA-International census do not record any birds, although it is believed that there may be fewer than ten in captivity.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: MADAGASCAR PARTRIDGE *Margaroperdix madagascarensis*
STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: A monotypic genus.

Distribution: Endemic to Madagascar where it is found in brushland in all but the driest areas of the island between sea level and 1700m. The brushland is mostly secondary throughout the island except in the subdesert. Introduced to Reunion.

Wild population: Apparently much declined since the 1930s (anecdotal evidence only) and could be decidedly scarce and more seriously reduced than appreciated. Was formerly common in the east and center regions of the island. Population estimate of 10,000-100,000 is based only on range and comments on abundance.

Field studies: None known.

Threats: Habitat degradation through the conversion of brushland to grassland caused by annual fires. Intensively hunted with dogs and caught using rice-baited snares.

Comments: Protected areas - does seem to be present in many protected areas. In two out of two National Parks (combined area 997 sq. km.), six out of eleven Reserve Naturelle Integrales (combined area 2,982 sq. km.) and five out of sixteen Reserve Speciales (combined area 287 sq. km.). Seven other Reserve Speciales have not been surveyed. Therefore, there is potentially 4,266 sq. km. of protected area in 13 blocks which may be suitable for the species. Also recorded in 8 out of 18 Sites of Biological Interest which were proposed as additions to the Protected Area network by Nicoll and Langrand in 1989.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive survey which should fit in with the Madagascar Atlas which is in progress (contact Olivier Langrand, WWF, Antanarivo). Research on the impact of subsistence hunting and whether steps can be taken to improve its management. It may be possible to investigate population changes associated with alteration of the brushland habitat. This may be a suitable M.Sc. project for a Malagasy student.
PHVA: No

Captive population: ISIS records 0 individuals and the WPA-International census, 80.
Captive programme recommendation: The captive population should be properly maintained.

TAXON REPORT

SPECIES: BLACK WOOD-PARTRIDGE *Melanoperdix nigra*
STATUS:
Mace-Lande: ?VULNERABLE
CITES: Appendix III (Malaysia)

Taxonomic status: Monotypic genus.

Distribution: Malaysia and Indonesia (Sumatra and Kalimantan). Occurs in primary lowland forest from sea level to an unknown upper altitude limit. In Indonesia found in extreme lowland forest including wetland both on Sumatra and in Kalimantan. At Ulu Barito in Central Kalimantan reported from 900m in lower montane forest, which is an odd record, given the species' occurrence in the extreme lowlands in the Peninsula. There do, however, seem to be several species which inhabit extreme lowland forest in the Peninsula but occur in hill forests on Borneo.

Wild population: Believed to be very sparsely distributed in Malaysia and probably also in Indonesia. Status is determined by change in habitat cover and so is presumably decreasing. Extreme lack of records makes a population estimate very difficult. Wetland/peat swamp forest is still widespread in Indonesia but even this is now becoming threatened. The Ulu Barito record extends the Bornean distribution to the lower hills.

Field studies: None known.

Threats: Habitat loss and alteration; clear-felling for timber, forest loss to agriculture and forest degradation.. Possibly over-hunted in Indonesia.

Comments: Protected areas - Known from Pasoh Forest Reserve (~26 sq.km.), Krau Wildlife Reserve (530 sq. km.) and Gunung Mulu National Park (528 sq. km.) in Malaysia and Berbak Wildlife Reserve (1900 sq. km.) on Sumatra and Tanjung Puting National Park 3050 sq. km.) and Gunung Palung Nature Reserve (300 sq. km.) in Kalimantan.

Recommendations:
Wild management: Habitat protection (in lowland forests especially) and establishment of status of the species in other Malaysian protected areas. Possibly further protected area designation.
Research: Survey to establish distribution in protected areas and examine seemingly very specific habitat requirements.
PHVA: No
Captive population: ISIS records 0 individuals and the WPA-International census, 4.
Captive programme recommendation: A concerted effort should be made to establish the localities of all birds in a captivity and a breeding programme started.

20 November 1994

TAXON REPORT

SPECIES: MANIPUR BUSH-QUAIL *Perdicula manipurensis*

STATUS:
Mace-Lande: ?ENDANGERED
CITES: Not listed

Taxonomic status: Two subspecies.

Distribution: Occurs in North-east India and possibly in Bangladesh inhabiting a very specific habitat - elephant grass etc.

Wild population: No reliable figures, but based on the very small range and highly fragmented habitat the species must be declining in numbers. There are now very few, if any, extensive areas of elephant grass left in Bangladesh. Whilst some of the areas in north-east Bangladesh might be suitable in the dry season they are under water for two-thirds of the year. Population size is unknown but estimated to be less than 10,000, possibly < 1,000.

Field studies: None known.

Threats: Habitat loss and hunting for food.

Comments: A Restricted Range Species, occurring in EBA D09 which is the Assam plains and is a Priority I EBA. Ramakantha in the Manipur Forest Dept. is a contact.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive survey (especially of former localities) to determine distribution and assess habitat requirements.
PHVA: No

Captive population: ISIS and the WPA-International census do not record any individuals.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: TAIWAN HILL PARTRIDGE *Arborophila crudigularis*

STATUS:
Mace-Lande: SECURE/VULNERABLE
CITES: Not listed

Taxonomic status: Monotypic

Distribution: Occurs in the central and other mountain ranges in Taiwan, where it inhabits the temperate primary broadleaf and possibly also the mixed forest between 1500 and 2000m.

Wild population: Used to be widespread at suitable elevations but there have been few records in recent years. The population is estimated at 5,000 - 10,000 and is declining outside Protected areas.

Field studies: None known.

Threats: Pesticides and loss of forest for timber production and agriculture.

Comments: Protected areas - present in Taroko (92,000 ha.), Hsueh-Ba (76,900 ha.) and Yushan (64,229 ha.) National Parks, Yu-Li (350 ha.), Chu-yun Shan (5848.7 ha.), Nanao Lake and Hardwood (460 ha.) and Tsuifeng Lake (25 ha.) Wildlife Nature Reserves. A Restricted Range Species, occurring in EBA D25 which is Taiwan and is a Priority II EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive survey is needed in view of the paucity of recent records. Status in protected areas especially needs assessing.
PHVA: No

Captive population: ISIS and the WPA-International census do not record any individuals, although it is suspected that there may be less than 10 in captivity.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: CHESTNUT-BREASTED PARTRIDGE *Arborophila mandellii*

STATUS:
Mace-Lande: ?VULNERABLE
CITES: Not listed

Taxonomic status: A monotypic species and most closely related to *A. gingica, A. rufogularis* and *A. javanica* - comprising one of the two-species groups in the Grey-breasted group of Arborophila (Davison, 1982).

Distribution: Ranges through East India and Bhutan, where it is believed to inhabit evergreen forest undergrowth at 350-2500m. The range is relatively small and the habitat has probably always been fragmented.

Wild population: No information.

Field studies: None known.

Threats: Forest cutting, slash & burn and hunting for food.

Comments: Very little known. A Restricted Range Species, occurring in EBA D08, which is the Eastern Himalaya and is a Priority I EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Survey needed.
PHVA: No

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: BAR-BACKED PARTRIDGE
Arborophila brunneopectus albigula & *henriki*

STATUS:
Mace-Lande: SECURE/VULNERABLE
CITES: As a species, Appendix III (Guatemala)

Taxonomic status: Two subspecies restricted to Vietnam, *A.b. henriki* probably also in S. China. The nominate subspecies is the only other subspecies and is regarded as secure.

Distribution: Occupies a restricted range in Vietnam and China; there is very little habitat in latter. *A.b. albigula* has recently been recorded at six sites on the Da Lat and Di Linh Plateaux (Eames et al., 1992).

Wild population: The population is probably quite large at present, but declining and becoming fragmented.

Field studies: Searched for recently during Vietnam Forest Surveys undertaken by ICBP and the Vietnam Forest Bird Working Group of Hanoi University (Jonathan Eames, Craig Robson and Nguyen Cu).

Threats: Habitat is becoming reduced and fragmented and the species is hunted for food.

Comments: Protected areas - no protected areas for *A.b. albigula*. *A.b. henriki* is recorded from Bach Ma National Park (18,900ha).

Recommendations:
Wild management: establish new protected areas.
Research: Extensive surveys in Vietnam, China.
PHVA: No

Captive population: ISIS records 0 individuals of the species and the WPA-International census, 26. The subspecfic affinity of these individuals is not known.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: SICHUAN HILL PARTRIDGE *Arborophila rufipectus*

STATUS:
Mace-Lande: ENDANGERED/CRITICAL
CITES: Not listed

Taxonomic status: A monotypic species which is included in one of the species groups contained within the Grey-breasted group of *Arborophila* along with *A. crudigularis, A. atrogularis, A. ardens* and *A. orientalis* (Davison, 1982).

Distribution: Sichuan, China. known from five localities within a small range, < 100 sq. km. Found in sub-tropical evergreen forest and woods usually below 2500m.

Wild population: Estimated at about 1,000 and declining.

Field studies: A WPA study has recently been conducted by He Fen-qi and is currently being written up.

Threats: Habitat loss and degradation and artificial re-planting is having a major effect.

Comments: Protected areas - not found in any. A Restricted Range Species, occurring in EBA D14 which is the South China forests and is a Priority II EBA.

Recommendations:
Wild management: A protected area is desperately needed.
Research: Existing sites need monitoring.
PHVA: No

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: BARE-THROATED HILL PARTRIDGE *Arborophila orientalis orientalis*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: This is the nominate subspecies and there are three other subspecies, which are treated separately. The species is included in one of the species groups contained within the Grey-breasted group of *Arborophila* along with *A. crudigularis, A. atrogularis, A. ardens* and *A. rufipectus* (Davison, 1982). Taxonomy above and below the species level needs clarifying.

Distribution: This subspecies has a very restricted range in the mountains of eastern Java and is isolated from the other subspecies. It is known from four sites in rain forest between 500 and 2200m.

Wild population: The only recent information on the species in the wild are observations by Bas van Balen from three sites (see protected areas below).

Field studies: Recent survey by Bas van Balen.

Threats: Habitat degradation and over-exploitation for food and the bird trade.

Comments: Protected areas - recently recorded in Meru Betiri National Park (500 sq. km., but only a small part of this is suitable habitat for the species), Yang Highlands (141 sq. km., but only a small part of this is suitable habitat for the species) and Ijen Crater (25.6 sq. km.) Nature Reserves.

Recommendations:
Wild management: Not indicated at this time
Research: Taxonomic clarification to determine if this taxon is best treated as a species or subspecies.
PHVA: No

Captive population: There are individuals in Surabaya Zoo and ISIS records 15 individuals of the species and the WPA-International census, 34. Subspecific affinities are not known.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: GREY-BREASTED PARTRIDGE *Arborophila orientalis rolli/sumatrana/campbelli*

STATUS:
Mace-Lande: ?SECURE
CITES: Not listed

Taxonomic status: Three subspecies of four in the species. The nominate subspecies is treated separately because of its isolated distribution. The species is included in one of the species groups contained within the Grey-breasted group of *Arborophila* along with *A. crudigularis, A. atrogularis, A. ardens* and *A. rufipectus* (Davison, 1982). Taxonomy above and below the species level needs clarifying.

Distribution: Found in Peninsular Malaysia and Indonesia (Sumatra). Occurs in primary forest (upper dipterocarp, lower montane and (tall) upper montane forest) between ~750 and 1600m in Peninsular Malaysia. On Sumatra, it inhabits rain forest from 500 - 2200m.

Wild population: Regarded as sparsely distributed in suitable habitat in Malaysia and numerous on Sumatra. Should be present all along the Main Range in Peninsular Malaysia and in the mountains of Sumatra, where habitat is relatively secure. Probably slightly declining.

Field studies: None known.

Threats: Habitat loss for timber and agriculture, especially on Sumatra. Potentially the road planned along the Main Range from Genting to Cameron Highlands in Peninsular Malaysia will disrupt much habitat.

Comments: Protected areas - present in Cameron Highlands (649 sq. km.) and Fraser's Hill (30 sq. km.) Wildlife Sanctuaries. In principle, all forest above ~750m in Peninsular Malaysia is "Protection Forest". Not recently recorded from any protected area in Sumatra, but further searches are necessary.

Recommendations:
Wild management: Protect existing habitat.
Research: Not indicated at this time
PHVA: No

Captive population: ISIS records 15 individuals of the species and the WPA-International census, 34. Subspecific affinities are not known.

Captive programme recommendation: None.

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TAXON REPORT

SPECIES: JAVAN (CHESTNUT-BELLIED) PARTRIDGE *Arborophila javanica*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: A polytypic species with three subspecies - *A.j. javanica, A.j. bartelsi* and *A.j. lawuana.*

Distribution: West and Central Java in Indonesia, where it inhabits forest between 300 and 3000m.

Wild population: Probably extirpated from the lower slopes by forest clearance in recent decades. A number of mountains, especially in Central Java, have not yet been surveyed for this species, but surveys are planned. Population decline may now have stabilized.

Field studies: None known.

Threats: Deforestation in the form of timber collection, especially the margins of the forest, and the fragmentation of the habitat may pose a threat to the species. Some collection of live birds for the bird trade.

Comments: Protected areas - present in Halimun (400 sq. km.), Gede/Pangrango (150 sq. km.) and Tengger/Semeru (570 sq. km.) National Parks; Puncak/ Megamendung (in part a Nature Reserve - 3.5 sq. km.); Tilu (80 sq. km.), Tangkuban/Prahu (16.6 sq. km.); Papandayan Nature Reserve/Recreation Park (2.5 sq. km.); Sanggabuana Proposed Recreation Park; Lawu Proposed Nature Reserve (210 sq. km.) and Gunung Karang and Salak Protected Forests. A Restricted Range Species, occurring in EBA E13 which is the Javanese and Balinese mountains and is a Priority I EBA.

Recommendations:
Wild management: Stop what bird trade there is and protect remaining habitat.
Research: Not indicated at this time
PHVA: No

Captive population: There are individuals in Taman Mini Bird Park in Indonesia and ISIS records 21 individuals and the WPA-International census, 26. It is, however, suspected that there are up to 250 individuals in captivity.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: COLLARED HILL PARTRIDGE *Arborophila gingica*

STATUS:
Mace-Lande: VULNERABLE/ENDANGERED
CITES: Not listed

Taxonomic status: A monotypic species and most closely related to *A. rufogularis, A. javanica* and *A. crudigularis* - comprising one of the two-species groups in the Grey-breasted group of *Arborophila* (Davison, 1982).

Distribution: Distributed through C & NW Fujian, N Guangdong and E Guangxi in China. Inhabits densely wooded areas in montane areas below 1000m. Whilst the range is large there is little available habitat.

Wild population: Little information but must be in decline because of extensive logging and the population is probably less than 10,000. Now believed to be rare in its range.

Field studies: None known.

Threats: Deforestation and fragmentation of habitat in an area that has a very dense human population.

Comments: A Restricted Range Species, occurring in EBA D24 which is the Fujian mountains and is a Priority II EBA.

Recommendations:
Wild management: Protected area designation & management.
Research: Extensive survey in suitable habitat throughout the range area, concentrating on existing protected areas.
PHVA: No

Captive population: There is a captive breeding project in south China which comprised 14 females and 10 males in 1989. These birds produced 109 eggs of which six were reared and kept alive through to the following year.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: ORANGE-NECKED PARTRIDGE *Arborophila davidi*
STATUS:
Mace-Lande: ENDANGERED
CITES: Not listed

Taxonomic status: A monotypic species placed in the Brown-breasted group of *Arborophila,* which also includes *A. brunneopectus, A. cambodiana, A. hyperythra* and *A. rubrirostris* (Davison, 1982).

Distribution: Endemic to S. Vietnam where it was only known from specimens collected at Bu Kroai [Bu Croi], Song Be Province (Cochinchina/S Annam) in 1917. Two birds were seen briefly on 21st and 22nd June 1991 and a single bird two days later near Dac Lua, Nam Bai Cat Tien National Park (Eames et al., 1992). The type series was collected at ca. 250m in densely wooded country with rolling hills. The 1991 observations were made at about 200m in thorny bamboo forest, the bamboo being extremely dense in places and reaching 6 - 10m in height.

Wild population: The above is the only information that we have on this species. This, together with the extent of habitat present and failure to find the species in other sites may suggest a population of less than 1,000 individuals.

Field studies: Searched for recently during Vietnam Forest Surveys undertaken by ICBP and the Vietnam Forest Bird Working Group of Hanoi University (Jonathan Eames, Craig Robson and Nguyen Cu).

Threats: Since virtually nothing is known of the species' ecology, the scale of the threats to its survival are unknown. Nonetheless, it seems likely that the species has suffered a range contraction due to loss of habitat.

Comments: Protected areas - recorded in Nam Bai Cat Tien National Park (35,000ha). A Restricted Range Species, occurring in EBA D22 which is Cochinchina and is a Priority II EBA.

Recommendations:
Wild management: Habitat protection and management is needed at existing site and any further sites that are found.
Research: Extensive survey of suitable habitat to determine where the species still occurs.
PHVA: No

Captive population: None.
Captive programme recommendation: None.

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TAXON REPORT

SPECIES: CHESTNUT-HEADED PARTRIDGE *Arborophila cambodiana cambodiana*

STATUS:
Mace-Lande: SECURE/VULNERABLE
CITES: Not listed

Taxonomic status: One of two subspecies which are treated separately here. The species has been placed in the Brown-breasted group of *Arborophila*, which also includes *A. brunneopectus*, *A. davidi*, *A. hyperythra* and *A. rubrirostris* (Davison, 1982).

Distribution: Endemic to the Cardammon and Elephant mountains of Cambodia, where it occurs in tropical forest.

Wild population: No information at all. Possibly declining because of habitat loss.

Field studies: None known.

Threats: Habitat loss.

Comments: A very poorly known subspecies from an area where there is very little recent ornithological information. The species is a Restricted Range Species, occurring in EBA d19 which is not a highlighted EBA.

Recommendations:
Wild management: Establishment of Protected area(s) after survey.
Research: Extensive survey to determine distribution, habitat requirements and threats. Taxonomic clarification to assess whether *cambodiana* and *diversa* are best treated as species or subspecies.
PHVA: No

Captive population: ISIS and the WPA-International census do not record any individuals of the species. There are, however, believed to be up to 50 individuals of the species in captivity.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: CHESTNUT-HEADED HILL PARTRIDGE *Arborophila cambodiana diversa*

STATUS:
Mace-Lande: ENDANGERED
CITES: Not listed

Taxonomic status: One of two subspecies which are treated separately here. The species has been placed in the Brown-breasted group of *Arborophila,* which also includes *A. brunneopectus, A. davidi, A. hyperythra* and *A. rubrirostris* (Davison, 1982).

Distribution: SE Thailand where it occurs from 700m up to the mountain tops.

Wild population: Definitely known from only two localities - Khao Sabap (135 sq. km.), within the Namtok Phliu National Park and Khao Soi Dao Wildlife Sanctuary (747 sq. km.). Probably still declining. Estimated population is just over 100.

Field studies: None so far.

Threats: Deforestation - clear cutting of forest and over-exploitation for food.

Comments: Protected areas - present in two - at Khao Sabap (135 sq. km.), within the Namtok Phliu National Park and in Khao Soi Dao Wildlife Sanctuary (747 sq. km.). The species is a Restricted Range Species, occurring in EBA d19 which is not a highlighted EBA.

Recommendations:
Wild management: Hunting should be stopped and existing habitat protected.
Research: Taxonomic clarification to assess whether the two subspecies are distinct species.
PHVA: No

Captive population: ISIS and the WPA-International census do not record any individuals of the species. There are, however, believed to be up to 50 individuals of the species in captivity.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: RED-BILLED TREE PARTRIDGE *Arborophila rubrirostris*

STATUS:
Mace-Lande: ?SECURE
CITES: Not listed

Taxonomic status: A monotypic species. The species has been placed in the Brown-breasted group of *Arborophila*, which also includes *A. brunneopectus, A. davidi, A. hyperythra* and *A. diversa* (Davison, 1982).

Distribution: Endemic to the island of Sumatra in Indonesia. Occurs in montane forest (including scrub in pine forest) between 900 and 2500m from Aceh to southern Sumatra. May favor steep gullies.

Wild population: Known from three areas in Aceh, N Sumatra and S Sumatra and what is believed to be suitable habitat is still widespread throughout the mountains of Sumatra. Numbers may be stable.

Field studies: None so far.

Threats: Habitat degradation may be a problem in some areas.

Comments: Protected areas - present in Gunung Leuser (7927 sq. km.) and Kerinci-Seblat (14, 846 sq. km.) National Parks. A Restricted Range Species, occurring in EBA E11 which is Sumatra and Peninsular Malaysia (above 600m) and is a Priority II EBA.

Recommendations:
Wild management: Monitoring of habitat.
Research: Not indicated at this time
PHVA: No

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: BORNEO (RED-BREASTED) HILL-PARTRIDGE *Arborophila hyperythra*

STATUS:
Mace-Lande: ?SECURE
CITES: Not listed

Taxonomic status: There are two subspecies, *A. h. hyperythra* and *A. h. erythrophrys* which are treated together here. It has been suggested that the species is conspecific with *A. orientalis* (Johnsgard, 1988), whereas Davison (1982) regards *orientalis* as belonging to one of the two Grey-breasted groups and *hyperythra* is one of five species in the Brown-breasted group along with *A. brunneopectus, A. davidi, A. rubrirostris* and *A. diversa.*

Distribution: Endemic to Borneo (East Malaysia and Kalimantan, Indonesia). Inhabits montane forest of various types in Kalimantan and recorded in primary lower montane forest between about 1200 and 1800m.

Wild population: The only recent Kalimantan record is from Ulu Barito which extends the known range south by 150km. Other localities are Gunung Mulu National Park in Sarawak and Kinabalu National Park, Sabah, both in East Malaysia. Should also be present throughout the unsurveyed mountains of appropriate altitude in Sabah, Sarawak and Kalimantan.

Field studies: None known.

Threats: Degradation of habitat as a result of logging. Possibly over-hunted for food and sport in Kalimantan.

Comments: Protected areas - present in Gunung Mulu National Park (528 sq. km.) in Sarawak and Kinabalu National Park (754 sq. km.), Sabah, both in East Malaysia and Sungai Kayan/Sembakung Nature Reserve (?21,700 sq. km.). A Restricted Range Species, occurring in EBA E10 which is the Borneo mountains and is a Priority I EBA.

Recommendations:
Wild management: Possibly designation of further Protected areas.
Research: Survey needed to determine contemporary distribution.
PHVA: No

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: HAINAN (OR WHITE-EARED) HILL PARTRIDGE *Arborophila ardens*

STATUS:
Mace-Lande: VULNERABLE/ENDANGERED
CITES: Not listed

Taxonomic status: Monotypic

Distribution: Central areas of Hainan island, known from five areas, possibly two more on Hainan and maybe also some localities in S. Guangxi on the mainland. Found in tropical evergreen forests and woods between 950 and 1200m.

Wild population: Based on what little available habitat is left, the population is estimated to be less than 10,000, and probably much less.

Field studies: Study proposed by Gao Yu-ren (South China Institute of Endangered Animals).

Threats: Habitat loss due to timber extraction and conversion to agricultural land as well as degradation of other patches of suitable habitat. Also over-hunting for food.

Comments: Protected areas - may not occur in any Protected area. A Restricted Range Species, occurring in EBA D20 which is Hainan and is a Priority II EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Survey to determine its occurrence in any protected area.
PHVA: No

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: ANNAM PARTRIDGE *Arborophila merlini*

STATUS:
Mace-Lande: VULNERABLE/ENDANGERED
CITES: Not listed

Taxonomic status: Confused. Johnsgard (1988) indicates that *A. charltonii* has 8 subspecies, of which *A.c. merlini* and *A.c. vivida* are sometimes considered specifically distinct. This latter convention is followed here and the two forms are regarded as subspecies of *A. merlini.* Because these two forms are geographically isolated from the forms included here in *A. charltonii* and *A. chloropus,* they also merit separate conservation attention.

Distribution: Central Vietnam where it only occurs below 600m and should, therefore, be considered a lowland forest specialist.

Wild population: Little information on status in the wild. Based on available habitat, the population is estimated at >1,000 individuals. Current trend in population is unknown but it is possibly in decline due to habitat destruction within its range.

Field studies: Searched for recently during Vietnam Forest Surveys undertaken by ICBP and the Vietnam Forest Bird Working Group of Hanoi University (Jonathan Eames, Craig Robson and Nguyen Cu).

Threats: Forest clearance for agriculture and degradation of habitat.

Comments: Protected areas - recorded in the Bach Ma National Park (18,900ha) at an altitude of 90 - 600m. A Restricted Range Species, occurring in EBA D19 which is the Annamese lowlands and is a Priority II EBA.

Recommendations:
Wild management: Habitat management and protection.
Research: Survey of range.
PHVA: No

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: CHESTNUT-NECKLACED HILL PARTRIDGE *Arborophila charltoniii charltonii*

STATUS:
Mace-Lande: VULNERABLE/ENDANGERED
CITES: Species - Appendix III (Malaysia)

Taxonomic status: Confused. Johnsgard (1988) indicates that *A. charltonii* has 8 subspecies, of which *A.c. tonkinensis, A.c. atjehensis, A.c. graydoni* and *A.c. charltonii* are sometimes considered specifically distinct. Here *atjehensis, graydoni* and *charltonii* are regarded as belonging to a single species - *A. charltonii.* Because these three subspecies are geographically isolated from each other, they merit separate conservation attention. The taxon that Johnsgard refers to as *A.c. tonkinensis* is included in *A. chloropus* along with four other subspecies that Johnsgard assigned to *A. charltonii: A.c. chloropus, A.c. peninsularis, A.c. olivacea* and *A.c. cognacqi.*

Distribution: Peninsular Thailand, Burma and Malaysia. Lowland forest (plains and foothills) - reported from primary forest in Malaysia and conversely from heavily disturbed/secondary forest in southern Thailand.

Wild population: Based on the reduction in lowland forest habitat the population is estimated at 100-1,000. Believed on the verge of extinction in Thailand.

Field studies: None known.

Threats: Deforestation and habitat degradation.

Comments: Protected areas - recorded from Khlong Phraya Wildlife Sanctuary in Thailand. Total area of this protected area is 95 sq. km., most of which is unsuitable and steeply mountainous and there is probably less than one sq. km. of lowland forest around the margins.

Recommendations:
Wild management: Not indicated at this time
Research: Taxonomic clarification, survey.
PHVA: No

Captive population: None

Captive programme recommendation: None.

TAXON REPORT

SPECIES: CHESTNUT-NECKLACED HILL PARTRIDGE *Arborophila charltonii atjehensis*
STATUS:

Mace-Lande: ?CRITICAL
CITES: Species - Appendix III (Malaysia)

Taxonomic status: Confused. Johnsgard (1988) indicates that *A. charltonii* has 8 subspecies, of which *A.c. tonkinensis, A.c atjehensis, A.c. graydoni* and *A.c. charltonii* are sometimes considered specifically distinct. Here *atjehensis, graydoni* and *charltonii* are regarded as belonging to a single species - *A. charltonii.* Because these three subspecies are geographically isolated from each other, they merit separate conservation attention. The taxon that Johnsgard refers to as *A.c. tonkinensis* is included in *A. chloropus* along with four other subspecies that Johnsgard assigned to *A. charltonii: A.c. chloropus, A.c. peninsularis, A.c. olivacea* and *A.c. cognacqi.* The spelling of the subspecific name needs clarification; *atjenensis* is widely used, but it was supposedly named *ajtehensis* after the district of Atjeh.

Distribution: N. & S. Sumatra. Known only from specimens collected in the far north (NE Aceh, 1939) and far south of Sumatra. Exact forest type and altitude limits are not known but the highest altitude recorded is 300m.

Wild population: Most of the range in the south is now completely deforested and the subspecies has not been recorded from Way Kambas National Park. Due to the large extent of habitat destruction the population is estimated at <100 individuals. Now it is thought to exist only in the north of its range.

Field studies: None so far.

Threats: Deforestation and habitat degradation.

Comments: Protected areas - atjehensis is not reported from any protected area, but it should be looked for in the NE lowland limit of Gunung Leuser National Park.

Recommendations:

Wild management: Depending upon results of survey, habitat protection measures are a high priority.
Research: Survey is urgently needed to establish whether the subspecies still exists. Taxonomic clarification to determine validity of the species and subspecies proposed in this assemblage of *Arborophila* forms.
PHVA: No

Captive population: None.
Captive programme recommendation: None.

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TAXON REPORT

SPECIES: CHESTNUT-NECKLACED HILL PARTRIDGE *Arborophila charltonii graydoni*

STATUS:
Mace-Lande:VULNERABLE/ENDANGERED
CITES: Species - Appendix III (Malaysia)

Taxonomic status: Confused. Johnsgard (1988) indicates that *A. charltonii* has 8 subspecies, of which *A.c. tonkinensis, A.c atjehensis, A.c. graydoni* and *A.c. charltonii* are sometimes considered specifically distinct. Here *atjehensis, graydoni* and *charltonii* are regarded as belonging to a single species - *A. charltonii.* Because these three subspecies are geographically isolated from each other, they merit separate conservation attention. The taxon that Johnsgard refers to as *A.c. tonkinensis* is included in *A. chloropus* along with four other subspecies that Johnsgard assigned to *A. charltonii: A.c. chloropus, A.c. peninsularis, A.c. olivacea* and *A.c. cognacqi.*

Distribution: Sabah, where it is found in primary lowland forest up to perhaps 300m. The only recent records are from Danum Valley although it may also occur along the Sungai Kinabatangan and in a few other places too.

Wild population: Due to the large extent of habitat destruction the population is probably very small and may be in the low hundreds.

Field studies: None so far.

Threats: Deforestation and habitat degradation.

Comments: Protected areas - *graydoni* recently recorded from Danum Valley in Sabah only (state-run research center).

Recommendations:
Wild management: Not indicated at this time
Research: Taxonomic clarification, survey.
PHVA: No

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: FERRUGINOUS WOOD PARTRIDGE *Caloperdix oculea*
STATUS:
Mace-Lande: SECURE/VULNERABLE
CITES: Appendix III (Malaysia)

Taxonomic status: The only species in the genus and containing two subspecies; *ocellata* on Sumatra and *borneansis* on Borneo.

Distribution: Thailand, Indonesia (Sumatra) & Malaysia. In Thailand found in evergreen forest, maybe chiefly in the lowlands and foothills in S. Thailand, where the mountains are steep, but ascending to greater elevations elsewhere. In Malaysia, found in primary forest up to about 1000m on the Main Range. On Sumatra (not recorded from Kalimantan), it occurs in dry forest in the mountains up to 1000m. Recent records from the extreme lowland site of Way Kambas National Park were unexpected. Found in primary and secondary forest in sandy valleys.

Wild population: Widespread in the Sumatran hills. Very scarce in Thailand. Anecdotal information and range areas indicates a population estimate of 1,000-100,000. The population is thought to be declining.

Field studies: None so far.

Threats: Habitat destruction, over-exploitation for food.

Comments: Protected areas - present in Beung Kroeng Kavia Non-Hunting area (120 sq. km.), Khao Pra Bang Khram (173 sq. km.), Thaleban National Park (85 sq. km.), Kaeng Krachen National Park (3083 sq. km.) and Khlong Phraya Wildlife Sanctuary in Thailand. Total area of this last protected area is 95 sq. km., most of which is unsuitable and steeply mountainous and there is probably less than one sq. km. of lowland forest around the margins. In Malaysia recorded from Taman Negara National Park (4343 sq. km.) and on Sumatra from Gunung Leuser National Park (7927 sq. km.) and Way Kambas National Park (1300 sq. km.). Only 50% of this last protected area contains forest.

Recommendations:
Wild management: Habitat protection & management.
Research: Extensive survey of existing reserves to determine habitat use limits.
PHVA: No

Captive population: ISIS records 17 individuals and the WPA-International census, 59. There are, however, believed to be up to 100 individuals of the species in captivity.
Captive programme recommendation: None.

TAXON REPORT

SPECIES: CRIMSON-HEADED PARTRIDGE *Haematortyx sanguiniceps*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: A monotypic genus.

Distribution: N.E. Borneo, where it inhabits lower montane forest, including poor forest of sandy areas, between about 1000 and 1500m. Known historically from watershed regions of central Kalimantan, but no recent surveys.

Wild population: Locally common but much of its original habitat has been lost. Anecdotal information and range area leads to an estimate of the population of 1,000-10,000 individuals. Population thought to be declining.

Field studies: None so far and not even recent surveys in Central Kalimantan.

Threats: Habitat destruction and degradation.

Comments: Protected areas - not recorded from any Protected area in Kalimantan. Found in Gunung Mulu National Park in Sarawak (528 sq. km.). A Restricted Range Species, occurring in EBA E10 which is the Borneo mountains and is a Priority I EBA.

Recommendations:
Wild management: Habitat management.
Research: Extensive survey required.
PHVA: No

Captive population: ISIS and the WPA-International census do not record any individuals of the species. There are, however, believed to be up to 50 individuals of the species in captivity.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: CRESTED WOOD PARTRIDGE *Rollulus rouloul*
STATUS:
Mace-Lande: VULNERABLE
CITES: Appendix III (Malaysia)

Taxonomic status: A monotypic genus.

Distribution: S.E. Asia. In Thailand found in evergreen forest in the plains and foothills; in Malaysia it inhabits primary and logged forest up to about 1500m; in Indonesia occurs in primary and other old forests up to 800m (Sumatra) and 1200m (Kalimantan), but mainly in the lowlands.

Wild population: Based on anecdotal information and range area the population is estimated at 1,000-100,000 and almost certainly declining in all three countries. Scarce and much reduced in Thailand, severely threatened habitat in Indonesia and presumed declining because of logging in Malaysia.

Field studies: The historical and contemporary distribution has been reviewed and micro-habitat use assessed (McGowan, 1992).

Threats: Capture for bird trade, over-exploitation for food (Thailand), habitat destruction and degradation.

Comments: Protected areas - Present in Khao Pra Bang Khram (173 sq. km.), Thaleban National Park (85 sq. km.), Khao Phanom Bencha (50 sq. km.) and Khlong Nakha (463 sq. km.) in Thailand. In Malaysia it is reported from Pasoh Forest Reserve (~25 sq. km.), Krau Wildlife Reserve (530 sq. km.), Taman Negara (4343 sq. km.), Endau-Rompin proposed State Park (total area would be about 800 sq. km. in Johore and Pahang states), Gunung Mulu National Park 528 sq. km.), Danum Valley Research Centre and Kinabalu National Park (54sq. km.). In Indonesia it is reported from Gunung Leuser (7927 sq. km.) and Way Kambas (1300 sq. km., although only about 50% contains forest) National Parks on Sumatra and Tanjung Puting National Park (3050 sq. km.) in Kalimantan.

Recommendations:
Wild management: Stop hunting, habitat management.
Research: Not indicated at this time
PHVA: No

Captive population: ISIS records 608 individuals and the WPA-International census, 297. There are, however, believed to be over 1,000 individuals of the species in captivity.

Captive programme recommendation: A captive breeding programme should be started to manage the species properly in captivity.

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TAXON REPORT

SPECIES: MOUNTAIN BAMBOO PARTRIDGE *Bambusicola fytchii*
STATUS:
Mace-Lande: ?SECURE
CITES: Not listed

Taxonomic status: Two subspecies.

Distribution: China, India, Bangladesh, Burma, Thailand and Vietnam. In Thailand it occurs in open, deforested hillsides where it inhabits swiddens with scattered woodlots above 1000m.

Wild population: Wide range but limited and probably fragmented distribution within this. Globally declining but probably well over 10,000. In Thailand believed to be widespread above 1000m in the NW and probably increasing in numbers (possibly up to 10,000 individuals in Thailand).

Field studies: None so far.

Threats: Suffering from habitat loss throughout its range. Subject to hunting in India and by hill tribes in Thailand.

Comments: Very little known, but appears to thrive in secondary scrub jungle and grassland.

Recommendations:
Wild management: Not indicated at this time
Research: Survey in India and China.
PHVA: No

Captive population: ISIS records 7 individuals and the WPA-International census, 46.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: CEYLON SPURFOWL *Galloperdix bicalcarata*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: A monotypic species.

Distribution: Endemic to a restricted area within Sri Lanka.

Wild population: Unknown but must be declining because it is a forest species and forests are disappearing.

Field studies: Nothing known.

Threats: Deforestation.

Comments: A Restricted Range Species, occurring in EBA D05 which is Sri Lanka and is a Priority I EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Survey needed.
PHVA: No

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: INDIAN MOUNTAIN QUAIL *Ophrysia superciliosa*

STATUS:
Mace-Lande: CRITICAL/EXTINCT
CITES: Not listed

Taxonomic status: monotypic, known only from 9 museum skins.

Distribution: Specimens collected from Mussorie (1870) and Naini Tal (1876) in Uttar Pradesh, India.

Wild population: A very small bird it lives in grasslands and so may be hard to locate. No record since 1952, but two unconfirmed reports were made in 1978/9 (Salim Ali). There is also an recent unconfirmed record of the species from the 'Eastern lesser Himalaya'.

Field studies: Some searching by Ingo Rieger.

Threats: Unknown

Comments: A Restricted Range Species, occurring in EBA D02 which is the Western Himalayas and is a Priority II EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Survey needed to establish persistence of species.
PHVA: No

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: TANZANIAN PARTRIDGE *Xenoperdix udzungwensis*

STATUS:
Mace-Lande VULNERABLE
CITES: Not listed

Taxonomic status: A new species which was only named in 1994 (*Ibis)*

Distribution: Tanzania, where it is newly discovered. Occurs in two areas within the Udzwunga Mountains - Ndundulu Mts. (westernmost part of a forest covering 240 sq. km.) and Nyumbanitu Mts (55 sq. km.) in primary forest between 1350 and 1900m. Therefore, total known range is less than 300 sq. km.

Wild population: Flocks of up to eight recorded. 246 individuals were seen in 85 encounters during five-and-a-half months fieldwork in 1991/92.

Field studies: Discovered during the first phase of fieldwork undertaken as part of a project to identify areas of vertebrate endemism in the Eastern Arc Mountains. The project is led by Jon Fjeldsa of the Zoological Museum of Copenhagen and the field survey team comprised Lars Dinesen, Louis Hansen, Thomas Lehmberg and Jens Otto Svendsen.

Threats: None yet known, although the very small distribution makes the species vulnerable to any change in habitat use.

Comments: Protected areas - present in the West Kilombero Scarp Forest Reserve which encompasses the Ndundulu and Nyumbanitu Mts. Part of this Forest Reserve is now within Udzunga Mountains National Park which was gazetted in February 1992. Neither Ndundulu nor Nyumbanitu Mts. were included, however. Ndundulu is about five kilometers from the National Park border but is continuous with the Luhombero Forest, the eastern part of which is inside the Park. The area between Ndundulu and the National Park has yet to be surveyed, as does the rest of the Luhombero Forest east of Ndundulus. Some of the forest in the Udzungwa Mts. National Park is not used by the species and there are also large grassland areas. Discovered after the completion of the Biodiversity Project, this species does have a restricted range and must occur within the Eastern Arc Mountains which is EBA C24 and Priority I. The altitude limits of the EBA are 750 - 3000m and the species has been found between 1350 and 1900m.

Recommendations:
Wild management: Maintain protection of two areas - preferably by inclusion in Udzungwa Mts National Park. The area includes a number of other IUCN Red List species. Because inclusion within the National Park will not seriously affect the

villages of Udekwa and Ikula this step should be taken as a matter of urgency.
Research: Extensive survey of the entire forest blocks around Mt Luhombero and Nyumbanitu to assess the total distribution of the species within these forested areas. Subsequently, other forests, such as the nearby Matundu, should be surveyed. Given that the species is believed to be most closely related to the South-east Asian genus *Arborophila*, a further assessment of taxonomy is desirable using DNA techniques.
PHVA: No

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: BEARDED TREE-QUAIL *Dendrortyx barbatus*

STATUS:
Mace-Lande: CRITICAL
CITES:

Taxonomic status: A monotypic species.

Distribution: Cloud forests of eastern Mexico, humid montane forests, subtropical and possibly temperate forests between 1,200-2,200 m elevation. See Collar et al. (1992).

Wild population: Unknown, but likely to be <1,000 with disjunct populations likely to be <250 in 2 locations.

Field studies: Casual observation (see Collar et al. 1992).

Threats: Rampant destruction of primary forests in its range. Subsistence hunting taking place. Documented loss of habitat in areas formerly known to be occupied.

Comments: This is a Restricted Range Species, occurring in EBA a07 which is not a highlighted EBA.

Recommendations:
Wild management: Habitat protection pending results of survey. Hunting ban. Collar et al. (1992) outline research and management strategy for this species.
Research: Identify suitable habitat and determine presence or absence of species followed by assessment of population densities.
PHVA: Pending; once above information is collected.

Captive population: 0

Captive program recommendation: Pending PHVA recommendations.

TAXON REPORT

SPECIES: BLACK-EARED WOOD-QUAIL *Odontophorus melanotis*

STATUS:
Mace-Lande: ?SECURE
CITES:

Taxonomic status: Two subspecies. Possibly conspecific with *O. erythrops.*

Distribution: Found in tropical and lower subtropical forest in eastern Central America from Honduras to Panama at 450-1,600m elevation.

Wild population: Unknown, but thought to be < 50,000.

Field studies: Casual observations.

Threats: Severe deforestation.

Comments: This is not a Restricted Range Species, but it probably occurs in Southern Central American Caribbean Slope (A16) and North Chaco and Darien Lowlands (A19). These EBAs have a protected area coverage of 0-5% and 20-30% respectively, although this does not necessarily apply to the required habitat of this species. The EBA Priority Status is category II and category III (ICBP 1992). Subspecies in Honduras considered to be uncommon in 1968. See Johnsgard (1988).

Recommendations:
Wild management: Not indicated at this time
Research: Estimate densities in >3 areas as part of the *Odontophorus* monitoring plan.
PHVA: Not recommended at present.

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: BLACK-FRONTED WOOD-QUAIL *Odontophorus atrifrons*

STATUS:
Mace-Lande: ?VULNERABLE
CITES:

Taxonomic status: A polytypic species, containing three subspecies.

Distribution: Restricted range inhabiting subtropical montane forests in northeast Colombia and northwest Venezuela. 1,200-3,000 m elevation.

Wild population: Unknown, but likely to be < 10,000 in 3 subpopulations.

Field studies: Casual observations.

Threat: Two subpopulations, *O. a. variegatus* and *O. a. navai,* outside Santa Marta Mountains in areas subject to heavy deforestation. Range in some areas of Venezuela subject to losses as a result of increased mineral extraction.

Comments: This is a Restricted Range Species and is found in Santa Marta Mountain (B08) and Eastern Andes (B10). These EBAs have protected area coverage of 60-70% and 5-10% respectively, although this does not necessarily apply to the required habitat of this species. The EBA Priority Status is category II (ICBP 1992). Nominate race secure in large protected area. O. a. navai is protected in Sierra de Perija National Park. See Johnsgard (1988).

Recommendations:
Wild management: Not indicated at this time
Research: Subject to human security concerns, assessment of remaining forest cover in eastern Andes is needed and determination of species presence. For nominate race estimate population densities as part of *Odontophorus* monitoring plan.
PHVA: Not recommended at present.

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: CHESTNUT WOOD-QUAIL *Odontophorus hyperythrus*

STATUS:
Mace-Lande: VULNERABLE
CITES:

Taxonomic status: Possibly conspecific with *O. speciosus.*

Distribution: Restricted range species in humid montane forest and dense borders in secondary growth in Western and Central Andes of Colombia at 1,600-2,700 m elevation.

Wild population: Unknown, but likely to be < 10,000 in 3 subpopulations.

Field studies: Casual observations.

Threat: High rates of deforestation in Central Andes, evidence of hunting pressure.

Comments: This is a Restricted Range Species and is found in Cauca valley (B12), Magdalena valley (B13) and Western Andes of Colombia and Ecuador (B15) EBAs. The last EBA has a protected area coverage of 10-15%, although this does not necessarily apply to the required habitat of this species. The EBA Priority Status is category II, category II and category I respectively. This species is common in Muniche National Park. See Johnsgard (1988).

Recommendations:
Wild management: Not indicated at this time
Research: Estimate population densities in >3 known localities as part of Odontophorus monitoring plan. This species of higher priority in the *Odontophorus* group.
PHVA: Not recommended at present.

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: DARK-BACKED WOOD-QUAIL *Odontophorus melanonotus*

STATUS:
Mace-Lande: ?VULNERABLE
CITES:

Taxonomic status: Possibly conspecific with *O. speciosus.*

Distribution: Restricted range species found in lower subtropical forest zone in southwest Colombia and northwest Ecuador. 1,200-1,500 m elevation.

Wild population: Unknown, but might be <10,000 with small distribution. However, common at La Planada, Colombia.

Field studies: Casual observation.

Threat: Deforestation.

Comments: Endemic to the Western Andes of Columbia and Ecuador (B15). This EBA has a protected area coverage of 10-15%, although this does not necessarily apply to the required habitat of this species. The EBA Priority Status is category I (ICBP 1992). See Johnsgard (1988).

Recommendations:
Wild management: Not indicated at this time
Research: Estimate densities in both Colombia and Ecuador as part of the *Odontophorus* monitoring plan.
PHVA: Not recommended at present.

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: TACARCUNA WOOD-QUAIL *Odontophorus dialeucos*

STATUS:
Mace-Lande: ?SECURE
CITES:

Taxonomic status: Possibly conspecific with *O. strophium.*

Distribution: Restricted Area Species found in subtropical forest in eastern Panama and extreme northern Colombia. 1,200-1,400 m elevation.

Wild population: Unknown, but thought to be < 50,000.

Field studies: Casual observation.

Threats: Deforestation.

Comments: This is a Restricted Range Species found in the Darien Highlands (A20). This EBA has a protected area coverage of 20-30%, although this does not necessarily apply to the required habitat of this species. The EBA Priority Status is category II (ICBP 1992). See Johnsgard (1988).

Recommendations:
Wild management: Not indicated at this time
Research: Estimate densities in >3 areas as part of the *Odontophorus* monitoring plan.
PHVA: Not recommended at present.

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: GORGETED WOOD-QUAIL *Odontophorus strophium*

STATUS:
Mace-Lande: ENDANGERED
CITES: Not listed

Taxonomic status: Possibly conspecific with *O. dialeucos* and *O. columbianus.*

Distribution: Endemic to temperate and subtropical forests in a small area of the western slope of the Eastern Andes. See Collar et al. (1992).

Wild population: Unknown, but likely to be <2,500 and known to persist at only one site.

Field studies: See Collar et al. (1992). Survey work carried out in late 1980s, but there are no population estimates.

Threat: Forests now largely cleared and one sizeable forest block in range is only place where species is known to occur. Hunting may negatively impact other relic populations.

Comments: This is a Restricted Range Species and is endemic to the Eastern Andes of Columbia (B10). This EBA has a protected area coverage of 5-10%, although this does not necessarily apply to the required habitat of this species. The EBA Priority Status is category II (ICBP 1992).

Recommendations:
Wild management: Protect additional forest outside Cachalu Wildlife Sanctuary.
Research: Identify remnant forest and determine presence or absence of species followed by assessment of populations. Assess population in known area.
PHVA: Pending collection of above information.

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: VENEZUELAN WOOD-QUAIL *Odontophorus columbianus*

STATUS:
Mace-Lande: ?VULNERABLE
CITES: Not listed

Taxonomic status: Possibly conspecific with O. strophium.

Distribution: Endemic to subtropical forests in northern and western Venezuela. 800-1,200 elevation.

Wild population: Unknown, but population could be < 10,000.

Field studies: Some research on breeding biology by Schwartz and Lentino in 1984. Casual observations.

Threats: Although part of the population is found in a large protected area (Henri Pittier National Park) much of the range is threatened by deforestation and urbanization.

Comments: This is a Restricted Range Species found in the Northern Venezuela Mountains (B04) and Merida Mountains (B06). The former EBA has a protected area coverage of 10-30%, although this does not necessarily apply to the required habitat of this species. Both EBAs are Priority Status II (ICBP 1992). Very few observed in 750 km of Cracid transects. See Johnsgard (1988). Potentially common in Henri Pittier National Park.

Recommendations:
Wild management: Not indicated at this time
Research: Estimate densities in several locations, including Henri Pittier National Park as part of the Odontophorus monitoring plan. This species is of higher priority in the *Odontophorus* group.
PHVA: Not recommended at present.

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: BLACK-BREASTED WOOD-QUAIL *Odontophorus leucolaemus*

STATUS:
Mace-Lande: ?SECURE
CITES:

Taxonomic status: A monotypic species.

Distribution: Tropical and subtropical forests of Costa Rica and western Panama. 1,350-1,600 m elevation.

Wild population: Unknown, but thought to be <50,000.

Field studies: Casual observation.

Threats: Deforestation and loss of habitat to agriculture.

Comments: This is a Restricted Range Species found in Costa Rican and Panamanian Highlands (A18). This EBA has a protected area coverage of 10-15%, although this does not necessarily apply to the required habitat of this species. The EBA Priority Status is category II (ICBP 1992). See Johnsgard (1988).

Recommendations:
Wild management: Not indicated at this time
Research: Estimate densities in >3 areas as part of the *Odontophorus* monitoring plan.
PHVA: Not recommended at present.

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: STRIPE-FACED WOOD-QUAIL *Odontophorus balliviani*

STATUS:
Mace-Lande: ?SECURE
CITES:

Taxonomic status: A monotypic species.

Distribution: Humid montane forests, including stunted cloud-forest, clearings, and boggy meadows in eastern Andes of southeastern Peru and northwestern Bolivia at 2,000-3,000 m elevation.

Wild population: Unknown, but thought to be $<50{,}000$.

Field studies: Casual observation.

Threats: Possibly deforestation and loss of habitat to urbanization and agriculture.

Comments: This is a Restricted Range Species found in the Bolivian Andes (B35) and Upper Yungas (B33). This EBA has a protected area coverage of 0-5%, although this does not necessarily apply to the required habitat of this species. The EBA Priority Status is category II and category III (ICBP 1992). See Johnsgard (1988).

Recommendations:
Wild management: Not indicated at this time
Research: Extremely poorly known species for which locality data is required. Estimate densities in >3 areas as part of the *Odontophorus* monitoring plan.
PHVA: Not recommended at present.

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: OCELLATED QUAIL *Cyrtonyx ocellatus*

STATUS:
Mace-Lande: ?SECURE
CITES:

Taxonomic status: A monotypic species.

Distribution: Open pine-oak woodland and brushy fields from Mexico south through eastern Guatemala, El Salvador, Honduras, to northern Nicaragua. 750-3,000 m elevation.

Wild population: Unknown, but thought to be < 50,000

Field studies: Casual observation.

Threats: Possibly deforestation and habitat degradation.

Comments: This is a Restricted Range Species that may occur in Northern Central American Highlands (A14). This EBA has a protected area coverage of 0-5%, although this does not necessarily apply to the required habitat of this species. The EBA Priority Status is category II (ICBP 1992). See Johnsgard (1988).

Recommendations:
Wild management: Not indicated at this time
Research: Efforts should be made to obtain good population density data from suitable habitat.
PHVA: Not recommended at present.

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: WHITE-BREASTED GUINEAFOWL *Agelastes meleagrides*

STATUS:
Mace-Lande VULNERABLE
CITES: Appendix III (Ghana)

Taxonomic status: Monotypic.

Distribution: Sierra Leone, Ghana, Liberia and Cote d'Ivoire in primary and occasionally secondary lowland rainforest with a dry floor.

Wild population: 58,000 known and possibly more. Cote d'Ivoire appears to be the species' stronghold, with up to 50,000 individuals. Apparently it is more abundant in habitat where it is not hunted.

Field studies: Several surveys in the late 1980s.

Threats: Hunting and habitat loss.

Comments. Very little known and an extensive survey is needed in part of its range. Not seen in Ghana since 1963.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive survey, especially in Liberia, to identify other areas that may be designated as protected areas. Existing protected areas should be monitored and hunting controlled.
PHVA:

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: MOROCCAN HELMETED GUINEAFOWL *Numida meleagris sabyi*

STATUS:
Mace-Lande: ?ENDANGERED
CITES:

Taxonomic status: One of 9 subspecies accepted in *Birds of Africa: Vol. II.*, it is geographically isolated from other subspecies by a considerable distance.

Distribution: Morocco. Confined to an area between the Oum er Rbia and Sebou Rivers in the NW.

Wild population: Very poorly known and rarely seen but must be very scarce in the one area from where it is known. Much declined.

Field studies: None known - only three records of this subspecies have been made in the 1970s *(Birds of Africa: Vol. II.).*

Threats: Not known due to the lack of work on the subspecies.

Comments: The population has declined a lot and there are no data available on its current status. Therefore, it is in need of urgent attention as its total range is small. It is not known if it is present in any protected area.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive surveys are urgently required to establish status in former sites and recommend conservation action.
PHVA: Yes, but more data are needed first.

Captive population: No information.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: BLOOD PHEASANT *Ithaginis cruentus clarkei/kuseri/rocki/holoptilus/marionae*
STATUS:
Mace-Lande: SECURE/VULNERABLE
CITES: Appendix II

Taxonomic status: Subspecific taxonomy is confused and needs review. This group comprises five of the 13 subspecies currently proposed, some of which may not be valid. These five subspecies form a morphologically distinct group and have a very restricted combined range.

Distribution: Occurs in extreme south-western China, Arunachal Pradesh in India and Burma and has a very restricted combined range. There is limited information on habitat use by this group of subspecies in particular, but the species as a whole inhabits high altitude rhododendron and other sub-alpine scrub. Most blood pheasants in China belong to subspecies in the other group, which is found in primary forest with shrubby undercover from 2200 to 4000m. In India, blood pheasants are found between 2750 and 4500m in sub-alpine forest and primary forest. No information from Burma.

Wild population: Unknown, but probably less than 10,000.

Field studies: None known.

Threats: Hunting for food.

Comments: Occurrence in Protected areas is unknown.

Recommendations:
Wild management: Not indicated at this time
Research: Taxonomy to determine validity of current subspecies so as to determine which group(s) merit conservation attention. On current information, this group requires extensive surveys to determine numbers and distribution.
PHVA: No

Captive population: ISIS records 6 blood pheasants and the WPA-International census, 5. Subspecific affinities are not recorded.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: WESTERN TRAGOPAN *Tragopan melanocephalus*

STATUS:
Mace-Lande: VULNERABLE
CITES: Appendix I

Taxonomic status: Monotypic species in genus containing five species.

Distribution: Distributed in Pakistan and north-west India but has a small range and very specific habitat requirements. It is found in climax, transitional moist/dry temperate forest with heavy understory between 1350m (in winter) and 3600m. Record from Sengezangbu in Tibet is regarded as dubious.

Wild population: ca. 5,000 and declining and fragmented. Population estimate for Pakistan is 900+.

Field studies: Studies have been conducted by Kamal Islam, Guy Duke and Rahul Kaul.

Threats: Habitat alteration (degradation of forest, conversion to agriculture etc.) and fragmentation are the major problems. Harvesting of non-timber forest products is a less serious threat in Pakistan.

Comments: Protected areas - in India it is found in the Great Himalayan National Park, Himachal Pradesh (620 sq. km.) and the following Sanctuaries; Limber, Jammu and Kashmir (55 sq. km.), Daranghati (167.4 sq. km.), Taira (40.49 sq. km.) Churdar (56.15 sq. km.) and Manali, (31.8 sq. km.), all Himachal Pradesh. In Pakistan it is found in Machiara National Park, Azad Kashmir. A Restricted Range Species, occurring in EBA D02 which is the Western Himalayas and is a Priority II EBA.

Recommendations:
Wild management: Needs additional protected area in Palas Valley, District Kohistan and strengthening of existing Protected areas in Pakistan and India.
Research: Not indicated at this time
PHVA: No

Captive population: ISIS and the WPA-International census do not record any individuals of the species. There are, however, believed to be up to 10 individuals of the species in captivity.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: SATYR TRAGOPAN *Tragopan satyra*

STATUS:
Mace-Lande: VULNERABLE
CITES: Appendix III (Nepal)

Taxonomic status: A monotypic species.

Distribution: India, Nepal, Bhutan, and a recent record in China. In India it is found in primary forest between 2400 and 4250m and has a higher upper altitude limit in the east. It occurs in damp oak and rhododendron with dense undergrowth and bamboo. Altitude limits are 2590 to 3800m in summer and down to 2100m in winter. Recorded between 2745 and 3600m in dense oak, rhododendron and bamboo forest in Bhutan.

Wild population: Very fragmented across its long thin range. Probably less than 20,000. More common in Bhutan than India. Overall, population numbers are declining. In Nepal it is a resident and reports indicate that it is uncommon, although it may be under-recorded because it is shy and wary. Should be more secure in the recently designated Makalu Borun National Park. It is fairly common and probably stable in Bhutan.

Field studies: WPA study at Pipar near Pokhara in Nepal (Tony Lelliot).

Threats: Selective logging, hunting for food, habitat degradation where wood is removed for fuel, building etc.

Comments: Protected areas - known from the Sunderdungha Reserve Forest in Kumaon, Uttar Pradesh, India and in Nepal from Khaptad, Langtang, Makalu Borun and Sagarmatha National Parks, Royal Dhorpatan Hunting Reserve and the Annapurna Conservation Area.

Recommendations:
Wild management: Habitat protection, stop hunting.
Research: Extensive survey
PHVA: No

Captive population: ISIS records 175 individuals and the WPA-International census, 583. It is, however, believed that there are over 1,000 individuals of the species in captivity.

Captive programme recommendation: Management is required as there are many distinct blood lines among the captive population.

TAXON REPORT

SPECIES: BLYTH'S TRAGOPAN *Tragopan blythii blythii*

STATUS:
Mace-Lande: ENDANGERED
CITES: Species - Appendix I

Taxonomic status: Two subspecies of which this is the nominate.

Distribution: Has a restricted range in China, India and probably Burma. Concentrated in Nagaland and Manipur in E. India and probably in the adjacent parts of Burma. Found in the Barrail mountains in Nagaland and the Patkoi mountains in Burma and also reported from Mizoram in NE India.

Wild population: Probably 500 - 5000. Certainly declining. Status in protected areas important.

Field studies: Some fieldwork by Angami in Nagaland. Wildlife Institute of India course paper by A. Kabi (1983).

Threats: Loss and degradation of habitat and hunting for food.

Comments: Protected areas - reported in Fakim Range, Intaki and Pulebatze Sanctuaries in Nagaland, NE India. The species is a Restricted Range Species, occurring in EBA D08 which is the Eastern Himalayas and is a Priority I EBA.

Recommendations:
Wild management: Management in protected areas.
Research: Extensive survey and local use by tribal peoples in area needs study.
PHVA: No
Other: Local education programs to control hunting.

Captive population: An international studbook is maintained by WPA-International Captive breeding Advisory Committee. The studbook population stood at 32 individuals in 8 collections in November 1989. All are descended from a single founder pair. ISIS records 8 individuals.

Captive programme recommendation: The studbook should be maintained and the captive population properly managed.

TAXON REPORT

SPECIES: MOLESWORTH'S TRAGOPAN *Tragopan blythii molesworthii*

STATUS:
Mace-Lande: Unknown (Insufficient information)
CITES: Species - Appendix I

Taxonomic status: One of two subspecies, only known from three skins collected in east Bhutan in 1914, 1936 and 1966.

Distribution: East Bhutan. Two specimens collected from Louri district and Scherechopka county in the east and one from Manas Valley in the south-east. Habitat described as thicket scrub and ringal bamboo in high forest.

Wild population: Unknown.

Field studies: None.

Threats: None suspected.

Comments: Nothing known of any wild population. The species is a Restricted Range Species, occurring in EBA D08 which is the Eastern Himalayas and is a Priority I EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Survey in Bhutan needed.
PHVA: No

Captive population: Speculation of some in captivity in U.S.

Captive programme recommendation: Establish whether there are in fact any in captivity in the U.S.

TAXON REPORT

SPECIES: CABOT'S TRAGOPAN *Tragopan caboti caboti*

STATUS:
Mace-Lande: VULNERABLE
CITES: Species - Appendix I

Taxonomic status: One of two subspecies, separated on differences in plumage color.

Distribution: Restricted to China where it has been found in 30 localities in Zheijang, Jiangxi, Guangdong, Fujian and Hunan. Seven localities in Guangxi may pertain to the subspecies T.c. uangxiensis. Occurs in evergreen deciduous forest and deciduous-coniferous forest between 800 and 1400m.

Wild population: About 5000 in China and declining. Given the number of localities, the population must be very fragmented.

Field studies: Good number of recent studies in China.

Threats: Loss and fragmentation of habitat and over-exploitation for food.

Comments: Protected areas - the species is recorded from Wuyanling, Jingangshan and Wuyishan Natural Reserves. The species is a Restricted Range Species, occurring in EBA D24 which is the Fujian mountains and is a Priority II EBA.

Recommendations:
Wild management: Extension of protected areas, management of protected areas
Research: Not indicated at this time
PHVA: No

Captive population: ISIS records 11 individuals and the WPA-International census, 126. It is, however, believed that there are over 250 individuals of the species in captivity and the species has been crossed with Temminck's tragopan.

Captive programme recommendation: Pure birds must be identified and a managed programme initiated.

TAXON REPORT

SPECIES: WESTERN CABOT'S TRAGOPAN *Tragopan caboti guangxiensis*

STATUS:
Mace-Lande: ?ENDANGERED
CITES: Species - Appendix I

Taxonomic status: One of two subspecies, this one occurring in a very restricted area and described from 3 skins in Academia Sinica, Beijing.

Distribution: Tiny, restricted range which may be continuous with *T.c. caboti*. Seven localities of the species *T. caboti* in Guangxi may pertain to this subspecies. No previous records from this area for this species. Occurs in evergreen deciduous forest and deciduous-coniferous forest between 800 and 1400m.

Wild population: Nothing known, estimated at probably less than 1000.

Field studies: None known.

Threats: Habitat destruction and over-hunting.

Comments: Protected areas - the species is recorded from Wuyanling, Jingangshan and Wuyishan Nature Reserves. There are some doubts about the validity of this subspecies, but the skins are said to be very distinctive. The species is a Restricted Range Species, occurring in EBA D24 which is the Fujian mountains and is a Priority II EBA.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive survey and assess the validity of the subspecies.
PHVA: No

Captive population: There are 10 in captivity in China.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: JORET'S AND DARWIN'S KOKLASS PHEASANTS
Pucrasia macrolopha joretiana and darwini

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: Pair of parapatric subspecies within a species containing nine subspecies. *P.m. joretiana* is almost unknown.

Distribution: Distributed but in very disturbed parts of SE China, so highly restricted and fragmented range.

Wild population: Population patchy and always rare (i.e., at low density). Certainly < 10,000 and declining.

Field studies: None known.

Threats: Hunting, Habitat loss and degradation.

Comments: None

Recommendations:
Wild management: Not indicated at this time
Research: Extensive survey.
PHVA: No

Captive population: ISIS records 76 individuals of the species and the WPA-International census, 207. It is, suspected that none of these birds belong to these subspecies, but this is not definite.

Captive programme recommendation: None.

TAXON REPORT

SPECIES:
MEYER'S, ORANGE-COLLARED AND YELLOW-NECKED KOKLASS PHEASANTS
Pucrasia macrolopha meyeri/ruficollis/xanthospila

STATUS:
Mace-Lande: SECURE/VULNERABLE
CITES: Not listed

Taxonomic status: Eastern Himalayan set of 3 parapatric subspecies within a species containing nine subspecies.

Distribution: SE to NE China from 200 to 5000m. *P.m. ruficollis* is found in Taibai county, Shanxi province China, where there is about six square km. of suitable habitat.

Wild population: Declining. Up to 100,000, but restricted habitat and declining.

Field studies: None known.

Threats: Hunting for food and habitat loss.

Comments: *P.m. ruficollis* is not known from any protected area.

Recommendations:
Wild management: Not indicated at this time
Research: Survey in Burma. Taxonomic clarification within this group.
PHVA: No

Captive population: ISIS records 76 individuals of the species and the WPA-International census, 207. It is, suspected that none of these birds belong to these subspecies, but this is not definite.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: SCLATER'S MONAL *Lophophorus sclateri*

STATUS:
Mace-Lande: VULNERABLE/ENDANGERED
CITES: Appendix I

Taxonomic status: Two subspecies have been described based only on small differences in the tail band.

Distribution: Has a small range in China, India, and probably Burma and extreme E. Bhutan. In China found between 2500 and 4200m in coniferous forest, rhododendron and bamboo shrubs. Recorded from Milin, Mishmi Hills and Linzhi in Tibet, and from Gongshan, Fugong, Lushui, Tengchong in Yunnan.

Wild population: May be more than 10,000 and declining globally. Stable or declining only slightly in China.

Field studies: He Fen-qi in China.

Threats: Hunting for food, habitat degradation.

Comments: Protected areas - known from Gaoligong Shan Natural Reserve in Yunnan, China. No information on this species form India. A Restricted Range Species, occurring in EBA D08 which is the Eastern Himalayas and is a Priority I EBA.

Recommendations:
Wild management: Stop hunting, habitat protection.
Research: Extensive survey.
PHVA: No

Captive population: None.

Captive program recommendation: None.

TAXON REPORT

SPECIES: CHINESE MONAL *Lophophorus lhuysii*

STATUS:
Mace-Lande: VULNERABLE
CITES: Appendix I

Taxonomic status: Monotypic.

Distribution: Central China, 25 localities within a small range. Inhabits sub-alpine and alpine meadows with bare rock outcrops.

Wild population: 10,000 - 20,000 in wild and declining, but not drastically.

Field studies: He Fen-qi in China.

Threats: Habitat degradation, and hunting for food.

Comments: Protected areas - several Natural Reserves have been established. A Restricted Range Species, occurring in EBA D08 which is the Eastern Himalayas and is a Priority I EBA. The Zoological Society of San Diego has been assisting the Chinese with a captive breeding program.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive survey.
PHVA: No

Captive population: A breeding programme has already been started in China which needs to be well managed. ISIS records 2 individuals of the species and the WPA-International census, none.

Captive programme recommendation: Advice and training may be needed to aid the Chinese enterprise.

TAXON REPORT

SPECIES: GREY JUNGLEFOWL *Gallus sonneratii*

STATUS:
Mace-Lande: SECURE/VULNERABLE
CITES: Appendix II

Taxonomic status: A monotypic species.

Distribution: Southern and western peninsular India, where it has a strong preference for understory and scrub.

Wild population: Many recent reports of decline and fragmentation.

Field studies: P. Gautam at Bori Wildlife Sanctuary, Madhya Pradesh; V. J. Zacharias in Western Ghats (Kerala).

Threats: Habitat loss and fragmentation, hunting for food.

Comments: Protected areas - reported from Mt. Abu Sanctuary (288 sq. km.), Rajasthan and in Gujarat from Jessore and Dhukmal sloth bear Sanctuaries, Puran Proposed Sanctuary and Bansda National Park. In Kerala it is reported from Wynad, Thattekad and Periyar Sanctuaries, and Silent Valley and Eravikulum National Parks and in Madhya Pradesh it is known from Bori Wildlife Sanctuary.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive surveys, including assessment of status in existing protected areas.
PHVA: No

Captive population: ISIS records 188 individuals of the species and the WPA-International census, 231. It is, however, suspected that there are up to 1,000 individuals in captivity.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: BLACK KALIJ PHEASANT *Lophura leucomelanos moffiti*

STATUS:
Mace-Lande: ? (Insufficient information)
CITES: Not listed

Taxonomic status: No type locality; description is based on captive birds.

Distribution: Suspected in Bangladesh, SW Assam and Bhutan.

Wild population: *L.l. moffiti* is of major concern as there is no good information of original range.

Field studies: None known.

Threats: Not known.

Comments: There is disagreement in the literature about this subspecies' native range. Known only from captive birds found in Calcutta bird market.

Recommendations:
Wild management: Not indicated at this time
Research: Survey to establish existence and distribution. The validity of the subspecies needs clarifying.
PHVA: No

Captive population: ISIS records 2 individuals of the subspecies and the WPA-International census, 34.

Captive programme recommendation: Yes; Needs management.

TAXON REPORT

SPECIES: OATES', LINEATED AND CRAWFURD'S KALIJ PHEASANTS
Lophura leucomelanos oatesi/lineata/crawfurdii

STATUS:
Mace-Lande: SECURE/VULNERABLE
CITES: Not listed

Taxonomic status: Currently accepted within *L. leucomelanos*, but may well be more closely related to *L. nycthemera.*

Distribution: S. Burma & W. Thailand.

Wild population: Based on the amount of habitat available, the population is estimated at 1,000-100,000 and possibly declining. Numbers in Thailand estimated at around 200,000 for the species, but this includes the other Thai *L. leucomelanos* subspecies.

Field studies: None so far.

Threats: Habitat destruction.

Comments: Under threat category these three subspecies are, together, considered Secure/ Vulnerable but individual subspecies may be more threatened.

Recommendations:
Wild management: Not indicated at this time
Research: Taxonomic clarification to determine whether this group should be split into three subspecies and whether these forms are more correctly placed within *L. nycthemera.*
PHVA: No

Captive population: ISIS records 10 individuals belonging to these subspecies and the WPA-International census, 238. It is, however, suspected that there are more than 500 individuals in captivity.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: ANNAMESE SILVER PHEASANT *Lophura nycthemera annamensis*

STATUS:
Mace-Lande: ?ENDANGERED
CITES: Not listed

Taxonomic status: One of 15 subspecies.

Distribution: Has a restricted range in Vietnam. Recently recorded from six sites on the Du Lat and Di Linh Plateaux.

Wild population: No reliable information is available and based on the extent of habitat the population is estimated at 500 - 5,000 and declining.

Field studies: Searched for recently during Vietnam Forest Surveys undertaken by ICBP and the Vietnam Forest Bird Working Group of Hanoi University (Jonathan Eames, Craig Robson and Nguyen Cu).

Threats: Habitat destruction, hunted for food.

Comments: No protected areas.

Recommendations:
Wild management: Not indicated at this time
Research: Surveys in highlands of S. Vietnam.
PHVA: No

Captive population: ISIS records 384 silver pheasants and the WPA-International census, 1835. Subspecific affinities are not known.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: HAINAN SILVER PHEASANT *Lophura nycthemera whiteheadi*

STATUS:
Mace-Lande: VULNERABLE/ENDANGERED
CITES: Not listed

Taxonomic status: One of 15 subspecies, this one is a geographically isolated island form.

Distribution: Mountain forests of Hainan, including one small reserve (20 sq. km.).

Wild population: Unknown but probably less than 10,000 in such a small range.

Field studies: None known.

Threats: Habitat destruction. Hunting for food.

Comments: Protected Areas - one small reserve (20 sq. km.).

Recommendations:
Wild management: Not indicated at this time
Research: Research on distribution and habitat requirements.
PHVA: No

Captive population: ISIS records 384 silver pheasants and the WPA-International census, 1835. Subspecific affinities are not known.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: BOLOVEN'S SILVER PHEASANT *Lophura nycthemera engelbachi*

STATUS:
Mace-Lande: ENDANGERED
CITES: Not listed

Taxonomic status: One of fifteen subspecies.

Distribution: Restricted to the Bolovens Plateau, Laos.

Wild population: No reliable information, but based on habitat extent, the population is estimated at 500 - 5,000 and declining.

Field studies: None so far.

Threats: Presumed to be suffering from habitat loss and over-exploitation for food.

Comments: Protected areas - not recorded from any protected area, but probably occurs in the Bolovens Plateau proposed conservation area.

Recommendations:
Wild management: Establish protected area.
Research: Extensive survey.
PHVA: No

Captive population: ISIS records 384 silver pheasants and the WPA-International census, 1835. Subspecific affinities are not known.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: LEWIS'S SILVER PHEASANT *Lophura nycthemera lewisi*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: One of fifteen subspecies.

Distribution: Has a very restricted range in SW Cambodia and SE Thailand.

Wild population: No reliable information, but based on habitat extent, the population is estimated at less than 10,000 and declining.

Field studies: None so far.

Threats: Habitat loss.

Comments: Protected areas - status in protected areas needs determining.

Recommendations:
Wild management: Management of any protected area in which it occurs.
Research: Known populations in Thailand should be monitored and suitable areas in Cambodia surveyed.
PHVA: No

Captive population: ISIS records 384 silver pheasants and the WPA-International census, 1835. Subspecific affinities are not known. The only pure captive population of this subspecies is believed to be in Thailand.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: IMPERIAL PHEASANT *Lophura imperialis*

STATUS:
Mace-Lande: ENDANGERED
CITES: Appendix I

Taxonomic status: Regarded as a monotypic species.

Distribution: Vietnam. The only recent record is that of a live bird trapped by rattan collectors 12km west of Cat Bin on 28th February 1991 in secondary lowland forest at 50 - 100m. The historical assertion that the species occurs in central Laos is probably erroneous. The statement, made by David-Beaulieu is not supported by a specimen and was based on a vague description of a bird which was given to local hunters. David-Beaulieu did not observe the bird himself and presumed that the description was that of *L. imperialis*. Few details are given, except that the bird had a black crest.

Wild population: Population estimate based on available habitat is 100-10,000 and declining.

Field studies: Searched for recently during Vietnam Forest Surveys undertaken by ICBP and the Vietnam Forest Bird Working Group of Hanoi University (Jonathan Eames, Craig Robson and Nguyen Cu).

Threats: Over-exploitation for food, habitat destruction.

Comments: A Restricted Range Species, occurring in EBA D19 which is the Annamese lowlands and is a Priority II EBA.

Recommendations:
Wild management: Habitat protection & management. There are plans for the establishment of a reserve in the Cat Bin area by CRES (Centre for Natural Resources Management and Environmental Studies, University of Hanoi).
Research: The contemporary range of the species is very poorly known and extensive surveys must be considered the highest priority.
PHVA: No

Captive population: None. Although it was "reconstructed" by earlier crosses with closely related species to produce something that resembled the Imperial pheasant phenotype, these individuals can have no conservation importance.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: EDWARDS'S PHEASANT *Lophura edwardsi*

STATUS:
Mace-Lande: CRITICAL/EXTINCT
CITES: Appendix I

Taxonomic status: Uncertain and usually regarded as a monotypic species. The Vietnamese pheasant *L. hatinhensis*, which was described in 1975 may well be a form of *L. edwardsi*.

Distribution: Vietnam, from where it was only ever known from a small area. Recent fieldwork in its historical range failed to find the species and revealed the area to be almost completely deforested.

Wild population: The recent survey failed to find this species in its historic locality and all the collecting localities have been completely deforested. It may, however, still exist in small numbers (<1,000).

Field studies: Searched for recently during Vietnam Forest Surveys undertaken by ICBP and the Vietnam Forest Bird Working Group of Hanoi University (Jonathan Eames, Craig Robson and Nguyen Cu).

Threats: Habitat destruction.

Comments: See section on Edwards's pheasant PHVA. A Restricted Range Species, occurring in EBA D19 which is the Annamese lowlands and is a Priority II EBA.

Recommendations:
Wild management: If it persists, establish protected areas.
Research: Taxonomic clarification is urgently required, given that *L. hatinhensis* is known to exist and may be conspecific. Further surveys are also urgently needed in southern Thua Thien and Quang Tri Provinces to determine the presence of any suitable remaining forest patches and whether they contain this species.
PHVA: Yes

Captive population: ISIS records 133 individuals and the WPA-International census, 418. It is, however, believed that there may be up to 1,000 individuals in captivity.

Captive programme recommendation: Yes; needs management.

TAXON REPORT

SPECIES: VIETNAMESE PHEASANT *Lophura hatinhensis*
STATUS:
Mace-Lande: ENDANGERED
CITES: Not listed

Taxonomic status: Uncertain. Described by Professor VoQuy in 1964 in Russian, but the type description is regarded to be that in his 1975 book Chim Vietnam. Recently (Vuilluemier et al. 1992: *Bull. Brit. Orn. Club* p 299) regarded it as insufficiently known to be sure that this form is distinct from *L. edwardsi* at the species level. May turn out to be a subspecies of *L. edwardsi*.

Distribution: NC Vietnam, where it appears to be confined to the forests of the level lowlands of northern central Annam. At Cat Bin recently the species was found in level or gently sloping terrain covered by secondary lowland evergreen forest with a well-developed understory of palms and rattan interspersed with patches of bamboo.

Wild population: Based on a recent survey, by the ICBP/FBWG team, and extent of available habitat, the population is estimated at 100-10,000.

Field studies: Searched for recently during Vietnam Forest Surveys undertaken by ICBP and the Vietnam Forest Bird Working Group of Hanoi University (Jonathan Eames, Craig Robson and Nguyen Cu).

Threats: Habitat degradation, over-exploitation for food.

Comments: A Restricted Range Species, occurring in EBA D19 which is the Annamese lowlands and is a Priority II EBA.

Recommendations:
Wild management: Establishment of protected areas which will allow habitat protection and management.
Research: Taxonomic clarification to determine relationship with edwardsi and extensive survey.
PHVA: No

Captive population: ISIS and the WPA-International census do not record any individuals in captivity. ca. 10 in Hanoi Zoo.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: HOOGERWERF'S PHEASANT *Lophura hoogerwerfi*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: Only known from the skins of two females. Validity of species is dubious and may be better regarded as a subspecies of *L. inornata - L.i. hoogerwerfi.*

Distribution: Occurs in N. Sumatra where it is known only from Gunung Leuser in Aceh province at 600 - 2000m.

Wild population: Population appears confined to Gunung Leuser National Park. Based on available habitat the population is estimated at 100-10,000 and, although small, the population is considered stable.

Field studies: Nothing since skins were collected.

Threats: Not known if this species is threatened.

Comments: Protected Areas - present in Gunung Leuser National Park (~7927 sq. km.). A Restricted Range Species, occurring in EBA E11 which is Sumatra and Peninsular Malaysia (above 600m) and is a Priority II EBA.

Recommendations:
Wild management: Habitat in the known locality should be protected.
Research: Taxonomic clarification to determine its relationship to *inornata*. Extensive survey including concerted efforts to describe the male.
PHVA: No

Captive population: None.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: SALVADORI'S PHEASANT *Lophura inornata*

STATUS:
Mace-Lande: SECURE/VULNERABLE
CITES: Not listed

Taxonomic status: This species probably should include *L. hoogerwerfi* as a subspecies, in which case this form should be regarded as *L.i. inornata*.

Distribution: Sumatran endemic. Central & southern Sumatra. Montane forest between 1000 and 2200m. Definitely known from Mt. Kerinci and Mt. Kaba (west Sumatra and Bengkulu). There is no recent information from Mt. Dempu in the south.

Wild population: Based on remaining habitat the population is estimated at 1,000-10,000 individuals and thought to be stable or slightly declining.

Field studies: Nothing known.

Threats: Habitat degradation.

Comments: Protected Areas - present in Kerinci/Seblat National Park (~15,000 sq. km.). A Restricted Range Species, occurring in EBA E11 which is Sumatra and Peninsular Malaysia (above 600m) and is a Priority II EBA.

Recommendations:
Wild management: Habitat protection.
Research: Extensive survey to determine the exact range and taxonomic clarification to determine its relationship with respect to *L. hoogerwerfi*.
PHVA: No

Captive population: ISIS records 50 birds and the WPA-International census, 0. There are, however, believed to be over 100 in captivity. There are some individuals in Taman Mini Bird Park, Indonesia.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: MALAY CRESTLESS FIREBACK *Lophura erythrophthalma erythrophthalma*

STATUS:
Mace-Lande: VULNERABLE (in Malaysia)/ENDANGERED (in Sumatra)
CITES: Species - Appendix III (Malaysia)

Taxonomic status: One of two subspecies.

Distribution: Peninsular Malaysia & Sumatra. Found from nearly sea level to about 300m in Peninsular Malaysia where it may tolerate secondary forest conditions. Believed to be a lowland forest specialist in Sumatra from where there are no recent sightings. In Sumatra its historical distribution is the central regions (west and east) only. If it is tolerant of wetland forest conditions its range in Sumatra will be much larger.

Wild population: Sparsely distributed in Peninsular Malaysia, presumably declining. Estimated population based on available habitat is 1,000-10,000. In contrast to Peninsular Malaysia, it seems to be naturally rare (i.e., at low densities) in Sumatra.

Field studies: Nothing known.

Threats: Habitat degradation and loss to agriculture, clear felling for timber production.

Comments: Protected areas - in Peninsular Malaysia it is present in the Krau Wildlife Reserve (530 sq. km.), Endau-Rompin proposed State Park (total area would be about 800 sq. km. in Johore and Pahang states) and probably in Taman Negara National Park (4343 sq. km.). Also known from Ampang Forest Reserve. In Indonesia it is known from Way Kambas National Park, Sumatra (1300 sq. km.), where there is also a much larger population of Crested firebacks *L. ignita.*

Recommendations:
Wild management: Habitat management & protection.
Research: Extensive survey.
PHVA: No

Captive population: ISIS records 18 birds and the WPA-International census, 115. There are, however believed to be over 250 in captivity.

Captive programme recommendation: Yes; captive management is required.

TAXON REPORT

SPECIES: BORNEAN CRESTLESS FIREBACK *Lophura erythrophthalma pyronota*

STATUS:
Mace-Lande: VULNERABLE/ENDANGERED
CITES: Species - Appendix III (Malaysia)

Taxonomic status: One of two subspecies.

Distribution: Borneo. Found from nearly sea level to about 300m in East Malaysia where it may tolerate secondary forest conditions. Believed to be a lowland forest specialist in Kalimantan where it is probably widespread although there are only two recent records. If it is tolerant of wetland forest conditions its range in Kalimantan will be much larger.

Wild population: Sparsely distributed in East Malaysia, presumably declining. The estimated population, based on available habitat, is 1,000-10,000. In contrast to the other subspecies in Peninsular Malaysia, it seems to be naturally rare (i.e., at low densities) in Kalimantan.

Field studies: Extensive survey and research into tolerance to habitat degradation.

Threats: Not known.

Comments: Protected areas - present in Gunung Mulu National Park (528 sq. km.) in Sarawak, but no records from existing Protected areas in Kalimantan.

Recommendations:
Wild management: Not indicated at this time
Research: Extensive survey and research into tolerance to habitat degradation.
PHVA: No

Captive population: ISIS records 0 birds and the WPA-International census, 33. There are, however believed to be up to 50 in captivity.

Captive programme recommendation: Captive population needs monitoring.

TAXON REPORT

SPECIES: CRESTED FIREBACK *Lophura ignita*
STATUS:
Mace-Lande: VULNERABLE
CITES: Appendix III (Malaysia)

Taxonomic status: Four subspecies which are treated together here.

Distribution: S.E. Asia. It is probably restricted to the plains and foothills in Thailand where its upper altitude limit is not known. Has become extinct on Phuket island. In Peninsular and East Malaysia it is sparsely distributed from near sea level up to 1000m or more depending on locality. In Indonesia it is found on Sumatra and in Kalimantan where it is regarded as a lowland forest specialist. It has been recorded from logged and secondary forest, but the limits of its tolerance to habitat alteration are not known. Not known from swamp forest. It has probably been extirpated from areas where lowland forest has been lost.

Wild population: Based on available habitat and anecdotal information there are estimated to be possibly more than 100,000 individuals. Overall the population is declining.

Field studies: Nothing specifically on this species.

Threats: Habitat destruction for agriculture. It has been recorded from logged and secondary forest, but the limits of its tolerance to habitat alteration are not known. Statements concerning the effects of logging on the species must be treated with caution at present because of methodological problems (e.g., small sample size).

Comments: Protected Areas - present in Taman Negara National Park (4343 sq. km.), Krau Wildlife Reserve (530 sq. km.), Gunung Mulu National Park (528 sq. km) and Danum Valley Research Centre in Malaysia. Also known from Pasoh Forest Reserve (~25 sq. km.) in Peninsular Malaysia. In Indonesia it is found in Way Kambas National Park (1,300sq. km) on Sumatra and Tanjung Puting National Park (3050 sq. km.) in Kalimantan. In Thailand it is known from Khao Pra Bang Khram.

Recommendations:
Wild management: Habitat protection.
Research: Extensive surveys, particularly in Indonesian protected areas.
PHVA: No

Captive population: ISIS records 6 birds and the WPA-International census, 0.

Captive programme recommendation: None.

TAXON REPORT

SPECIES: SIAMESE FIREBACK *Lophura diardi*

STATUS:
Mace-Lande: VULNERABLE
CITES: Not listed

Taxonomic status: Monotypic.

Distribution: S.E. Asia, where it regarded as a lowland forest resident. In Thailand it inhabits primary and secondary evergreen forest from the plains to about 800m. No information from Cambodia. Recently recorded from six localities in Vietnam and one in Laos.

Wild population: Based on a recent population estimate for Thailand (5,400) and the amount of habitat estimated to be in other locations, the population is believed to be between 5,000-10,000.

Field studies: Recently recorded at Buon Luo in central Annam, Son Tung in north Annam, Kon Cha Rang, Gia Lai and Nam Bai Cat Tien National Park, Dong Nai, Vietnam and Xe Pane National Park, Laos.

Threats: Habitat degradation, over-exploitation for food and sport. As it is a lowland forest specialist, it is very vulnerable.

Comments: Protected areas - recorded recently from Nam Bai Cat Tien National Park (35,000ha.) in Vietnam and Xe Pane National Park in Laos.

Recommendations:
Wild management: Habitat protection and stop hunting.
Research: Not indicated at this time
PHVA: No

Captive population: ISIS records 88 birds and the WPA-International census, 650.

Captive programme recommendation: None.

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GALLIFORM CONSERVATION ASSESSMENT

FIRST REVIEW DRAFT

20 NOVEMBER 1994

REPORT FROM THE WORKSHOP HELD
1-3 FEBRUARY 1993

EDITED BY
PHILIP J. MCGOWAN, JOHN CARROLL, AND SUSIE ELLIS

SECTION 4

APPENDICES

APPENDIX I.

PARTICIPANTS

Eve Abe
Uganda National Parks
PO Box 3530,
Kampala, Uganda

Han Assink
De Vogelhof
Boerenweg 66, 5944 EL
Arcen, Netherlands

Colin Bibby
BirdLife International
Wellbrook Court
Girton Road
Cambridge, CB3 0NA, United Kingdom

Roland van Bocxstaele
Zoo Antwerpen
Koningin
Astridplein 26
B 2018 Antwerpen, Belgium

Koen Brouwer
National Foundation for Research in Zoos
Postbus 20164
1000 HD Amsterdam, The Netherlands

Don Bruning
NYZS/The Wildlife Conservation Society
Bronx, NY 10460-1099, USA

John Carroll
Dept of Biological and Environmental Sciences
California University of Pensylvania
California, PA 15419, USA

Rene Dekker
Nationaal Natuurhistorisch Museum
Postbus 9517
2300 RA Leiden, The Netherlands

Simon Dowell
Dept. of Biological and Earth Sciences
Liverpool John Moores University
Byrom Street,
Liverpool, L3 3AF, United Kingdom

Jonathan Eames
BirdLife International
Wellbrook Court
Girton Road
Cambridge, CB3 0NA, United Kingdom

Susie Ellis
IUCN/SSC CBSG
12101 Johnny Cake Ridge Rd,
Apple Valley, MN 55124, USA

Peter Garson
Dept. of Agricultural and Environmental Sciences
Ridley Building
The University
Newcastle-upon-Tyne NE1 7RU
United Kingdom

Wolfgang Grummt
Tierpark Berlin-Friedrichsfelde
Am Tierpark
125 D-O-1136 Berlin, Germany

Willy Haers
Sluizeken 13
9000B Ghent, Belgium
(Edwards' pheasant PVA only)

Diane Hewitt
Windy Hall
Cumbria LA23 3JA, United Kingdom

Keith Howman
Ashmere, Felix Lane
Shepperton,
Middlesex, TW17 8NN, United Kingdom

Derek Holmes
PO Box 4087
Jakarta 12040, Indonesia

Rahul Kaul
WPA-International
c/o WWF India Secretariat
172-B Lodi Estate
New Delhi 110 023, India

Martin Kelsey
BirdLife International
Wellbrook Court
Girton Road
Cambridge, CB3 0NA, United Kingdom

Reese Lind
Jersey Wildlife Preservation Trust
Les Augres Manor
Trinity
Jersey, Channel Islands, JE3 5BF,
United Kingdom

Georgina Mace
Institute of Zoology
Zoological Society of London
Regent's Park
London, NW1 4RY, United Kingdom

Philip McGowan
Biology Department
The Open University
Walton Hall
Milton Keynes, MK7 6AA, United Kingdom

Gary Robbins
40 Old Market Street
Mendlesham
Suffolk, IP14 5SA, United Kingdom

Ulysses Seal
IUCN/SSC/CBSG
12101 Johnny Cake Ridge Rd,
Apple Valley, MN 55124, USA

Roland Wirth
Franz-Senn Str. 14
8000 Munchen 70, Germany

Madelon van der Zee
Langeveg 68
4675 RM St.
Philipsland, Netherlands

Essay

Assessing Extinction Threats: Toward a Reevaluation of IUCN Threatened Species Categories

GEORGINA M. MACE

Institute of Zoology
Zoological Society of London
Regent's Park, London NW1 4RY, U.K.

RUSSELL LANDE

Department of Ecology and Evolution
University of Chicago
Chicago, Illinois 60637, U.S.A.

Abstract: *IUCN categories of threat (Endangered, Vulnerable, Rare, Indeterminate, and others) are widely used in 'Red lists' of endangered species and have become an important tool in conservation action at international, national, regional, and thematic levels. The existing definitions are largely subjective, and as a result, categorizations made by different authorities differ and may not accurately reflect actual extinction risks. We present proposals to redefine categories in terms of the probability of extinction within a specific time period, based on the theory of extinction times for single populations and on meaningful time scales for conservation action. Three categories are proposed (CRITICAL, ENDANGERED, VULNERABLE) with decreasing levels of threat over increasing time scales for species estimated to have at least a 10% probability of extinction within 100 years. The process of assigning species to categories may need to vary among different taxonomic groups, but we present some simple qualitative criteria based on population biology theory, which we suggest are appropriate at least for most large vertebrates. The process of assessing threat is clearly distinguished from that of setting priorities for conservation action, and only the former is discussed here.*

Resumen: *La categorización de la Unión Internacional para la Conservación de la Naturaleza (UICN) de las especies amenazadas (en peligro, vulnerables, raras, indeterminadas y otras) son ampliamente utilizadas en las Listas Rojas de especies en peligro y se han convertido en una herramienta importante para las acciones de conservación al nivel internacional, nacional, regional y temático. Las definiciones de las categorías existentes son muy subjetivas y, como resultado, las categorizaciones hechas por diferentes autores difieren y quizás no reflejen con certeza el riesgo real de extinción. Presentamos propuestas para re-definir las categorías en términos de la probabilidad de extinción dentro de un período de tiempo específico. Las propuestas están basadas en la teoría del tiempo de extinción para poblaciones individuales y en escalas de tiempo que tengan significado para las acciones de conservación. Se proponen tres categorías (CRITICA, EN PELIGRO, VULNERABLE) con niveles decrecientes de amenaza sobre escalas de tiempo en aumento para especies que se estima tengan cuando ménos un 10% de probabilidad de extinción en 100 años. El proceso de asignar especies a categorías puede que necesite variar dentro de los diferentes grupos taxonómicos pero nosotros presentamos algunos criterios cualitativos simples basados en la teoría de la biología de las poblaciones, las cuales sugerimos son apropiadas para cuando ménos la mayoría de los grandes vertebrados. El proceso de evaluar la amenaza se distingue claramente del de definir las prioridades para las acciones de conservación, sólamente el primero se discute aquí.*

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Introduction

Background

The Steering Committee of the Species Survival Commission (SSC) of the IUCN has initiated a review of the overall functioning of the Red Data Books. The review will cover three elements: (1) the form, format, content, and publication of Red Data Books; (2) the categories of threat used in Red Data Books and the IUCN Red List (Extinct, Endangered, Vulnerable, Rare, and Indeterminate); and (3) the system for assigning species to categories. This paper is concerned with the second element and includes proposals to improve the objectivity and scientific basis for the threatened species categories currently used in Red Data Books (see IUCN 1988 for current definitions).

There are at least three reasons why a review of the categorization system is now appropriate: (1) the existing system is somewhat circular in nature and excessively subjective. When practiced by a few people who are experienced with its use in a variety of contexts it can be a robust and workable system, but increasingly, different groups with particular regional or taxonomic interests are using the Red Data Book format to develop local or specific publications. Although this is generally of great benefit, the interpretation and use of the present threatened species categories are now diverging widely. This leads to disputes and uncertainties over particular species that are not easily resolved and that ultimately may negatively affect species conservation. (2) Increasingly, the categories of threat are being used in setting priorities for action, for example, through specialist group action plans (e.g., Oates 1986; Eudey 1988; East 1988, 1989; Schreiber et al. 1989). If the categories are to be used for planning then it is essential that the system used to establish the level of threat be consistent and clearly understood, which at present it does not seem to be. (3) A variety of recent developments in the study of population viability have resulted in techniques that can be helpful in assessing extinction risks.

Assessing Threats Versus Setting Priorities

In the first place it is important to distinguish systems for assessing threats of extinction from systems designed to help set priorities for action. The categories of threat should simply provide an assessment of the likelihood that if current circumstances prevail the species will go extinct within a given period of time. This should be a scientific assessment, which ideally should be completely objective. In contrast, a system for setting priorities for action will include the likelihood of extinction, but will also embrace numerous other factors, such as the likelihood that restorative action will be successful; economic, political, and logistical considerations; and perhaps the taxonomic distinctiveness of the species under review. Various categorization systems used in the past, and proposed more recently, have confounded these two processes (see Fitter & Fitter 1987; Munton 1987). To devise a general system for setting priorities is not useful because different concerns predominate within different taxonomic, ecological, geographical, and political units. The process of setting priorities is therefore best left to specific plans developed by specialist bodies such as the national and international agencies, the specialist groups, and other regional bodies that can devise priority assessments in the appropriate regional or taxonomic context. An objective assessment of extinction risk may also then contribute to the decisions taken by governments on which among a variety of recommendations to implement. The present paper is therefore confined to a discussion of assessing threats.

Aims of the System of Categorization

For Whom?

Holt (1987) identifies three different groups whose needs from Red Data Books (and therefore categories of threat) may not be mutually compatible: the lay public, national and international legislators, and conservation professionals. In each case the purpose is to highlight taxa with a high extinction risk, but there are differences in the quality and quantity of information needed to support the assessment. Scott et al. (1987) make the point that in many cases simple inclusion in a Red Data Book has had as much effect on raising awareness as any of the supporting data (see also Fitter 1974). Legislators need a simple, but objective and soundly based system because this is most easily incorporated into legislation (Bean 1987). Legislators frequently require some statement about status for every case they consider, however weak the available information might be. Inevitably, therefore, there is a conflict between expediency and the desire for scientific credibility and objectivity. Conservationists generally require more precision, particularly if they are involved in planning conservation programs that aim to make maximal use of limited resources.

Characteristics of an Ideal System

With this multiplicity of purposes in mind it is appropriate to consider various characteristics of an ideal system:

(1) The system should be essentially simple, providing easily assimilated data on the risk of extinction. In terms of assessing risk, there seems to be little virtue in developing numerous categories, or in categorizing risk on the basis of a range of different parameters (e.g., abundance, nature of threat, likelihood of persistence of threat, etc.). The categories should be few in number,

existing models (e.g., grizzly bear: Shaffer 1983; spotted owl: Gutiérrez & Carey 1985; Florida panther: CBSG 1989), and there is much potential for further development.

Although different extinction factors may be critical for different species, other, noncritical factors cannot be ignored. For example, it seems likely that for many species, habitat loss constitutes the most immediate threat. However, simply preserving habitats may not be sufficient to permit long term persistence if surviving populations are small and subdivided and therefore have a high probability of extinction from demographic or genetic causes. Extinction factors may also have cumulative or synergistic effects; for example, the hunting of a species may not have been a problem before the population was fragmented by habitat loss. In every case, therefore, all the various extinction factors and their interactions need to be considered. To this end more attention needs to be directed toward development of models that reflect the random influences that are significant to most populations, that incorporate the effects of many different factors, and that relate to the many plant, invertebrate, and lower vertebrate species whose population biology has only rarely been considered so far by these methods.

Viability analysis should suggest the appropriate kind of data for assigning extinction risks to species, though much additional effort will be needed to develop appropriate models and collect appropriate field data.

Proposal

Three Categories and Their Justification

We propose the recognition of three categories of threat (plus EXTINCT), defined as follows:

CRITICAL:	50% probability of extinction within 5 years or 2 generations, whichever is longer.
ENDANGERED:	20% probability of extinction within 20 years or 10 generations, whichever is longer.
VULNERABLE:	10% probability of extinction within 100 years.

These definitions are based on a consideration of the theory of extinction times for single populations as well as on meaningful time scales for conservation action. If biological diversity is to be maintained for the foreseeable future at anywhere near recent levels occurring in natural ecosystems, fairly stringent criteria must be adopted for the lowest level of extinction risk, which we call VULNERABLE. A 10% probability of extinction within 100 years has been suggested as the highest level of risk that is biologically acceptable (Shaffer 1981) and seems appropriate for this category. Furthermore, events more than about 100 years in the future are hard to foresee, and this may be the longest duration that legislative systems are capable of dealing with effectively.

It seems desirable to establish a CRITICAL category to emphasize that some species or populations have a very high risk of extinction in the immediate future. We propose that this category include species or populations with a 50% chance of extinction within 5 years or two generations, and which are clearly at very high risk.

An intermediate category, ENDANGERED, seems desirable to focus attention on species or populations that are in substantial danger of extinction within our lifetimes. A 20% chance of extinction within 20 years or 10 generations seems to be appropriate in this context.

For increasing levels of risk represented by the categories VULNERABLE, ENDANGERED, and CRITICAL, it is necessary to increase the probability of extinction or to decrease the time scale, or both. We have chosen to do both for the following reasons. First, as already mentioned, decreasing the time scale emphasizes the immediacy of the situation. Ideally, the time scale should be expressed in natural biological units of generation time of the species or population (Leslie 1966), but there is also a natural time scale for human activities such as conservation efforts, so we have given time scales in years and in generations for the CRITICAL and ENDANGERED categories.

Second, the uncertainty of estimates of extinction probabilities decreases with increasing risk levels. In population models incorporating fluctuating environments and catastrophes, the probability distribution of extinction times is approximately exponential (Nobile et al. 1985; Goodman 1987). In a fluctuating environment where a population can become extinct only through a series of unfavorable events, there is an initial, relatively brief period in which the chance of extinction is near zero, as in the inverse Gaussian distribution of extinction times for density-independent fluctuations (Ginzburg et al. 1982; Lande & Orzack 1988). If catastrophes that can extinguish the population occur with probability p per unit time, and are much more important than normal environmental fluctuations, the probability distribution of extinction times is approximately exponential, pe^{-pt}, and the cumulative probability of extinction up to time t is approximately $1 - e^{-pt}$. Thus, typical probability distributions of extinction times look like the curves in Figures 1A and 1B, and the cumulative probabilities of extinction up to any given time look like the curves in Figures 1C and 1D. Dashed curves represent different distributions of extinction times and cumulative extinction probabilities obtained by changing the model parameters in a formal population viability analysis (e.g., different amounts of environmental variation in demographic parameters). The uncertainty in an

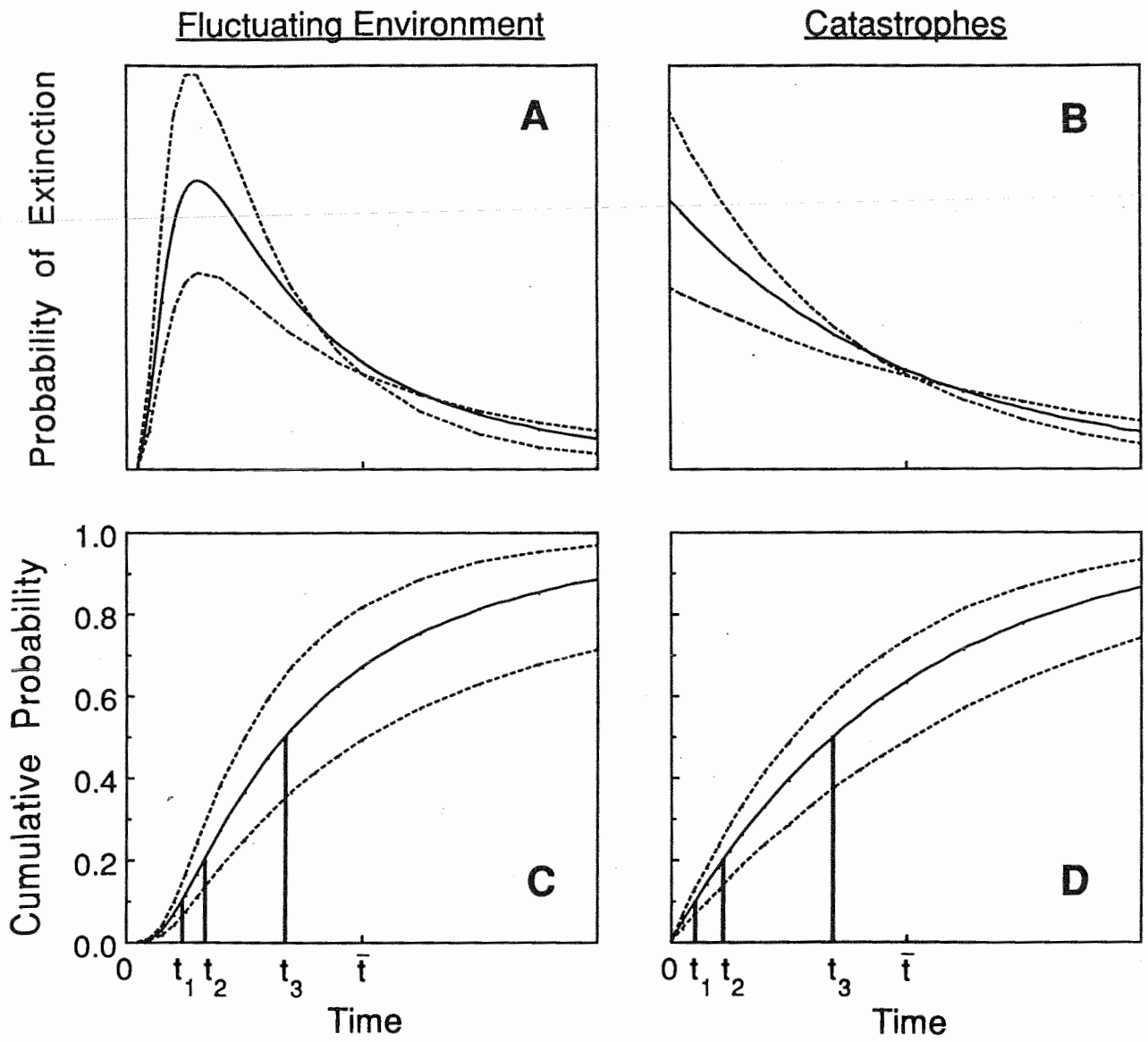

Figure 1. Probability distributions of time to extinction in a fluctuating environment, inverse Gaussian distributions (A), or with catastrophes, exponential distributions (B). Corresponding cumulative extinction probabilities of extinction up to any given time are shown below (C and D). Solid curves represent the best estimates from available data and dashed curves represent different estimates based upon the likely range of variation in the parameters. t_1, t_2, and t_3 are times at which the best estimates of cumulative extinction probabilities are 10%, 20%, and 50%. $\bar{t}$ is the expected time to extinction in the solid curves.

ENDANGERED:

20% probability of extinction within 20 years or 10 generations, whichever is longer, or

(1) Any **two** of the following or any **one** criterion under CRITICAL

(a) Total population $N_e < 500$ (corresponding to actual $N < 2,500$).

(b) Population fragmented:

(i) ≤ 5 subpopulations with $N_e > 100$ ($N > 500$) with immigration rates <1 per generation, or

(ii) ≤ 2 subpopulations with $N_e > 250$ ($N > 1,250$) with immigration rates <1 per generation.

(c) Census data of $>5\%$ annual decline in numbers over past 5 years, or $>10\%$ decline per generation over past 2 generations, or equivalent projected declines based on demographic data after

variability and catastrophes, substantial differences may arise in the results from analyses of equal validity performed by different parties. In such cases, we recommend that the criteria for categorizing a species or population should revert to the more qualitative ones outlined above.

Reporting Categories of Threat

To objectively compare categorizations made by different investigators and at different times, we recommend that any published categorization also cite the method used, the source of the data, a date when the data were accurate, and the name of the investigator who made the categorization. If the method was by a formal viability model, then the name and version of the model used should also be included.

Conclusion

Any system of categorizing degrees of threat of extinction inevitably contains arbitrary elements. No single system can adequately cover every possibility for all species. The system we describe here has the advantage of being based on general principles from population biology and can be used to categorize species for which either very little or a great deal of information is available. Although this system may be improved in the future, we feel that its use will help to promote a more uniform recognition of species and populations at risk of premature extinction, and should thereby aid in setting priorities for conservation efforts.

Summary

1. Threatened species categories should highlight species vulnerable to extinction and focus appropriate reaction. They should therefore aim to provide objective, scientifically based assessments of extinction risks.
2. The audience for Red Data Books is diverse. Positive steps to raise public awareness and implement national and international legislation benefit from simple but soundly based categorization systems. More precise information is needed for planning by conservation bodies.
3. An ideal system needs to be simple but flexible in terms of data required. The category definitions should be based on a probabilistic assessment of extinction risk over a specified time interval, including an estimate of error.
4. Definitions of categories are appropriately based on extinction probabilities such as those arising from population viability analysis methods.
5. We recommend three categories, CRITICAL, ENDANGERED, and VULNERABLE, with decreasing probabilities of extinction risk over increasing time periods.
6. For most cases, we recommend development of more qualitative criteria for allocation to categories based on basic principles of population biology. We present some criteria that we believe to be appropriate for many taxa, but are appropriate at least for higher vertebrates.

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