Reprinted from the International Zoo Yearbook Vol. 17 1977

Block '77

A method of zoo inventory reporting

JUDITH A. BLOCK[1], ALLEGRA HAMER[2] & ANN HESS[3]

[1]*National Zoological Park, Washington, DC 20009,* [2]*New York Zoological Park, Bronx, New York 10460, and* [3]*Philadelphia Zoological Gardens, Pennsylvania 19104, USA*

The New York (Bronx) Zoo, Philadelphia Zoo and the National Zoo in Washington have co-operated in developing a compatible inventory system modelled on the 'balance sheet' format in use at the Rotterdam Zoo. Amongst its advantages it reveals with minimum loss of time the species and numbers in each collection, and where and how changes have taken place; it also provides a basis for further analysis. By standardising the principles and format of inventory reporting, not only have we gained a new perspective on the individual collection, but we have also acquired a uniform method of comparing similar species groups in the three zoos.

SPECIES	STATUS 31 Dec 74	HATCHED	OTHER ACQUISITIONS	DIED	OTHER DISPOSITIONS	STATUS 31 Dec 75
RECURVIROSTRIDAE						
Black-winged stilt						
Himantopus himantopus himantopus	8.5.5–0.0.3	0.0.4	0	0.0.5–0.0.3	–0.0.2	8.5.2–0.0.2
Black-necked stilt						
Himantopus himantopus mexicanus	1.1	0	0	0.1	0	1.0
European avocet						
Recurvirostra avosetta	0.1.19–0.1.7	0	0	0.1.5–0.1.6	–0.0.6.	0.0.8–0.0.7
BURHINIDAE						
Central American stone plover						
Burhinus bistriatus bistriatus	0.0.1	0	+0.0.1	0	0	0.0.1+0.0.1

Table 1. Extract from the 'balance sheet' annual inventory of birds of the New York Zoological Park

	AMPHIBIANS	REPTILES	BIRDS	MAMMALS			TOTAL
STATUS OF THE COLLECTION							
31 December 1975							
Orders	2	5	20	12			35
Families	5	23	62	43			133
Species	16	104	302	133			555
Specimens	50	403	1313	700			2466
CHANGES IN THE COLLECTION 1975							
				CRC	OAM	OZR	
Status 31 Dec 1974*	43	415	1519	17	434	194	2622
Born/Hatched**	0	32	708	9	124	96	969
Other acquisitions	32	186	94	27	56	57	452
Total in	75	633	2321	53	614	347	4043
Died	25	116	533	7	92	93	866
Other dispositions	0	114	442	3	92	33	684
Adjustment	0	0	33	0	0	6	27
Status 31 Dec 1975*	50	403	1313	43	430	227	2466
Loans to NZP	1	13	20	23	17	5	

* includes loans from NZP
** includes stillbirths

Table 2. Annual inventory summary of the National Zoological Park, Washington.

A traditional inventory is a simple list, compiled in taxonomic order, of the numbers of each species living in a zoo on a particular date. Its purpose is threefold: it is an accounting to the zoo's management; it is an aid to inter-zoo trade, co-operative agreements and the exchange of information; and finally, it is a management tool for operational analysis and planning.

For the last purpose in particular, a balance sheet demonstrating activity throughout the year is by far a more suitable means of analysing the collection than is the traditional annual catalogue. It is also worth mentioning that the operation of a system of this kind, where individual accounting plays such an essential role, presupposes the marking and identification of individual animals. This is now normal management practice in our own and many other zoos.

As illustrated in Table 1, the balance sheet is a summary of the various events – births, deaths, and other acquisitions and dispositions such as purchases, donations, sales, exchanges – which have altered the numerical status of each species within the zoo during the course of the year. A parallel summary is then compiled for each of the various vertebrate classes, and the changes for the whole collection are aggregated as shown in Table 2.

Before the three record systems could be harmonised, agreement had to be reached among the participating zoos on the criteria for and methods of reporting and recording events. It was decided that every specimen living in the zoo at any time during the year in question was to be recorded, including animals which arrived and departed again within the period. It was also necessary to determine criteria for accessioning newborn animals: in the case of mammals, every birth, however short-lived, is recorded (stillbirths are recorded separately to be dealt with individually by each zoo), and for birds, reptiles and amphibians the criterion is either live birth or live emergence from the shell. For the latter three classes there are also clutch records maintained on site to record the number of eggs, fertility, stillbirths, etc. and separate analyses can be derived from these documents. None of the three zoos houses fishes or invertebrates.

The standard zoological notation 1.1.1 to indicate sex is employed. To record loans – increasingly important transactions – we use a plus sign to indicate a loan to the institution and a minus sign to indicate a loan out. Thus, 0.3.1+ 2.0−1.1 means that there are three ♀♀ and one animal of undetermined sex, as well as two ♂♂

on loan, living in the collection, and one ♂ and one ♀ currently out on loan to another zoo.

Mammalian taxonomy follows the sequence and nomenclature established by the International Species Inventory System (ISIS) (Seal & Makey, 1974). For other classes, the latest standard references are used. Within the basic limits, individual zoos can where necessary modify the information which they report; they may add columns, make special notations, or designate subcategories as desired. The system also permits various kinds of analyses according to taxonomic categories, e.g. to measure reproductive and management success within a given group. On the basis of such examinations the zoos can take either individual or collective decisions about species selection, population policies and disposal of surpluses. Analysis can raise questions and pinpoint problems, while areas for further investigation may suggest themselves. Successive assessments may be made over time, and comparisons among the three zoos facilitated by the fact that their inventories and principles of recording are similar.

The standardised inventory is an important aspect of the collaborative management pioneered by the New York, Philadelphia and National Zoos. The system is a logical extension of the ISIS scheme, and the individual and collective inventories already produced by ISIS on lines similar to those described in this paper are a further step towards inaugurating a common policy for zoos in general.

REFERENCE

SEAL, U. S. & MAKEY, D. G. (1974): *Mammalian taxonomic directory*. Minnesota: ISIS–Minnesota Zoological Garden.

Manuscript submitted 6 April 1976

Printed in Great Britain by Henry Ling Ltd., at the Dorset Press, Dorchester, Dorset