Section 1.3: Elephant

Section 1.3.1 – Cumulative summation system

Method:
Body condition score the four printed photosets and the three Tulsa Zoo Asian elephants using Wemmer *et al* (2006) "The criteria and point scores used to assess body condition in Asian elephants".

Assessment is based on the total sum of individual regional scores below. Record scores for each specimen on this data sheet. When a particular body region is intermediate between two criteria, an intermediate point score (i.e. 0.5, 1.5 points) should be assigned.

Region	A	B	C	D	E	F	G	H	I
Head – Scores: 2,1,0	…………	…………	…………	…………	…………	…………	…………	…………	…………
2. Scapula – Scores: 2,1,0	…………	…………	…………	…………	…………	…………	…………	…………	…………
3. Thoracic region – Scores: 2,1,0	…………	…………	…………	…………	…………	…………	…………	…………	…………
4. Flank area – Scores: 1,0	…………	…………	…………	…………	…………	…………	…………	…………	…………
5. Lumbar vertebrae – Scores: 2,1,0	…………	…………	…………	…………	…………	…………	…………	…………	…………
6. Pelvic bone – Scores: 2,1,0	…………	…………	…………	…………	…………	…………	…………	…………	…………
Total Sum of all regions	…………	…………	…………	…………	…………	…………	…………	…………	…………

Assessment of summation (adapted from Mikota, 2006)
> 0-3 points = emaciated condition
> 4-8 points = average condition
> 9 or more = very good condition (or fat)

Wemmer, C., Krishnamurthy, V., Shrestha, S., Hayek, L-A. Thant, M. and Nanjappa, K. A. (2006) *Assessment of Body Condition in Asian Elephants (Elephas maximus)*, Zoo Biology 25: 187-200

Mikota, S.K. (2006) *Preventative health care and physical examination; In:* Fowler, M.E. and Mikota S.K. (eds) Biology, Medicine and Surgery of Elephants; Blackwell Publishing, Ames, IO, USA

**Table 1: The criteria and point scores used to assess body condition in Asian elephants**

Body region/score	Criteria

A. Head: temporal depression (view from several angles)

2 points — Full and convex in outline when viewed from behind (at the level of the neck or shoulder); frontal ridge vaguely outlined at best.

1 point — Slightly to moderately concave; frontal ridge defined.

0 points — deeply concave; frontal ridge forms a crater-like rim around the temporal depression.

B. Scapula (shoulder blade) (view from side)

2 points — Spinous process of the shoulder blade not visible, or slightly visible when the foreleg is in certain positions.

1 point — Spinous process visible as a vertical ridge with a concavity between the ridge and the and the posterior edge of the scapula.

0 points — Spinous process pronounced and bladelike with the acromial process pronounced as a knot.

C. Thoracic region (view from side)

2 points — Ribs not visible, barrel smooth.

1 point — Some ribs visible, but the extent and demarkation not pronounced.

0 points — Many ribs strongly demarcated (even behind the scapula) with pronounced intercostal depressions.

D. Flank area (immediately in front of pelvic girdle) (view from side and behind)

1 point — No depression visible; flank bulges outwards in front of the pelvis.

0 points — Depression visible as a sunken area immediately in front of pelvis.

E. Lumbar vertebrae (behind ribs and in front of pelvis) (view from behind, an elevated vantage point may be necessary)

2 points — Not visible, lower back smooth and rounded.

1 point — Visible as a ridge; skin slopes away from the top of the ridge; height of the vertebrae does not exceed width.

0 points — Visible as a knife-like blade; sides of spinal ridge almost parallel, and the height equal to or exceeds the width.

F. Pelvic bone (external angle of the ilium) (view from several angles)

2 points — Not visible (or slightly visible); rump region between the ilium and caudal vertebrae filled with tissue (and not forming a depressed zone).

1 point — Visible but not pronounced; the rump is a slightly depressed zone between the ilium and the caudal vertebrae.

0 points — Visible as a jutting bone; rump is a pronounced sunken zone between ilium and the caudal vertebrae.

Figure 1. Body configuration of (A) young adult bull in good body condition (ca. 8 points); notice the smooth shoulder and rib cage, absence of flank depression (pelvic bone not clearly discernible); (B) a thin male in late middle age in poor body condition (2–3 points); (C) a thinbodied old cow (notice that the ribs are not visible) (2 points); (D) an emaciated old cow with strongly demarcated scapula, ribs, and pelvic girdle (0 points).
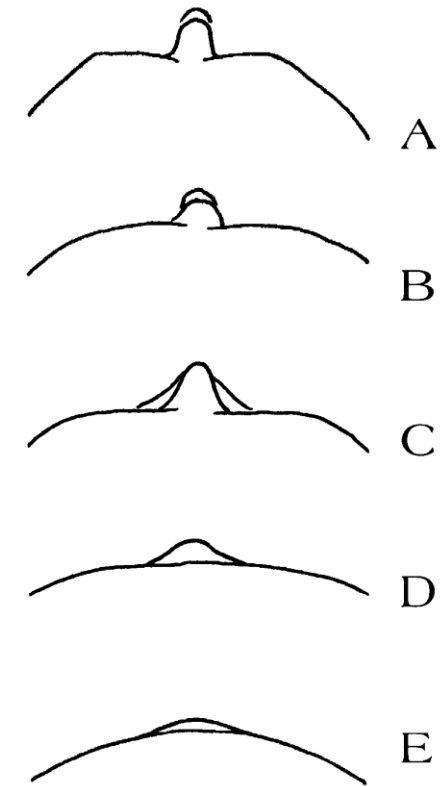
Figure 2. The degrees of visibility of the lumbar vertebrae of Asian elephants of differing body condition (as seen from behind; sketches from photographs). In the top two profiles (A,B) the lumbar vertebrae and the thoracic vertebrae beyond them are clearly visible and blade-like (0 points); the middle example © shows the vertebral ridge with sloping tissue on the sides (1 point); the fourth example (D) is less pronounced and would receive 1.5 points. In the bottom example (E), as is seen in the rare fat elephant, underlying tissue obscures the lumbar vertebrae (2 points).