Alcelaphus buselaphus caama – Red Hartebeest


Beryl Wilson

Regional Red List status (2016)	
Alcelaphus b. caama	**Least Concern**
Alcelaphus b. lichtensteinii	**Not Evaluated***
National Red List status (2004)	
Alcelaphus b. caama	Least Concern
Alcelaphus b. lichtensteinii	Not Evaluated
Reasons for change	No change
Global Red List status (2016)	
Alcelaphus b. caama	Least Concern
Alcelaphus b. lichtensteinii	Least Concern
TOPS listing (NEMBA)	None
CITES listing	None
Endemic	No

*Watch-list Data

While having been eliminated over all of their historical range besides areas of the Northern Cape, today Red Hartebeest have been successfully reintroduced into all provinces and numbers are increasing.

Taxonomy

Alcelaphus buselaphus caama (Geoffroy Saint-Hilaire 1803)

ANIMALIA - CHORDATA - MAMMALIA - CETARTIODACTYLA - BOVIDAE - *Alcelaphus – buselaphus - caama*

Common names: Red Hartebeest (English), Rooihartbees (Afrikaans), Ihlezu, Indluzele, Iqhama (Ndebele), Thetele (Sepedi), Kgama, Khama (Setswana), Kgama, Khama, Lethodile, Tlohela (Sesotho), Umzansi (Swati), Nondo, Nondzo (Tsonga), Thendele (Venda), Ixhama (Xhosa), Indluzela, Inkolongwane (Zulu)

Taxonomic status: Subspecies

Taxonomic notes: Following Gosling and Capellini (2013), and in contrast to Grubb (2005), this species is here considered to include both Red Hartebeest *A. caama* and Lichtenstein's Hartebeest *A. lichtensteinii*. A total of eight subspecies are recognized, of which Red Hartebeest occurs in the assessment region and possibly (see discussion below) Lichtenstein's Hartebeest. The eighth and nominate subspecies, the Bubal Hartebeest *A. b. buselaphus*, from North Africa is now Extinct (IUCN SSC Antelope Specialist Group 2016).

Assessment Rationale

The Red Hartebeest, although historically reduced from overhunting, is now common within the assessment region, having been reintroduced into a number of formal and private protected areas across its range. The wildlife ranching industry also harbours a large number of animals on privately owned game farms and reserves. The population is widespread on formally protected areas and private land and has increased significantly on formally protected areas at least over the past three generations (1992–2015). Globally, Red Hartebeest is the most numerous subspecies (*c*. 130,000 animals) and is increasing. Within the assessment region, there are at least 14,849 mature animals (assuming a 70% mature population structure) on formally protected areas (with three subpopulations > 1,000 mature individuals in Kgalagadi Transfrontier Park, Golden Gate Highlands National Park and Karoo National Park), which increases to 38,511 mature animals by including private lands (2013/14 counts). Thus, the Least Concern listing remains. While there are no major threats, local threats, such as poaching, may cause declines outside protected areas. However, the effects of the wildlife industry on this species should be monitored, and hybridisation between Red Hartebeest, other hartebeest subspecies and other antelope species should be carefully regulated (for example, there should be no movement from the private sector into formally protected areas without genetic testing). This species is a key species for sustainable, wildlife-based rural economies and incentives should be put in place to conserve this species as wild and free-roaming herds on private land.

Lichtenstein's Hartebeest is Not Evaluated within the assessment region, as there is much uncertainty over whether the subspecies was ever resident in both Kruger National Park (KNP) and northern KwaZulu-Natal Province (KZN) (for example, Pongola Nature Reserve). While they have been reintroduced into both KNP and private conservancies in the Lowveld, their numbers are currently very low within the assessment region (although their numbers were estimated to be 82,000 globally in 2008), probably comprising fewer than 50 individuals. Once further evidence has been produced to confirm or reject its historical residency in the assessment region, this subspecies should be reassessed.

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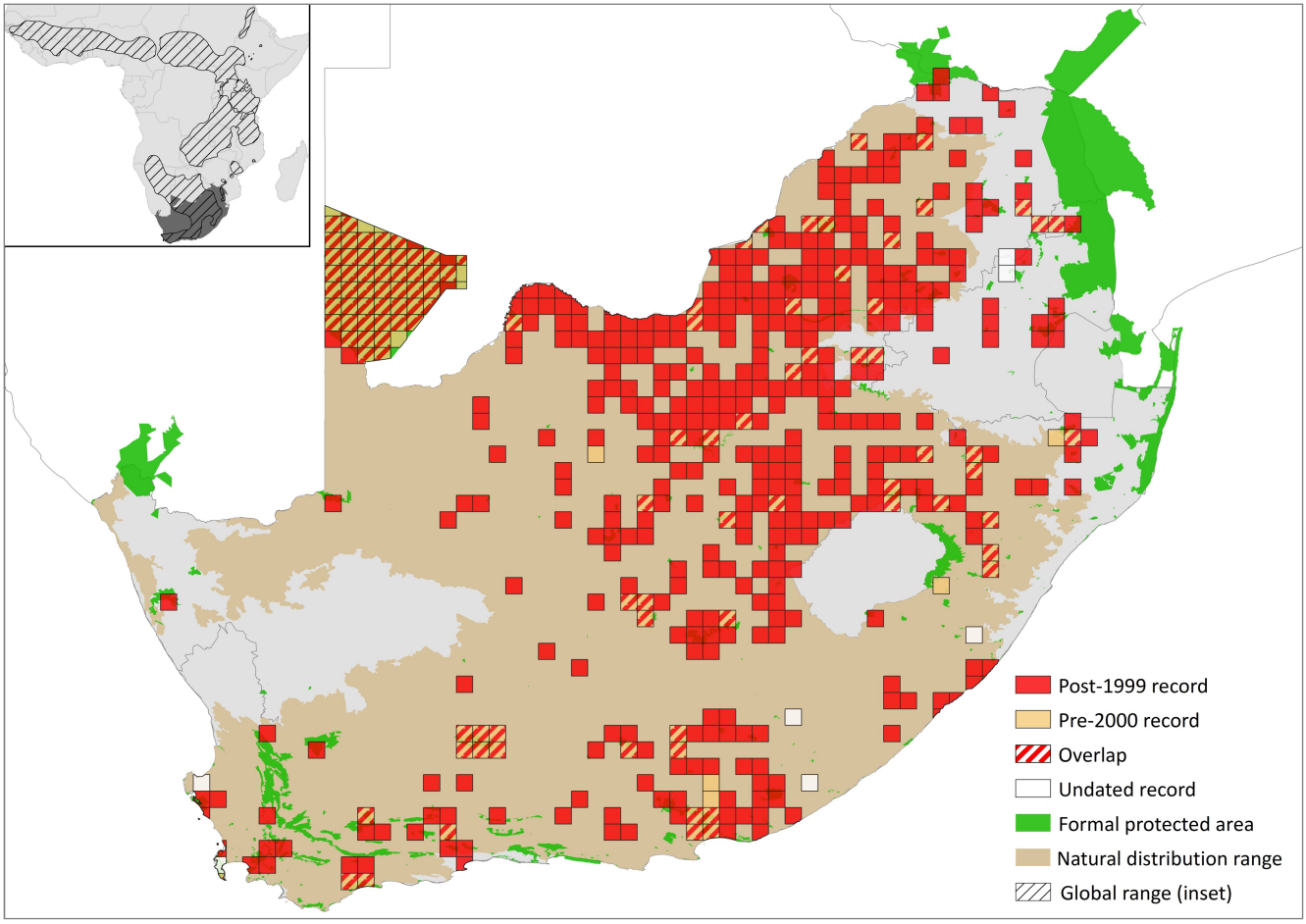

Figure 1. Distribution records for Red Hartebeest (*Alcelaphus buselaphus caama*) within the assessment region. The global distribution (inset) refers to all hartebeest subspecies.

Table 1. Countries of occurrence within southern Africa

Country	Presence	Origin
Botswana	Extant	Native
Lesotho	Extinct	Native
Mozambique	Absent	-
Namibia	Extant	Native
South Africa	Extant	Native
Swaziland	Extant	Introduced
Zimbabwe	Absent	-

Regional population effects: Most of the population is fragmented through fencing. However, there is some local dispersal in the Kgalagadi Transfrontier Park between South Africa and Botswana depending on rainfall and local climatic variability.

Distribution

Red Hartebeest occur throughout much of southern Africa (and marginally into Angola near the Namibian border) and, although much reduced by European colonists, their range is now expanding again as they have been reintroduced into many protected areas and private game farms (and widely introduced outside their former range) (IUCN SSC Antelope Specialist Group 2016); for example, in Namibia (Skinner & Chimimba 2005). The bulk of the population in Botswana is in the southwest of the country in the Kalahari but they occur widely south of the Okavango (Skinner & Chimimba 2005). While Red Hartebeest historically occurred in the western lowlands of Lesotho, intense hunting and depredation have eradicated them from this area (Lynch 1994). They are widespread throughout South Africa extending eastwards from the Western Cape coastal areas along the coast and into the hinterland into the semiarid and savannah regions as well as Highveld grasslands, but the natural range does not extend into the Lowveld of Mpumalanga and Limpopo and northern KZN. It is widespread in protected areas throughout its range, and there is an increasing tendency for this species to be introduced onto private conservation areas. Currently, the subspecies now occurs in all provinces, which is echoed historically as numerous writers documented their occurrence throughout the Northern, Western and Eastern Cape provinces and in parts of the Free State, North West, Gauteng, KZN and Limpopo provinces (Handley 1961; Skinner & Chimimba 2005). Extra-limital introductions have, however, occurred in parts of the eastern Limpopo as well as Mpumalanga (where they are currently present in three provincial protected areas; J. Eksteen pers. comm. 2015) using animals from Namibia (Skinner & Chimimba 2005). They have also been introduced into Swaziland (IUCN SSC Antelope Specialist Group 2016). The Red Hartebeest as a subspecies (*A. b. caama*) naturally occurs in South Africa, Namibia, Botswana and Zimbabwe.

The only part of their former range from which they were not entirely eliminated was the Northern Cape and presently herds move across the Botswana border onto farms in the province (Skinner & Chimimba 2005), which is corroborated by reports from the North West Province

where the Moshita region harbours a naturally occurring, free-roaming subpopulation that probably originated from Botswana (Buijs 2010; Power 2014).

Lichtenstein's Hartebeest formerly occurred widely in the miombo woodlands of south-central Africa, but now occur mainly in wildlife areas in Tanzania, Mozambique and Zambia; they are extinct in Burundi (IUCN SSC Antelope Specialist Group 2016). Within the assessment region, they were probably present in low numbers in the Lowveld and northern KNP and KZN (du Plessis 1969; Milstein 1989; Skinner & Chimimba 2005), but were perhaps mistaken for Tsessebe (*Damaliscus lunatus lunatus*) in southern KNP (Penzhorn 1985). In 1985, 18 hartebeest were reintroduced from Malawi to KNP, a further 91 captive-bred individuals were released into northern KNP during 1990–1994, and 31 to the southern regions in 1994, but there are no further planned translocations into KNP (S. Ferreira pers. comm. 2014). In KZN, there were reports of hartebeest in Pongola as early as 1895 (Skinner & Chimimba 2005). Being ecologically unsuitable for Red Hartebeest, it is reasonable to assume the subspecies was Lichtenstein's. They have also been reintroduced to some private reserves in the Lowveld. However, there is debate around whether this subspecies ever truly occurred in the assessment region or whether they were occasional visitors from their core range. For example, it was excluded from the previous assessment (Friedmann & Daly 2004). Supporting the exclusion, several older texts do not mention the subspecies as occurring in South Africa (Roberts 1951; Rautenbach 1982; Meester et al. 1986). More research is necessary to determine whether this subspecies was, or should be, native to the assessment region.

Population

Globally, East (1999) estimated the total population of all hartebeest at about 362,000 animals (including Lichtenstein's), the majority of which are Red Hartebeest, estimated to number about 130,000 animals on both private and formally protected land. The population is widespread and thriving within the assessment region. On protected areas alone, there are a minimum observed number of 21,213 animals in 70 reserves (2013/14 counts), with the largest subpopulations occurring in the South African side of Kgalagadi Transfrontier Park (1,925 animals in the wet season of 2012; Ellis & Herbst 2013), Golden Gate Highlands National Park (1,646 animals in 2016; Bissett et al. 2016b), and Karoo National Park (1,650 animals in 2015; Gaylard et al. 2016). Some large private wildlife reserves (such as Tswalu Kalahari Reserve and Khamab Kalahari Reserve) also contain subpopulations in excess of 1,000 animals. Including animals on private lands increased the population estimate to a minimum number of 55,016 animals (2013/14 counts) on 726 properties. This yields a total estimated mature population size (assuming 70% mature population structure) of 14,849–38,511 animals in 2013/14.

Generation length has been calculated as 7.8 years (Pacifici et al. 2013), which yields a three-generation window of 23.5 years (1992–2015). All available subpopulation trends on protected areas indicate a positive growth rate over three generations (Peinke & Gibisela 2014; for example, Nel 2015; Bissett et al. 2016a, 2016b; Ferreira et al. 2016; Gaylard et al. 2016). This subspecies generally thrives in protected areas. For example, following the incorporation of QwaQwa National

Park into Golden Gate Highlands National Park in 2008 (increasing the size of the protected area to 327 km^2), Red Hartebeest increased from 346 in 2002 to 1,646 in 2016 (Bissett et al. 2016b).

There were suspected to be around 50 Lichtenstein's Hartebeest in KNP in 2009 (Ferreira et al. 2013), but they now are virtually locally extinct in KNP with perhaps one individual remaining (S. Ferreira pers. comm. 2014).

Current population trend: Increasing

Continuing decline in mature individuals: No

Number of mature individuals in population: 14,849–38,511

Number of mature individuals in largest subpopulation: 1,348 in Kgalagadi Transfrontier Park (assuming a 70% mature population structure).

Number of subpopulations: 70 formally protected subpopulations.

Severely fragmented: Yes. Most subpopulations exist within fenced areas, relying on translocation for gene flow. However, some farms are fenced with cattle fencing which may allow herds to move between farms.

Habitats and Ecology

Red Hartebeest prefer open habitat and mainly occur in grasslands of various types (Skinner & Chimimba 2005). More tolerant of woodland areas and high grass than other alcelaphines, Hartebeest prefer the edge to the middle of open plains (Gosling & Capellini 2013). They thus appear to be an edge or ecotone species (Booth 1985), generally avoiding more closed woodland, and sometimes they occupy high-lying areas that are avoided by most other larger grazers (J. Eksteen unpubl. data). They occur on floodplain grassland, vleis, semi-desert savannah and open woodland (Skinner & Chimimba 2005).

Red Hartebeest are considered to be predominantly selective grazers that will make use of browse under limited resource conditions (Murray & Brown 1993). They feed selectively in medium-height grassland; they are less water-dependent than other alcelaphines, but nonetheless dependent on the availability of surface drinking water (IUCN SSC Antelope Specialist Group 2016). In areas with much moribund vegetation, the Red Hartebeest faces particular constraints because nearly all vegetation

Table 2. Use and trade summary for the Red Hartebeest (*Alcelaphus buselaphus caama*)

Category	Applicable?	Rationale	Proportion of total harvest	Trend
Subsistence use	Yes	Bushmeat and biltong hunting.	Minority	Stable
Commercial use	Yes	Trophy hunting and live sales.	Majority	Increasing
Harvest from wild population	Yes	Minimal use from protected areas.	< 1%	Stable
Harvest from ranched population	Yes	Most commercial use occurs in wildlife ranches and game farms.	Majority	Increasing
Harvest from captive population	Yes	Limited captive breeding.	< 1%	Stable

biomass is of low quality, which reduces food intake rates (Drescher et al. 2006a, 2006b; van Langevelde et al. 2008). Under these conditions grassland fire plays an important role in providing suitable grazing conditions for this species (Venter et al. 2014). Additionally, the hartebeest skull morphology is specially adapted to be very selective at times when good forage is scarce (Schuette et al. 1998). They are gregarious, occurring in herds of up to 20 but can occur in much larger herds (Skinner & Chimimba 2005). Among the various hartebeest subspecies, a positive correlation between mean body size and rainfall suggests that habitat productivity may drive morphological evolution between ecotypes (Capellini & Gosling 2007).

Ecosystem and cultural services: In Bushman folklore the hartebeest and the Eland (*Taurotragus oryx*) have magical power. A woman who has a young child does not eat the hartebeest. The head and hide of a Hartebeest were sometimes worn over men's shoulders when hunting large animals like African Elephants (*Loxodonta Africana*) or Eland. Whilst advancing towards their quarry through the grass, they would carefully mimic the actions of the hartebeest.

Use and Trade

This species is used in live animal trading at game auctions, and has a subsistence value as bushmeat or for recreational biltong hunters as they have high-quality meat (Gosling & Capellini 2013). The hartebeest also has national and international value as a species suitable for trophy hunting. This appears to have had no negative effect on the population as its value as a trophy animal ensures an increase in numbers due to reintroductions to game farms. Hunting quotas also benefit communal areas in some regions (Buijs 2010). There is also some captive breeding of hartebeest (IUCN SSC Antelope Specialist Group 2016), but this is limited.

Wildlife ranching and the private sector have generally had a positive effect on this species as it has been widely reintroduced onto private properties within its natural distribution range. Most populations on wildlife ranches are free-roaming. Ranches are generally a few hundred hectares in the central and northern parts of the country to several thousand hectares in the more arid areas of the Northern Cape. Some of the very large privately owned reserves in this area have populations in access of 1,000 individuals and therefore contribute significantly to the regional population. Due to its value (medium priced) and popularity as a trophy hunting animal, it is a popular species to have amongst game farm owners. Captive breeding of this species is not common and currently hybrids or colour variants do not feature in the live sale market.

Threats

Globally, as the bushmeat trade escalates out of control (Lindsey et al. 2013), many hartebeest populations are being hunted to extinction (IUCN SSC Antelope Specialist Group 2016). However, unlike the rest of Africa, the Red Hartebeest population within the assessment region is well protected and most subpopulations are stable or increasing. Poaching is a localised threat; for example, on Borakalalo National Park, North West Province (Nel 2015).

Ongoing threats to this subspecies are habitat loss and habitat degradation. Ongoing habitat conversion from agriculture, livestock farming and commercial development make habitat less available or less suitable for future reintroductions into such areas. The distributions of most hartebeest subspecies are likely to become increasingly fragmented until they are confined to those areas where there is effective control of poaching and encroachment by livestock and settlement (IUCN SSC Antelope Specialist Group 2016). However, the Songimvelo subpopulation showed an increasing trend despite an increase in competition from livestock; in the same period that the Sable (*Hippotragus niger niger*) subpopulation declined (J. Eksteen unpubl. data).

Climate change may make the western parts of South Africa drier in the coming years, and Red Hartebeest are

Table 3. Possible net effects of wildlife ranching on the Red Hartebeest (*Alcelaphus buselaphus caama*) and subsequent management recommendations

Net effect	Positive
Data quality	Inferred
Rationale	Wildlife ranching has significantly increased population size and area of occupancy for this subspecies.
Management recommendation	Create conservancies to sustain wild and free roaming herds; do not hybridise with exotic subspecies or other antelope species.

Table 4. Threats to the Red Hartebeest (*Alcelaphus buselaphus caama*) ranked in order of severity with corresponding evidence (based on IUCN threat categories, with regional context)

Rank	Threat description	Evidence in the scientific literature	Data quality	Scale of study	Current trend
1	*5.1.1 Hunting & Collecting Terrestrial Animals*: bushmeat poaching.	Nel 2015	Empirical	Local	Increasing with settlement expansion.
2	*11.2 Droughts*: habitat degradation caused by more frequent droughts.	Nel 2015	Empirical	Local	Increasing
3	*2.1.3 Agro-industry Farming*: habitat loss from crop agriculture. Current stress *1.3 Indirect Ecosystem Effects*: habitat fragmentation.	Driver et al. 2012	Indirect	National	Stable
4	*2.3.3 Agro-industry Grazing, Ranching or Farming*: habitat loss from livestock agricultural expansion. Current stresses *1.3 Indirect Ecosystem Effects* and *2.3.2 Competition*: habitat fragmentation and competition with livestock.	Driver et al. 2012	Indirect	National	Stable
5	*2.3.2 Small-holder Grazing, Ranching or Farming*: increasing intensification of wildlife management on private land. Current stresses *1.3 Indirect Ecosystem Effects* and *2.3.1 Hybridisation*: habitat fragmentation and hybridisation with other subspecies/species.	-	Anecdotal	-	Possibly increasing

particularly susceptible to drought. For example, many carcasses were found on Molopo Nature Reserve in North West Province following drought conditions (Nel 2015).

This subspecies is suspected to be hybridised with other hartebeest subspecies and with Blesbok (*Damaliscus pygargus phillipsi*), Bontebok (*D. p. pygargus*) and Tsessebe (*Damaliscus lunatus lunatus*) on private lands. This may make certain subpopulations ineligible for Red List assessment and may threaten the genetic integrity of the subspecies overall. This practise, while currently not common, should be disincentivised.

Current habitat trend: Habitat for this subspecies is generally stable (*sensu* Driver et al. 2012). Climate change, however, is likely to decrease the availability of preferred ecotonal habitats. Conversion to livestock farming and conversion of habitat has historically decreased habitat for this species. However, many areas are currently moving to wildlife ranching and this may actually improve habitat quality in certain areas by conserving land that would otherwise be overgrazed by livestock.

Conservation

Red Hartebeest are well protected across their range within the assessment region. No direct interventions are currently necessary for this subspecies. However, continued protected area expansion to connect fragmented subpopulations and restrictions on the introduction of extra-limital subspecies/species, especially on private lands, will increase the long-term resilience of the population.

Table 5. Conservation interventions for the Red Hartebeest (*Alcelaphus buselaphus caama*) ranked in order of effectiveness with corresponding evidence (based on IUCN action categories, with regional context)

Rank	Intervention description	Evidence in the scientific literature	Data quality	Scale of evidence	Demonstrated impact	Current conservation projects
1	*1.1 Site/Area Protection*: protected area expansion of grassland habitats.	Nel 2015	Empirical	Regional	Subspecies thrives in protected areas.	Protected area expansion strategies; SANParks and provincial conservation authorities
		Bisset et al. 2016a,b	Empirical	Local		
		Gaylard et al. 2016	Empirical	Local		
		Ferreira et al. 2016	Empirical	Regional		
2	*1.2 Resource & Habitat Protection*: grassland conservation through biodiversity stewardship and private land.	-	Anecdotal	-	-	-
3	*3.1.2 Trade Management*: regulation of translocations to prevent hybridisation with exotic/extra-limital species/ subspecies.	-	Anecdotal	-	-	-
4	*2.1 Site/Area Management*: increase effectiveness of anti-poaching.	-	Anecdotal	-	-	-

Recommendations for land managers and practitioners:

- Drop internal fences to form conservancies so as to encourage greater movement within the landscape and thus less habitat degradation at the local scale.

Research priorities: Research is currently being conducted by Eastern Cape Parks and Tourism Agency on movement and feeding ecology of the subpopulation in Mkambati Nature Reserve. UNISA's College of Agriculture and Environmental Sciences is conducting some research on the physiology of the subspecies in the Northern Cape.

Research priorities include:

- Quantifying the severity of bushmeat poaching.
- Quantifying vulnerability to climate change.
- Genetic work on wild subpopulations (Kalahari, Namibia and other regions) to establish if any genetically distinct subpopulations exist.

Encouraged citizen actions:

- Landowners should create conservancies for this species and engage local stakeholders to create sustainable, wildlife-based rural economies.
- Report sightings of free-roaming herds outside private lands or protected areas on virtual museum platforms (for example, iSpot and MammalMAP).

Data Sources and Quality

Table 6. Information and interpretation qualifiers for the Red Hartebeest (*Alcelaphus buselaphus caama*) assessment

Data sources	Field study (unpublished)
Data quality (max)	Estimated
Data quality (min)	Estimated
Uncertainty resolution	Best estimate
Risk tolerance	Evidentiary

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Assessors and Reviewers

Jan Venter[1], Matthew F. Child[2]

[1]Nelson Mandela Metropolitan University, [2]Endangered Wildlife Trust

Contributors

Johan Eksteen[1], Angela Gaylard[2], Sam Ferreira[2], IUCN SSC Antelope Specialist Group

[1]Mpumalanga Tourism and Parks Agency, [2]South African National Parks

Details of the methods used to make this assessment can be found in *Mammal Red List 2016: Introduction and Methodology.*