EAST LOCH SHIEL DEER MANAGEMENT GROUP

Eastern Working Group

Population Model and Targets

Summary Information

2022–2031

EWG – June 2026 Population model A – Issue 1

Executive Summary

This document sets out the Eastern Working Group (EWG) population model and deer management targets for 2022–2031 and is Appendix 13 to the Action Plan Working Document. It supersedes earlier versions and provides the current basis for managing the EWG open-range deer population.

The EWG model is now presented separately from the wider East Loch Shiel DMG context because the Sunart Rainforest Project and associated management changes are creating new patterns of culling and movement across neighbouring areas. Earlier models had been reliable when checked against the 2016, 2019 and 2022 counts, but recent changes in adjacent areas mean that a more focused EWG model is now required.

The model is based on the established helicopter count and deer population assessment evidence, with the latest full helicopter count used as the main baseline. It is then updated using cull figures, mortality, recruitment, migration and a notional allowance for other losses. A further full count of the EWG area is due in 2027, which will provide a new baseline and allow the model to be recalibrated.

Current evidence indicates that herbivore impacts within the EWG are within the agreed DMG target, deer condition is seasonally good to very good, and forage availability remains sufficient. Over recent decades, large herbivore pressure has reduced significantly as domestic livestock numbers have fallen, and this has contributed to wider habitat recovery and woodland protection across the area.

For 2026/27, the EWG aims to maintain an open-range spring deer density of approximately 9.5 deer/km². The current sporting stag target is 160 stags per annum, although this is presently constrained to around 125 because of apparent migration and other losses. The proposed EWG cull target for 2026/27 is 344 deer, comprising 125 stags, 165 hinds and 54 calves.

Overall, the document supports a balanced approach that seeks to maintain environmental progress, support viable deer stalking and related employment, and respond adaptively to changing conditions within the wider East Loch Shiel and Sunart area.

Overview

Introduction

This Eastern Working Group (EWG) Population Model and Targets document is Appendix 15 to the Action Plan Working Document and supersedes previous issues.

Management Context

At the 2024 ADMG AGM, the East Loch Shiel Deer Management Group (ELSDMG) area was identified as one of several Deer Management Priority Areas. Although no prior notification or detailed supporting information had been issued at that point, or since, NatureScot Wildlife Management Officers later advised at the April 2024 meeting, and again at a neighbouring DMG meeting the same day, that the designation reflected the substantial positive work already under way in habitat preservation and restoration. This work contributes to a wider Atlantic Rainforest cluster and was presented as recognition of ongoing management efforts across the area.

Sunart Rainforest Project

The Sunart Rainforest Project (SRP), still in its early stages, is expected to influence local deer populations and the associated modelling. The SRP includes the ELSDMG Western Working Group (WWG) and the neighbouring North Sunart Woodland Owners Group (NSWG) areas. No decisions have yet been confirmed on its overall objectives, on whether the WWG will remain part of ELSDMG, or on any future relationship between NSWG and ELSDMG.

Given the changes already under way within the SRP, this document summarises the history of ELSDMG modelling but now presents only the model for the EWG, as the SRP is developing its own Deer Management Plan and population models.

Population Model Basis

Historically, population models for the East Loch Shiel area have calculated red deer density using the FES 2009 deer census and the 2010 open-range helicopter count, with later inputs from the FLS 2019-20 deer census and the 2016, 2019 and 2022 helicopter counts.

Forecast density had previously been accurate to within a margin of less than 3% when compared with the 2016, 2019 and 2022 counts.

Reports indicate that unusually high numbers of deer were culled in the neighbouring NSWG DMG area between 2023 and 2025. Cull figures for the SRP area for 2025/26 have been copied to ELSDMG. Taken together with cumulative modelling error, unknown historic culls in the NSWG area, recently increased culls there, and changed cull strategies in both the NSWG and

WWG areas, these factors are thought to have reduced the reliability of the population models.

Each Working Group now produces its own population model.

The EWG model is adaptive, proactive and reactive. It uses count figures and FES deer density figures as the baseline, then applies cull figures, mortality, migration, other losses and recruitment to explain population dynamics, check model accuracy, and update population and cull targets where needed.

Counting and Evidence

Much of the area is remote, so foot counts are not considered practical or effective. In the absence of a suitable alternative, aerial counts remain the only viable method for counting the open hill range.

Helicopter and Aerial Counts

East Loch Shiel DMG open-range members fully funded helicopter counts in 2002, 2010 and 2016. With estimated emissions of more than 40,000 kg of GHGs and costs of more than £65,000 per count, more frequent helicopter counts are avoided because they are unlikely to provide materially new information.

These were followed at three-year intervals by NatureScot-funded, ELSDMG-wide helicopter counts covering the whole East Loch Shiel DMG area in 2019 and 2022.

The NatureScot Wildlife Management Officer has confirmed that, there are no plans for a group-wide aerial count in 2026/27. The latest helicopter count figures are therefore used as the baseline for population modelling.

A drone count covering part of the SRP area and the neighbouring NSWG area was carried out in 2025. Because it covered different areas and used a different method from the historic counts used by ELSDMG, it is not directly comparable with the established baseline figures. The results reported are as undernoted:

76 km² net census area covered.

In total, 778 Red deer and 31 Roe deer were observed inside the census boundary.

Confirming a Red Deer density of 10.2 / km² and Roe Deer density of 0.4 / km² across the Sunart Rainforest project area at the time of census.

A full count of the EWG area will provide a new baseline and allow recalibration of the population model.

FES/FLS Deer Population Assessment

FES/FLS completed a Deer Population Assessment in winter 2009 and provided density figures to the DMG, which were then used as a baseline in population modelling.

FLS presented its "FLS 2019–20 DPA Report – Ardnamurchan Complex – Draft 040621" to the DMG in June 2021.

FLS has explained that carbon and cost considerations prevent more frequent woodland Deer Population Assessments.

Population Dynamics

Deer Density

Using figures from the 2022 NS helicopter count as the datum we calculate: -

An East Loch Shiel DMG area deer density of 8.4/km².

The overall Group 2022 Spring density allowing for deer in the woodlands is ≈ 8.9/km².

The WWG open range 2022 Spring deer density of ≈ 6.2/km².

The EWG 2022 Spring deer density of ≈ 9.4/km².

Mortality Assessment

Refer to FLS for their mortality assessments.

Refer to the SRP for their mortality assessments.

Going forward, the EWG bases its assessment of normal mortality on rates of 2% for adult red deer and 6% for calves after winter counts, or 4% for stags and 3% for hinds in years without counts, with adjustments where appropriate based on stalker and deer manager observations or the timing of counts. These figures are then applied in the population model.

EWG open-range mortality is assessed as being at normal levels during 2025/26.

Recruitment

FLS have historically assessed their recruitment at 45% of all hinds or 65% of sexually mature hinds indicating a calving rate of >85% of sexually mature hinds.

Refer to the SRP for their recruitment data.

For net recruitment in the EWG population model, sample recruitment counts are carried out in late spring, by which time late winter and spring mortality and other losses will already have occurred. This provides an actual post-count, post-cull, post-mortality recruitment figure without the need for further calculation. These figures are then applied to the population model.

EWG open-range sample recruitment counts carried out in late spring 2026 showed a post-cull, post-mortality recruitment rate of 33% of all hinds for 2025/26, indicating a calving rate of more than 65% of sexually mature hinds.

Migration

The combined area of ELSDMG and the neighbouring NSWG DMG is largely bounded by lochs or fenced land bridges, so migration into or out of the wider area is thought to be limited.

However, population models and field evidence, including porous fences, tracking through fences, and observations from stalkers and consultants, indicate that non-targeted migration does occur between Working Group areas and NSWG. Historic population models suggest that movement from the EWG area into the WWG and NSWG areas has been a significant factor.

It is not yet known whether increased culling in the SRP area will change migration rates between areas. This remains a source of uncertainty in the model.

In the absence of further information, the EWG model continues to use the same migration assumptions as in previous years.

Other Losses and Variation

Other non-targeted losses may include emigration, predation, deer-vehicle collisions, unreported culls, poaching, and deer taken by neighbours or crofters. Variation may also arise from incorrect mortality assumptions or misclassification of yearling stags as hinds. Although few such incidents are specifically identified or reported, they are inherently difficult to quantify, so a notional allowance is built into the EWG model.

Wider Management Factors

Small numbers of roe deer are present in localised areas, along with occasional sika deer and feral pig. Their numbers are considered too low to be relevant to the population model and they are therefore excluded. A shoot-on-sight policy has been agreed by all EWG members for muntjac, sika deer and feral pigs/wild boar, subject to close seasons, periods of maximum dependency, licensing requirements and ethical culling. There are no hares or beavers in ELS, and very few rabbits.

Some domestic livestock continue to graze on the open hill, but numbers have fallen significantly since the 19th-century peak. More recent management changes over the last 30 to 40 years have further reduced the overall impact of large herbivores. In particular, more than 13,170 sheep and their followers, together with more than 350 cows and their followers, have been removed from the ELS open range during this period, resulting in a further 75% reduction in large herbivore density.

Herbivore Impacts

The Eastern Working Group Habitat and Impact Assessment Report shows that overall deer impacts are within the agreed DMG target. With no hares or beavers in ELS, and very few rabbits, large herbivore impacts are lower than in many other areas of Scotland with similar or greater deer densities and with higher livestock, hare, beaver or rabbit numbers.

Deer Condition

The condition of the deer in the EWG area was reported as seasonally good to very good.

Availability of Forage and Shelter

With large herbivore densities reduced by more than 75% over the last 30 to 40 years, and deer density maintained or reduced, forage availability has improved.

There have been no significant changes in the availability of forage and shelter since the 2025/26 population model. Heather shows mainly low to moderate browsing impacts, and it is flowering and setting seed, indicating that browsing pressure is not excessive and that deer are not struggling to find sufficient winter forage.

Objectives and Rationale

Refer to the FLS for their objectives.

Refer to the SRP/WWG for their objectives.

Alongside environmental soundness, economic viability and social responsibility, a primary objective for the Eastern Working Group open-range landholding members is to support sustainable deer stalking enterprises, while also recognising agricultural, woodland and forestry interests where these apply.

Environmental

Over several decades, landscape-scale habitat and environmental benefits have been achieved through measures including reductions in domestic livestock, the creation of livestock and deer exclosures, and woodland planting. Ongoing work includes further woodland protection, creation and regeneration projects that secure designated features. NatureScot has recognised the substantial positive work in habitat restoration within the ELSDMG area, which forms part of an Atlantic Rainforest cluster, as a positive endorsement of this continuing commitment.

Socio-economic Benefits

Deer management in the open-range areas supports both primary and secondary employment, with deer stalking remaining a key source of income and jobs. In addition to

the direct income, employment and food production generated by stalking and agricultural enterprises, together with commercial and amenity woodlands, there are wider economic and social benefits for local communities and the public. These include estate investment, project investment, employee and community housing, and broader contributions to social, mental and physical wellbeing.

Local Economy

Many local businesses, enterprises and individuals rely on the income, employment and wider benefits generated by deer management.

Sporting estates add significant value to deer management and generate substantial income for the local area. Loss of deer from the open range through migration and other non-targeted losses reduces local economic activity, employment and housing prospects, as well as the broader range of benefits described above.

Local employment is covered in more detail in section 12 of the ELSDMG DMP Background Information 9th Edition 2018 and identifies 8 full-time and 9 seasonal or part-time jobs plus an opportunity for a full-time HNC/HND trainee. A further 7 full-time and 32 part-time people are engaged with and reliant on secondary employment relating to open-range sporting deer management.

Non-targeted emigration and other deer losses from the EWG open range are having a negative effect on both the local and wider economy. Despite strong demand for deer stalking, open-range sporting members are often unable to meet full demand and capacity, and sometimes have to turn away stalking guests and their parties because of the limited availability of sporting stags and hinds or calves.

Meanwhile, the impacts on the FLS forestry and the cost of FLS culling operations are significant with a major part of their impacts and costs incurred culling deer that have migrated onto the FLS estate, the bill for this being picked up by the taxpayer. The FLS deer management team provide 1.6 FTE jobs in East Loch Shiel. There is little opportunity for additional secondary employment.

Venison production will be the same on whichever side of the fence the deer are culled.

Broader Economy

In the wider economy, employment and earnings from deer management on the open-range landholdings are multiplied through contractor and professional services, equipment suppliers, trade associations, gun shops, garages, trophy preparation, transport and tourism. Direct taxation is also generated for the Exchequer through income tax, National Insurance, VAT and property or business rates.

2026/27 Forward-looking Population Model

Population Targets

EWG density targets are intended to balance environmental, economic and social considerations, while supporting sustainable estate management, deer stalking and associated secondary business activity within the area.

Refer to FLS for their population targets.

Refer to the SRP for their population targets.

The Eastern Working Group area sporting stag target is 160 stags per annum, but it is currently constrained to around 125 because of apparent migration and other losses.

The Eastern Working Group aims to maintain an open-range spring deer density of approximately 9.5 deer/km².

Cull Targets

The ELSDMG Eastern Working Group cull targets for 2026/27, intended to achieve the density targets, are as follows:

Area	Stags	Hinds	Calves	Total
EWG	125	165	54	344

Individual landholding culls are discussed and apportioned collaboratively by the EWG members who may target culls in their areas to address specific local deer impacts or issues.

Current Population Model

Refer to FLS for their Population Models.

Refer to the SRP for their Population Models.

The Eastern Working Group model spreadsheet below projects from the 2022 count through to 2031 and incorporates planned culls, observed mortality, a notional allowance for other losses, estimated non-targeted migration between Working Group areas, and net recruitment.

Notes

Figures remain subject to revision as further information becomes available, including cull figures from non-members, some of which are currently estimated within the population model.

ELSDMG POPULATION MODEL **Eastern Working Grc** **2026**

Target Spring Density	9.5
Management area Km2	330
Target population	3135

Counted February 2022	Stags	Hinds	Calves	Total	Calf:hind%
	984	1753	588	3325	32.5

Year	Population Model	Stags	Hinds	Calves	Total	Density
Datum	Datum count	984	1753	588		
		984	1753	570	CR	
	Post count cull	0	0	0	0	
	Post count mortality + losses	30	53	51	M+L	
	Post count migration	-29	-25	-8		
2022	Spring population	925	1675	510	3111	9.43
	Summer population	1181	1931	627	CR	
	Cull	131	129	57		
	Mortality + losses	66	81		M+L	
	Migration	-60	-50	-17		
2023	Spring population	924	1671	543	3137	9.51
	Summer population	1195	1942	631	CR	
	Cull	114	182	66	362	
	Mortality + losses	67	82		M+L	
	Migration	-60	-60	-20		
2024	Spring population	954	1618	526	3099	9.39
	Summer population	1217	1881	611	CR	
	Cull	129	153	58	340	
	Mortality + losses	68	79		M+L	
	Migration	-60	-50	-18		
2025	Spring population	960	1599	520	3079	9.33
	Summer population	1220	1859	604	CR	
	Cull	109	165	44	318	
	Mortality + losses	54	61		M+L	
	Migration	-60	-50	-18		
2026	Spring population	997	1583	514	3095	9.38
	Summer population	1254	1840	598	CR	
	Cull	125	165	54	344	
	Mortality + losses	55	61		M+L	
	Migration	-60	-50	-18		
2027	Spring population	1014	1564	508	3087	9.36
	Summer population	1268	1819	591	CR	
	Cull	131	165	54	350	
	Mortality + losses	56	60		M+L	
	Migration	-60	-50	-18		
2028	Spring population	1021	1544	502	3067	9.29
	Summer population	1272	1795	583	CR	
	Cull	138	165	54	356	
	Mortality + losses	56	59		M+L	
	Migration	-60	-50	-18		
2029	Spring population	1018	1520	494	3033	9.19
	Summer population	1266	1767	574	CR	
	Cull	145	165	54	363	
	Mortality + losses	56	58		M+L	
	Migration	-60	-50	-18		
2030	Spring population	1005	1494	486	2985	9.04
	Summer population	1248	1737	564	CR	
	Cull	152	165	54	371	
	Mortality + losses	55	57		M+L	
	Migration	-60	-50	-18		
2031	Spring population	1005	1494	486	2985	9.04
	Target Population/Density	1030	1575	512	3117	9.45

	SNH Post winter count Mortality	Annual mortality non count years
2%	2% Stag Mortality	4%
2%	2% Hind Mortality	3%
6%	6% Calf Mortality	
	1:1 Hind/Stag Calving Ratio	