Supporting information

Kellaway Research | Great Britain rewilding study | Version 1.1 | 28 November 2026

Companion to Mapping landscape-scale rewilding opportunities across Great Britain. This static edition replaces the public interactive atlas. The underlying frozen Phase II–VIII analytical outputs and audit are unchanged.

The report includes all 686 substantial landscape records (combined footprint ≥ 1,000 ha) across three principal distributed 5% scenarios. This supplement also contains machine-readable CSV tables embedded as standard PDF attachments. Download the PDF and open its attachments panel in a desktop PDF viewer that supports embedded files. The tables cover the full 19,187 scenario-specific landscape catalogue and audit results. The original large geospatial databases and archived phase packages are retained separately; original source downloads are needed for full upstream reproduction.

Interpretation and scope

England, Scotland and Wales only. The three principal scenarios and other alternatives overlap and cannot be added together. Candidate cells are not verified restoration parcels. Open hectares count sampled crop, rangeland and bare ground outside SACs/SPAs; the complete selected cell footprint is used for geometric connectivity. Reference site names and representative WGS84 coordinates do not define official boundaries. Existing habitat condition is not a ranking criterion.

Embedded machine-readable tables

Filename	Contents
landscape_catalogue.csv	Full landscape catalogue (19,187 records)
scenario_summary.csv	14 mapped alternatives
scenarios.csv	48 main selection scenarios
regional_allocations.csv	Main regional allocation results
ALC_scenarios.csv	12 agricultural safeguard scenarios
ALC_regional_allocations.csv	Safeguard regional allocation results
audit_checks.csv	129 internal audit checks
scenario_audit.csv	60 scenario reconciliations
atlas_audit.csv	14 historical map reconciliations
adjacency_sensitivity.csv	Four- and eight-neighbour tests
raw_sample_check.csv	3,000 source samples
source_mismatch_diagnostics.csv	Six source differences
input_manifest.csv	Original input and archived package checksums
source_register.csv	Historical source register

Scenario results — all mapped alternatives

Scenario	Selected open ha	≥1,000 ha networks	Target shortfall ha
GB_distributed_balanced_1pct	230,242	216	0
GB_distributed_balanced_2.5pct	575,364	273	0
GB_distributed_balanced_5pct	1,150,646	338	0
GB_distributed_balanced_10pct	2,301,227	361	0
GB_balanced_5pct	1,150,585	214	0
EW_distributed_balanced_1pct	151,392	112	0
EW_distributed_balanced_2.5pct	378,400	150	0
EW_distributed_balanced_5pct	756,641	209	0
EW_distributed_balanced_10pct	1,402,855	277	110,251
EW_balanced_5pct	756,571	120	0
ALC_EW_ALC_guard_distributed_1pct	151,363	94	0
ALC_EW_ALC_guard_distributed_2.5pct	378,342	123	0
ALC_EW_ALC_guard_distributed_5pct	756,581	139	0
ALC_EW_ALC_guard_distributed_10pct	838,434	142	674,672

At the 10% target both restricted England and Wales pools are exhausted; the shortfalls are not successful target attainment.

Verification summary

The 129 programmed checks passed on the archived Phase VIII baseline. The independent source comparison matched 2,994 of 3,000 samples; six disagreements were consistent with subpixel reprojection differences but their cause is not proven. This is processing agreement, not validation of the original satellite classification. Four-neighbour and eight-neighbour connectivity produce different component counts. No full independent raw-to-grid rerun, external peer review or field validation has been carried out.

Reproducibility guide

Audit scope

Checks independently reconstruct sampled-area accounting, country/class counts from the saved 100 m checkpoint, protection bounds, alignment of all rasters, moderate gate, structural core and expansion masks, selected hectares, crop hectares, geographic allocation, target attainment/shortfall, core-component counts and large-network metrics, English appraisal aggregates, 14 mapped landscape geometries and their representative cell membership, map PNG codes and catalogue totals. All 60 scenarios reconcile with the archived Phase VI summaries. This is not a fully independent raw-source pipeline rerun: ALC/protection overlays and urban convolution were not regenerated, and the ranking procedure was reviewed rather than independently re-optimised. Field validation, independent peer review, full prior-art review and empirical economic calibration have not occurred. Code and logs are supplied for independent reproduction.

Reproduction

1. Keep all baseline ZIP packages and original source downloads in one root directory. Put the Phase VIII scripts in a child folder `GB_rewilding_phase8`. Run `python GB_rewilding_phase8/audit.py`, then `python GB_rewilding_phase8/supplementary_tests.py`, then `python GB_rewilding_phase8/source_mismatch_diagnostics.py`. The audit extracts baseline II–VII into `phase8_work` automatically. Requires Python, NumPy, pandas, Rasterio, SciPy, Pillow, PyProj and Fiona. Full upstream regeneration requires original data, GeoPandas, odfpy, matplotlib, artifact_tool (or an equivalent workbook reader), Shapely and sufficient disk/RAM.

2. To reproduce upstream, unpack phases II and III into `GB_rewilding_phase2` and `GB_rewilding_phase3`; unpack IV, V and VI using their existing folder names. Follow each README's execution order. Phase II `build_grid.py` expects original source files in the root (or set REWILDING_INPUT). Avoid duplicate raw files matching glob patterns. Phase VII `identify.py` reads archived phase packages and original SAC/SPA ZIPs. `build_atlas.py` then assembles the HTML from generated JSON. The original Phase VIII publication script uses ReportLab and is part of the historical archive. Archive files are untouched by the audit.

3. To check input integrity compare SHA-256 with `input_manifest.csv`. Original files are listed by exact filename; the supplied phase ZIPs contain generated materials and are not substitute raw sources.

Important corrections / interpretation changes

- Earlier wording implied selected cells had no SAC/SPA overlap. In Phases IV–VII mixed cells can include protected samples; only outside-designation crops, rangeland and bare ground contribute to the new-open-land target. The principal GB 5% distributed scenario contains 5,990 such cells with 25,358 sampled protected hectares in their full footprints. No changes to selection rasters are required for this clarification.

- Candidate land may already be natural. National targets are percentages of sampled land-containing boundary area including inland water, not net gains of natural habitat. The term economic optimisation refers to a ranked proxy heuristic, not optimised measured monetary losses.

- The Phase VII 10% restricted EW and safeguarded scenarios show explicit shortfalls of 110,251 and 674,672 ha; broader-pool scenarios are in Phase VI, not this atlas.

- Source sampling found six minor disagreements. These are retained and disclosed rather than claiming exact source agreement. Independent recalculation of selected-cell neighbourhood metrics, field conditions and ranking robustness to all weights remains future work.

- No separate site-by-site verification or formal ecological forecast was conducted. Data credits are provided in the paper and atlas; retain original licences, especially for derivative redistribution.

Programmed audit checks

check	status
Grid count and area	PASS
Nation accounting	PASS
Cover accounting	PASS
ALC accounting	PASS
Protection union bounds	PASS
Outside protection cover bounds	PASS
Scottish ALC missing	PASS
Alignment landscape_ids_500m.tif	PASS
Alignment gb_grid_500m.tif	PASS
Alignment economic_proxy_grid.tif	PASS
Alignment ecological_structure_GB.tif	PASS
Alignment ecological_structure_EW.tif	PASS
Alignment nature_economic_grid.tif	PASS
Alignment selections_ALC_EW.tif	PASS
Alignment selections_GB.tif	PASS
Alignment selections_EW.tif	PASS
Checkpoint country counts	PASS
Checkpoint cover counts	PASS
Checkpoint missing/conflict	PASS
Moderate gate	PASS
Core geometry GB	PASS
Expansion gate GB	PASS
Selection GB_economic_1pct	PASS
Selection GB_economic_2.5pct	PASS
Selection GB_economic_5pct	PASS
Selection GB_economic_10pct	PASS
Selection GB_connectivity_1pct	PASS
Selection GB_connectivity_2.5pct	PASS
Selection GB_connectivity_5pct	PASS
Selection GB_connectivity_10pct	PASS
Selection GB_balanced_1pct	PASS
Selection GB_balanced_2.5pct	PASS
Selection GB_balanced_5pct	PASS

check	status
Landscape GB_balanced_5pct	PASS
Atlas pixels GB_balanced_5pct	PASS
Atlas summary GB_balanced_5pct	PASS
Selection GB_balanced_10pct	PASS
Selection GB_distributed_balanced_1pct	PASS
Landscape GB_distributed_balanced_1pct	PASS
Atlas pixels GB_distributed_balanced_1pct	PASS
Atlas summary GB_distributed_balanced_1pct	PASS
Selection GB_distributed_balanced_2.5pct	PASS
Landscape GB_distributed_balanced_2.5pct	PASS
Atlas pixels GB_distributed_balanced_2.5pct	PASS
Atlas summary GB_distributed_balanced_2.5pct	PASS
Selection GB_distributed_balanced_5pct	PASS
Landscape GB_distributed_balanced_5pct	PASS
Atlas pixels GB_distributed_balanced_5pct	PASS
Atlas summary GB_distributed_balanced_5pct	PASS
Selection GB_distributed_balanced_10pct	PASS
Landscape GB_distributed_balanced_10pct	PASS
Atlas pixels GB_distributed_balanced_10pct	PASS
Atlas summary GB_distributed_balanced_10pct	PASS
Selection GB_balanced_crop_neutral_1pct	PASS
Selection GB_balanced_crop_neutral_2.5pct	PASS
Selection GB_balanced_crop_neutral_5pct	PASS
Selection GB_balanced_crop_neutral_10pct	PASS
Selection GB_distributed_broader_1pct	PASS
Selection GB_distributed_broader_2.5pct	PASS
Selection GB_distributed_broader_5pct	PASS
Selection GB_distributed_broader_10pct	PASS
Core geometry EW	PASS
Expansion gate EW	PASS
Selection EW_economic_1pct	PASS
Selection EW_economic_2.5pct	PASS
Selection EW_economic_5pct	PASS
Selection EW_economic_10pct	PASS
Selection EW_connectivity_1pct	PASS

check	status
Selection EW_connectivity_2.5pct	PASS
Selection EW_connectivity_5pct	PASS
Selection EW_connectivity_10pct	PASS
Selection EW_balanced_1pct	PASS
Selection EW_balanced_2.5pct	PASS
Selection EW_balanced_5pct	PASS
Landscape EW_balanced_5pct	PASS
Atlas pixels EW_balanced_5pct	PASS
Atlas summary EW_balanced_5pct	PASS
Selection EW_balanced_10pct	PASS
Selection EW_distributed_balanced_1pct	PASS
Landscape EW_distributed_balanced_1pct	PASS
Atlas pixels EW_distributed_balanced_1pct	PASS
Atlas summary EW_distributed_balanced_1pct	PASS
Selection EW_distributed_balanced_2.5pct	PASS
Landscape EW_distributed_balanced_2.5pct	PASS
Atlas pixels EW_distributed_balanced_2.5pct	PASS
Atlas summary EW_distributed_balanced_2.5pct	PASS
Selection EW_distributed_balanced_5pct	PASS
Landscape EW_distributed_balanced_5pct	PASS
Atlas pixels EW_distributed_balanced_5pct	PASS
Atlas summary EW_distributed_balanced_5pct	PASS
Selection EW_distributed_balanced_10pct	PASS
Landscape EW_distributed_balanced_10pct	PASS
Atlas pixels EW_distributed_balanced_10pct	PASS
Atlas summary EW_distributed_balanced_10pct	PASS
Selection EW_balanced_crop_neutral_1pct	PASS
Selection EW_balanced_crop_neutral_2.5pct	PASS
Selection EW_balanced_crop_neutral_5pct	PASS
Selection EW_balanced_crop_neutral_10pct	PASS
Selection EW_distributed_broader_1pct	PASS
Selection EW_distributed_broader_2.5pct	PASS
Selection EW_distributed_broader_5pct	PASS
Selection EW_distributed_broader_10pct	PASS
Core geometry ALC_EW	PASS

check	status
Expansion gate ALC_EW	PASS
Selection ALC_EW_ALC_guard_balanced_1pct	PASS
Selection ALC_EW_ALC_guard_balanced_2.5pct	PASS
Selection ALC_EW_ALC_guard_balanced_5pct	PASS
Selection ALC_EW_ALC_guard_balanced_10pct	PASS
Selection ALC_EW_ALC_guard_distributed_1pct	PASS
Landscape ALC_EW_ALC_guard_distributed_1pct	PASS
Atlas pixels ALC_EW_ALC_guard_distributed_1pct	PASS
Atlas summary ALC_EW_ALC_guard_distributed_1pct	PASS
Selection ALC_EW_ALC_guard_distributed_2.5pct	PASS
Landscape ALC_EW_ALC_guard_distributed_2.5pct	PASS
Atlas pixels ALC_EW_ALC_guard_distributed_2.5pct	PASS
Atlas summary ALC_EW_ALC_guard_distributed_2.5pct	PASS
Selection ALC_EW_ALC_guard_distributed_5pct	PASS
Landscape ALC_EW_ALC_guard_distributed_5pct	PASS
Atlas pixels ALC_EW_ALC_guard_distributed_5pct	PASS
Atlas summary ALC_EW_ALC_guard_distributed_5pct	PASS
Selection ALC_EW_ALC_guard_distributed_10pct	PASS
Landscape ALC_EW_ALC_guard_distributed_10pct	PASS
Atlas pixels ALC_EW_ALC_guard_distributed_10pct	PASS
Atlas summary ALC_EW_ALC_guard_distributed_10pct	PASS
Selection ALC_EW_ALC_guard_crop_neutral_distributed_1pct	PASS
Selection ALC_EW_ALC_guard_crop_neutral_distributed_2.5pct	PASS
Selection ALC_EW_ALC_guard_crop_neutral_distributed_5pct	PASS
Selection ALC_EW_ALC_guard_crop_neutral_distributed_10pct	PASS
Scenario totals	PASS

Source data manifest

file	bytes	sha256
30U_20250101-20251231.tif	104534007	e81b5e4e609f712551fcddc4365f03733a8980030d3fb950546dabde4bbea28a
30V_20250101-20251231.tif	32308829	846b79bbb12a2cf2f15e5a16207ed00bf3dab5f2836dc812271780bfca33e824
31U_20250101-20251231.tif	92436582	9b3dbea678117a62bf63bd5731611c2fadc928d6fbaa93e0b6133fc29553d0a2
AUK-chapter3-20260709.ods	17822	c1974383d85eaf9aa1973e3cc4a2ea35861178f1c089a68f438de30a2bc40a77
Agricultural-land-use-uk-june25-20251211.ods	117351	3388da4a074d545260c3d4701b0907e7b103b277163987202f500da4cff9d4b1
Countries_December_2024_Boundaries_UK_BGC_-1855499217926164404.zip	3031361	1a7d271100db42b191c563b9ecc97084f94e2926db0fbc4ec27f5dde5aa8c0f0
GB-SAC-OSGB36-20260331.zip	71191607	70ffbb9a246063366949fc639f13eafabc6b53817d5dd0a01ec4676221a90ddd
GB-SPA-OSGB36-20260331.zip	46077723	520f50d783d64ef81b1585e7906208269123f20ac5b4d80f56078d0fe5beca1a
GB_Rewilding_Phase_II.zip	21404727	d6f62f5111a4917f41a7307c7ebc940a928f2c5bcb5e043b6ebf54f68d374c0a
GB_Rewilding_Phase_III.zip	15528198	dc0157460baf57daf0e040731806d2cf1c17e2a169b58c85e4514f168ff81656
GB_Rewilding_Phase_IV.zip	5171523	af6a3e998a1d27a54ab559ffae8fa84cbf7f37539d950742c223c751a5058d69
GB_Rewilding_Phase_V.zip	40382780	2a7363fe0de6fd622617e803528ed3f1614bc08393ae4e04b19e710db72acfdd
GB_Rewilding_Phase_VI.zip	916263	716c858c91e7c055534baf43c627090063cb58a4543ca8d4d9e053954ec61312

file	bytes	sha256
GB_Rewilding_Phase_VII.zip	3837926	e68b1b86b2142120a471728e9a91171de664e69bc14cdd675323763bdef6ea12
Land_value_estimates_for_policy_appraisal_2023.xlsx	170688	1f3383f11e77d057494123d30de9d7167c8a0789dd7a4d47e75349d9a86558db
Predictive_Agricultural_Land_Classification_Map_for_England.gpkg.zip	93235592	7bee3401b483c62293c7ad59cb0a8d30942f25da48eb2bf564183c499e3b791a
Regions_December_2024_Boundaries_EN_BGC_-4322719980866115179.zip	1242383	4e2b0ec6143c513c0e7f1ca256a9f4f30a1493ad2ab9e4d9ce3f7873eb867c78
UK_Rewilding_Phase_I.zip	7085	bdda9ed908798da5070cbf965d585ae2e6245880d5f3ab113f5995a4a03bfe9e
structure-england-june-farmtype-16apr26.ods	456417	3469d4e2bee3df900aceabffae772df7187574e30f136439d73b23f418493d9d
wg_predictive_alc2.zip	15093989	41adb73567d5edaa12f66f070578e1084df9fee8cd3f09f1db336878bc46fc74

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