

Terra Lens — Land History Report

demo-parcel-burn-2024 · report date 2026-08-26 · generated deterministically from the frozen pipeline (zero LLM)

	1 · Parcel identifier and geometry source
Parcel identifier	demo-parcel-burn-2024
Public label	demo-parcel-burn-2024
Geometry source	illustrative parcel-shaped boundary hand-drawn around the 2024 burn detection for sales-demo purposes; not a cadastral survey, not a title boundary
Geometry confidence	coordinates-only
Window bbox (lon/lat)	123.19320, 9.12580 – 123.20800, 9.14150
	The analysis window is the bounding box of the provided polygon, not a titled boundary.

	2 · Period and observation coverage
Requested period	2024-04-03 → 2026-05-15
Verified span (honest)	2024-04-03 → 2026-04-25
Span note	no cloud-valid (<20%) scene exists on this tile for 2017 under the spike-frozen cap; the verified span starts at the first cloud-valid observation and every gap > 90 days is rendered UNOBSERVED
Cloud-valid scenes used	12
First / last valid scene	2024-04-03 / 2026-04-25
Scenes (dates)	2024-04-03, 2024-04-13, 2024-05-23, 2025-06-02, 2025-07-07, 2025-08-01, 2026-03-16, 2026-03-19, 2026-03-29, 2026-04-03, 2026-04-18, 2026-04-25
Cloud-blind intervals > 90 days	2 (UNOBSERVED, listed below)

Unobserved interval (cloud-blind)	Days
2024-05-23 → 2025-06-02	375
2025-08-01 → 2026-03-16	227

3 · Event chronology — STABILITY NOT CONFIRMED

Stability criteria NOT met — see pairs below. Rule: STABLE iff every detection-capable pair (same-sensor, both scenes <20.0% cloud, pair SCL-valid >= 0.80, gap <= 90 d) yields event_area_ha == 0 (MMU 0.5 ha); parcel-mean NDVI is reported for transparency, not as a gate (seasonal dip and sub-MMU regrowth are not land-use change)

Detected events — family inferred from the spectral index stack, not field-verified; evidence level per the frozen vocabulary, from the same-sensor follow-up series listed below (persistent when NBR stays at least 0.10 below the pre-event NBR)

Pre	Post	Area (ha)	Family	Evidence level	Max persistence
0240403_	0240413_	14.54	burn	OBSERVED	0.991
0260329_	0260418_	0.83	water	LIKELY	n/a

Persistence timeline — pair 2024-04-03 → 2024-04-13 (same-sensor follow-ups, frozen < 40% cloud rule)

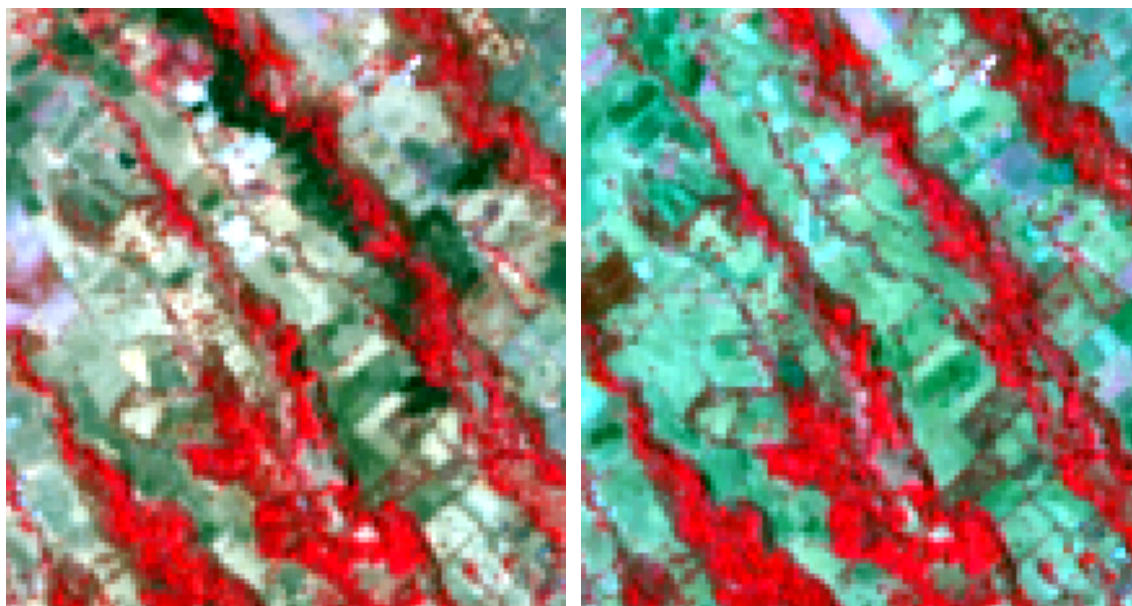
Persistence date	Item	Cloud %	Valid event px	Persistent frac	Mean NBR rec
2024-05-23	S2A_51PWL_20240523_0_L2A	6.4	646	0.991	-0.293
2026-03-16	S2A_51PWL_20260316_1_L2A	9.9	646	0.076	0.020
2026-04-25	S2A_51PWL_20260425_2_L2A	8.3	646	0.102	-0.020

Detection pairs rerun offline over the verified span (6 detection-capable of 6 same-sensor pairs)

Pre	Post	Gap (d)	Pair SCL-valid	Detection-capable	Event area (ha)
0240403_	0240413_	10	1.000	yes	14.54
0240413_	0240523_	40	1.000	yes	0.00
0260316_	0260425_	40	1.000	yes	0.00
0250602_	0250801_	60	0.988	yes	0.00
0260319_	0260329_	10	1.000	yes	0.00
0260329_	0260418_	20	1.000	yes	0.83

Parcel-mean NDVI across 12 valid observations: min 0.337, median 0.531, max 0.767 (transparency series — the recurring dry-season dip and sub-floor regrowth are phenology, not land-use change; the frozen detector is the change instrument)

First / last valid observation — false colour (near-infrared/red/green), parcel window; vegetation appears red. Endpoint observations shown for illustration, captured in different seasons — seasonal vegetation state explains most of the visible colour difference; detection never compares these two scenes, only consecutive valid pairs



3b · Sub-grade disclosure — below the certification floor

Route: LIKELY sub-grade persistent conversion — rule cap-acq-anchored-baseline-v1 (frozen 2026-09-04). This layer is additive: it is never a certified event and is never aggregated into the grade verdict of section 3. Persistence window degenerate: no — the 12-month persistence window is a strict subset of the 24-month departure window.

No sub-grade disclosure: this parcel carries 2 at-grade detection(s); below-floor residue belongs to the same conversion.

	4 • Methodology
Satellite	Copernicus Sentinel-2 L2A (10 m native; 15 m analysis grid), anonymous Tier-1 archive (Earth Search STAC)
Bands	B03 green, B04 red, B08 NIR, B11 SWIR16, B12 SWIR22, SCL
Indices	NDVI, NBR, NBR2, NDWI; pair deltas dNBR, dNDVI, dNBR2, dNDWI
Thresholds (frozen)	core dNBR $\leq$ -0.15, severe dNBR $\leq$ -0.27, dNDVI $\leq$ 0.02, brightening ratio $\leq$ 1.3, SWIR rise ratio $\leq$ 1.05, vegetation baseline NDVI $\geq$ 0.2; no tuning, provenance in DETECTOR_CARD.md
Minimum mapping unit	0.5 ha (detection floor; sub-MMU changes are not reported)
Pairing	same-sensor detection pairs only (cross-sensor = trajectory only); pair scenes < 20% scene cloud; pair SCL-valid fraction $\geq$ 0.80
BOA harmonization	per-scene T03 rule: PB $\geq$ 04.00 with boa_offset_applied != True -> -1000 DN at ingest; pre-04.00 scenes (PB 02.x/03.x, flag absent) carry no offset and are used as-is; every scene's baseline, flag and subtracted DN are listed in the series
SCL masking	scene-classification invalid classes {0,1,3,8,9,10,11} masked; SCL resampled nearest-neighbour only
Persistence	same-sensor follow-ups < 40% cloud; persistent when NBR stays $\geq$ 0.1 below the pre-event NBR over the event pixels

	5 • Limits
Detection floor	changes below the 0.5 ha minimum mapping unit (~1 ha practical detection floor at 15 m grid) are not detected and not reported
No ground survey	no ground survey and no field verification were performed; spectral families are candidates
Cloud-blind intervals	every interval > 90 days without a cloud-valid scene is listed UNOBSERVED in section 2 — absence of a detected event there is absence of observation, not of change
Geometry	the window is a study box (geometry confidence: see section 1), not a titled boundary

6 • Disclaimers

Decision-support document only. This report is not a survey, is not field-verified, and makes no legal claim. Detections are candidates pending human confirmation.

Data attribution: Free and open use of Copernicus Sentinel data (ESA). Attribution: "Contains modified Copernicus Sentinel data [2024-2026]".