The Pasture Condition Signal, Grade C+ Regional Pasture-Quality Overlay on Live Cattle

Why USDA NASS weekly pasture Good + Excellent percentage across TX/OK/KS/MO captures direct rangeland quality supporting cattle supply – Grade C+ dual-tail bullish overlay with distinct mechanisms (retention vs forced-placement).

David Stendahl · Market Lab Analytics · November 1, 2026

What this signal is, with the limits stated upfront

USDA NASS publishes weekly pasture condition ratings as the share of pasture rated Good or Excellent (G+E) by state. The G+E percentage captures the direct quality of rangeland supporting cow-calf operations – a distinct read from rainfall or drought-monitor signals (which read INPUTS to pasture quality).

This signal composites G+E condition across Texas, Oklahoma, Kansas, and Missouri – the four states that together host over 50 percent of US beef cow inventory. Z-scores on a 504-day rolling window with 60-day minimum sample. Tanh-bounded to [−1, +1]. State thresholds at plus or minus 0.2 (moderate) and plus or minus 0.5 (extreme). Weekly NASS release cadence (growing-season only, approximately April-October).

Daily Spearman IC against LC fwd60d is plus 0.046 at p-value 1.2e-5 across 9,049 trading days – marginal. Non-overlapping (every-60-day) IC is +0.015 at p-value 0.86 – not significant. Phase +1 (High Pasture Quality) delivers +4.24 percent fwd60d at 76 percent hit rate, +3.22 pp above the +1.02 percent baseline. Phase −1 (Low Pasture Quality) delivers +2.24 percent fwd60d at 72 percent hit rate, +1.22 pp above baseline. Phase 0 (Normal) delivers +0.61 percent – below baseline.

This is a Grade C+ regional pasture-quality overlay with a dual-tail bullish pattern. BOTH extreme tails deliver meaningfully above-baseline forward returns via DIFFERENT mechanisms. The Normal middle zone (83 percent of sample) underperforms baseline.

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How the dual-tail mechanism composes

The pasture-condition signal captures the state of rangeland supporting cow-calf operations. The empirical pattern – BOTH tails bullish, Normal middle bearish – reflects two distinct economic mechanisms firing at opposite extremes.

High Pasture Quality (positive composite) means TX/OK/KS/MO pasture is in strong condition. Producers can hold cattle on grass longer. Feedlot placements delay as rangeland supports the current cow-calf herd without forcing early movement. The near-term feedlot pipeline tightens; forward slaughter supply compresses. Historical response: bullish LC forward via retention-driven pipeline tightening.

Low Pasture Quality (negative composite) means pasture conditions have collapsed (drought, overgrazing, cold snap). Producers are FORCED to move cattle off compromised pasture into feedlots sooner than planned, or to liquidate herds. The near-term feedlot pipeline floods short-term but the forward supply compresses through accelerated clearing. Historical response: bullish LC forward via forced-placement-driven pipeline compression.

Normal Pasture (Phase 0) is the equilibrium regime where pasture condition is tracking baseline. No forced retention or forced placement. The supply pipeline operates at steady-state. Historical response: slightly below baseline because there's no supply-disruption catalyst.

This signal is DISTINCT from other LC weather signals:

- **CHIRPS Texas Panhandle Rainfall (Z4230)**: rainfall INPUT (meteorological).
- **CHIRPS KS-NE Corridor Rainfall (Z11555)**: rainfall INPUT.
- **US Beef-Belt Drought (Z3727)**: drought monitor OUTPUT.
- **Z3270**: NASS pasture CONDITION (ground-truth output of rangeland quality).

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What the state-conditional returns have actually done

> **Reference baseline – LC fwd60d (unconditional)**
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> CME Live Cattle back-adjusted continuous (LC20040BD) forward-60-day return baseline (unconditional): mean plus 1.02 percent, median plus 1.74 percent, standard deviation 8.01 percent, percent negative 41.8 percent. Sample window 1990-11-29 through 2026-10-30.

Phase plus 1 (High Pasture Quality, composite greater than plus 0.3) covers 774 trading days – 8.6 percent of the sample. Per-day mean fwd60d is plus 4.24 percent, hit rate 76 percent. Edge above baseline: plus 3.22 pp.

Phase 0 (Normal, composite between plus and minus 0.3) covers 7,584 trading days – 83.8 percent of the sample. Mean fwd60d is plus 0.61 percent, hit rate 54 percent. UNDERPERFORMS baseline by 0.41 pp.

Phase minus 1 (Low Pasture Quality, composite less than minus 0.3) covers 691 trading days – 7.6 percent of the sample. Per-day mean fwd60d is plus 2.24 percent, hit rate 72 percent. Edge above baseline: plus 1.22 pp.

Dual-tail bullish pattern with Normal middle bearish. The two tails together cover 16 percent of sample but deliver meaningful edge; Normal (84 percent) is the dormant regime.

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Three cases that frame how to read this signal

Case 1: October 2016. High Pasture Quality – retention regime.

Firing window: Q4 2016 at composite above +0.80. TX/OK/KS/MO pasture conditions were materially above year-ago on favorable rainfall through the growing season. Producers held cattle on grass longer, delaying feedlot placements. Forward LC rallied as the near-term pipeline tightened. Canonical High Pasture anchor.

Case 2: July 2012. Low Pasture Quality – 2012 drought forced placements.

Firing window: Q3 2012 at composite below −0.80. The 2011-2012 Texas-Plains drought collapsed pasture conditions across TX/OK/KS/MO. Producers were forced to move cattle off pasture into feedlots or liquidate herds. The near-term feedlot pipeline floodied, but the forward supply compressed through accelerated clearing. Live cattle rallied through Q3-Q4 2012 as the compression transmitted. Canonical Low Pasture anchor.

Case 3: August 2002. Low Pasture Quality – 2002 Plains drought.

Firing window: Q3 2002 at composite below −0.70. The 2002 Plains drought pressured TX/OK/KS/MO pasture conditions. Forced placements accelerated. Forward LC rallied as the near-term supply pipeline tightened. Non-crisis anchor demonstrating the drought-driven mechanism in isolation.

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How to use the signal today

As of November 1, 2026, the composite reads plus 0.494 – High Pasture Quality moderate-positive firing near the EXTREME POS threshold (+0.5), 30 trading days running. NASS weekly G+E% across TX/OK/KS/MO is materially above the 2-year baseline. CME Live Cattle trades the $220-230 range.

Historical Phase +1 delivers +3.22 pp above baseline at 76 percent hit rate – strong retention-regime read.

Pair with four confirming reads:

- **LC Texas Panhandle Rainfall (Z4230)**: CHIRPS rainfall over Texas feedlot region.
- **LC KS-NE Feedlot Corridor Rainfall (Z11555)**: CHIRPS rainfall over KS-NE corridor.
- **LC US Beef-Belt Drought (Z3727)**: Multi-state drought-monitor coverage.
- **LC-Corn Ratio Signal (Z15201)**: Grade A LC fundamental anchor.

Pasture condition is a direct quality read – distinct from rainfall input signals and drought monitor outputs. All three weather signal types complement in the overlay stack.

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Methodology notes

Data source. USDA NASS weekly Crop Progress and Condition report, pasture condition ratings for TX/OK/KS/MO.

Signal construction. Composite = Good + Excellent percentage across 4 states (TX/OK/KS/MO), weighted by beef cow inventory share. Z-score on 504-day rolling window with 60-day minimum

sample. Tanh-bounded to [−1, +1]. State thresholds plus or minus 0.2 (moderate) and plus or minus 0.5 (extreme). Phase +1 above +0.3, phase −1 below −0.3.

Validation statistics. Daily Spearman IC against LC fwd60d is +0.046 at p = 1.2e-5 (n = 9,049) – marginal. Phase +1 (High Pasture) state-conditional per-day mean fwd60d plus 4.24 percent (+3.22 pp above baseline). Phase −1 (Low Pasture) per-day mean plus 2.24 percent (+1.22 pp above baseline). Phase 0 (Normal) mean plus 0.61 percent (-0.41 pp below baseline).

Independence test. Non-overlapping (every-60d) sampling yields Spearman IC +0.015 at p-value 0.86 – not significant.

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What this signal does not cover

First, weekly NASS release only during growing season (approximately April-October). Winter-period readings carry over last Autumn data – the signal is less responsive in winter months.

Second, daily IC is marginal (+0.046). The directional edge sits in the tail-conditional stats, not the continuous IC measure.

Third, 4-state composite is weighted by beef cow inventory share. Shifts in state herd distribution over time introduce composition drift.

Broader caveat: Grade C+ regional pasture-quality overlay with dual-tail bullish pattern. The signal provides a direct quality read distinct from rainfall input and drought-monitor signals. Pair with the weather-overlay stack and LC fundamentals.

This research brief is for informational purposes only and does not constitute investment advice. Past performance is not indicative of future results. Signal reads reflect historical state-conditional statistics; any decision to act on signal readings is the reader's responsibility. Data sources: USDA NASS weekly pasture condition ratings; CME Live Cattle back-adjusted continuous (LC20040BD). State-conditional statistics computed through 2026-10-30.