Supplementary to

A 1-km dataset of crop residue production and usage pathways in the conterminous U.S. from 2001 to 2021

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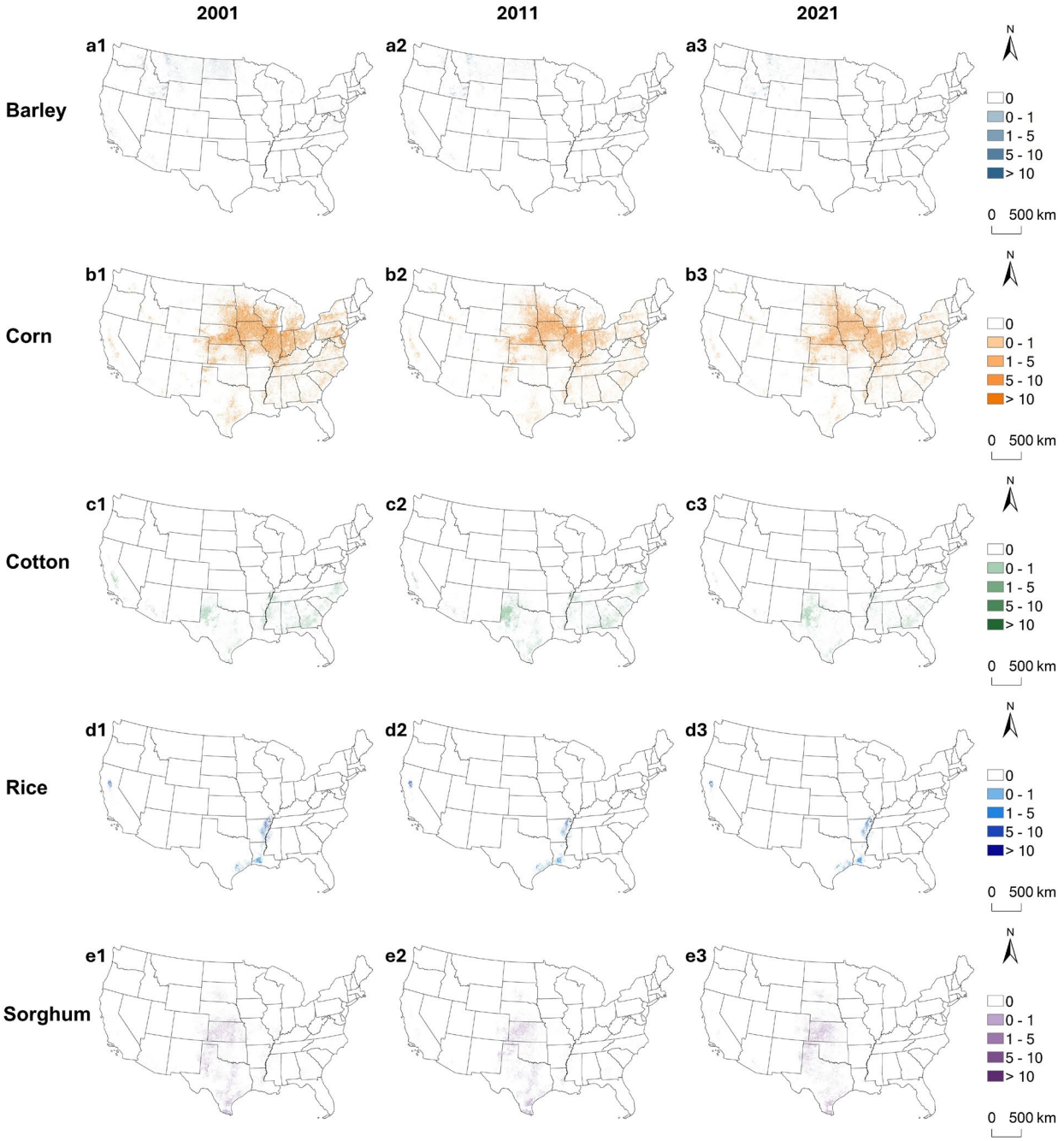

Figure S1. Spatial distribution of residue production for nine major crop types (Unit: t/ha)

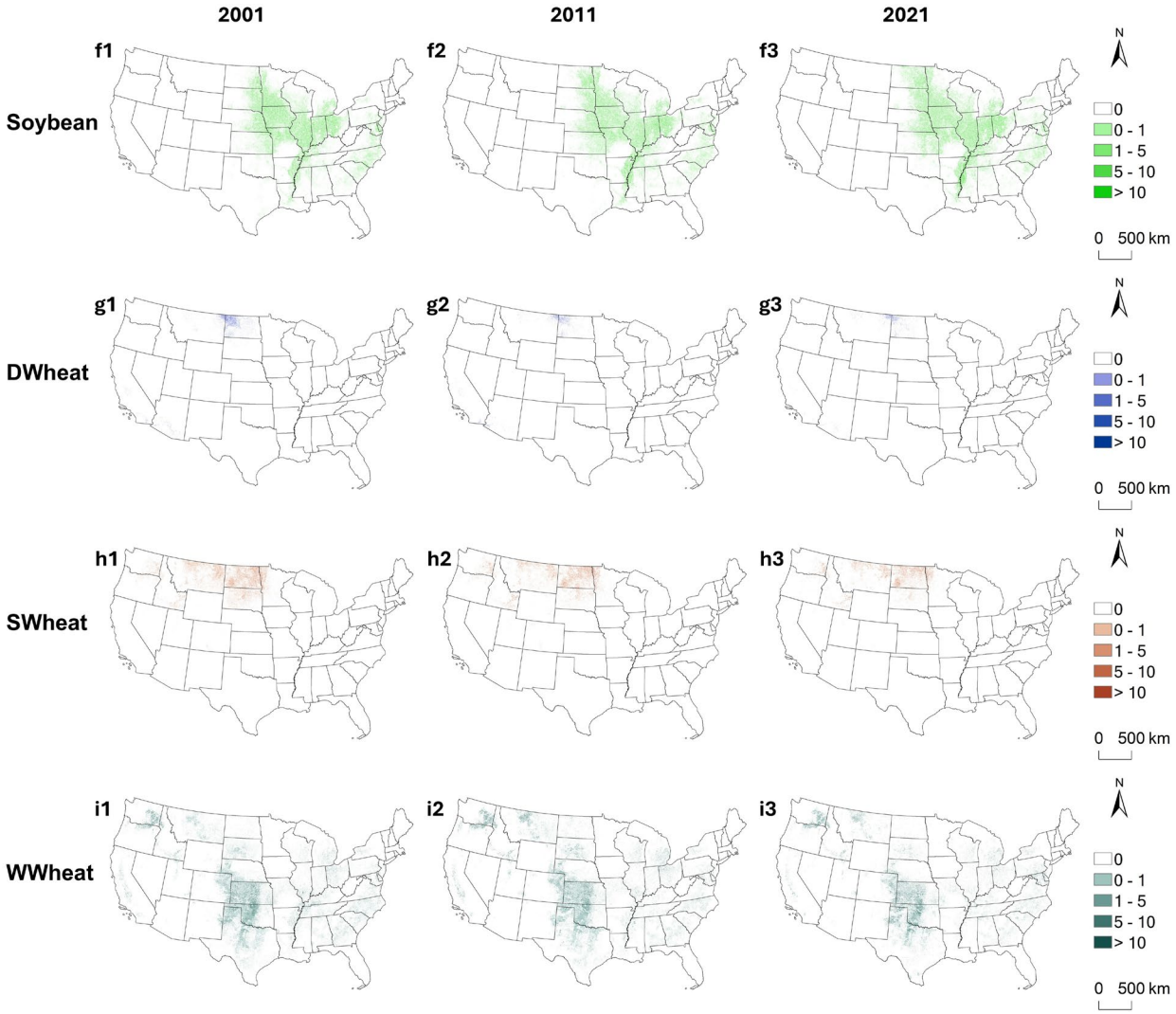

Figure S1 (continued).

Figure S2. Burnt residue amount (Unit: t/ha)

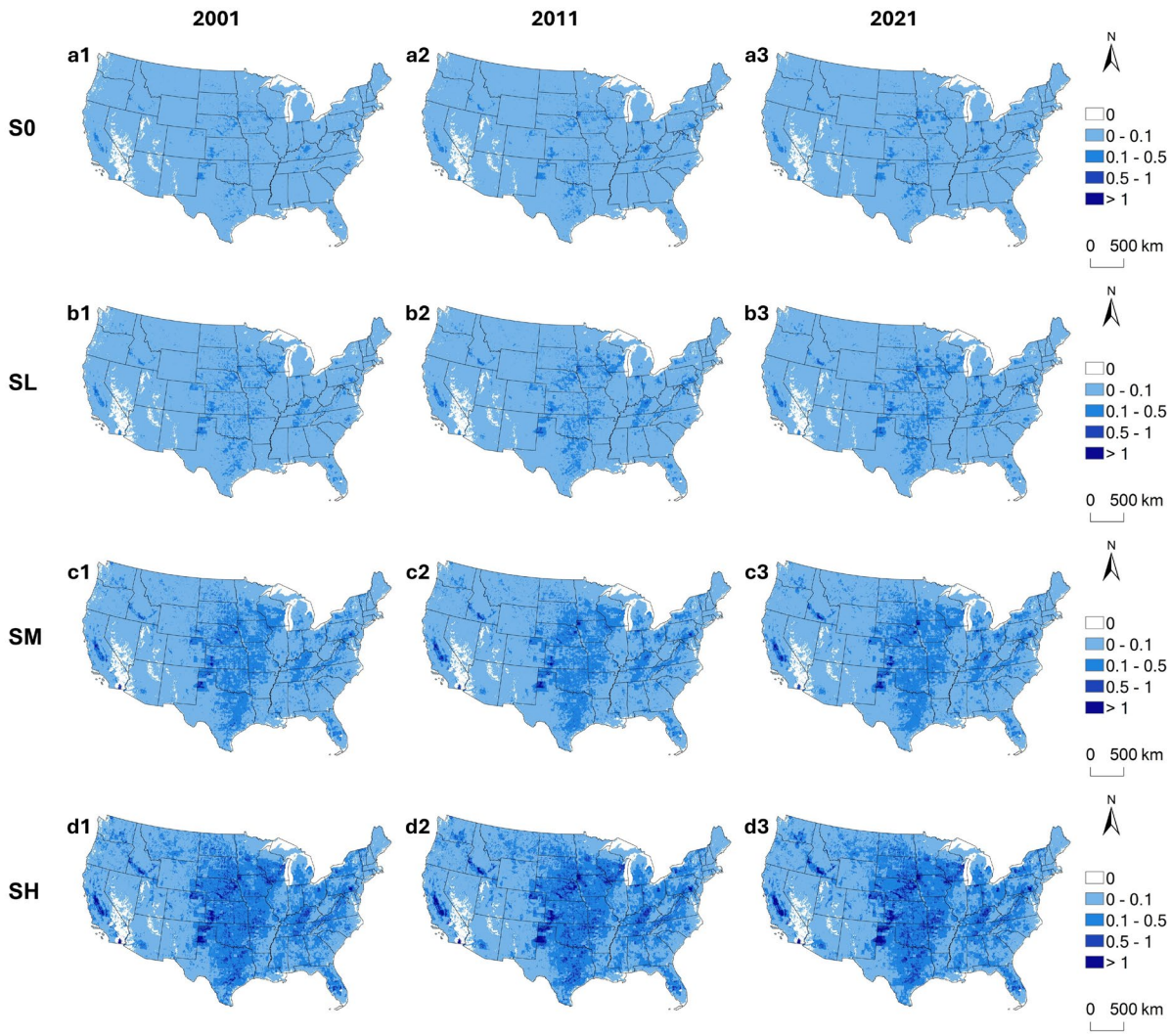

Figure S3. Animal-use demand for feeding and bedding under each scenario (Unit: t/ha)

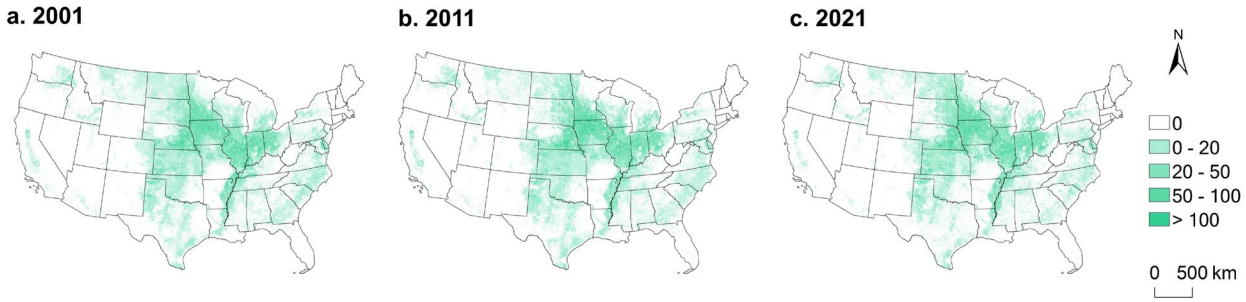

Figure S4. Off-field residue demand (Unit: kg/ha)

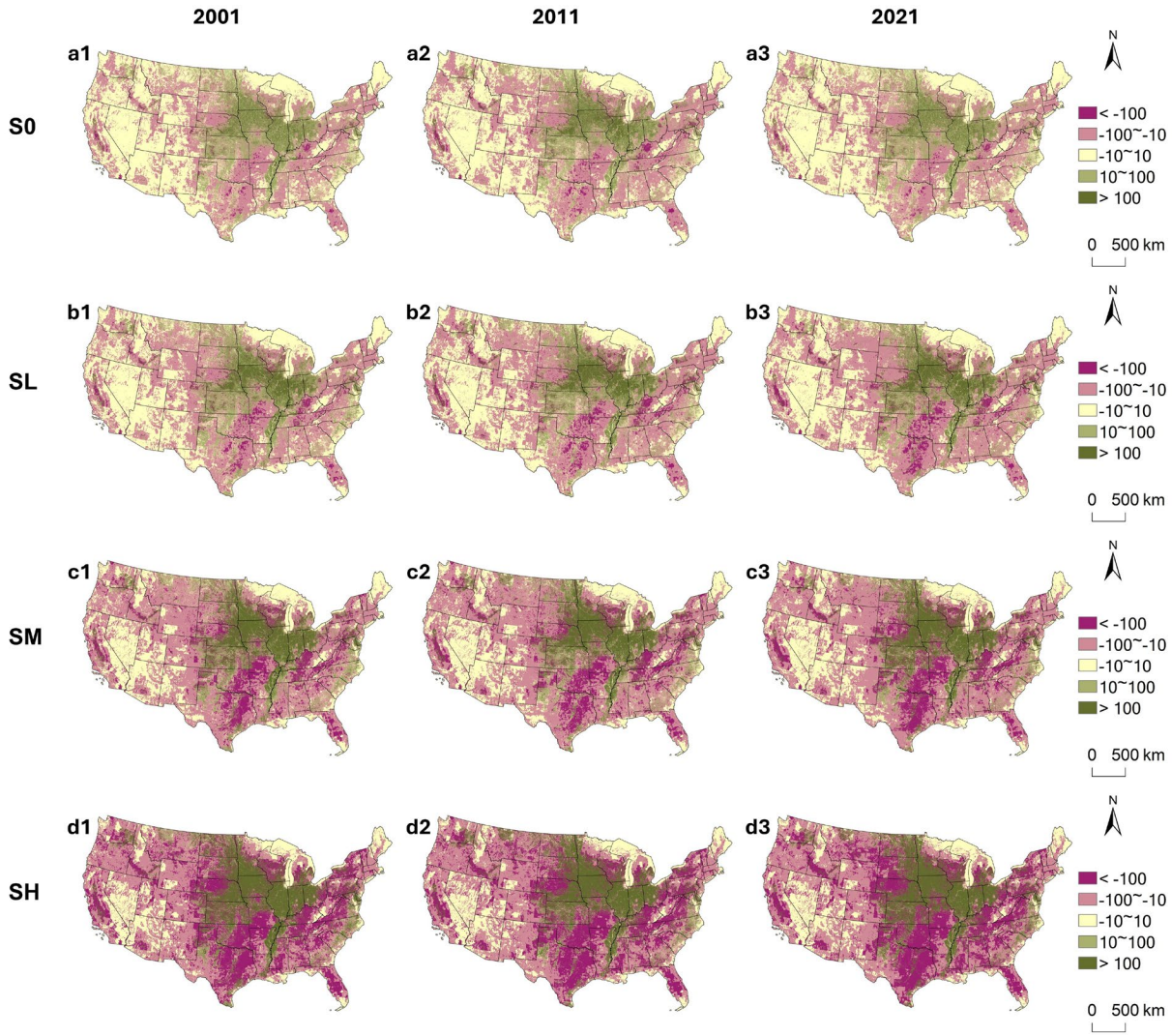

Figure S5. Implied domestic transfers (mismatch) under each scenario (Unit: kg/ha)

Note: Transfers are inferred from grid-level mass-balance reconciliation and represent domestic reallocation required to align consumption with available production. Negative values indicate inflow (local consumption demand exceeds available production), whereas positive values indicate outflow (available production exceeds local consumption demand). National totals are calculated as the sum of absolute inflow (equivalently, outflow).

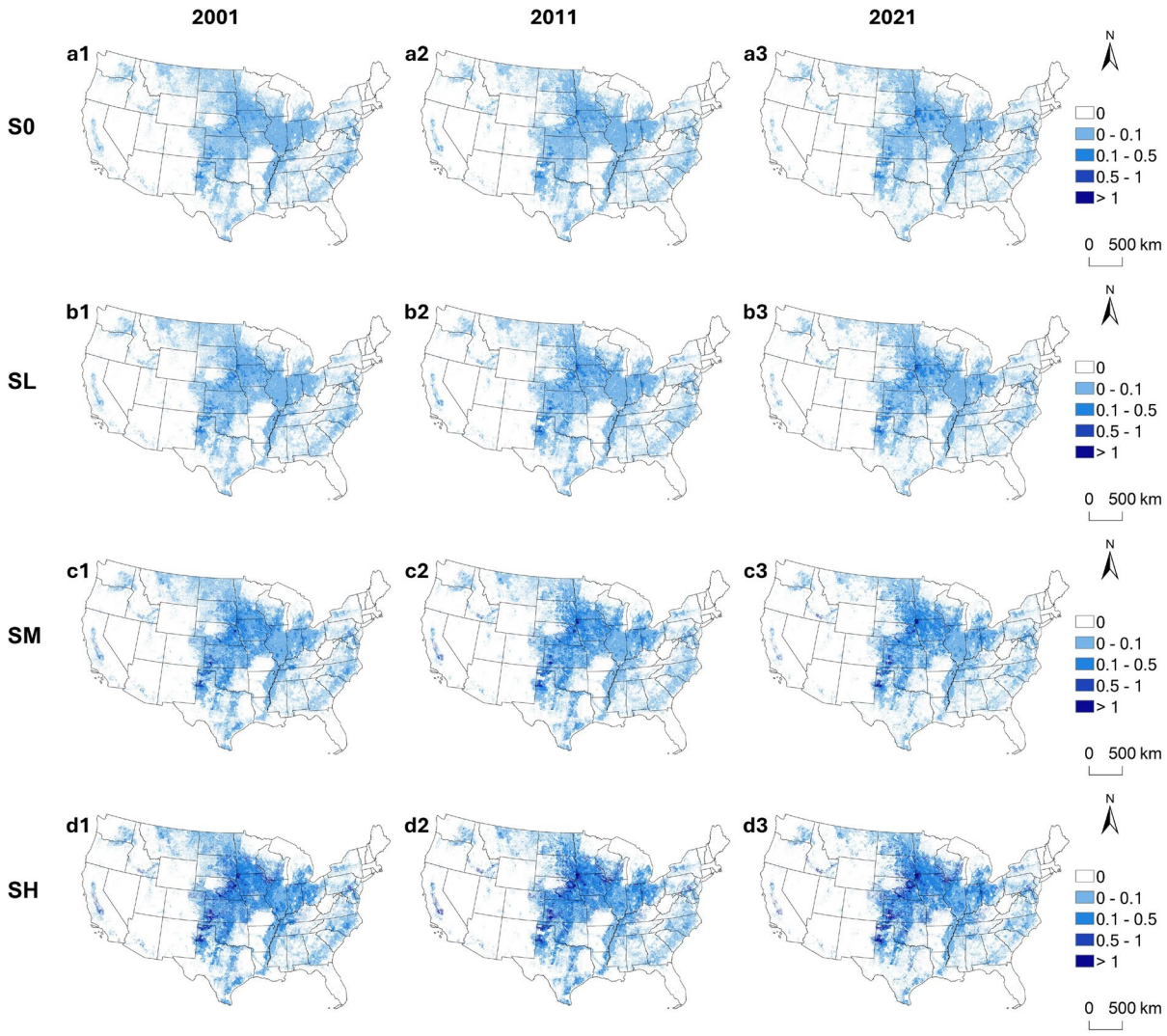

Figure S6. Production-based animal-use residue under each scenario (Unit: t/ha)

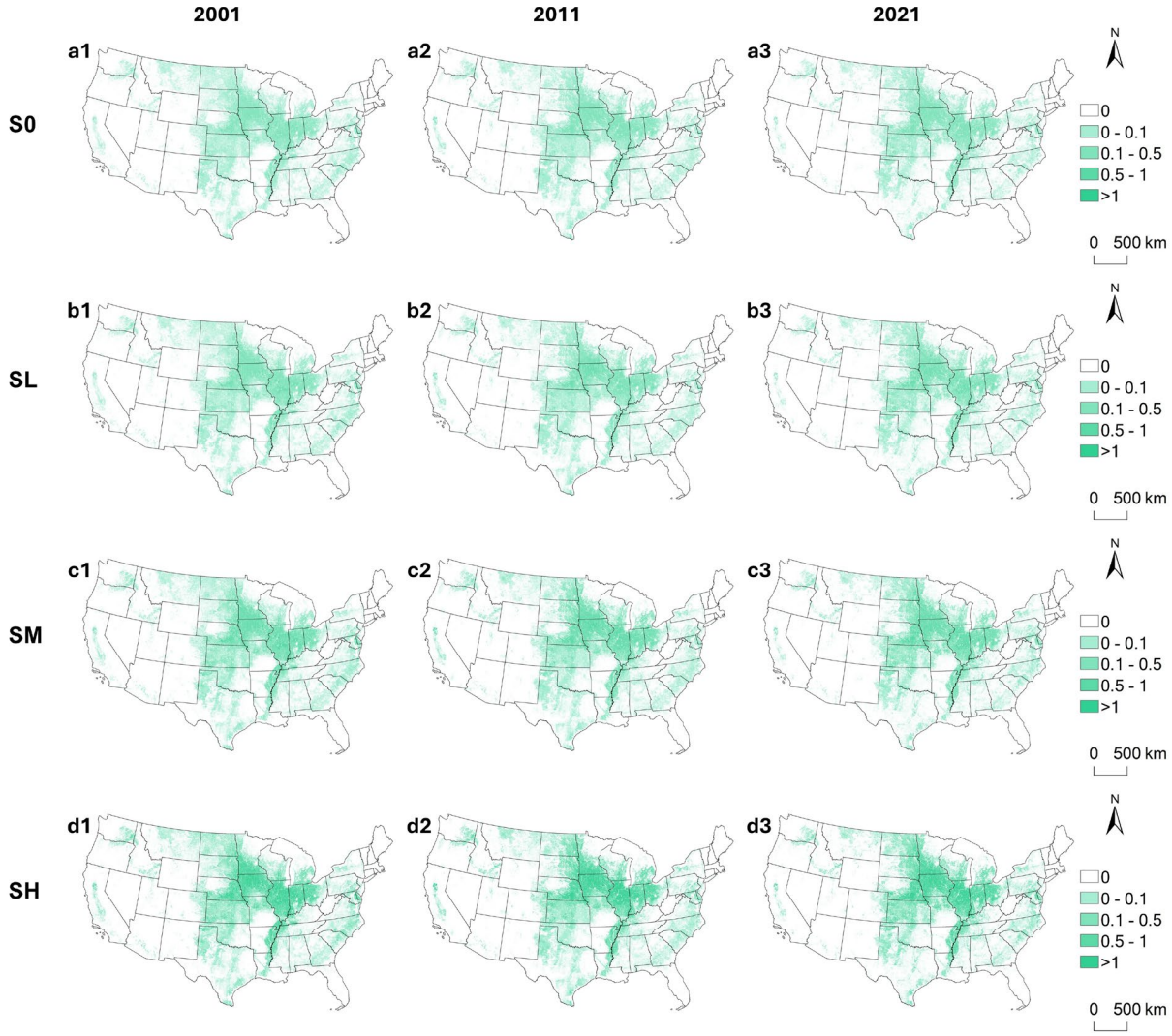

Figure S7. Production-based off-field residue under each scenario (Unit: t/ha)

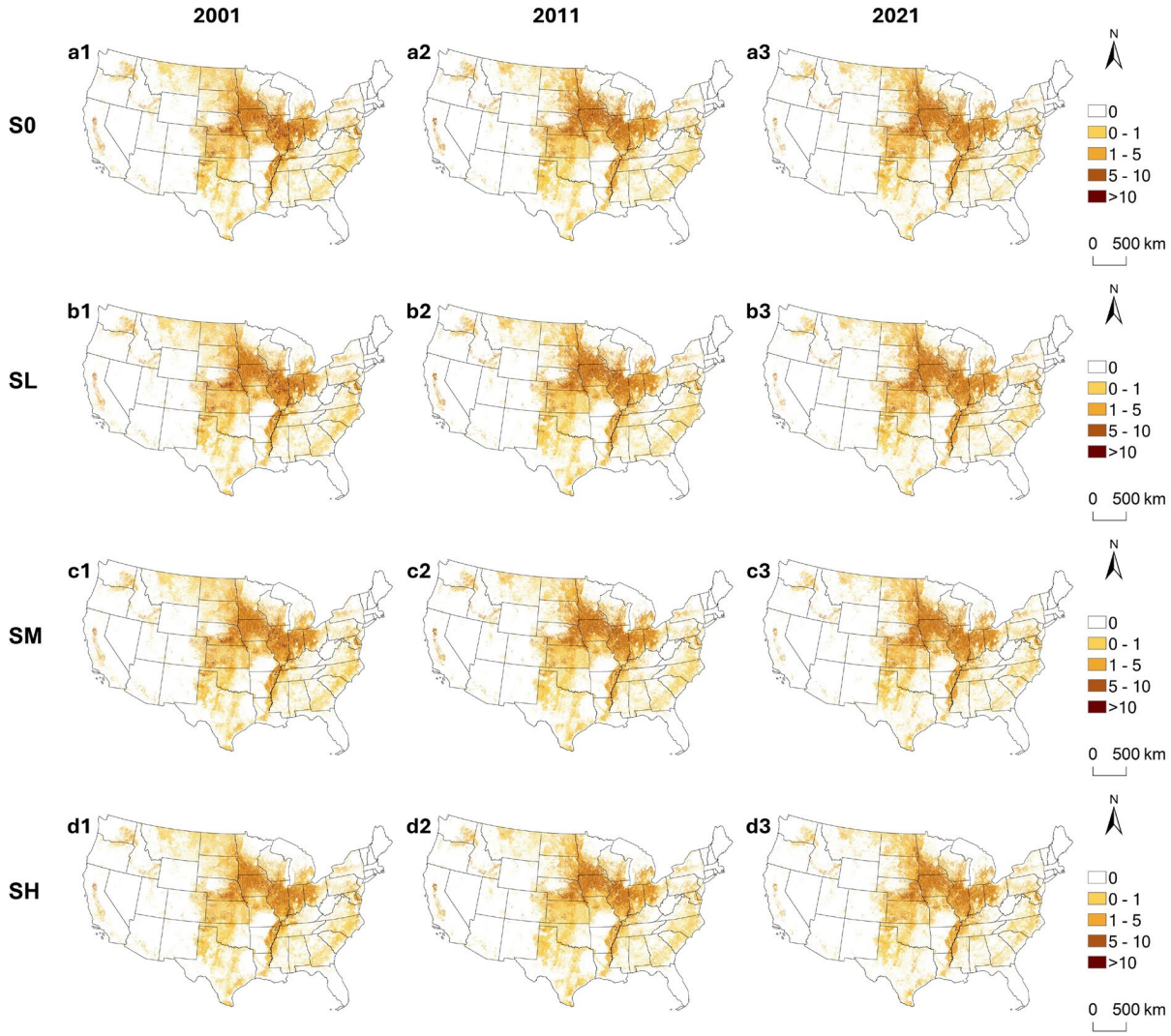

Figure S8. Residue left on field under each scenario (Unit: t/ha)

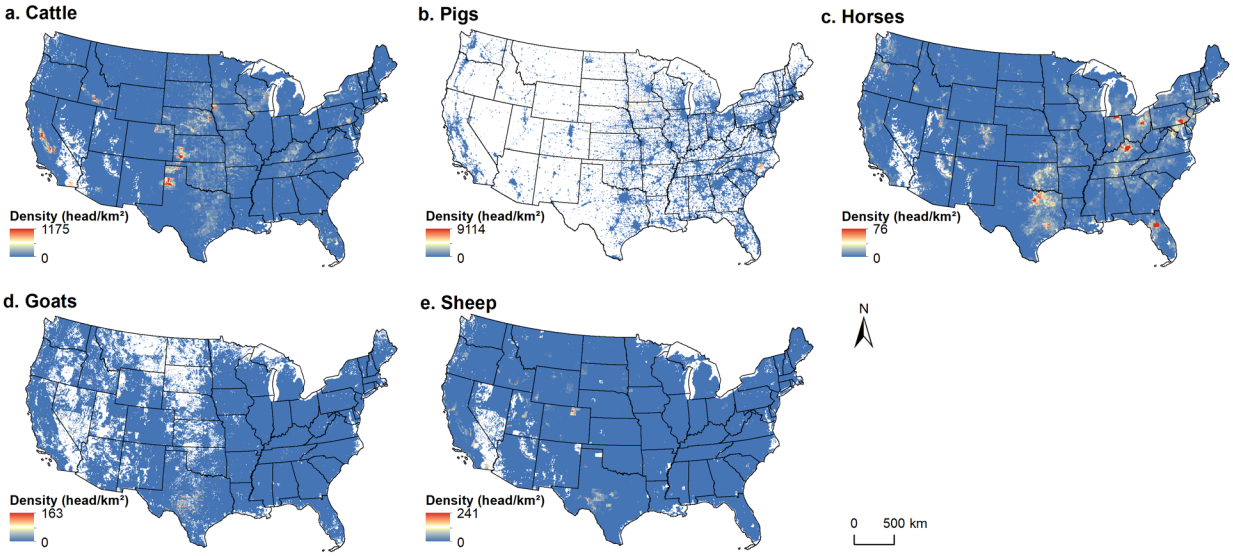

Figure S9. Multi-year average density of animals (Unit: head/km^2)

Table S1. Average national production-based residue pathway proportions under different scenarios (2001–2021)

Residue type	**S0**	**SL**	**SM**	**SH**
Animal	1.8%	2.5%	4.8%	9.3%
Off-field	4.0%	5.1%	9.0%	17.7%
Burnt	0.1%	0.1%	0.1%	0.1%
Left on field	94.1%	92.3%	86.1%	72.9%

Table S2. Average national mismatch residue amount and fraction under different scenarios (2001–2021).

	S0	**SL**	**SM**	**SH**	**Mean**
Residue amount (10^{10}kg)	1.5	2.0	3.9	8.2	3.9
Fraction	3.0%	4.0%	7.9%	16.6%	7.9%