

Appendix II: Land Use Data

Table I: Average New England Family Farm, ca. 1770, over Twenty-Six Years

Total Acreage Available: 91 acres

Adult Agricultural Laborers: 3.5

Land Use	Acreage in Use	Emission Factors (E.F.) Applied: E.F. Value (in parentheses), as Metric tons of Carbon (MtC) <i>per acre</i>	Emission in Metric tons of Carbon (MtC)	Description
Cropland	7	Above-Ground Biomass in Forest (24.3) Below-Ground Biomass in Forest (11.7) Dead Wood Biomass (3.6) Litter Biomass (9.7) Soil Organic Carbon Stock, applied 26 times (2.2) Carbon drawdown in cropland (-1.9)	721	All croplands are for subsistence and perhaps some for local market; no exports. Soil emission factor applied 26 times to account for 26 years of croplands being tilled.
Pasture and meadow	34	Above-Ground Biomass in Forest (24.3) Below-Ground Biomass in Forest (11.7) Dead Wood Biomass (3.6) Litter Biomass (9.7) Carbon drawdown in grassland, above- and below-ground (-5.5)	1,487	Combines 20 acres in meadows; 14 acres in pasture
Household	4	Above-Ground Biomass in Forest (24.3) Below-Ground Biomass in Forest (11.7) Dead Wood Biomass (3.6) Litter Biomass (9.7)	197	Area cleared for household, barn, kitchen garden, and orchard
Fuelwood (26 years)	26	Above-Ground Biomass in Forest (24.3) Below-Ground Biomass in Forest (11.7) Dead Wood Biomass (3.6) Litter Biomass (9.7) Carbon drawdown in grassland, above- and below-ground (-5.5)	1,137	1 acre of fuelwood per year, for 26 years
<i>Remaining woodlands after 26 years</i>	20	<i>n/a</i>	<i>n/a</i>	
Total (26 years)	71		3.54²	

Sources and Notes: All land use except fuelwood from Brian Donahue, *The Great Meadow: Farmers and the Land in Colonial Concord* (New Haven, Conn., 2004), 163 (table 7.1); *ibid.*, 141 (table 6.1), for household acres; *ibid.*, 243–56, appendix 2 (Tables A2.1–14), for average acreage owned. Fuelwood from William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York, 1983), 120. Given the small acreage in crops, we assume that after 7 years in use, croplands could be fallowed, and farmers could use their deforested fuelwood acreage—7 acres in 7 years—for new croplands. In addition, New England farmers fertilized their fields with manure, which prolonged soil fertility and reduced the need for a lengthy fallow period. Therefore, we assume there was no need to clear additional land for croplands beyond what was already cleared annually for fuelwood. Average adult agricultural laborers derived by dividing in half the average household size for Massachusetts in 1764, found in Robert V. Wells, “Household Size and Composition in the British Colonies in America, 1675–1775,” *Journal of Interdisciplinary History* 4, no. 4 (Spring 1974): 543–70, esp. 548 (table 1). Land use practices from Donahue, *The Great Meadow*, 155–96; Daniel Vickers, *Farmers and Fisherman: Two Centuries of Work in Essex County, Massachusetts, 1630–1850* (Chapel Hill, N.C., 1994), 33–35, 42–49, 210–16. For sources of emission factors, see Appendix I: Table A.I.1.