Source Category:	Animal Husbandry - Cattle
SCC Code:	2805020000
Pollutants of Concern:	NH_3

How is the NH_3 National Emission Inventory developed for this category?

Current Methodology:

- The total number of cattle in production is estimated from data available through the Census of Agriculture.
- Emission factors based on European studies are applied.
- A composite emission factor is developed to represent the national mix of animal type, size, and production conditions.
- Total emissions for each state are calculated from state-level animal count information.
- Emissions are allocated to the county level based on the agricultural land surrogate.

Uncertainties / Shortcomings of Current Methods:

- The animal counts reported to Census of Agriculture may undercount nonproduction animals.
- In the NEI methodology, an aggregate factor for both beef cattle and dairy cattle was used. Beef and dairy cattle have significantly different NH3 emission characteristics.
- The emission factors represent European operations and European weight classifications which can differ markedly from U.S. conditions.

How can State, Local, and Tribal agencies improve upon this methodology?

NOTE: Historical NET data included beef and dairy in one category. The NEI methodology will treat the two categories separately and apply a separate emission factor for each group as emission factors become available.

- Obtain local data on the total herd size for dairies including calves, bulls, and replacement stock.
- Estimate the typical practices for feeding, waste treatment, and waste disposal practices in the area. Aggregate emission factors could be adjusted to account for the revised local conditions. If data on manure spreading are used as a separate fertilizer application category, the emission factor for cattle will have to be adjusted to avoid double counting.
- Obtain local data on the total number of beef cattle on the range and in feedlots.
- Adjust emission factors to represent the local conditions as appropriate.

Activity Variables Used to Calculate Emissions from Cattle Production

Current Variables/Assumptions Used:

• Total number of beef cattle and dairy cattle by State. [*Census of Agriculture*]
• Aggregate emission factor [*based on European studies*]

Suggestions for Improved Variables:

• Local estimate of number of dairy cattle including nonproduction animals. [*State Department of Agriculture, Agriculture Extension Service*]
• Local estimate of number of beef cattle including replacement herd and breeding stock. [*State Department of Agriculture, Agriculture Extension Service*]

Where can I find Additional Information and Guidance?

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NH₃ Emission Factors Report	http://www.epa.gov/ttn/chief/efdocs/ammonia.pdf
NEI Methodology Description	http://www.epa.gov/ttn/chief/publications.html#reports
MARAMA CMU NH₃ Emissions Inventory	check MARAMA website www.marama.org/
1997 Census of Agriculture	http://www.nass.usda.gov/census/