

Animal Feeding Operations and Residential Land Value

Summary of Literature

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This literature review evaluates the impact of animal feeding operations (AFOs) on surrounding residential and nonresidential land prices. It is based on eight published studies on the impact of animal feeding operations on rural residence and property values. In summary:

- All studies indicated that the impact of AFOs on property value was localized or limited to properties near the AFO.
 - Five of the eight indicated that AFOs reduced nearby residential property values.
 - A Minnesota study showed that rural residences increased in value, supporting the hypothesis that the AFOs increased the demand for nearby residences by those employed in agriculture.⁸
 - One study indicated that AFOs could either raise or lower the value of particular residential properties, depending on specific characteristics of the AFO.⁷
 - One study indicated no impact of AFOs on agricultural land.³
 - Only one study compared the local effect of the AFO on land prices with the impact of the AFO on the local economy and found local economic impact exceeded negative impact on residential real estate values.¹
- An Iowa study indicated that a new AFO located ¼ mile upwind of a residence would decrease residential value a maximum of 16 percent. At 1½ miles away the impact of the AFO is zero. AFOs only affected residences located downwind from the facility.⁴
 - A North Carolina study indicated that a new AFO located ½ mile from a residence would decrease the residential value a maximum of 0.3 percent to 8.4 percent depending on the density of livestock around the residence before the new facility was built. This effect decreases to 3.6 percent or less at 2 miles distance from the new AFO.⁶
 - A Pennsylvania study indicated that an AFO located within ½ mile of a residence decreased the residential value a maximum of 15 percent. This impact decreased to zero at a distance of 1 mile from the AFO.⁹
 - A Colorado study found that nearby beef and dairy operations increased residential values; poultry within 2 miles increased residential values, while poultry within 2–3 miles decreased residential values; swine operations decreased residential values up to 3 miles away.⁷
 - A Pennsylvania study found that proximity to a poultry operation was more negative than proximity to a swine facility, which was more negative than proximity to beef and dairy facilities.⁹

This review summarizes the reported effects of four factors (distance, size and concentration, management, economic benefits) on the relationship between AFOs and rural residence values.

Distance

Seven studies considered the impact of distance from the AFO on residential values. The studies included residential sales up to 10 miles from AFOs. The conclusions indicate that the negative impact of AFOs on residential value diminishes quickly with distance between the AFO and the residence.

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Because of poor sales data in Missouri, a traditional economic analysis of the effect of AFOs on residential values (as in all other studies mentioned) could not be performed in a Missouri study. Instead, the Missouri study attributed all economic impact to the land containing a residence rather than to the actual residence. This data problem yielded confusing results. The study found that if no house was on the land, the value of the land did not decrease due to proximity to an AFO. However, if land contained a residence within 3 miles of an AFO, the land decreased in value by an average of \$112 per acre. Recognizing that proximity to an AFO did not decrease the value of land without a home, any observed land value decrease when a house was present is due to an unmeasured decrease in residential value. Because the

amount of land associated with individual homes was not a factor in the study, no quantitative impact on residential values in Missouri could be determined.³

Size and concentration

There is some disagreement among three studies on the impact of the number or concentration of animals on the real estate value of nearby residences.

Three studies indicated that larger AFOs (or the presence of many animals) influenced residential values less than smaller AFOs.^{4,6,8} One study suggested that larger AFOs affected residence values less because they were newer or better managed.⁴ The second study used concentration of livestock rather than individual AFOs to estimate property values. The study showed that a new AFO in an area of relatively concentrated livestock production would not have as much impact as a new AFO in an area relatively free from livestock production.⁶ The third study considered the number of animals on the nearest AFO and the concentration of animals in all AFOs within 3 miles, concluding that the increased concentration increased residential values.⁸

Two studies indicated that the higher concentration of animals increased the negative impact on residential values.^{1,5} A Michigan study estimated that residential property values decreased 1.71 percent for every additional 1,000 hogs nearby.¹ The authors warn that their findings may be biased by the fact that they only studied housing sales near AFOs that had received odor complaints. A North Carolina study also showed that increased density of livestock increased the negative impact of the AFO on residential values.⁵

The Colorado study yielded confusing results.⁷ Increasing the size of beef and dairy operations decreased the value of residences (though the presence of these operations generally increased the value of residences). In contrast, increasing the size of swine operations increased the value of residences (though their presence generally decreased the value of residences.) The apparently contradictory results of the Colorado study may be due in part to its specific location. The study covered the northern front range of the Colorado Rockies, including the commuter towns northwest of Denver and the entire greater metropolitan area of Greeley.

Management practices

Only two studies considered the impact of management practices on residential real estate values. A Pennsylvania study found that AFOs with conservation plans negatively affected residential values less than AFOs without conservation plans.⁹ An Iowa study hypothesized that the lesser effect of large AFOs on land prices compared to smaller AFOs may have been due to bet-

ter management of manure storages, land application of manure and site selection for the operation.⁴

Economic benefits

The Michigan study concludes that the economic benefits from local hog operations exceeded the economic costs on property value.¹

In an interesting lawsuit in Nebraska, a man successfully argued that the presence of *his* AFO negatively impacted the *assessed* value of his expensive home. Reducing his assessed value allowed him to pay less property tax on the home.²

References

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