HI-TECH HOOPS: AN OVERVIEW OF LIVESTOCK IDENTIFICATION AND TRACEABILITY PROGRAMS AND WHERE WE GO FROM HERE

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ABSTRACT

This Note provides a background and history of national livestock identification systems in the United States, specifically geared at disease tracing efforts in cattle. First, it delves into the factors and concerns which created a push for comprehensive animal disease traceability in the United States. Next, it explores the first nationwide livestock tracing program, the National Animal Identification System (NAIS), and why this voluntary system was ultimately jettisoned. It then discusses how aspects of NAIS were used to inform the 2013 Animal Disease Traceability (ADT) Rule, a new mandatory (albeit much narrower) system. With the 2024 update to ADT, this Note discusses the benefits of the new requirements for electronic identification, while also exploring the constraining factors still present and critiques of the rule that continue to mirror those which led to the demise of NAIS. Finally, this Note highlights the importance of continuing advancement in disease traceability while acknowledging the very real concerns in terms of data security and privacy, cost of implementation, and infrastructure development, which must be addressed to protect not only the livelihoods of U.S. cattle producers, but also the abundant, affordable supply of beef available to consumers.

I. INTRODUCTION

Why ID cows? While you will never hear a police officer ask for one, cows and other livestock species today follow intricate and important systems of identification, whether at the farm level or as part of national efforts. However, the critical question that arises is what legal framework, oversight, and regulation is necessary to achieve the goals of those systems, and how much is simply an unnecessary burden on the producers responsible for it?

Going back thousands of years, identification has been used to track animals.[1] The earliest identification practices, dating back to 1,000 B.C.E., took the form of hot iron branding and ear incisions to show ownership and protect against theft.[2] Animal identification has also been a constant practice in the United States, taking on similar forms for similar purposes.[3] However, starting as early as the 1940s, the purposes for animal identification expanded and shifted to tracing

1. Hongwu Bai et al., *Traceability Technologies for Farm Animals and Their Products in China*, 79 FOOD CONTROL 35, 35–36.

2. *Id.*

3. *Id.*

animals involved in disease outbreaks.[4] Large numbers of livestock are still identified for reasons other than disease tracing, but disease tracing has expanded in recent years due to a growth in technological advancements. Unlike other forms, records of the identification and travel of each animal—which is massively aided by online databases and electronic identification forms—are beneficial to tracking disease outbreaks.[5]

While animal identification has been a constant throughout history, today the term identification encompasses a multitude of practices, including: cold and hot branding; tattooing; ear notching; ear tagging; nose printing; retinal scanning; leg banding; and transponder injecting.[6] Nevertheless, the purpose of identification has shifted from showing ownership to tracing the location and movements of animals for public health and safety purposes.[7]

II. ORIGIN OF THE NEED FOR TRACEABILITY

As the global market for livestock products has grown, disease outbreaks, as well as concerns over bioterrorism, have increased the need for national traceability systems.[8] Particularly, the discovery of Bovine Spongiform Encephalopathy (BSE) in Europe in the late 1980s, and in North America by the early 2000s, marked a critical development that pushed the importance of livestock identification and traceability onto a national platform.[9]

BSE, a progressive neurological disorder found in cattle, is an exceptionally dangerous disease, characterized by its 100% fatality rate and its ability to infect

4. *Animal Identification & Tracing: An Overview*, NAT'L AGRIC. L. CTR. (Sep. 14, 2024, at 11:24 CT), https://nationalaglawcenter.org/overview/animalid/ [https://perma.cc/7PRQ-ZWA2].

5. *Id.*

6. *See generally* MICHAEL NEARY & ANN YAGER, DEP'T OF ANIMAL SCI., PURDUE UNIV., METHODS OF LIVESTOCK IDENTIFICATION (Sep. 14, 2025, at 11:24 CT), https://www.extension.purdue.edu/extmedia/as/as-556-w.pdf [https://perma.cc/D8Q7-D7EH] (detailing various methods of identification); *see* Daliah Singer, *Facial Recognition Technology Could Improve Livestock Health*, MOD. FARMER (May 11, 2023), https://modernfarmer.com/2023/05/facial-recognition/ [https://perma.cc/C65Z-98QE]; ANIMAL & PLANT HEALTH INSPECTION SERV., U.S. DEP'T OF AGRIC., FACTSHEET, ANIMAL DISEASE TRACEABILITY: A GUIDE TO IDENTIFYING POULTRY FOR INTERSTATE MOVEMENT (2011), https://www.aphis.usda.gov/sites/default/files/FStracpoultry.VS.pdf [https://perma.cc/YRJ3-8NP9].

7. *See Animal Identification & Tracing: An Overview*, *supra* note 4.

8. Margaret Rosso Grossman, *Animal Identification and Traceability Under the US National Animal Identification System*, 2 J. FOOD L. & POL'Y 231, 232–33 (2006).

9. *Id.*

humans who eat affected beef in a form known as variant Creutzfeldt-Jakob disease (vCJD).[10] The human form, vCJD, causes rapid, progressive dementia and is associated with neuromuscular disturbances.[11] Despite the United States' ability to protect itself from outbreaks, even the identification of exceptionally rare occasions of the extremely dangerous disease caused major alarm among governments around the world.[12]

It was found that a common avenue of BSE transmission was from cattle feed containing processed beef products derived from infected cattle.[13] The United States dealt with early outbreaks by culling sick animals along with blanket bans on feed and meat from certain countries and regions.[14] Despite exceptionally isolated occurrences, the discovery of BSE in the United States also prompted implementation of the National Animal Identification System (NAIS) in order to address current cases and prevent future ones from going unidentified.[15]

In addition to national traceability plans, the USDA's Animal and Plant Health Inspection Service (APHIS) responded directly to the BSE outbreaks by implementing an enhanced surveillance plan.[16] This plan tested high-risk cattle as well as a random sample of normal appearing aged cattle in an attempt to verify, or disprove, growing public concern that isolated cases of BSE being discovered in the absence of a tracing or testing protocol pointed to larger outbreaks going completely unidentified.[17] This surveillance plan, however, was much more isolated than a national traceability system both in its reach and in its goal of pinpointing only one specific disease, as opposed to all types of diseases.[18]

Rather than acting as a food safety program, this plan acted "as a one-time effort to provide information" about BSE in the United States to the USDA.[19] The

10. *Mad Cow Disease (Bovine Spongiform Encephalopathy)*, JOHNS HOPKINS MED.: HEALTH (Sep. 14, 2025, at 13:14 CT), https://www.hopkinsmedicine.org/health/conditions-and-diseases/bse-mad-cow-disease-and-vcjd [https://perma.cc/582H-T6FH].

11. *Id.*

12. *See Bovine Spongiform Encephalopathy (BSE)*, CTR. FOR DISEASE CONTROL (July 7, 2025), https://www.cdc.gov/mad-cow/php/animal-health/index.html#cdc_generic_section_5-risk-to-people [https://perma.cc/8YXJ-EYKG].

13. *Id.*

14. *Id.*

15. Man-Keun Kim et al., *Benefits of an Animal Traceability System for a Foot-And-Mouth Disease Outbreak: A Supply-Driven Social Accounting Matrix Approach*, 49 J. AGRIC. & APPLIED ECON. 438, 438–39 (2017).

16. Grossman, *supra* note 8, at 241.

17. *Id.*

18. *See id.* at 236.

19. *Id.* at 241–42.

testing, which required over $157 million in funding, concluded that fewer than one animal per one million adult cattle were likely to have BSE.[20] This plan was altered in 2006 to move away from identifying the number of cases of the disease and toward assessing and monitoring relative increases in BSE.[21]

The new ongoing surveillance plan was designed to lower the number of animals tested while maintaining a testing level adequate to track dangerous changes in the disease from an animal health perspective.[22] While a large-scale BSE outbreak never occurred, this new plan was criticized for its limited scope paired with a hefty price, at $17 million per year. [23]

III. OVERVIEW OF NAIS

Contrasting the limited application and focus on animal health under the BSE surveillance plan, NAIS took a much broader approach in all aspects.[24] Instead of testing only one species of animal for one disease to track its potential spread, NAIS tracked all animals.[25] The program then compiled the data in case of a disease outbreak, which would allow for the implementation of a plan to pinpoint animals involved in that outbreak in order to prevent further spread.[26] NAIS was revolutionary because it applied to a variety of species, including cattle, swine, bison, sheep, goats, and poultry, and created the ability "to trace all livestock and poultry within 48 hours of a certain event such as a disease outbreak."[27]

IV. THE STRUCTURE OF NAIS

In accordance with the goal set forth in the Animal Health Protection Act (AHPA), to address livestock diseases, the USDA implemented the original system of NAIS in 2004.[28] The AHPA authorizes the Secretary of Agriculture to "carry

20. *Id.* at 242.

21. *Id.* at 242–43.

22. *Id.* at 243–44.

23. *Id.* at 243.

24. *See id.*

25. *See id.* at 282.

26. *See* U.S. DEP'T OF AGRIC., NATIONAL ANIMAL IDENTIFICATION SYSTEM: A USER GUIDE 5–7 (2006), https://www.aphis.usda.gov/media/document/12834/file [https://perma.cc/UN9P-VZN4].

27. *Animal Identification & Tracing: An Overview*, *supra* note 4.

28. Animal Health Protection Act, Pub. L. No. 107-171, title X, subtitle E, § 10409, 116 Stat. 134, 501 (codified as amended at 7 U.S.C. § 8308); Grossman, *supra* note 8, at 280; ANIMAL & PLANT HEALTH INSPECTION SERV. VETERINARY SERVS., U.S. DEP'T OF AGRIC., THE

out operations and measures to detect, control, or eradicate any pest or disease of livestock . . . ."[29] In order to carry out its provisions, the Secretary of Agriculture was tasked with implementing "a central automated recordkeeping system to provide for the reliable tracking of the status of animal and plant shipments . . . ."[30] Lastly, the Secretary of Agriculture was granted authority to "cooperate with other Federal agencies, States or political subdivisions of States . . . Indian tribes, and other persons" to carry out its authorized actions.[31] Beginning implementation in 2004, NAIS was comprised of and sought to achieve its goal of identifying sick animals within 48 hours of the discovery of the disease using three interrelated phases: premises registration, animal identification, and animal tracking.[32]

A. Premises Registration

The first phase of NAIS involved creating a database to register geographic locations of farms and ranches where applicable animals resided.[33] This registration, overseen by the USDA, required multiple pieces of information, including a premises identification number (PIN), name of the entity along with contact persons, mailing address or coordinates of the premises, operation type, and when and why retirement had occurred.[34] PINs were permanently assigned to a location and registration was to take place at a state animal health authority.[35] Registration was also free and did not require producers to participate in the following two steps of NAIS.[36] While the program's goal as of 2006 was to have all registration complete by 2009, only about 37% of eligible premises succeeded by September 6 of that year.[37] This low participation, fueled by producer distrust of what was perceived as additional, unnecessary government oversights, contributed to the eventual abolition of NAIS and need for a mandatory system.[38]

EVOLUTION OF THE NATIONAL ANIMAL IDENTIFICATION SYSTEM IN THE UNITED STATES 1 (2005), https://www.govinfo.gov/content/pkg/GOVPUB-A101-PURL-LPS99277/pdf/GOVPUB-A101-PURL-LPS99277.pdf [https://perma.cc/5MYQ-2HFL].

29. 7 U.S.C. § 8308.

30. *Id.* § 8320(b).

31. *Id.* § 8310(a).

32. Grossman, *supra* note 8, at 280–81; JOEL L. GREENE, CONG. RSCH. SERV., R40832, ANIMAL IDENTIFICATION AND TRACEABILITY: OVERVIEW AND ISSUES 13–18 (2010).

33. GREENE, CONG. RSCH. SERV., *supra* note 32, at 14.

34. *Id.*

35. *Id.*

36. *Id.*

37. *Id.*

38. *See id.*

B. Animal Identification

Phase two of NAIS involved assigning unique numbers to individual animals from a uniform numbering system.[39] Due to logistics, specific groups of animals that are raised and travel through the production chain together, as is often the case for swine and poultry, could be allotted a group ID.[40] While this portion of the program embodied the classic understanding of "animal identification," it was just one aspect of the larger goal of not only identifying animals, but also tracing where those animals travel in order to combat disease outbreaks.[41] An animal's unique ID number, called an animal identification number (AIN) consisted of a fifteen-digit number, with the first three digits being the country code and the following twelve being that animal's unique identification number.[42]

The minimum standard of identification originally required under NAIS was an official, visual ear tag.[43] However, other forms have become a central aspect to the current system, such as radio frequency identification tags (RFID), which allow an animal's AIN to be read electronically.[44] The ease and efficiency allowed by scanning an RFID and directly downloading identification information to computer databases has exploded in popularity since its creation due to the benefits of easily accessed data and stress reduction on animals.[45] Despite opposition, these benefits have empowered RFID tags to be mandated under the current Animal Disease Traceability system (ADT), for which NAIS was the predecessor.[46]

Under NAIS, official devices were generally required for all participating animals with the exception of those "animals whose movement poses a low risk of disease spread or exposure."[47] This exception included animals which never left the premises they were born and raised on, as well as those animals which never left except for direct transportation to "custom slaughter for personal consumption."[48]

39. *Id.* at 16.
40. *Id.* at 16–17.
41. *See id.*
42. *Id.*
43. ANIMAL & PLANT HEALTH INSPECTION SERV., U.S. DEP'T OF AGRIC., OFFICIAL ANIMAL IDENTIFICATION NUMBER (AIN) DEVICES WITH THE "840" PREFIX 1 (2025), https://www.aphis.usda.gov/sites/default/files/adt_device_ain.pdf [https://perma.cc/LR9F-8T7Z].
44. *Id.*
45. GREENE, *supra* note 32, at 16.
46. *See Animal Identification & Tracing: An Overview*, *supra* note 4.
47. GREENE, *supra* note 32, at 16.
48. *Id.*

Even with these narrow exceptions, the USDA encouraged all animal producers to register their premises no matter the number and movement of the animals present.[49] Once identified, animals under this system kept the same identification for their lifetime—allowing their data to be tracked through each owner or any movement made by that animal—which could be utilized in the event of a disease outbreak.[50] Specifically, the universal numbering system under this phase is a mainstay which outlived NAIS and has been incorporated into the present 2024 ADT Final Rule.[51]

C. Animal Tracing

The third and final phase of NAIS was animal tracing, which utilized the data collected from phase one and two, including the PIN, AIN, and date of an event, such as move-in to a new premises or move-out of a current premises.[52] The main goal of this phase was to identify and track animal movement data in order to quickly locate at-risk animals and limit any potential disease outbreak to a specific region.[53] This data would be reported by individual producers to an NAIS-compliant animal tracking database.[54] Producer reports would be comprised of identification of animals moved into or out of their individual premises and could have additional information, standardized by NAIS, that included age, species, and sex.[55] As a practical matter, animal movements within an operation were not considered under NAIS to impact the spread of disease and therefore were not necessary for these reports.[56]

The animal tracking databases set up under NAIS serve as an informative example of private and public components collaborating. Under the program, states and private entities, not the federal government, would maintain tracking databases.[57] The federal government then operated a portal system, which allowed officials to submit requests to administrators for information in the course of investigating animal disease outbreaks.[58] This division of responsibility was

49. *Id.*

50. *Id.* at 16–17.

51. *See* Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 89 Fed. Reg. 39540, 39550, 39552 (May 9, 2024) (codified at 9 C.F.R. pts. 71, 77, 78, and 86).

52. GREENE, *supra* note 32, at 16.

53. *Id.*

54. *Id.*

55. *Id.*

56. *Id.* at 17.

57. *Id.* at 16.

58. *Id.* at 17.

surmised to protect confidentiality of producers taking part in the program.[59] In fact, state and federal officials would only use the system in the event of a positive test for an animal disease in "an animal disease emergency as determined by the Secretary of Agriculture [or] state departments of agriculture[,]" and when a traceback was necessary to determine where a specific disease covered under the program originated from.[60]

When viewed as a whole, the animal tracing phase of NAIS was the catalyst for using the data retrieved by phase one and phase two to accomplish the public and governmental purpose of NAIS in identifying diseases in animals and pinpointing where those diseases originated from and to where they could be contained.[61] Nevertheless, the tracking and reporting portion can only be as good as the data collected.[62] In the case of NAIS, that data simply did not allow the envisioned universal application to fully unfold.[63] Nevertheless, the reporting system itself has survived to lay the foundation of the current ADT Rule.

V. THE DOWNFALL OF NAIS AND ITS INFLUENCE ON ADT

The concerns that put an end to NAIS held massive influence over the structure and application of its successor, ADT—and are still echoed today by opponents who criticize the current ADT final rule—which went into effect on November 5, 2024.[64]

A. Low Participation

The first major issue relating to NAIS was the low participation rates across the country.[65] According to a 2008 report, by September of that year only 40% of all potential United States' premises had been registered under the program.[66] While poultry, sheep, swine, and horse premises all registered at rates exceeding 50%, up to 95% in the case of poultry, cattle premises massively underperformed

59. *Id.*

60. *Id.*

61. *See id.*

62. *See id.* at 32, 39.

63. *See id.* at 14–15 (showing only 37% of premises registered by 2009 under Table 3).

64. *See* RON GILL & KARL HARBORTH, DEP'T ANIMAL SERV., TEX. A&M AGRILIFE EXTENSION SERV., CHANGES TO USDA APHIS ANIMAL DISEASE TRACEABILITY (ADT) RULE AFFECTING BEEF CATTLE (2024), https://wise.agrilife.org/files/2024/05/Update-Beef-Cattle-Traceability-Rule.pdf [https://perma.cc/9LVX-DS9G]; Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 89 Fed. Reg. 39540, 39540 (May 9, 2024) (codified at 9 C.F.R. pts. 71, 77, 78, and 86).

65. GREENE, *supra* note 32, at 17–18.

66. *Id.* at 17.

their contemporaries with only 18% registration.[67] Given that beef production outpaced swine production that year by over three billion pounds, the poor participation among beef producers clearly generated a certain level of ineffectiveness for the traceability phase.[68]

This slow implementation occurred for a variety of reasons. Proponents criticized the USDA for lacking a clear path toward universal identification.[69] Particularly, lack of a plan to integrate with previous identification programs lead to conflicting requirements and unclear standards.[70] It is important to point out that the NAIS program was optional.[71] Critics of such an intrusive program that are largely connected to the cattle industry maintain that low participation accurately reflected producers' concern about handing over so much personal operational information to a potentially nationally accessible database.[72]

B. Confidentiality Concerns

Confidentiality of the records provided under NAIS was also a major concern within the cattle industry.[73] The Freedom of Information Act (FOIA), generally allows members of the public to obtain records held by federal agencies.[74] Combined with the deletion of a provision in the senate-passed version of the 2008 farm bill which would have addressed "the protection of trade secrets" and other information "disclosed due to participation in an animal ID system[,]" this concern rested in the possibility that radical animal rights groups could potentially access and misuse producers' data through FOIA requests. [75]

In addition to information potentially released through FOIA, pushback over data privacy also arose from the fear that database hacks could allow radical animal rights groups, or even foreign adversaries, access to sensitive data, which could be

67. *Id.*

68. *Compare U.S. Total Pork Production from 2000 to 2023*, STATISTA (June 17, 2024), https://www.statista.com/statistics/194696/us-total-pork-production-since-2000/ [https://perma.cc/REX5-V65A], *with Total Beef Production in the United States from 2000 to 2024*, STATISTA (Mar. 7, 2024), https://www.statista.com/statistics/194687/us-total-beef-production-since-2000/ [https://perma.cc/2FG7-G7ZP].

69. GREENE, *supra* note 32, at 18.

70. *Id.* at 18.

71. *Id.* at 20.

72. *Id.* at 9.

73. *Id.* at 22.

74. *Id.*

75. *Id.*

used to disrupt the United States' food supply.[76] Because such unique information is required for a successful livestock operation to run, even the possibility of exposure of that information pushed producers away from NAIS.[77]

C. Liability

Producers have voiced opposition over a traceability program of this size due to worry over liability for the spread of a disease or contamination by an animal they do not control once it leaves their premises.[78] Ironically, the low participation rate itself fed this uncertainty, as tracing and identification of problem animals theoretically becomes more accurate and reliable as a larger percentage of the population is accounted for in the system.[79] Nevertheless, this also takes time, investment, and infrastructure to achieve.

While NAIS was expedited as a response to a massive need for a national traceability system, the plan was poorly received by the public and the cattle industry.[80] This prompted the ending of NAIS in 2010 and the subsequent drafting of the current rule, with a new goal of "establishing general regulations for improving the traceability of [United States] livestock moving interstate."[81]

VI. THE 2013 ADT RULE: BIRTH OF THE MODERN TRACEABILITY SYSTEM

Ineffective implementation paired with continued push back from critics led the Secretary of Agriculture to completely revise NAIS in 2010, leaving individual states to choose their own identification and traceability systems while focusing only on certain classes of animals traveling interstate.[82] The resulting rule was implemented in 2013 and has combined aspects of the previous program with modern advancements in technology, while balancing producer concerns with the modern necessities for animal tracing.[83]

76. *E.g.*, LIA BIONDO, CONG. RSCH. SERV., R48169, ANIMAL DISEASE TRACEABILITY: ELECTRONIC IDENTIFICATION REQUIREMENTS 10–11 (2024).

77. *See* GREENE, *supra* note 32, at 9.

78. *Id.* at 22.

79. *See id.* at 17–19, 22.

80. *Animal Identification & Tracing: An Overview*, *supra* note 4.

81. *Id.*

82. BIONDO, *supra* note 76, at 3.

83. *Id.*; Robert Roos*, USDA Offers New Approach for Tracing Animal Diseases*, CTR. FOR INFECTIOUS DISEASE RSCH. & POL'Y, UNIV. OF MINN. (Aug. 9, 2011), https://www.cidrap.umn.edu/usda-offers-new-approach-tracing-animal-diseases [https://perma.cc/N64F-4UDT].

A. Introduction to ADT

ADT was enacted under the authority of the Animal Health Protection Act, with the purpose "to improve our ability to trace livestock in the event that disease is found."[84] Most central to animal identification, the AIN system pioneered under NAIS formed the foundation for ADT record-keeping and was adopted as the official identification requirement for classes of cattle and bison covered under the new ADT rule.[85]

While integral aspects of NAIS were used as the foundation for the ADT rule, the systems vary significantly in two important aspects. First, NAIS attempted to provide traceability through an exceptionally broad approach, encompassing nearly all classes of animals within each applicable species, while ADT alternatively takes an exceptionally narrow approach, only applying to specified classes of each species and only members of those classes which cross state lines.[86] Second, ADT is not voluntary.[87] Under Article I, Section Eight, Clause Three of the United States Constitution (the Commerce Clause), the federal government has the power "to regulate commerce with foreign Nations, and among the several States, and with the Indian Tribes."[88] Thus, by narrowing its application to interstate commerce, the federal government was finally able to create a comprehensive, mandatory traceability plan.[89]

Nevertheless, this required sacrificing the tracing of animals that never leave their home state, which encompasses a large proportion of the livestock in the United States.[90] Only 11% of the total population of cattle were constrained by this

84. Traceability for Livestock Moving Interstate, 78 Fed. Reg. 2040, 2040 (Jan. 9, 2013) (to be codified at 9 C.F.R. pts. 71, 77, 78, 86).

85. *See generally* U.S. DEP'T OF AGRIC., ANIMAL DISEASE TRACEABILITY: SUMMARY OF FEDERAL INTERSTATE MOVEMENT REQUIREMENTS BY SPECIES (2014) https://iowaagriculture.gov/sites/default/files/animal-industry/pdf/Handbook/ADT.pdf [https://perma.cc/4ZF8-RJRH] (the same AIN system used in NAIS is referred to under the "official ID methods" for the 2013 ADT Rule).

86. *Contrast* GREENE, *supra* note 32, at 11, *with* 9 C.F.R. § 86.4 (2025).

87. 9 C.F.R. § 86.4(a)(1).

88. U.S. CONST. art. 1, § 8, cl. 3.

89. *Id.*; 7 U.S.C § 8305.

90. Kenneth Mathews, *Are More Livestock Hitting the Road*?, ECON. RSCH. SERV., U.S. DEP'T OF AGRIC.: AMBER WAVES (Nov. 11, 2003), https://www.ers.usda.gov/amber-waves/2003/november/are-more-livestock-hitting-the-road [https://perma.cc/MU58-3E9L] (discussing how 20% of U.S. cattle travel interstate).

dramatic limiting of the rule.[91] In other words, if a disease outbreak were to occur and affect only animals constrained under ADT, the system's mandatory nature ensures that infected individual animals will be quickly pinpointed, their previous locations traced, and an origin of the disease discovered in an exceptionally efficient manner.[92] However, because so many animals do not fall under ADT requirements, state and private traceability systems would be the only way to track other animals and fill in the gaps between the animals that ADT can access and the animals they cannot.[93]

While other, smaller entities do often implement their own traceability procedures, the lack of federal ADT coverage translates to a lack of universality, rendering responses not necessarily ineffective, but certainly less efficient.[94] Despite its limited application, ADT was a massive step forward in terms of United States animal disease traceability and continues to supply a starting point for disease outbreak identification and tracking today.

B. Classes of Livestock Covered

The comprehensive ADT rule supplies regulations for certain classes of animals in all major livestock species, including cattle, bison, captive cervids, goats, equines, poultry, sheep, and swine.[95] However, cattle and bison differ from other livestock species that fall under ADT and bear unique similarities to one another.[96] Because of this, cattle and bison are identified together under ADT.[97] For example, while industries such as swine and poultry are extremely consolidated, cattle and bison producers are comprised of a much wider variety of

91. *NCBA Statement on USDA Final Traceability Rule*, NAT'L CATTLEMEN'S BEEF ASS'N (Apr. 26, 2024), https://www.ncba.org/news-media/news/details/41229/ncba-statement-on-usda-final-traceability-rule [https://perma.cc/7Z77-AAXR].

92. *See* Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 89 Fed. Reg. 39540, 39545–46 (May 9, 2024) (codified at 9 C.F.R. pts. 71, 77, 78, and 86).

93. *See id.*

94. *See id.* at 39545.

95. *Animal Disease Traceability Rule*, AM. VETERINARY MED. ASS'N (Sept. 14, 2025, at 12:01 CT), https://www.avma.org/animal-disease-traceability [https://perma.cc/6CTP-WRKH].

96. *Are Cows Just Domestic Bison? Behavioral and Habitat Use Differences Between Cattle and Bison*, W. WATERSHEDS PROJECT (Sep. 14, 2025, at 13:18 CT), https://westernwatersheds.org/gw-cattle-v-bison/ [https://perma.cc/KT5A-C5XB].

97. 9 C.F.R. § 86.4(a)(1) (2025).

independent small and mid-sized operations.[98] Additionally, while smaller livestock species usually live their entire lives in enclosed climate-controlled confinement buildings which make biosecurity precautions much easier, bison and cattle both require large amounts of space, opening them up to potential contact with neighboring animals and other environmental factors that could lead to disease transmission.[99]

Even within the cattle and bison species, official identification requirements under ADT apply only to four specific classes: "(A) All sexually intact cattle and bison 18 months of age or over; (B) All dairy cattle; (C) Cattle and bison of any age used for rodeo or recreational events; and (D) Cattle and bison of any age used for shows or exhibitions."[100] These four classes reflect a compromise between including animals which are most beneficial to ADT's goals and excluding animals whose inclusion would place too high of a financial and logistical burden on the livestock industry.[101] This regulation does not apply to many slaughter cattle because a large portion of slaughter cattle reach their market endpoint prior to 18 months.[102] Many male slaughter cattle are also exempted from this rule because they are not usually left intact.[103] Nevertheless, with the growing trend of beef-on-dairy breeding within the cattle industry, it is important to note that beef-dairy cross cattle (including slaughter cattle under 18 months of age which are not sexually intact) are officially classified as "dairy cattle" and therefore covered under ADT.[104]

98. James M. MacDonald, *Consolidation in U.S. Agriculture Continues*, ECON. RSCH. SERV., U.S. DEP'T OF AGRIC.: AMBER WAVES (Feb. 3, 2020), https://www.ers.usda.gov/amber-waves/2020/february/consolidation-in-u-s-agriculture-continues [https://perma.cc/PN9H-58LL].

99. *See* Susan Kerr, *The Benefits and Challenges of Pasture-Based Pork Production*, OREGON STATE UNIV. EXTENSION SERV. (May 2015), https://extension.oregonstate.edu/animals-livestock/swine/benefits-challenges-pasture-based-pork-production [https://perma.cc/CH2Y-HVV2]; *Bison Production*, PENN. STATE EXTENSION (Oct. 10, 2005), https://extension.psu.edu/bison-production [https://perma.cc/TS5S-U42L].

100. 9 C.F.R. § 86.4(b)(1)(iii).

101. *See* Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 89 Fed. Reg. 39540, 39542–43 (May 9, 2024) (codified at 9 C.F.R. pts. 71, 77, 78, 86).

102. Wes Ishmael, *Enhancement Ideas for the Animal Disease Traceability Framework*, BEEF MAG. (July 3, 2018), https://www.beefmagazine.com/cattle-disease/enhancement-ideas-for-the-animal-disease-traceability-framework [https://perma.cc/7CVP-4595].

103. Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 89 Fed. Reg. at 39545.

104. 9 C.F.R. § 86.1.

C. Documentation Requirements

In addition to the proscribed classes requiring official identification for transport across state lines, animals must also be accompanied by an Interstate Certificate of Veterinary Inspection (ICVI).[105] An ICVI is defined under ADT as "[a]n official document issued by a Federal, State, or Tribal government, or an accredited veterinarian, certifying the inspection of animals in preparation for interstate movement."[106] The ICVI must document the species of animals being transported along with the number of animals; the purpose of moving the animals; the address the animals are being transported from and the address animals are being transported to; the names of buyer and seller and their addresses if different from origin and destination; and generally, the official identification number of each animal being transported.[107]

The agent in charge of issuing an ICVI, whether it is an "APHIS representative, state or tribal representative, or accredited veterinarian[,]" is also required to forward a copy of the ICVI to the animal health official of the state or tribe of origin within seven calendar days of the ICVI being issued.[108] The state or tribal health official from the origin state in turn must forward a copy of the ICVI to the state or tribal health official in the destination state within seven calendar days of receiving the document.[109] This system is much more extensive than its predecessor as it guarantees that cattle traveling between states are both documented and verified as leaving the origin state and as entering the destination state.[110]

The 2013 ADT rule has also made incredible steps forward in terms of data collection and access when compared to its predecessor, NAIS.[111] Under ADT, those who distribute official identification devices are required to maintain records of the names and addresses those devices are distributed to for five years and enter that information into the approved state or tribal database.[112] Livestock facilities

105. *Id.* § 86.5.

106. *Id.* § 86.1.

107. *Id.*

108. *Id.* § 86.5.

109. *Id.*

110. *See* ANIMAL & PLANT HEALTH INSPECTION SERV., U.S. DEP'T OF AGRIC., RIN 0579-AD24, REGULATORY IMPACT ANALYSIS & INITIAL REGULATORY FLEXIBILITY ANALYSIS, PROPOSED RULE APHIS-2009-0091 RIN 0579-AD24, TRACEABILITY FOR LIVESTOCK MOVING INTERSTATE 7, 30–33 (2011) [hereinafter TRACEABILITY FOR LIVESTOCK MOVING INTERSTATE], https://www.aphis.usda.gov/sites/default/files/Regulatory%20Impact%20Analysis.pdf [https://perma.cc/GBH5-GHBZ].

111. *See id.*

112. 9 C.F.R. § 86.3(a).

which distribute and receive ICVIs must also maintain records of documentation for a minimum of five years for cattle.[113]

Finally, because APHIS is given oversight over the traceability program, all records must be accessible to APHIS during normal business hours and all reports and notices containing requested information must be submitted to APHIS "within 48 hours of receipt of request . . . ."[114] These rigorous data collection and storage requirements, while central to effective disease traceability, have reignited concerns over data privacy among producers in the industry; concerns similar to those which lead to such low participation in ADT's voluntary predecessor.[115]

D. Exceptions and Exemptions

While general classes are required under ADT to be accompanied by official identification when crossing state lines, it is important to note the exceptions and exemptions to the rule.[116] The first exception, a commuter herd, is defined under the ADT rule as "[a] herd of cattle or bison moved interstate during the course of normal livestock management operations and without change of ownership directly between two premises, as provided in a commuter herd agreement."[117] For producers who operate along state lines or with locations in multiple states, these types of movements can be fairly commonplace.[118] Because these herds are not changing ownership nor coming into contact with other cattle under different ownership, the risk of disease outbreak from these movements is greatly reduced.[119] Regardless, in order to qualify, owners of commuter herds must still procure an agreement with animal health officials from the origin and destination states outlining the conditions and time periods of these movements.[120]

In some situations, cattle without official identification may also move interstate directly to an approved tagging site as long as those cattle receive official identification prior to comingling with other cattle on the premises.[121] Alternatively, these cattle may be provided some other type of identification which

113. *Id.* § 86.5.

114. *Id.* § 86.3.

115. BIONDO, *supra* note 76, at 6, 10.

116. 9 C.F.R. § 86.4.

117. *Id.* § 86.1.

118. *See* TRACEABILITY FOR LIVESTOCK MOVING INTERSTATE, *supra* note 110, at 36 n.9.

119. John F. Mee et al., *Bioexclusion of Diseases from Dairy and Beef Farms: Risks of Introducing Infectious Agents and Risk Reduction Strategies*, 194 VETERINARY J. 143, 145 (2012).

120. TRACEABILITY FOR LIVESTOCK MOVING INTERSTATE, *supra* note 110, at 36.

121. *Id.*

reliably correlates them "to the person responsible for shipping the animal to the approved tagging site."[122] Because these alternative procedures still require these animals to be officially tagged or otherwise accounted for prior to potential disease transmitting contact with other animals, documentation still occurs and therefore, ADT's purposes are not undermined in this exception.[123]

Additionally, states and tribes have the power to agree on alternative forms of identification on a case-by-case basis.[124] For instance, cattle moved between states but wholly within Native American land, which has an alternative form of identification, are exempted from the requirements of official identification.[125] In each of these situations, while "official" identification required under ADT may not be used, animals are still required to comply with another, albeit more localized, governing body, ensuring the goal of traceability under ADT is not circumvented.[126]

Lastly, cattle being transported interstate directly to a harvest facility remain unburdened by the official identification requirements as long as they satisfy certain requirements.[127] These include harvest within three days of arrival and application of a USDA approved back tag (either prior to transport or at the recognized facility of destination).[128] Requiring an alternative form of identification ensures that animals soon to be harvested, for which expensive official identification is not logistically economical, are still traceable under ADT.

The common thread between all these exceptions is a focus on eliminating contact between unidentified cattle from one state and cattle from another state.[129] Therein lies the foundation of ADT. Because traceability of disease outbreaks is the goal of ADT, contact between livestock exchanging ownership or being intermingled with new livestock is the rule's sole focus.[130] In instances where livestock travels across state lines but can be reliably determined to not

122. 9 C.F.R. § 86.4.

123. *See* Traceability for Livestock Moving Interstate, 78 Fed. Reg. 2040, 2040 (Jan. 9, 2013) (codified at 9 C.F.R. pts. 71, 77, 78, 86).

124. *See* 9 C.F.R. § 86.4 (b)(1)(i)(D).

125. *See id.*

126. *See id.* §§ 86.2(d), 86.3(d).

127. *Id.* § 86.4(b).

128. *Id.* § 86.4(b)(1)(ii).

129. *See* ANIMAL & PLANT HEALTH INSPECTION SERV., U.S. DEP'T OF AGRIC., ANIMAL DISEASE TRACEABILITY ASSESSMENT REPORT 4–8, 11–13 (2017) [hereinafter ANIMAL DISEASE TRACEABILITY ASSESSMENT REPORT], https://www.aphis.usda.gov/sites/default/files/adt-assessment.pdf [https://perma.cc/7W56-QZK3].

130. 7 U.S.C § 8305.

meaningfully contact foreign populations, the risk of potential spread of disease outside of that herd is simply not present. Therefore, these exceptions exist to eliminate unnecessary constraints on those populations.

VII. THE 2024 ADT FINAL RULE: SMALL CHANGES WITH BIG IMPLICATIONS

Following the original 2013 ADT Rule, APHIS published a new proposed rule in the Federal Register in January of 2023.[131] After receiving over 2,000 comments, a final rule was enacted and began to take effect on November 5, 2024.[132] While the 2013 rule was largely left intact, there is one alteration that has been the focus of discussion.[133] Under the new final rule, "all official eartags sold for or applied to cattle and bison must be readable both visually *and* electronically (EID) . . . ."[134]

The technology to read ear tags electronically is not new.[135] In fact, EID tags have been offered as options under ADT and its predecessor NAIS in the past.[136] However, the change to mandating EIDs has both signified an important step forward in terms of efficient disease tracing and spurred much discussion over its impacts (which are discussed further below),[137] including cost of implementation and data security.[138]

Despite these concerns, EID technology is extremely important to disease traceability.[139] First, the efficiency and reliability of EID tags benefit animal health and producer profits in multiple ways.[140] Physically reading tag identifications

131. Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 89 Fed. Reg. 39540, 39540 (May 9, 2024) (to be codified at 9 C.F.R. pts. 71, 77, 78, 86); BIONDO, *supra* note 76, at 7.

132. Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 88 Fed. Reg. 3320, 3320 (Jan. 19, 2023) (to be codified at 9 C.F.R. pts. 71, 77, 78, 86); BIONDO, *supra* note 76, at 7.

133. *See* BIONDO, *supra* note 76, at 7.

134. 9 C.F.R. § 86.4(a)(1)(i) (2025).

135. Bob Violino, *The History of RFID Technology*, RFID J. (Jan. 16, 2005), https://www.rfidjournal.com/expert-views/the-history-of-rfid-technology/76202/ [https://perma.cc/E9P2-VXHY].

136. BIONDO, *supra* note 76, at 6; GREENE, *supra* note 32, at 10.

137. *See* discussion *infra* Section VIII.

138. BIONDO, *supra* note 76, at 16.

139. ANIMAL & PLANT HEALTH INSPECTION SERV., U.S. DEP'T OF AGRIC., FREQUENTLY ASKED QUESTIONS: ANIMAL DISEASE TRACEABILITY RULE (2024) [hereinafter FREQUENTLY ASKED QUESTIONS: ANIMAL DISEASE TRACEABILITY RULE], https://www.aphis.usda.gov/sites/default/files/traceability-faq.pdf [https://perma.cc/7JGM-YML3].

140. *Id.*

requires much more contact with cattle.[141] This increased contact can be time-consuming, disruptive of normal herd operations, increase animal stress, and increase the likelihood of injury to both the cattle and their handlers.[142] In addition, EID tags eliminate the likelihood of transcription errors which may be present when manually transcribing tag information into online databases.[143] Finally, and most importantly for traceability purposes, faster recording of identification allows officials to regionalize and centralize the origin of a disease outbreak more quickly.[144] The faster that an origin and path of disease can be identified, the fewer cattle operations will be subject to negative economic impacts stemming from widespread quarantines and prevention of sales which may occur while disease tracking takes place.[145] Indeed, instead of quarantining entire states or regions for weeks or months while gathering identification information, identification as fast as a few hours, made possible through EIDs, will allow the industry to combat potential disease outbreaks in specific areas without unnecessarily constraining the movement and sale of unaffected cattle in nearby areas.[146]

VIII. ADT'S IMPERFECTIONS AND POTENTIAL SOLUTIONS

A. Narrow Application

While specific exceptions have been created in alignment with ADT's narrowly tailored goals, there are a massive number of cattle traveling interstate that fall outside ADT's restricted classes altogether. After all, every beef calf under 18 months of age in the United States can be transported freely between states with no federal traceability requirements (as long as their purpose is not for rodeo or exhibition).[147] The mass exodus—specifically of feeder calves to stocker or backgrounder operations shortly after weaning, then to feedlots 60 to 90 days later— begs the question of why there are no federal regulations set in place under

141. *Id.*

142. *Id.*

143. *Id.*

144. *Id.*

145. ANIMAL & PLANT HEALTH INSPECTION SERV., U.S. DEP'T OF AGRIC., FACTSHEET, ADVANCING ANIMAL DISEASE TRACEABILITY: A PLAN TO ACHIEVE ELECTRONIC IDENTIFICATION IN CATTLE AND BISON 1–2 (2019), https://www.aphis.usda.gov/sites/default/files/plan-to-achieve-eid-factsheet.pdf [https://perma.cc/S4LW-PD3V].

146. *Id.*

147. 9 C.F.R. § 86.5 (2025).

these circumstances.[148] Discussing the recent amendment to ADT, the National Cattlemen's Beef Association recently acknowledged that "[o]nly 11% of the [United States] cattle herd is impacted by this final rule."[149] While the exceptions make up some of the remainder, nearly 90% of United States cattle are simply not included.[150]

But why are so many cattle unaccounted for? First, only about 22% of cattle in the United States travel interstate each year.[151] Thus, ADT is immediately constrained by its authority under the Commerce Clause to less than one-fourth of the total herd population in the United States.[152] Additionally, roughly half of all cattle that do travel interstate, which are mostly feeder cattle that fall below the applicable age requirement of 18 months, are outside of ADT's constrained classes.[153] APHIS has acknowledged that the lack of feeder calf identification requirements are a concerning gap under the current rule.[154] In fact, the 2017 ADT assessment report noted that "APHIS views the inclusion of feeder cattle in the traceability regulations as an essential component of an effective traceability system in the long-term."[155] However, the same report emphasized the need for RFID tags and other framework before the inclusion of cattle under the age of 18 months.[156]

It is important to note that ICVIs are currently required for feeder calves entering and exiting in 48 states.[157] While this documentation must be verified and authorized by state health officials and accompany the transported livestock, official identification of each individual animal is not required for these ICVIs as is required with classes constrained by ADT.[158] Thus, while precautions generally

148. *See generally* Nevil Speer, *Industry at a Glance: Stocker Cattle Inventory Shifting to Southeast States*, BEEF MAG. (Mar. 27, 2013), https://www.beefmagazine.com/stocker-backgrounding/industry-at-a-glance-stocker-cattle-inventory-shifting-to-southeast-states [https://perma.cc/2HQY-7MLX] (explaining that large numbers of cattle travel interstate as feeder cattle).

149. *NCBA Statement on USDA Final Traceability Rule*, *supra* note 91.

150. *Id.*

151. DENNIS A. SHIELDS & KENNETH H. MATHEWS, JR., ECON. RSCH. SERV., U.S. DEP'T OF AGRIC., LDP-M-108-01, INTERSTATE LIVESTOCK MOVEMENTS 4 (2003), https://ers.usda.gov/sites/default/files/_laserfiche/outlooks/37685/15376_ldpm10801_1_.pdf?v=26060 [https://perma.cc/8VAF-VM6K].

152. U.S. CONST. art. 1, § 8, cl. 3; 7 U.S.C § 8305.

153. SHIELDS & MATHEWS, *supra* note 151, at 4; 9 C.F.R. § 86.5(c) (2025).

154. ANIMAL DISEASE TRACEABILITY ASSESSMENT REPORT, *supra* note 129, at 5.

155. *Id.*

156. *Id.*

157. TRACEABILITY FOR LIVESTOCK MOVING INTERSTATE, *supra* note 110, at 27.

158. ANIMAL DISEASE TRACEABILITY ASSESSMENT REPORT, *supra* note 129, at 23–24.

are in place for feeder cattle tracing, the specificity which forms the foundation for ADT's tracing ability is not a component of those precautions.

When discussing the idea of ADT and disease traceability, APHIS refers to an ideal "bookend" system.[159] A bookend system is a system where individual animals have identification records which allow tracing of that animal's entire life.[160] Under the current rule, no beef animal is constrained until they reach 18 months of age (unless transported for rodeo or exhibition purposes).[161] Therefore, the current beginning bookend is the location of the cattle immediately prior to interstate travel after reaching maturity.[162] Inclusion of feeder cattle under ADT would require cattle moved across state lines at younger ages to be officially identified, which in turn would allow that bookend to be established at an earlier point in their lives.[163] Because the vast majority of cattle travel interstate first at the feeder stage, this would likely be the earliest point to realistically begin record keeping for the purposes of ADT.[164]

As of the 2017 APHIS assessment report, there were two major concerns constraining the inclusion of feeder calves under ADT: cost and infrastructure.[165] Whether requiring new technologies or classes of livestock, cost of implementation is a major constraining factor which is best done in phases.[166] For example, prior to the original 2013 final rule, APHIS projected that "the estimated cost of an identification tag is $0.18 per animal for producers that already tag and $1.68 to $4.68 for producers who do not tag their animals."[167] This large disparity highlights the importance of implementing education to encourage producers to incorporate critical traceability practices over time prior to mandating those practices. Additionally, it highlights the benefit of offering opportunities to voluntarily adopt new technology and practices prior to mandate.[168] For two years leading up to the 2024 final rule, ADT attempted to do just this by offering free EID tags to

159. *Id.* at 8.
160. *See id.*
161. *Id.*
162. *See id.*
163. *See id.*
164. *See id.* at 5, 23–24; SHIELDS & MATHEWS, *supra* note 151, at 4.
165. *Id.* at 5.
166. TRACEABILITY FOR LIVESTOCK MOVING INTERSTATE, *supra* note 110, at 34–35.
167. *Id.* at 53.
168. *See* NAT'L CATTLEMEN'S BEEF ASS'N, THE 2024 CATTLE TRACEABILITY RULE: FREQUENTLY ASKED QUESTIONS 1–3 (2024) [hereinafter THE 2024 CATTLE TRACEABILITY RULE: FREQUENTLY ASKED QUESTIONS], https://orcattle.com/wp-content/uploads/2024/10/Cattle-Traceability-FAQs-for-Livestock-Markets-1.pdf [https://perma.cc/K9FH-T8YN].

producers as an alternative to previous official identification tags on a voluntary basis.[169] With the new final rule recently going into effect, time will likely be required before implementing such an expansion to a new class of cattle.[170]

The infrastructure concerns look more optimistic than costs. The 2017 assessment opined that "the requirement for collecting official identification numbers on movement documents . . . or [ICVIs] for feeder cattle will be unduly cumbersome with visual only tags and therefore should only be considered when an RFID infrastructure is in place."[171] This "infrastructure" would consist of efficiently manufactured, economically feasible EID tags as well as EID readers distributed to and installed in at least all official tagging sites in the United States.[172] However, with the new 2024 final rule requiring EID tags which use RFID technology, it appears that the infrastructure is approaching a level conducive to support such an expansion.[173]

Because an RFID infrastructure is now being implemented, the first major hurdle that APHIS has identified for the inclusion of feeder cattle is being addressed.[174] Therefore, the future inclusion of this additional class of cattle is certainly a possibility, and will be a necessary step if disease traceability continues to progress. Until then, creating voluntary incentives and providing resources to mitigate financial impacts for producers who choose to incorporate official identification of feeder cattle are all important steps that should be taken to facilitate a smooth transition when that time comes.

B. Data Privacy Concerns

Data privacy has also been cited by critics as a concern to the final rule.[175] Under ADT, the name and address of every individual who receives official identification devices must be recorded and preserved for five years in their state database.[176] Additionally, movement of a required animal into or out of every state

169. *Id.* at 3.

170. Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 89 Fed. Reg. 39540, 39540 (May 9, 2024) (to be codified at 9 C.F.R. pts. 71, 77, 78, 86).

171. ANIMAL DISEASE TRACEABILITY ASSESSMENT REPORT, *supra* note 129, at 5.

172. *See id.*

173. *Understanding EID Ear Tags & What They Mean for Herd Management*, PBS ANIMAL HEALTH (July 17, 2024), https://www.pbsanimalhealth.com/blog/learning-center/b/eid-ear-tags/ [https://perma.cc/2CQY-2V37].

174. *See* ANIMAL DISEASE TRACEABILITY ASSESSMENT REPORT, *supra* note 129, at 5.

175. BIONDO, *supra* note 76, at 10.

176. 9 C.F.R. § 86.3 (2025).

must be recorded.[177] The names and addresses of all parties sending and receiving these animals must also be attached to those records, recorded, and preserved for at least five years on state databases.[178] Similar to concerns which lead to low participation in the prior NAIS system, commenters expressed worry over so much sensitive operation information being accessible to the public, or falling into the hands of adversarial domestic groups or hostile foreign governments.[179] Now, with electronic identification information being mandated, critics voice concern over the potential damage that such entities could do if provided financial records, addresses, and identities of producers.[180] Sole reliance on electronic data collection and data storage could also spell disaster within the industry if cyberattacks were to manipulate, block, or clone radio signals for a significant period of time, rendering electronic tracing abilities useless.[181]

Division is currently present regarding whose confidential information should be accessible and to who.[182] While FOIA "entitles members of the public to obtain some records held by federal agencies[,]" it expressly "exempts access to certain types of business information, such as trade secrets, commercial or financial information, and other confidential material that might harm the provider."[183] It has been posited that ADT identification information falls under this exemption.[184] Still, information exempted from FOIA may not be immune from subpoena powers.[185]

Industry members and public officials have also voiced their worries over the security of the databases used to store identification information.[186] The National Cattlemen's Beef Association (NCBA) has argued for a private approach, supporting "the 'expansion and development of the private, not-for-profit corporation, U.S. CattleTrace' as the 'nationally significant solution for animal disease traceability.'"[187] NCBA argues that data from industry producers will be better protected through a centralized, private database funded and governed by

177. *Id.* § 86.1.
178. *Id.* § 86.3.
179. BIONDO, *supra* note 76, at 11.
180. *Id.* at 10–12.
181. *Id.* at 10–11.
182. *Id.*
183. *Id.* at 10; Freedom of Information Act, 5 U.S.C. § 552.
184. THE 2024 CATTLE TRACEABILITY RULE: FREQUENTLY ASKED QUESTIONS, *supra* note 168, at 3.
185. BIONDO, *supra* note 76, at 10.
186. *Id.*
187. *Id.* at 10–11.

industry members with the best interests of producers in mind.[188] For its part, CattleTrace, already implemented in a handful of individual states, posits its goal "for all [United States] states to be using the initiative's database and technology as the sole contact tracing database by 2026."[189]

However, others are distrustful of the idea of a private corporation maintaining sole control over governmentally mandated information.[190] In particular, concerns over market manipulation could arise in the event that industry members in charge of population numbers or sensitive geographical information altered their own conduct in a way that they would not have if they were unaware of that information.[191]

Either way, three of the six manufacturers which have been approved to sell EID tags for cattle and bison in the United States are based in foreign countries.[192] While criteria set by the Official Animal Identification Device Standards requires United States based representatives to serve as device managers for foreign manufacturers, no requirements currently exist in relation to where an EID ear tag must be made, nor "the extent to which it be secured against cybersecurity risks."[193]

Members of Congress have also voiced data security concerns, noting that the four largest meat packers control upwards of 85% of all market purchases in the United States.[194] Confidential information leaks to packers in such a highly concentrated industry could potentially create disastrous market manipulation tactics.[195] Congress also recognizes the concerns over this information falling into the hands of groups opposed to agriculture, such as Mercy for Animals, whose mission is to end "the exploitation of animals for food."[196] These types of groups, who openly campaign for abolition of the United States meat animal industry, could release individual names, addresses, and livestock information of producers

188. *See id.* at 9–11; *NCBA Files Comments on USDA Traceability Rule*, NAT'L CATTLEMEN'S BEEF ASS'N (April 19, 2023), https://www.ncba.org/news-media/news/details/41400/ncba-files-comments-on-usda-traceability-rule [https://perma.cc/7RSS-D53G].

189. BIONDO, *supra* note 76, at 11.

190. *Id.* at 10.

191. *Id.* at 11.

192. *Id.*

193. *Id.* at 12.

194. *Id.* at 14.

195. *Id.*

196. *Id.*; Todd Wilkinson, *Fight the Animal Rights Groups Infiltrating Our Industry*, NAT'L CATTLEMEN'S BEEF ASS'N (May 11, 2023), https://www.ncba.org/news-media/news/details/41297/fight-the-animal-rights-groups-infiltrating-our-industry [https://perma.cc/79J5-CXPJ].

to the public, opening these producers up to potential trespass, violent demonstration, and public smear campaigns.[197]

While additional requirements must be set in place to ensure the security of the data being collected and stored, Congress has considered limiting which entities are allowed to access or request EID information as well as "revising the range of information collected and retained for the purposes of ADT."[198] As RFID infrastructure continues to develop, attention must be given by Congress in relation to narrow application, protection of the information from the public, and unrelated private and public entities. At the same time, attention must be paid to facilitate the continued improvement and updating of the identification methods and databases which are being used. As of right now, while consolidation of these databases would certainly aid in tracing efficiency, it is unclear whether it is ideal in the absence of guarantees against cyber threats.[199]

C. Costs

Finally, costs and funding of infrastructure to satisfy the final rule continue to be an important subject.[200] APHIS estimates place the average cost the industry must front to purchase EID tags at around $26.1 million annually, with some estimates approaching $34 million.[201] If producers were to front such costs with no governmental assistance, these estimates would equate to about $30.45 per head, or about 2.5 cents per hundred; certainly not an insignificant addition in such a volatile industry.[202] While producers generally may be able to absorb such a cost in the current market, no guarantee exists that this absorption is sustainable.[203] This also does not include extra costs producers may require to update or construct

197. *See* BIONDO, *supra* note 76, at 14; Casey Kinler, *How to Protect Your Farm from Extreme Activists*, ANIMAL AGRIC. ALL. (Aug. 13, 2018), https://animalagalliance.org/how-to-protect-your-farm-from-extreme-activists/ [https://perma.cc/72MD-8S2T].

198. BIONDO, *supra* note 76, at 14.

199. *See id.* at 12, 14.

200. *See* Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 89 Fed. Reg. 39540, 39556–59 (May 9, 2024) (to be codified at 9 C.F.R. pts. 71, 77, 78, 86); FREQUENTLY ASKED QUESTIONS: ANIMAL DISEASE TRACEABILITY RULE, *supra* note 139; THE 2024 CATTLE TRACEABILITY RULE: FREQUENTLY ASKED QUESTIONS, *supra* note 168, at 4.

201. Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 89 Fed. Reg. at 39556; BIONDO, *supra* note 76, at 9.

202. Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 89 Fed. Reg. at 39556.

203. *See* Derrell S. Peel, *Cattle Markets 2025: To Retain or Not to Retain*, DROVERS (Jan 6, 2025, at 13:40 CT), https://www.drovers.com/news/beef-production/cattle-markets-2025-retain-or-not-retain [https://perma.cc/7QC4-U8WG].

corrals, working facilities, and head catch gates to implement the new tags and accurately collect individual information.[204]

Regarding data collection specifically, EID ear tag readers are required to read and record RFID information.[205] These readers cost up to $2,000, and are often not financially feasible for individual operations.[206] Luckily, efforts by APHIS have provided opportunities for allocation of federal funds to provide readers to accredited livestock markets and veterinarians in certain circumstances.[207] While EID tags themselves are required for producers, and these readers are beneficial for individual operations to manage their own records, they are not necessary to abide by the current final rule.[208] Therefore, no state or federal funding has been allocated for such assistance.[209]

Prior to the final rule's implementation, over 22 million EID ear tags were distributed by APHIS to states as voluntary alternatives to the previously required non-EID official tags.[210] This effort should mitigate some financial impacts. Along with these previous efforts, each state currently receives an allocated number of free EID tags "based on their proportional share of the national cattle herd according to the 2022 agricultural census conducted by USDA's National Agricultural Statistics Service . . . ."[211] Individual producers may request tags from state health authorities at no charge.[212] In addition, the NCBA has recently secured $15 million in funding in the Consolidated Appropriations Act of 2024, which directs APHIS to "provide . . . electronic identification tags and related infrastructure needed for stakeholders to comply with the proposed rule."[213]

Nevertheless, APHIS has not committed long-term funding to EID ear tags and infrastructure, citing budget uncertainties.[214] The idea of having to front the cost of EID tags in the future creates concern especially among small producers

204. BIONDO, *supra* note 76, at 9.

205. *Id.* at 10.

206. THE 2024 CATTLE TRACEABILITY RULE: FREQUENTLY ASKED QUESTIONS, *supra* note 168, at 4.

207. BIONDO, *supra* note 76, at 10.

208. *Id.* at 7.

209. *Id.* at 10.

210. *Id.*

211. THE 2024 CATTLE TRACEABILITY RULE: FREQUENTLY ASKED QUESTIONS, *supra* note 168, at 3.

212. *Id.*

213. *Id.* at 4.

214. BIONDO, *supra* note 76, at 13.

unable to benefit from economies of scale by bulk purchases, which large operations have a better financial opportunity to take advantage of.[215]

However, one cannot overstate how much larger the financial burden could be in the absence of the current final rule.[216] The mere presence of a national traceability framework largely eliminates the requirements for regular testing that would dwarf the current costs of ADT.[217] Additionally, the impacts of just one potential large-scale disease outbreak could very likely financially decimate the current United States cattle industry.[218] ADT framework significantly reduces the possibility that such an outbreak will cause such a financial disaster in the first place.[219]

Whether Congress in the future decides to raise funding, create grant programs to support producers based on herd size, or neglect to act at all will have a large impact on the ongoing success of the final rule.[220] In addition to ongoing availability of low-cost or free EID ear tags, readers will continue to become more important for data collection and information management at the operation level.[221] Future allocation of funds to provide support for reader purchases at the producer level could be a key development to encourage more voluntary participation for non-mandatory cattle classes, in turn spurring continued progression of disease tracing capabilities. Unquestionably, long-term funds and efforts must be implemented prior to further expansion of ADT and will likely be a constraining factor to expansion going forward.[222]

IX. WHERE WE GO FROM HERE

There is no doubt that animal identification for disease traceability is critical to the current food supply and livestock industry. There is also no doubt that the current ADT rule is a momentous step in the right direction. Technological advancements like EID tags, electronic databases, and RFID readers dwarf our ancestors' livestock identification understanding and capabilities.[223] Nevertheless,

215. *Id.*

216. *See* TRACEABILITY FOR LIVESTOCK MOVING INTERSTATE, *supra* note 110, at 4.

217. *Id.* at 50–51.

218. Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 88 Fed. Reg. 3320, 3320 (Jan. 19, 2023) (to be codified at 9 C.F.R. pts. 71, 77, 78, 86).

219. *Id.*

220. BIONDO, *supra* note 76, at 12–13.

221. *Strategies for Effective Cattle Tags*, CATTLEMAX (Sept. 14, 2025, at 13:13 CT), https://www.cattlemax.com/cattle-tags-eid-readers [https://perma.cc/NM6E-MUF6].

222. BIANDO, *supra* note 76, at 13.

223. Violino, *supra* note 135.

the current system is understandably a work in progress with complex concerns framing discourse over its future direction.[224] While fast, efficient disease tracing ability is still the ultimate goal of ADT, industry concerns over cost of implementation, unnecessary governmental interference, and data security create a need for balance as ADT continues to progress.[225]

Further, the constraint of only animals that are put into interstate commerce fails to identify the vast majority of cattle in the United States.[226] Failure of application to certain classes of cattle that do cross state lines further damages the reliability and effectiveness of ADT.[227] With competing goals creating such tension, two major areas must be addressed first: long-term funding and cybersecurity.[228] Reliable sources of funding will allow industry members, especially small operations, the freedom to implement crucial infrastructure to continue advancing ADT. A focus on data security and safeguard creation by the federal government to ensure the narrow, confidential, and secure purposes for which ADT data are used is required in order to continue gaining producer trust and to prevent a potential industry disaster in the future. EID tags are a necessary step toward ideal disease traceability, but they are only one step as the United States continues to work toward that goal. ADT is here to stay, but as evidenced by the past, there is always room to improve.

224. *See generally* Use of Electronic Identification Eartags as Official Identification in Cattle and Bison, 89 Fed. Reg. 39540 (May 9, 2024) (to be codified at 9 C.F.R. pts. 71, 77, 78, 86) (addressing the many public comments and concerns with the final rule).

225. BIONDO, *supra* note 76, at 9–11.

226. *NCBA Statement on USDA Final Traceability Rule*, *supra* note 91 ("Only 11% of the U.S. cattle herd is impacted by this final rule.").

227. *See* ANIMAL DISEASE TRACEABILITY ASSESSMENT REPORT, *supra* note 129, at 8–9.

228. BIONDO, *supra* note 76, at 12–13.