



# Japanese Beetle Survey 2024



All photos by Charles Elhard, NDDA.



Charles Elhard, Plant Protection Officer  
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## **Background**

Japanese beetle (*Popillia japonica*) was first discovered in the United States in New Jersey in 1916. A native of Japan, the beetle occurs in all states east of the Mississippi River and in some counties and partial states west of the Mississippi River. Nearest to us, South Dakota, Minnesota, and Montana have established populations in some areas. Japanese beetles attack a broad range of host material including nearly 300 species of plants. The adult beetle will feed on field crops, ornamentals, trees, shrubs, and garden plants, severely defoliating, and skeletonizing the host plants. The larvae will feed on the roots of turf grasses and field crops (especially corn and soybeans) as well as organic matter in the soil, severely damaging golf courses, lawns, and pastures. Japanese beetles prefer irrigated turf sites such as golf courses and lawns for reproduction. The Japanese beetle is a highly destructive plant pest that can be very difficult and expensive to control. Japanese beetle is regulated by the United States Department of Agriculture, Animal Plant Health Inspection Service, Plant Protection and Quarantine (USDA-APHIS-PPQ) only at airports to prevent artificial spread by aircraft. All other regulatory arrangements are decided state-to-state in cooperation with the [Japanese Beetle Harmonization Plan](#).

Japanese beetle adults are about ½ inch long with the male slightly smaller than the female. The insects are metallic green in color with bronze wing covers called elytra. Adults begin to emerge mid-June with peak emergence occurring approximately 3 to 4 weeks after initial emergence. The female beetle will burrow into the soil during the day to lay eggs, laying up to 60 eggs in her 4-6-week lifespan. Eggs will hatch in about two weeks. Larvae, which are about 1 inch long and cream colored with a brown head, will live in the soil, feeding on plant roots. The insect will overwinter as third instar larvae below the frost line and will pupate and emerge the following spring. Flight period for Japanese beetles is recognized as June through October. Based on North Dakota trapping data, flight period in the state appears to be early to mid-July through late September.

Japanese beetle trapping has been ongoing in North Dakota since the early 1960s. Traps are typically deployed in June and removed in October. Two transient beetles were first intercepted in North Dakota in 2001 in Bismarck, but not again until 2012. Since 2012, beetles have been caught every year. Figure 3 on page 5 illustrates the historical Japanese beetle trapping data since 2012.

## **2023 Survey Review**

A total of 570 traps were placed across the state and 562 of those were retrieved at the end of the season. After all traps were removed, the data was collected from all trappers. In all traps, 8,453 beetles were caught across the state, 39 in nurseries. Of note, 97% of all beetles were caught in the city of Grand Forks within a small area. 2% were caught in the city of Fargo, and the remaining 1% within 9 total counties.

These counts were Barnes (3 positive traps, 11 beetles, <1% of all beetles caught), Burleigh (18, 31, <1%), Cass (29, 173, 2%), Grand Forks (62, 8207, 97%), McKenzie (1, 4, <1%), Morton (5, 16, <1%), Richland (2, 5, <1%), and Ward (3, 3, <1%).

## **2024 Survey**

Each trap was individually labeled with an ND-\*\*\*\* number and baited with lure. Traps were placed beginning in May, and all traps were removed by early November. Traps were in place for an average of 113 days. A total of 617 traps were placed across the state and 603 of those were retrieved at the end of the season. After all traps were removed, the data was collected from all trappers. The map in Figure 1 shows the number of beetles caught in each county with positive counties highlighted in orange. In all traps, 48,275 beetles were caught across the state, 155 in nurseries. Of note, 99% of all beetles were caught in the city of Grand Forks within a small area. <1% were caught in the city of Fargo, and the remaining <1% within the remaining 11 counties.

### **Exploring Grand Forks County Numbers**

In Grand Forks County, 139 traps were placed. Of those, 134 were placed within the city of Grand Forks. All traps outside of the city were negative. Within Grand Forks, 96 traps caught 47,336 beetles within a 2 square mile area in northwest Grand Forks. The rest of the 229 beetles were caught in the remaining 27 traps scattered throughout town. This population has grown from 311 beetles in 2022, 8,207 caught in 2023, and 47,565 caught in 2024. Favorable winter weather and overwintering conditions likely contributed to the population growth. Feeding damage was noticed in the infested area.

### **Exploring Cass County Numbers**

Thanks to a favorable 2023/2024 winter, numbers in Cass County also increased. 66 traps were placed in the county, and 64 of those were placed within the Fargo metro area. All traps outside of the metro were negative. There are two areas that caught an increased number of beetles. Traps in a small area in far north Fargo recorded 116 beetles in 3 traps. We had not caught beetles in this area previously, so we will place more traps in this area in 2025. The other area with increased numbers in the vicinity of Rose Creek Golf Course in southeast Fargo. Six traps near the golf course caught 199 beetles. This area has caught a few beetles in the past, but we will continue to monitor.

### **County Summaries**

The map in figure 2 below indicates how many traps and how many positive traps were in each county. These counts were Adams (1 positive traps, 2 beetles, <1% of all beetles caught), Barnes (3, 9, <1%), Burleigh (48, 195, <1%), Cass (42, 449, <1%), Eddy (1, 1, <1%), Grand Forks (123, 47565, 99%), Kidder (1, 1, <1%), Morton (16, 36, <1%), Renville (1, 1, <1%), Richland (4, 4, <1%), Stark (2, 2, <1%), Stutsman (3, 4, <1%), and Wells (1, 6, <1%).

Figure 1.

The map below shows the number of beetles caught in each county.

## Japanese Beetle Survey 2024

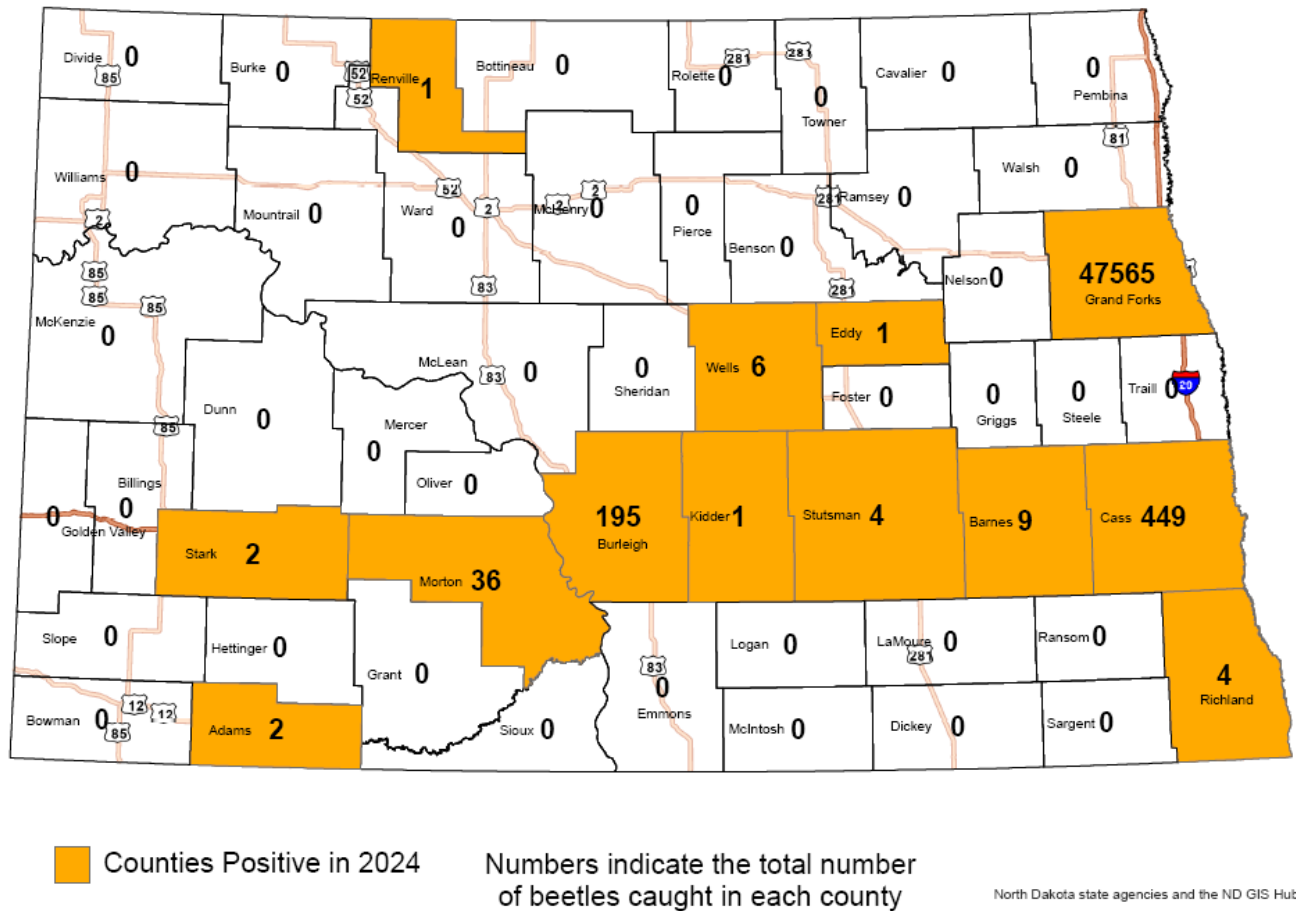
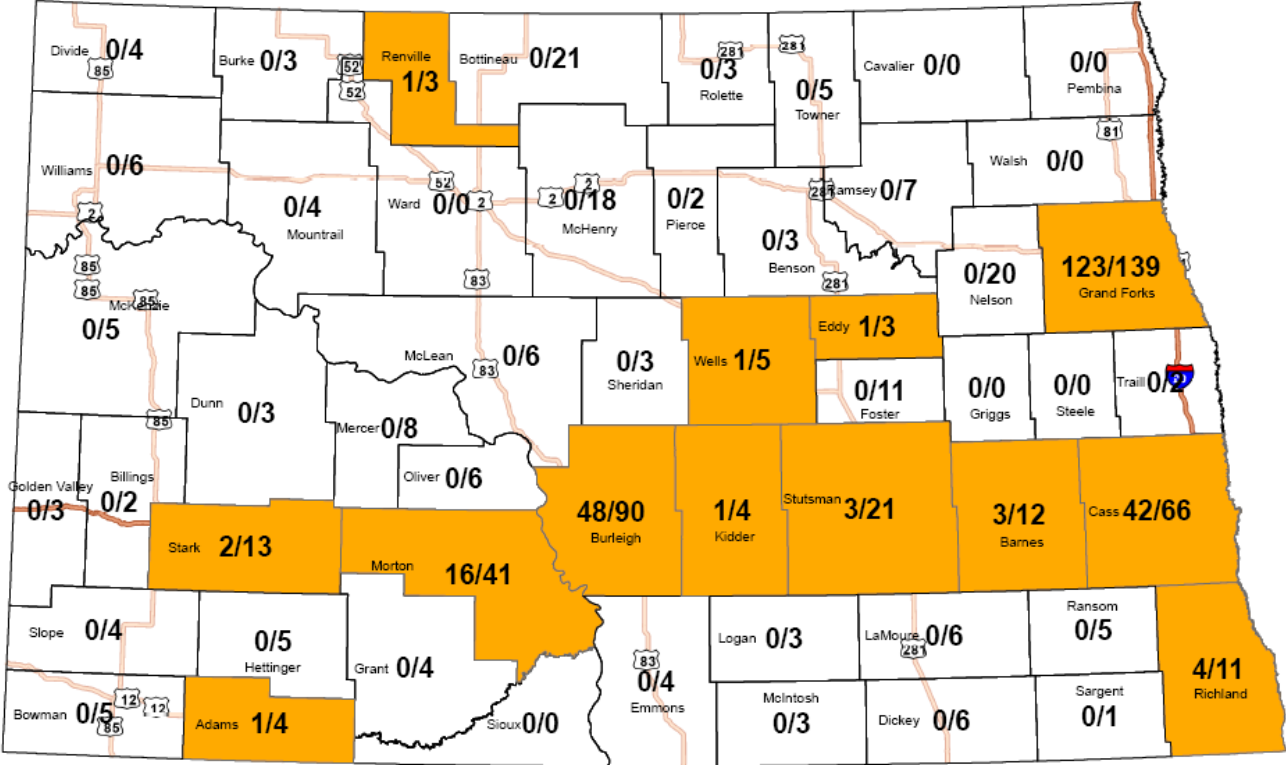



Figure 2. The figure below shows the number of traps placed in each county, and the number of positive traps in that county.

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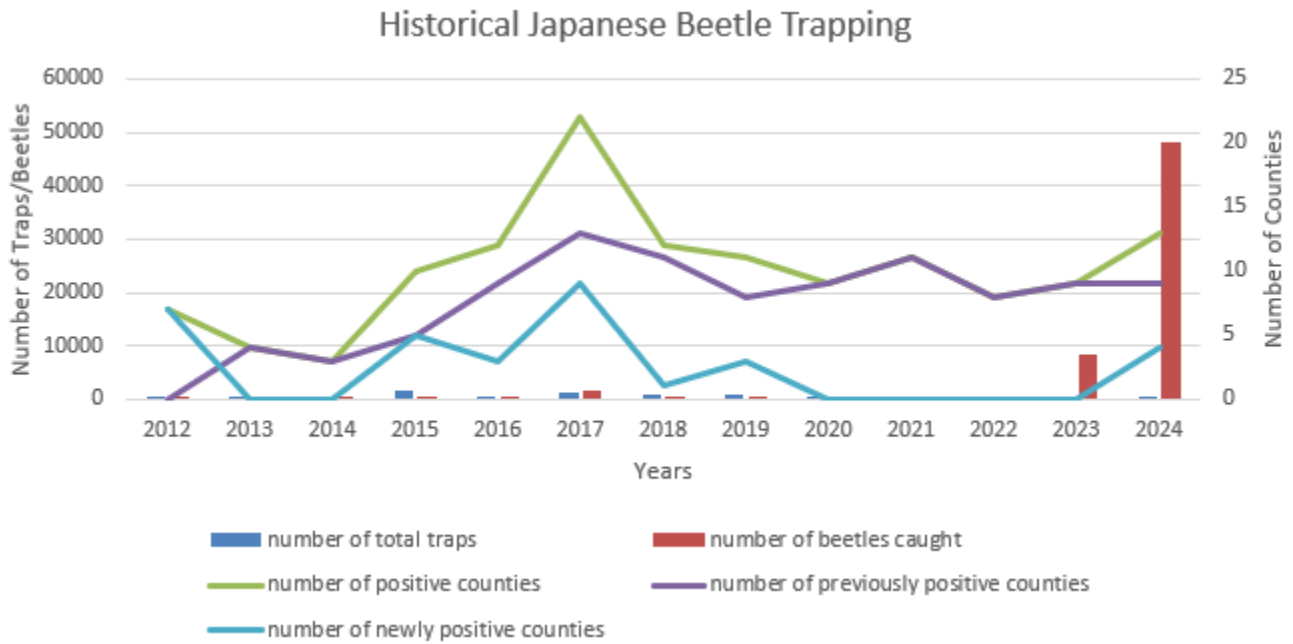


 Counties Positive in 2024      Numbers indicate the number of positive traps/the number of traps placed in each county

North Dakota state agencies and the ND GIS Hub

The below table shows historical Japanese beetle trapping data, including number of beetles, traps, and positive counties.

Figure 3.



### Future Plans

NDDA will continue to focus survey work on uninfested areas as well as areas that are picking up low numbers of beetles to determine if they are hitchhiking beetles or if populations are becoming established. We will continue discussion with nursery stock suppliers in infested states to prevent accidentally introductions into North Dakota. We also continue outreach efforts to make the public more aware of Japanese beetles and the damage they can cause. We will also continue to monitor uninfested counties to maintain their negative status.

For more information, visit these websites.

<https://www.nationalplantboard.org/japanese-beetle-harmonization-plan.html>

<https://www.ndda.nd.gov/divisions/plant-industries/pest-survey-and-outreach>