Assessing Waterfowl Use of Agricultural Lands in Metro Vancouver and Fraser Valley

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Winter 2025-2026

Photo 1: A mixed flock of Cackling and Snow Geese in a Richmond cover crop field

2025-2026 Summary

- This survey year saw waterfowl species counts sharply increase across all species compared to the previous year.
- Highest recorded year for observations of Mallards, American Wigeon, Canada Geese and Cackling Geese since 2021.
- Cackling Geese are increasingly abundant during fall migration, becoming the fourth most common species in Delta, narrowly below Snow Geese.
- The increase in waterfowl observations is likely due to a combination of healthy cover crop growth, high winter temperatures and snow-free conditions.
- Delta continues to be the leading municipality for waterfowl density, observing roughly 4 times as many birds as Abbotsford, with Delta cover crops experiencing correspondingly higher levels of grazing.

Project Background

The Fraser River Delta is a productive agricultural area and a significant region for migratory birds, especially waterfowl. Delta Farmland & Wildlife Trust administers the Cover Crop Stewardship Program to support farmers and wildlife. The Cover Crop program helps farmers establish vegetative cover on their fields after harvest in late summer. Cover cropped fields provide feeding habitat for waterfowl and shorebirds, reduces erosion, and improves soil quality.

Since 2017, the Delta Farmland & Wildlife Trust has conducted a survey of wintering waterfowl abundance throughout Delta and south Richmond. The survey range was expanded in 2023 as the cover crop program expanded coverage to include all of Metro Vancouver and Abbotsford. The objectives of the waterfowl survey are to consistently monitor the distribution of migratory waterfowl on the Fraser River delta and to evaluate how cover crop habitats are being utilized by waterfowl.

Survey Methods

Surveys were conducted by the roadside along a standardized route and waterfowl populations were estimated visually using binoculars and a spotting scope. The survey route was designed to efficiently survey agricultural fields across Delta, emphasizing surveying fields enrolled in the Cover Crop program (*Figure 1*). Field technicians surveyed 727 fields, of which 348 were enrolled in either the Cover Crop program or Cereal Habitat Enhancement Program (CHEP). Surveys were conducted weekly from October 14, 2025, to March 16, 2026, between 8:00 AM and 4:00 PM.

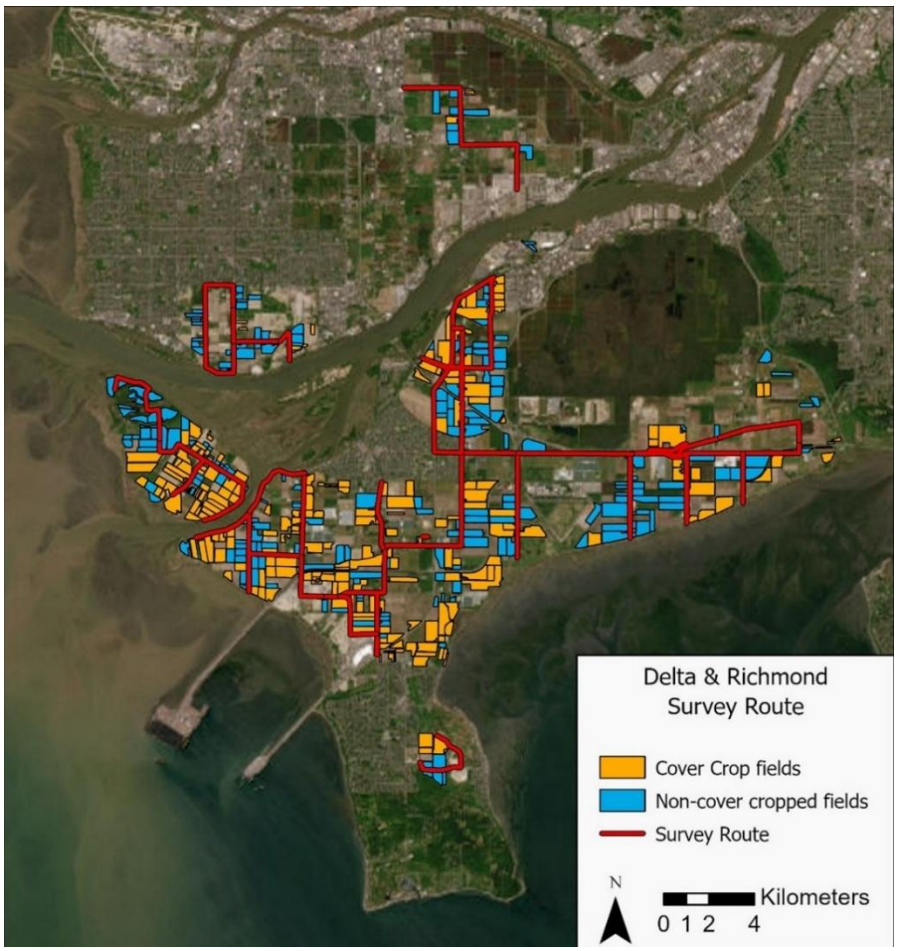

Figure 1. Waterfowl survey route and Cover Crop fields in Delta and Richmond

Since 2023 with the expansion of the cover crop program to include all of Metro Vancouver and Abbotsford, the waterfowl survey area was expanded to monitor newly enrolled Cover Crop fields. Fields in Surrey and Langley were visited individually, and a new survey route of Sumas Prairie was designed to monitor cover cropped and adjacent fields in Abbotsford (Figure 2). While the Abbotsford surveys were previously conducted weekly, during the 2024-25 monitoring period, surveys were conducted every two weeks.

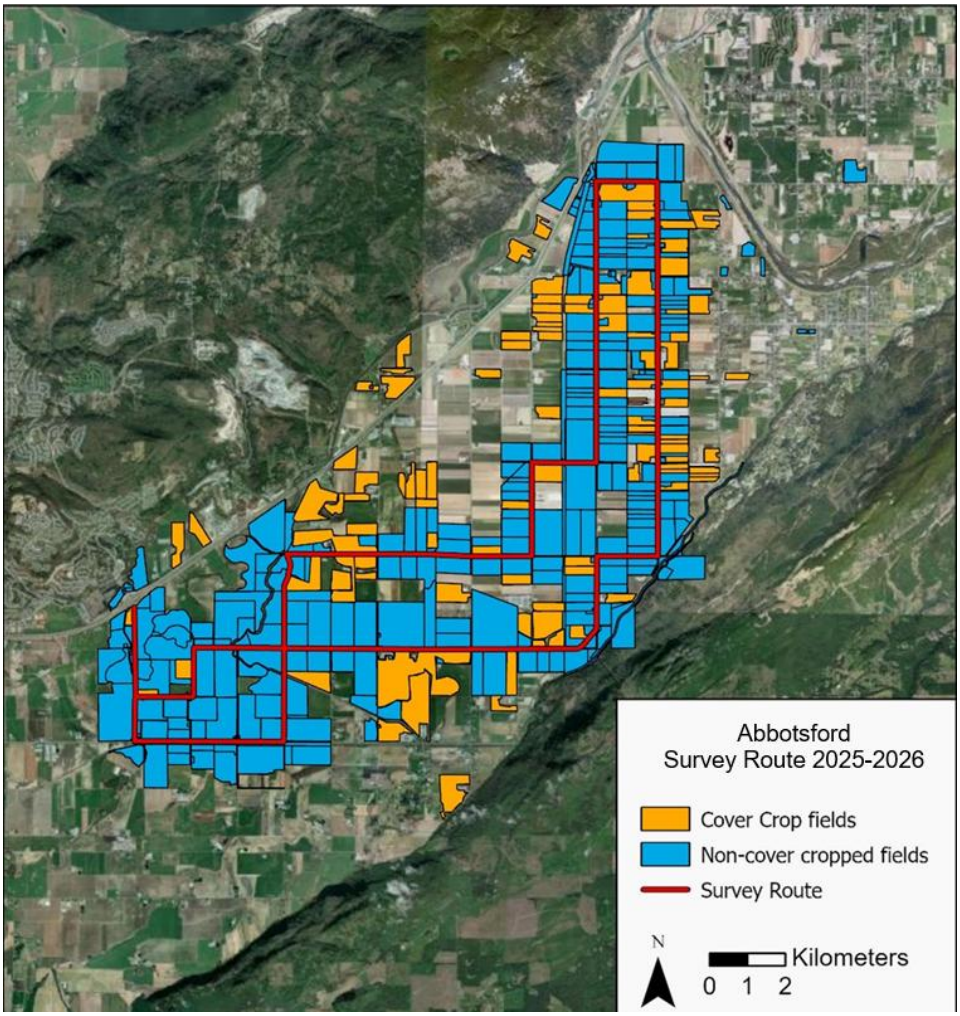

Figure 2. Waterfowl survey route and Cover Crop fields in Abbotsford

Survey Results and Discussion

Over 53 survey days, 11 species of waterfowl were observed at an average rate of 2,102 individuals per week, which was a sharp increase from 870 per week in the previous year. The waterfowl species counted from greatest to least abundant were Mallard, American Wigeon, Snow Goose, Cackling Goose, Trumpeter Swan, Canada Goose, Northern Pintail, Northern Shoveler, Green-winged Teal, Gadwall and Eurasian Wigeon.

Mallards were the most frequently encountered waterfowl species, with an average of 923 individuals observed weekly, which was three times more abundant than the previous year. Mallard flocks typically also contained American Wigeon, the second most abundant species at 466 individuals per week.

Snow Geese were the third most detected waterfowl species, with 358 individuals seen weekly, which were slightly higher than the 2024-25 season. Along the Delta survey route, waterfowl were widespread overall, and hotspots of higher waterfowl activity were seen at Brunswick Point, Westham Island, and Crescent Island (*Figure 3*).

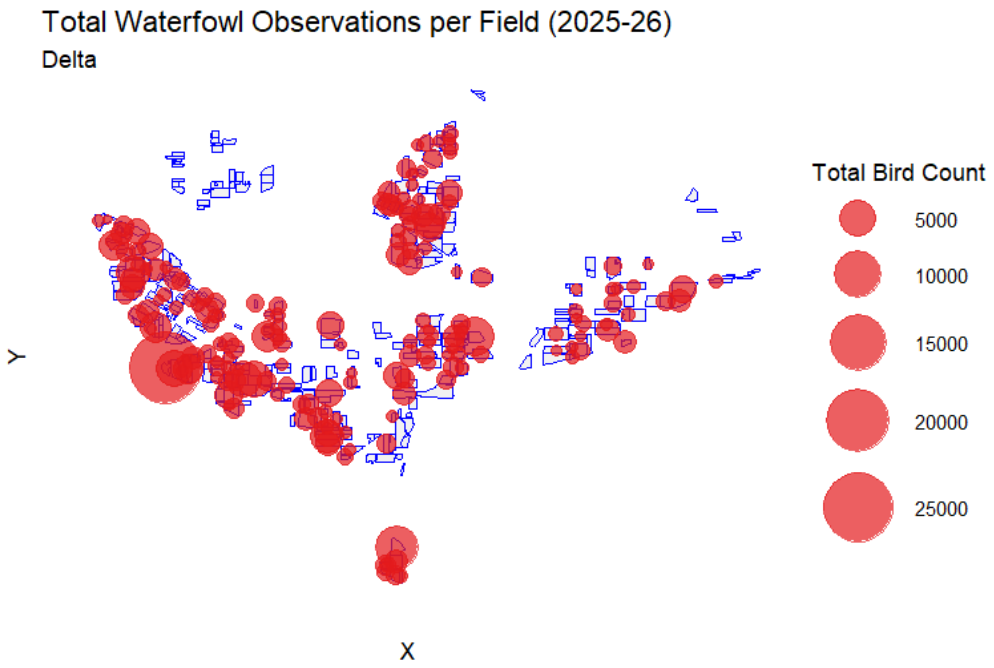

Figure 3. Cumulative waterfowl observations by field in Delta

While both average flock sizes and number of flocks increased over the previous year in aggregate, we observed localized decreases in waterfowl observed in northern Crescent Island, Southlands and eastern Westham Island (*Figure 4)*. The large yearly decreases (and large increases) are partially driven by changes in where cover crop fields are planted, as cover cropping may not be a practice in a farmer's crop rotation every year.

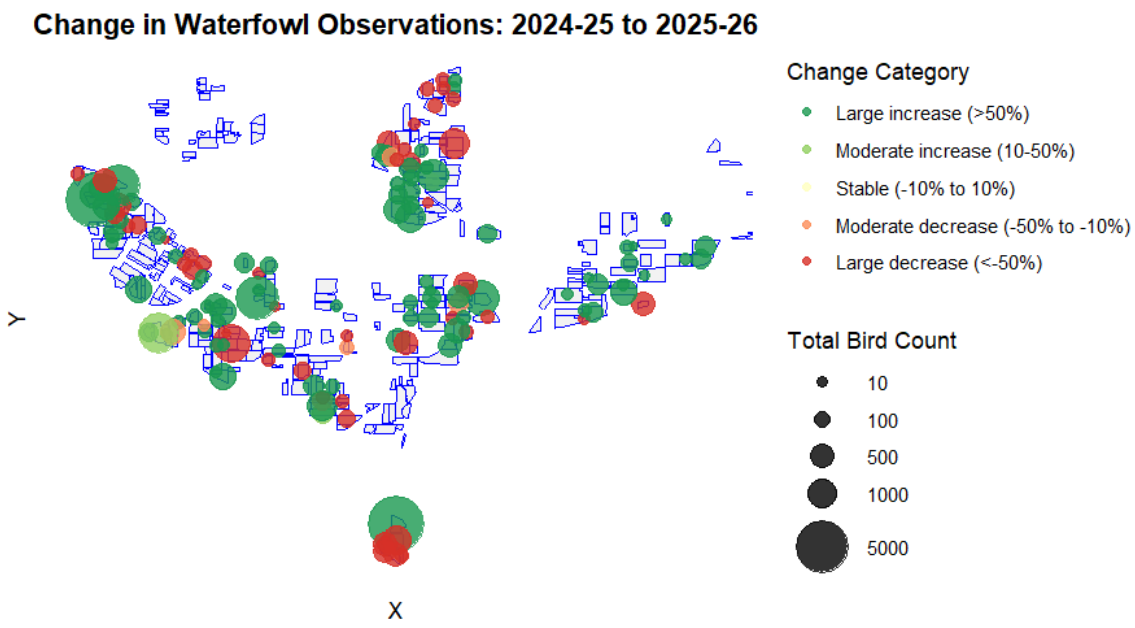

Figure 4. Year-over-year change in cumulative waterfowl observations in Delta, Oct. 2024-Mar. 26

On the Abbotsford survey route, waterfowl are most evenly distributed than in Delta, with nearly every field having a waterfowl flock present at some point in the season (*Figure 5*).

There was a slight decrease in the number of birds observed in Abbotsford across all sites, which explains why many fields experienced large percentage-based decreases in observations (*Figure 6)*. In a typical year, freezing conditions in Delta would push waterfowl flocks out towards the Skagit Delta and Abbotsford, which did not happen to the same degree this year due to warmer than average temperatures.

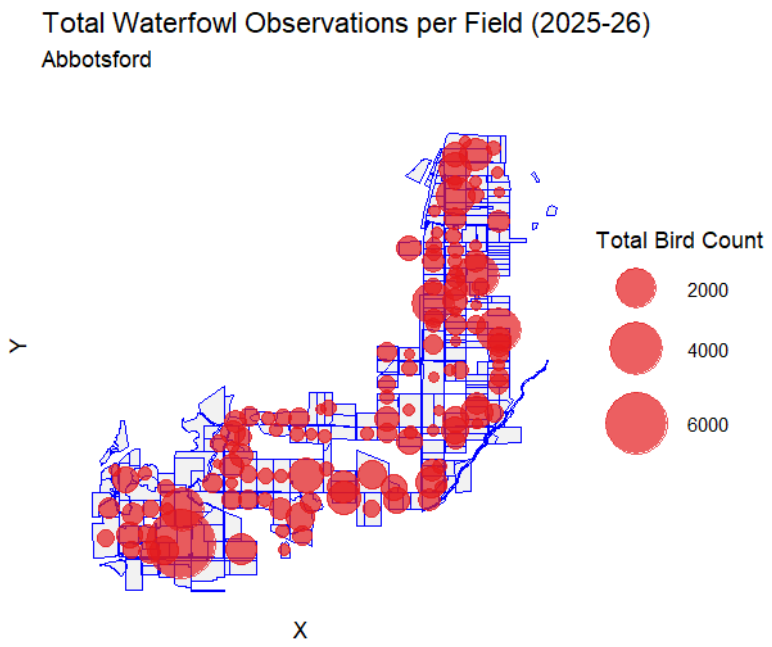

Figure 5. Cumulative waterfowl observations by field in Abbotsford

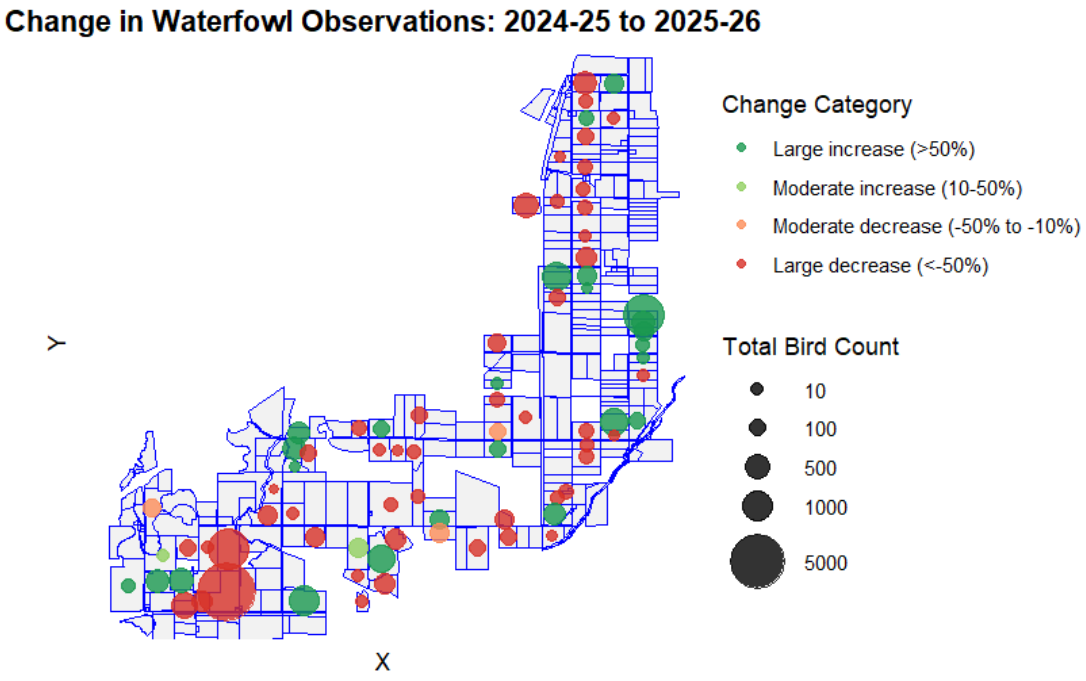

Figure 6. Year-over-year change in cumulative waterfowl observations in Abbotsford, Oct. 2024-Mar. 26

Mallards, American Wigeon, Snow Geese, Trumpeter Swans, Canada Geese and Cackling Geese were the six-most frequently observed species of waterfowl on both the Abbotsford and Delta survey routes. In Abbotsford, Mallards were the most common species (64.8%), followed by Trumpeter Swans, Wigeon and Snow Geese. (*Figure 7*). American Wigeon tended to occur in mixed flocks with Mallards, while Swans and Geese tended to form single-species flocks.

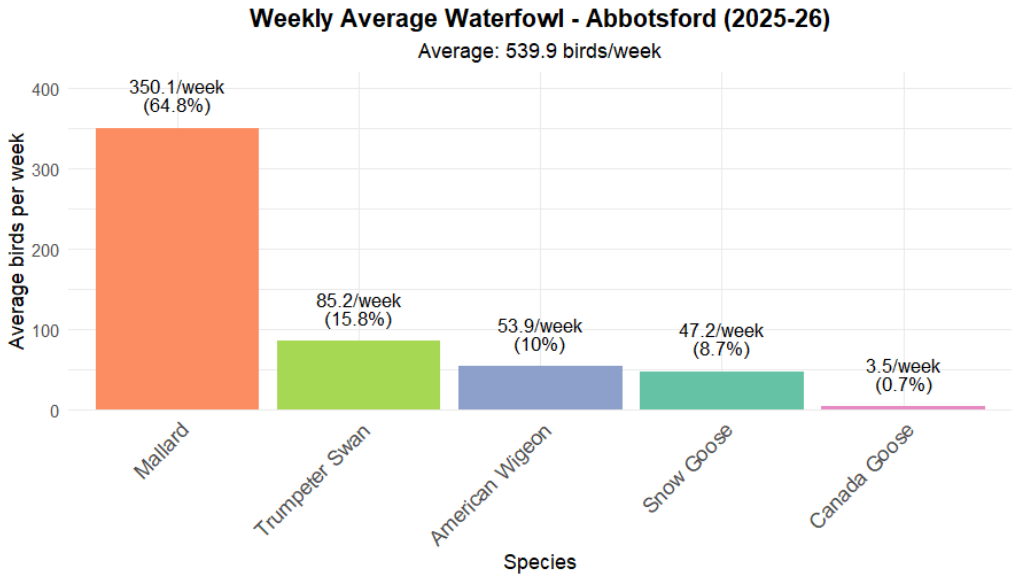

Figure 7. Weekly average species composition in Abbotsford

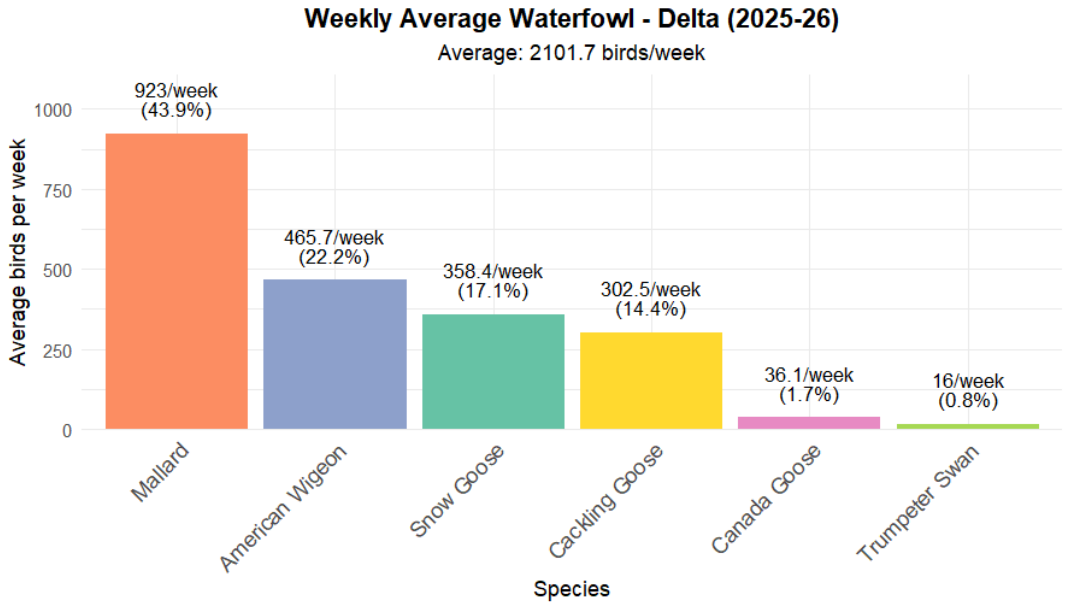

Figure 8. Weekly average species composition in Delta

In Delta, we observed increases in every species of waterfowl over the previous year. The largest increases were seen in Mallards and Cackling Geese which had increases by a factor of 3-4 from 2024-25, while American Wigeon and Snow Geese observations increased by approximately a factor of 2.

Since the waterfowl survey was standardized in October 2021, Cackling Geese observations have sharply and consistently risen. The species was not observed during the first survey year and is now the fourth most observed species, narrowly below Snow Geese at an average of 303 individuals counted per week (*Figure* 9). However, Cackling Geese were also unique in that they were only species with no records past December, highlighting how particularly abundant they are during the fall migration.

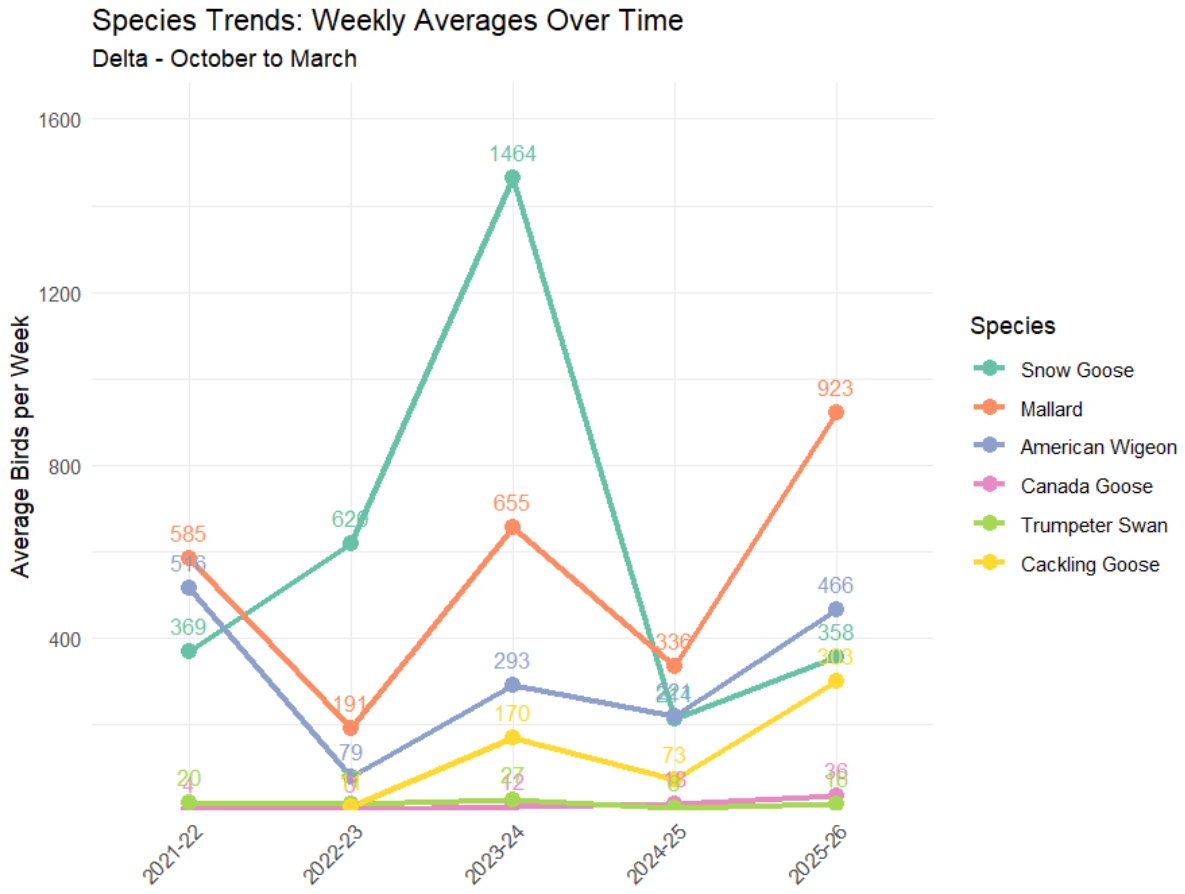

Figure 9. Weekly species averages of the Delta waterfowl survey over 5 survey years (Oct. 2021- Mar. 2026)

Waterfowl observations continue to follow trends related to establishment and growth of cover crops. The fall of 2025 was a typical year for precipitation and the higher-than-normal temperatures over the rest of the winter led to many cover crops persisting throughout the entire season. In a typical year, a cold snap in December or January will freeze Delta cover crops and sloughs, pushing waterfowl south to the Skagit delta and east to Sumas Prairie (*e.g. 2023-24; Figure 10*). During the 2025-2026 season, we did not have extensive cold weather or snow and observed consistent occupancy on fields throughout December through to the end of the season in March.

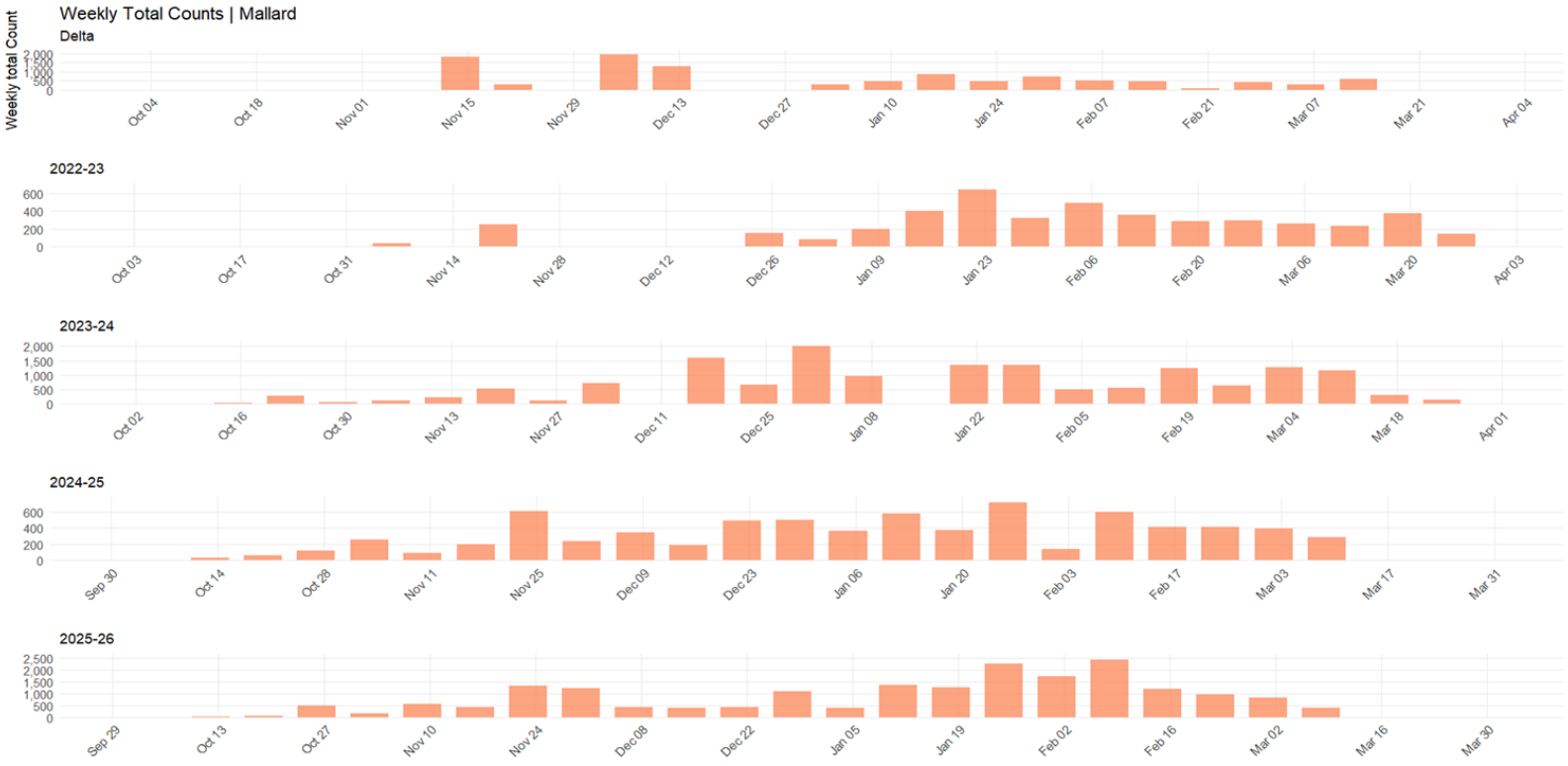

Figure 10. Weekly total counts of Mallards across all Delta sites (Oct. 2021 – Mar. 2026)

With the abundance of cover crop foraging material, snow-free conditions and warm fall and winter weather, this year was very productive for wintering waterfowl in the lower Fraser River delta. We observed increases in observations across all species from the previous year, among the highest being an approximately 4x increase of Cackling Geese, which continues to increase in numbers during fall migration.

Delta remains the most abundant area for waterfowl, accounting for 80% of all waterfowl counted, although due to the favorable growing conditions, grazing on cover crop fields was not as significant as it has been in recent years, with many fields remaining ungrazed all winter.

Further research is needed on how site-level and survey-level factors influence waterfowl occupancy. In particular, any effects on waterfowl caused by tide level, distance to light pollution and the type of cover crop planted would all be valuable to have a better understanding of to inform our stewardship programs.

We have had success monitoring waterfowl with autonomous recording units (ARUs) and are developing new methods to streamline data collection and processing to monitor at more sites and expand our knowledge of waterfowl movements between regions.