Monarch CCAA Implementation Plan

For the Nationwide Monarch Butterfly Candidate Conservation Agreement for Energy and Transportation Lands

I. Roles and Responsibilities

List primary individuals responsible for implementing the CCAA in your organization:

Partner Organization Name: Beltrami County Highway Department, MN

CCAA Implementation Coordinator:	**Bruce Hasbargen**
Address:	**2491 Adams Avenue NW, Bemidji, MN 56601**
Phone Number:	**218.333.8173**
E-mail:	**Bruce.hasbargen@co.beltrami.mn.us**
Vegetation Management Contact:	**Brent Kinn**
Address:	**2491 Adams Avenue NW, Bemidji, MN 56601**
Phone Number:	**218.333.8173**
E-mail:	**Brent.kinn@co.beltrami.mn.us**
Environmental Department Contact:	**Ryan Fielding**
Address:	**2491 Adams Avenue NW, Bemidji, MN 56601**
Phone Number:	**218.333.8173**
E-mail:	**Ryan.fielding@co.beltrami.mn.us**
Construction Management Contact:	**Brent Kinn**
Address:	**2491 Adams Avenue NW, Bemidji, MN 56601**
Phone Number:	**218.333.8173**
E-mail:	**Brent.kinn@co.beltrami.mn.us**
Communications Contact:	**Bruce Hasbargen**
Address:	**2491 Adams Avenue NW, Bemidji, MN 56601**
Phone Number:	**218.333.8173**
E-mail:	**Bruce.hasbargen@co.beltrami.mn.us**

II. Implementation Details

Summary of Important Dates:
The following dates are described as key dates within this implementation plan:

Action	Responsibility	Annual Due Date
Annual Report (internal review draft) preparation	CCAA Implementation Coordinator	December 1
Annual Report (internal review draft) completion	CCAA team contacts	December 15
Annual Report submittal to UIC	CCAA Implementation Coordinator	January 15
Coordinate annual monitoring requirements with staff teams	CCAA Implementation Coordinator	May 31
Conduct field sampling for monitoring	Monitoring staff	July 1 – September 15
Compile field monitoring data	Vegetation Management personnel	October 1
All tracking conservation measures submittal to the CCAA implementation coordinator	CCAA team contacts	November 1
Upload annual data to ROWHWG Geospatial Habitat Database	CCAA Implementation Coordinator	November 15

Conservation Measures Timing and Prescriptions:

Beltrami County will achieve adopted acres targets through the combination of seeding and planting, brush removal, habitat set-asides, conservation mowing, and targeted herbicide use. All conservation measures will be implemented in accordance with all company policies, procedures, and specifications.

Beltrami County will use the Monarch CCAA Toolkit as a reference for the most updated forms, implementation guidance, and training resources for new personnel assisting in CCAA implementation.

Seeding and planting

What: Seeding and planting will be conducted on all adopted ROW areas associated with final restoration of ground disturbance from projects, or routine operations and maintenance to restore or create habitat and promote native floral resources for monarch breeding and foraging. Supplemental seeding on areas associated with reconstruction or maintenance activities will use Minnesota Department of Transportation (MNDoT) approved native seed mixes.

Who: Seed mixes will be procured by County staff and will be supplied by approved local native seed vendors. The native seed mixes will be consistent with Minnesota's DNR pollinator friendly native seed mixes. Qualified County staff will do the planting/seeding.

When: Mixes may be applied if site conditions are suitable. General seeding times are mid-May to mid-June and mid-October to freeze.

How: Seeding and planting will be conducted by qualified County staff/contractors. All seed mixes, seeding and planting plans, and other documentation will be saved in the project file for tracking and future reference.

Brush removal

What: Brush removal to manage and remove woody (non-herbaceous) plants will be conducted as needed within all adopted ROW to promote suitable monarch habitat. Brush will also be maintained on adopted park areas to promote pollinator habitat.

Who: Brush removal will be performed by County maintenance staff or qualified hired personnel.

When: Brush removal will be completed in suitable habitat areas when monarchs are not present before May 15 or after September 20. Brush removal in areas devoid of suitable habitat will be cleared with a brush mower or similar equipment throughout the year to promote suitable habitat. Selective removal by hand (i.e., chainsaw or other handheld mechanical method) may be completed throughout the year where needed in any habitat.

How: County personnel or contractors will use the best brush removal practices based on the terrain and existing vegetation type. Brush plans and schedules will be saved for tracking and future reference. Brush removal may include using forestry mowers, chainsaws, or other mechanical methods.

Habitat set-asides

What: Habitat set-asides will consist of the approximately 42.4 acres of road ROW along County Road 39 that is set aside for showy lady's slipper (Cypripedium reginae) habitat conservation. These 42.4 acres are included as Beltrami County CCAA adopted acres.

Who: The County will maintain ownership of the land, and maintenance staff may conduct habitat promoting activities outside of the monarch's active season.

When: The habitat set-asides will be maintained for the life of the CCAA. Areas within the set-aside lands that contain existing pollinator habitats will not be disturbed during growing seasons.

How: The County will sustain the habitat set-aside land in between vegetation management treatment or cycles. During peak monarch breeding and migration periods (i.e., May 15 – September 20) disturbance to existing monarch habitats in set-aside areas will be avoided or minimized to the greatest extent practical. If activities occur within the set-asides, they will be logged in the project file for tracking and reference, as well as documented during annual reporting.

Conservation mowing

What: Routine conservation mowing will be conducted on all adopted ROW in a manner that promotes habitat and minimizes impacts to monarch breeding and migration activity when possible.

Who: Mowing will be performed by trained mower operators and will be conducted in accordance with recommended practices by Monarch Joint Venture and Xerces Society.

When: Routine mowing schedules will be modified to comply with the conservation timeframes for preserving pollinator habitat on all adopted ROW. For monarch habitat conservation, the preferred mowing schedule is before May 15 and after September 20; and from June 30 to July 5 during the summer months.

How: Qualified contractors will avoid mowing entire adopted ROW habitat, mow using a minimum cut height of 10 -12 inches, and will use spot mowing methods whenever possible. Mowing locations, methods, and timing will be documented and kept for tracking and reference purposes.

Targeted herbicide use

What: Targeted herbicide treatment will be used on all adopted acres to effectively control undesirable or noxious plant species.

Who: Targeted herbicide applications will be conducted by licensed and trained pesticide applicators and will be in accordance with herbicide best management practices.

When: Targeted herbicide use will be used in conjunction with site preparation for native seed mix installation. Spot spraying will be conducted as needed to control undesirable or noxious species and following conservation mowing, if needed.

How: Qualified pesticide applicators will complete spot spraying as applicable. Locations of herbicide use, methods, and timing will be documented and kept for tracking and reference purposes.

Monitoring Procedures:

In accordance with the protocol described in Section 14.2 of the CCAA the County is responsible for a minimum of 10 monitoring plot locations. Monitoring data will be recorded by County personnel using the Tier 1 ROWHWG Pollinator Scorecard or GIS Collector application. Monitoring data will be documented and kept for tracking and reference purposes.

Field monitoring will be conducted by County personnel or contractors trained in CCAA monitoring protocols. The CCAA implementation coordinator will outline annual monitoring requirements with staff by May 31.

Monitoring will occur July 1 through September 15 to the extent feasible. Monitoring data will be compiled by the CCAA implementation coordinator by October 1 annually.

*All aspects of this plan will be implemented in accordance with organization policies, procedures and specifications mentioned within. The County's CCAA Monitoring Plan describes our planned methods for all aspects of monitoring (**Attachment A**).*

Tracking and Reporting:

Tracking

Tracking of adopted acres contributions will be conducted throughout the year as maintenance and project locations are finalized. Annual adopted acres will be reported to the CCAA implementation coordinator and will include location, date completed, CCAA partner overlap status, and information sources used to support the estimate. Tracking methods will be in accordance with the methods described under each Conservation Measure and will be entered in the master spreadsheet maintained by CCAA implementation coordinator throughout the year as conservation actions are completed.

Habitat set-aside areas will be summarized at the end of the calendar year as previously described.

Overlap Accounting

County CCAA trained staff involved in tracking will also assist the CCAA implementation coordinator in identifying and documenting estimated amounts of overlap with other CCAA partner organizations occurring on adopted acres, if applicable. If there is adopted acre overlap, it will be quantified/estimated and will be submitted to the CCAA implementation coordinator. Please note, that there is no current overlap and the potential for overlap in the future is unlikely.

Overlap accounting will be conducted during conservation measures tracking.

Reporting

The CCAA implementation coordinator will submit the annual report summarizing the County's compliance with CCAA requirements associated with implementation of conservation measures, tracking, and monitoring. The annual report will be reviewed by other Beltrami County CCAA contacts listed in this Implementation Plan before it is submitted by the CCAA implementation coordinator.

The internal report will be drafted based on the following deadlines:

1. *All tracking of conservation measures must be completed and correctly logged in by November 1, annually.*
2. *The internal review draft will be prepared no later than December 1, annually.*
3. *Internal review will be completed by no later than December 15, annually.*
4. *Final submittal of the report to UIC will be completed by no later than January 15 of the subsequent year, annually. Annual reports are officially due January 31 if extra time is needed to complete the reporting documentation.*

Adopted Acres Target Ramp Up Period (only if applicable):

Based on the County's Certificate of Inclusion and accompanying application, the County is responsible for a minimum of 280 acres adopted acres annually. The County will implement all 280 adopted acres in Year 1 (2025):

Year 1 (2025) – (280 acres total):

County Road 39 from the southern County line to County Road 12 (37 acres);

County Road 39 from County Road 22 to County Road 47 (70 acres);

County Road 39 from County Road 12 to County Road 22 (35 acres);

County Road 706 from Powder Horn Road Northwest to one mile east of Morel Road Northwest (31.5 acres);

County Road 710 from County Road 54 to County Road 89 (79.5 acres); and

County Road 111 from County Road 108 to 0.75 miles northwest of Shupatch Lane Northeast (27 acres).

The County will train its team members on CCAA-related expectations.

Funding:

Funding for the implementation of the CCAA is provided through the Beltrami County Highway Department general funds.

III. Quality Control Details

Applicable Quality Control Procedures:

All aspects of this implementation plan will be conducted in accordance with applicable policies, procedures, and specifications. This document outlines all required procedures for CCAA implementation, tracking, and reporting. All listed responsible parties will review annual reports.

Revisions to this Implementation Plan:

October 2024: This implementation plan was created on the 23rd.

ATTACHMENT A

Monitoring Plan

Monarch CCAA Monitoring Plan

Organization & Author Information

Organization Name *Beltrami County Highway Department, MN*

Contact: Bruce Hasbargen

2491 Adams Avenue NW, Bemidji, MN 56601

218.333.8173

Bruce.hasbargen@co.beltrami.mn.us

Date October 23, 2024

Monitoring Goals

The purpose of monitoring is to demonstrate the biological effectiveness of conservation measures on adopted acres and contribute to program-level monitoring as described in the Monarch Butterfly CCAA section 14.2.1. Monitoring is also intended to detect changes in milkweed (*Asclepias* spp.) stem densities on adopted acres to inform adaptive management practices, if needed.

The monitoring goals as outlined in the Monarch CCAA are to:

1. Conduct monitoring in accordance with monitoring requirements outlined in Section 14.2 of the CCAA,
2. Verify that adopted acres are providing monarch habitat (i.e., milkweed or nectar plants), and
3. Inform adaptive management, when required.

Management Overview

The County's management of adopted acres includes seeding and planting, brush removal, habitat set-asides, conservation mowing, and targeted herbicide use. Management actions on adopted acres for each conservation method are described in the Implementation Plan.

Management & Sampling Objectives

1	**Management Objective**	Maintain more than 6 milkweed stems (per plot) on managed lands from 2025 till through 2050
	Sampling Objective	Obtain estimates of milkweed stem abundance with 90% confidence intervals that are within +/- 2 milkweed stems per plot

Sampling Design

Sampling Design Element	Instructions	Description
Area of Interest	Describe the geographic extent of the area that will be characterized with monitoring data.	*This includes the 280 adopted acres that will be implemented in Year 1 (2025) in Beltrami County. Ten sample plots were randomly generated for annual surveys within the 280 acres. See maps and tracking data for locations (Appendix A).*
Data Collection Protocol	Describe any supplemental considerations in addition to the CCAA monitoring protocol and June 2021 addendum.	*The County does not have any supplemental considerations other than those outlined in the CCAA monitoring protocol and June 2021 addendum.*
Number of plots collected	Indicate the number of plots to be collected. See Table 14-4 in the CCAA for assistance.	*Data will be collected at 10 sample plots per year in accordance with CCAA monitoring requirements.*
Plot location strategy	Describe how plots will be located within the area of interest.	*Plots will be located within the adopted acres using a GIS random plot generator or comparable method.*
Data collection platform	Method(s) used by your organization to collect and compile sampling data. Could include ROWHWG pollinator habitat scorecards, internal GIS, or paper hard copies of forms.	*Sampling data will be collected using the ROWHWG Tier 1 Pollinator Scorecard paper form or via the monitoring app, internal GIS, and the ROWHWG Geospatial Habitat Database.*
Survey timing	Sampling can be conducted any time during the growing season, but is ideally carried out during peak bloom	*Sampling will be conducted June through mid-September annually.*
Survey frequency	Describe how often areas will be resampled (or if using permanent plots how often to revisit plots).	*Sampling plots will be randomly selected annually.*
Random plot selection method(s)	If plots will be established while in the field, indicate how plots will be located to reduce bias.	*If a new sampling plot must be selected in the field due to an unsafe sampling plot location, the surveyor will replace the unsafe sampling plot location with another randomly selected safe plot location based on compass bearing and distance within the field.*
Data Collectors	List or describe who will collect data.	*Plot data will be collected by County staff trained in CCAA data collection methods.*

Sampling Design Element	Instructions	Description
Data management and reporting	Describe how data will be managed and how results will be reported.	*Field data will be managed and compiled by October 1 of each year. Data will be saved to the ROWHWG geospatial database and the effective monitoring tracking table. Data will be analyzed and reported to the CCAA Coordinator annually by November 15.*

Area of Interest

All 280 adopted acres will have the potential to be selected during random plot selection during the life of the CCAA agreement. Additionally, all 280 adopted acres will be implemented in Year 1. Sampling plots were randomly selected from the 280 adopted acres (**Appendix A**).

Sampling Protocol

The County will use the Rights-of-Way as Habitat Tier 1 Pollinator Scorecard in paper form or an electronic form via the Survey 123 application internal GIS database for data collection.

1. The CCAA Implementation Coordinator or the designee will coordinate annual monitoring requirements with staff teams by May 31.
2. The CCAA Implementation Coordinator or County staff will generate the random GIS sampling plot selections.
3. The CCAA Implementation Coordinator or designee will upload and communicate the sampling plot locations to monitoring staff.
4. Monitoring staff or contractors will provide the updated plot locations via a global positioning system (GPS) device or logged in paper form.
5. Protocols for sampling will be followed as described in Section 14.2.2 of the CCAA.
6. All monitoring data will be collected and provided to the CCAA Implementation Coordinator by November 1 annually.
7. Data will be uploaded to the ROWHWG Geospatial Habitat Database by the CCAA Implementation Coordinator by November 15 annually.

Plot Locations

Survey plots will be randomly distributed through the adopted acres using the random plot generator in GIS. See **Appendix A** for Year 1 (2025) plot coordinates.

The coordinates of survey plots will be located in the field using a handheld GPS unit (or similar device) with sub-meter accuracy. The 150 x 10- foot plot (1500 square feet) should be oriented perpendicular to the right-of-way and away from the road if possible. Otherwise, the data collector should rotate the plot towards the flow of traffic until the plot fits within the right-of-way. A 22-foot radius circle plot (1520 square feet) may be used if a 150 x 10-foot plot cannot fit within a right-of-way. The plot coordinate will serve as the left side as the data collector faces the plot.

If a survey plot is deemed unsafe to survey, the surveyor will replace it with another randomly selected survey plot location based on compass bearing and distance within 100 meters or the safest accessible location next to the unsafe plot.

If a plot is unvegetated (i.e., bare), the surveyor will proceed within the survey protocol and will note the absence of vegetation.

Timing & Frequency

Sampling will be conducted during the active growing season for flowering nectar plants, approximately June through mid-September.

Equipment

Equipment to be used by the survey technicians to successfully and safely complete field surveys include:

Equipment	Required?	Use
PPE (personal protective equipment)	Yes	Bring high-visibility vest, hat, water, sunscreen, and bug spray, as needed.
GPS unit and/or paper map with printed list of coordinates	Yes	Plot locations will be uploaded to a handheld GPS unit or similar device; or will be depicted on georeferenced paper maps, if necessary.

Equipment	Required?	Use
Clipboard/pens/ monitoring forms or tablet/smartphone	Yes	Data will either be collected on a paper form or via the monitoring app.
ROWHWG Pollinator Scorecard	Yes	Tier 1 version 2.2 – Midwest and Northeast US Region
Effectiveness Monitoring Template	Yes	Data tracking spreadsheet with the reporting fields requested by the CCAA
Flagging, marker cones, or stakes	Optional	To demarcate the transect boundaries.
Camera	Optional	To document plot conditions, visually record monarch adults, caterpillars, et cetera.
Sampling binder	Yes	To hold and organize reference documents including safety forms, field protocols, and data sheets.

Monitoring Roles / Responsibilities

Contact information for the organizational personnel assigned to the monitoring roles are as follows:

Survey Manager Name: Ryan Fielding

Address: 2491 Adams Ave NW, Bemidji, MN 56601

Phone Number: 218-333-8173

E-mail: ryan.fielding@co.beltrami.mn.us

Survey Technician Name: Allen Brundin and Kyle O'Beirne

Address: 2491 Adams Ave NW, Bemidji, MN 56601

Phone Number: 218-333-8173

E-mail: allen.brundin@co.beltrami.mn.us and kyle.obeirne@co.beltrami.mn.us

Data Manager Name: Ryan Fielding

Address: 2491 Adams Ave NW, Bemidji, MN 56601

Phone Number: 218-333-8173

E-mail: ryan.fielding@co.beltrami.mn.us

Responsibilities

Survey Manager: Will be responsible for verifying that field surveys are conducted per Section 14.2.2 of the CCAA protocol guidelines and that the data format is suitable for inclusion in the annual CCAA report. Also responsible for verifying that the survey technician(s) have the necessary survey equipment, training, datasheets, and that they adhere to the County's safety protocol.

Survey Technician: Will be responsible for conducting field surveys properly and accurately. Also, responsible for completing the County's annual training and following the County's safety protocols.

Data Manager: Will be responsible for maintaining the collection, storage, reporting, and archiving all field data, and for providing them to the Survey Manager in a format that will be used in annual reporting.

Training

Vegetation management staff and monitoring staff will be trained in plant identification, either annually or periodically throughout a field season. Specifically, staff will be trained in the identification of native and non-native species, with a focus on invasive and noxious weeds, milkweed species, and nectar plants. Staff will be trained in the sampling protocol and monitoring requirements by May 31 of each year.

Data Management

The County has developed a data management strategy to ensure that data collected in the field is properly stored for later use and review. This includes:

1. Once surveys are completed, field monitoring data will be compiled and provided to the CCAA Implementation Coordinator.

2. Complied data are uploaded into the appropriate geospatial database by the CCAA Implementation Coordinator.

Data will be collected in paper form using the Tier 1 version of the Pollinator Habitat Scorecard. Data collected in paper form will be entered through the app by November 15 and the paper forms will be archived.

Data Notification and Reporting

The County's CCAA reporting protocols includes:

1. Notify CCAA Implementation Coordinator or designee before and after field sampling is conducted.
2. Compile field monitoring data and submit to CCAA Implementation Coordinator or designee to be uploaded and used to complete reporting.
3. Annual plot and monitoring data will be uploaded to the ROWHWG Habit Geospatial Database at the conclusion of each field season by November 15.
4. The results of the data analysis will be reported to the CCAA Implementation Coordinator or designee before January 15 each year. Any vegetation management response will be implemented during the following season.

Appendix A

Beltrami County

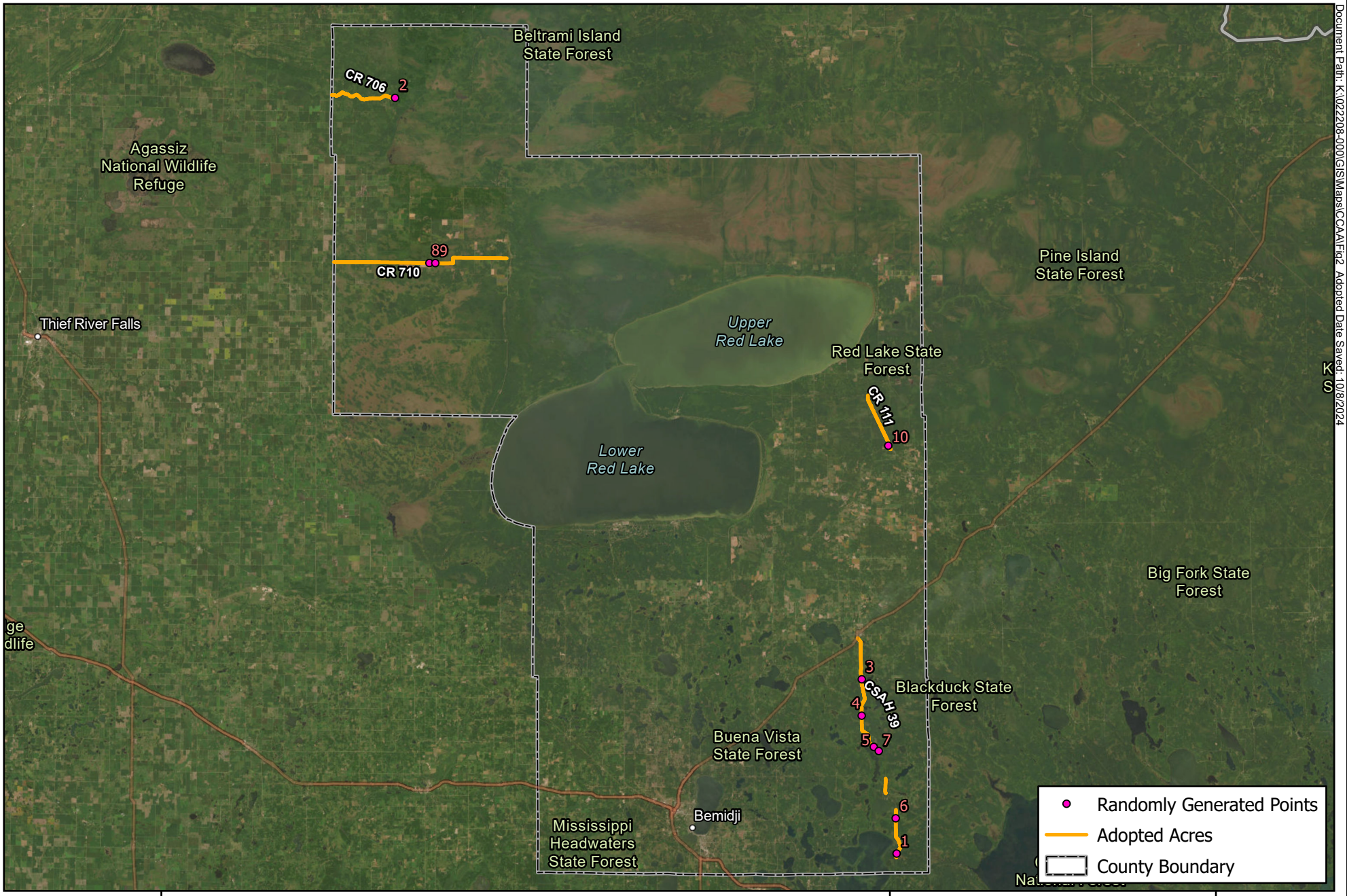
2025 Monitoring Locations

2026 Monitoring Locations

2027 Monitoring Locations

2028 Monitoring Locations

2029 Monitoring Locations



BELTRAMI county

2025 Monitoring Locations

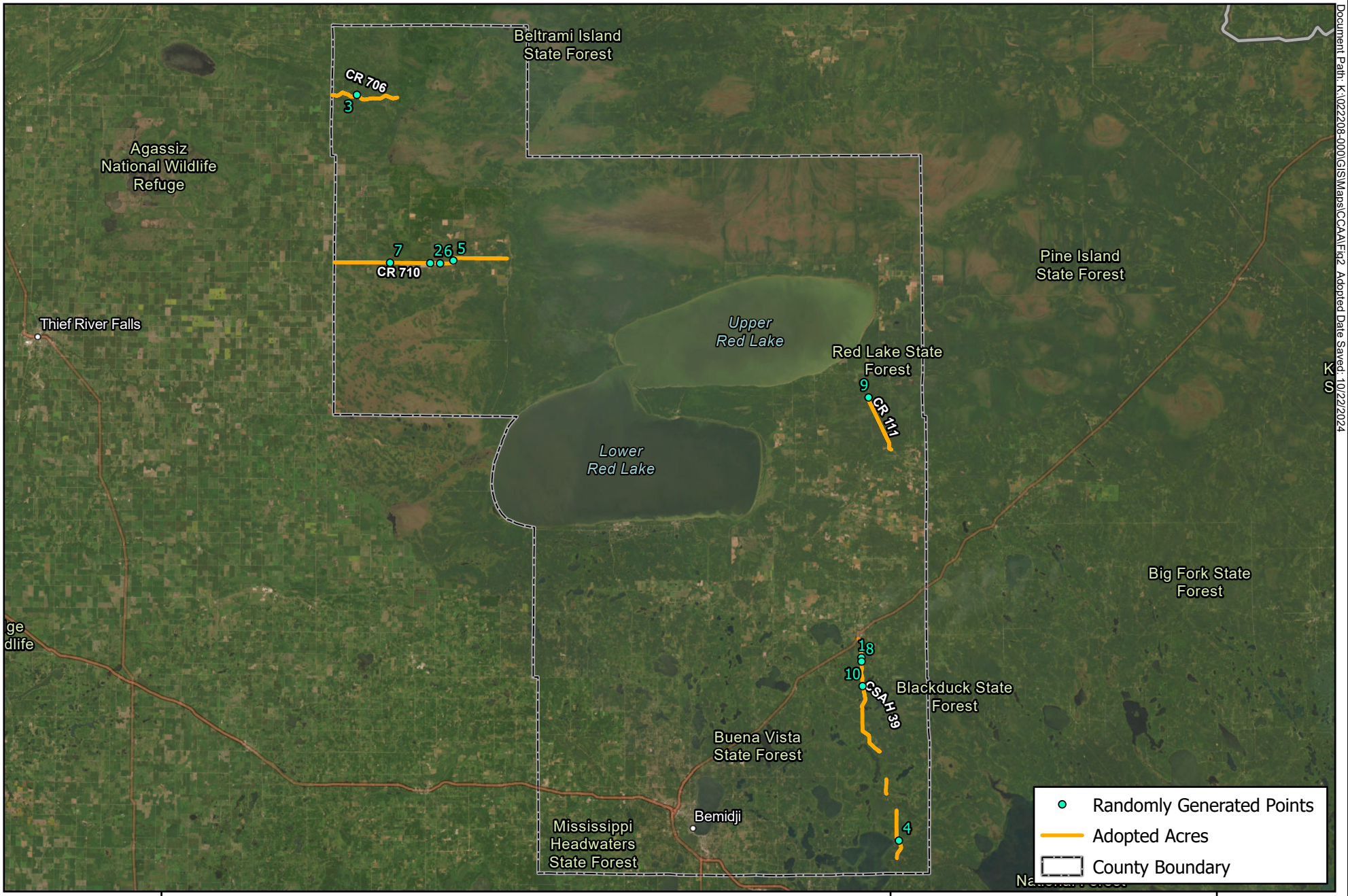
Monarch CCAA
Beltrami County, MN

N

0 12 Miles

1 inch = 12 Miles

wsb



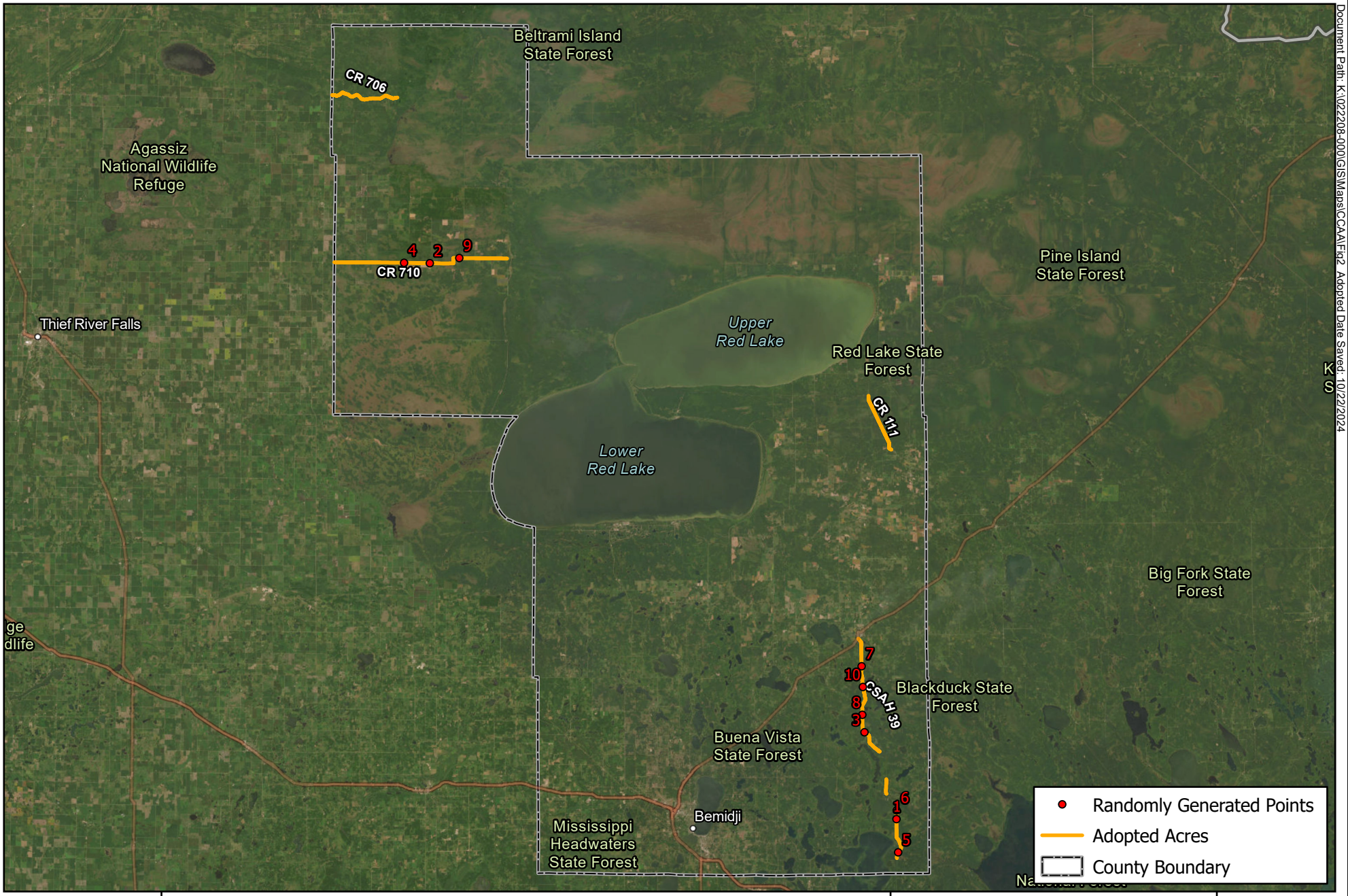
2026 Monitoring Locations

Monarch CCAA
Beltrami County, MN

N

0 12 Miles

1 inch = 12 Miles



BELTRAMI county

2027 Monitoring Locations

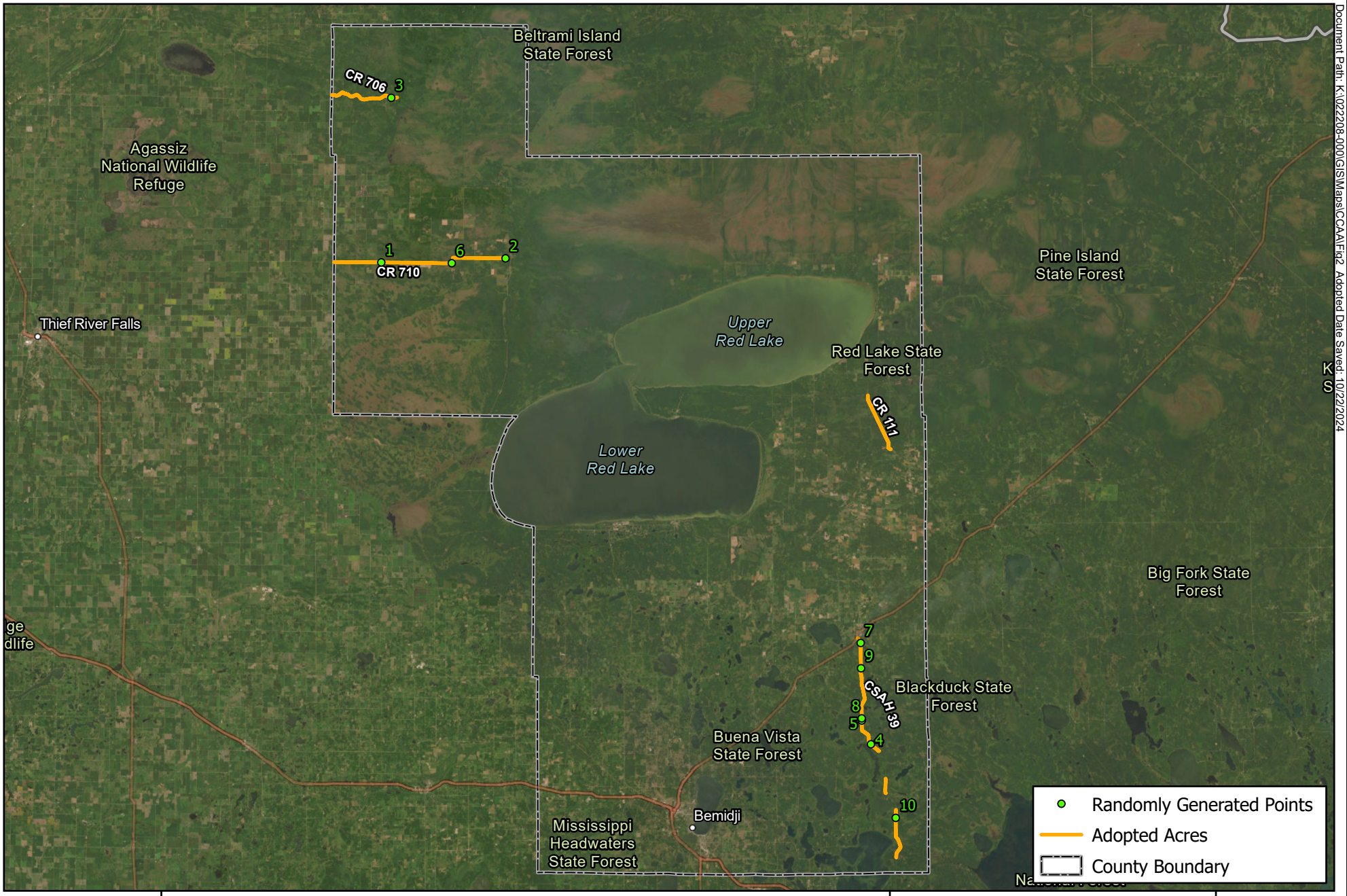
Monarch CCAA
Beltrami County, MN

N

0 12 Miles

1 inch = 12 Miles

wsb



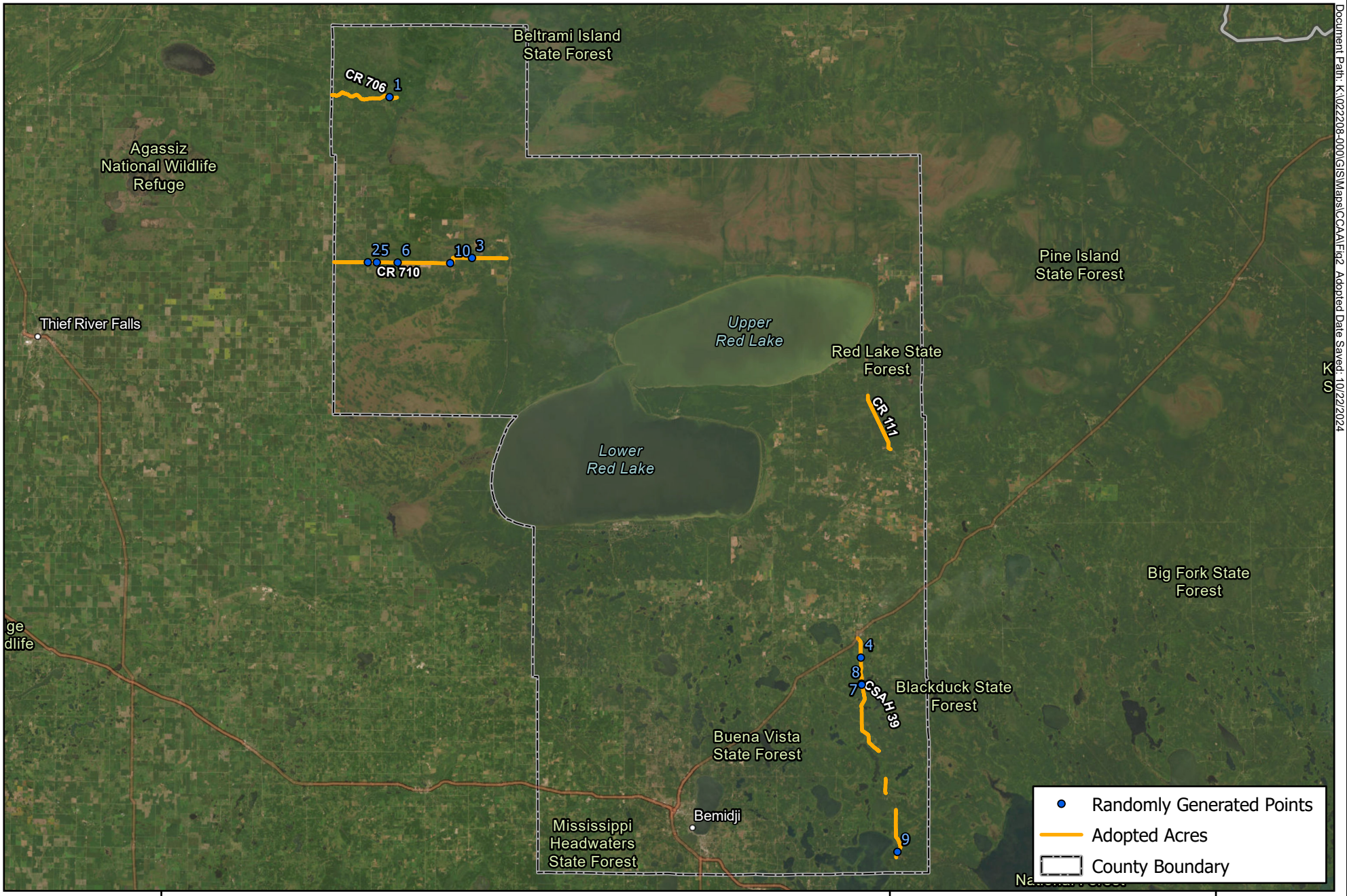
2028 Monitoring Locations

Monarch CCAA
Beltrami County, MN

N

0 12 Miles

1 inch = 12 Miles



2029 Monitoring Locations

Monarch CCAA
Beltrami County, MN

N

0 12 Miles

1 inch = 12 Miles

Table A. Latitude and longitude of randomly generated sampling points by year.

Year	Point Number	Latitude	Longitude
2025	1	47.43768233	-94.47867142
	2	48.44282860	-95.47509115
	3	47.66994863	-94.54571698
	4	47.62146424	-94.54616391
	5	47.57988343	-94.52267139
	6	47.48466691	-94.48010712
	7	47.57433199	-94.51282406
	8	48.22336881	-95.40408018
	9	48.22329706	-95.39220706
	10	47.98085106	-94.49132472
2026	1	47.69954753	-94.54742308
	2	48.22345432	-95.40299453
	3	48.44653157	-95.55209541
	4	47.45573786	-94.47537058
	5	48.22709244	-95.35707183
	6	48.22314815	-95.38339547
	7	48.22357411	-95.48296349
	8	47.69433512	-94.54725733
	9	48.04564963	-94.53133013
	10	47.66157002	-94.54539066
2027	1	47.60836898	-94.54609187
	2	48.22332727	-95.35776653
	3	47.68537385	-94.54681486
	4	47.53474490	-94.49973237
	5	47.99837732	-94.50041880
	6	47.61634493	-94.54600940
	7	48.22360101	-95.57271258
	8	47.44761876	-94.47103619
	9	48.22324444	-95.39101319
	10	47.43916052	-94.47781574
2028	1	48.22361591	-95.49990078
	2	48.23017476	-95.25237875
	3	48.44286665	-95.48270981
	4	47.58340000	-94.52815007
	5	47.61503022	-94.54598149
	6	48.22330304	-95.35947513
	7	47.71832957	-94.54760699
	8	47.61790561	-94.54611389
	9	47.68461705	-94.54697687
	10	47.48519596	-94.47997253

Year	Point Number	Latitude	Longitude
2029	1	48.44378297	-95.48613785
	2	48.22370689	-95.52668610
	3	48.23045780	-95.31922169
	4	47.69880148	-94.54734800
	5	48.22361327	-95.50893950
	6	48.22364155	-95.46732297
	7	47.66401760	-94.54607557
	8	47.66265849	-94.54594044
	9	47.43989007	-94.47705678
	10	48.22332833	-95.36251674