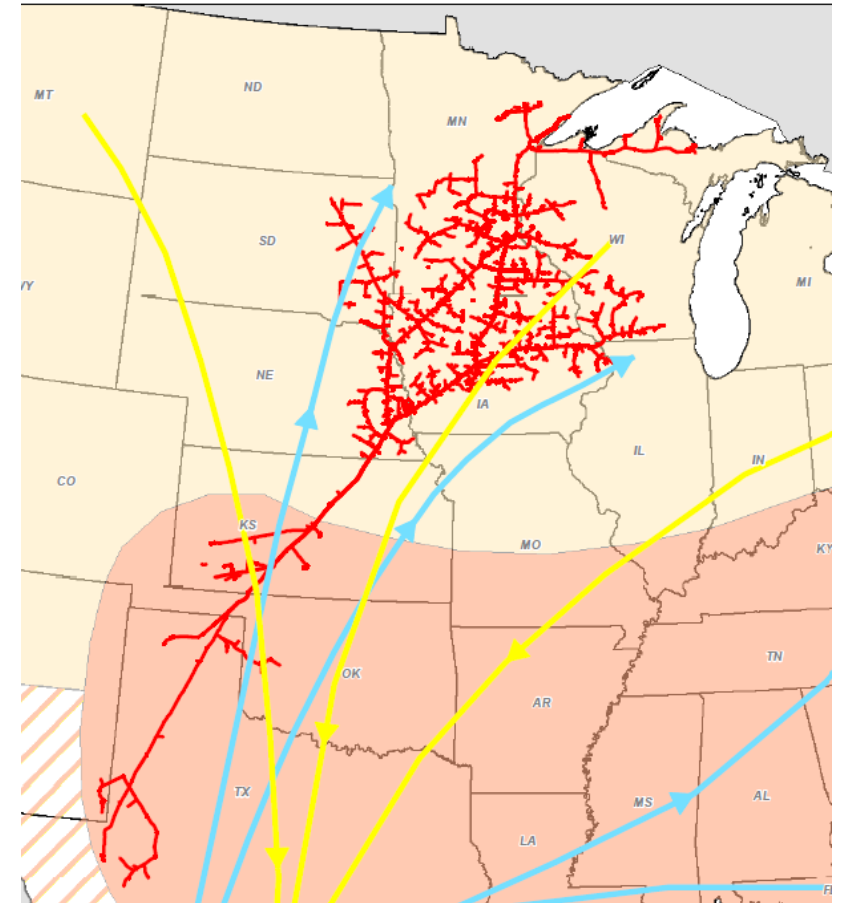# Northern Natural Gas's First Years of Monarch CCAA Implementation: Lessons Learned

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Northern's First Years of Monarch CCAA Implementation: Biological Monitoring

- ❏ Enrolled lands in 11 states from TX to MN

- ❏ In 2021, triggered adaptive management in Midwest/East, but not in South/West

- ❏ In 2022, triggered adaptive management in Midwest/East and South/West

- ❏ Factors to consider:
  - ❏ Drought
  - ❏ Survey implementation

- ❏ Adaptive Management

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1) Balance timing of surveys

❑ Target geographically specific peak blooms

❑ Multiple mobilizations for different regions/latitudes

❑ Identify adopted acres early enough to select plots, request and receive access, and sample during peak bloom, especially in the South

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2) Plan for surveyor type, training, and focus of effort

- ❑ Biological field staff with botanical expertise vs O&M staff or Environmental Inspector

- ❑ Focused effort instead of opportunistic visits

- ❑ Training and communication to increase consistency in data collection among surveyors

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3) Consider level of information collected

- ❑ Tier 1 vs Tier 2 data collection (categorical vs numerical data)

- ❑ Differences in threshold of success (90% of plots vs lower bound of 90% Confidence Interval)

- ❑ Milkweed variability among plots can result in a wide 90% Confidence Interval for Tier 2 analysis

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4) Coordinate more survey plots than required

❑ Allow for plots that are inaccessible at time of survey

❑ Additional survey plots may decrease 90% CI among plots, and result in lower likelihood of triggering adaptive management

❑ Administrative fee discount for additional plots (> 10 more)