

# Simulating N<sub>2</sub>O emissions in Eastern Canada: evaluating a multi-model ensemble

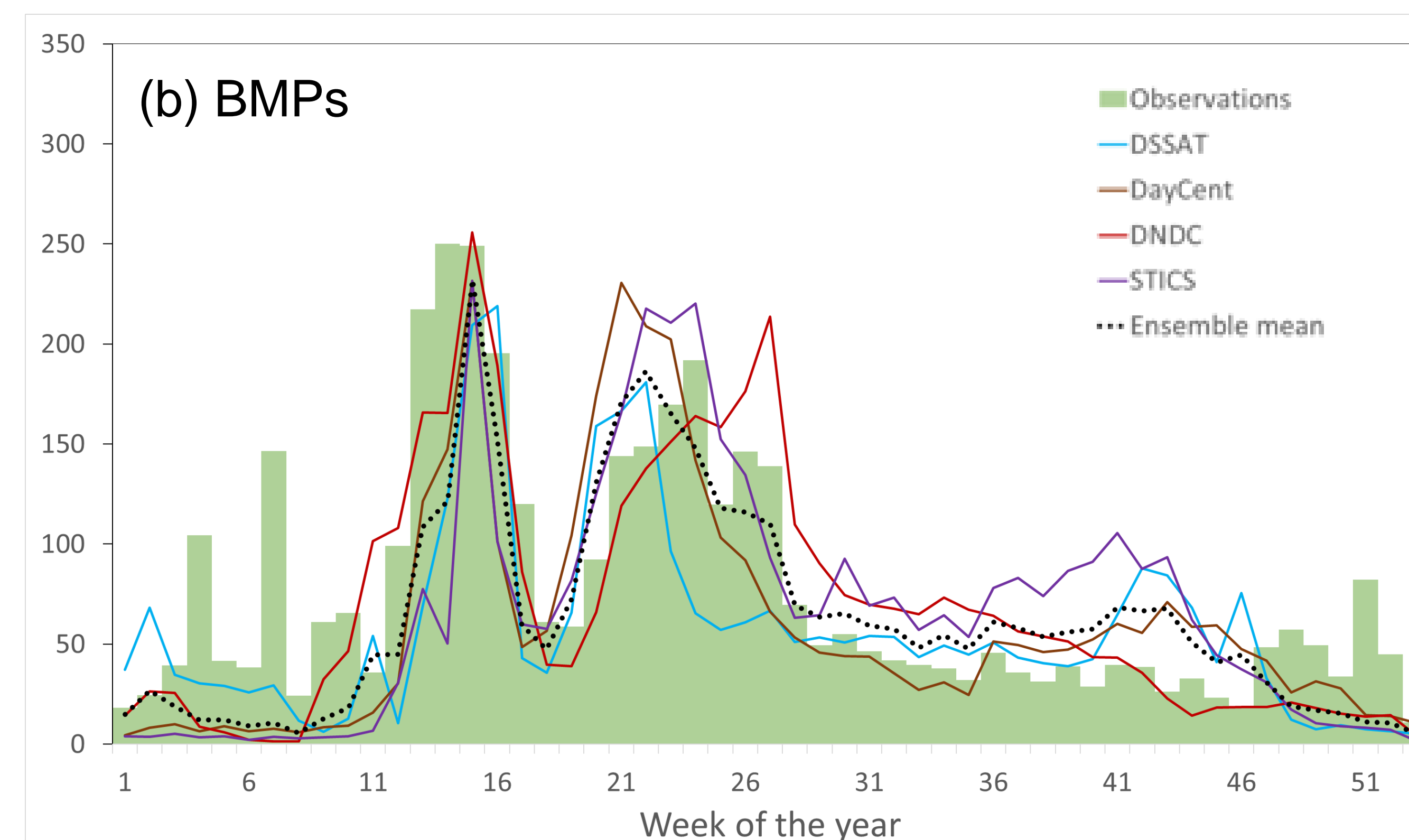
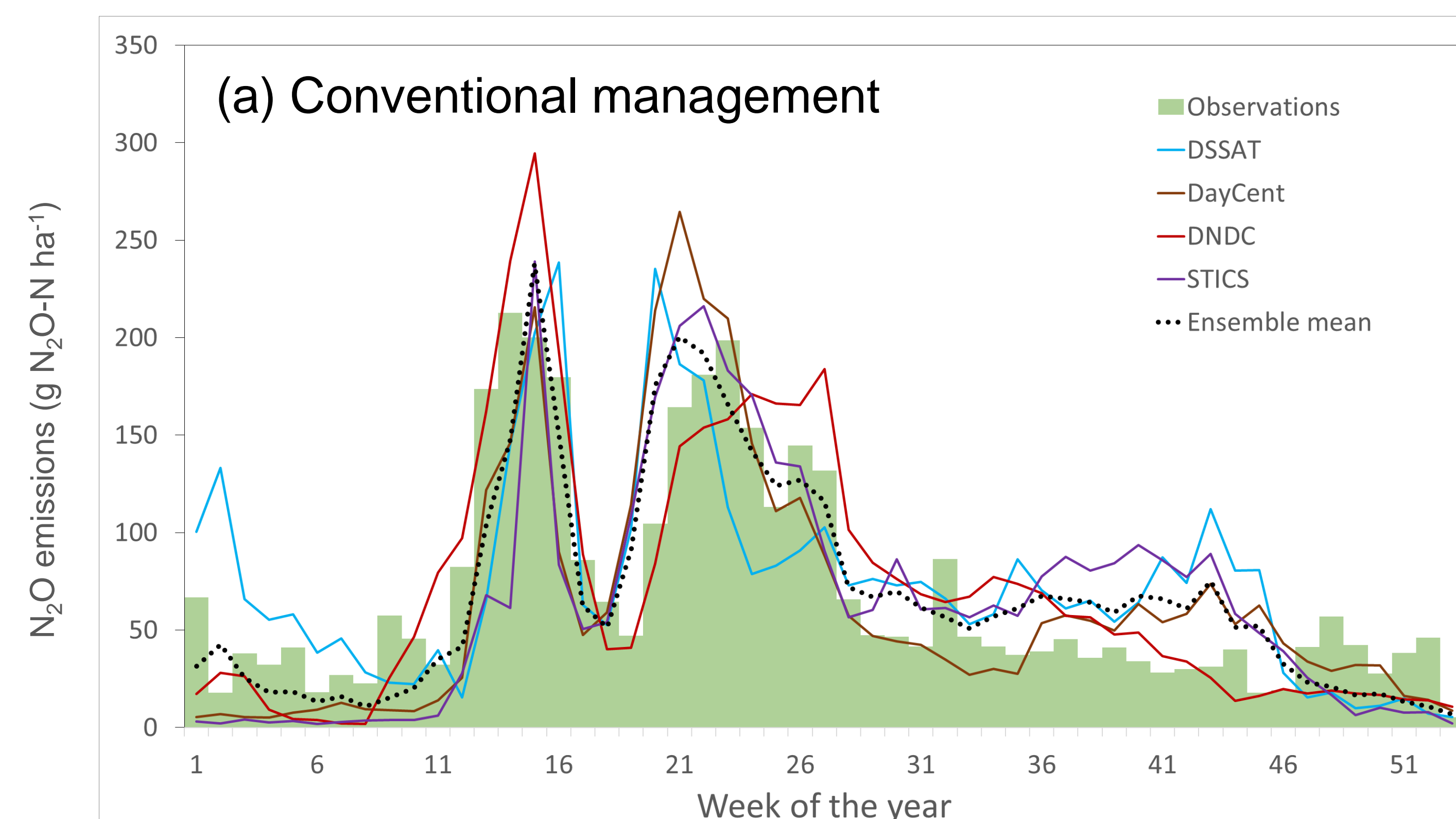
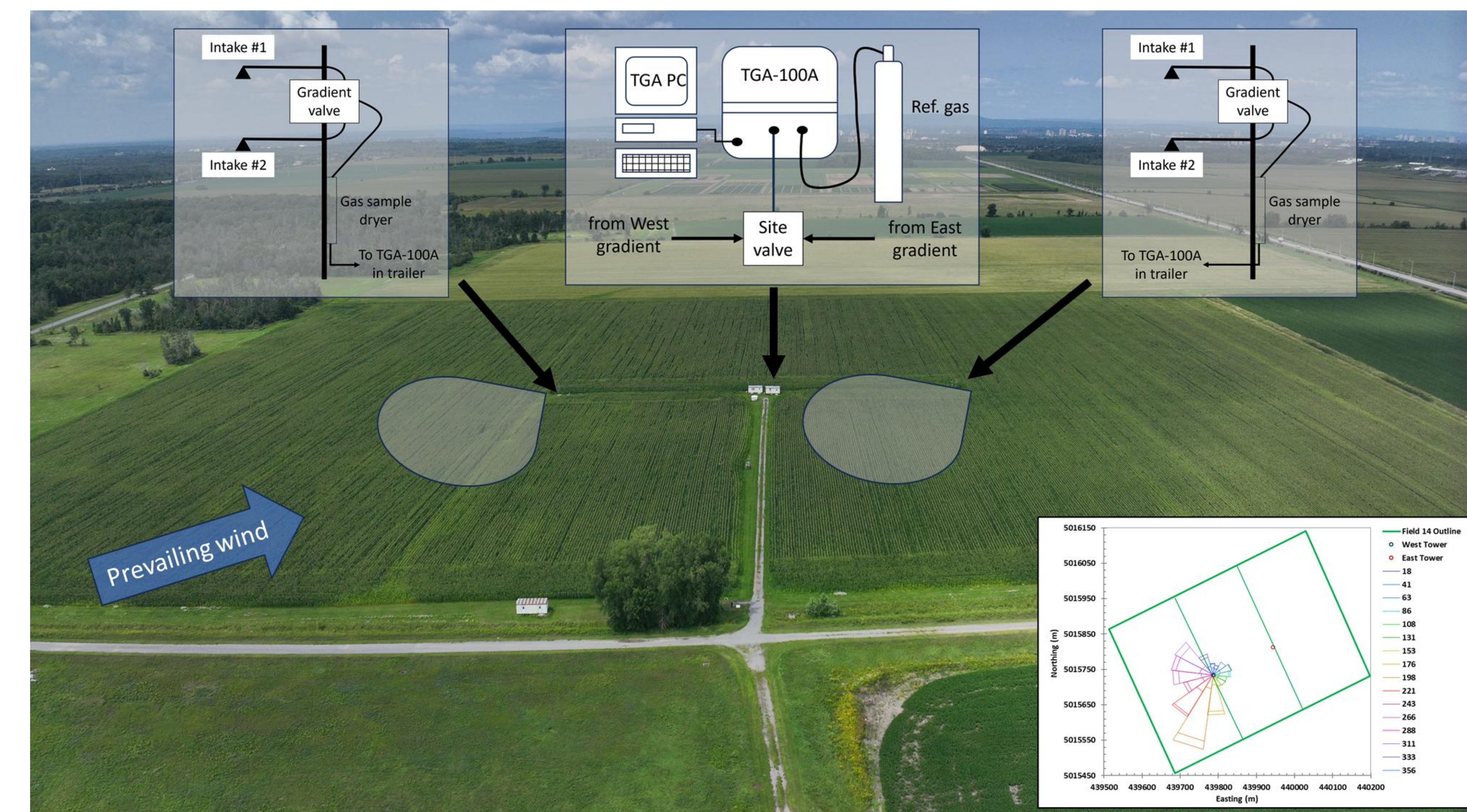
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## Objective

The objective of this work is to evaluate the performance of a set of four crop–soil models (STICS, DAYCent, DNDC and DSSAT) in simulating long-term N<sub>2</sub>O emissions under different management practices

Year	Crop	Conventional	BMP	Year	Crop	Conventional	BMP
2002	Corn	Urea	Coated urea	2013	Corn	Early planting	Late planting
2003	Wheat	-	-	2014	Wheat	Early planting	Late planting
2004	Canola	100% N fert	60% N fert	2015	Canola	Early planting	Late planting
2005	Wheat	Urea	Ammonium nitrate	2016	Soybean	Early planting	Late planting
2006	Corn	Manure-spring	Digestate-fall	2017	Corn	No inhibitors	Dual inhibitors
2007	Wheat	Manure-spring	Digestate-spring	2018	Corn	No inhibitors	Dual inhibitors
2008	Soybean	-	-	2019	Wheat	No inhibitors	Dual inhibitors
2009	Canola	Spring N fert	Split N fert	2020	Soybean	-	-
2010	Corn	Split N fert	Split-reduce N fert	2021	Corn	No inhibitors	Dual inhibitors
2011	Wheat	100% N fert	40% N fert	2022	Wheat	No inhibitors	Dual inhibitors
2012	Canola	100% N fert	40% N fert	2023	Corn	No inhibitors	Dual inhibitors



## Key Findings

- The four models simulated N<sub>2</sub>O emissions well on a weekly basis.
- The model ensemble performs slightly better than individual models.
- BMPs have small effects on N<sub>2</sub>O emissions.