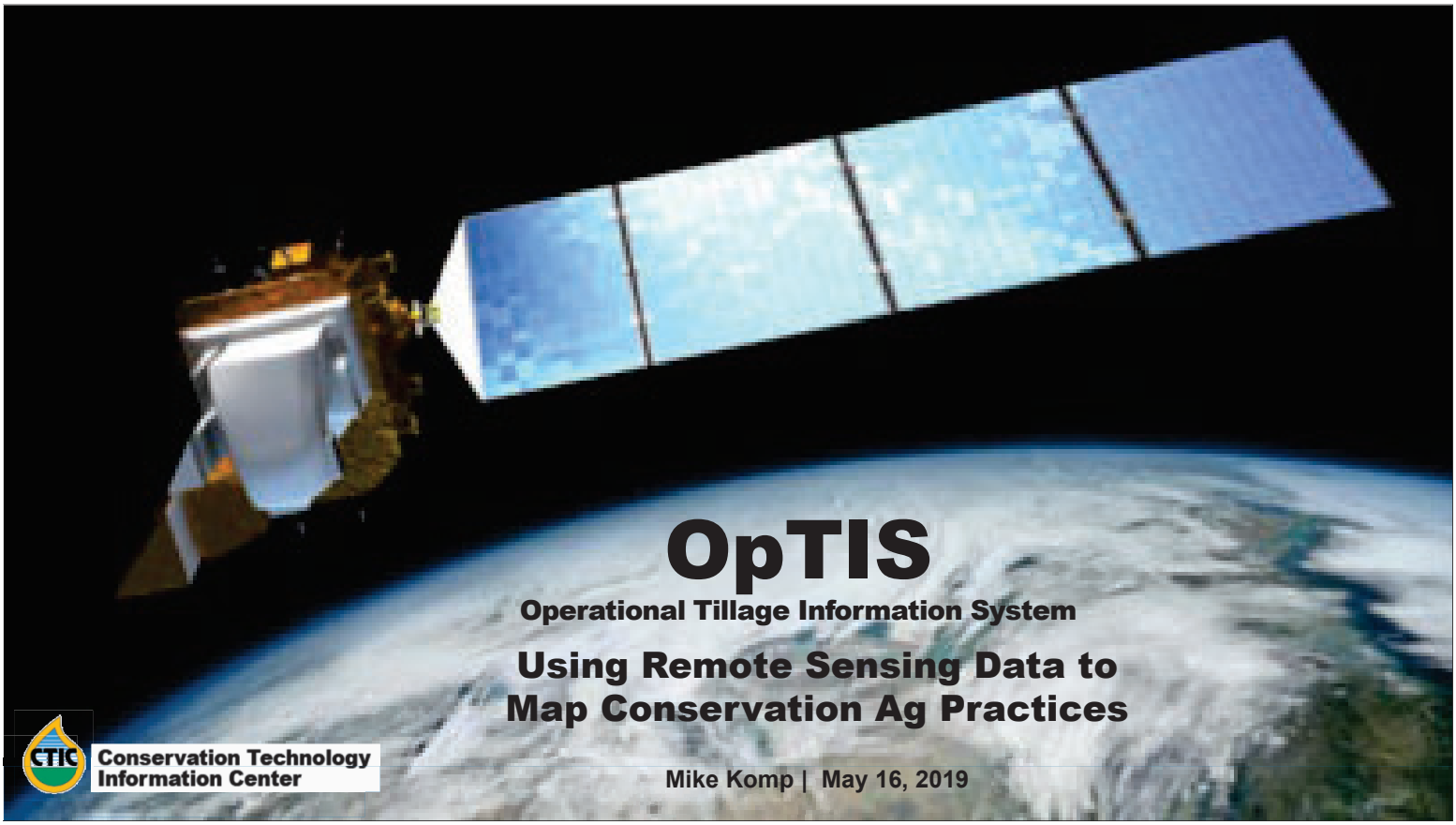


OpTIS

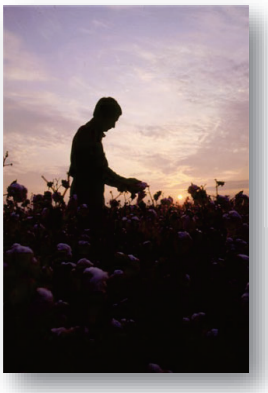
Operational Tillage Information System

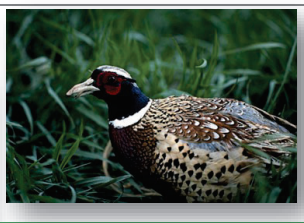
Using Remote Sensing Data to Map Conservation Ag Practices

Conservation Technology Information Center

Mike Komp | May 16, 2019

CTIC: The Mission





CTIC connects, champions and provides information on sustainable agricultural systems and technologies that are productive, profitable and preserve natural resources.

OpTIS: Multiple Past & Current Co-Sponsors

Outline

What is OpTIS?

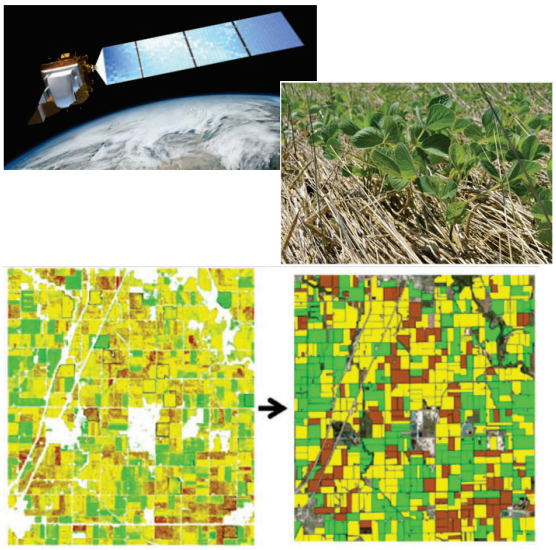
Next steps

Possible applications

OpTIS: What is it?

Applied · Geosolutions

- Technology from Applied GeoSolutions
- Uses publicly-available remote sensing data to map & monitor adoption of tillage practices and cover crops
- Multi-scale: field (not-released), HUC8, Crop reporting district
- Temporal comparisons
- Data available (FREE!) at www.ctic.org

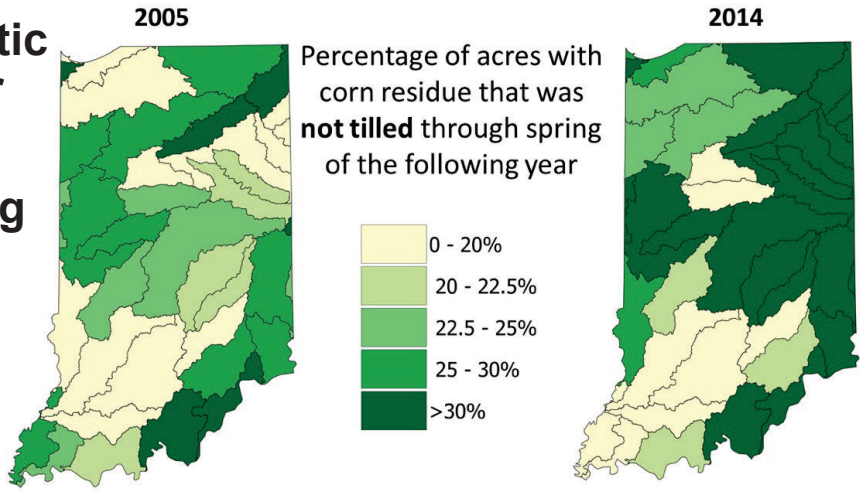


OpTIS: Indiana Pilot

Verified OpTIS automatic processing method for an important ag state

"Ground-truthed" using 10 years of CRM-style tillage-transect data (2005-2014)

Report available at www.optis.ags.io



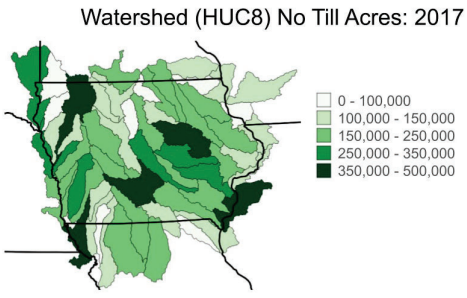
OpTIS Data: Details

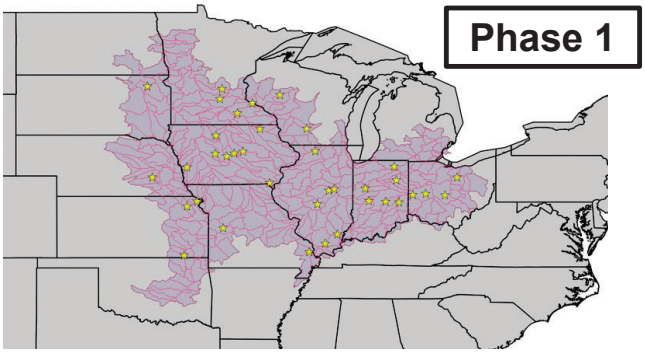
CRM Survey Data (Legacy)	No-Till	Ridge-Till	Mulch Till	Reduced Tillage *(low residue)*	Conventional Tillage
Residue Level	>30%			15-30%	<15%
	Conservation Tillage				
NRCS (approximate)	329	345			
OpTIS	No-Till	Reduced Tillage (Corn) No-Till (other crops)		Reduced Tillage *(low residue)*	Conventional Tillage
Residue Level	>50%	30-50%		15-30%	<15%
	Conservation Tillage				
NRCS (approximate)	329	345			

Data reported by previous year's crop (corn, soy, small-grain, other)
Land not planted to row crops (e.g. pasture) is excluded

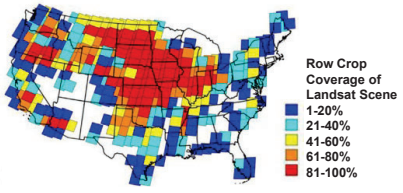
OpTIS: Next steps

Phase 1: Corn Belt 2005-2017 (Summer 2019)





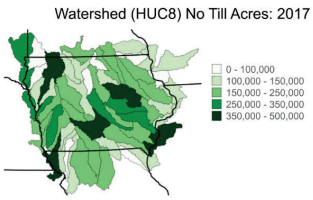
Phase 2

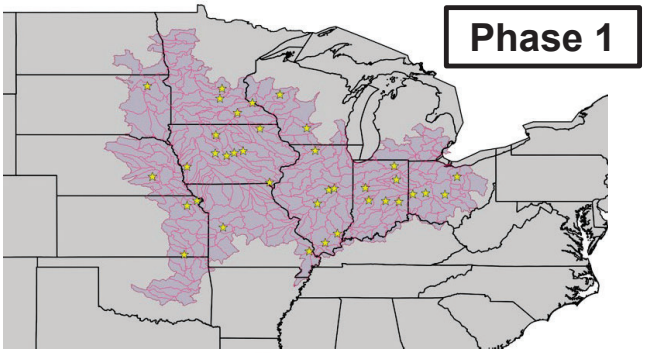


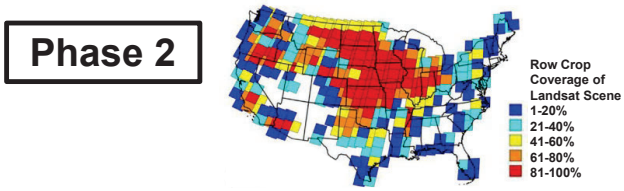
OpTIS: Next steps

Phase 2: Nationwide (TBD)

N-Gage: **Utilize OpTIS data to support water quality trading within the MRB**







OpTIS: Other opportunities

Measure **Soil Health** baselines and trends

Input to **Water Quality** models (local and basin-scale)

Input to Biogeochemical models (e.g. DayCent, DNDC, etc.) to estimate **GHG** emissions and changes in **Soil Carbon**

Targeting **Conservation** efforts

Provide validation data for **Ecosystem Services Markets**

And many others … (e.g. **Biodiversity**, etc.)

How to learn more

www.ctic.org

Dave Gustafson
314-409-7123
gustafson@ctic.org

Mike Komp
608-886-7599
komp@ctic.org