



**SpraySync**

# Intro

- ▶ Jeremy Zerr
- ▶ Founder & Engineer
- ▶ [jeremy@spraysync.com](mailto:jeremy@spraysync.com)
- ▶ Web Site: SpraySync.com
- ▶ Located in Boise, Idaho



# SpraySync

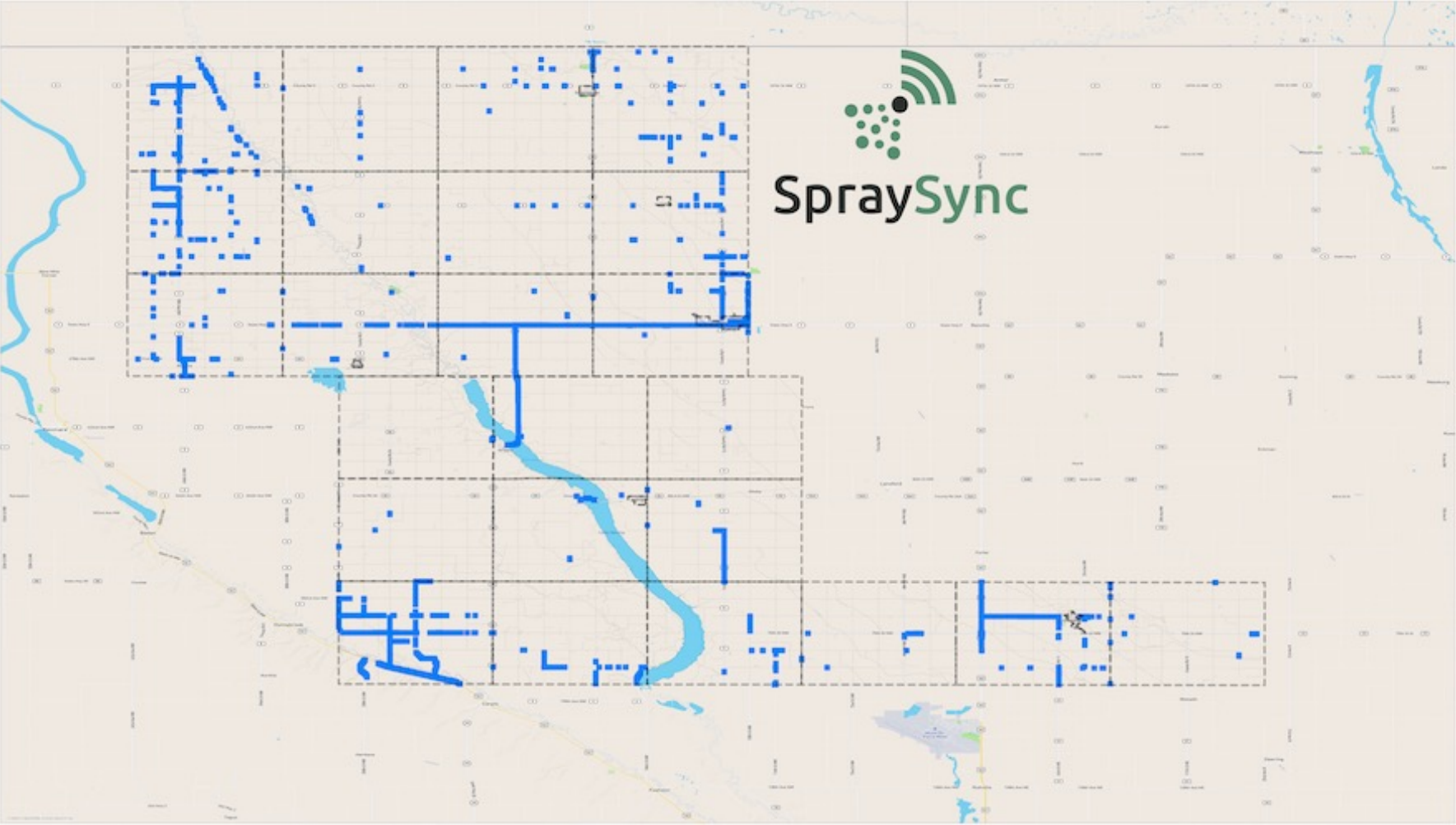
# Why Do You Need Cloud-Connected GPS Spray Mapping?

# Eliminate Paperwork – Go Digital!

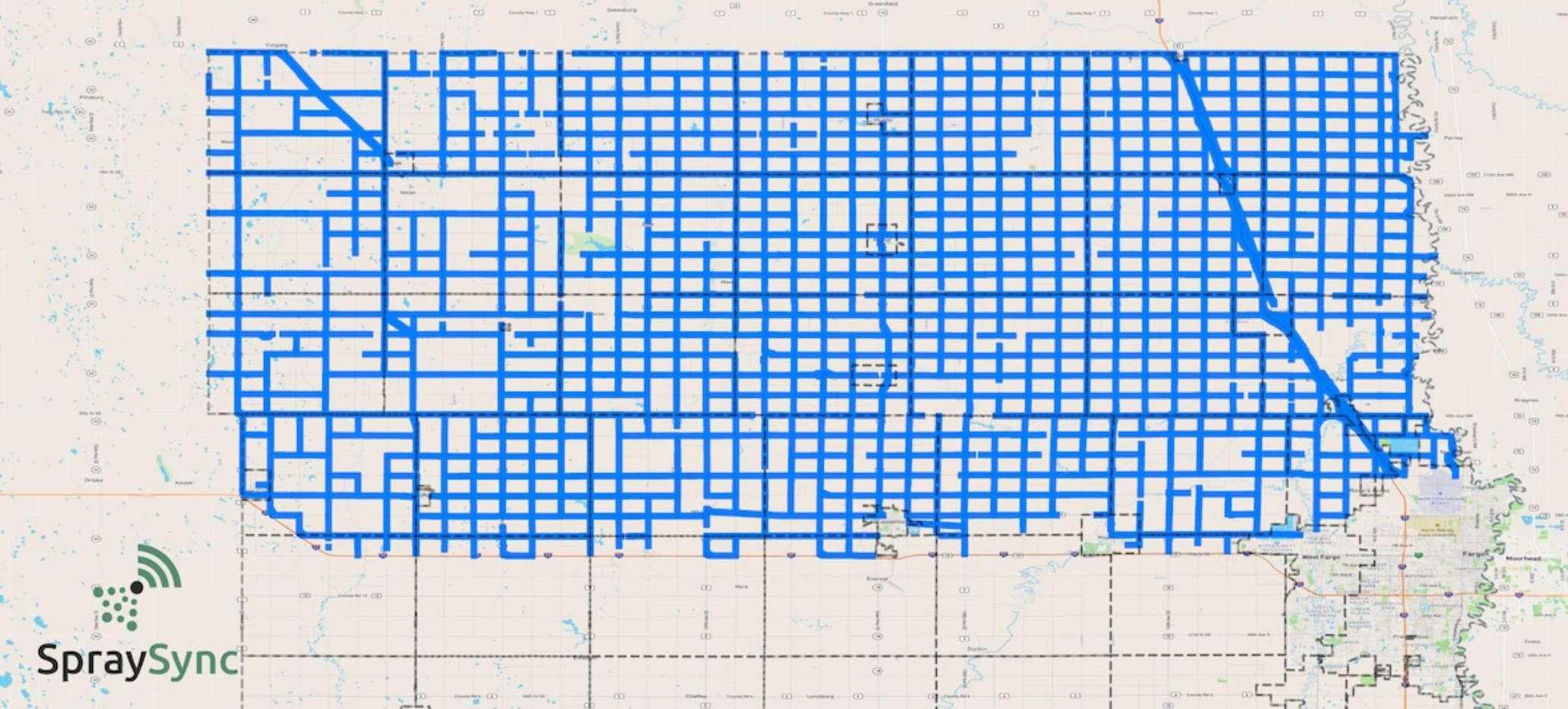
- ▶ Save time, errors, and cost
- ▶ Spray maps and chemical usage logged automatically by our sprayer integration hardware
- ▶ Data tracked syncs to cloud
- ▶ Download or View Maps on the web site



# Renville County ND



# Cass County ND (North of I-94)

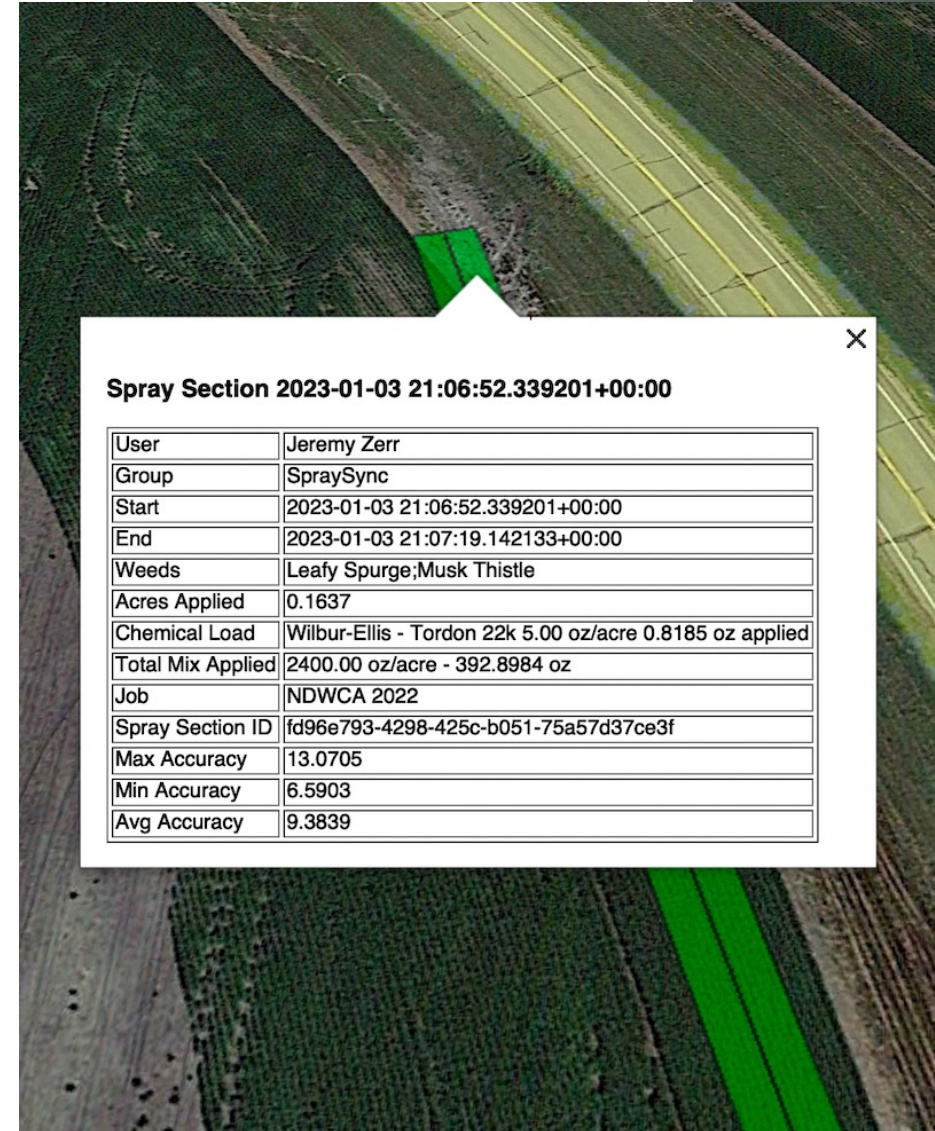


# Easily Handle Landowner Complaints

- ▶ A price of a SpraySync WT1 bundle (\$3,500) is about the price of:
  - ▶ 4 acres of corn
  - ▶ 6 acres of soybeans
  - ▶ 7 acres of wheat
- ▶ How much time would you save?
  - ▶ Rummage through paper or download a map?

# Improve Accuracy of Your Spray Maps

- ▶ GPS data used along with monitoring the sprayer to show area sprayed
- ▶ Only so much you can show on paper



Spray Section 2023-01-03 21:06:52.339201+00:00	
User	Jeremy Zerr
Group	SpraySync
Start	2023-01-03 21:06:52.339201+00:00
End	2023-01-03 21:07:19.142133+00:00
Weeds	Leafy Spurge;Musk Thistle
Acres Applied	0.1637
Chemical Load	Wilbur-Ellis - Tordon 22k 5.00 oz/acre 0.8185 oz applied
Total Mix Applied	2400.00 oz/acre - 392.8984 oz
Job	NDWCA 2022
Spray Section ID	fd96e793-4298-425c-b051-75a57d37ce3f
Max Accuracy	13.0705
Min Accuracy	6.5903
Avg Accuracy	9.3839



# Optimize Your Chemical Usage and Weed Control

- ▶ Spraying with another person?
- ▶ Trying to coordinate can be difficult.
- ▶ Overlapping spray? Missing spots?
- ▶ See your team in near real-time, see where the whole team has sprayed

# Meet Reporting Requirements – Chemicals

- ▶ Chemicals and EPA Numbers
- ▶ Chemical Suppliers and Addresses
- ▶ Chemical flow rates, mixes, and overall tank mix rates

### Chemical Load

Name	Total Flow Rate
Freelexx/Tordon 22k	1280.0
Wilbur-Ellis - Tordon 22k	22.0 (oz/acre) <a href="#">REMOVE</a>
Nutrien - Freelexx	12.0 (oz/acre) <a href="#">REMOVE</a>

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Nutrien - Freelexx ▼ Flow Rate (oz/acre)

[ADD](#)

[DELETE](#) [CLOSE](#)

# Reporting Requirements – Maps

- ▶ GPS mapped location/area of chemicals applied
- ▶ Total acres applied
- ▶ GPS accuracy: max, min, average

# Reporting Requirements – Temp/Wind

- ▶ Temperature, wind velocity and direction
- ▶ Organization information
- ▶ Sprayer name, license/certification number, contact info
- ▶ Weeds sprayed
- ▶ Dates, times, signatures

# Reporting Requirements - Custom Forms

- ▶ We have initial default temp/wind forms and an Excel output format
- ▶ Let us help you analyze your current reporting process
- ▶ We can customize your forms by adding different fields
  - ▶ Dropdowns
  - ▶ Numbers
  - ▶ Text input/text boxes
- ▶ We can customize the Excel output if needed

# Manage Your Spray Crew

- ▶ Tablets in field can see your other team members near real time as they spray
- ▶ Set up everything on web site once and all tablets sync and get the settings

# Bring your own maps into the field


- ▶ New Bring your own Data feature allows you use your own map data
  - ▶ No spray maps
  - ▶ Landowner maps
  - ▶ Anything in a Shapefile
- ▶ View the map data on the tablet as you spray
- ▶ Tap on the map data to see the attributes

# Accountable Digital Records with Signature

- ▶ Ensure accountability of digital records with signature when collecting wind/temp on tablet

Log Confirmation Signature

CLEAR



CANCEL SUBMIT



# Easily Access Past Records

- ▶ Records never deleted
- ▶ No limits to Job size
- ▶ Filter spray maps by Job, User, Time Range

# SpraySync System Overview

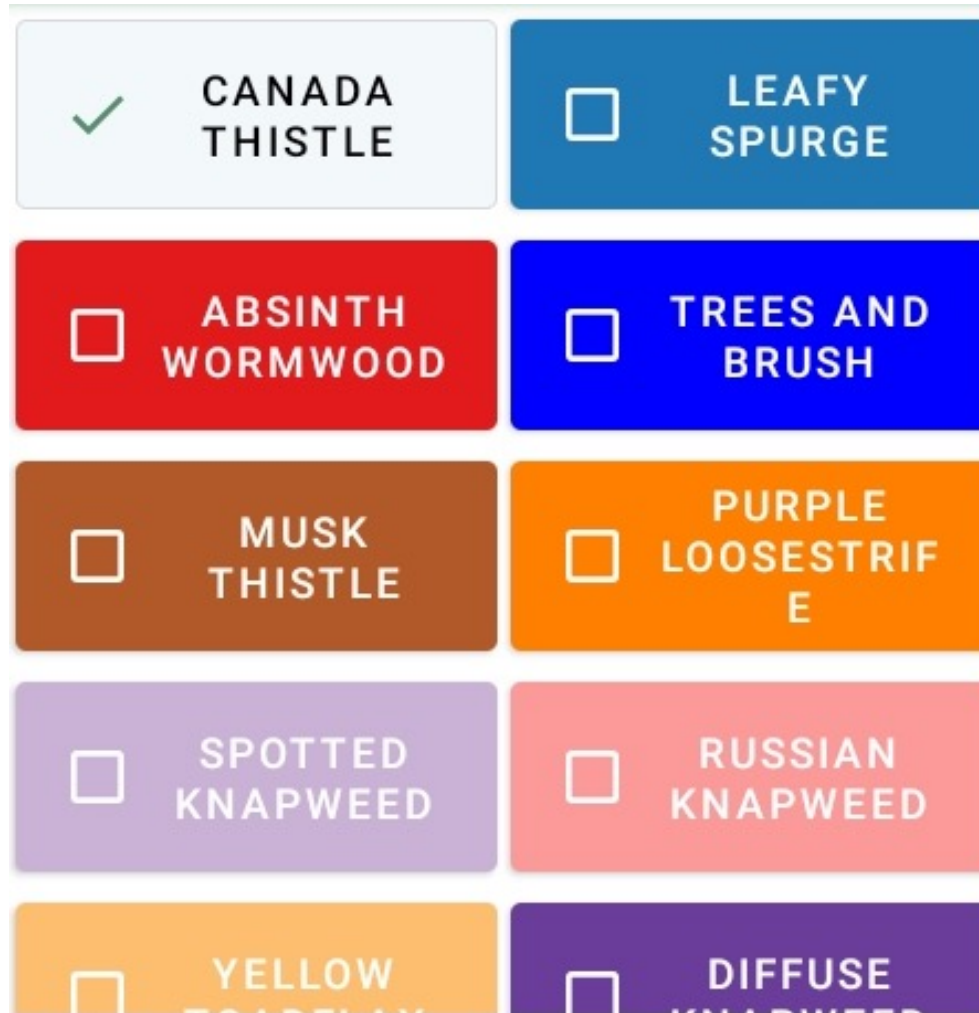
# Mobile App on a Tablet In Your Sprayer



Show What you  
Spray While you  
Drive



# Track Weeds with a Single Tap




# Digital Temperature/Wind Log

Who:	jeremy@spraysync.com	Acres:	.497
Temperature (°F):	<input type="text" value="66"/>	Date:	2022-01-01
Wind Velocity (mph):	<input type="text" value="5.9"/>	Time:	11:31:09 AM
Wind Direction (N: 0°):	<input type="text" value="90"/>	Location:	48.77126, -101.51841
Edge of Road:	North ▼	Chemical Loads:	Method
Gallons Diluted Material Used:	.023	Job:	<b>County Job 2021</b>
Weeds Controlled:	Canada Thistle		

# Add your Job, Chemical Load, Vehicle

<b>Job:</b>	Cass County
<b>Last Log:</b>	No logs today
<b>Acres Since Log:</b>	.000
<b>Chemical Load:</b>	Cass cty
<b>Vehicle:</b>	Polaris Ranger #3
<b>Speed:</b>	9 mph

# Add your own Data Layers




 US/Mountain SpraySync Jeremy

Dashboard Vehicles Jobs Weeds Chemicals **Layers** Tasks Admin

## Layer Files

+ Add Layer File

▼ Active Layers

Layer Type Fill/Polygon	Layer Name <input type="text" value="CassNoCities"/>	<input type="checkbox"/> All jobs Cass Landowner BYOD	Layer Color 	Save	Delete
Layer Type Fill/Polygon	Layer Name <input type="text" value="SensitiveArea"/>	<input type="checkbox"/> All jobs Cass Sensitive Areas	Layer Color 	Save	Delete
Layer Type Fill/Polygon	Layer Name <input type="text" value="Water_Table"/>	<input type="checkbox"/> All jobs Cass Sensitive Areas	Layer Color 	Save	Delete



# View your Data Layers While Spraying

The screenshot displays the SpraySync mobile application interface. At the top, the status bar shows the time as 3:55 on Tuesday, January 2, along with location, download, and battery icons. The app's header includes a menu icon, a location pin, a refresh icon, a truck icon, and a settings icon. The main map area shows a satellite view of a rural area with roads labeled 154th Ave SE, 156th Ave SE, 157th Ave SE, 158th Ave SE, and 39th St SE. A red overlay indicates the current spraying path. The left sidebar contains a list of data layers with checkboxes: CANADA THISTLE (checked), TREES AND BRUSH, LEAFY SPURGE, TEST, MUSK THISTLE, ABSINTH WORMWOOD, SPOTTED KNAPWEED, and PURPLE LOOSESTRIFE. At the bottom left, a job information panel displays: Job: Cass Sensitive Areas, Last Reset: 12:00:00 AM, Acres: .000, Chemical Load: Test Chemical Load 1, Vehicle: Four Switch Truck, and Speed: 0 mph. The bottom right of the map features a play button and a zoom-in (+) button. The Mapbox logo is visible at the bottom center of the map area.

# Everything Syncs To the Cloud

**SpraySync** US/Mountain SpraySync Jeremy

Dashboard Vehicles Jobs Weeds Chemicals Layers Tasks Admin

**Users:**  All users [Select](#) **Start:** 02/20/2024, 12:00 AM  **Jobs:**  All jobs [Select](#) [Filter](#)

**End:** 02/20/2024, 11:59 PM  [Today](#) | [Yesterday](#) | [All Time](#)

**▼ Spray Data** [Summary](#) [Map](#) [Fix](#) [Export](#)

**Spray Section Counts by Spray Type**

Boom: 8

**Acres Applied:** 0.035 **Miles sprayed:** 0.024 **Total Mix Applied:** 0.353 gallons (45.121 oz)

**Weeds Seen:**  Canada Thistle (8) **Users:**

- Jeremy Zerr (8)

**Jobs:**

- OVMA 2024 (8)

**Chemical Used:**

Supplier & Chemical	Flow Rate (oz/acre)	Acres Applied	Ounces Applied
Nutrien - Freelexx	12.0	0.035	0.423
Wilbur-Ellis - Tordon 22k	22.0	0.035	0.775




# Filter by User, Date, Job

**Users:**

All users

[Select](#)

**Start:** 02/20/2024, 12:00 AM 

**End:** 02/20/2024, 11:59 PM 

[Today](#) | [Yesterday](#) | [All Time](#)

**Jobs:**

All jobs

[Select](#)

 [Filter](#)

# View Your Spray Maps and Summary

## ▼ Spray Data

Summary

Map

Fix

Export

### Spray Section Counts by Spray Type

Boom: 8

#### Acres Applied:

0.035

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#### Jobs:

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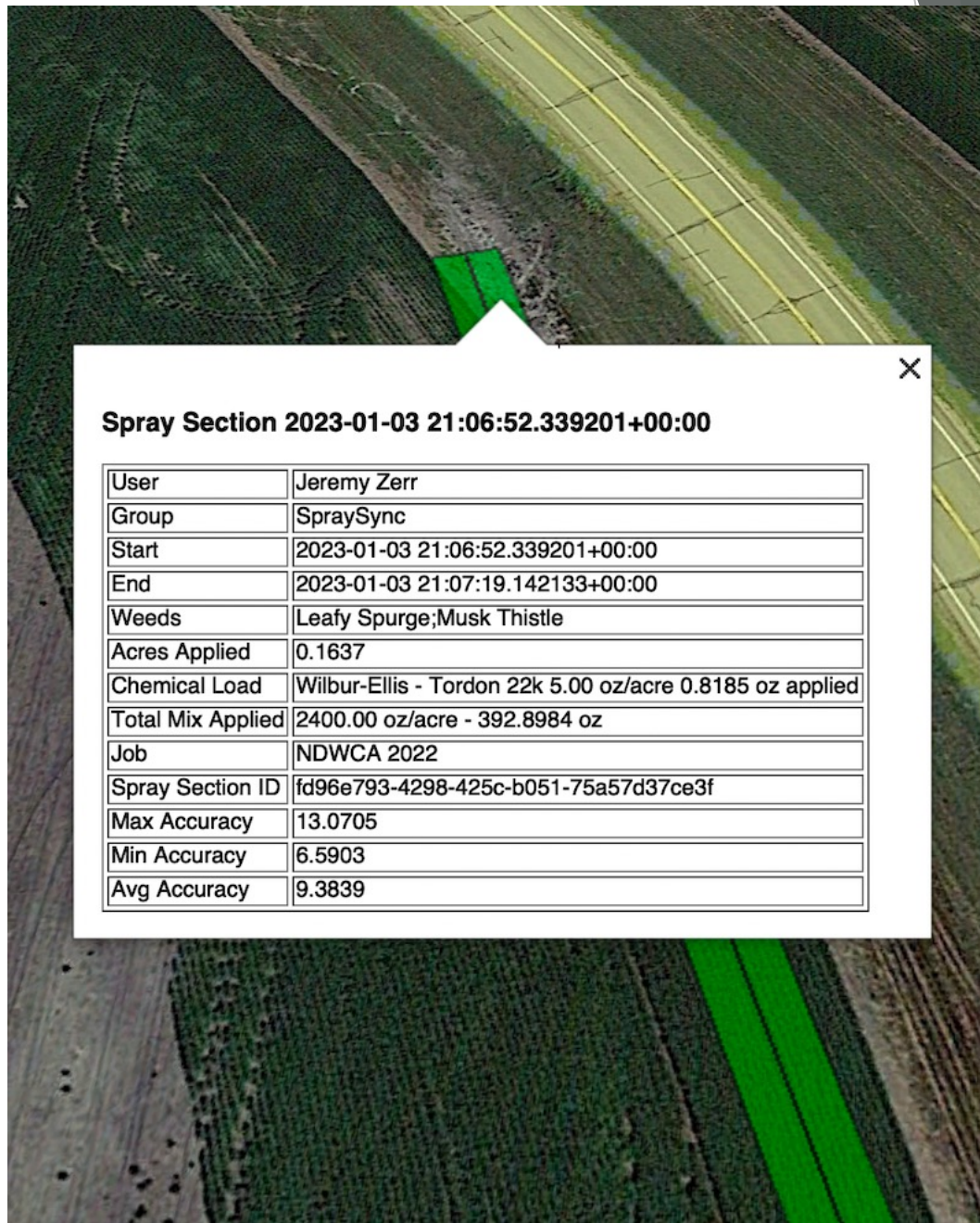
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# See your Spray Maps on the Web Site




Download  
Spray Maps in  
useful GIS data  
formats like  
KML and  
Shapefile




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# View Your Temperature/Wind Logs Online

User	Spray Job	Time	Wind Dir	Wind Vel	Temp	Edge of Road	Weeds	Acres	Signature
Jeremy Zerr	County Job 2021	1/1/2022, 11:31:09 AM MST	90	5.9 mph	66 °F	N	Canada Thistle	0.5	

# Download Your Logs in Excel Spray Report Including a Spray Map

	A	B	C	D	E	F	G
1							
2	<b>Date Range:</b>	02/20/2024					
3							
4	<b>Applicator Information:</b>						
5	<b>User</b>	<b>License Number</b>					
6	Jeremy Zerr	123456-78					
7							
8							
9	<b>Group Information:</b>						
10	<b>Name</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip</b>		
11	SpraySync Form Demo						
12							
13							
14	<b>Job Information:</b>						
15	<b>Job Name</b>	<b>Job Description</b>					
16	Temp/Wind Snapshot Job						
17							
18							
19	<b>Record Reporting:</b>						
20	<b>Log Time</b>	<b>Temperature (°F)</b>	<b>Wind Direction</b>	<b>Wind Velocity (mph)</b>	<b>Latitude/Longitude</b>	<b>Notes</b>	<b>Confirmation Signature</b>
21	February 20, 2024, 4:21 PM		56 N	10	<a href="#">44.5781326, -123.4145592</a>	N/A	
22							
23							
24	<b>Applied Chemical Information:</b>						
25	<b>Chemical</b>	<b>Supplier</b>	<b>EPA Number</b>	<b>Chemical Applied (oz)</b>	<b>Acres Applied</b>		
26	Test Chemical	Test Supplier	44444	1.34	0.08		



# How Do You Track What You Are Spraying?



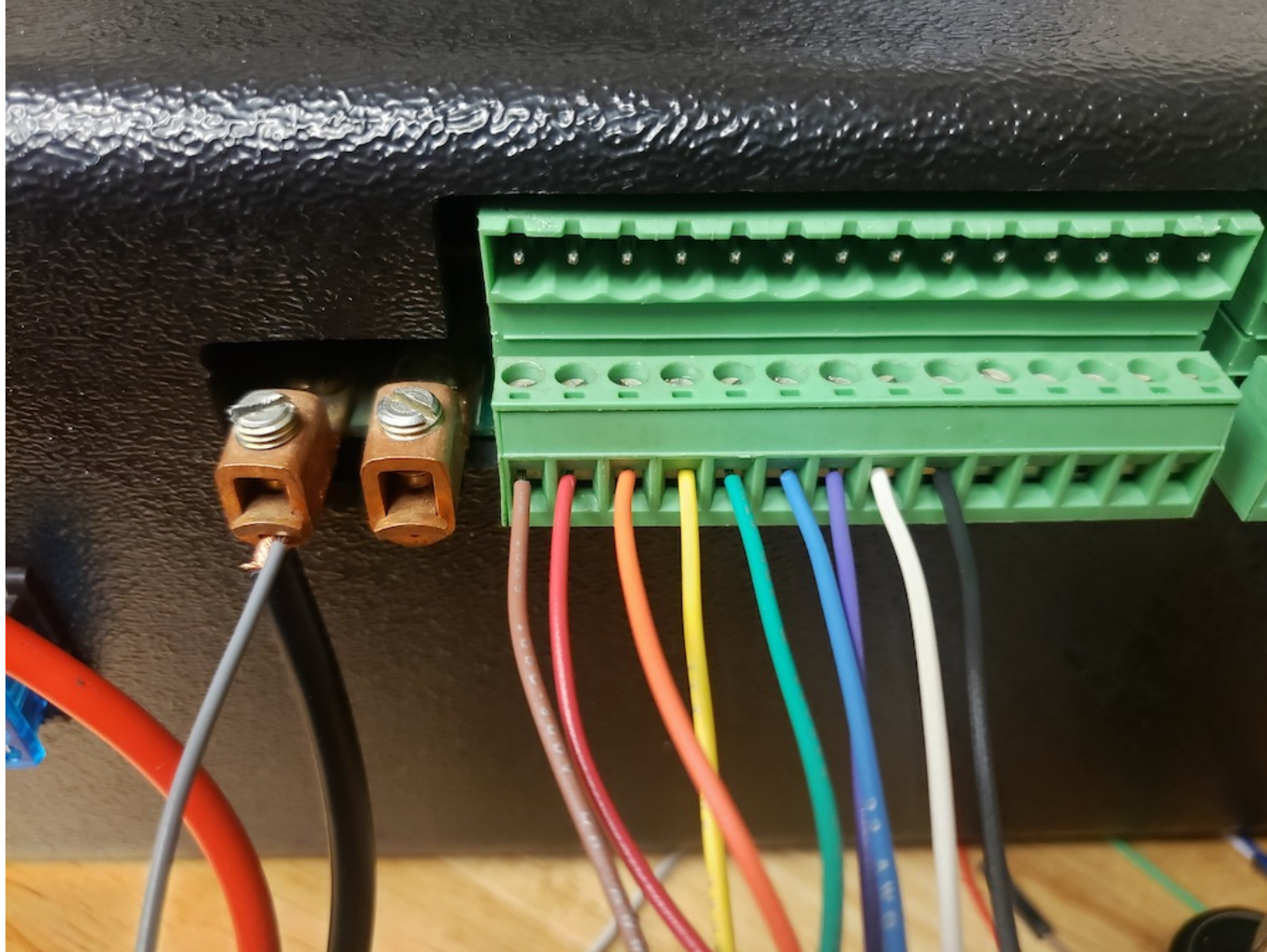
# Set Switches to Where You Spray

Raven SCS 450		
1	-30.0ft => -20.0ft	BOOM <input type="checkbox"/>
2	-20.0ft => -10.0ft	BOOM <input type="checkbox"/>
3	-10.0ft => 0.0ft	BOOM <input type="checkbox"/>
4	0.0ft => 10.0ft	BOOM <input type="checkbox"/>
5	10.0ft => 20.0ft	BOOM <input type="checkbox"/>

# Norstar RS6000



# Wires Go Directly Into the Screw Terminals



# Raven 450 and 4400 Custom Wiring Harness



# TeeJet 744A-3



# TeeJet 744A-3 wiring harness



# Other Sprayer Controllers

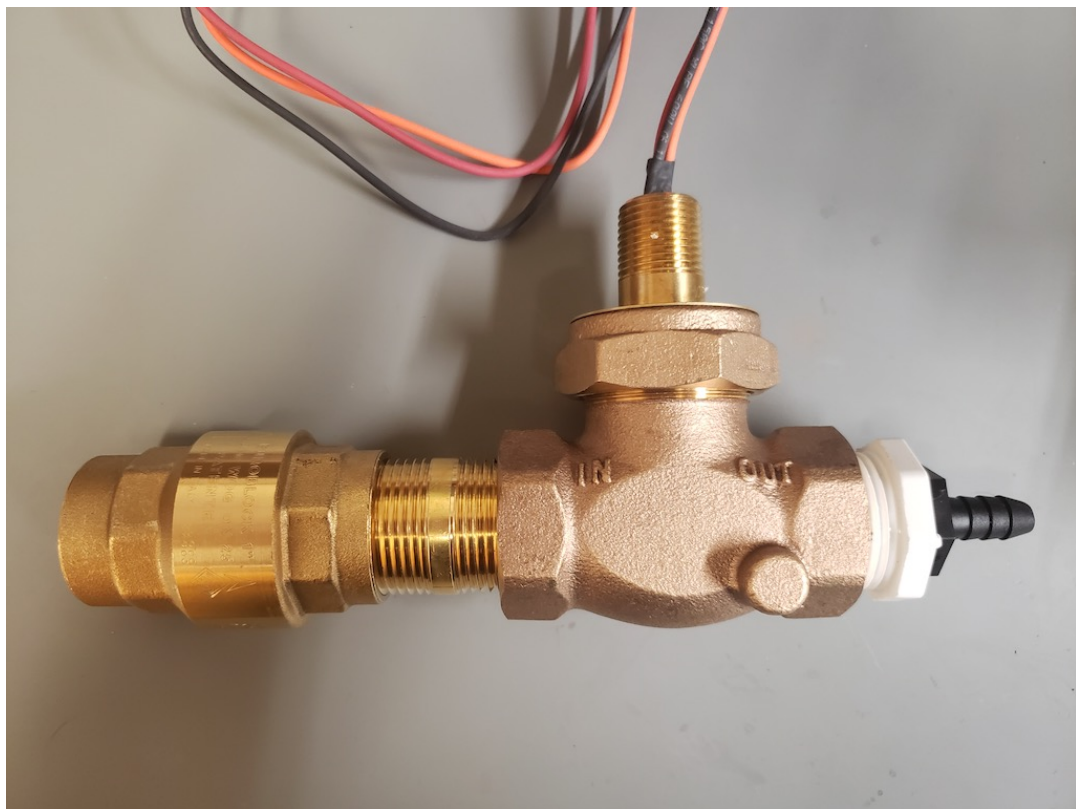
- ▶ TeeJet 844E/845/744E
- ▶ Texas Industrial Remcor TXRC-1B
- ▶ Spray-Mate II
- ▶ Anything with switches



# ATVs



# Hose reel mapping with flow switches



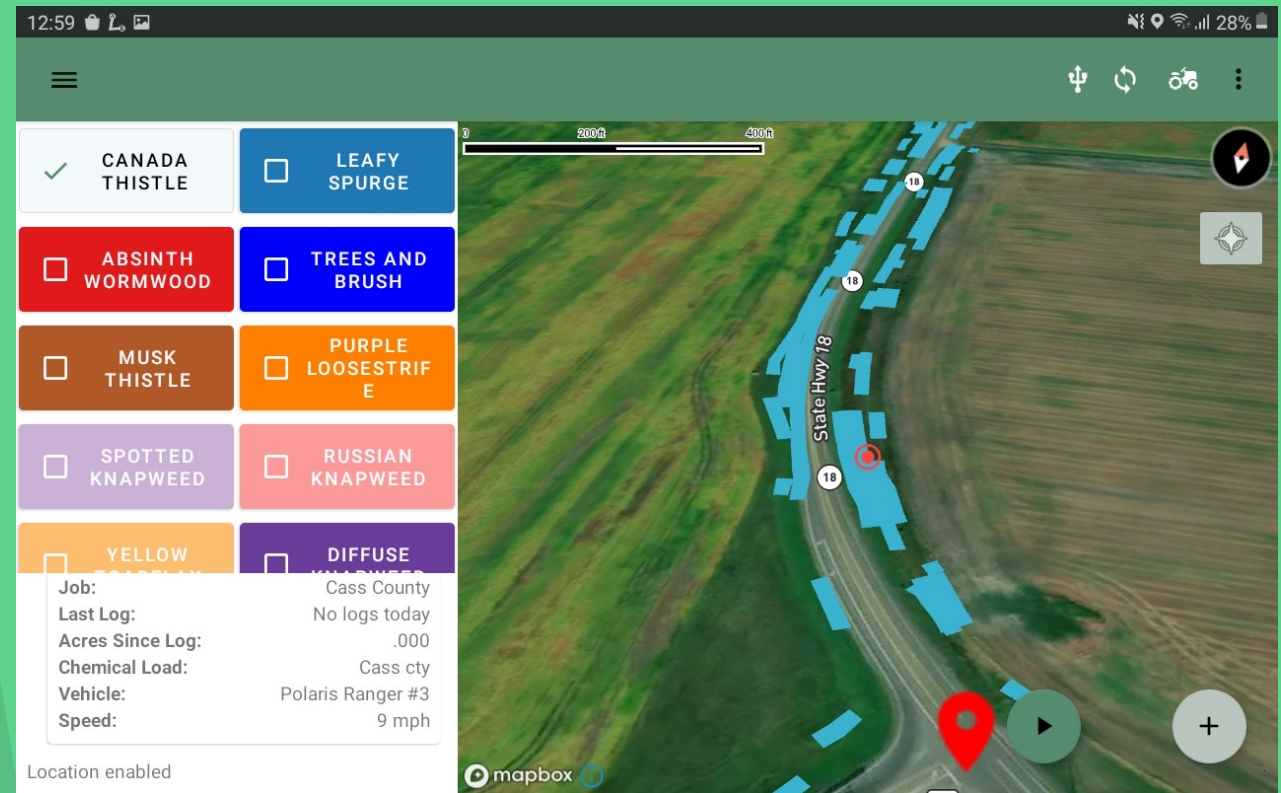
# Spray Mapping Options

- ▶ Boom - Polygon
- ▶ Hose Reel Line/Backpack - Line
- ▶ Hose Reel Point - Point
- ▶ Software button - Add Spray Point

# No Internet Needed While Spraying

- ▶ Works offline, no cell plan needed.
- ▶ Everything stored on the tablet.
- ▶ You can download satellite maps offline to give you landmarks while spraying.

Our Goal:  
To Build The  
Simplest Way for  
you to Track your  
Spraying



# On-Site Installation

- ▶ We bring all the cables, mounting hardware.
- ▶ We don't leave until you can track your spraying.
- ▶ Installation cost varies based on your sprayer and location.
- ▶ Installers based in North Dakota and Idaho
- ▶ May not need on-site install if using one of our supported sprayer controllers

# SpraySync Bundle

## All the Hardware You Need

- ▶ Tablet: Samsung Galaxy Tab Active5 128GB with cell data capability – Verizon/AT&T
- ▶ Tablet Mount: Custom fit tablet mounts (RAM Mount custom fit to the Active5)



# SpraySync Bundle

## All the Hardware You Need

- ▶ Cable to monitor up to 11 12V Voltage Signals (to Solenoids/Ball Valves)
- ▶ Cable to monitor up to 4 flow switches
- ▶ USB Cable To Connect Tablet to Monitor Box





# SpraySync Platform

## All the Software You Need



YOU DON'T NEED TO USE  
MULTIPLE PRODUCTS OR  
APPLICATIONS TO SPRAY.



SPRAYSYNC ANDROID  
MOBILE APP



SPRAYSYNC WEB SITE FOR  
ADMINISTRATION AND  
REPORTING

# No Desktop Software To Install

- ▶ Android App
- ▶ Web Site
- ▶ Both automatically updated



# Simple Pricing

- ▶ One-time cost for the hardware bundle.
- ▶ Annual service fee.

# Simple Pricing Hardware Bundle

- ▶ SpraySync WT1 bundle
- ▶ One time cost, \$3,500, includes:
  - ▶ Tablet
  - ▶ Tablet Mount + hardware
  - ▶ WT1 Monitor Box - Up to 11 voltage/nozzle inputs and up to 4 flow switch inputs



# Simple Pricing

## Annual Service Fee

- ▶ Per year: \$500 base + \$300 per SpraySync Monitor box
- ▶ 1 box = \$800/year
- ▶ 2 boxes = \$1,100/year

# Simple Pricing

## Annual Service Fee

- ▶ Unlimited users included.
- ▶ Unlimited jobs, track as much data and with as many users.
- ▶ Share your data with as many people as you would like.
- ▶ We have no per user charge, only per box

# Iowa Living Roadway Trust Fund

- ▶ \$4,500 is provided for spray tracking at 20% match req

**Table 1. Examples of Electronic Equipment Eligible for LRTF Funding**

Equipment Type	Match Requirement	Maximum Award
<b>Communications Equipment</b>		
Two-way radio communication <sup>1</sup>	20%	\$2,000
Intercom <sup>1</sup>	20%	\$2,000
<b>GPS Equipment</b>		
GPS Equipment (and Training)	20%	\$4,500
GIS Software (and Training)	20%	\$2,000
<b>Automated Spray Tracking Equipment</b>		
Automated spray tracking hardware/software	20%	\$4,500
<b>Other Electronic Equipment</b>		
Action cameras <sup>2</sup>	20%	\$2,000
Unmanned aerial vehicles (i.e., drones) <sup>2</sup>	20%	\$2,000

# What Was Added in the Past 12 Months?

- ▶ Add your own map data layers to be able to see on the tablets.
- ▶ Support for Mosquito Fogger tracking (chemical tracked in oz/minute instead of oz/acre)
- ▶ You can add offset your GPS location for booms that are ahead/behind your sprayer
- ▶ Added Last Known Location tracking, can opt-in to having every tablet report location and view live location on web site



# Where do you go for more help?

- ▶ Our website <https://www.spraysync.com> has walkthrough videos
- ▶ Stop by our vendor booth and we can give you a demo
- ▶ Grab a card and give me a call or email

# Connect Online With Us

- ▶ Jeremy Zerr: [jeremy@spraysync.com](mailto:jeremy@spraysync.com)
- ▶ Web Site: [spraysync.com](http://spraysync.com)
- ▶ [SpraySync Youtube Channel](#)



**SpraySync**