AI for Climate & Weather Resilience on the Farm
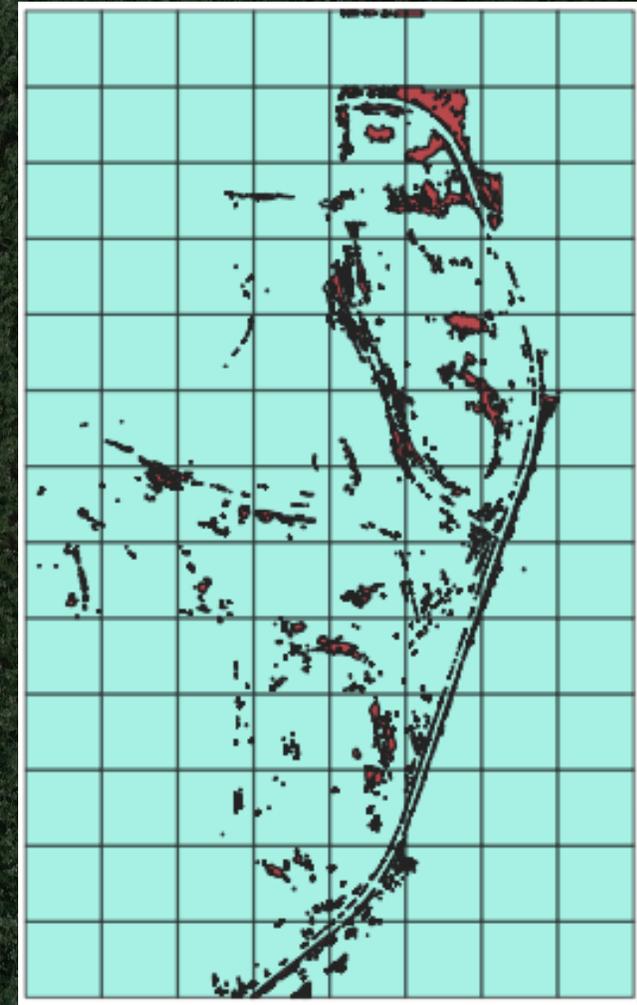
Reducing uncertainty. Improving decisions. Building resilience.

Andrew Nelson
5th Generation Farmer and Software Engineer

Today: Reducing uncertainty

- AI Microclimate Predictions

    Ground level weather insights

- Weed Detection

    Lower chemical use, same effectiveness

- Natural language crop advising

    Research assistant for the land-grant publications

- Variable Rate Crop Protection Application

    Applying inputs at the rate needed in sub-acre

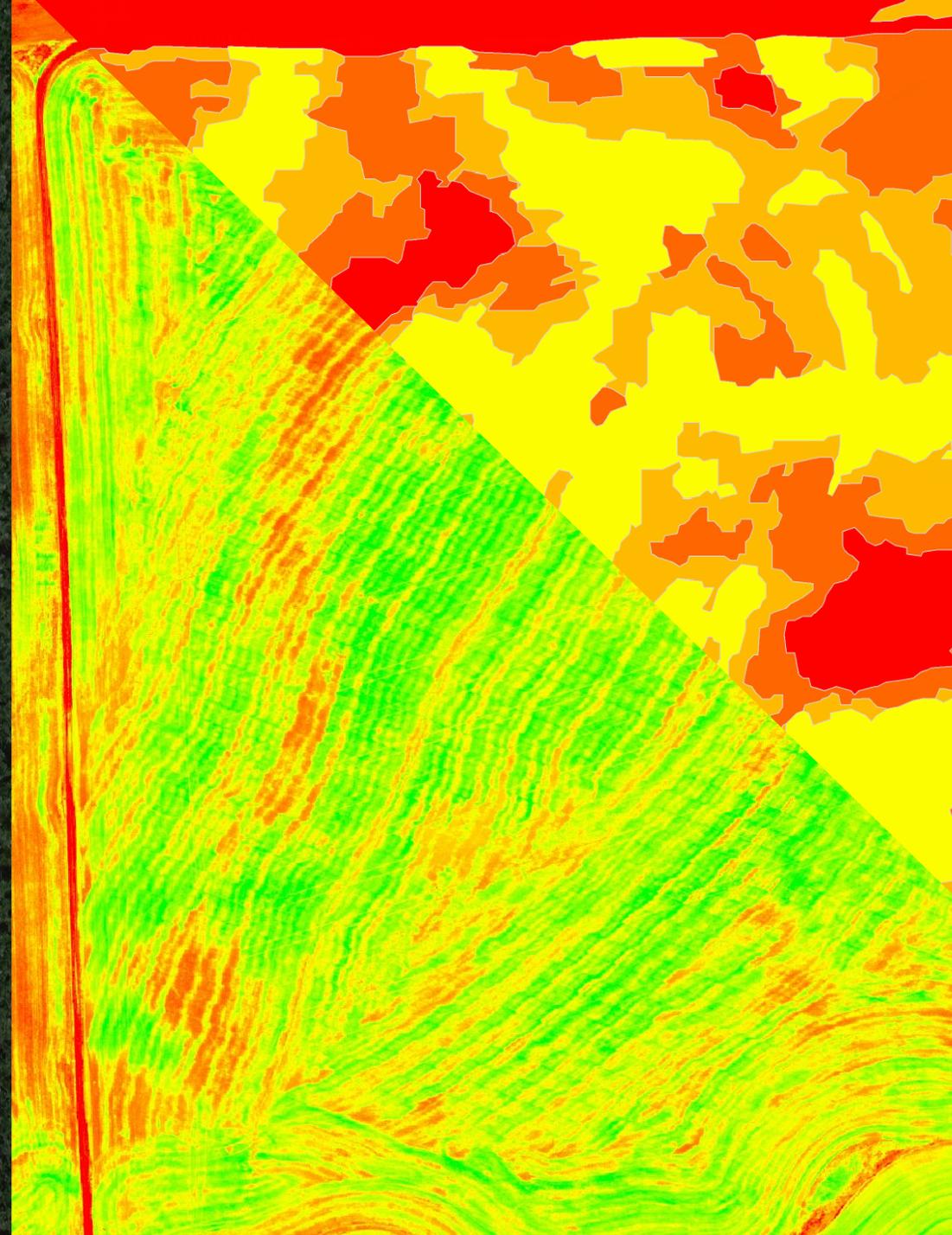   increments

Near Term: Proactive assistance

- Automated input prescriptions

    Hands free drone/satellite generation

- AI guided and robotic field operations

    Weeding that adapts in real time

- Natural-language farm operations

  planning

    AI for farm for logistics, labor, and finance

- AI field scouts

    Proactive monitoring instead of infrequent visits

Far Term: Adapting

- AI-accelerated crop genetics

  Building varieties for future climate conditions

- AI built Farm-scale digital twins

  Accurately simulating weather, soils, and

  management decisions

- Forecast-driven seed and fertilizer

  strategies

  Planning months ahead, not reacting mid-season

- Real-time nutrient sensing

  Closing the loop between plant health and inputs

Thank You!