

# Photos of USDA-ARS Maize Water Productivity Trials 2008 - 2011

Tom Trout



Photo 1. USDA-ARS Limited Irrigation Research Farm, Greeley, CO

**Pinto  
Bean  
Varieties**

**WPF  
Trials**

**Weather  
Station**

**Wheat  
Varieties**

**Bowen  
Ratio ET  
55% Corn**

**Bowen  
Ratio ET  
100% Corn**

**Bowen  
Ratio ET  
100% Pinto  
Bean**

Photo 2. LIRF 2010 (false  
color aerial image)

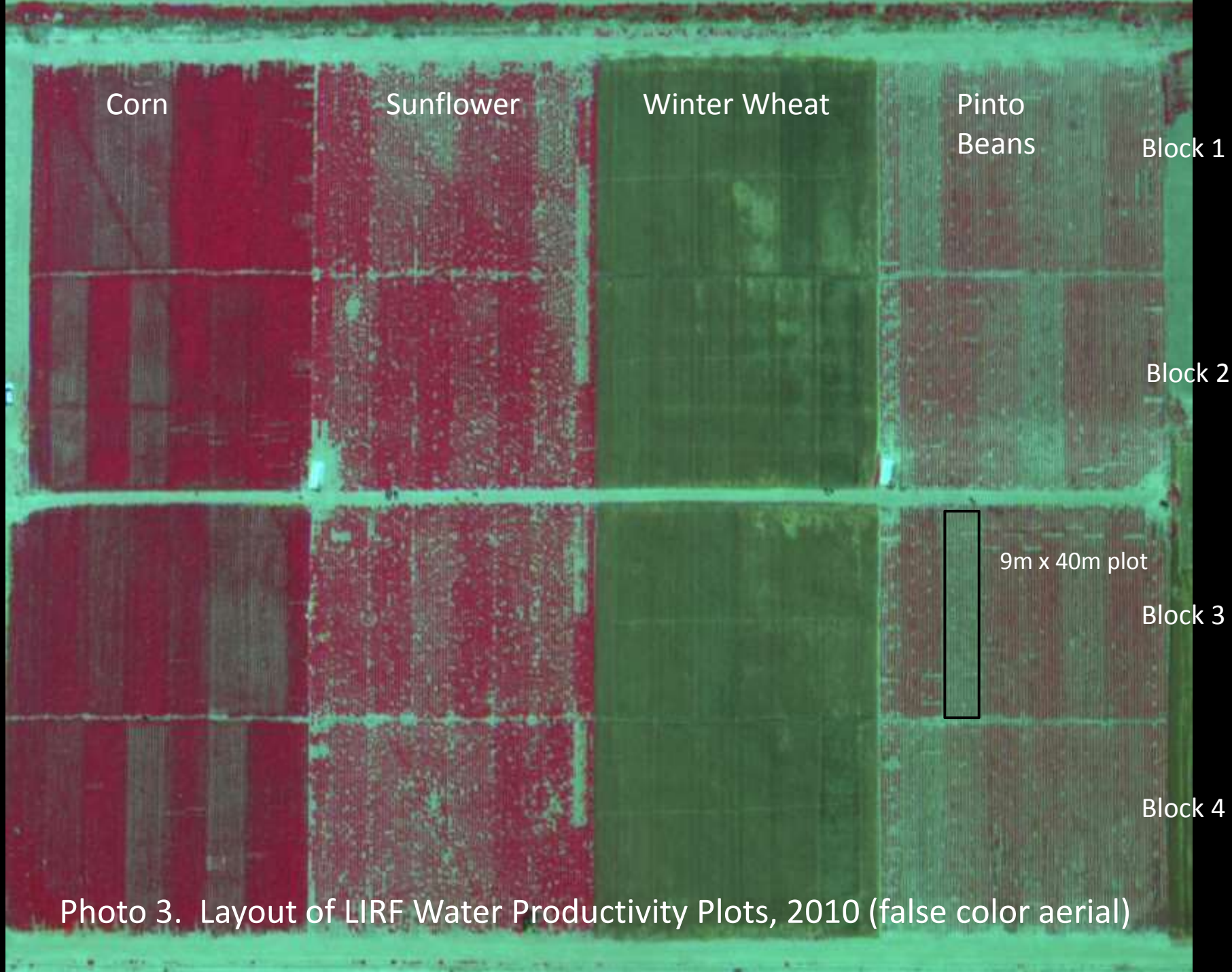


Photo 3. Layout of LIRF Water Productivity Plots, 2010 (false color aerial)



Photo 4. Aerial Image of LIRF Water Productivity Plots, 2008

Photo 5. LIRF WPF surface drip irrigation system showing delivery to surface drip tubing in every row from a 12-row manifold from a riser at the corner of each plot



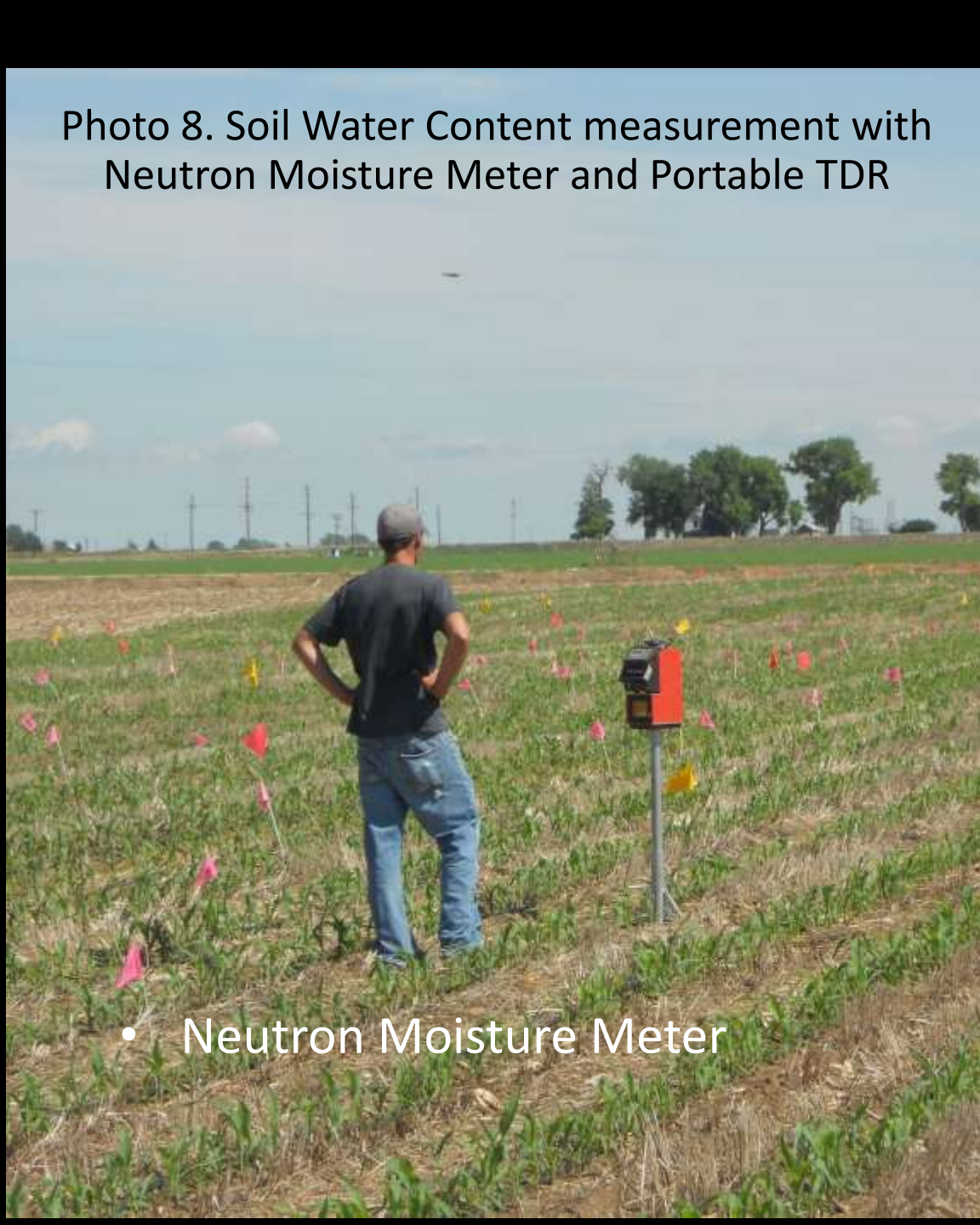


Photo 6. LIRF WPF Trial irrigation control and monitoring system showing hydraulic valves and turbine flow meters for each treatment.



Photo 7. LIRF Weather Station – CoAgMet  
GLY 04

Photo 8. Soil Water Content measurement with  
Neutron Moisture Meter and Portable TDR



- Neutron Moisture Meter



- Portable TDR  
(Minitrase)



Photo 9. Young maize planted in wheat residue, and drip tubing



Photo 10. Maize at two growth stages.



Photo 11. Impact of water treatment on maize growth at tasseling showing short plants due to water stress in the foreground.

Photo 12. WPF Maize on 8/4/08 showing effects of treatments T1 and T6 on crop growth and condition



Treatment T1

Irrigation: 300mm

Precip: 40mm

ETc: 300mm

Treatment 6

Irrigation: 115mm

Precip: 40mm

ETc: 150mm

Photo 13. WPF Maize on 7/28/08 showing effects of treatments T1 and T6 on crop growth and condition. Images from high clearance reflectance tractor used to determine canopy ground cover

T1:  $fc = 91\%$



T6:  $fc = 63\%$





Photo 14. Effect of water treatment on maize ear size and grain fill



Photo 15. Effect of 7/27/09  
hail on maize crop showing  
shredded leaves

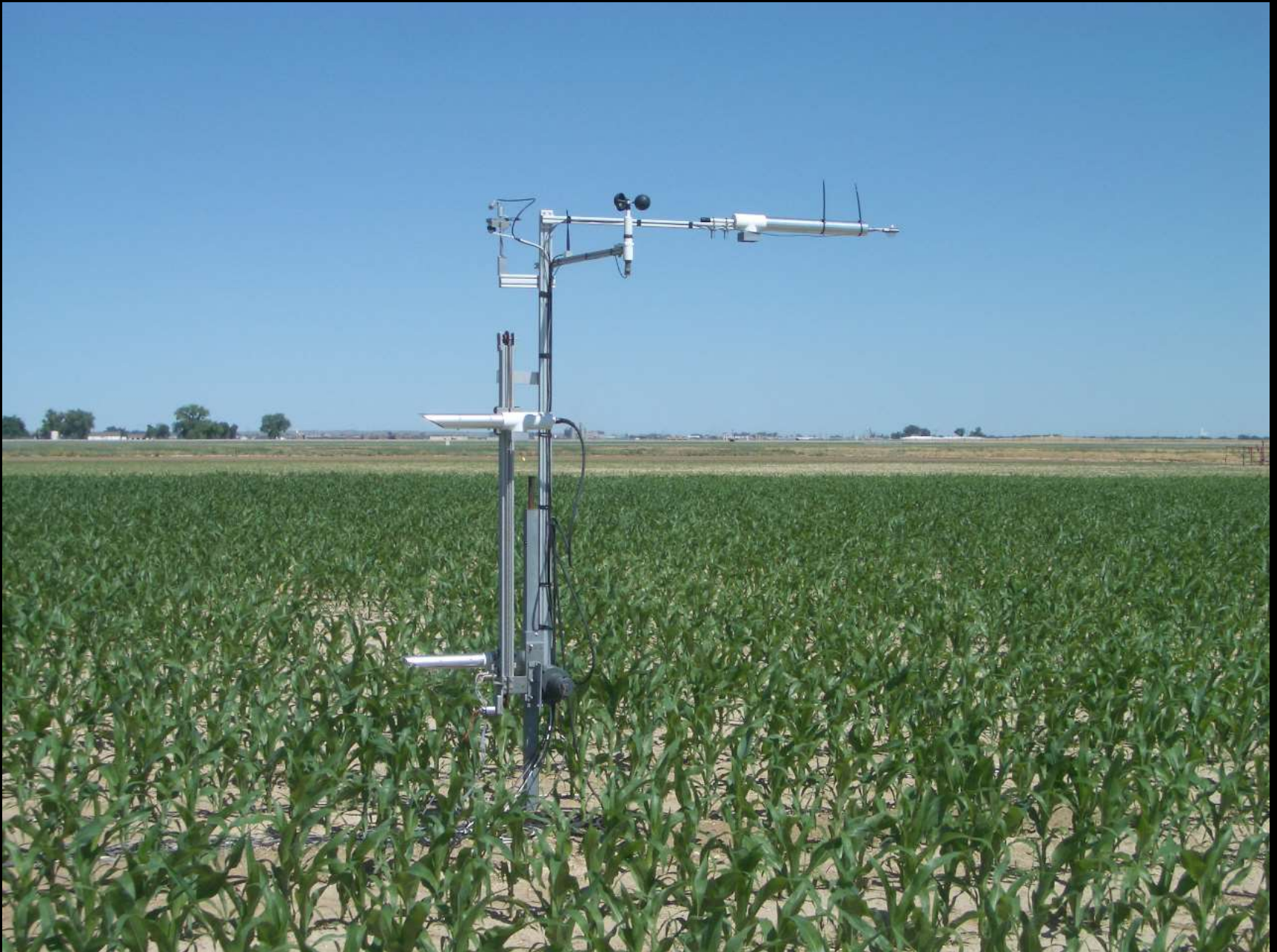


Photo 16. Bowen Ratio Energy Balance instrumentation in adjoining maize field, 2010



Photo 17. High clearance  
reflectance tractor taking canopy  
ground cover images