



Using Climate Engine to Prioritize Meadow Restoration and Assess Meadow Conditions

Gwen Starrett, ACCG member

Upper Onion Valley, photo by Chris Fuller

Sierra Nevada Meadow Vulnerability to Climate Change

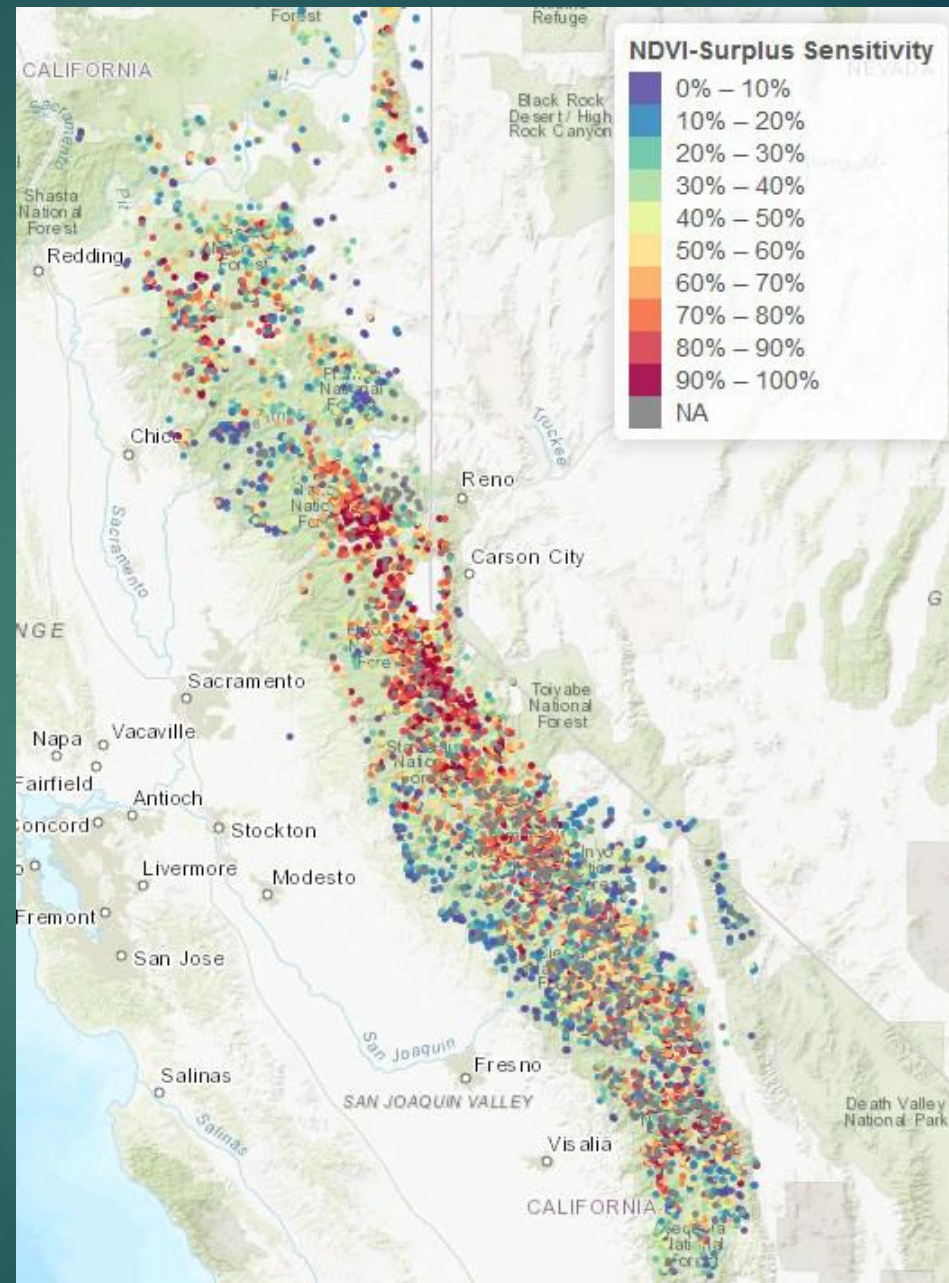
- ▶ Goal: Develop a decision-support tool to help prioritize meadow restoration based on vulnerability to climate change
- ▶ Objective: ACCG establishes priorities for meadow restoration
- ▶ Project Scientists: Shana Gross (USFS) and Meredith McClure (CPS)
- ▶ Analysis: Computer analysis of 6000 meadows over time. How do they respond to changing temperature and precipitation?
- ▶ Funded by California Landscape Conservation Partnership
- ▶ Work completed in summer 2018
- ▶ Shana Gross will present to ACCG in February 2019

Sierra Nevada Meadow Restoration Prioritization Process

Vulnerability Assessment

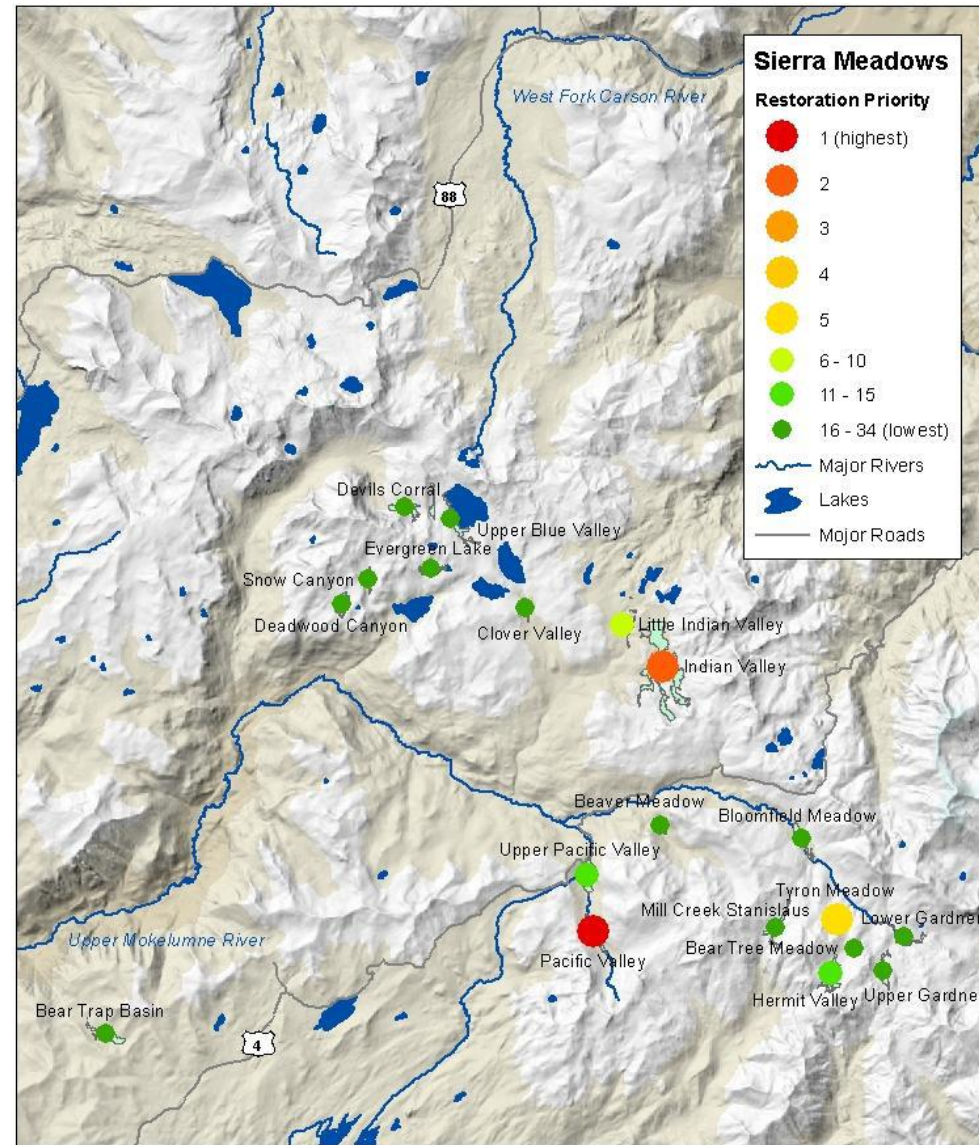
Cornerstone meadows are
sensitive to snowpack,
rainfall variability

Prelim results presented at
2017 ACCG Monitoring
Symposium



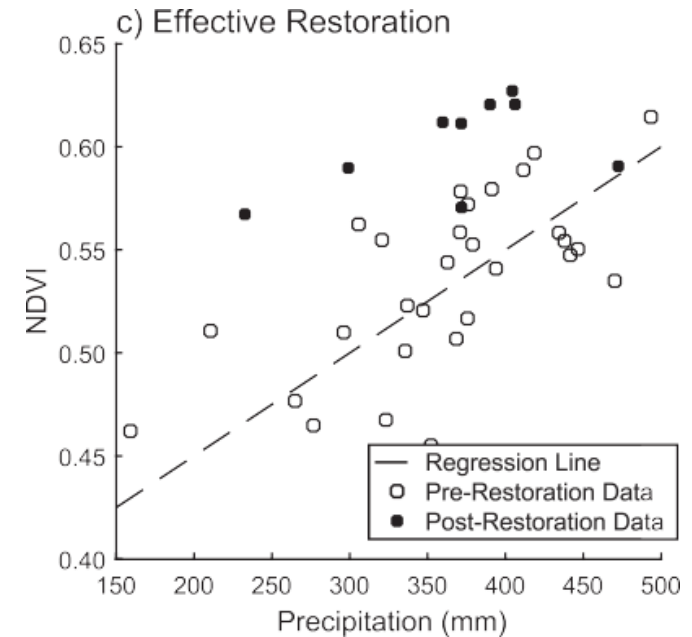
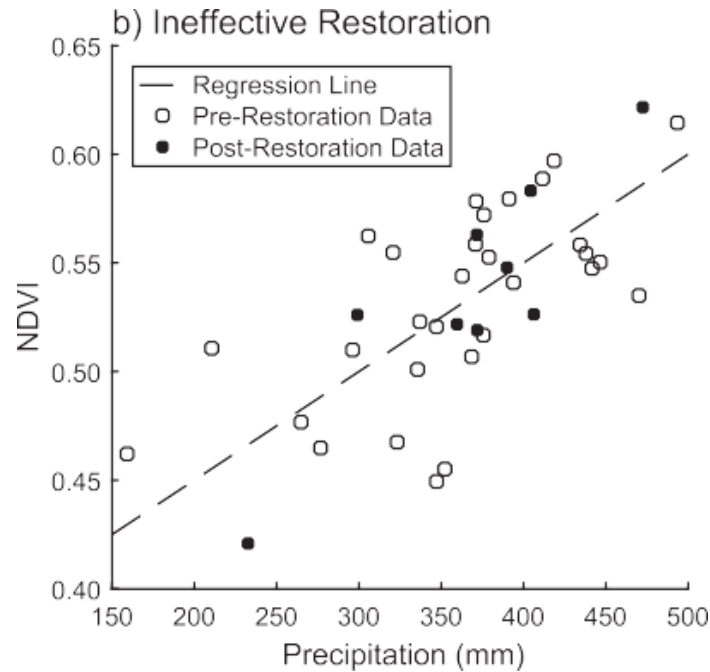
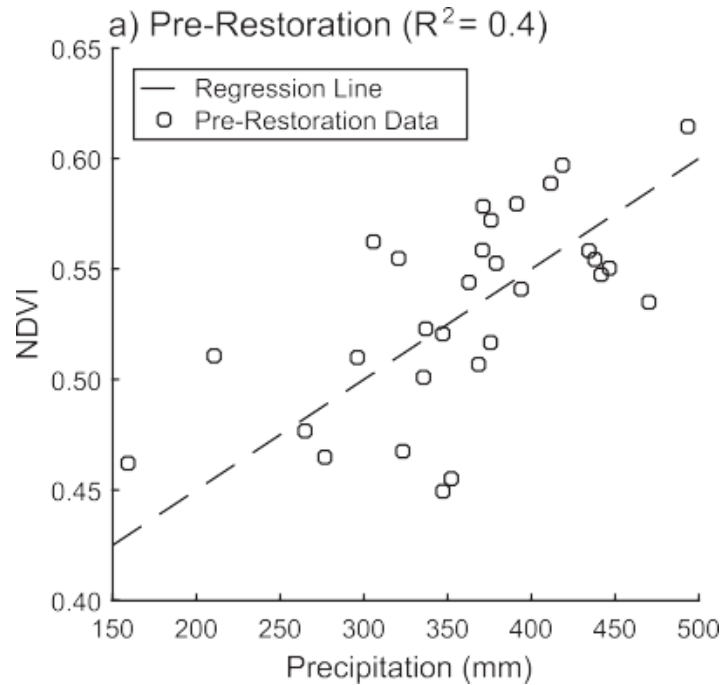
Sierra Nevada Meadow Restoration Prioritization Process

ACCG determines other
factors important in
selection process

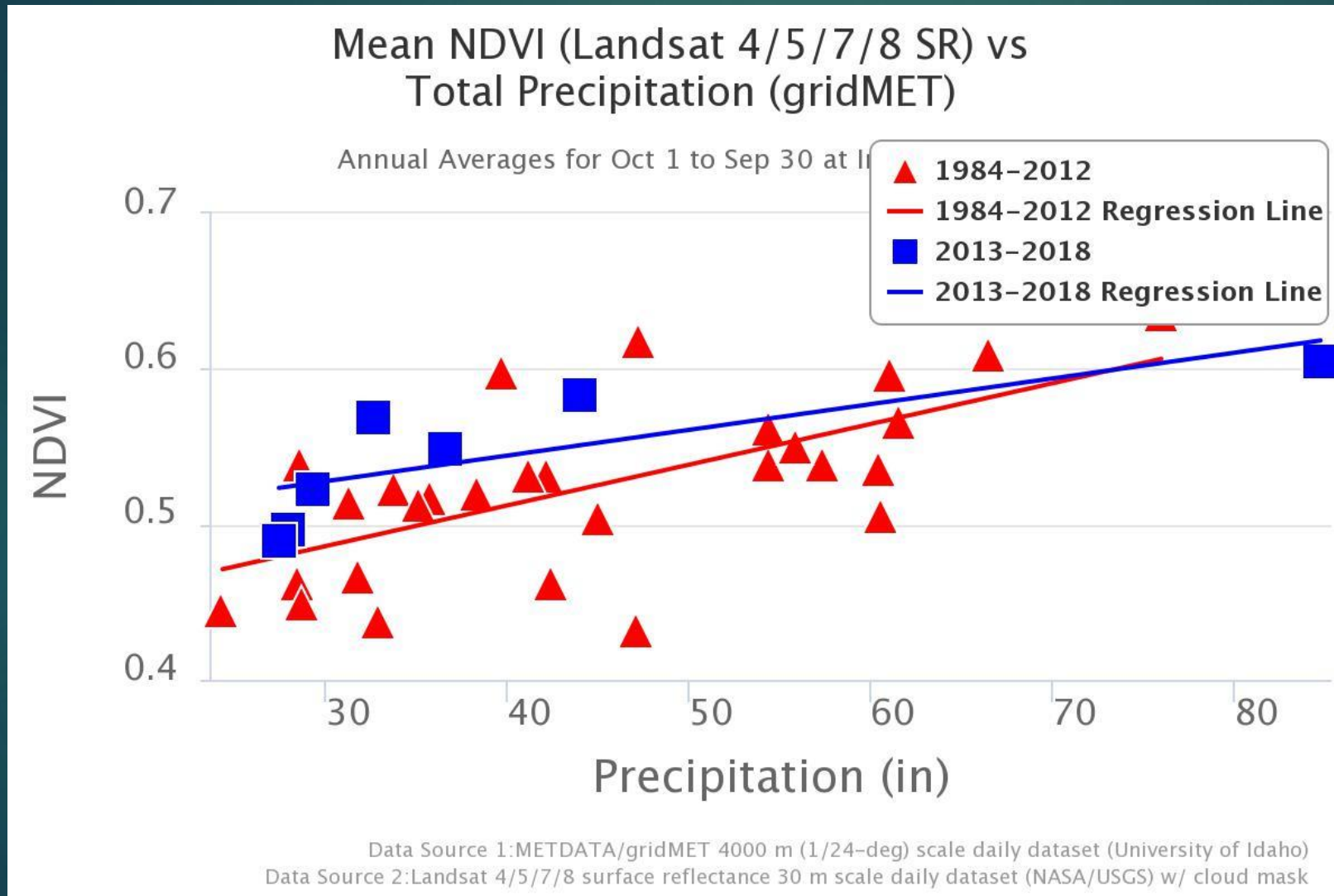


American Rivers Scorecard Priorities

Using Climate Engine to evaluate restoration effectiveness



Indian Valley – Climate Engine Data

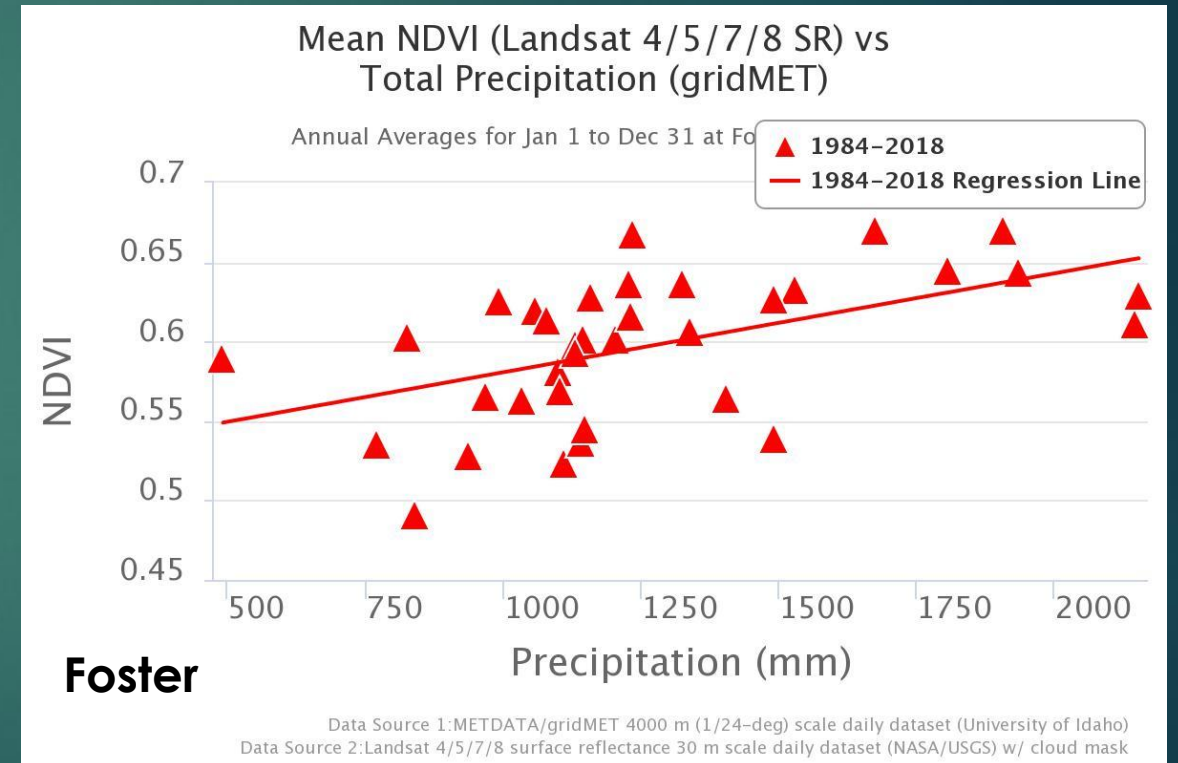
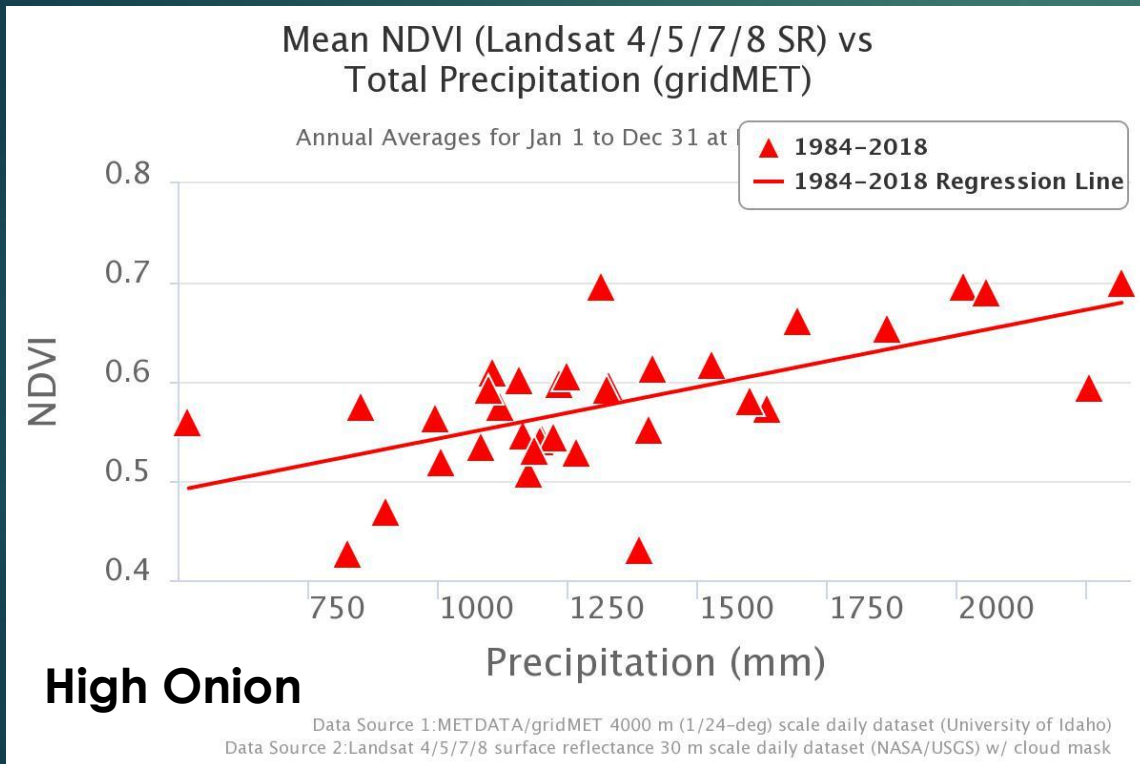


Application at
ClimateEngine.org

Training was
provided to ACCG
members

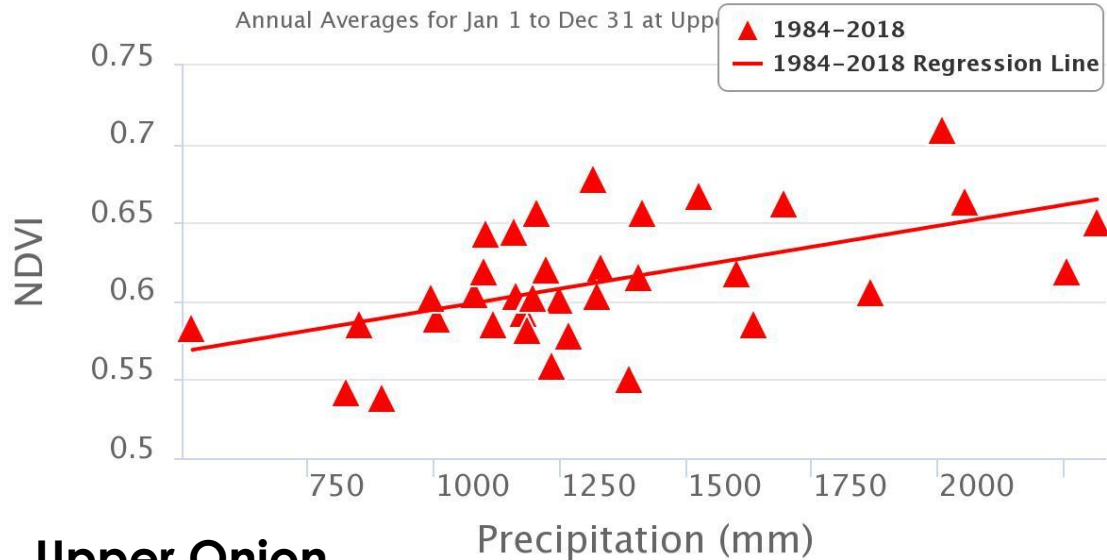
NDVI – indicator
of plant vigor.
Lower values –
plant stress

Pre-Restoration Conditions for Meadows



Pre-Restoration Conditions for Meadows

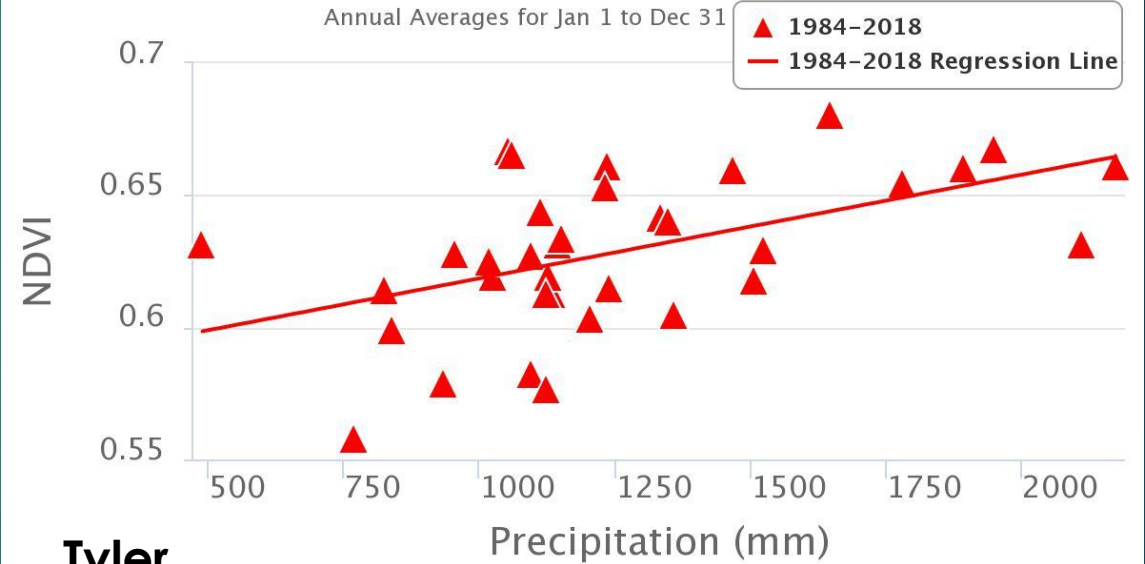
Mean NDVI (Landsat 4/5/7/8 SR) vs
Total Precipitation (gridMET)



Upper Onion

Data Source 1: METDATA/gridMET 4000 m (1/24-deg) scale daily dataset (University of Idaho)
Data Source 2: Landsat 4/5/7/8 surface reflectance 30 m scale daily dataset (NASA/USGS) w/ cloud mask

Mean NDVI (Landsat 4/5/7/8 SR) vs
Total Precipitation (gridMET)



Tyler

Data Source 1: METDATA/gridMET 4000 m (1/24-deg) scale daily dataset (University of Idaho)
Data Source 2: Landsat 4/5/7/8 surface reflectance 30 m scale daily dataset (NASA/USGS) w/ cloud mask