# Slide 1: Title

* Good morning and thanks for having me here. My name is Seth Frame and I am with Alpine Archaeological Consultants based in Montrose, Colorado. The subject I will present today is entitled: Rock Art Recording at the Wolf Creek Pictograph Site (5RT90).

# Slide 2: General LOcational Map

* Here we can see our state of Colorado with our location here in Salida in relation to Steamboat Springs as well as Montrose where Alpine is located. This gives you an idea of the area that I will be talking about is. As you can see our site is located in the Northwestern corner of the state close to Steamboat Springs in Routt County.

# Slide 3: Old and New Compared 1

* In 2015 Alpine was hired by the Colorado Department of Transportation (CDOT) to excavate and record the rock art at 5RT90 also known as the Wolf Creek Pictograph Site. A previous recordation of the site was done in 1988 and Alpine’s goal was to expand upon that recording utilizing new techniques and technology. In addition to the Alpine crew we were assisted with the recording by volunteers from the Vermillion Chapter of the Colorado Archaeological Society.
* Here we can see a photo from the rock art recordation that occurred at that time with one taken in 2015. It is obvious that there has been severe degradation to the rock art in the intervening years.

# Slide 4: Old and New Compared 2

* And here is another example of the damage that the rock art has suffered.

# Slide 5: Threats to Rock art

* There are many threats to rock art including vandalism, effects of human activities, and physical and biological weathering. This photo from the site shows vandalism in the form of graffiti as well as the removal of panels. There are also signs of natural spalding of the rock surface.

# Slide 6: Pole-ish photography

* Here we have a slide showing our photographing process. We had a medium format digital SLR camera mounted on an extendable painter’s pole. With a downloadable app the camera and an Android cell phone can be paired, with the camera controls and viewfinder accessible through the phone.

# Slide 7: dstretch

* Decorrelation Stretch an algorithm to enhance multispectral images. It was first developed by the Jet Propulsion Laboratory for use in enhancing photos from Mars. Later Jon Harman took this algorithm and created a plugin for the ImageJ image processing program. This was intended to be used in the recording of rock art. Recently Harman has publish an IPhone and IPad app for Dstretch.

# slide 8: imagej dstretch

* This is what ImageJ and the Dstretch plugin look like.

# Slide 9: Colorspaces 1

* The Dstretch plugin contains access to multiple preset colorspaces that easily facilitates photo enhancement. Some are standard RBG and LAB colorspaces and others are ones created by Jon Harman. There is also the option to create your own custom colorspaces.

# Slide 10: colorspaces 2

* As a starting point for new users, Harman offers some suggestions for colorspaces that are best for different types of pigments.

# Slide 11: Examples of the Colorspaces

* Here are just some of the examples of the different colorspaces available through the plugin. What we see are the false color images created by the plugin.

# Slide 12: Composite Process

* There is a process to go from the raw photos to the finished composites that you will see later in the presentation.
  + The first step is to run through a number of Dstretch colorspaces. This allows for all aspects and colors of pigments to be enhanced.
  + The next step is to load the colorspace images into Photoshop and extract the pictographs from the background.
  + These enhanced pictographs can then be overlaid on the original photo with a transparency

# slide 13: Photography tips

* Included on the Dstretch website are included tips for digital photography. These six tips can help users make the most out of their time and the software.

# slide 14: Photos from the site

* The Wolf Creek Pictographs have been split into several panels, each having a letter designation. The next few slides will be split up by those lettered panels.

# slide 15: Panel A - Original

# Slide 16: Panel A - Composite

# Slide 17: PANEL B - ORIGINAL

# Slide 18: PANEL B - COMPOSITE

# Slide 19: PANEL C – ORIGINAL

# slide 20: PANEL C - Composite

# slide 21: PANEL D – ORIGINAL

# slide 22: PANEL D - Composite

# Slide 23: Panel E – Historic Inscriptions

* A portion of the rock art at the site includes some historic inscriptions. While Dstretch can be used to bring out inscriptions like this or petroglyphs it function much better on pictographs.

# Slide 24: PANEL F – ORIGINAL

# Slide 25: PANEL F - Composite

# Slide 26: 5RT6 – original 1

* While out at the site we were given permission to visit and record an additional nearby rock art panel, 5RT6.

# Slide 27: 5RT6 – Composite 1

# Slide 28: 5RT6 – ORIGINAL 2

# Slide 29: 5RT6 – COMPOSITE 2

# Slide 30: Thank You