

# Monitoring with Panoramas and Fixed Photopoints:

Monitoring recreational impacts, and assessing  
habitat change from the office  
using panoramic and fixed photopoints.



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**Panoramic Photopoint** = *multiple photographs taken from one specific point, stitched together to form a*



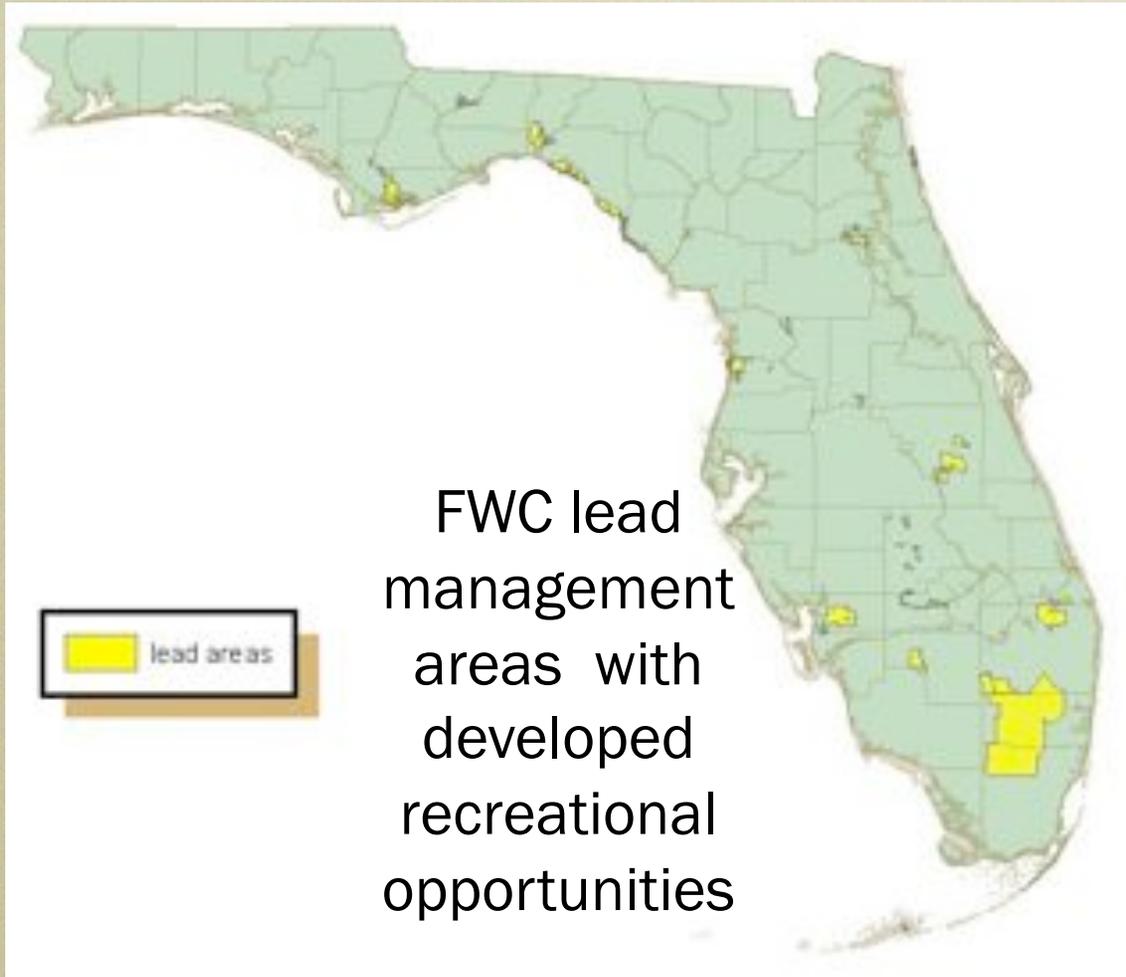
**Fixed Photopoint** = single photograph taken at a specific point in a specific direction (bearing).



# Why use fixed and/or panoramic photopoints for monitoring?

- Shows condition of area at one place and time.
- Shows change over time at a particular place.
- Possible to monitor many areas in a relatively short period of time in the field (to be later assessed from the office).
- Quick and easy.





**Shows condition of area at one time and place.**



# Shows change over time at a particular place (site condition)



FALL 2007



SPRING 2008



# Shows change over time at a particular place (*inventory*).



FALL 2007



FALL 2008



# Situations where photopoints are utilized as an efficient way to monitor impacts.

- Trailheads
- Points along trail
- Parking lots
- Camping areas
- Wildlife viewing blinds
- Observation towers
- Boardwalks
- Boat ramps/paddling launches
- Picnic areas
- and many other use areas



# Trailheads



SPRING 2008



FALL 2008



# Points along trail



SPRING 2008



FALL 2008



# Parking lots



FALL 2007



SPRING 2008



# Camping areas



FALL 2007



SPRING 2008



# Wildlife viewing blinds



SPRING 2008



FALL 2008



# More wildlife viewing blinds...



FALL 2007



SPRING 2008



# Boardwalks



FALL 2007



FALL 2008



# Picnic areas



FALL 2007



FALL 2008



# Boat ramps/paddling launches



FALL 2007



SPRING 2008



# Panoramic photopoints



# Show change over time at a particular place (site condition)



SPRING 2008



FALL 2008



# What you will need...

## *IN THE FIELD...*

- Camera tripod
- Panoramic mount
- Digital camera
- GPS unit
- Compass
- Tape measure
- Tree tag or other marker (to mark points of panoramas)
- Field notebook/field pencil

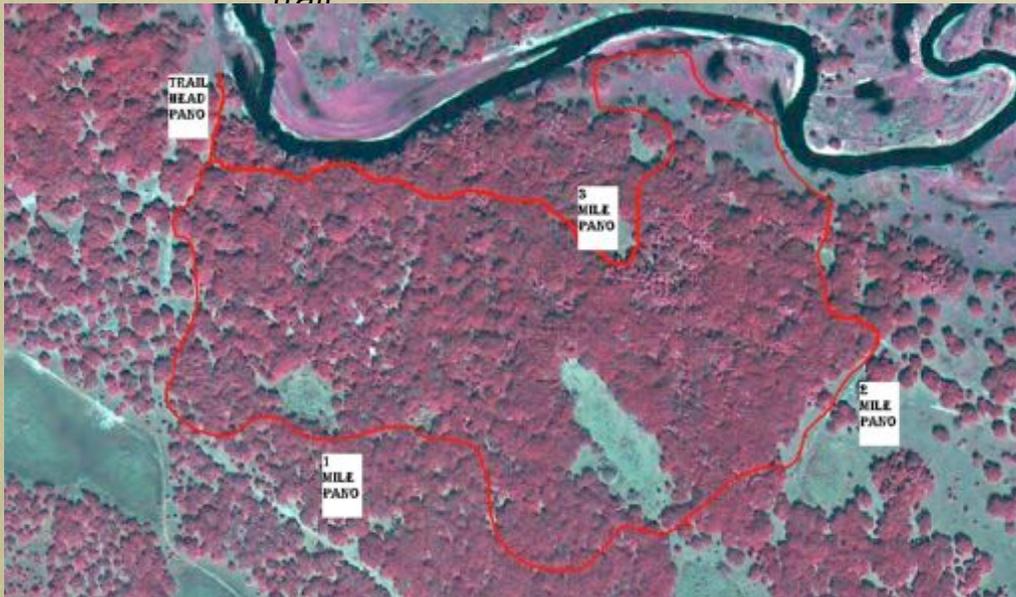
## *IN THE OFFICE...*

- Computer (laptop preferred)
- Image database software
  - ACDSsee Photo Manager
  - Picasa
  - Adobe Photoshop Album
- Panorama creation software
  - VR Worx
  - Hugin
  - Canon Photostitch
  - AutoDesk Stitcher
  - Auto Pano Pro
  - Mapsa VR
- Photo editing software
  - Corel Paint Shop
  - Adobe Photoshop Elements 6
  - Paint.net
  - Gimp.org

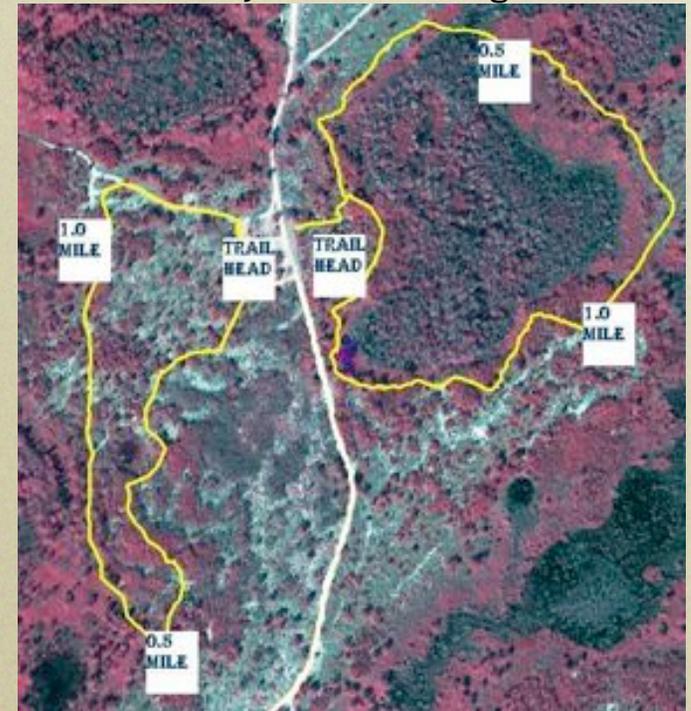


# Photopoint protocol for different use areas.

- For trails  $\geq 2$  miles in length
  - Panorama at trailhead
  - Panorama every 1.0 miles along trail



- For trails  $< 2$  miles in length
  - Panorama at trailhead
  - Panorama every 0.5 miles along trail



# In-field procedure

- Connect together tripod, panoramic mount, and digital camera.
- Assure that tripod is located at exact/correct photopoint location (using GPS coordinates, marker tag, and/or field notes).
- Set camera lens height at 60" above ground surface (using a tape measure).
- Assure that panoramic mount on tripod is level.
- Assure that camera is mounted level (perpendicular to panoramic mount).
- Using a compass, position the camera facing due north.
- Set lens to full wide zoom.
- Snap photo.
- Turn camera clockwise 20 degrees until it "clicks" into place for next photo.
- Repeat for a total of 18 photos/360 degrees (# of photos can vary due to different focal lengths of digital cameras).
- Take note of image #'s on your camera.
- *or* take picture of hand after 18<sup>th</sup> image in order to differentiate between panoramic photopoint locations.



# Parking lots, picnic areas, campsites, etc...

*Panorama centered*



# Wildlife viewing blinds, boat ramps, paddling launches, etc...

*Fixed photopoint adjacent to/in front of*



# Observation deck, tower, boardwalk, etc...

*Fixed photopoint upon approach...*



*Optional panoramic photopoint of view*

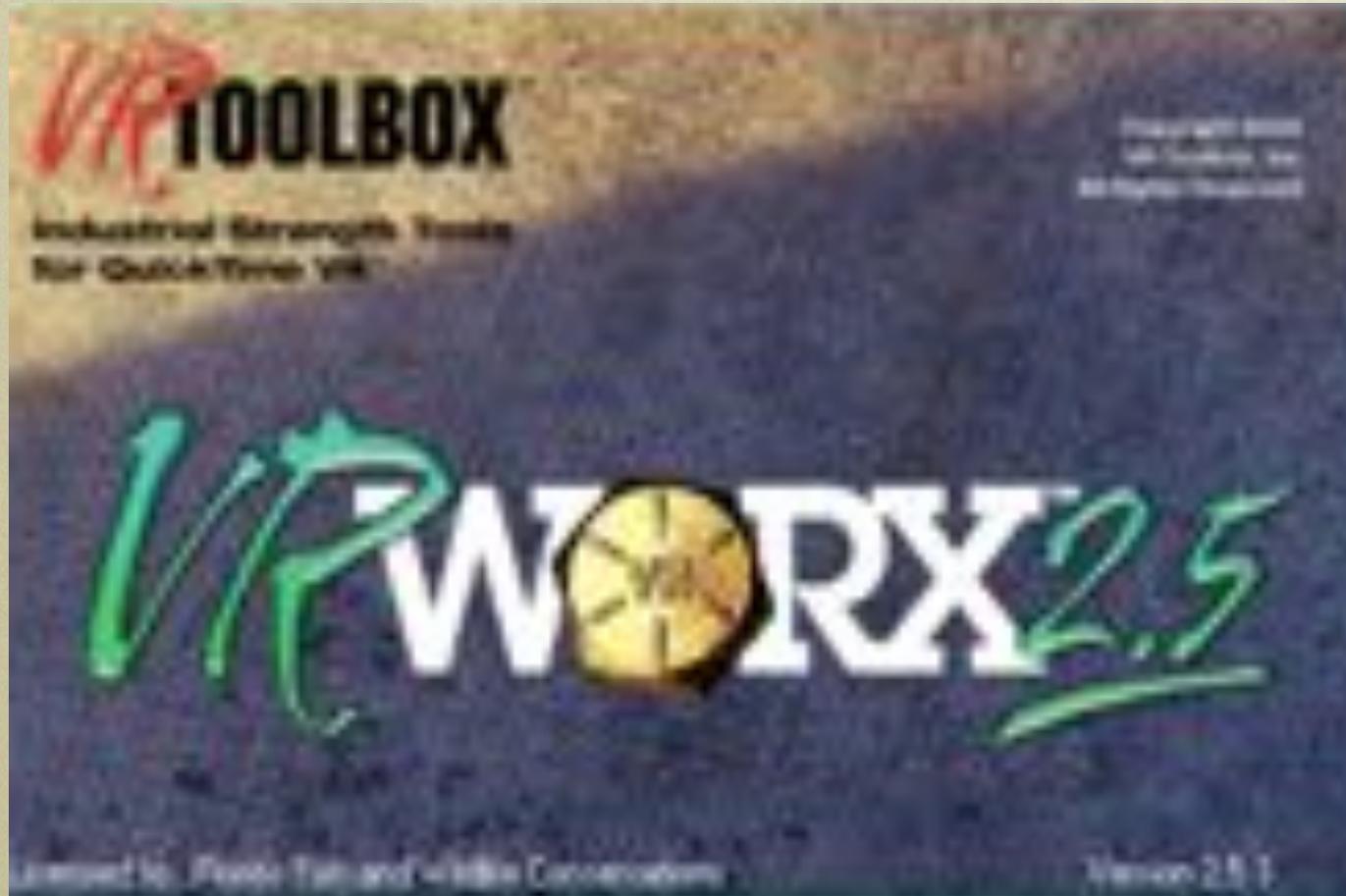


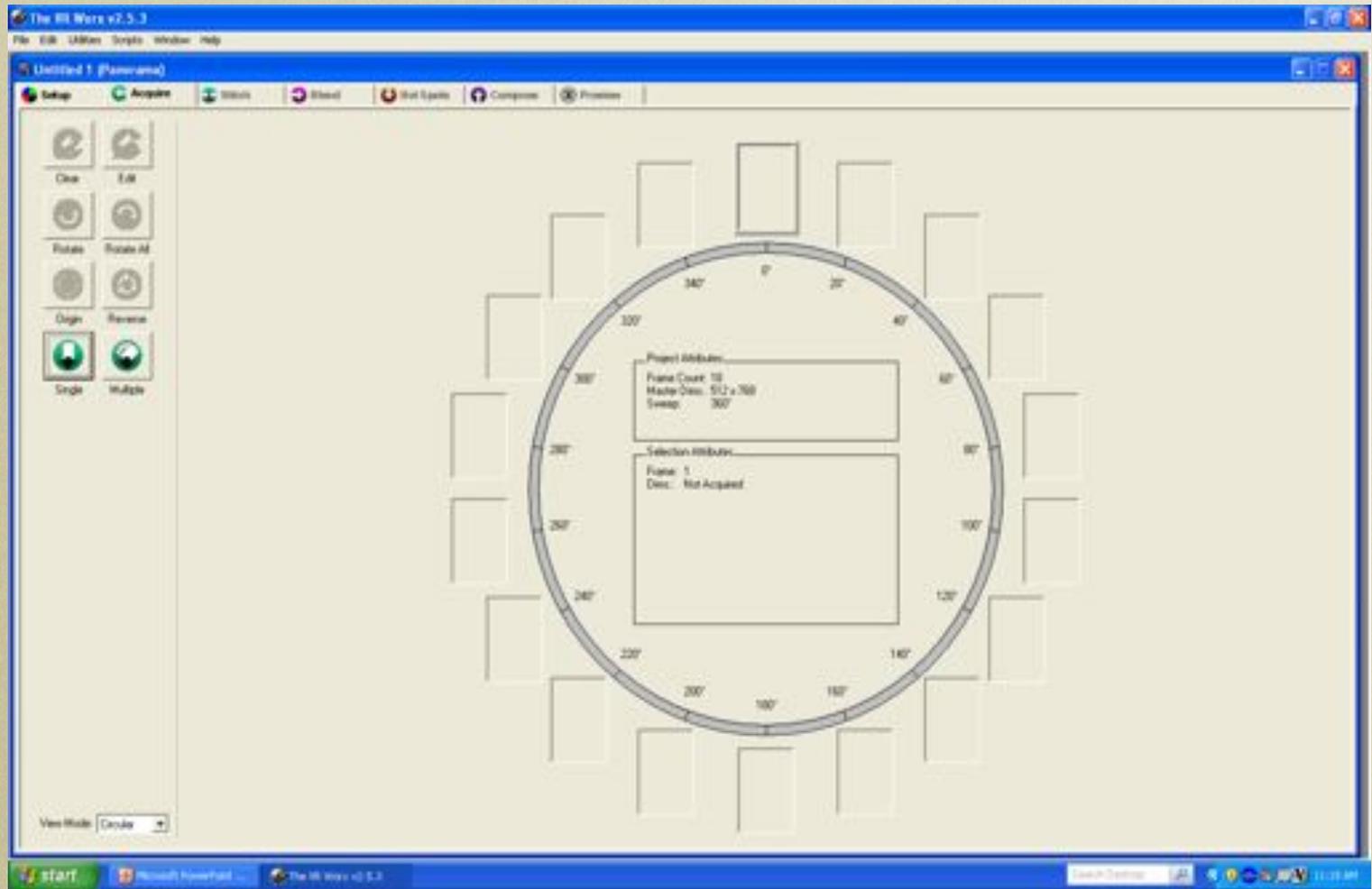
# Organizing your data from the field

- Digital camera and computer cable
- Computer (laptop preferred for convenience “on the road”)
- Image database (for image organization)
- Organize by area, use area type, season, etc...

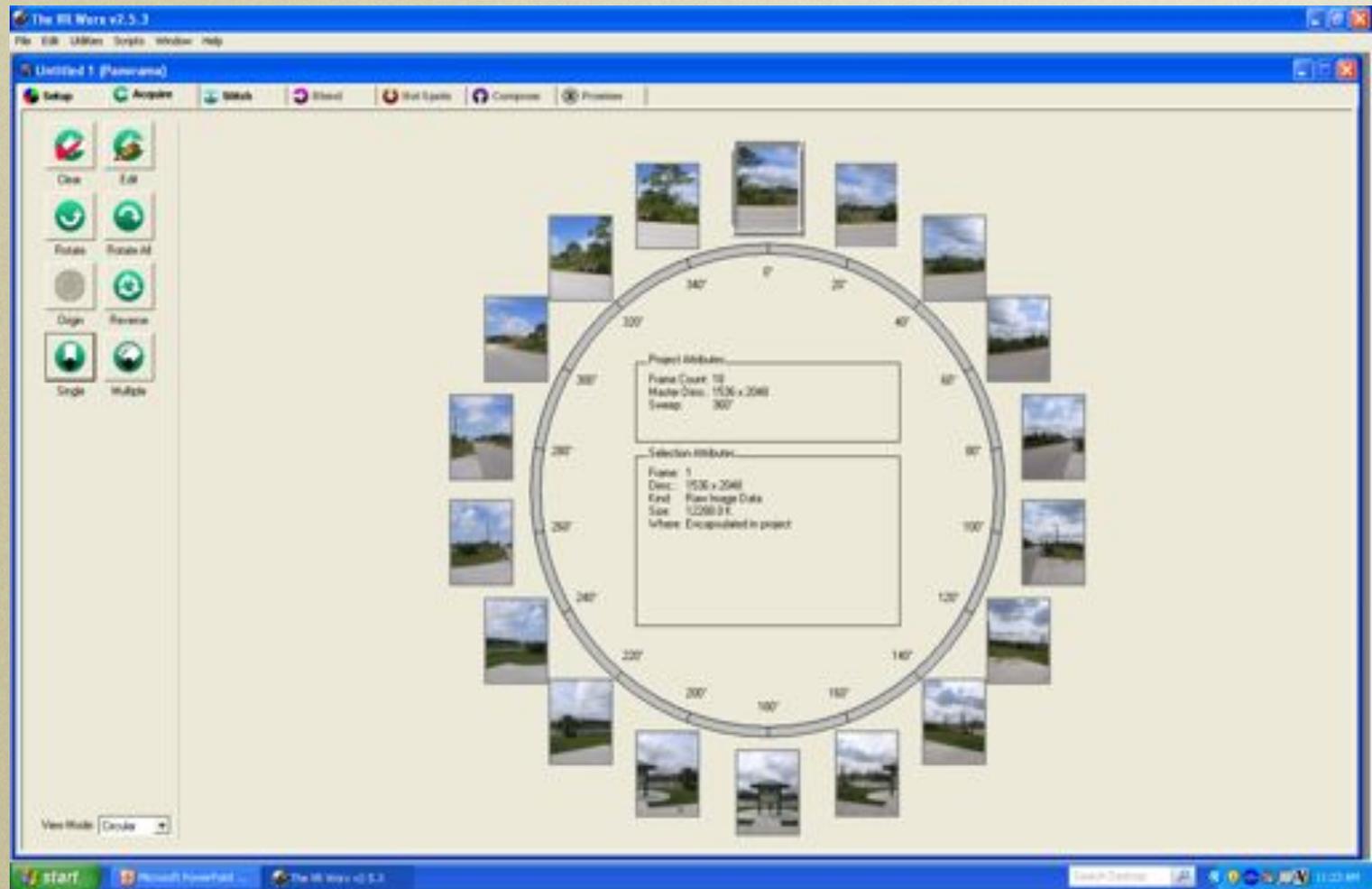


Putting it all together  
using panorama creation software.

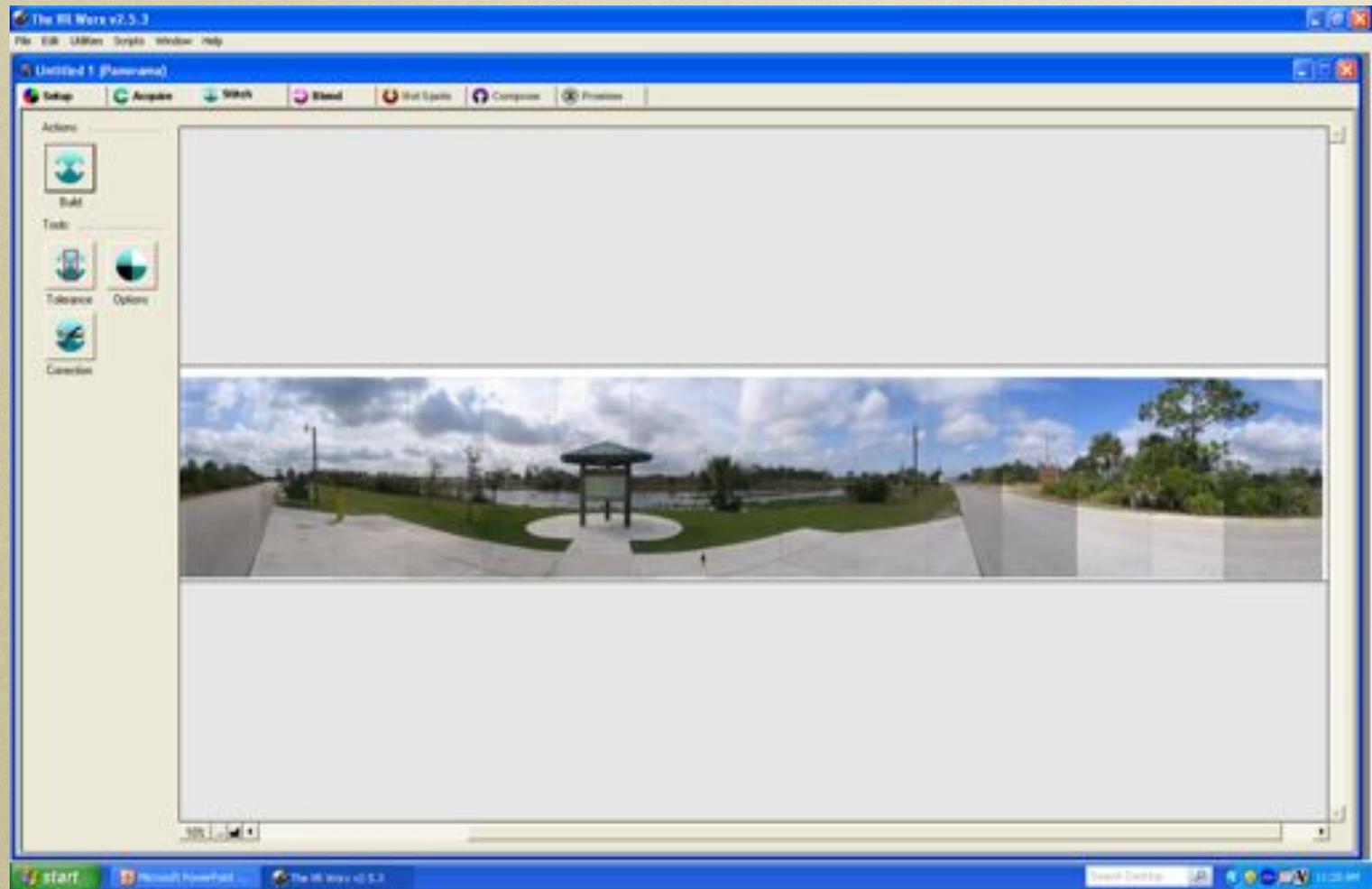




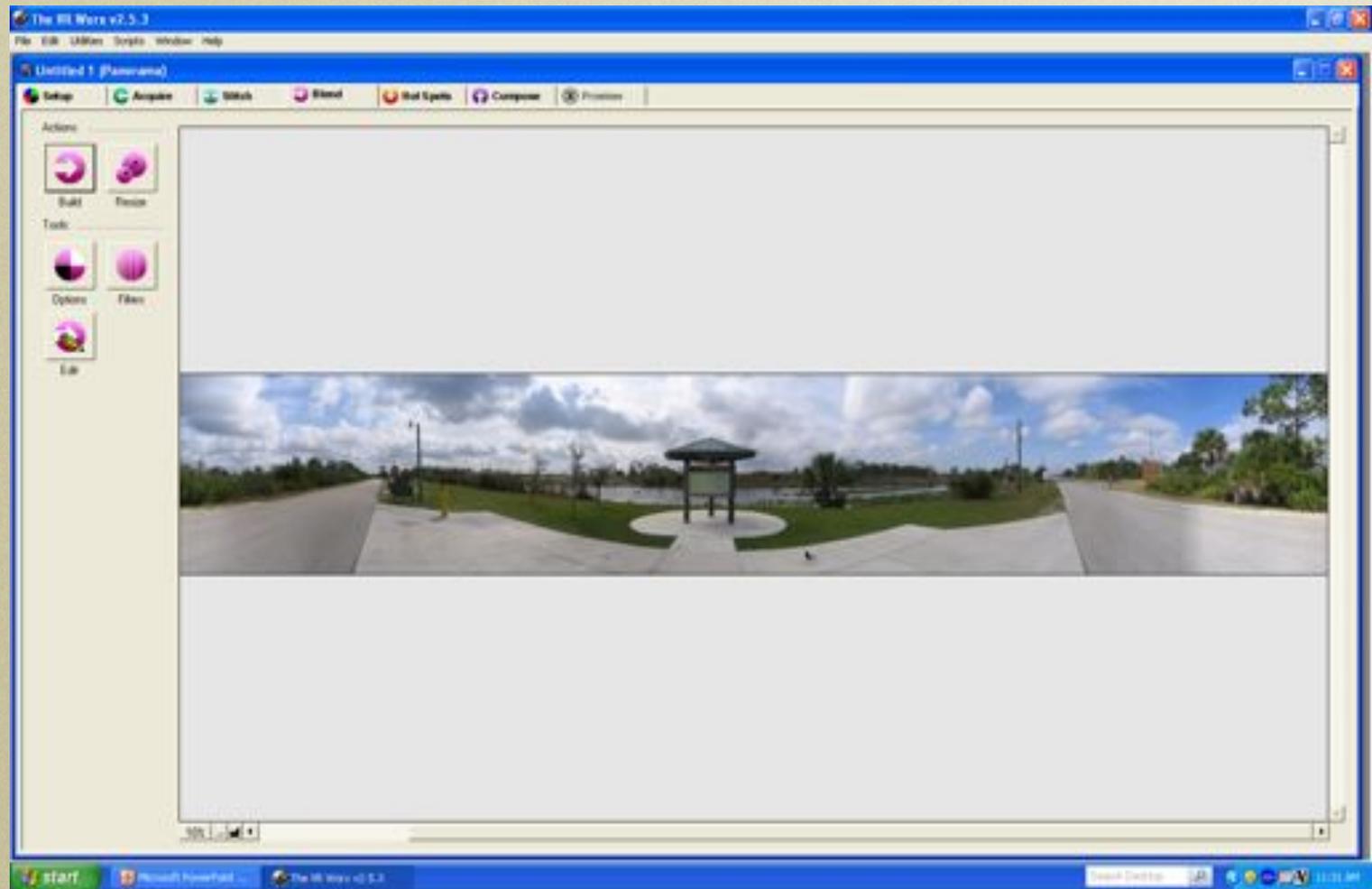
Acquire from image database and stitch together the 18 consecutive images from each photopoint.



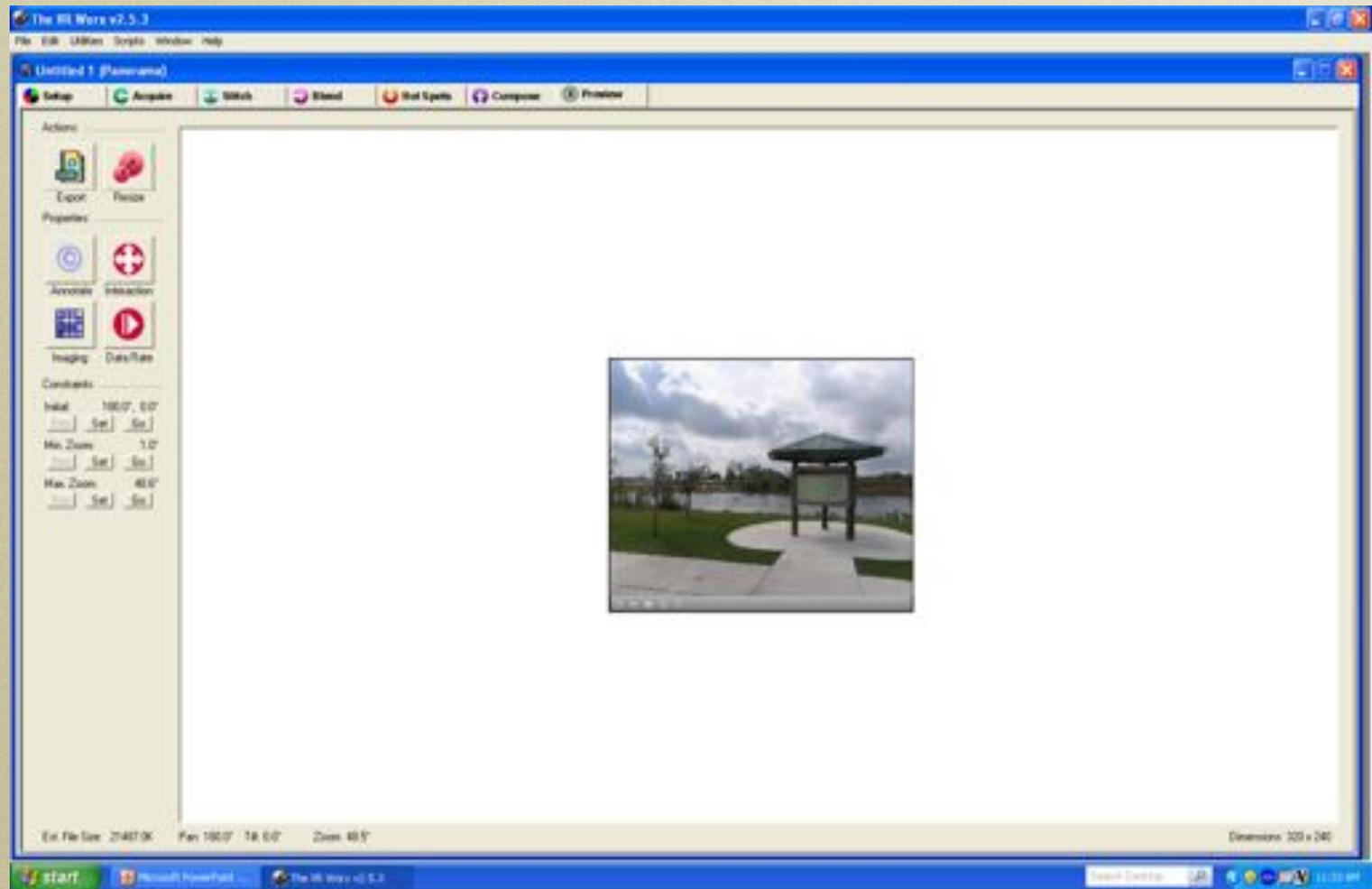
Reassure that stitched images are in correct order, and click “blend.”



Preview blended image and click “compose.”



# Export as Quicktime VR movie to desired location.





**Also save as single panoramic image  
to desired location**



# Some examples of photopoint interpretation focus...

- Changes in vegetation type
  - Structure damage
  - Erosion issues
  - Hydrology issues
  - Maintenance issues (upkeep)
- 
- Based upon your agency/group goal or mission.

