Prehistoric Hanging Canals of the Safford Basin II

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The Gila Valley has a rich prehistory...

Especially during the Late Classic period around 1350 CE.

- Studied by Neely and others.
- Population possibly as high as today.
- Some ties to Hohokam, Mimbres, Salado, Sinagua and Anasazi cultures.
- Gila River lowland canals as extensive as today and the basis for modern irrigation.
- Thousands of world class agriculture grids, possibly used for Agave crops...
Lesser known are the "hanging" canals...

- Literally "hung" on steep sided mesa edges.
- As high as 90 feet above base terrain!
- Twenty or more total at least 40 miles!
- Create the illusion of "water flowing uphill".
- May include above ground aqueducts, route switching, and flood breakaways.
- Used for long range water delivery.
- Nearly totally exploit Mt. Graham streams.
- Typically a yard wide by a foot deep.
Three terms you need to know...

BAJADA —
A coalescing alluvial fan.

QUATERNARY —
The latest geological period.

MESA —
A remnant Quaternary bajada.
Some properties of local southern mesas...

- Typically narrow and long.
- Steep sided.
- Gently sloped.
- Limited rainfall.
- Largely infertile.
- Pretty much water impermeable.
- Not too useful to pioneers or present.
- Easily conveys water long distances.
The hanging canals might be named...

- P Ranch
- Ledford*
- Henry's*
- Marijilda*
- Roper*
- Tranquility*
- Twin East*
- Twin West*
- Deadman*
- Longview
- Frye Mesa*
- Robinson*
- Riggs
- Allen*
- Mud Springs*
- Jernigan*
- Shingle Mill*
- Lefthand*
- Bear Springs
- Bandolier
Ledford Hanging Canal...

- Southernmost of the known hanging canals.
- Sources near Jacobson Canyon dam.
- Rather difficult to access and explore.
- Switches between several drainages.
- Sees current use for cattle tanks.
- About three miles total extent.
- Associated with prehistoric fields.
- Parasitic vegetation makes reach obvious when viewed from highway US 191.
Henry’s Hanging Canal...

- Possibly oldest of Marijilda sourced canals.
- Portions still unresolved.
- Apparently once fed Roper Canal.
- Moderate hanging portion.
- Somewhat larger than typical.
- About one mile explored extent.
- Exact takein remains enigmatic.
- May have been replaced or updated by the Marijilda hanging canal.
Roper Canal...

- Modern Canal, possibly prehistoric.
- From Lebanon Reservoir #2 to Roper Lake.
- May once have been Marijilda Canal sourced.
- Possible early Henry’s Canal destination.
- Flat and easy route.
- Two miles current length.
- Prehistoric origins still needs proven.
- Roper Lake may overlay prehistoric field end use area.
Marijilda Hanging Canal...

- Earliest to be studied and researched.
- Runs from Marijilda Creek to fields found in the Lebanon area.
- Initial reach rebuilt by historic pioneers and sees active irrigation use to this day.
- Easiest access of the known hanging canals. but western 4WD track is extremely rough.
- Includes impressive above ground aqueduct.
- Hangs on the western mesa face.
- Apparent switching to several destinations.
- Elaborate French Drains going off mesa.
Tranquility Hanging Canal...

- Apparently artesian sourced.
- One mile long.
- Presently terminates in Cooks Reservoir.
- Urban subdivision private property located.
- Amazingly close to Twin East canal via cliff.
- Moderate short hanging portion.
- Curious mix of historic and prehistoric.
Twin East Hanging Canal...

- Ponding area fed by TWO major canals.
- East canal likely Marijilda sourced.
- Runs under Lebanon Cemetery buildings.
- Amazingly close to Tranquility Canal.
- Sharp "U" and "S" turns to maintain grade.
- Mystery alignments remain unexplored.
- Contours highly obvious on satellite images...
Twin West Hanging Canal...

- Ponding area fed by TWO major canals.
- Likely unverified Deadman Canal fed.
- Sweeping "S" portion to maintain grade.
- Earlier habitations and artifacts in area.
- Possible four mile total length.
- Ponding area unusually single walled.
- A section has been run over by the Safford water tank project.
- Additional slope measurements still needed.
Deadman Hanging Canal...

- Sources from Deadman creek and possibly routes to Porter Springs and Deadman tanks.
- Initial hanging portion believed overlain by historic and modern pipeline.
- Prehistoric portion flows to this day.
- Consistently routes along HIGHEST portion of Deadman Mesa.
- Possible elaborate three way switching at the narrowest point of mesa.
- Could approach five miles in length if the presumed extensions are verified.
Longview Area...

- Delivery canal conspicuous by its absence.
- One possible short canal wall located.
- Possibly Deadman and/or Frye fed.
- Very strong tradeware evidence.
- Numerous aproned check dams.
- Rock alignments define one use area.
- Confused by CCC overwork.
- Further study still needed.
Frye Mesa Area...

- Braided stream channels and ponding area.
- Mystery delivery canal routes UPCANYON.
- Second canal is possible Robinson source.
- Takein points presently unclear.
- Confused by CCC and dam construction.
- Falls routing unlikely but not ruled out.
- Mesa watershed gathering unlikely.
- Major further study required.
Robinson Hanging Canal...

- Rebuilt by historic pioneer to serve cattle tanks in the Daley Estates area.
- Likely sourced from Frye Creek.
- Short section spectacularly failed by falling off the mesa edge.
- Prehistoric fields overlain by sheet flooding.
- Very strong "water flows uphill" illusion.
- Mesa top used for water transport only.
- Accessible only by ill defined cattle trail.
Allen Hanging Canal...

- Nearly SEVEN MILES long!
- Source from Spring Canyon. May go as far as Central bottomlands.
- Apparently overlain by CCC Hawk Hollow tank, Allen Dam, and Layton Dam.
- Two distinct architectural styles.
- Spectacular "Culebra" cut of seven feet.
- Portions obscured by sheet flooding.
- Mesa to dam routing remains uncertain.
- Many questions remain unanswered.
Mud Springs Hanging Canal...

- Routes Ash Creek over Mud Springs Bajada.
- Entire 6 mile route linear and viewable.
- Possibly the earliest hanging canal.
- Overrun without access by SCS dam.
- Splits into Jernigan Canal.
- Enigmatic associated rock structure.
- Mid-canal cleanout and flood spur.
- Key portions still missing or unexplored.
Jernigan Hanging Canal...

- Part of a well studied and reported site.
- "U" and "S" grade routings.
- Large Mesquite tree mid channel.
- Moderate hanging portions.
- One fairly impressive cut of three foot depth.
- Well defined exit French Drain area.
- Sources from Mud Springs Canal.
- Three reaches remain ill defined.
Shingle Mill Area...

- Home of historic Minor Webster Ditch.
- Possible prehistoric original canal would be conspicuous by its absence.
- Shingle Mill or Merrill Wash possible sources.
- Includes obviously modern service track and deeper vee construction.
- Half of presumed routing unknown.
- Additional historic and site research needed.
- Many questions remain unanswered.
Lefthand Hanging Canal...

- Extensively studied and reported by Neely.
- Directly associated with plant nursery areas.
- Elaborate switching and control structures.
- Short "local" and direct agricultural uses.
- No "hanging" evidence but similarities to the other area prehistoric canals are remarkable.
- Small gates divert controlled water amounts.
- Both earthen and rock bordered examples present. Possible instances of clay lining.
Other possibilities not fully explored...

- Veech Canyon in the "P" Ranch area. A few rumors of historic and prehistoric canals.
- Hints of a Frye Mesa to Longview route.
- North and east of Deadman Canal show unvisited and enigmatic aerial images.
- Braided channels near Riggs Mesa area.
- Carter and Nuttall canyons could possibly provide western extensions.
- The North Taylor UFO Fish Filets remain a CCC or earlier largely undated artifact.
- Possible mountain sources for Bandolier Lowland Canal not yet totally excluded.
Why the obsession with mesa hanging?

- Slope is INDEPENDENT of terrain!
- Minimum cuts and fills.
- One canal side is often "free".
- Superbly energy and effort efficient.
- Easy repairs from flood damage.
- Much of the construction can be across rather than along the route.
- Mesa top slopes often optimum.
- Not much other use for mesa tops.
- Conveys water long distances.
Arguments the canals are prehistoric...

- Archaeologists say so.
- Extreme purposefulness and a highly directed energy efficiency.
- Run over by roads, tanks, fences, dams and cemeteries. Without accommodation.
- Consistent patina, caliche, and lichens.
- Lack of any apparent use of pioneer tools.
- Prehistoric population very much higher.
- Easier to "dig out an old ditch".
- Far more attuned to prehistoric needs.
- Lack of characteristic CCC signatures.
- Mature cacti and Mesquite trees midstream.
Survey instruments are still unknown, but...

- Pilot extensions of the canals themselves could have served as static water levels.

- Such concepts remain highly speculative.
Hanging canals ARE endangered...

There are typically zero to very few canal artifacts, so pothunting issues are by no means severe. BUT...

- An utter lack of public awareness clearly causes damage through neglect.

- Water projects by the Town of Safford totally trashed a number of canal crossings, mulch rings, grids, and even a CCC dam. All these could have been cheaply avoided.

- New proposed realignment of US70 to the south may threaten many of the canals.

- The state lands bureaucracy is exceptionally hostile to archaeological research.
What needs done now...

- **Map** and catalog all southern features.
- Videotape all hanging canal routes.
- Resolve the still unknown canal portions.
- Find credible Deadman Canal destinations.
- Involve students and any others interested.
- Apply "CSI" type forensics techniques.
- Publish both traditionally and **new media**.
- Make upcoming threats aware of the issues.
- Invite "field mice" to thoroughly explore.
- Scam a **Draganfly** grant...
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More info on Gila Valley prehistory can be found at