

A Cataract Canyon Take-out

History, current issues, and factors that may influence and inform a safer, more reliable, and long term solution.

The following report reflects a river running perspective.



Returning Rapids Project
Moab, Utah

The intent of the following information is to show the continued challenges related to a reliable Cataract Canyon take out.

From 2003 to present, river runners and other users wishing to take out from a Cataract Canyon trip or launch a boat in the Hite area have been dealing with an inconsistent, un-reliable, and at times hazardous access point to this area.

The following collection of information is intended to show the challenges, access issues, and safety concerns with the current Hite area/ North Wash Boat Ramp.

Over the years, the main user group for the North Wash Boat ramp has been commercial and private river runners. In order to take boats out of the water, techniques have been developed to deal with the inability to safely get a trailer to the water’s edge and get a boat out of the water.

Equipment has been damaged, near misses have occurred, and the condition of the ramp has been a contributing factor to many incidents.

When looked at collectively, the level of attention to this boat ramp issue begs for a different solution.

There are other issues coming into play that complicate decisions regarding the best course of action: future reservoir levels, a river that is flowing out of its historic channel, the presence of unstable lake sediments, and a river to reservoir zone that fluctuates up to 60 feet a year.

We hope that this report represents all the related issues to help inform a more permanent, safer, and reliable long term solution.

Cataract Canyon	2018	2019	2020
Commercial Trips	233	267	152
Commercial People	2814	2963	1628
Private Trips	154	182	239
Private People	1328	1660	2080

Cataract Canyon User Numbers, courtesy of Canyonlands National Park concessions office

Part 1

The North Wash Boat Ramp

History and Challenges



An "easy" day at the North Wash Ramp August 2006, Steve Young

March,
2003

Ramp Location
Not yet cut in

North Wash Boat Ramp Location

Lake Powell Water Levels 2000-2020



In 2002 and into 2003, the level of Lake Powell drastically dropped from a long maintained level of 3670-3700 feet above sea level.

The drought of 2002-2003 was the beginning of a new average reservoir water level of 3600' (+/- 30 feet).

Photo shows ramp location at an approximate elevation of 3610 feet above measured sea level(famsl) at the Glen Canyon Dam.

Source: <http://lakepowell.water-data.com/index2.php>

North Wash Ramp location prior to ramp existence; Dec 2003 John Dohrenwend/John Weisheit

Concrete Ramp, Hite Marina

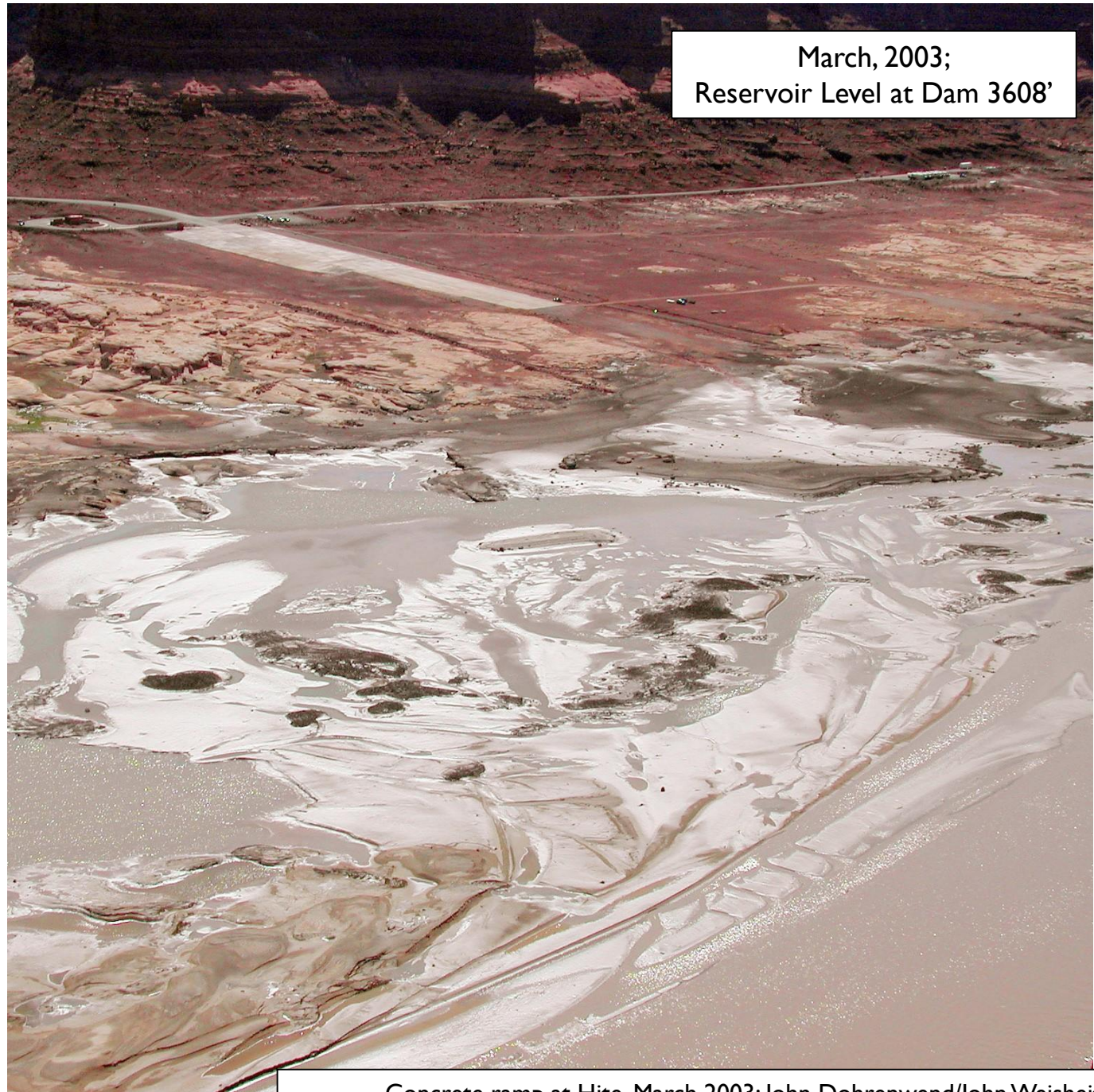
With the significant change of reservoir level in 2003, the concrete ramp at Hite “Marina” became inaccessible.

March,
2003




Toe of Concrete Ramp, Hite; March 2003; Dohrenwend/Weisheit

March, 2003;
Reservoir Level at Dam 3608'



Concrete ramp at Hite, March 2003; John Dohrenwend/John Weisheit



Nov 20, 2003
Reservoir Elevation 3601 at Dam

During the summer of 2003, a ramp was bladed through the sediment on river right approximately ½ mile below where the Dirty Devil River flows into the Colorado River's corridor.

This new ramp was located near a pre-reservoir road to North Wash Canyon and became known as the "North Wash Boat Ramp."

North Wash Ramp Nov 20, 2003; John Dohrenwend/John Weisheit

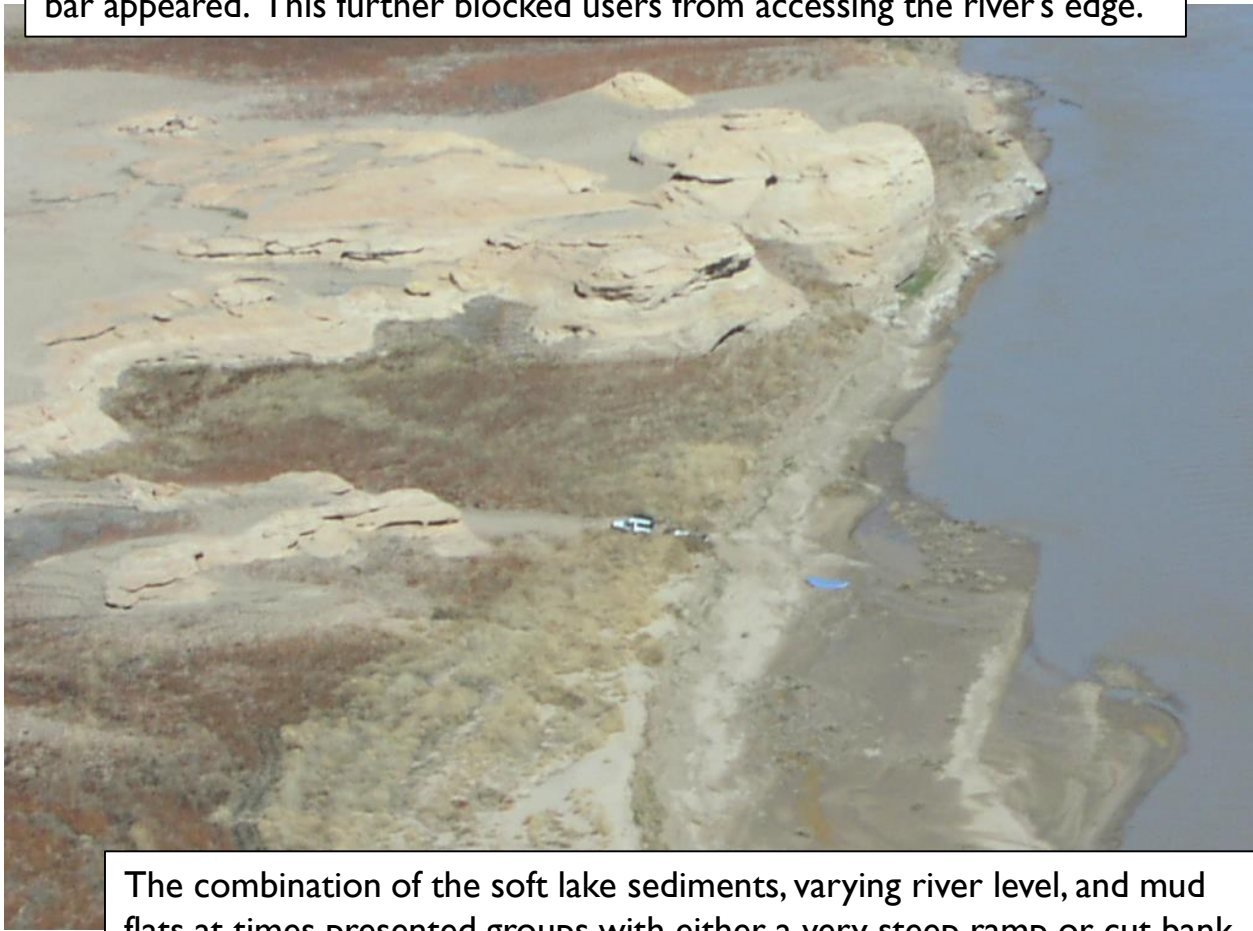
The single lane construction of the ramp made it difficult for more than one group to take boats out of the river at a time. The ramp was on the soft silt of river sediment, which made many parties not want to risk putting their vehicles/ trailer too close to the water's edge.



2003

Holiday River Expedition boats being pulled up the
single lane ramp from the water's edge
Holiday River Expeditions 2003, Tim Gaylord

In 2004, the river receded further from the toe of the ramp and a mud bar appeared. This further blocked users from accessing the river's edge.



Spring
2004



The combination of the soft lake sediments, varying river level, and mud flats at times presented groups with either a very steep ramp or cut bank.

Groups had to carry equipment across the mud bank and up the steep ramp to an area where a vehicle/ trailer could be safely backed down.

River trip take out across mud flat;
Spring of 2004; Tim Gaylord

If enough people were around, a raft could be carried across the mud flats to a trailer.
The task was time consuming and often there were not enough hands to use this technique.

Spring
2004



Cataract Interpretive River Trip participants carrying an Adventure Bound 18 foot raft across mud flat;
Spring 2004; Tim Gaylord

Prepping an “S-Rig” to get roller-tubed out of the water;
April 2004;Tim Gaylord



Laying out roller tubes on the North Wash Ramp;
April 2004;Tim Gaylord



Western boats getting roller tubed up ramp;
June 2013;Tim Gaylord

Running a good river trip requires an ability to adapt and solve problems. This characteristic is inherent in most river runners.

Dealing with the ever changing boat ramp issue became just another problem to solve.

Many outfitters began utilizing a take out method known as “roller-tubing.”

Tubes that are made of the same material as rafts are inflated and laid out under the boats. A line is anchored to the raft and a vehicle or winch is used to pull the raft up onto the tubes and up the ramp's slope.

A crew of people is required to shuffle the tubes as the boats are pulled along and up the ramp so they can be loaded onto a trailer.

This is a very time consuming process. It puts undue wear and tear on the boats and other equipment, requires the outfitter to be equipped with additional equipment, and has people working around highly tensioned lines.

Over time, roller tubing became the go-to method to get larger boats from the water's edge to a trailer.

Often it meant that only one party could use the ramp at a time and it made for back-ups at the ramp.



Canyonlands National Park snout rig roller tube take out;
Spring 2013; Tim Gaylord



Roller tubing 18ft rafts at North Wash;
2013 Peter Lefebvre



Spring
2013

Snout rig take out with roller tubes 2013; Peter Lefebvre

Summary of Notable Incidents at North Wash Take Out

2013 – While winching two 18' rafts up the steep ramp, a rope broke and the 2 rafts rolled out of control towards the river. Luckily no one was in their path.

2014 – While trying to load rafts onto a trailer submerged in the highwater current at the ramp, a fully loaded 18' raft was pinned against the submerged trailer. The force of the current started to push the trailer downstream and drug the truck a few feet with it. The pinned raft then flipped, washed free of the trailer, and floated down river. The boat had to be chased down and retrieved.

2018- During a heavy rain storm a dually truck and 40' trailer slid down the ramp on mud. Another truck had to be hooked to the truck and trailer to stabilize the situation and pull the works up the saturated lake sediment slick ramp.

2019- While winching a boat onto a trailer, a handle broke and struck a person in the face – the steepness of the ramp was a contributing factor.

June 11, 2016; 46,000 cfs;
Reservoir Elevation 3632 at the Dam

June
2016

The ramp's unevenness and steep bumpy grade contributed to a boat shifting as it was pulled out of the water.

The "S-Rig" shifted off the trailer as it was pulled away from the water's edge and up the ramp.

Luckily there were enough people around to help get it back on the trailer.



Pushing an S-Rig back onto the trailer at the North Wash Ramp;
June 11, 2016; Peter Lefebvre

A Close Call at the Ramp

In November 2019, the condition of the ramp was such that it didn't make sense to sink a trailer, it was too steep and muddy.

While winching a zodiac style boat onto a trailer, an anchor point broke and hit the person operating the winch.

The steepness of the ramp was a contributing factor to the incident.

Nov,
2019



2014-2020; A Period of Catching the Ramp Maintenance and Water Levels Right

From 2014 and into 2019, if the reservoir level was above 3610' and the ramp was well maintained then the take out challenges were diminished.

There were times when taking a boat out of the water took less than an hour.

These occasions were often close to a time when the ramp had been worked on by maintenance crews and the reservoir level was on the rise for the year.

July, 2019



North Wash Boat Ramp at Highest Lake Level for 2019;
3622' at Glen Canyon Dam

March,
2019



Roller tube 4x4 take out;
Reservoir Level 3570 at Glen Canyon Dam;
March 2019; Bego Gerhart

At other times of the year, specifically after high water or when maintenance crews had not worked on the ramp, using the ramp was as challenging as ever.

It seemed that the ramp was only maintained to be functional during the high water times of the year – all other times were a crap shoot.

2019 was a year that showed the need to have a ramp that could be functional regardless of the 30-50' annual fluctuation that takes place in the river-to-reservoir zone.

The Need for a More Durable Surface than Lake Sediments

May,
2020



Young couple sitting with their feet in the river;
middle ramp North Wash Ramp 5-29-2020

May 29, 2020

There were signs that the ramp was recently graded and a new middle ramp was established.

While pulling the trailer out of the water with the CNP snout rig, the truck became bogged down in the soft silt. (The new “middle ramp” only had a thin layer of road base over soft lake sediment.)

The crew had to resort to roller tubing and winching the boat up and onto the trailer. At one point the private parties vehicle was used in an attempt to assist pulling the truck and trailer out of the soft ramp area.

The process took about 2.5 hours.



Roller tubing the Canyonlands Snout Rig; May 29, 2020; 18250 cfs
Reservoir Level at Bridge 3608, Reservoir level at Glen Canyon Dam 3604

April 1, 2014

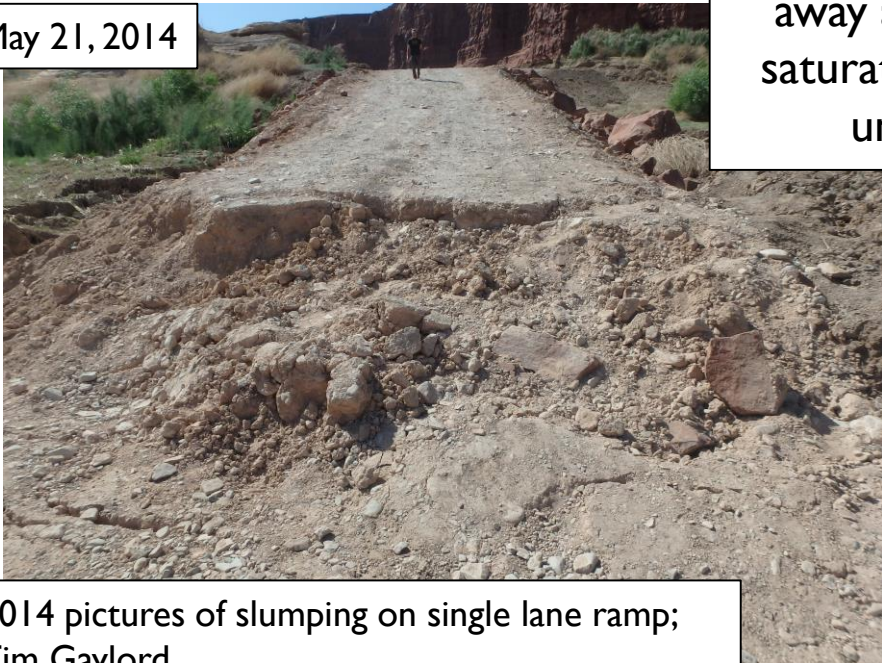


The Lake Sediments continue to prove that they cannot be a reliable foundation for a boat ramp.

Credit must be given to the maintenance crews and their efforts to make the North Wash location functional.

Over the years, the same issue keeps re-appearing: the lake sediment sloughs away after going through periods of saturation and de-watering, making it unreliable for vehicle travel.

May 21, 2014



October 23, 2020



November 24, 2020



2020 slumping of ramp

2014 pictures of slumping on single lane ramp;
Tim Gaylord

The North Wash ramp is one of the few ramps that people dress differently for in order to take boats out (i.e. put on gloves/ special shoes, clothing, etc.). It gets special safety talks, etc.

Many people have expressed concern that one day this ramp is going to cause serious injury or a fatality and that such an injury/ fatality may be the only thing that drives a reasonable change.

Some concessionaires have stopped running certain types of trips because they do not wish to deal with the arduous/ unreliable nature of the take out. (For example: Adrift Adventures 2-day Cataract Canyon Trips)

While researching this report a user reported “I am more concerned about what might happen at the take out than what could happen while running the rapids.”



North Wash Ramp with growing cut bank Spring 2006; Steve Young

Part 2

Considerations for any Cataract take out location

- Water Levels and Annual River Fluctuation
- Future Reservoir Levels
- The Unstable Sediment
- Slope and Substrate
- Installation of an Upstream Barrier
- Regular Maintenance for Year Round Access
- A Ramp that can Accommodate Several Parties and Traffic
- Going Across the Delta is Not a Viable Solution

Water Levels and Annual River Fluctuation

It is possible that the take out for Cataract Canyon must accommodate the greatest water level fluctuation and sediment load of any access ramp on the entire Colorado River:

The annual level of Lake Powell can fluctuate as much as 30-60 feet in one year.

The Colorado River through Cataract regularly has spring runoff high water peaks of 40,000 cfs with occasional higher levels of 70,000-90,000 cfs. This equates to a 20-35 foot fluctuation of sediment laden river water.

The Colorado River's high water events can move, scour, and deposit a huge amount of sediment. Similar to the water fluctuation, the sediment that is moved by the Colorado through Cataract Canyon and deposited into Lake Powell may be the greatest annual load of sediment moved on any other section of the Colorado River. There needs to be as much of a sediment management plan as there is a plan for water and reservoir level management.

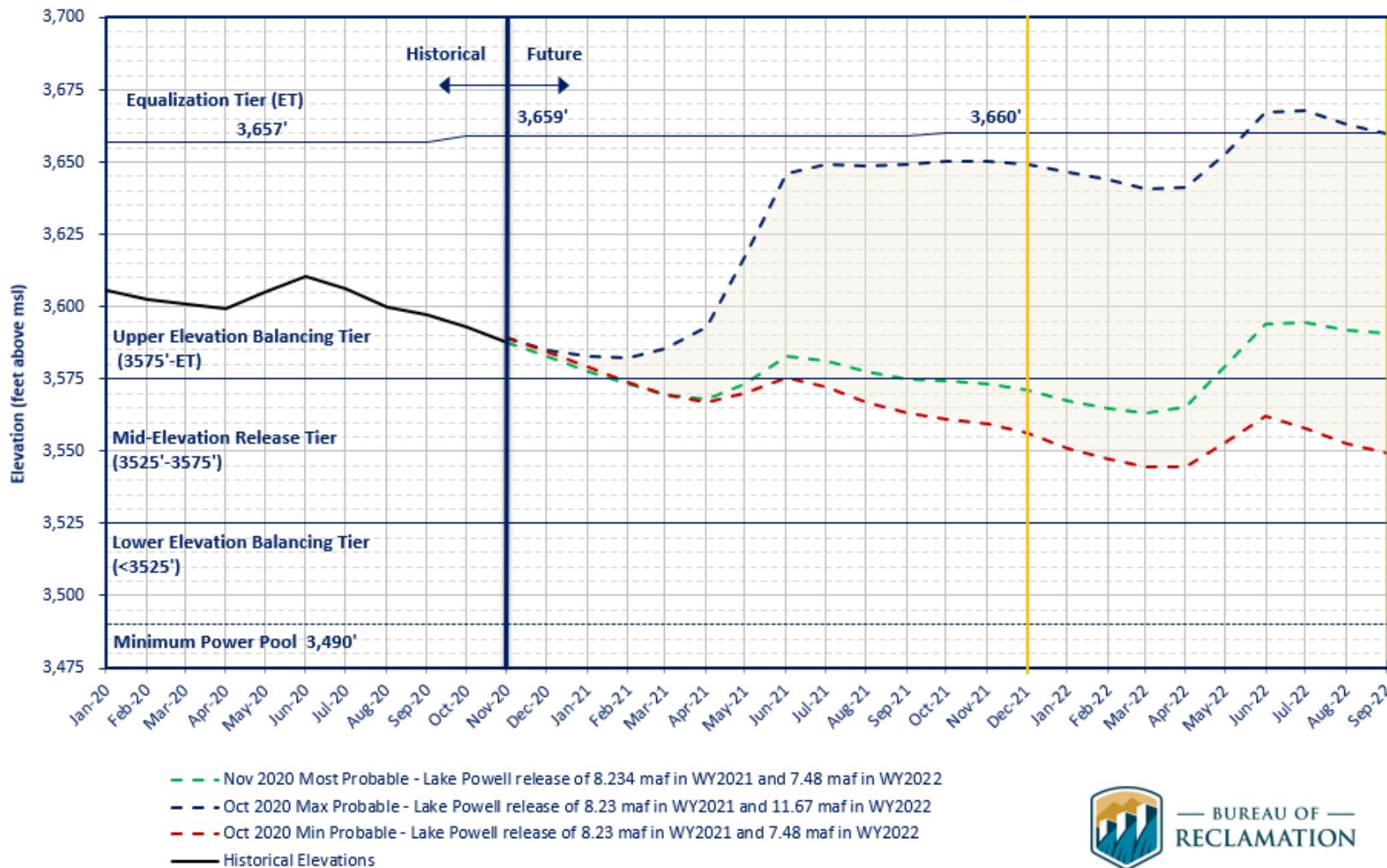


Big Drop 2, Little Niagara; 90,000cfs; June 6, 2011

Future Reservoir Levels

Lake Powell End of Month Elevations

Historic and Projected based on October and November 2020 24-Month Study Inflow Scenarios



The ability to accurately predict the future levels of Lake Powell is outside the scope of this report.

Forecasted reservoir water levels for Lake Powell as of December 10, 2020 from the Bureau of Reclamation show a 24 month projected reservoir level between 3,575' and 3,600'.

The Long Term Management Plan concerning the collective management of both Lake Powell and Lake Mead will be revised by 2027. Currently both are under 45% capacity.

Ideally, a Cataract take out would allow access from the maximum managed elevation of the reservoir all the way down to the minimum power pool of Glen Canyon Dam, 3,490'.

Bureau of Reclamation 24 Month Lake Powell Elevation Forecast issued December 10, 2020;

Source: <https://www.usbr.gov/uc/water/crsp/cs/gcd.html>

The Unstable Sediment

One of the main things that the North Wash Ramp continues to show through the years is that the sediments are reliably unstable.

If dry, they prove too soft for regular vehicle travel.

If cycled through periods of saturation and drying out, they slough away.

If there is any groundwater present, this helps the sediment to migrate.

When sloughing occurs, it can leave cut banks.

Where exposed to the current of the river, the river will always carve it away.

In areas where the sediment is saturated, it is not always safe for foot traffic.

In any construction of, or continued maintenance to, a ramp, we strongly advise not to use sediment as a base for any ramp.



Passenger stuck in Lake Sediments
just downstream of Palmer Canyon;
Peter Lefebvre



River bank and North Wash boat ramp showing sloughing
Jan 1, 2021

2-3 degree slope



Hite Ramp, gravel extension, triple trailer coupling to launch hard hulled craft;
Ramp slope approximately 2-3 degrees, solid substrate
Tim Gaylord

Slope and Substrate

A good boat ramp needs to be between 6-9 degrees in slope.

Too shallow and it cannot allow a boat to be trailered.
Too steep and it is difficult for a 2 wheel drive vehicle to use and becomes an area where users can slip/ fall while using.

This is assuming the substrate of the ramp is an all weather durable surface with a reliable and even surface for vehicle traction.

12-14 degree slope



Hooking 2 trucks together to pull a GCMRC boat out of the water;
Ramp slope approximately 12-14 degrees, loose and soft substrate
North Wash Boat Ramp; October 23, 2020; Meg Flynn

Installation of an upstream barrier to push the current out away from the take out area

The challenges of dealing with a less than ideal ramp are compounded even more during highwater. Trying to trailer a non motored boat in 5-7 mph current is treacherous at best.

Some type of upstream jetty designed to form an eddy around the boat ramp would make for a more controlled boat loading location.



High Water at NW ramp;
May 15, 2015; Tim Gaylord

Regular Maintenance for Year Round Access

The boat ramps utilized to put in for a Cataract Canyon trip are regularly cleared of sediment or worked on by maintenance crews 2-3 times a year:

At the beginning of the river season, after the high water run off, and when the river has settled out to its base flow. Research for this report has made clear that users desire reliable year-round river access points. An approach focused on ramp maintenance only at the “beginning” of a river season does not meet the access needs of all users.



Waiting for your turn
to take out;
Tim Gaylord

A ramp that can accommodate several parties and large truck/trailer traffic

The ramp must be as wide as the current concrete ramp at Hite to accommodate multiple parties. It also needs to be wide enough for commercial companies to maneuver the large vehicles that they use to take out multiple boat river trips. For example: a heavy pick up truck and 40 ft trailer combo or a small semi truck.

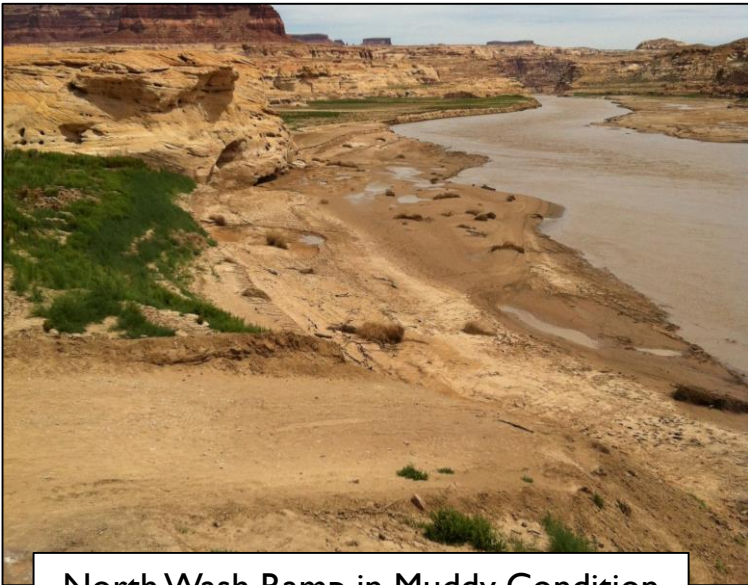
Going across the delta is not a viable solution

At times when the North Wash Ramp was in unusable condition for parties with larger or heavier boats, groups made a difficult decision to continue across the reservoir to take out at Bullfrog or Hall's Crossing.

Parties that have done this have reported incidents and near misses related to the ever fluctuating channels inherent to the river-to-reservoir sediment delta (currently located just below White Canyon).

Users have been surprised by unknown stretches of whitewater that change on an hourly basis, they have had group members stuck in a soupy layer of mid-channel mud, have had to negotiate channel wide stretches of driftwood and flotsam, and have reported having a sediment island form around them and needing to wait for the current to cycle back to carve them out.

Even if all goes well while traveling across the delta and breakwater, river rafting groups have reported altercations with other reservoir users once they reach their alternate take out location many miles and additional hours downstream.



North Wash Ramp in Muddy Condition



Western River Expedition can't take out



Motoring away to Bullfrog, 45 miles away

May 24, 2013 Photos; Tim Gaylord

The current site of the North Wash Boat Ramp could still be a viable boat ramp/ access point if the following points were addressed:

- The steepness of the ramp, durability of the ramp substrate, and sloughing of the sediments.
- A jetty or some other structure was put in place to push the main current of the river away from the ramp area.
- The narrowness of the ramp at water level was widened so that more than one party could take out at a time.
- The ramp was regularly maintained so vehicles with a trailer could get near the water's edge, the ramp area was kept at a reasonable slope, and was on a surface that offered durable traction in all types of weather conditions.

Part 3

Extending the Concrete Ramp at Hite

The idea to extend the current concrete ramp at Hite Marina could be an effective solution provided it is executed with:

- An understanding of pre-dam area topography
- Mitigation of the unreliable nature of the lake sediments
- Anticipation of how to keep the ramp functional in the annual 30-50 feet fluctuation of the river-to-reservoir zone
- A plan to address the potential of a lake sediment caused waterfall that may occur just upstream of this proposed take-out location.

Google Earth Imaging;
June, 2013

North Wash Boat Ramp

Perched River

Pre Reservoir River Channel

Hite Overview

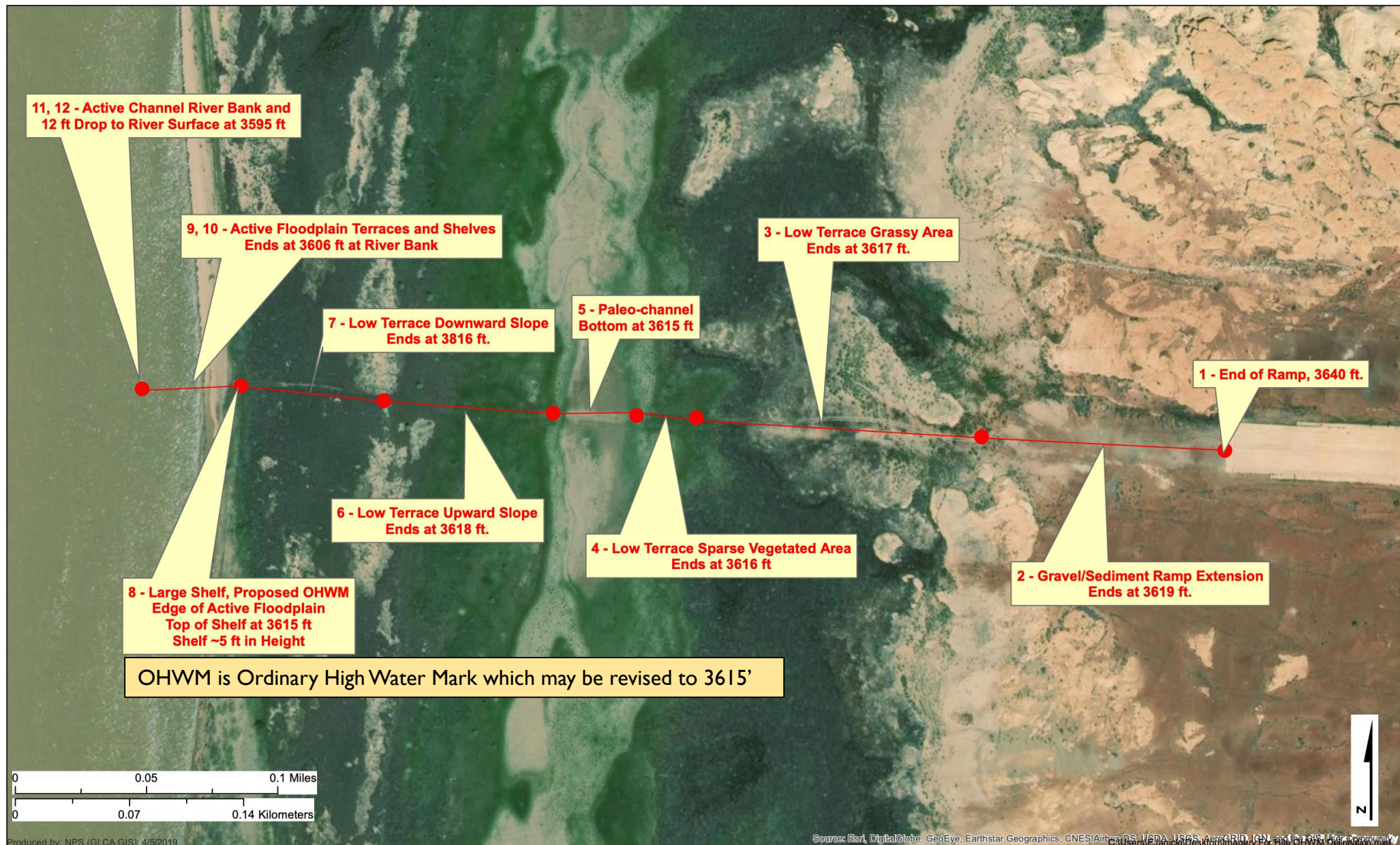
Note: Along any part of the “Perched River” the current could flow over bedrock and make downstream travel challenging

Hite Area
Store, Ranger Station, Campground,
Entrance Station, Bathrooms

Old Concrete Ramp
Red dashed line indicates the
proposed ramp extension

Hite OHWM Delineation - Imagery (2016)

Glen Canyon NRA and Rainbow Bridge NM
National Park Service
U.S. Department of the Interior



Scoping details of proposed ramp extension, 2016. Note points 3 through 11 are on lake sediment.

Approximate Location of Concrete Ramp at Hite Outpost and Other Detail

Compare w previous page

Concrete Ramp
Ends at 3640' feet above sea level
Has roughly a 3-4 degree slope

"Gravel Extension" is actually mostly on
exposed bedrock
Ends at approximately 3620' in elevation
Has a 2 degree slope – too little to effectively
launch or take out a motorized boat

The "Paleo Channel" as labeled in the Glen Canyon
scoping document on the previous page is actually
just a reservoir-to-river sediment caused backwater.
This is yet another example of sediment related
issues.

Cliff Bands
As seen in pre-reservoir
photos – see next page
These occur at
approximately 3600' and
3500'

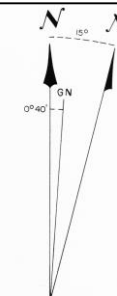
Historic
River
Elevation
3460'

Direction of flow

Location of pre-reservoir
North Wash Canyon
take-out for Cataract
Canyon.
Perspective of Take-out
Pictures on next page.

North Wash
Canyon Mouth

1959 pre-reservoir topo map, cropped to show
Hite, River and pre-reservoir take out



COLORADO

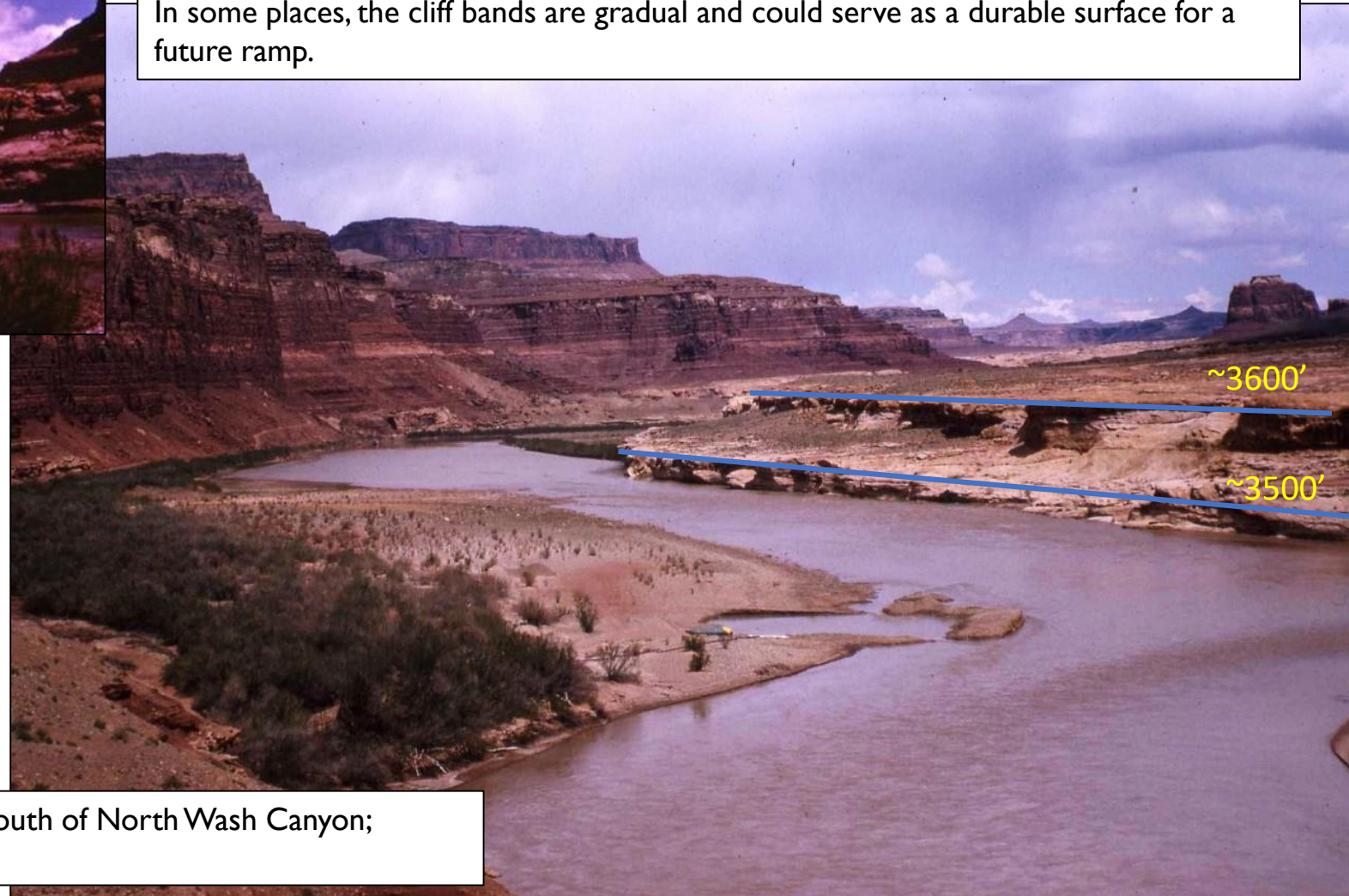
Sand



Views from the Historic North Wash Take Out

Pictures from the area show that the current concrete ramp at Hite has a gentle slope that continues down from the toe of the ramp to the cliff bands (as shown on the topo map from the previous page).

In some places, the cliff bands are gradual and could serve as a durable surface for a future ramp.



Pre-reservoir North Wash Take Out – River Right at the mouth of North Wash Canyon;
1964 Grant Reeder Pictures, courtesy of Stuart Reeder

Hite Area

Both ramps are shown overlaid on a pre-reservoir
overflight picture.



North Wash Ramp 2002-present

Hite Concrete Ramp
with potential extension

Hite Marina Area 1959 USGS overflight pic
cropped for detail



Panorama of ramps from Hite overlook;
July 22, 2019; Tim Gaylord

Any plan proposing a potential Hite Ramp extension should consider the long term maintenance challenge and accessibility issues posed by the backwater zone and sediment deposition that will occur at the toe of the ramp extension.



Panorama of ramps from Hite overlook;
Oct 11, 2019; Tim Gaylord



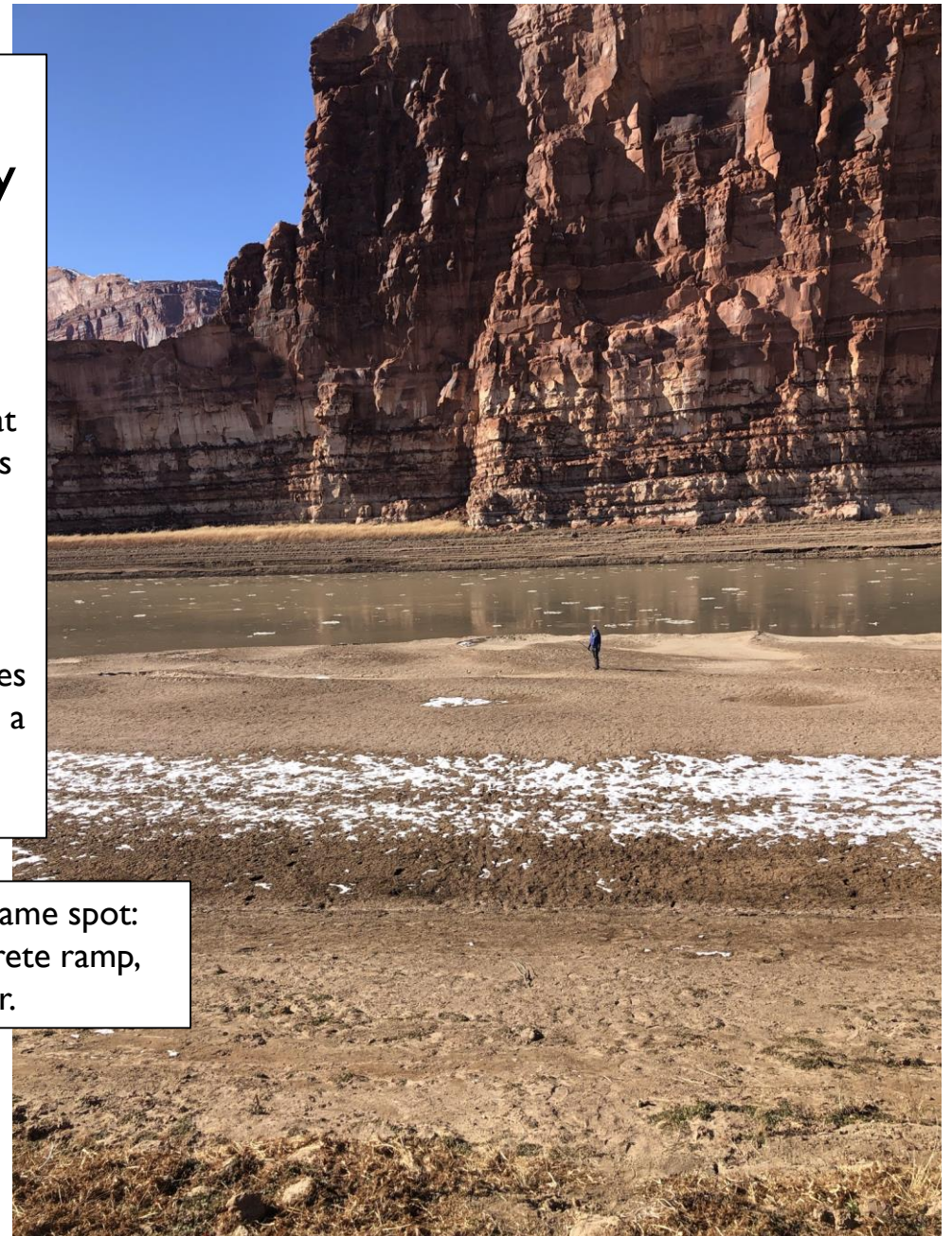
Looking back towards the end of the concrete ramp; Jan 1, 2021

Is there an option to just scrape away all the lake sediments?

Since the topography shows that the slope of the ramp continues to the edge of the cliff bands, could the sediments just be scraped away?

This would eliminate the variables related to building a road across a surface that has proved to be incredibly unstable.

These pictures were taken from the same spot: one looking up towards the old concrete ramp, one looking towards the river.



Looking down the large cut bank to the lower river bank; Jan 1, 2021

If the extension from the end of the concrete ramp at Hite happens, please consider:

- Scraping away as much of the lake sediments as possible
- Making the extension wide enough to accommodate 3-4 vehicles/ parties so they can simultaneously interact with the area at the same time – and space for a large truck/ trailer to turn around.
- Designing the location so that boats may be loaded in an eddy and not in the main river current regardless of water level.
- The current will be migrating back towards the river left bank. This may create cut banks if not mitigated.
- What will be done if a rapid/ waterfall occurs in the perched river area?

Part 4

Will there be a Lake Sediment caused waterfall?

The river was pushed out of its old channel when the reservoir dropped onto its sediment delta in 2002.

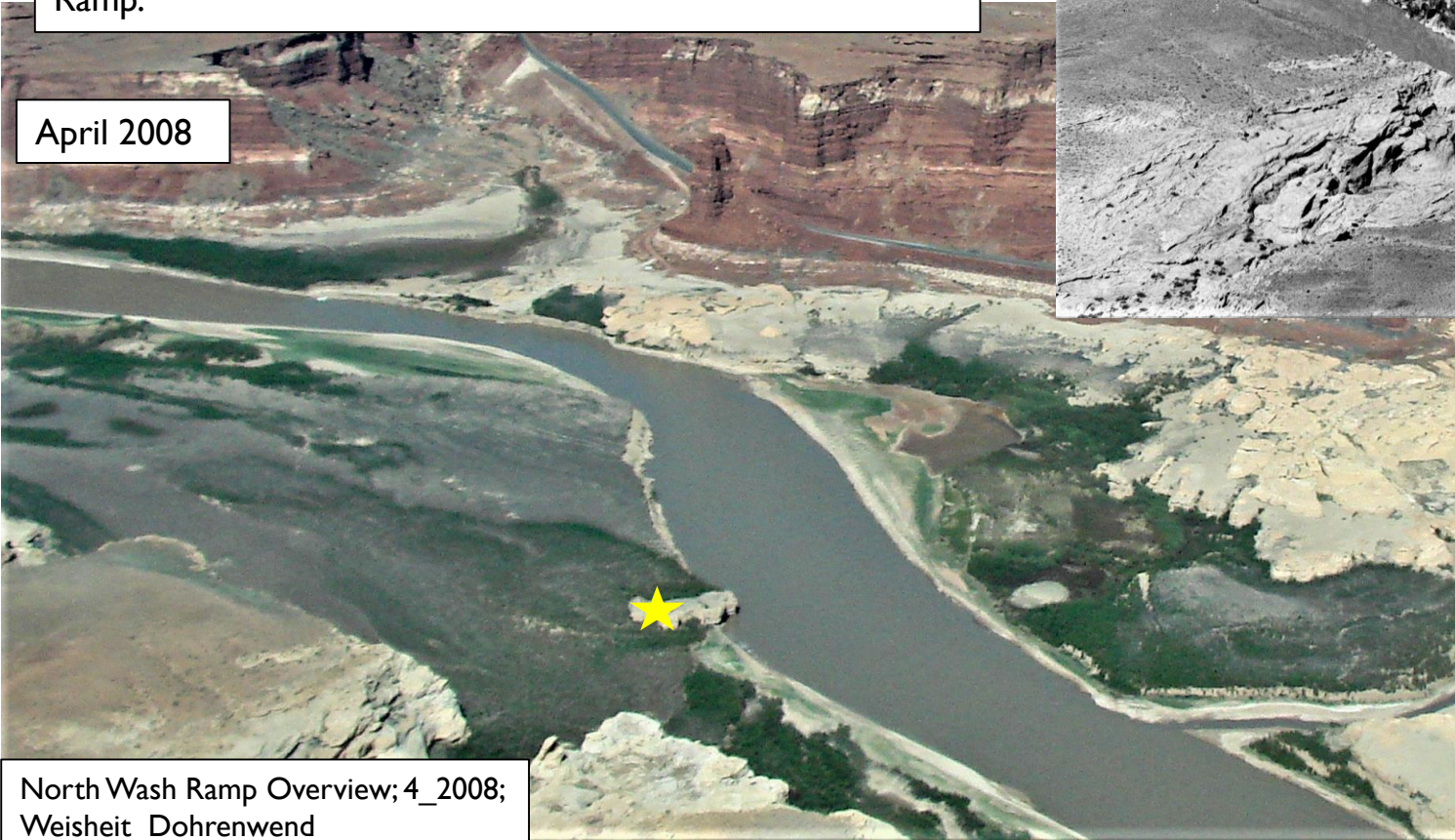
The river is perched in an area that is 150 feet above its pre-reservoir channel.

The Perched River

When Lake Powell dropped from during the 2002-2004 drought and stabilized near 3600', the Colorado River just below its confluence with the Dirty Devil River settled into an area outside of its pre-Glen Canyon Dam channel.

It is currently "Perched" about 150 feet above its old channel as it flows by the current location of the North Wash Boat Ramp.

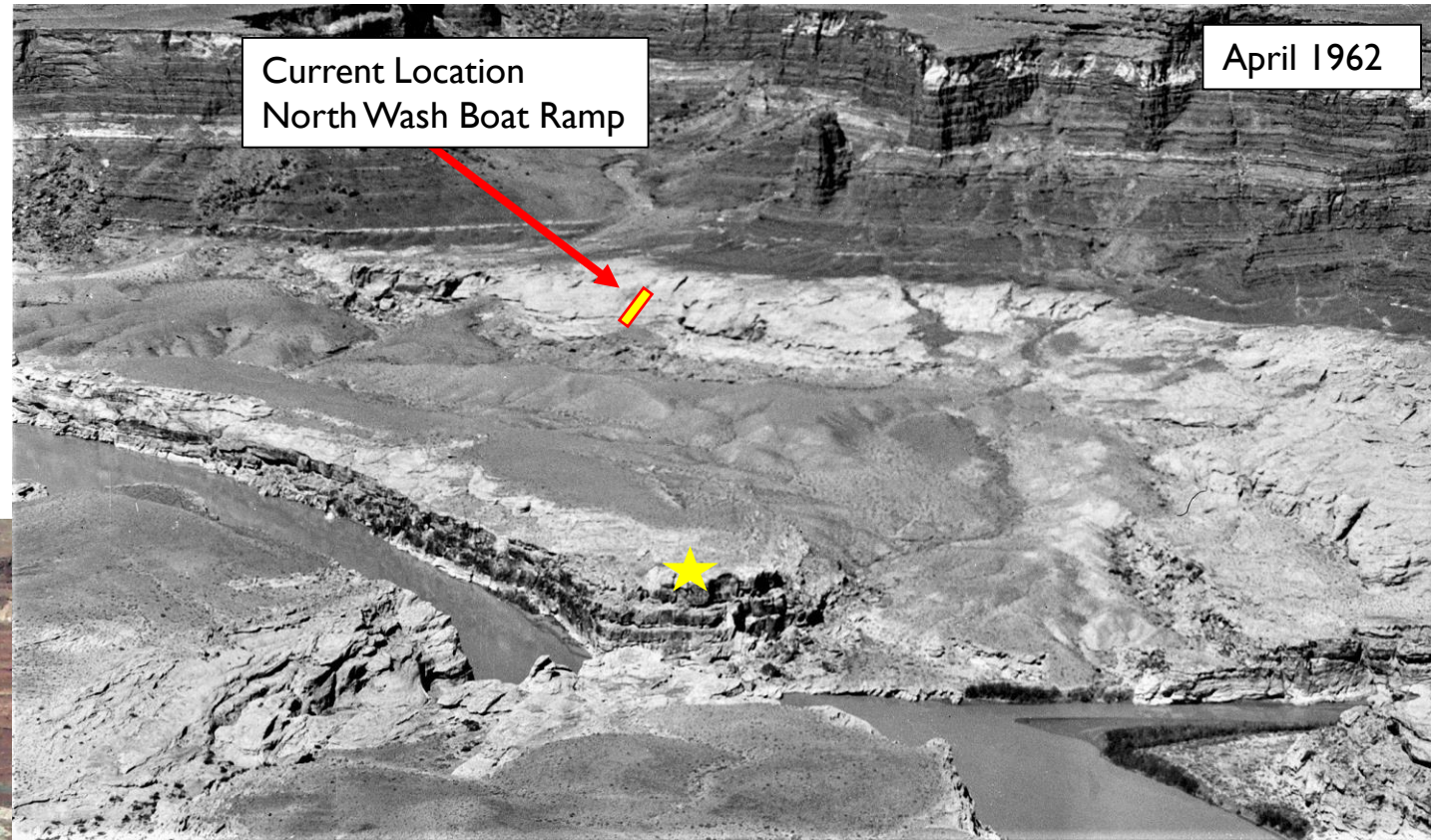
April 2008



North Wash Ramp Overview; 4_2008;
Weisheit_Dohrenwend

Current Location
North Wash Boat Ramp

April 1962



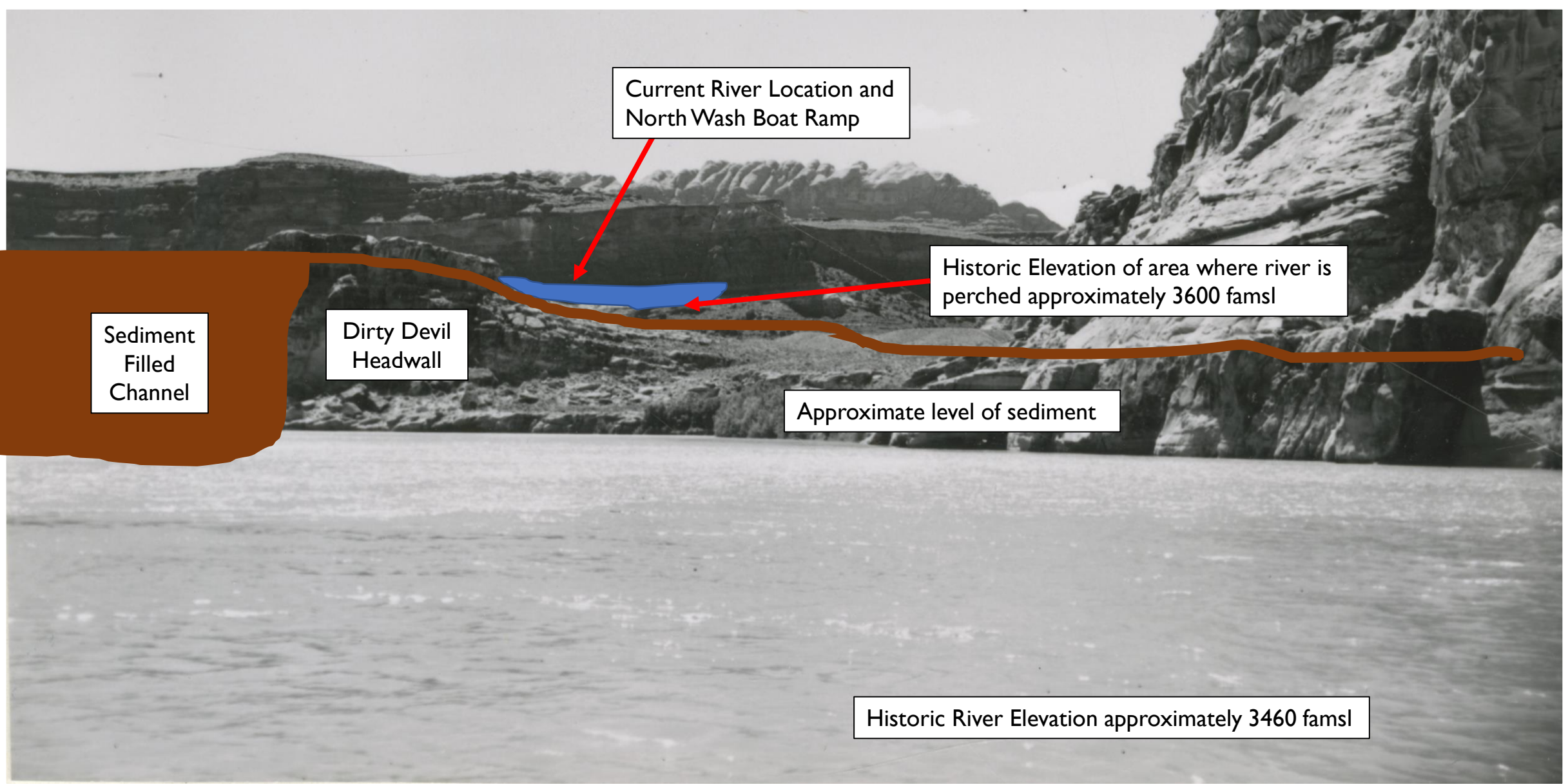
RS9383_P_557_420-6955 Mouth of Dirty Devil WL
Rusho 4_62 Cropped and Enhanced
Special Collections, J. Willard Marriott Library, U of U

1963

Dirty Devil
Headwall

Historic River Channel

Historic River Elevation approximately 3460 famsl

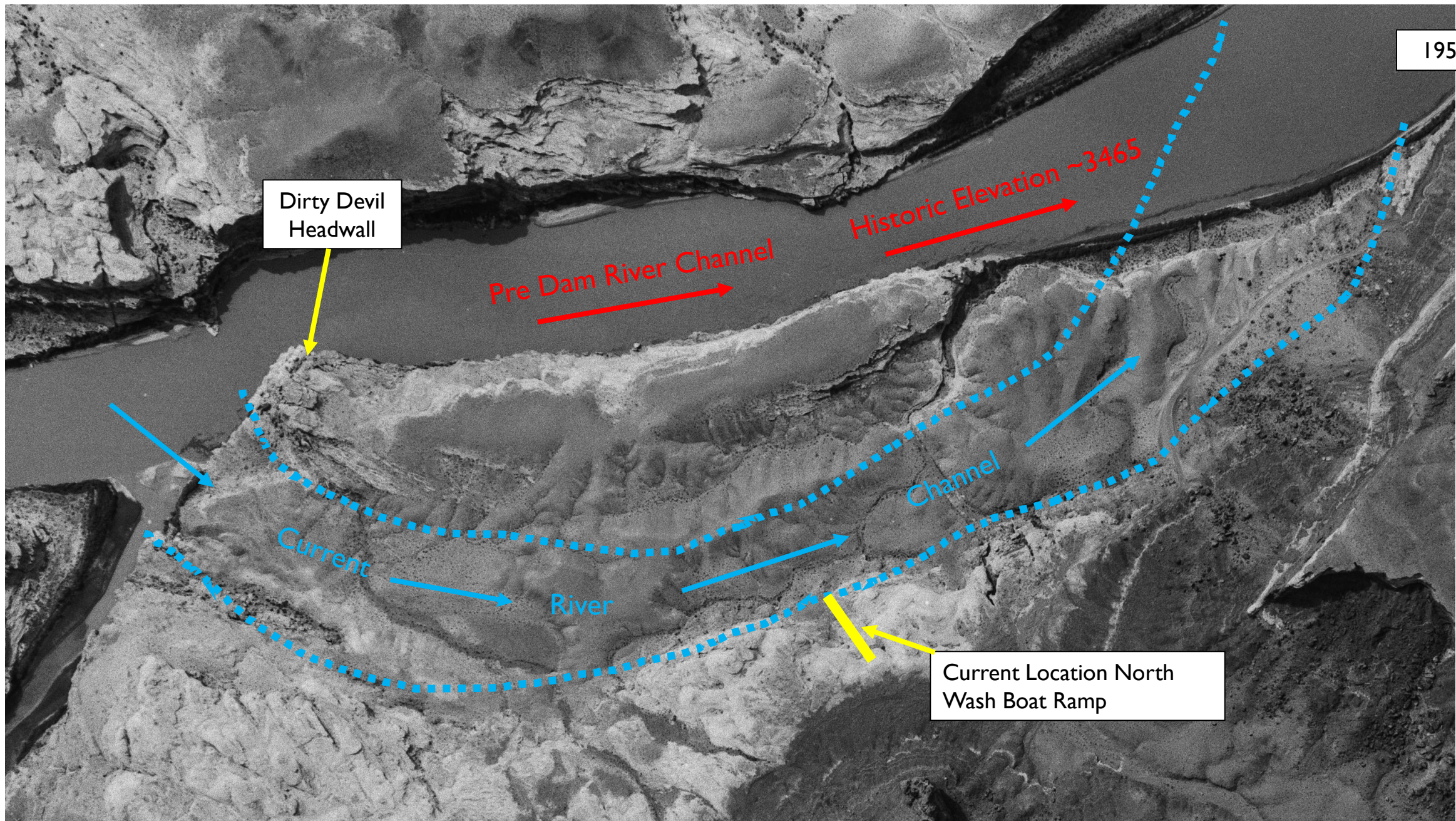


P0197n38_02_019_Narrow Canyon mile 169.7_Just above mouth of Dirty Devil, comes in on right above bluff left center_ May 24, 1963, Cropped/Altered
C. Gregory Crampton Collection, Special Collections, J. Willard Marriott Library, The University of Utah

This is a black and white aerial photograph showing a wide river flowing through a landscape. The river is dark and occupies the upper half of the frame. The surrounding terrain is light-colored and shows signs of erosion, with numerous small, rounded hills and valleys. The texture of the land appears rough and uneven. The overall scene is captured from a high altitude, providing a broad view of the geographical features.

1959

USGS Overflight Picture
August 7, 1959



1959

Dirty Devil
Headwall

Pre Dam River Channel

Historic Elevation ~3465

Channel

Current

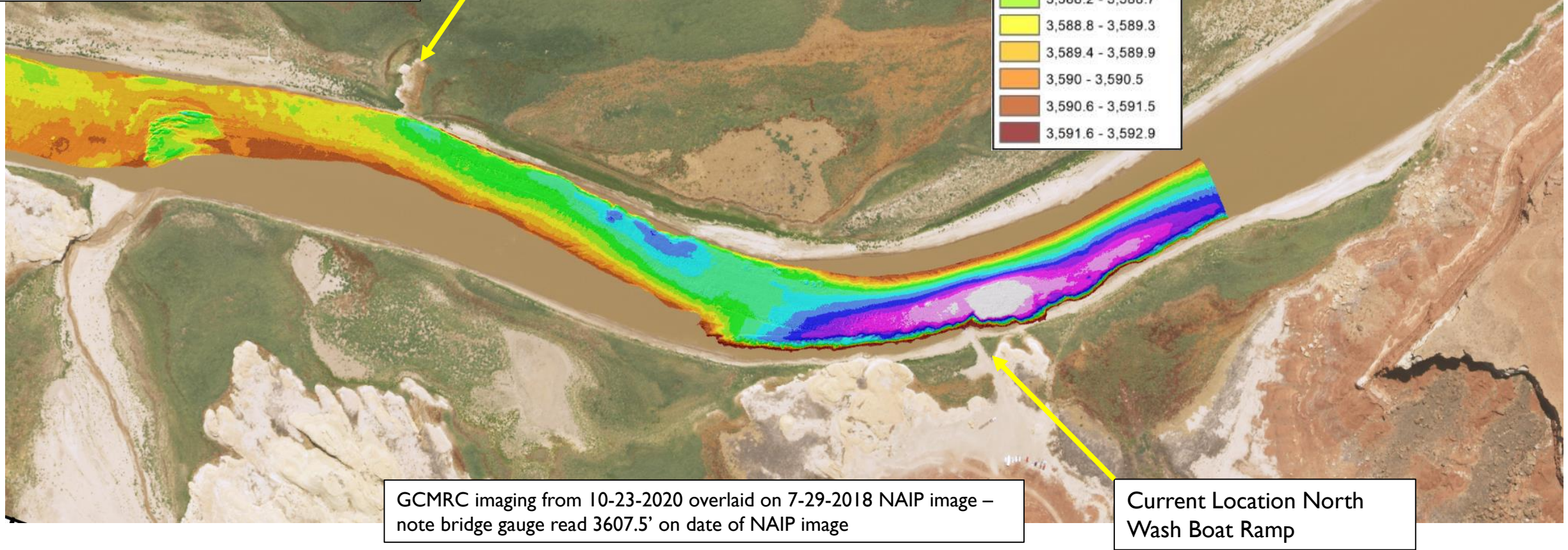
River

Current Location North
Wash Boat Ramp

North Wash Channel Mapping

Depth by Elevation
Overlaid on Google Earth Image

USGS water surface elevation at the
bridge:
3598.42 famsl on October 21, 2020



1959 Topographic Map of Dirty Devil Confluence and areas downstream showing pre-reservoir topography and river corridor

Dirty Devil Headwall
Approximately 3670'
Surveyed summer 2020

Silted-in Historic River Channel
Elevation of approximately 3460'

Concrete Ramp at Hite
approximately $\frac{3}{4}$ mile

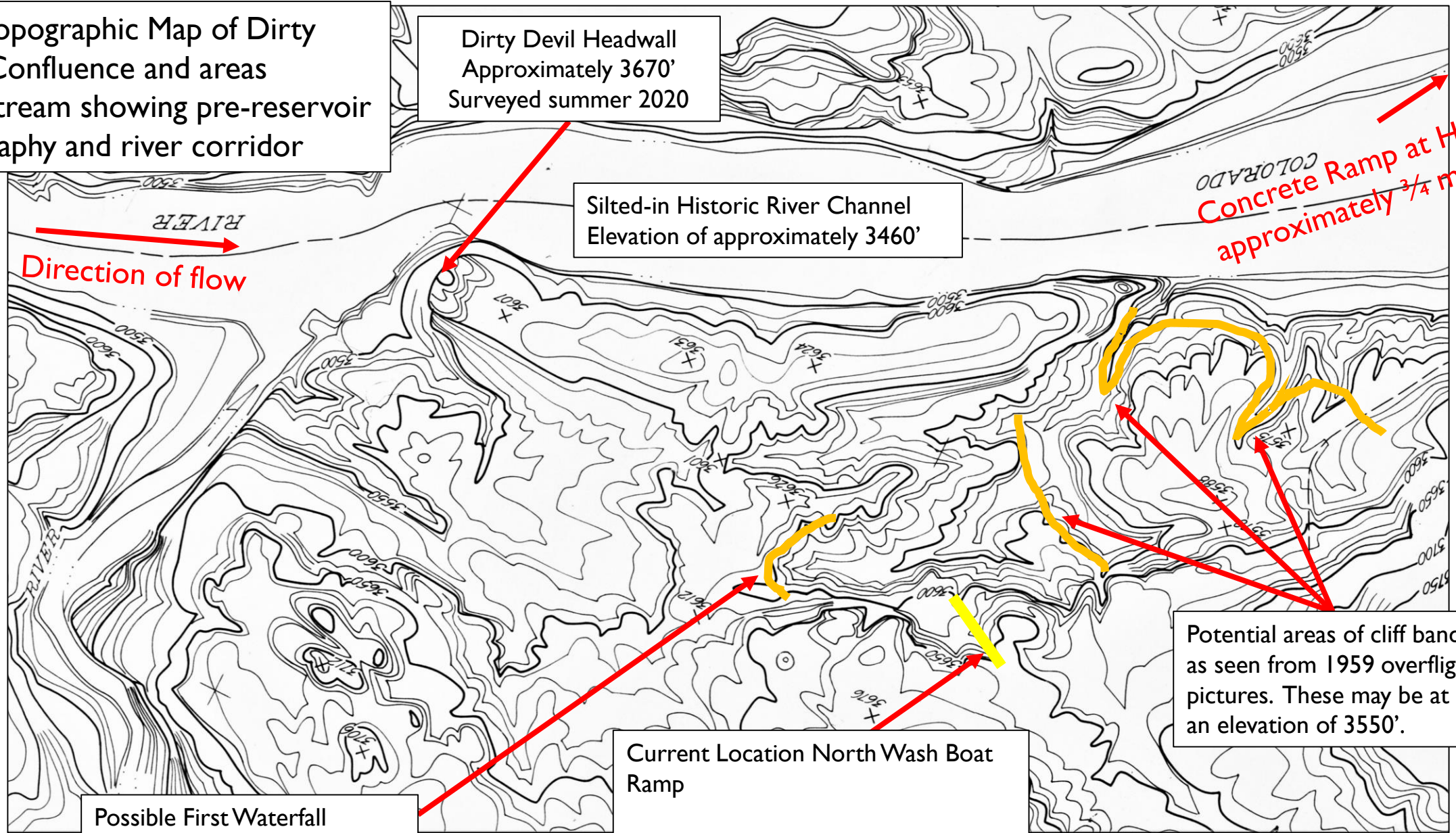
Direction of flow

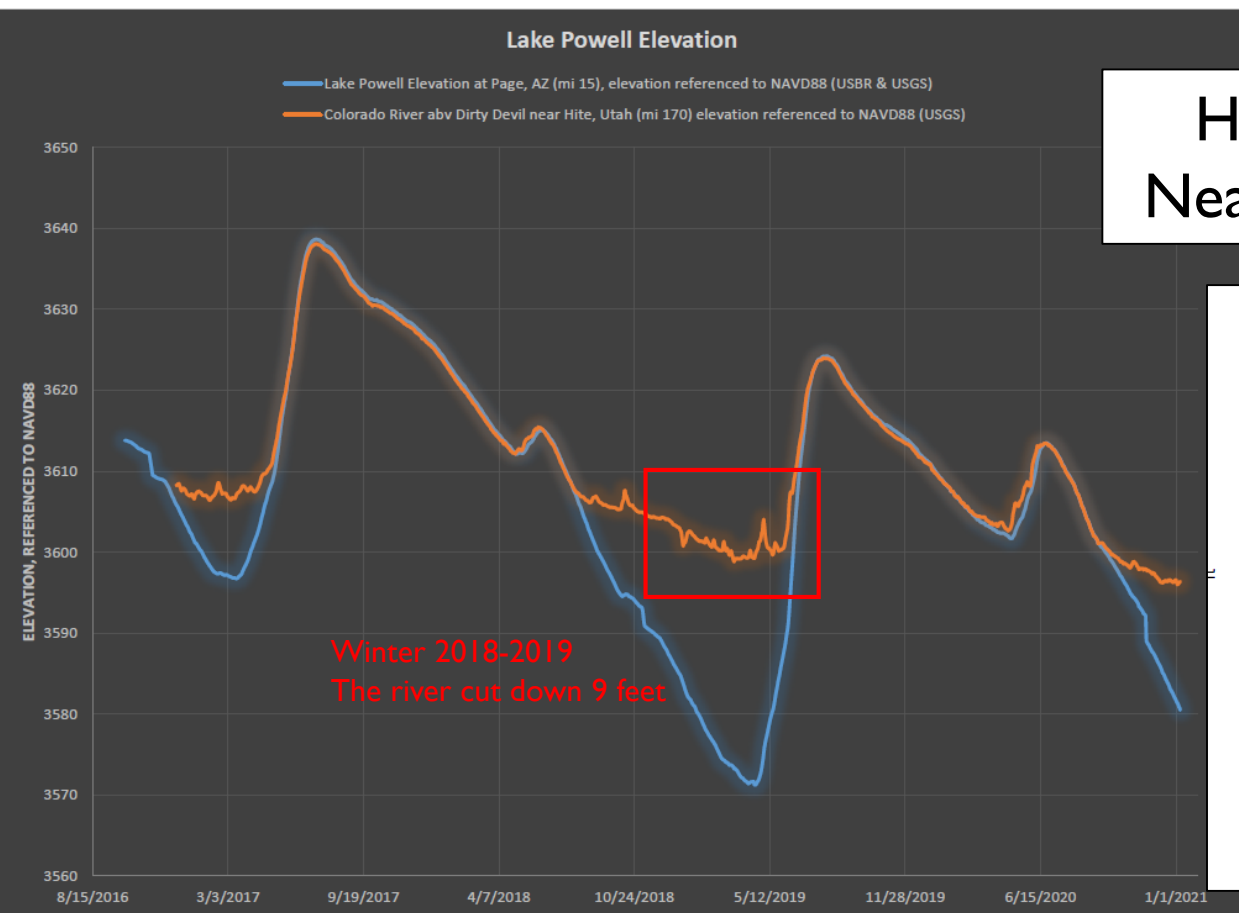
Potential areas of cliff bands
as seen from 1959 overflight
pictures. These may be at
an elevation of 3550'.

Possible First Waterfall
Location- higher than 3550'

Current Location North Wash Boat
Ramp

Water Surface Elevation on
December 9, 2020 approximately
3595'





History of USGS Colorado River Bridge Gauge Near Hite and Glen Canyon Dam Winter Variances



During the winter of 2018-19 the river carved down approximately 9 feet near the Colorado Bridge near Hite.

The downcutting rate was approximately 1.5-2 feet per month.

In September of 2020 the bridge gauge and the dam gauge levels diverted and the river was flowing on its delta/ on the perched river area.

This reading of 3596 (famsl) and dropping was the lowest the USGS gauge at the Colorado River Bridge near Hite has ever recorded.

At the time of this writing, the river level at the Colorado Bridge near Hite has stopped downcutting at a rate similar to the winter of 2018-2019. This may show that the perched river could be flowing over a more erosion resistant layer.

Based on field observations during a January 9th visit to the North Wash Ramp there are no visible signs of disturbances. It is hard to say what the river may be flowing over and what the future may hold.

Source: <https://waterdata.usgs.gov/monitoring-location/09328990/#parameterCode=00065>

In the spring of 2005, the reservoir was below 3575' for the first time in over a decade.

Just below Hite Marina, the Colorado River meandered across its delta mud flats.

During a period in the spring of 2005, the river cut down to a bedrock cliff band, creating a new rapid.



Ariel view of river flowing over cliff band, Spring 2005 Dohrenwend/Weisheit



A scene that could again take place in the area between the current North Wash Ramp and the proposed Hite Ramp Extension.

This was only a temporary feature. It disappeared as the river cut back towards its historic channel in the spring of 2005. Later that summer, as the reservoir refilled, it covered the area.

However, several parties were caught unaware by this hydraulic hazard.

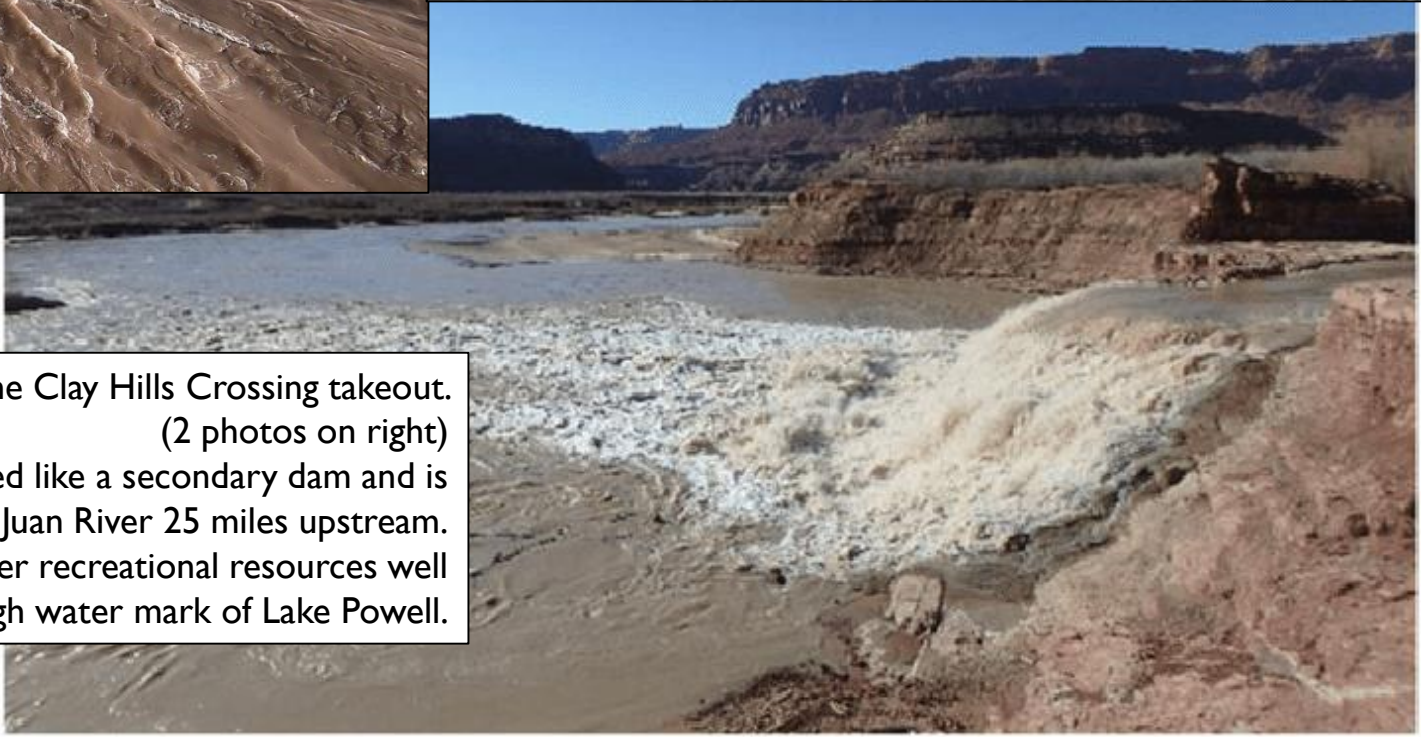
Boats were flipped and lost.

George Simmons, 2005

Here are some examples of places where the river was pushed out of its original channel due to reservoir sediments, causing the river to flow over a cliff band and creating an impassable obstacle.



Pearce Ferry Rapid, Colorado River, Grand Canyon. River trips used to float through here and take out at South Cove on Lake Mead. A takeout had to be created upstream of this location.



Paiute Farms Waterfall. San Juan River below the Clay Hills Crossing takeout.
(2 photos on right)

While not a well traveled section of river, this feature has acted like a secondary dam and is causing sediment aggradation on the San Juan River 25 miles upstream. This sedimentation has consumed rapids and altered other recreational resources well above the high water mark of Lake Powell.

If a Perched River Hazard Appears near Hite

How it may affect access, resources, and general safety

Access: If a waterfall forms where the Colorado River is perched just below the Dirty Devil River confluence, access will be inhibited to users that may wish to go either downstream (from the current North Wash Ramp), or need to access the extended ramp at Hite from upstream.

Resources: If a waterfall forms where the river is perched downstream of the Dirty Devil & Colorado River confluence, it will inhibit the river's ability to restore itself upstream of the waterfall (i.e. secondary dam). The recently observed return of upstream rapids and riparian zone will stop and the sediment load will drop out as it aggradates above the new hydraulic feature. Over time, such an occurrence will consume the rapids that have returned in lower Cataract Canyon.

Hazards/ Dangers: If a waterfall forms in this section of the Colorado where the flow is known to fluctuate from 3,000cfs to 90,000 CFS, it could become a significant hazard for any boats and persons on the water.

The Dredging of Castle Rock Cut Off

Glen Canyon National Recreation Area
Arizona

National Park Service
U.S. Department of the Interior

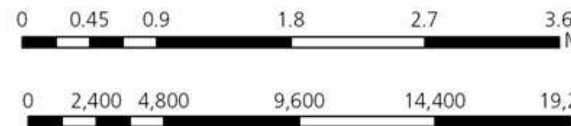


Castle Rock Dredging Project



Legend

- Current Route
- Route Through Castle Rock Cut
- ▨ Proposed Project Area
- 3700 Elevation Contour



October 2007
Produced by Environmental

Rationale:

- Shortens the “up-lake” travel for house and powerboaters by 12 miles
- Saves both time and fuel for reservoir related users

History and Dredging Operations (source:

<http://www.onthecolorado.org/Resources/NPS/ScalingCastleRockCut.pdf>):

- Castle Rock Cut was first deepened in the 1970s to allow Lake Powell users quick access to up lake areas from the popular Wahweap Marina. The exact amount of channel widening, deepening is unknown.
- In 1992, Castle Rock Cut was “deepened” by approximately 8 feet. (During this time the reservoir level was as low as 3619 at the dam.)
- The proposal of 2008 channel dredging and widening would “entail the removing of about 250,000 cubic yards of sandstone” to cut a channel 80 feet wide and 2,300 feet long and 15 feet deep... This would allow boats to pass through the Castle Rock Cut when Lake Powell is approximately 3,600 feet in elevation.”

If money can be spent to dredge a cut off near the Glen Canyon Dam to allow easier access for users, could money be spent to put the river back in its channel near Hite?

It is a complicated situation

Our hope is that you have a better understanding of the complicated issues - past and present - related to Colorado River access in the Hite area.

Infrastructure can be built to safely access locations regardless if they are reservoir or river.

Those of us who worked on this report just want access to be safer and reliable. Many people visit the area to experience the beautiful landscape around Hite, Utah. What users have encountered over the past 17-18 years has been inconsistent and dangerous.

We hope this helps. Thank you for all the maintenance of the ramps up to this point and any future work related to addressing this issue.



Looking out across the sediment delta near Farley/White Canyons; Jan 1, 2021



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Thank you for taking the time to read this. More to come.
Contact the Returning Rapids Project research team at:
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More information, project updates, or to make a donation visit our website: returningrapids.com