



## Proposed Amendments to Commission Order 40 (Bag and Possession Limits, Special Regulations, and Specific Closures for Sport Fishing) for Calendar Years 2021 & 2022

### 1. **Change regulations on the East Fork Little Colorado River upstream of Colter Dam to include a seasonal angling closure.**

**Proposed Regulation Change:** The East Fork Little Colorado River upstream of Colter Dam in Apache County would be closed to fishing from January 1 to April 30. Catch-and-release only for trout; trout must be immediately released unharmed; no trout may be kept; artificial fly and lure only; single-pointed barbless hooks only from May 1 to December 31.

**Current Regulation Language:** The East Fork Little Colorado River upstream of Colter Dam in Apache County is currently open to fishing year-round with these requirements, catch-and-release only for trout; trout must be immediately released unharmed; no trout may be kept; artificial fly and lure only; single-pointed barbless hooks only.

**Justification:** The East Fork Little Colorado River is an Apache Trout recovery stream on the Apache-Sitgreaves National Forest that is currently open to catch-and-release angling for wild genetically pure Apache Trout. It was first opened to angling in 2015 after it met the criteria generally used by the Department to define when a native trout recovery stream would be considered to be open to angling. Those criteria are (1) distribution of trout throughout the treated and previously occupied reaches, (2) a minimum of three years of recruitment in the recovery stream, and (3) a population size of at least 500 adults or at the maximum potential for the stream. A population estimate was completed in 2013 and estimated an Apache Trout population size of 1,306 of which 526 were adult fish. The stream has remained open to angling since 2015. No additional surveys have been completed since 2013, but anglers have reported

high catch rates for Apache Trout and the population is believed to be stable. Overall angling effort on the stream appears to be low, only three of the 117 anglers who have completed the Arizona Trout Challenge have caught their Apache Trout at the East Fork Little Colorado River.

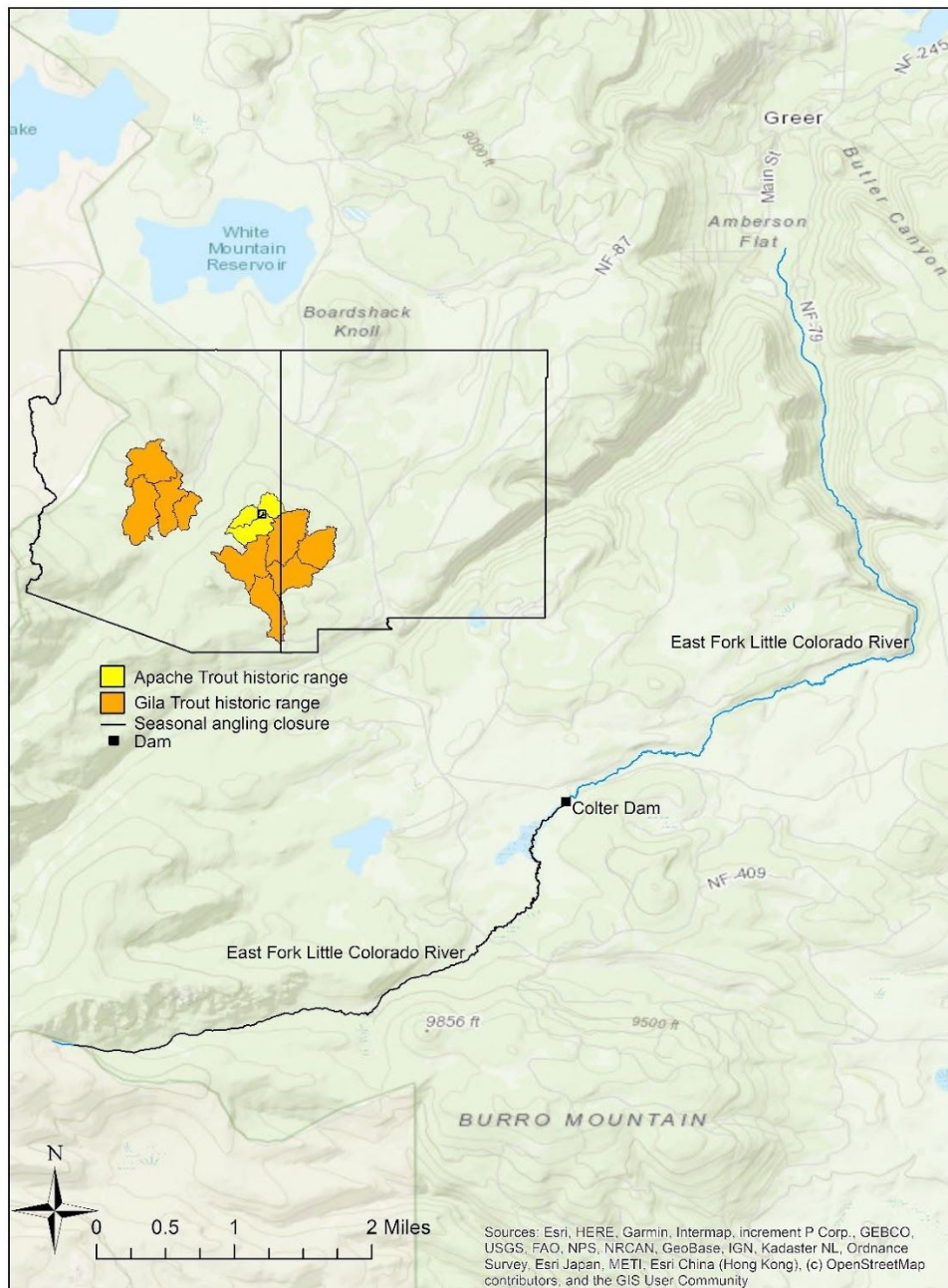
A change to close the stream to angling during Apache Trout spawning would be beneficial to the population and would be viewed favorably by most anglers. Closing the stream to angling from January 1 to April 30 is expected to give the population more protection from incidental mortality related to catch-and-release angling, especially during spawning season, a vulnerable time of year. Due to the changing climate, winters have become shorter and dryer resulting in increased stress on Apache Trout during spawning season. By closing the stream to angling during this critical time, angling stress on a climate stressed spawning population can be eliminated. Only a few anglers would be affected by the seasonal closure as the stream is typically inaccessible for most of the proposed closure period due to winter conditions.

**Potential Benefits:**

- Protects Apache Trout during the time of year when they are spawning and most vulnerable
- Reduces the reliance on satisfactory winter/spring conditions to protect Apache Trout during spawning
- Makes the angling regulations for native trout streams more consistent across the state.

**Potential Drawbacks:**

- A few anglers may have concerns about the proposed amendment limiting their angling opportunities on the stream for a portion of the year when they could previously fish the stream.



**Figure 1.** Location map of the East Fork Little Colorado River in Apache County. The black portions of the East Fork Little Colorado River highlight the areas that would receive a seasonal angling closure.

## **2. Open Lee Valley Creek to angling.**

**Proposed Regulation Change Language:** Lee Valley Creek; the limit is 2 trout (includes any combination of trout and grayling); artificial fly and lure only.

**Current Regulation Language:** Lee Valley Creek above Lee Valley Lake is closed to fishing.

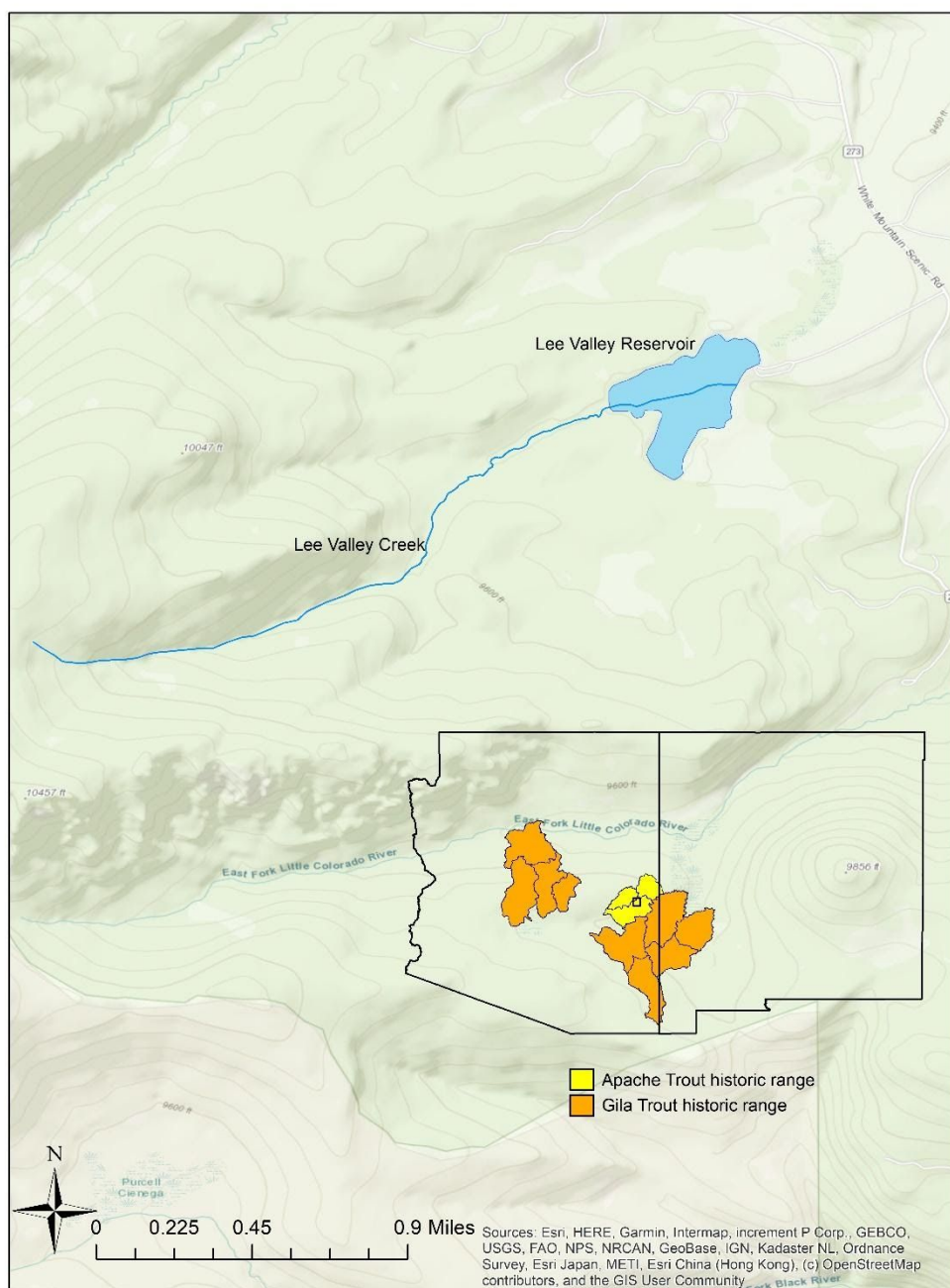
**Justification:** Lee Valley Creek has been considered an Apache Trout recovery stream until recently. Genetically pure Apache Trout were stocked into Lee Valley Creek in October 2004 and October 2007. However, no Apache trout were observed during visual surveys in 2008 and the stream is currently believed to be fishless. In 2014, an old fish barrier was removed from the stream above Lee Valley Reservoir. Originally the barrier was constructed to prevent movement of nonnative salmonids from Lee Valley upstream into Lee Valley Creek. The barrier was no longer needed because the nonnative salmonids of concern were removed from the reservoir. Since previous efforts to establish a recovery population of Apache Trout in Lee Valley Creek have failed and the stream itself is small and provides only marginal habitat for Apache Trout, the stream is no longer considered as a candidate for Apache Trout recovery. As such, any fish found in Lee Valley Creek are most likely fish that were stocked in Lee Valley Lake and moved upstream into the creek. Anglers should have the same opportunity to catch these fish if they move into the creek as they would in the lake. Therefore because there is no longer a barrier to fish passage on the stream, and it is no longer considered for Apache Trout recovery, the stream should be opened to fishing with the same regulations as Lee Valley Reservoir.

### **Potential Benefits:**

- Provides another fishing opportunity for anglers to catch Arctic Grayling or Apache Trout that were stocked into Lee Valley Reservoir.

### **Potential Drawbacks:**

- None identified.



**Figure 2.** Location map showing Lee Valley Creek above Lee Valley Reservoir. All of Lee Valley Creek would be opened to angling with a limit of two trout (includes any combination of trout and grayling) and artificial fly and lure only requirements.

### 3. Change angling regulations on Burro Creek to include a seasonal angling closure.

**Proposed Regulation Change Language:** Burro Creek in Apache County would be closed to fishing from January 1 to April 30. Catch-and-release only for trout; trout must be immediately released unharmed; no trout may be kept; artificial fly and lure only; single-pointed barbless hooks only from May 1 to December 31.

**Current Regulation Language:** Burro Creek is open to angling year round. Catch-and-release only for trout; trout must be immediately released unharmed; no trout may be kept; artificial fly and lure only; single-pointed barbless hooks only.

**Justification:** Burro Creek is a tributary to the West Fork Black River that originates on the Apache-Sitgreaves National Forest. It meets the West Fork Black River approximately 0.7 km upstream of forest road 116. Burro Creek is an Apache Trout recovery stream, and considered a part of the West Fork Black River Apache Trout meta-population with the majority of the Apache Trout residing in the mainstem West Fork Black River. There are no barriers to prevent movement of Apache Trout between Burro Creek and the West Fork Black River. Angling pressure directly on Burro Creek is presumed to be low. To date no trout challenge applications have been received with an Apache Trout caught from Burro Creek. Burro Creek is not sampled as part of a nonnative trout removal effort taking place on the Upper West Fork Black River and its tributaries. Burro Creek is not sampled because it is presumed to have very few or no Apache Trout present. The majority of the stream flows through a large meadow providing no shading via riparian vegetation. As such, stream temperatures in the summer often get too hot for trout to survive. As a result there is very little to no quality habitat available for Apache Trout in Burro Creek.

A change to close the stream to angling during Apache Trout spawning would be beneficial to the population and would be viewed favorably by most anglers. Closing the stream to angling from January 1 to April 30 is expected to give the population more protection from incidental mortality related to catch-and-release angling, especially during spawning season, a vulnerable time of year. Due to the changing climate, winters have become shorter and dryer resulting in increased stress on Apache Trout during spawning season. By closing the stream to angling during this critical time, angling stress on a climate-stressed spawning population can be eliminated. We expect only a few angler objections to the seasonal closure as the stream is typically inaccessible for most of the proposed closure period due to winter conditions.

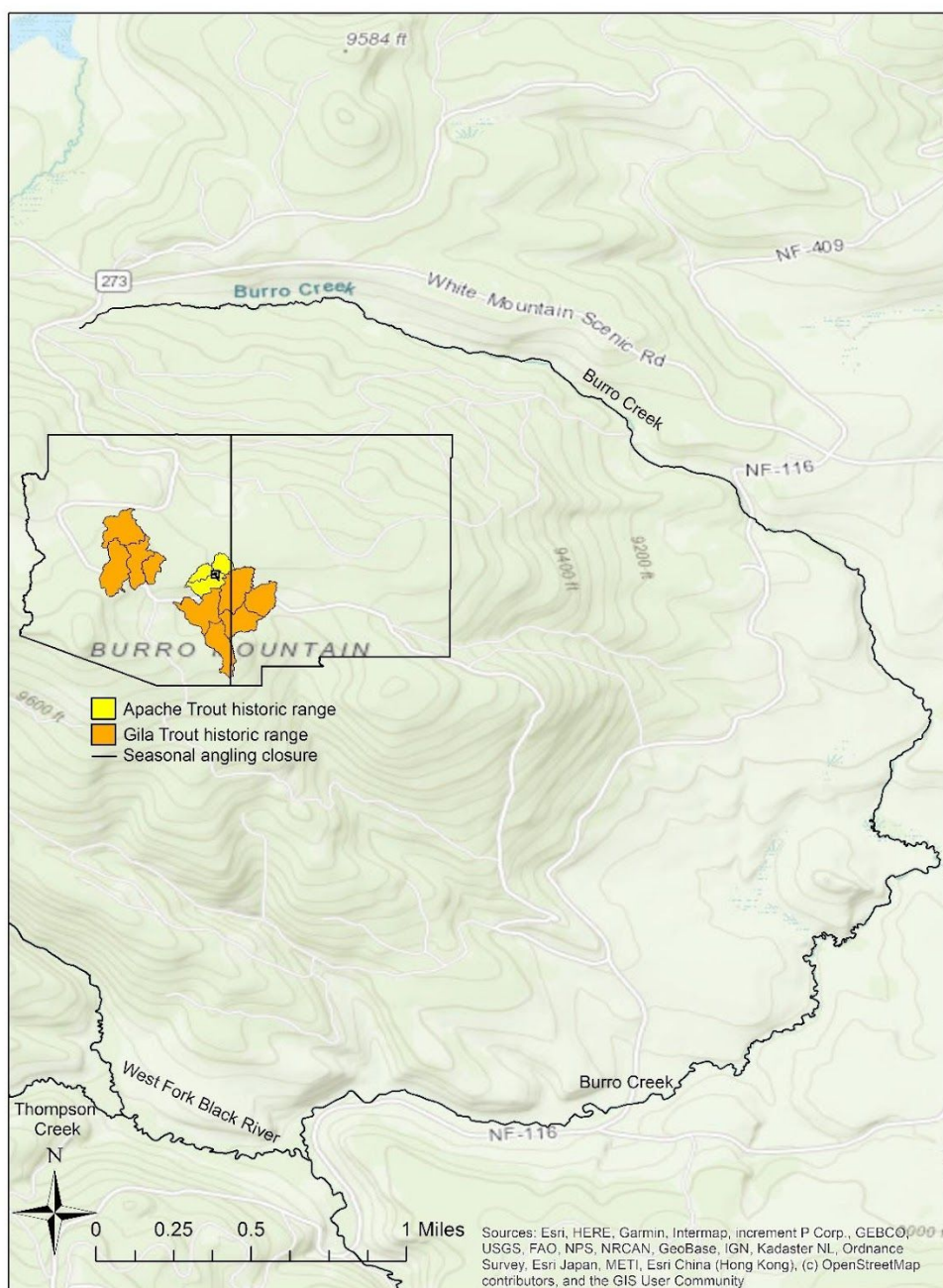
**Potential Benefits:**

- Protection for Apache Trout during the time of year when they are spawning and most vulnerable
- Reduces the reliance on satisfactory winter/spring conditions to protect Apache Trout during spawning
- Makes the angling regulations for native trout streams more consistent across the state.

**Potential Drawbacks:**

- Anglers may not like this change as it limits their angling opportunities on the stream for a portion of the year when they could previously fish the stream.





**Figure 3.** Location map showing Burro Creek. The black portions of Burro Creek, Thompson Creek, and the West Fork Black River highlight the areas that would receive a seasonal angling closure.



#### 4. Change angling regulations on Thompson Creek to include a seasonal angling closure.

**Proposed Regulation Change Language:** Thompson Creek in Apache County would be closed to fishing from January 1 to April 30. Catch-and-release only for trout; trout must be immediately released unharmed; no trout may be kept; artificial fly and lure only; single-pointed barbless hooks only from May 1 to December 31.

**Current Regulation Language:** Thompson Creek open to angling year round. Catch-and-release only for trout. Trout must be immediately released unharmed; no trout may be kept; artificial fly and lure only; single-pointed barbless hooks only.

**Justification:** Thompson Creek is a tributary to the West Fork Black River that originates on the Fort Apache Indian Reservation. It meets the West Fork Black River approximately 1.2 miles upstream of forest road 116. Thompson Creek is an Apache Trout recovery stream, and considered a part of the West Fork Black River Apache Trout meta-population with the majority of the Apache Trout residing in the mainstem West Fork Black River. There are no barriers to prevent movement of Apache Trout between Thompson Creek and the West Fork Black River. Angling pressure directly on Thompson Creek is presumed to be low. To date, no trout challenge applications have been received with an Apache Trout caught from Thompson Creek. The entire length of the stream on Apache-Sitgreaves National Forest land is sampled multiple times annually as part of a nonnative trout removal effort taking place on the Upper West Fork Black River and its tributaries. The most recent sampling effort in Thompson Creek in September 2019 sampled a total of 9 Apache Trout varying in length from 108 to 176 mm in length. Additional removal passes will be completed on Thompson Creek during 2020.

A change to close the stream to angling during Apache Trout spawning would be beneficial to the population and would be viewed favorably by most anglers. Closing the stream to angling from January 1 to April 30 is expected to give the population more protection from incidental mortality related to catch-and-release angling, especially during spawning season, a vulnerable time of year. Due to the changing climate, winters have become shorter and dryer resulting in increased stress on Apache Trout during spawning season. By closing the stream to angling during this critical time, angling stress on a climate stressed spawning population can be eliminated. We expect only a few angler objections to the seasonal closure as the stream is typically inaccessible for most of the proposed closure period due to winter conditions.

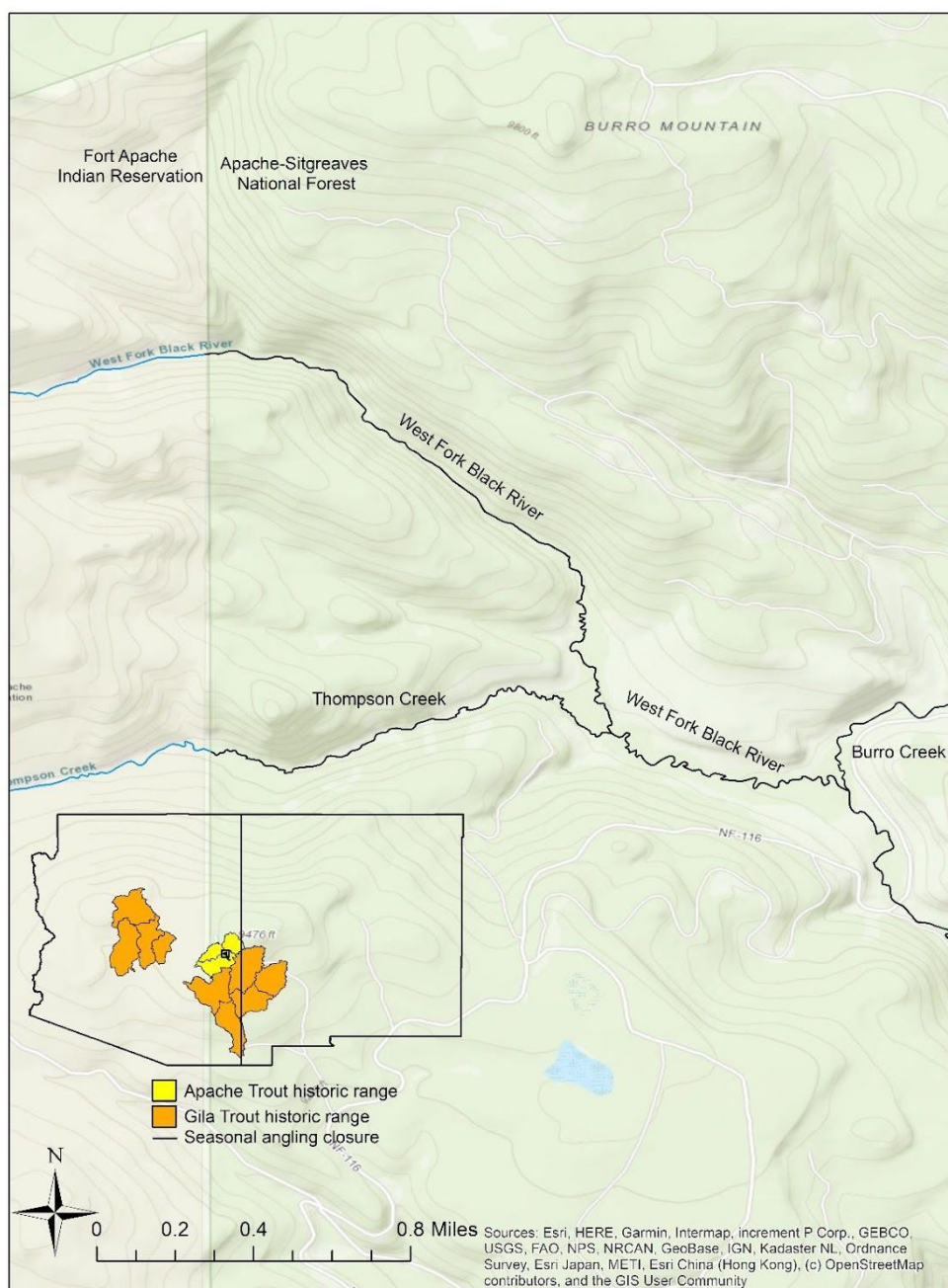
#### **Potential Benefits:**

- Protects Apache Trout during the time of year when they are spawning and most vulnerable

- Reduces the reliance on satisfactory winter/spring conditions to protect Apache Trout during spawning
- Makes the angling regulations for native trout streams more consistent across the state.

**Potential Drawbacks:**

- A few anglers may not like this change as it limits their angling opportunities on the stream for a portion of the year when they could previously fish the stream.



**Figure 4.** Location map showing where proposed regulation changes would take effect on Thompson Creek. The black portions of Burro Creek, Thompson Creek, and the West Fork Black River highlight the areas that would receive a seasonal angling closure.

**5. Change angling regulations on the Upper West Fork Black River to include a seasonal angling closure.**

**Proposed Regulation Change Language:** The West Fork Black River from the confluence of Hayground Creek including tributaries would be closed to fishing from January 1 to April 30. Catch-and-release only for trout; trout must be immediately released unharmed; no trout may be kept; artificial fly and lure only; single-pointed barbless hooks only from May 1 to December 31. The West Fork Black River would also be closed year round to angling from the upper Apache Trout barrier ¼ mile below Forest Service Road 116, downstream for 0.3 miles to a point 100 yards below the next Apache Trout barrier in Apache County.

**Current Regulation Language:** Open to angling year round from the confluence of Hayground Creek upstream to the Fort Apache Indian Reservation including tributaries. Catch-and-release only for trout; trout must be immediately released unharmed; no trout may be kept; artificial fly and lure only; single pointed barbless hooks only. The West Fork Black River is closed to angling from the upper Apache Trout barrier ¼ mile below Forest Service Road 116, downstream for 0.3 miles to a point 100 yards below the next Apache Trout barrier in Apache County.

**Justification:** The Upper West Fork Black River is an Apache Trout recovery stream that is a popular spot for native trout anglers. The most recent estimate of angling pressure on the West Fork Black River estimated 11,219 angler use days in 2013. However, this estimate includes angler use days from anglers fishing downstream of the uppermost fish barriers where nonnative Brown Trout are present and the Department stocks Apache Trout for recreational purposes. These areas are downstream of the areas the proposed angling regulation changes would affect. The total angler use days in the area that would be affected by the proposed regulation are unknown but presumed to be moderate. A total of 22 out of 117 Arizona Trout Challenge applications reported catching their Apache Trout at the West Fork Black River. The entire length of the West Fork Black River upstream of the uppermost fish barrier to the Fort Apache Indian Reservation is sampled multiple times annually as part of a nonnative trout removal project. The most recently sampling event in September 2019 sampled 600 Apache Trout. Apache Trout varied in size from 91 mm to 250 mm.

A change to close the stream to angling during Apache Trout spawning would be beneficial to the population and would be viewed favorably by most anglers. Closing the stream to angling from January 1 to April 30 is expected to give the population more protection from incidental mortality related to catch-and-release angling, especially during spawning season, a vulnerable time of year. Due to the changing climate, winters have become shorter and dryer resulting in

increased stress on Apache Trout during spawning season. By closing the stream to angling during this critical time, angling stress on a climate stressed spawning population can be eliminated. We expect only a few angler objections to the seasonal closure as the stream is typically inaccessible for most of the proposed closure period due to winter conditions.

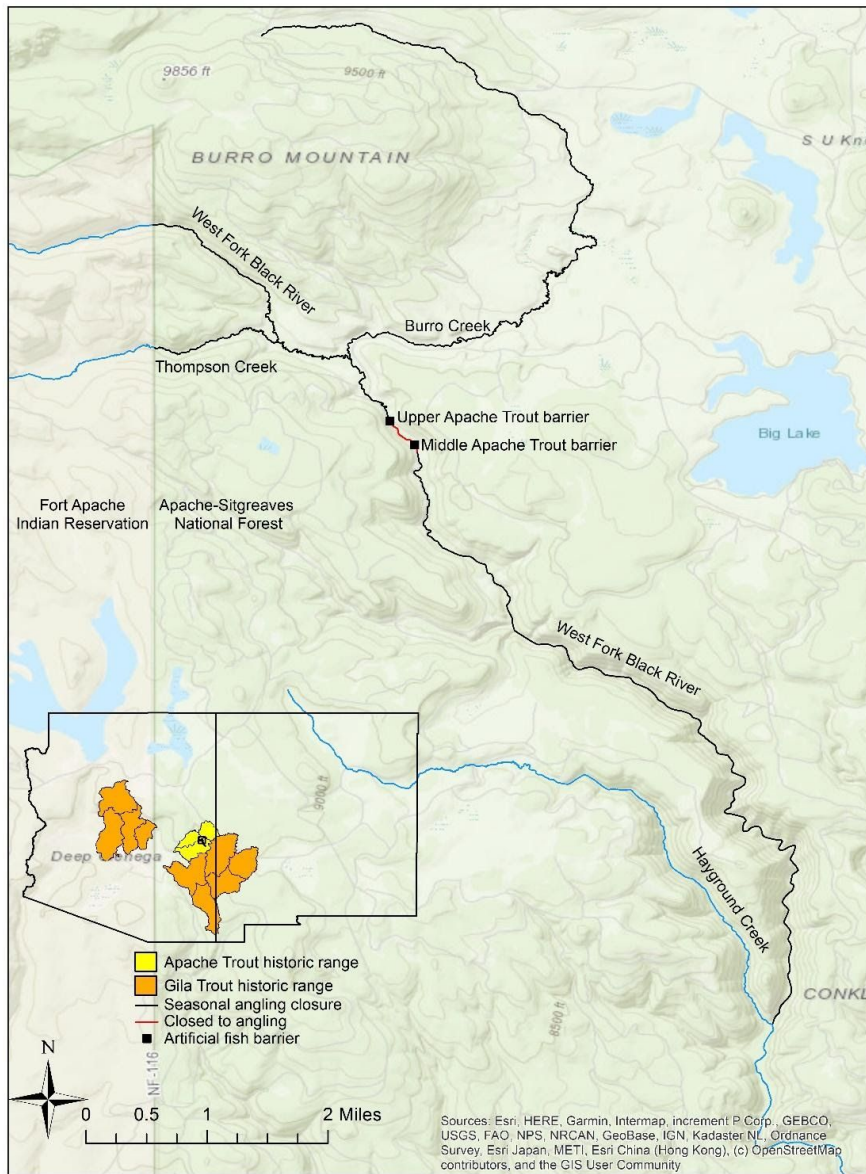
We also believe that maintaining the closure from the upper Apache Trout barrier ¼ mile below Forest Service Road 116, downstream for 0.3 miles to a point 100 yards below the next Apache Trout barrier in Apache County is critical due to the presence of nonnative Brown Trout between and directly below these two barriers. Annual sampling immediately upstream of the two Apache Trout barriers has failed to detect any Brown Trout above the two barriers. However, if this angler closure were lifted, anglers could fish immediately below or in between the barriers, making it easier for them to illegally move Brown Trout above the barriers into protected Apache Trout habitat. If Brown Trout were to establish above the two Apache Trout barriers they would have a devastating impact on the Apache Trout population through competition and predation and impede recovery efforts. Therefore it is essential that the angling closure between the two Apache Trout barriers remains in place to make it more difficult for Brown Trout to be moved upstream of the two barriers.

**Potential Benefits:**

- Protects Apache Trout during the time of year when they are spawning and most vulnerable
- Reduces the reliance on satisfactory winter/spring conditions to protect Apache Trout during spawning
- Makes the angling regulations for native trout streams more consistent across the state.

**Potential Drawbacks:**

- Anglers may not like this change as it limits their angling opportunities on the stream for a portion of the year when they could previously fish the stream.



**Figure 5.** Location map of where proposed regulation changes would take effect on the West Fork Black River and tributaries. The black portions of Burro Creek, Thompson Creek, and the West Fork Black River highlight the areas that would receive a seasonal angling closure. The red portion of the West Fork Black River highlights the area from the uppermost Apache Trout barrier to a point 100 yards downstream of the next Apache Trout barrier that would remain closed to angling.



## 6. Open Grapevine Creek to angling including a seasonal angling closure.

**Proposed Regulation Change Language:** Grapevine Creek in Yavapai County would be closed to fishing from January 1 to April 30. Catch-and-release only for trout; trout must be immediately released unharmed; no trout may be kept; artificial fly and lure only; single-pointed barbless hooks only from May 1 to December 31.

**Current Regulation Language:** Grapevine Creek in Yavapai County is closed to angling.

**Justification:** Grapevine Creek is a Gila Trout recovery stream and tributary to Big Bug Creek in Yavapai County. Gila Trout were originally introduced into Grapevine Creek in 2009, but the population was eliminated in 2017 following a catastrophic wildfire. In April 2019, efforts to reestablish Gila Trout in Grapevine Creek began when 19,000 eyed Gila Trout eggs were stocked directly into the stream. The egg stocking was determined to be successful and 485 Gila Trout were observed during a visual survey in August 2019. This visual survey also determined that the Gila Trout had distributed themselves throughout the entire accessible perennial section of Grapevine Creek. In April of 2020, an additional 6,000 eyed Gila Trout eggs were stocked in Grapevine Creek. A visual survey was also conducted during the April 2020 egg stocking and 126 Gila Trout were observed. It should be noted that only a proportion of the Gila Trout present in the stream are thought to have been observed during these visual surveys. Exact efficiency estimates for our visual surveys are variable. The method is generally considered to be reliable for estimating abundance of young-of-year salmonids, but not very effective for estimating abundance of sub-adult and adult salmonids. In June of 2020, 196 Gila Trout varying in length from 85 to 198 mm were captured and transported from lower Grapevine Creek below perennial water to the upstream most portions of perennial water which previously had very few Gila Trout from the 2019 stocking. Another visual survey is scheduled for the summer of 2020. Grapevine Creek will be stocked again with eyed Gila Trout eggs again in the spring of 2021.

The Department has received criticism in recent years from the general public that native trout streams are closed to angling and never reopened. For the most part this is a fair criticism, as the criteria the Department has used for determining when to reopen native trout recovery streams to angling have proved difficult to meet. Those criteria are (1) distribution of trout throughout the treated and previously occupied reaches, (2) a minimum of three years of recruitment in the recovery stream, and (3) a population size of at least 500 adults or at the maximum potential for the stream. Only two of 13 native trout recovery streams that were closed to angling have met these criteria in recent years.

Frye Creek (Gila Trout) and the East Fork Little Colorado River (Apache Trout) took 6 and 10 years respectively from the first stocking until the stream was reopened to angling, a long time

for anglers to wait. This has led to a lack of public support for some recent native trout recovery projects that would require closing streams to angling, as anglers fear those streams will never reopen. This has made recovery projects more difficult to complete and even delayed projects for several years. To change public opinion, garner support for upcoming native trout recovery projects, and provide more recreational angling opportunities for native trout we believe it is prudent to reopen native trout recovery streams to angling prior to meeting the criteria previously used. We believe the most sensible approach is to refrain from closing native trout recovery streams unless absolutely necessary.

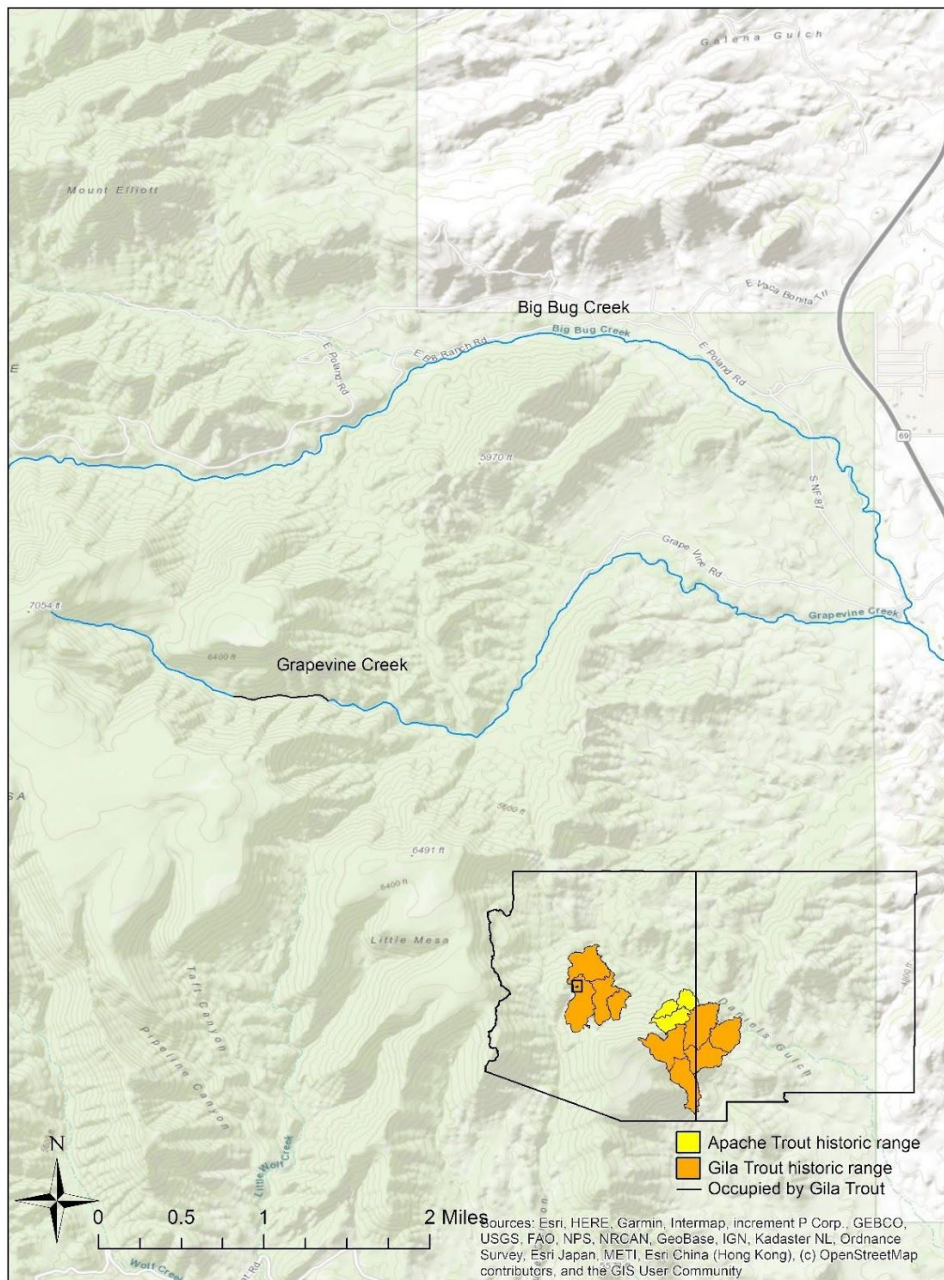
A seasonal closure of the stream to angling during Gila Trout spawning would be beneficial to the population and be viewed favorably by most anglers. Closing the stream to angling from January 1 to April 30 is expected to have a positive effect on Gila trout as it would give the population more protection from incidental mortality related to catch-and-release angling, especially during spawning season, a vulnerable time of year. This would provide protection for Gila Trout during the spawning period as the climate warms, and we have shorter and dryer winters. A similar approach has been used by the New Mexico Department of Game and Fish for Rio Grande Cutthroat Trout and for some Gila Trout recovery streams (i.e., Whitewater Creek). We believe this can be done effectively, providing additional angling opportunities for native trout, while not compromising the establishment of these recovery populations. We expect only a few angler objections to the seasonal closure as the stream is typically inaccessible to angling for most of the proposed closure period due to winter weather.

**Potential Benefits:**

- Increases the number of angling opportunities for Gila Trout in Arizona
- Limits the angling pressure on any single Gila Trout recovery stream by opening multiple recovery streams to angling and spreading out the angling effort
- Helps generate public support for future Gila Trout restoration projects by showing the public we are willing to open Gila Trout recovery streams to angling.

**Potential Drawbacks:**

- This action could increase incidental mortality related to catch-and-release angling and may slow the establishment of a self-sustaining Gila Trout population.



**Figure 6.** Location map showing Grapevine Creek in Yavapai County. The black portion of Grapevine Creek highlights the perennial section of the stream currently occupied by Gila Trout.

## 7. Open Dude Creek to angling including a seasonal angling closure.

**Proposed Regulation Change Language:** Dude Creek in Gila County would be closed to fishing from January 1 to April 30. Catch-and-release only for trout; trout must be immediately released unharmed; no trout may be kept; artificial fly and lure only; single-pointed barbless hooks only from May 1 to December 31.

**Current Regulation Language:** Dude Creek in Gila County is closed to angling.

**Justification:** Dude Creek is a Gila Trout recovery stream that is a tributary to the East Verde River northwest of Payson. The current population of Gila Trout in Dude Creek was started in 2015 when 1,030 age-0 Gila Trout were stocked. In 2016, an additional 100 age-0 and 100 catchable size Gila Trout were stocked, and finally in 2017, 500 more age-0 Gila Trout were stocked. The population has been monitored annually via visual surveys of the population. In a visual survey completed in August 2019, a total of 244 Gila Trout were observed; 42 adults, 19 sub-adults, and 183 young-of-year. Gila Trout were observed throughout all sections of the stream. Natural recruitment has been documented in Dude Creek in 2018, 2019, and 2020. While numbers of Gila Trout observed were low during the visual survey, it should be noted that only a proportion of the total Gila Trout present in the stream are observed during visual surveys. Exact efficiency estimates for our visual surveys are variable. The method is generally considered to be reliable for estimating abundance of young-of-year salmonids, but not very effective for estimating abundance of sub-adults and adult salmonids. A more recent population estimate was completed for Dude Creek in May 2020 and estimated a Gila Trout population size of 966, of which 462 of those were adults ( $\geq 130$  mm). Dude Creek has demonstrated 3 years of natural recruitment, distribution of Gila Trout throughout the stream, and an adult population size near or above 500 individuals in 2020.

The Department has received criticism in recent years from the general public that native trout streams are closed to angling and never reopened. For the most part this is a fair criticism, as the criteria the Department has used for determining when to reopen native trout recovery streams to angling have proved difficult to meet. Those criteria are (1) distribution of trout throughout the treated and previously occupied reaches, (2) a minimum of three years of recruitment in the recovery stream, and (3) a population size of at least 500 adults or at the maximum potential for the stream. Only two of 13 native trout recovery streams that were closed to angling have met these criteria in recent years.

Frye Creek (Gila Trout) and the East Fork Little Colorado River (Apache Trout) took 6 and 10 years respectively from the first stocking until the stream was reopened to angling, a long time for anglers to wait. This has led to a lack of public support for some recent native trout recovery

projects that would require closing streams to angling, as anglers fear those streams will never reopen. This has made recovery projects more difficult to complete and even delayed projects for several years. To change public opinion, garner support for upcoming native trout recovery projects, and provide more recreational angling opportunities for native trout we believe it is prudent to reopen native trout recovery streams to angling prior to meeting the criteria previously used. We believe the most sensible approach is to refrain from closing native trout recovery streams unless absolutely necessary.

A seasonal closure of the stream to angling during Gila Trout spawning would be beneficial to the population and be viewed positively by most anglers. Closing the stream to angling from January 1 to April 30 is expected to have a positive effect on Gila trout as it would give the population more protection from incidental mortality related to catch-and-release angling, especially during spawning season, a vulnerable time of year. This would provide protection for Gila Trout during the spawning period as the climate warms, and we have shorter and dryer winters. A similar approach has been used by the New Mexico Department of Game and Fish for Rio Grande Cutthroat Trout and for some Gila Trout recovery streams (i.e., Whitewater Creek). We believe this can be done effectively, providing additional angling opportunities for native trout, while not compromising the establishment of these recovery populations. We expect only a few angler objections to the seasonal closure as the stream is typically inaccessible to angling for most of the proposed closure period due to winter weather.

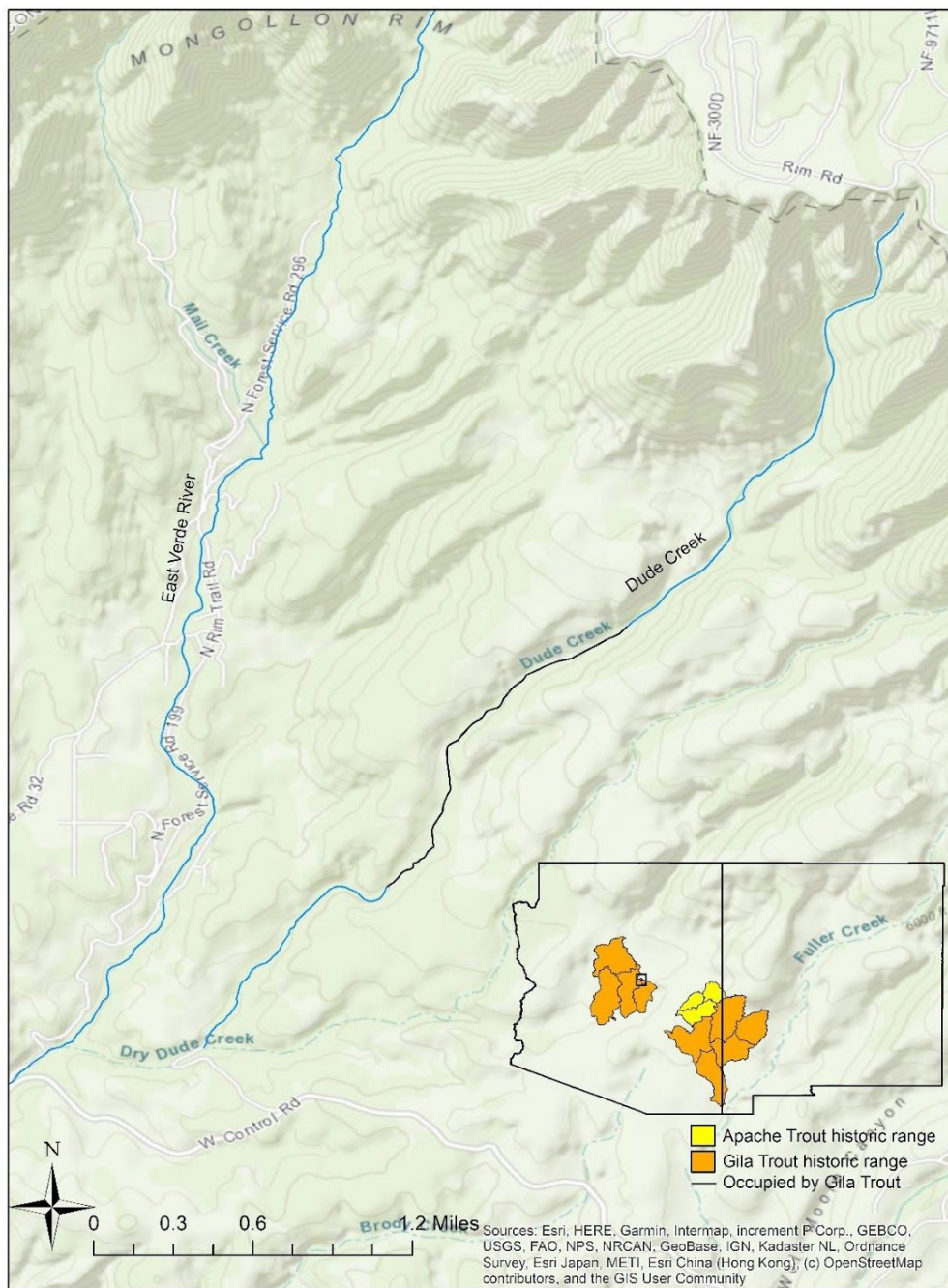
**Potential Benefits:**

- Increase the number of angling opportunities for Gila Trout in Arizona
- Limit the angling pressure on any single Gila Trout recovery stream by opening multiple recovery streams to angling and spreading out the angling effort
- Help generate public support for future Gila Trout restoration projects by showing the public we are willing to open Gila Trout recovery streams to angling
- Adds Gila Trout back to the Arizona Wild Trout Challenge, and a location to catch wild Gila Trout in Arizona for the Western Native Trout Initiative Trout Challenge.

**Potential Drawbacks:**

- The potential for increased incidental mortality related to catch-and-release angling may slow the establishment of a self-sustaining Gila Trout population.





**Figure 7.** Location map showing Dude Creek in Gila County. The black portion of Dude Creek highlights the perennial section of the stream currently occupied by Gila Trout.



## 8. Create seasonal harvest, and bait restriction regulations on River Reservoir.

**Proposed Regulation Change Language:** River Reservoir; catch-and-release only for trout; trout must be immediately released unharmed; no trout may be kept; artificial fly and lure only from October 1 through April 30. General statewide regulations apply from May 1 to September 30.

**Current Regulation Language:** Statewide Regulations for Trout (includes Rainbow, Cutthroat, Brown, Brook, Tiger, Gila, and Apache Trout; Grayling). Daily bag limit is six fish in any combination with a possession limit of twice the daily limit.

**Justification:** River Reservoir is one of three lakes referred to as the Greer Lakes (River, Bunch and Tunnel) on the outskirts of the community of Greer. Currently, all three lakes are managed as Intensive Use fisheries supported by Rainbow Trout stockings and general statewide daily bag limits. All contain wild Brown Trout, but River tends to grow more fish into the larger size classes. As such, River Reservoir is managed both as an Intensive Use fishery for Rainbow Trout and Blue Ribbon fishery for Brown Trout.

A 2013 telephone angler survey by the Arizona Game and Fish Department (Department) estimated that anglers fished a total of 17,129 days on all of the Greer Lakes (River, Bunch, and Tunnel). River in particular is very important to both locals and anglers traveling from outlying areas and is an economic driver for the town of Greer as anglers support local restaurants, bars, and other establishments in town. All three reservoirs are used for irrigation storage and delivery. River tends to hold the most water during drawdown periods. Per the Department's Coldwater Vision document, management goals for an Intensive Use fishery are as follows: angler catch rates of 0.5 fish/angler hour during stocking season, and fish to be stocked at 1 fish/angler use day (AGFD 2019). At this time, current statewide regulations provide adequate protection for the Intensive Use Rainbow Trout component of the fishery. The lake is normally stocked annually in the spring with 13,500 catchable Rainbow Trout.

River Reservoir is also managed as a Blue Ribbon fishery for Brown Trout. Historically, River Reservoir has produced some of the largest Brown Trout of any fishery in the area. Brown Trout do not reproduce within the reservoir, but do enter the Little Colorado River above the lake to spawn in the fall. Visits by Department personnel and law enforcement patrols have revealed that this short section has recently become extremely popular with anglers seeking to catch large Brown Trout entering the stream to spawn. Blue Ribbon management goals are typically accompanied by special regulations like reduced bag limits and/or gear restrictions, however

none currently exist on River Reservoir. To evaluate the need for special regulations for this Blue Ribbon fishery, Department staff undertook two different studies. One study was to evaluate the number of fish and the size structure in the system and another was to evaluate catch, harvest, and angler opinion of possible regulation changes for River Reservoir and connected waters.

During April 2020, electrofishing was used to capture fish for a mark recapture study in an effort to estimate the number and size structure of Brown Trout in River Reservoir. In three nights of sampling, 149 Brown Trout were captured and marked with a floy tag or fin clip. The largest Brown Trout captured was 28.4 inches in length and weighed 8.2 pounds, in fact, 20% of all Brown Trout captured were over 20 inches in length (Table 1). One goal for a Blue Ribbon fishery calls for 5% of trout sampled  $\geq$  20 inches. Based upon the result of this study, the estimated number of Brown Trout of all sizes that occupy River Reservoir was 367 (95 percent CI, 299 – 434) with an estimated 73 fish (95 percent CI 59 – 86) over 20 inches in length. Since the completion of the tagging, three tagged fish have been reported harvested by anglers; in one day a pair of anglers reported that they harvested all three Brown Trout they caught, including two tagged fish at 18 and 25 inches, and an untagged 28 inch fish.

Department staff also performed 15 days of creel survey from March 20, 2020 to April 29, 2020. A total of 1,938 hours of angler effort was estimated from 120 interviews. Overall, angler catch rates (fish per hour) for Brown Trout were relatively low at 0.02 fish per hour and an estimated 17 Brown Trout were harvested during the time period. When anglers were asked whether they would release a large Brown Trout versus keep it, the most common response was they would keep it. Also, when the results of the creel survey and angler reports of a tagged fish are combined, 6 out of 7 (86 %) of anglers harvested the Brown Trout they caught. Additionally, the average size of harvest for Brown Trout was 22.8 inches. No fish under 18 inches in length were reported as harvested. Even though interviewed anglers were likely to harvest a Brown Trout if they caught one, they were generally supportive of changes in regulation to protect Brown Trout. Of all anglers surveyed during the spring creel survey, 67 % responded yes when asked if they would support harvest restrictions on trout on River Reservoir.

River Reservoir also contains illegally stocked Yellow Perch and Common Carp. The perch tend to stunt and overpopulate due to a lack of predation and the carp tie up biomass in the reservoir that could be utilized by trout. Enhancing a population of larger Brown Trout in River Reservoir could help control these undesirable species. Yellow Perch compete for zooplankton forage with stocked Rainbow Trout, and Common Carp compete for benthic invertebrate forage.

Anglers seeking to harvest a large Brown Trout could still do so in a number of nearby waters. The lower reach of the East Fork Black River is managed for Intensive Use with stocked trout but contains a fishable population of larger sized wild Brown Trout.

This special regulation is being proposed to increase the number and persistence of large Brown Trout in the reservoir year round, and to protect Brown Trout that enter the river above the reservoir to spawn in the fall, but largely does not change the continued primary management of Intensive Use for Rainbow Trout during the summer months (May to September) when large numbers of people visit this lake to fish for trout. Due to the relatively small number of Memorable and Trophy-sized fish (estimated 73 fish with a 95 percent CI of 59 – 86) and the fact that anglers that catch Brown Trout during the spring season are likely to harvest them, protection is needed to maintain this Blue Ribbon Brown Trout population. The community of Greer is supportive of the proposed special regulation.

#### **Potential Benefits:**

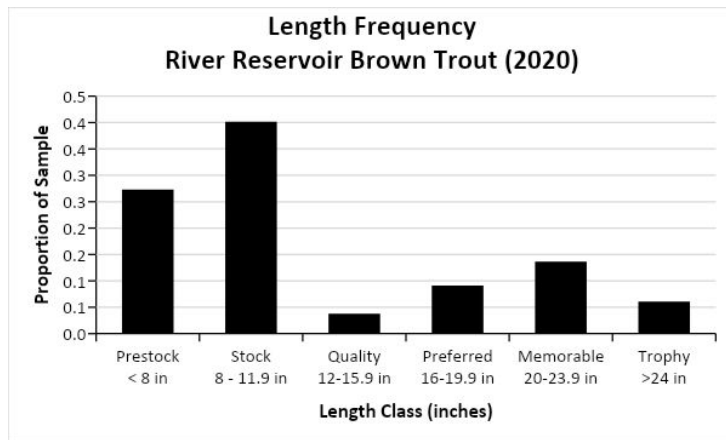
- Restriction to catch and release and artificial fly and lure would reduce harvest and hooking mortality on Brown Trout in River Reservoir when they are most vulnerable to capture (spring and fall)
- Will maintain the objective within the Department's Coldwater Vision Plan for Blue Ribbon management of 5% of the population at 20 inches or greater
- Will help maintain natural recruitment of Brown Trout by protecting them from harvest during the spawning season
- Does not create a new type of regulation. Currently, there are several fisheries statewide that have seasonal harvest closures (e.g. Silver Creek's seasonal harvest closure and hook restrictions from October 1 to March 31)
- By including the Little Colorado River upstream of River Reservoir to the confluence of the East and West Fork of the Little Colorado River in regulation, both the Brown Trout population will be adequately protected and the new regulation will be easier to understand for the public than just closing the river in an arbitrary place
- Would attract anglers to the community of Greer, which has been impacted economically by a lagging economy and the Wallow Fire of 2011.

#### **Potential Drawbacks:**

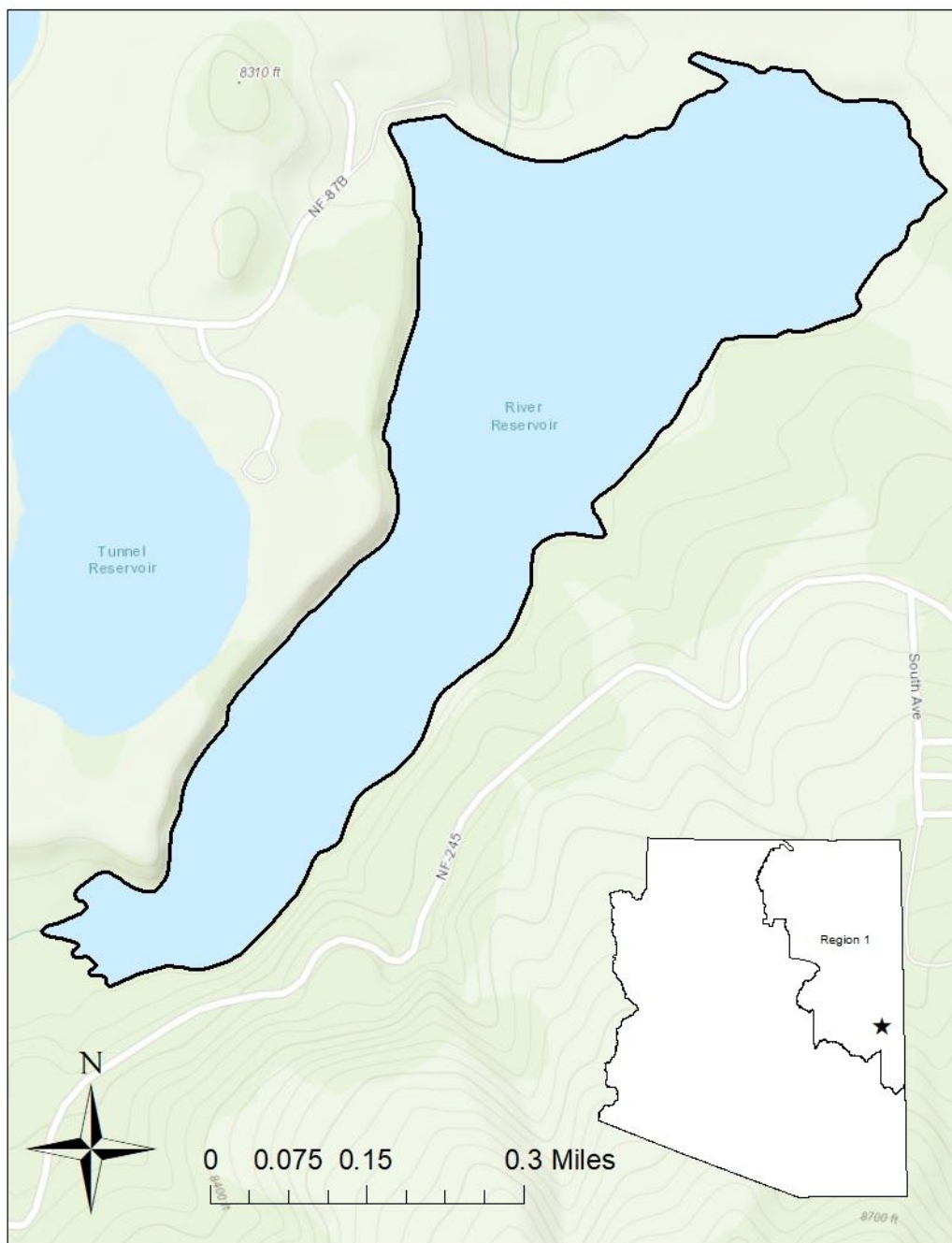
- Will not allow harvest of Trophy size classes of Brown Trout in River Reservoir during the catch and release season. It could prevent an angler from setting a State record from River Reservoir for harvested Brown Trout during the catch and release season, but this

is unlikely in this lake at this time. It would allow State records for released fish (measured by length)

- Goes against efforts to simplify regulations by introducing a seasonal closure for harvest of fish and hook restrictions for River Reservoir where none existed before. Bait fishing is popular on River Reservoir during the months of March and April so those anglers will have to adjust to new regulations if implemented
- River Reservoir will not be stocked with Rainbow Trout until after May 1, where typically the Department has stocked beginning in April. The Department will stock extra fish into Tunnel and Bunch Reservoirs to mitigate for this loss of opportunity in River Reservoir
- May require additional law enforcement presence at the opening of the fishery to ensure that regulations are being followed.



**Table 1.** Length frequencies in size classes of Brown Trout sampled by electrofishing and tagged with Floy tags and clips, April, 2020.



**Figure 8.** Location map of River Reservoir.

**9. Create seasonal harvest, and bait restriction regulations on Little Colorado River (Greer) upstream of River Reservoir to the confluence of the East and West Forks Little Colorado River.**

**Proposed Regulation Change Language:** Little Colorado River (Greer) upstream of River Reservoir to the confluence of the East and West Forks Little Colorado River; catch-and-release only for trout; trout must be immediately released unharmed; no trout may be kept; artificial fly and lure only from October 1 through April 30. General statewide regulations apply from May 1 to September 30.

**Current Regulation Language:** Statewide regulations for Trout (includes Rainbow, Cutthroat, Brown, Brook, Tiger, Gila, and Apache Trout; Grayling). Daily bag limit is six fish in any combination with a possession limit of twice the daily limit.

**Justification:** The Little Colorado River (Greer) is formed at the confluence of the West Fork Little Colorado River and East Fork Little Colorado River in the town of Greer and flows into River Reservoir. There is a diversion in the middle of Greer that diverts water into Bunch Reservoir and Tunnel Reservoir during the fill season, September 15-April 15 annually. Species present in this section of the Little Colorado River (LCR) include Rainbow Trout, Brown Trout, Apache Trout, Speckled Dace, and Bluehead Sucker. A 2013 angler survey commissioned by the Arizona Game and Fish Department estimated that anglers fished a total of 10,830 days on the section of the LCR from River Reservoir to the confluence of the East and West Forks of the LCR, the East Fork of the LCR to Coulter Dam, and the West Fork LCR to the first fish barrier. This fishery is very important to both locals and anglers traveling from outlying areas and is an economic driver for the town of Greer as anglers spend money at local restaurants, bars, or shops in town. The LCR (Greer) is managed both as an Intensive Use Apache Trout (or Rainbow Trout if Apache Trout are not available) and Wild Brown Trout fishery.

Management goals for an Intensive Use fishery are for anglers to catch 0.5 fish/angler hour during the stocking season, and fish to be stocked at 1 fish/angler use day. This section of the LCR along with the West Fork of the LCR near Greer, is stocked annually from May to September with 8,400 catchable Apache Trout (or Rainbow Trout if Apache Trout are not available). At this time, current statewide regulations are adequate for this Intensive Use fishery.

The LCR (Greer) is also managed as a Wild Trout fishery for Brown Trout. Designated Wild Trout fisheries have management objectives as follows: size structure of multiple year classes of trout including young of year and relative densities of > 500 trout/ stream mile. Brown Trout do not reproduce within River Reservoir, but enter into the LCR above the lake to spawn. Some of the 0.5 mile of the LCR above River Reservoir up to Hwy 273 is inaccessible due to thick



streamside willows, but the portion where it flows into the lake and where the trout swim up to spawn is very open and exposed, leaving the spawning trout vulnerable to angling. Visits by Department personnel and law enforcement patrols have revealed that the LCR upstream of River Reservoir has recently become extremely popular with anglers seeking to catch large Brown Trout entering the stream to spawn.

Eliminating the harvest of Brown Trout from October 1 to April 30 each year would protect Brown Trout during the spawning season and could improve the fishery of all waters in the area by minimizing harvest but still allowing fish to be caught by anglers when fishing is best. It would also allow harvest of trout under the Intensive Use concept, as well as allowing anglers opportunities to harvest Brown Trout from May 1 to September 30. A larger population of Brown Trout in Trophy size classes will better meet the anglers' desire for larger trout in waters covered by this regulation, which in turn would attract anglers to the area and community of Greer.

Anglers seeking to harvest a large Brown Trout from May 1 to September 30 could still do so in a number of nearby waters. The lower reach of the East Fork Black River is managed for Intensive Use with stocked trout but contains a fishable population of larger sized wild Brown Trout. A 13.6-pound, 30-inch Brown Trout was caught within this Intensive Use section in 2010, and an 11.5-pound, 28-inch Brown was caught in 2003. Bunch Reservoir and Tunnel Reservoir will also continue to offer opportunities for large, wild Brown Trout with current regulations and daily bag limits. Chevelon Creek and Chevelon Canyon Lake also have special regulations, but still allow the harvest of 2 trout daily.

This special regulation is being proposed to increase the number and persistence of large Brown Trout in River Reservoir year round by protecting Brown Trout that enter the river above the reservoir to spawn in the fall, but largely does not change the continued primary management of Intensive Use for Apache Trout (or Rainbow Trout if Apache Trout are not available) during the summer months (May to September). Due to the relatively small number of Memorable and Trophy-sized fish (estimated 73 fish with a 95 percent CI of 59 – 86) and the fact that anglers that catch Brown Trout during the spring season are likely to harvest them, protection for Brown Trout is needed.

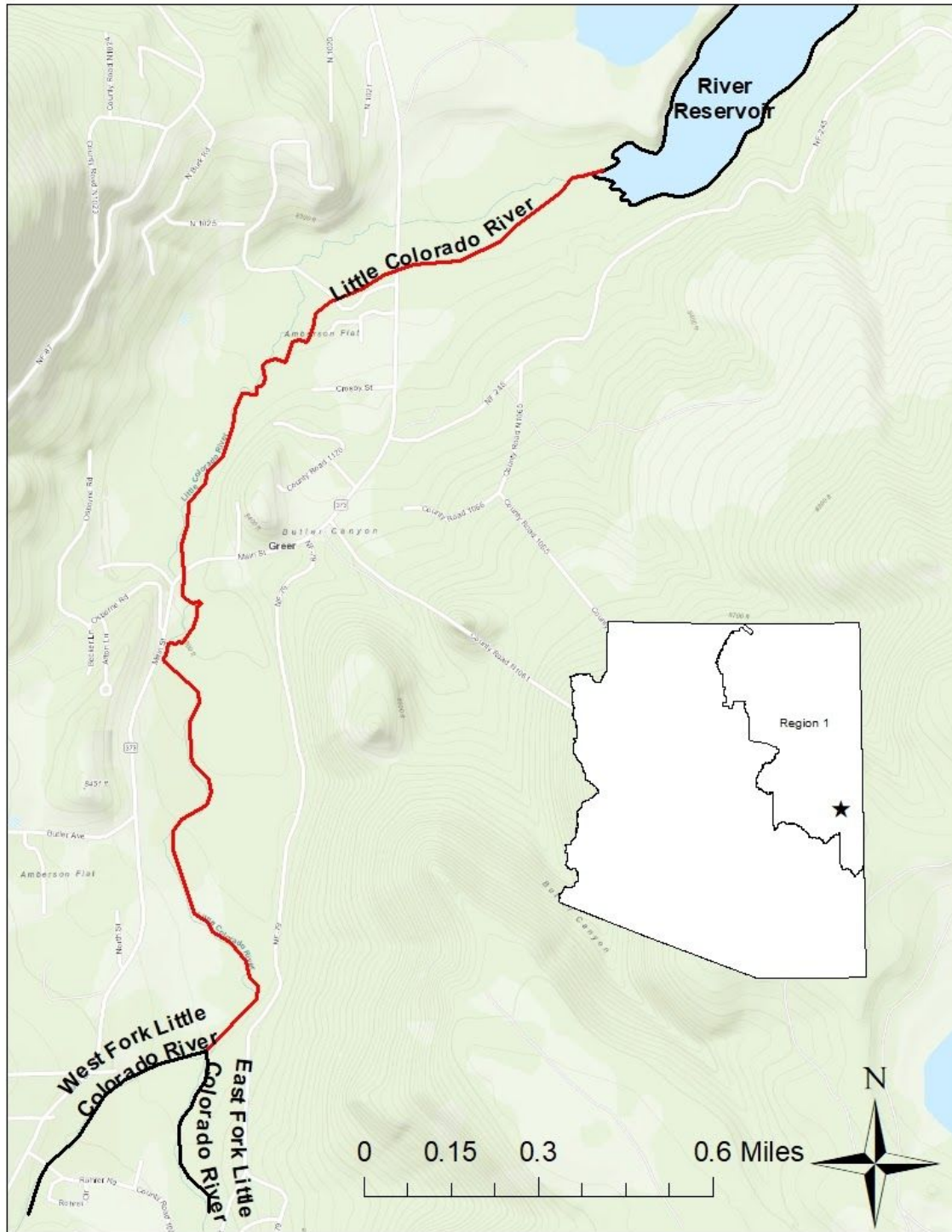
#### **Potential Benefits:**

- Restriction to catch and release, artificial fly and lure only would reduce harvest and hooking mortality on Brown Trout in this section of the Little Colorado River (Greer) when they are most vulnerable to capture (spring and fall)

- Maintains objectives within the Department's Coldwater Vision Plan for Blue Ribbon management
- Helps maintain natural recruitment of Brown Trout by protecting them from harvest during the spawning season
- Does not create a new type of regulation. Currently, there are several fisheries statewide that have seasonal harvest closures (e.g. Silver Creek)
- By including the Little Colorado River upstream of River Reservoir the confluence of the East and West Forks of the Little Colorado River in regulation, Brown Trout will be adequately protected and it will be easier for the public to understand versus closing the river to an arbitrary place in the Little Colorado River.
- No impact to the current stocking schedule or anglers' ability to harvest fish as stockings do not begin until after May 1 and end by September 30
- Would attract anglers to the community of Greer, which has been impacted economically by a lagging economy and the effects of the Wallow Fire in 2011.

**Potential Drawbacks:**

- Will not allow harvest of Trophy size Brown Trout in the Little Colorado River (Greer) during the catch and release season. It could prevent an angler from setting a State record from River Reservoir for harvested Brown Trout during the catch and release season, but this is unlikely in this lake at this time. It would allow State records for released fish (measured by length)
- Goes against efforts to simplify regulations by introducing a seasonal closure for harvest of fish and bait restrictions for the Little Colorado River (Greer) where none existed before
- May require additional law enforcement presence at the opening of the fishery to ensure that regulations are being followed.



**Figure 9.** Location map showing Little Colorado River and tributaries above River Reservoir. The red section is the portion proposed for the seasonal special regulation.

## **10. Change the Statewide Daily Bag limit for Trout to 4.**

**Proposed Regulation Change:** Trout (includes Rainbow, Cutthroat, Brown, Brook, Tiger, Gila and Apache trout; Grayling) the daily bag limit is 4, any combination.

**Current Regulation Language:** Trout (includes Rainbow, Cutthroat, Brown, Brook, Tiger, Gila and Apache trout; Grayling) 6, any combination.

**Justification:** The Department has developed themed objectives as well as approaches under these objectives to guide coldwater species management under the Coldwater Sportfisheries Strategic Vision Document. Under Objective 5 in this Vision, a goal of 80% angler satisfaction is defined for a three-year period. In addition, two critical components under Objective 3 are individual metrics for angler satisfaction and catch rates. Data from many lakes all over the state indicate most stocked trout waters do not meet this 80% satisfaction goal or the catch rate goals.

Currently the catchable production and stocking size at all state hatcheries is 2.5 per pound or 10" in length. A pilot study started in 2018 and completed in 2019 used Canyon Creek Hatchery to grow trout to 1 per pound, stock and follow angler satisfaction. Results from hatchery driver and regional studies demonstrate a significant improvement in return to creel when stocking size is greater than or equal to 1 fish per pound or 12" in length. We expect to maintain the same poundage being stocked from our hatchery system. The application of growing larger fish will be a net reduction of numbers being stocked. However, even with the reduction in numbers, the Department expects a higher catch rate and return to creel than our current state. Studies from other western states have shown that trout stocked at larger sizes return to the creel at a higher rate creating higher satisfaction rates.

### **Potential Benefits:**

- Reducing the daily bag limit of trout to 4 supports the concept of shifting the Department's trout rearing target to 1 fish per pound which reduces total number of trout produced and stocked, but increases the mean size of stocked trout to 12 inches. The Department believes by stocking a 12 inch trout, return to creel will increase as well as angler satisfaction.

### **Potential Drawbacks:**

- Anglers that currently enjoy catching and harvesting 6 trout per day because their total annual fishing days are low may have a reduced total harvest. In addition, because all

trout species are included, some confusion may occur when harvesting other species of trout other than Rainbow Trout.

**11. Restore the statewide daily bag limit for Trout at CC Cragin Reservoir, Knoll Lake, and Nelson Reservoir.**

**Proposed Regulation Change:** Trout (includes Rainbow, Cutthroat, Brown, Brook, Tiger, Gila and Apache trout; Grayling) the daily bag limit is 4, any combination at CC Cragin Reservoir, Knoll Lake, Nelson Reservoir.

**Current Regulation Language:** Seasonal unlimited daily bag limit for Trout (includes Rainbow, Cutthroat, Brown, Brook, Tiger, Gila and Apache trout; Grayling) any combination, from September 1 through March 31 annually at CC Cragin Reservoir, Chevelon Creek from Chevelon Crossing to the confluence with the Little Colorado River, East Clear Creek, Knoll Lake, Nelson Reservoir and Nutrioso Creek.

**Justification:** The Game and Fish Commission adopted this seasonal unlimited daily bag limit for the first time in September of 1997. The regulation was intended to allow anglers to continue to participate in traditional summertime put and take trout fisheries while removing as many of the Rainbow or Brown Trout from these watersheds between September 1 through May 1. The regulations were established in hopes to give the Little Colorado River (LCR) spinedace a biological advantage and help our efforts in recovering this species while still maintaining traditional trout sport fishing opportunities during the heavily used summer months.

The Department has been conducting management and research studies in both Nutrioso and East Clear Creek watersheds for over 20 years to maintain a balance between native and sportfish. Angler surveys have been performed at Blue Ridge, Knoll and Nelson Reservoirs as well. Our data suggests seasonal unlimited daily bag limits for trout in these areas has not resulted in a benefit to LCR Spinedace populations. This is due to low catch rates post September 1 and limited migration of trout into the areas of concern above and below reservoirs. In addition, the Department moved to stocking triploid trout in 2011, which limits trout exposure to spinedace. Concern still exists however that trout persist in Chevelon Creek, Nutrioso Creek and East Clear Creek and the encouragement of unlimited harvest should continue on these creeks.

At the time the proposal was established, the public did not support these regulations. Only 14% strongly supported, while 26% strongly disapproved. Many of the comments were focused on the

direction of the program rather than the intended purpose of the management action. Anglers were fearful that this is the beginning of many more changes that would interfere with traditional sport fishing activities throughout the State.

**Potential Benefits:**

- Returning these fisheries to the statewide daily bag limit would further simplify the fishing regulations for anglers typically leading to increased compliance and satisfaction.
- Current regulations do not meet the intent in which they were established.

**Potential Drawbacks:**

- The few anglers that currently take advantage of the seasonal unlimited daily bag limit will see their catches reduced. However, angler surveys have not shown that catches in excess of 4 or 6 trout per day from these areas during the unlimited period are common. Regular stockings don't begin until after March 1 annually.