ARIZONA GAME AND FISH DEPARTMENT
INTER-OFFICE MEMO

TO: Region VI Nongame Files & Others Interested

FROM: William P. Burger, Nongame Specialist, Region VI

SUBJECT: **Ellison Creek leopard frog surveys, August 28-29, 2006**

DATE: August 31, 2006

On August 28-29, 2006 personnel from AGFD and Tonto NF met at Ellison Creek to follow-up on our documentation of Chiricahua Leopard Frogs in the area on June 14, 2006. Ray Tanner, the local livestock permittee also joined us on August 28. Information on the survey area, methods, findings, and various background are contained in a memo dated June 21, 2006 that I wrote and distributed following the June surveys; most of that background will not be repeated here. I have included a map from the June report to illustrate the area visited and how we named the headwater tributaries.

The 2 primary purposes of our August follow-up were: 1) to conduct additional surveys of the headwaters area of Ellison Creek, and 2) to have key personnel that were not involved in the June surveys become more familiar with the area. No leopard frogs were found during this visit; however, all of us involved were able to become more familiar with the area.

Participants in this visit were Bill Burger (myself, from AGFD Region VI), Mike Sredl and Suzanne Goforth (AGFD, Phoenix Nongame), Steve Lohr (Tonto NF Biologist), Ray Tanner (permittee), and Duke Klein (Tonto NF Payson and Pleasant Valley Wildlife Staff) and his summer crew (Troy Maikis, Gareth Blakemore, Mary Finlay, Celeste Andresen, Tom Conlin, and Torra Washburn).

On Monday Duke K., Mike S., Steve L., Ray T. and I visited the 2 drainages where we found leopard frogs in June (Tributaries 3 & 4 on the attached map), and the headwaters of Ellison Creek itself as also marked on the map. These areas were thought most important for all to see since they are known to still support frogs, or as in the case of upper Ellison appeared to offer suitable habitat. Given the results of our June surveys, and specifically the number of rainbow trout and gartersnakes, the portion of Ellison Creek below the confluence with Tributary 3 was thought less likely to support leopard frogs and was not surveyed this trip.

Specific notes on our surveys during this visit follow:

Upper Ellison mainstem: Between about 11:30-15:30 on August 28, Suzanne, Troy and Gareth surveyed up Ellison Creek from near its confluence with Tributary 3 to slightly above the spring shown on the attached map near waypoint 10. Mike, Steve, Duke, Ray and I also briefly visited this area on August 28. In the morning of August 29th Steve, Duke, Suzanne, Mike and I re-visited the area near the spring. Flows in upper Ellison were greater than in June. In June there was an area between waypoints 2 and 11 on the attached map that did not have surface flow, and likewise there was not flow above the spring near waypoint 10. This trip, flows were present above the spring and Steve and I followed the flow upstream to its source at another, unmarked spring (UTM 484802E / 3805880N, NAD27 12S). Flows were continual from this upper spring downstream to below the confluence with Tributary 3. No frogs were seen in this portion of upper Ellison this visit. We did find 1 neonate Wandering Gartersnake, and 1 Mountain Kingsnake. Suzanne, Troy and Gareth noted a few trout in the lower portion of the creek near the start of their survey.

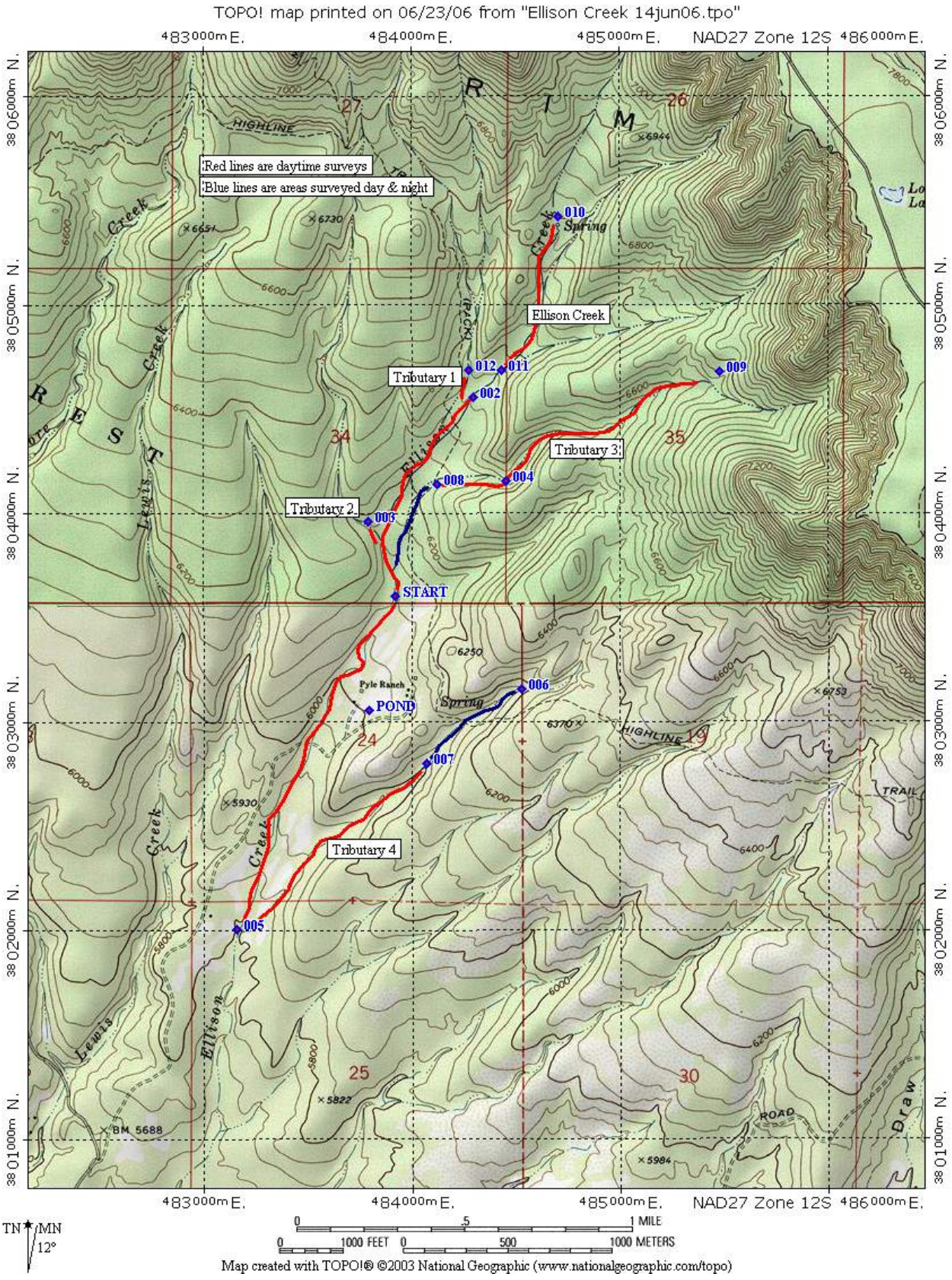
Tributary 3: During the afternoon of August 28th Tom C. and Torra W. surveyed Tributary 3 from its confluence with Ellison Creek to about ¼ mile below the upper end shown on the attached map (i.e. below waypoint 9). Duke, Mike, Ray, Steve & I also looked at a portion of this tributary near the Highline Trail crossing on our tour of the various sites. Mike, Gareth, and I did a night survey from the Highline Trail crossing downstream to Ellison Creek. No frogs were seen in any of our efforts this trip, though 1 leopard frog was found in this Tributary in June. Tom and Torra did note a few fish within about the first 5 minutes of their survey near the confluence with Ellison but none further up; they also saw a mountain kingsnake.

Tributary 4: Mary and Celeste surveyed approximately 1 km of this tributary from near UTM 483529 / 3802439 to slightly above the spring during the afternoon on August 28. The tributary was dry at both the upper and lower ends of their survey but there was surface water from the spring down to about 483847 / 3802608. Mike, Duke, Ray, Steve & I also briefly visited this tributary mid-day. Suzanne, Duke, Troy, and Steve conducted a night survey along the portion of the tributary with surface water that evening. Mary and Celeste found 1 Canyon treefrog, but no other fish, frogs, or snakes were seen this trip. Two (perhaps 3) leopard frogs were found in this tributary in June.

Updates from the June report:

*The tadpoles found in June and noted as either leopard frog or treefrog were determined to be *Hyla* sp., most certainly canyon treefrog, not Chiricahua leopard frog.

*The samples taken from 2 of the Chiricahua leopard frogs observed in June were tested for chytrid and were negative.


TOPO! map printed on 06/23/06 from "Ellison Creek 14jun06.tpo"
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Red lines are daytime surveys
Blue lines are areas surveyed day & night
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cc: Rod Lucas
Tom Hildebrandt
Mike Sredl
Suzanne Goforth
Dana Bayer
Duke Klein
Steve Lohr
Ray Tanner
Jeff Servoss

2006.020m

ARIZONA GAME AND FISH DEPARTMENT
INTER-OFFICE MEMO

TO: Region VI Nongame Files & Others Interested

FROM: William P. Burger, Nongame Specialist, Region VI

SUBJECT: **Ellison Creek Headwaters Survey June 14-15, 2006**

DATE: June 21, 2006

Summary: AGFD Region VI and Nongame personnel surveyed the headwaters area of Ellison Creek on June 14-15, 2006. Ellison Creek is a tributary to the East Verde River that drains off the Mogollon Rim, with its headwaters located about 20 km northeast of Payson and 5 km northwest of Tonto Village. The primary purpose of the survey was to search for Chiricahua leopard frogs (*Rana chiricahuensis*, hereafter leopard frogs), a species federally listed as Threatened, but which had not been documented in Ellison Creek since the late 1990s. We found 3 (possibly 4) RACH in tributaries to Ellison Creek. We noted a reproducing population of rainbow trout (*Oncorhynchus mykiss*) in Ellison Creek. Wandering gartersnakes (*Thamnophis elegans*) were common. We note that this headwater area of Ellison might have potential for introduction of native fish.

Location & Methods: Ellison Creek is located on the Tonto National Forest, Payson Ranger District, with the survey area on the Cross V grazing allotment. In terms of leopard frogs the drainage is classified as being in the Upper Verde River Management Area of Recovery Unit 4. Diamond Point and Dane Canyon USGS 7.5 minute topographic maps cover the survey area. All coordinates reported are in UTM zone 12, NAD27.

Permission to access and camp on the La Cienega Ranch was granted by both the property owners and the caretakers, and we sincerely thank Rosie and Rusty Lyon and Phil and Audra Daugherty.

On June 14-15, 2006, Bill Burger and Dana Warnecke of AGFD Region 6; and Suzanne Goforth, Chris Nyhart, and Jennifer Spawn of AGFD Nongame Branch surveyed the headwaters area of Ellison Creek, primarily searching for Chiricahua leopard frogs. For the purposes of discussion we labeled and refer to the various tributaries surveyed as shown on the attached map. We also surveyed the pond at La Cienega Ranch. Surveys were conducted by 2-5 people walking along the stream visually searching for leopard frogs, fish, snakes, other riparian herpetofauna, and other species or items of interest. Most of the surveys were conducted during daylight, but portions of 2 tributaries were also surveyed at night using flashlights & spot lamps (red lines on the map indicate daytime surveys, blue indicates areas that were surveyed both day and night).

Dip nets were used to capture various species when appropriate.

Survey Details:

La Cienega Ranch pond: After talking with the caretakers, Phil and Audra Daugherty; the 5 of us surveyed the pond, located at 483791E 3803055N, from about 9:35 to 9:55 on June 14. Several large rainbow trout came to the surface during our survey, and 3 wandering gartersnakes were captured and 2-3 others observed. We also returned to the pond that evening to eat dinner, and during that time we also observed trout and at least 3 gartersnakes. The pond is perhaps 30 m diameter, so the entire pond can easily be viewed from multiple locations, including our dinner spot. All of us walked around the pond in the morning, and several of us again in the evening and no frogs were seen or heard. According to Phil and Audra, the pond is 7-10 feet deep and is stocked with rainbow trout and bluegill (*Lepomis macrochirus*). They often see gartersnakes at the pond as well as in the nearby garden. There may have been leopard frogs in the pond at some time, but Phil and Audra said they have not seen any in at least 4-5 years (they were not specifically familiar with leopard frogs, but after discussion and pictures they determined they do occasionally see Canyon treefrogs, *Hyla arenicolor*, but hadn't conclusively ever seen a leopard frog). Given the number of fish & snake predators, and that neither Phil or Audra have noted any leopard frogs in at least 4-5 years we conclude it is highly unlikely that any leopard frogs exist in the pond.

Ellison Creek (main stem): We started our surveys of Ellison Creek at 10:30 AM June 14th at 483921E 3803601N, near the northern edge of La Cienega Ranch. Suzanne Goforth, Chris Nyhart, and Jennifer Spawn surveyed upstream to 484294E 3804553N, at which point they stopped surveying because the creek bed was dry. Bill Burger and Dana Warnecke surveyed downstream along Ellison Creek to 483157E 3802005N, which we reached at 13:45; flow continued at this point but at a much reduced level from further upstream. Both groups noted reproducing rainbow trout in the creek, and numerous wandering gartersnakes. Suzanne's group saw 4 gartersnakes. Bill and Dana saw 9, including 3 in one pool and 1 that we saw catch a trout. We also saw 2 Canyon Treefrogs (*Hyla arenicolor*) in Ellison. No leopard frogs were observed in the main stem of Ellison. Where the creek passed by a parcel of private land we noted another pond just above the creek, and saw that it contained a number large trout. In this same location (483365E 3802524N) there were 2 concrete dams placed across the creek.

On June 15th, Bill, Dana, and Chris surveyed the uppermost portion of Ellison Creek, from the spring at 484701E 3805422N, downstream to where flow ended about 0.75 km downstream near 484429E 3804686N. This section was upstream of the area surveyed on June 14. We did not see any frogs in this stretch, but the habitat looked quite good. There was a variety of aquatic vegetation, along with good streamside and overhead cover. Vegetation was similar to that described below for Tributary 3 but perhaps with more overstory and the notable addition of Ponderosa Pine. Stream gradient and flow were both considerably less than Tributary 3. Most of the stream was shaded; there were numerous pools, some with small falls at their upper ends,

with shallow areas of flow between. We did not see any fish in this drainage, but did see 2 Wandering gartersnakes. Elk were common in this area (we jumped about 4 from the riparian stringer), but the creek and streamside vegetation looked good.

Tributary 1: Mid-day on June 14th, Suzanne, Chris and Jennifer began up this tributary, but it was dry so the survey was ended roughly 100 meters up the drainage at 484276E 3804684N. No riparian herpetofauna or fish were seen.

Tributary 2: Mid-day on June 14th Suzanne, Chris and Jennifer began up this tributary, but it was dry so the survey was ended roughly 100 meters up the drainage at 483791E 3803961N. No riparian herpetofauna or fish were seen.

Tributary 3: This tributary had flowing water throughout its approximately 2 km length, starting at a spring along the edge of the Mogollon Rim at 485477E 3804675N. Interestingly, this spring did not show on any of our maps. We estimated flow as ~3 cfs, which was continuous from the spring to Ellison Creek. Flow from this tributary exceeded that from Ellison Creek above their confluence. Downed logs from the Dude Fire created large log jams that we had to climb around in multiple locations. These, as well as other woody debris and the substrate itself formed small falls and pools in numerous locations.

Suzanne, Chris and Jennifer surveyed the lower approximately 0.75 km of this tributary from Ellison Creek to 484450E 3804154N mid-day on June 14. They did not see any frogs, fish or gartersnakes.

Suzanne, Bill and Chris returned that night and surveyed from the Highline Trail crossing at 484122E 3804145N downstream to Ellison Creek between 22:11 to 23:15. We saw 1 adult Chiricahua leopard frog, no fish and no snakes.

Bill, Dana and Chris surveyed the upper portion of this tributary from the Highline Trail, upstream to near its spring source along the edge of the Mogollon Rim. We started upstream at 9:15 and surveyed until 11:09 at 484258E 3804611N, where we exited the drainage and circled around to locate the source of flow in this drainage. We did not see any frogs, fish or snakes. There was a substantial amount of elk sign along this tributary but the creek and riparian vegetation appeared in good condition.

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Dana Warnecke considered this tributary a potential site for introduction of native fish, and she provided the following description:

> This unnamed first order tributary (#3) to Ellison Creek is currently fishless and originates at approximately 6755 feet below Myrtle Point on the Mogollon Rim. The stream had an abundant assemblage of macro invertebrate species and productivity appeared high. Of particular note were abundant densities of snails, stonefly, and Dobson fly (hellgrammites were observed). The dominant herbaceous cover adjacent to the stream was Lehmann lovegrass (*Eragrostis lehmanniana*) introduced for post-fire stabilization after the Dude Fire. However, there were a few obligate/semi-obligate riparian

species that occurred including *Carex* spp., *Juncus* spp. and *Equisetum*. No deergrass (*Muhlenbergia rigens*) was seen however, habitat observations were cursory and it shouldn't be ruled out. There were several other species of grasses along the stream floodplain including orchard grass (*Dactylis glomerata*) and mountain muhly (*Muhlenbergia Montana).* Shrubs and ferns were codominant with lovegrass along the entire reach and included wild raspberry (*Rubus* spp.). Overstory was largely box elder (*Acer negundo*), along with New Mexico locust (*Robinia neomexicana*) and alder (*Alnus* sp). Tree overstory was limited and overall approximately half of the stream corridor was open to sunlight. The stream appeared to be a narrow type A/B stream with a fairly steep slope and bedrock/boulder/cobble channel materials. In the upper reaches we noted significantly more fine sediments deposited in small plunge pools, whereas the lower reaches had more fine cobble and sand deposits. There were several extensive log barriers and step/pool features that would function as barriers to upstream fish movement, at least during normal base flows. The stream flow was estimated at 2-3 cfs. This stream should be evaluated for suitability for native fish transplants. It appears to be suitable habitat for desert sucker (*Catastomus clarki*), speckled dace (*Rhinichthys osculus)* and headwater chub (*Gila nigra*). It may have potential for Gila trout (*Oncorhynchus gilae*) although large pools were fairly limited and stream flow may be a limiting factor. The water temperature was significantly colder than Ellison Creek although measurements were not taken.

Tributary 4: Bill and Dana surveyed this tributary on June 14th, between 13:50 - 16:15, from its confluence with Ellison Creek (483157E 3802005N) upstream to just above a spring at 484527E 3803155N. The drainage was dry at the confluence with Ellison Creek but water began to appear at roughly about 0.75 km up the drainage then continued to the spring just below our endpoint. The drainage was dry above the spring. We found one Chiricahua leopard frog (~64 mm nose to tail) near the downstream end of the flow. We also saw about a dozen tadpoles, all in one pool, that were either leopard frog or Canyon treefrog. We saw one Wandering gartersnake and one Arizona black rattlesnake (*Crotalus cerberus*), but no fish in this drainage. Flow from the spring in this drainage was << 1 cfs. Portions of the drainage were substantially impacted by cattle and elk, and we saw at least 31 cattle along the drainage and several elk. Downed logs from the Dude Fire created large log jams that we had to climb around in several locations in the upper portion of this drainage.

That evening the 5 of us returned to this tributary near where Bill & Dana had found the leopard frog in the afternoon. We surveyed from 484061E 3802796N upstream to the spring from 20:00 to 21:30. Two juvenile Chiricahua leopard frogs were observed (one was possibly the same frog observed earlier in the day). Belly swabs were taken from both frogs for a batch chytrid test. The group of tadpoles was seen again.

cc: Rod Lucas
Tom Hildebrandt
Dana Bayer
Suzanne Go forth
Jennifer Spawn
Chris Nyhart
Jim Warnecke
Mike Sredl
Tom Jones
Jim Rorabaugh, US FWS
Duke Klein, Tonto NF
Phil and Audra Daugherty, La Cienegas Ranch
Ray Tanner, Cross V permittee

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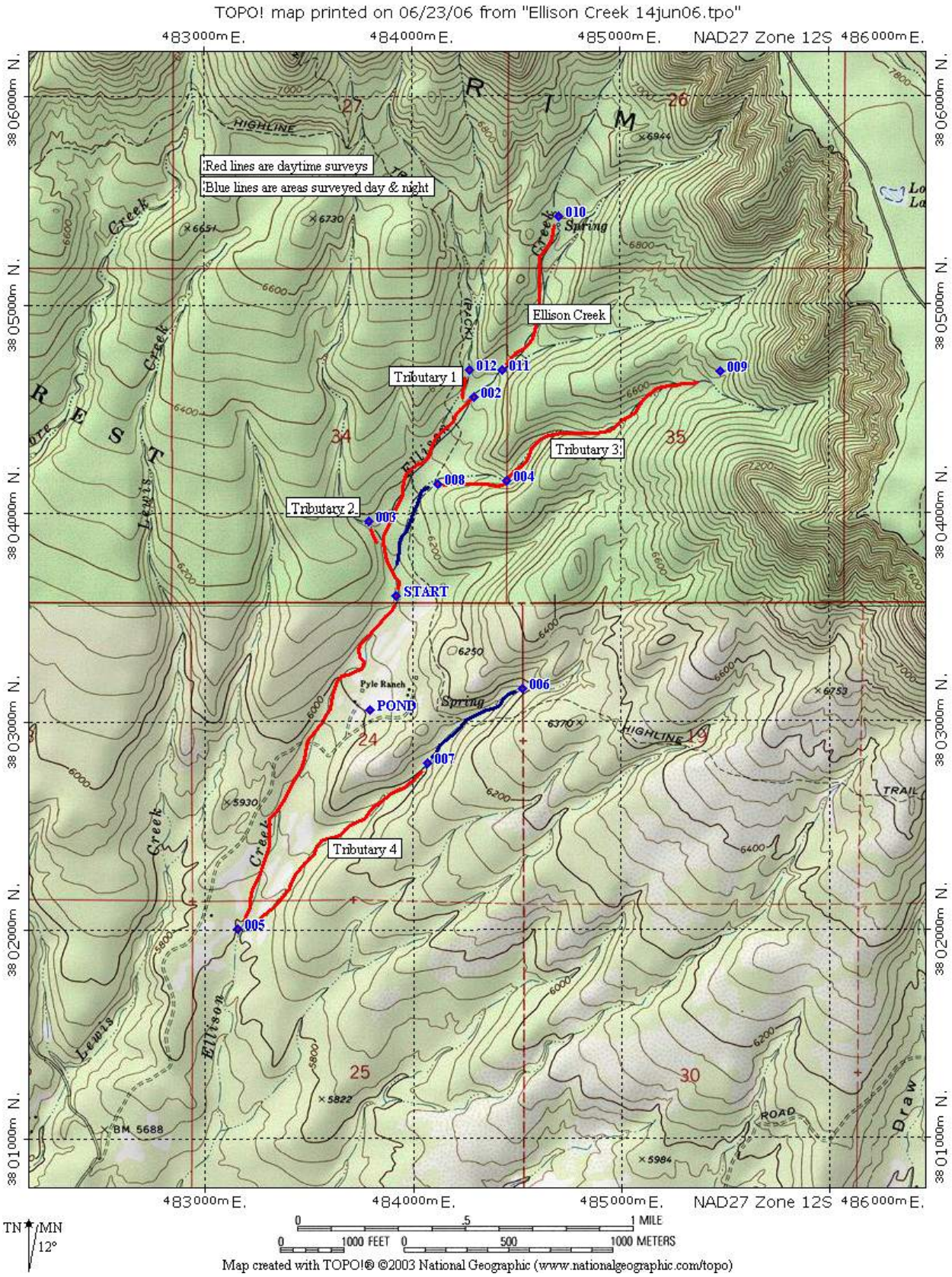
TOPO! map printed on 06/23/06 from "Ellison Creek 14jun06.tpo"
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Red lines are daytime surveys
Blue lines are areas surveyed day & night
Ellison Creek
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Tributary 3
Tributary 4
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La Cienega Ranch Pond


Ellison Creek, near N end La Cienegas Ranch


Ellison Creek, near N end La Cienegas Ranch


Wandering gartersnake, from La Cienega Pond


Rainbow trout from Ellison Creek


Wandering gartersnake eating trout, Ellison Cr.

Canyon treefrog, Ellison Creek

Dam on Ellison Creek

Upper Ellison Creek, near spring

Upper Ellison Creek, near Spring

Upper Ellison Creek, near Spring

Chiricahua leopard frog, “Tributary 4”

Tributary 4

Tributary 4, livestock use in the area

Tributary 3, lower end

Tributary 3

Tributary 3

Tributary 3

Tributary 3

Tributary 3

View looking down Tributary 3 from spring

ARIZONA GAME AND FISH DEPARTMENT

MEMORANDUM

TO: WMNG Ranid Frogs Program Files, and others interested

FROM: Suzanne Goforth

DATE: May 4, 2007

SUBJ: Chiricahua leopard frog (*Rana chiricahuensis*) surveys in the Ellison Creek headwaters area in March and April, 2007

Introduction

Personnel from AGFD Nongame Branch and Region 6, Tonto National Forest, and US Fish and Wildlife Service surveyed the Ellison Creek headwaters area on a weekly basis for 5 weeks in March and April, 2007. Primary goals for these surveys were collecting a Chiricahua leopard frog egg mass for headstarting at the Phoenix Zoo and identifying Chiricahua leopard frog population centers. We also began mapping habitat, discussing potential habitat enhancement projects, and identifying possible frog translocation/release sites.

For background information, including further details on location and survey methods, refer to the June 21, 2006 and August 31, 2006 trip reports. In June 2006, surveyors observed 3 Chiricahua leopard frogs in Ellison Creek headwaters. During follow-up surveys in August 2006, no Chiricahua leopard frogs were observed.

In this report, headwater tributaries are referred to by the names assigned in the June 21, 2006 report. An additional tributary surveyed on March 28, 2007 is assigned the name "Tributary 5" (map 1). All coordinates are reported in UTM zone 12, NAD27. Permission to access and camp on La Cienega Ranch was granted by both the property owners (Rusty and Rosie Lyons) and the caretakers (Phil and Audra Daugherty). The allotment grazing permittee (Ray Tanner) was informed of all surveys.

Summary

March 28 (map 2): Day surveys of Ellison Creek headwaters and Ellison Pasture "Tank 1". Poor survey conditions. Daytime air temperature in the low teens (°C). Almost constant wind. Intermittent afternoon snow. Water temperature ~10°C.

April 3-5 (map 3): Day surveys of Ellison Creek headwaters, Lewis Creek, Moore Creek, Hells' Gate Canyon, and livestock tanks. Night surveys of Ellison Creek headwaters and Lewis Creek. Favorable survey conditions. Daytime air temperature in the 20s (°C).

April 10-11 (map 4): Day surveys of Ellison Creek headwaters, La Cienega Ranch pond, Lewis Creek, and Bonita Creek. Night surveys of Ellison Creek headwaters and La Cienega Ranch pond. Generally favorable survey conditions. Gusty wind. Daytime air temperature in the 20s (°C). Air temperature during night survey ~12°C. Water temperature ~12°C both day and night.

April 17-18 (map 5): Day and night surveys of Ellison Creek headwaters. Generally favorable survey conditions on the first day. Air temperature in the low 20s (°C). However, temperature dropped severely during the night to just below freezing. Morning of second day was cold. Wind became extreme by noon and surveys were ended. Water temperature ~10°C.

April 24 (map 6): Day and night surveys of Ellison Creek headwaters. Generally favorable survey conditions. Daytime air temperature in the low 20s (°C). Cloud cover 40-50% but intermittently sunny. Light breeze fairly constant all day. Air temperature during night survey was ~13°C. Water temperature ~10°C both day and night.

No Chiricahua leopard frogs or egg masses were observed during any of the surveys.

Survey Details

Main stem Ellison Creek, TON-0255: Surveyed 3 times during the day. On March 28, Bill Burger (FOR6) surveyed from the Highline Trail crossing (484241E 3804411N) upstream to the spring area (484715E 3805449N). No herpetofauna observed. On April 10, Suzanne Goforth (WMNG) surveyed from the Highline Trail crossing upstream to the spring area. She observed 1 terrestrial gartersnake (*Thamnophis elegans*) in this upper section of the creek. From the spring, Suzanne returned overland to the Highline Trail crossing and then surveyed less intensively downstream to La Cienega Ranch (483931E 3803574N). She observed 1 terrestrial gartersnake and several trout in this lower section of the creek. On April 24, Tom Conlin and Jim Daeschler (Tonto NF) surveyed from the Highline Trail crossing upstream to the spring area. No herpetofauna observed.

The main stem of Ellison Creek had water flow throughout the survey areas during all 3 surveys. During the March 28 and April 10 surveys, there was also water draining into Ellison Creek from many of its tributaries. Much of this water will probably dry in May-June, and thus is unlikely leopard frog habitat. The upper section of Ellison Creek from the spring down to approximately the Highline Trail crossing is apparently perennial, and portions seem well suited for leopard frogs. Surveyors have not observed fish in this upper section, likely due to a frequently dry stretch of creek bed isolating the upper section from lower, trout-occupied areas.

"Tributary 3", unnamed tributary N of La Cienega Ranch: Surveyed 6 times during the day and 3 times at night. On March 28, John Wilcox (Tonto NF) surveyed from the confluence with Ellison Creek upstream to 485001E 3804434N. On April 3, Bill, Mike Sredl (WMNG), and Duke Klein (Tonto NF) surveyed from the confluence with Ellison Creek upstream to the Highline Trail crossing. This area was surveyed again that night by Mike and Heidi Plank (Tonto NF). On April 10, Jeff Leonard and Pam Rule (Tonto NF) surveyed from the confluence with Ellison Creek upstream to the spring (485477E 3804675N). On April 17 and again on April 18, Tom and Chris Thiel (Tonto NF) surveyed from the confluence with Ellison Creek upstream to approximately

484658E 3804377N. During a night survey on April 17, Tom and Chris surveyed from the confluence with Ellison Creek upstream to the Highline Trail crossing. On April 24, Suzanne surveyed from the confluence with Ellison Creek upstream to the spring. Tom and Jim surveyed at night from the confluence with Ellison Creek upstream to the Highline Trail crossing. No herpetofauna observed on any of these surveys.

"Tributary 3" had water flow throughout the survey areas during all surveys. The entire tributary from the spring down to its confluence with Ellison Creek is apparently perennial. Surveyors noted trout in Ellison Creek but not in the tributary. This distribution of fish was also observed in 2006, and it appears several barriers prevent fish from moving up "tributary 3" beyond its lowest portion. There are several pools that look suitable for leopard frogs both above and below the Highline Trail crossing (for example, at 483927E 3803787N and at 484680E 3804371N). However, the pools are relatively far apart and a large portion of the tributary seems rather high gradient for leopard frog habitat.

"Tributary 4", unnamed tributary E of La Cienega Ranch, TON-0275: Surveyed 6 times during the day and 4 times at night. On March 28, Suzanne surveyed from 483817E 3802579N upstream to the falls (484765E 3803229N). The tributary was dry at the survey start point. Water began ~5m upstream and continued up to just above the spring. Very little water in the upper portion of the tributary. No herpetofauna observed. On April 3, Bill, Mike, and Duke surveyed from the termination of water (~483792E 3802553N) up to the spring (484405E 3803105N). This area was surveyed again that night by Bill and Duke. No herpetofauna observed during the day survey. Bill and Duke observed 1 tiger salamander (*Ambystoma tigrinum*) during the night survey. On April 10, Jeff Servoss (USFWS) surveyed from 483917E 3802685N upstream to the falls. He observed 1 canyon treefrog (*Hyla arenicolor*) in the upper, dry portion of the tributary. The tributary was surveyed again at night by Suzanne, Jeff L., and Jeff S. Suzanne and Jeff L. began at 483917E 3802685N and surveyed upstream, while Jeff S. began at the spring and surveyed downstream. They met and ended the survey in about the middle of the survey area. Suzanne and Jeff L. observed 1 canyon treefrog. On April 17, Duke and Craig Woods (Tonto NF) surveyed during the day and at night from approximately 483921E 3802695N upstream to the spring. They surveyed the same area again during the day on April 18. No herpetofauna observed. On April 24, Jared Whitmer (Tonto NF) surveyed from 483917E 3802685N upstream to the spring. The same area was surveyed again that night by Jared and Suzanne. No herpetofauna observed.

"Tributary 4" is apparently perennial from the spring area down to about where these surveys began. There appears to be very little, if any, perennial water above the log jam at 484433E 3803129N. Water in the spring pool is only ~10cm deep and it seems probable that sediment was deposited in the pool after the Dude Fire. Surveyors have not observed fish in this tributary.

"Tributary 5", unnamed tributary N of La Cienega Ranch: Surveyed once during the day. On March 28, Bill surveyed ~1.5 km of "tributary 5" starting from its confluence with Ellison Creek (484454E 3804709N) and continuing upstream. No herpetofauna observed. "Tributary 5" had water flow throughout the survey area. However, this tributary was not surveyed in June or August 2006 due to substantially less flow observed at its confluence with Ellison Creek.

La Cienega Ranch pond, PVT-0286: Surveyed once during the day and once at night. On April 10, Suzanne, Jeff L., and Jeff S. surveyed the La Cienega Ranch pond (483751E 3803030N). They observed 1 terrestrial gartersnake and saw several large trout strike the water's surface. Suzanne surveyed the pond again that night but did not see or hear any herpetofauna.
Lewis Creek: Surveyed twice during the day and once at night. On April 4, Mike and Duke surveyed Lewis Creek from near the Highline Trail (483063E 3805260N) downstream to FR 64 (Control Road). They observed 1 gopher snake (*Pituophis catenifer*), 1 short-horned lizard (*Phrynosoma hernandesi*), and a number of plateau lizards (*Sceloporus tristichus*). Although they did not observe any leopard frogs, they identified a promising section of habitat at 482819E 3802309N. Mike, Duke, Bill, and Heidi returned to the lower section of the creek for a night survey. They surveyed from FR 64 upstream to the area of habitat at 482819E 3802309N, including an apparently spring fed tributary. They observed 3 tiger salamanders, heard 1 canyon treefrog, saw 1 Arizona toad (*Bufo microscaphus*) and heard a second one. On April 11, Suzanne, Jeff L., Jeff S. surveyed near 482819E 3802309N. They surveyed Lewis Creek from the ATV road crossing (just upstream of the habitat coordinates) downstream to 482792E 3802092N. They also surveyed the tributary from its confluence with Lewis Creek up to the log jam. Water in the tributary appeared to significantly diminish above the log jam.

The quickest means of accessing the habitat at 482819E 3802309N is to park just north of the Rock Ridge Ranch property, walk west (somewhat along the fence) to the ATV road, and follow the ATV road down to the creek.

Moore Creek: Surveyed once during the day. On April 4, Bill and Heidi surveyed Moore Creek from the Highline Trail (482950E, 3806053N) downstream to FR 64. They observed numerous plateau lizards, 1 gopher snake, and 1 canyon treefrog. They also observed 2 Arizona toad egg strings in the lower portion of the creek. Although intermittent water was present throughout the survey area, none of it appeared perennial. The flow increased in the middle section of the creek and several large bedrock pools were located near 481853E 3804042N. More deep pools occurred at 481045E 3802637N near the downstream end of the survey area. These lower pools were reported to be perennial or nearly perennial by Fred Henderson, Ray Tanner's ranch manager. However, surveyors did not observe aquatic vegetation (other than algae) in any of the pools. Overall, the pools appeared to be suitable habitat for canyon treefrogs but not for leopard frogs.

Hell's Gate Canyon: Surveyed once during the day. On April 5, Bill and Heidi surveyed Hell's Gate Canyon from the Highline Trail (481905E 3805598N) downstream to its confluence with Moore Creek (480822E 3802510N). They observed numerous plateau lizards. Habitat near the Highline Trail crossing appeared perennial and potentially suitable for leopard frogs. There were 2 pools just above the trail crossing, as well as a series of pools extending ~200m downstream. Aquatic/moist soil vegetation in this area included sedges, algae, milfoil, and miner's lettuce. Another ~100m of water was present at 481660E 3804992N. This section had less aquatic vegetation and appeared less likely to be perennial than the area at the Highline Trail. The creek was dry below this section until near 480822E 3802979N, where there was ~100m of water. The lower sections of Hell's Gate Canyon seemed to be suitable habitat for canyon treefrogs, but had little cover and questionable permanency (marginal habitat for leopard frogs).

Upper Hell's Gate Canyon can be accessed via a road branching north from FR 64 ~100m east of the Moore Creek bridge (480861E 3802218N). This road also provides access to Moore Pasture "Tank 4" and "Tank 5".

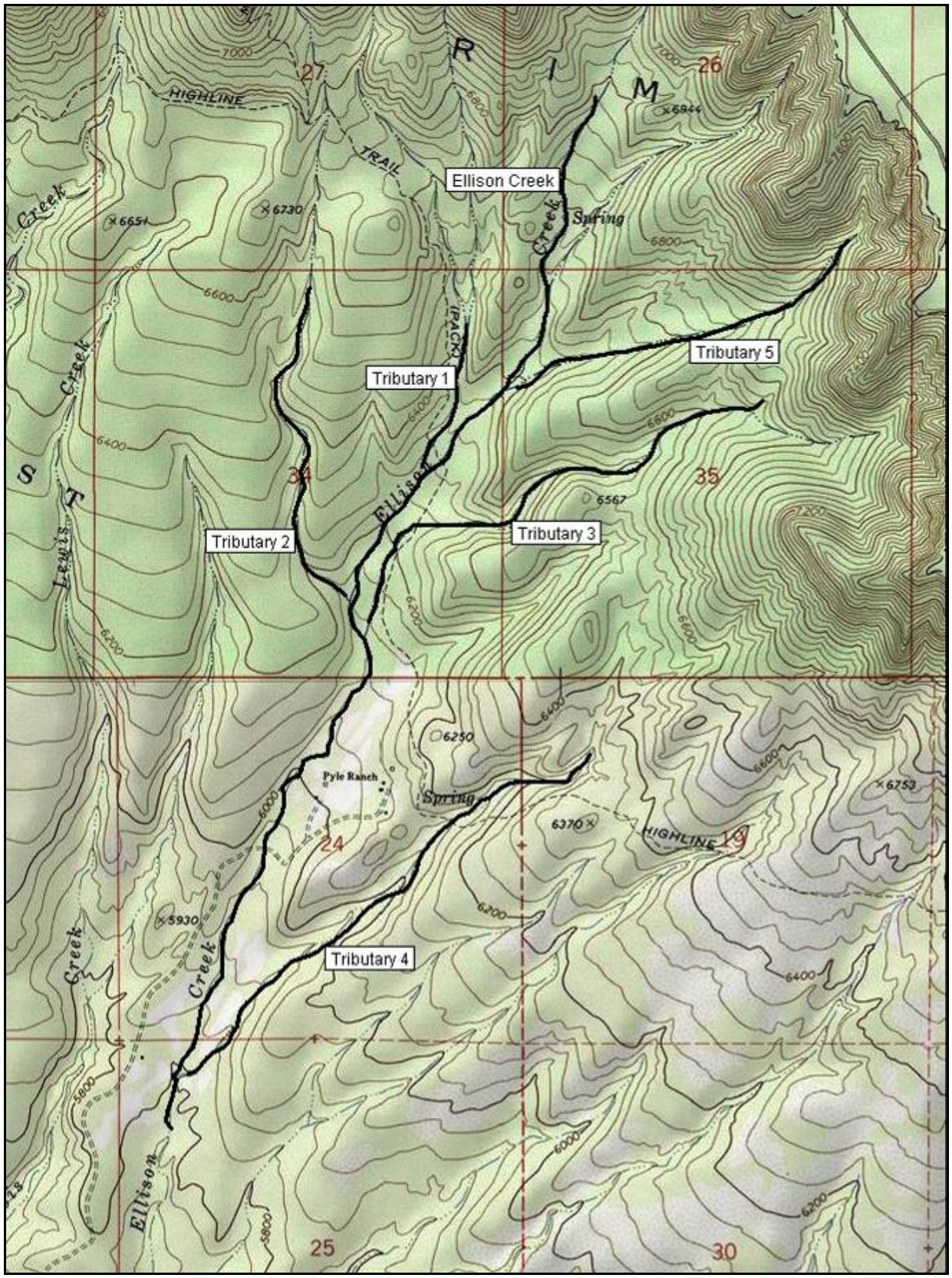
Bonita Creek, TON-0259/TON-0285: Surveyed once during the day. On April 11, Suzanne, Jeff L., and Jeff S. surveyed Bonita Creek starting from 480476E 3805474N. Suzanne and Jeff S. surveyed upstream for ~0.8km to 480549E 3806304N. Jeff L. surveyed downstream for approximately the same distance. Surveyors observed trout, but no herpetofauna. Bonita Creek had water flow throughout the survey area, although Jeff L. thought the water did not extend all the way down to the neighborhood. The survey area appeared perennial with nice looking aquatic vegetation and some deep pools. However, trout are present and overall the creek seems too high gradient for leopard frog habitat. The riparian area was not burned in the Dude Fire, but surveying was quite difficult due to numerous log jams and brambles.

Upper Bonita Creek can be accessed via a road branching north from FR 64 on the ridge west of Perley Creek.

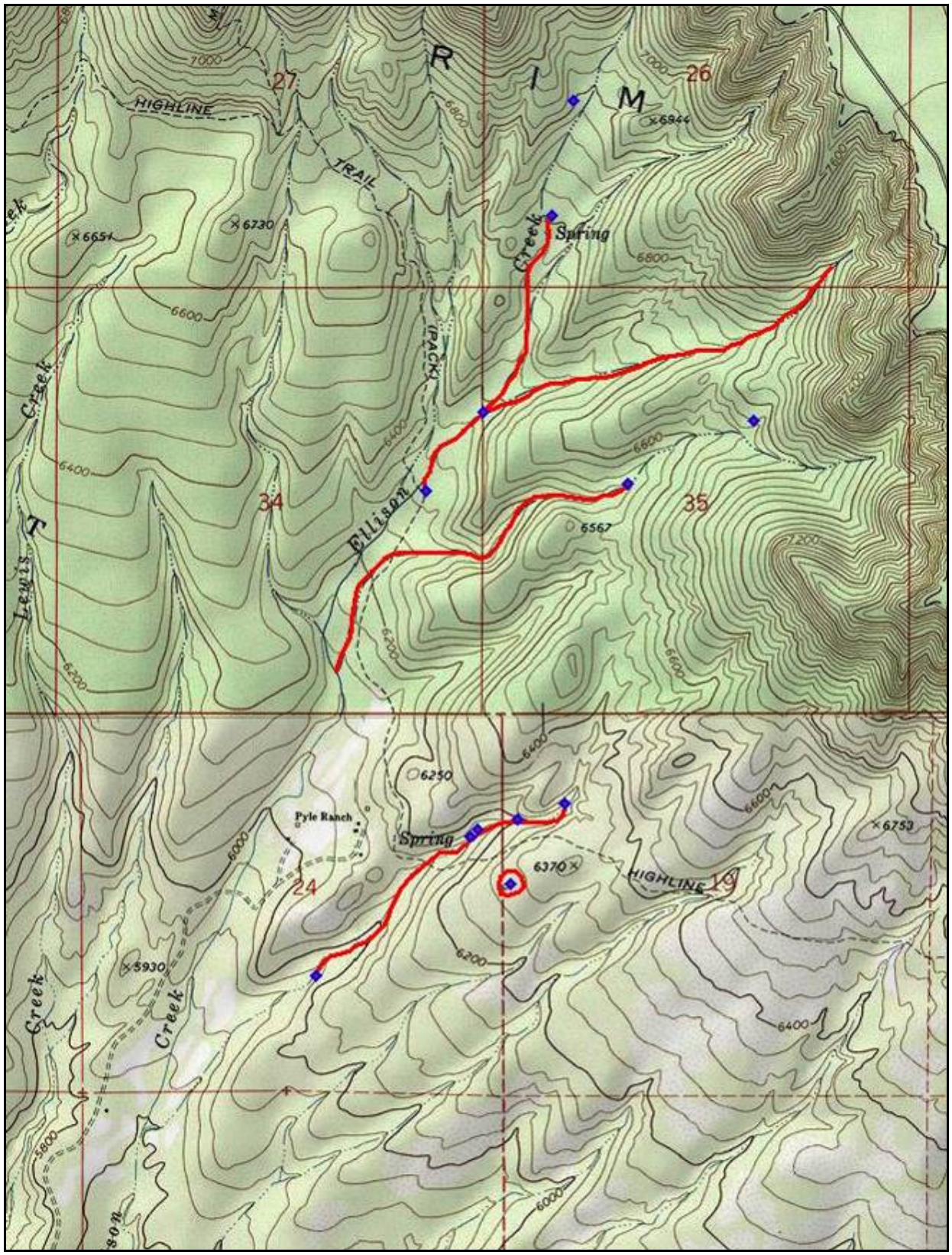
Livestock Tanks: On March 28, Suzanne surveyed Ellison Pasture "Tank 1" (484593E 3802940N). The tank had water but no emergent or perimeter vegetation. An old barbed-wire fence exists around half the tank, but is in need of major repair. No herpetofauna were observed. On April 5, Mike, Duke, Ray, and Fred surveyed Ellison Pasture "Tank 1" and "Tank 2" (483697E 3801474N), as well as Moore Pasture "Tank 1" (482200E 3802726N) and "Tank 2" (482444E 3803964N). No herpetofauna were observed. Also on April 5, Bill and Heidi surveyed Moore Pasture "Tank 4" (481152E 3803479N) and Moore Pasture "Tank 5" (481918E 3805122N). Moore Pasture "Tank 4" was ~25m in diameter with sedges along ~25% of the shoreline. Numerous aquatic invertebrates and 1 terrestrial gartersnake that had just captured a tiger salamander were observed. Moore Pasture "Tank 5" was similar in size, but lacked perimeter vegetation. Many water boatmen were observed, but no herpetofauna.

Recommendations for Additional Activities

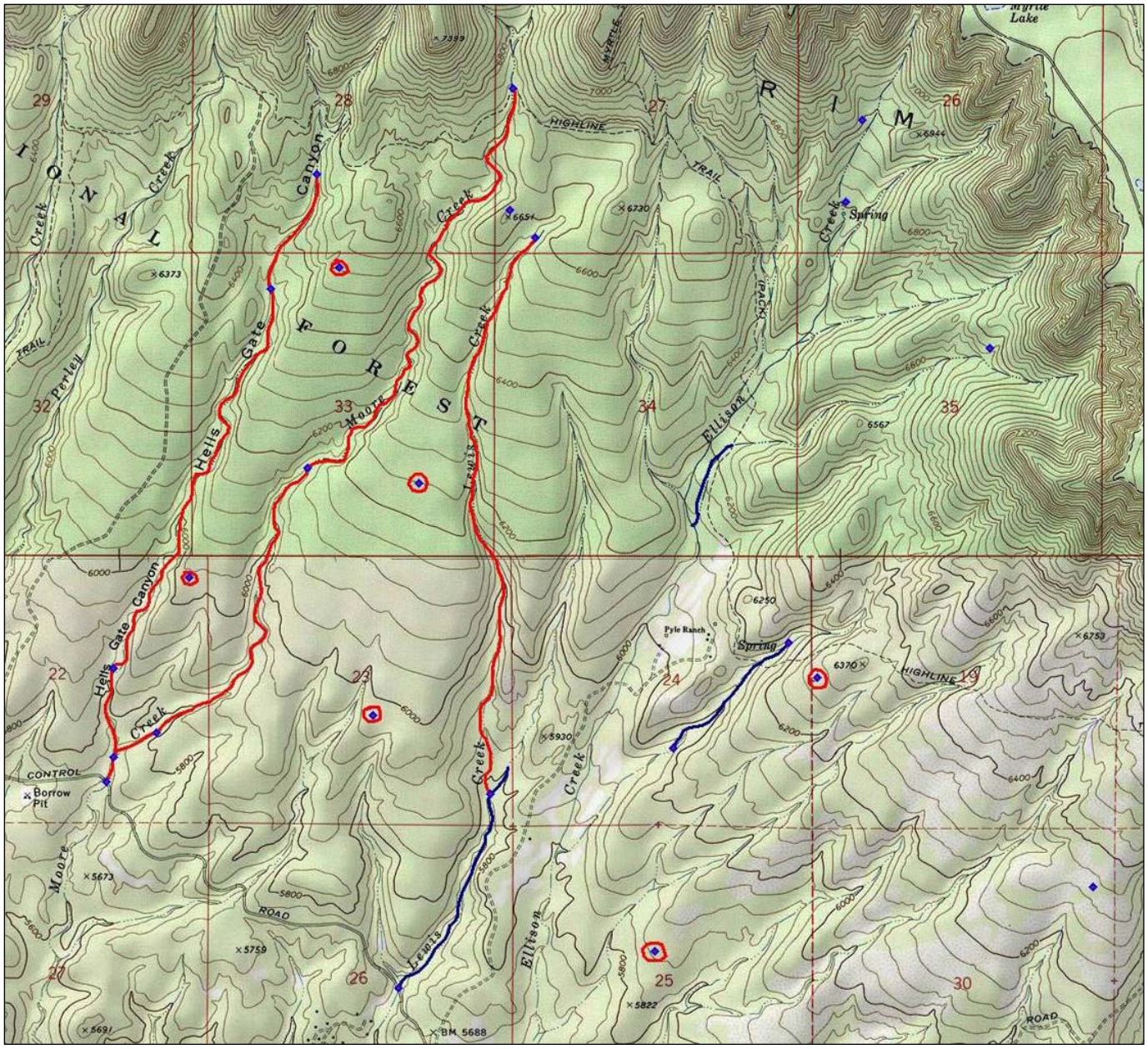
- Continue surveys for Chiricahua leopard frog adults and egg masses on an opportunistic basis. If an egg mass is observed, transport it to the Phoenix Zoo for captive rearing.
    - High priority survey areas are Ellison Creek from the spring down to the Highline Trail crossing, "Tributary 3" between its confluence with Ellison Creek and the Highline Trail crossing, and "Tributary 4" between the spring and the termination of water flow.
    - Lower priority survey areas include other portions of the Ellison Creek headwaters, the La Cienega Ranch pond, Lewis Creek near 482819E 3802309N, Hell's Gate Canyon at the Highline Trail, and other sites with potentially perennial water.
- Map perennial habitat during low water (June), identify potential habitat enhancement projects, and identify possible frog translocation/release sites.
- Hold an informational meeting for residents of the Ellison Creek Estates neighborhood.
- Discuss Safe Harbor opportunities as appropriate.



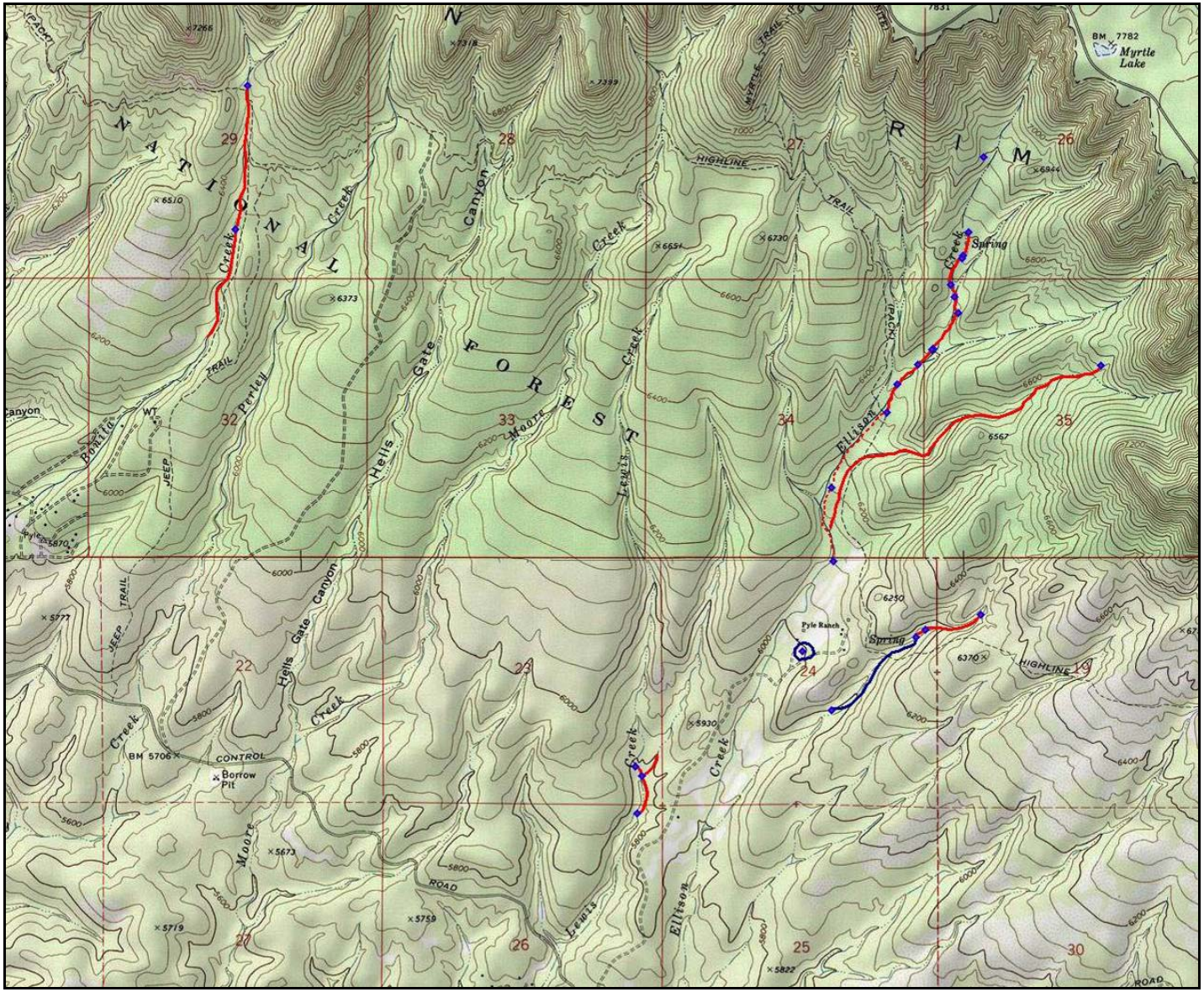
Map 1. Assigned names for tributaries in Ellison Creek headwaters.



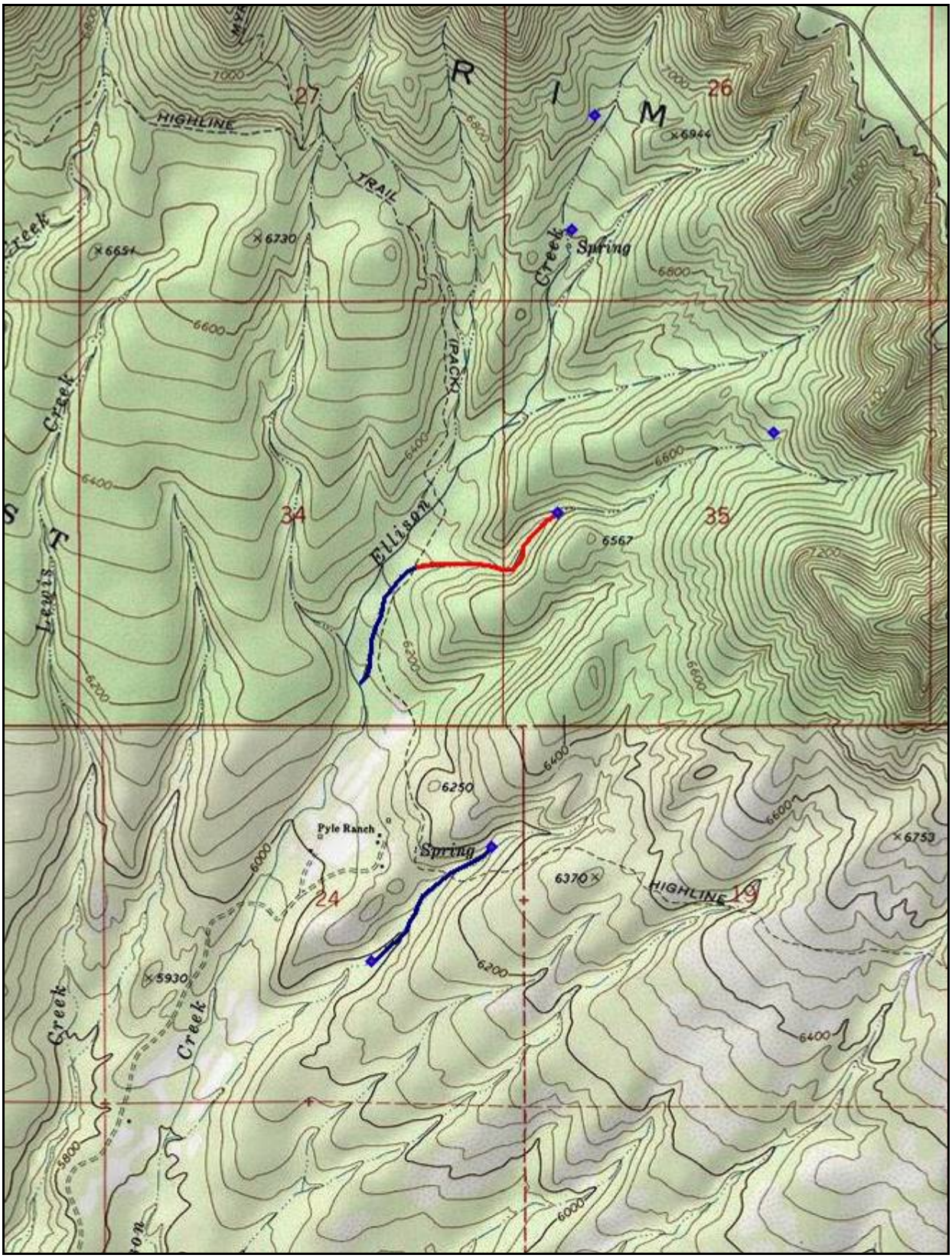
Map 2. Areas surveyed for Chiricahua leopard frogs on March 28, 2007. All areas were surveyed during the day.



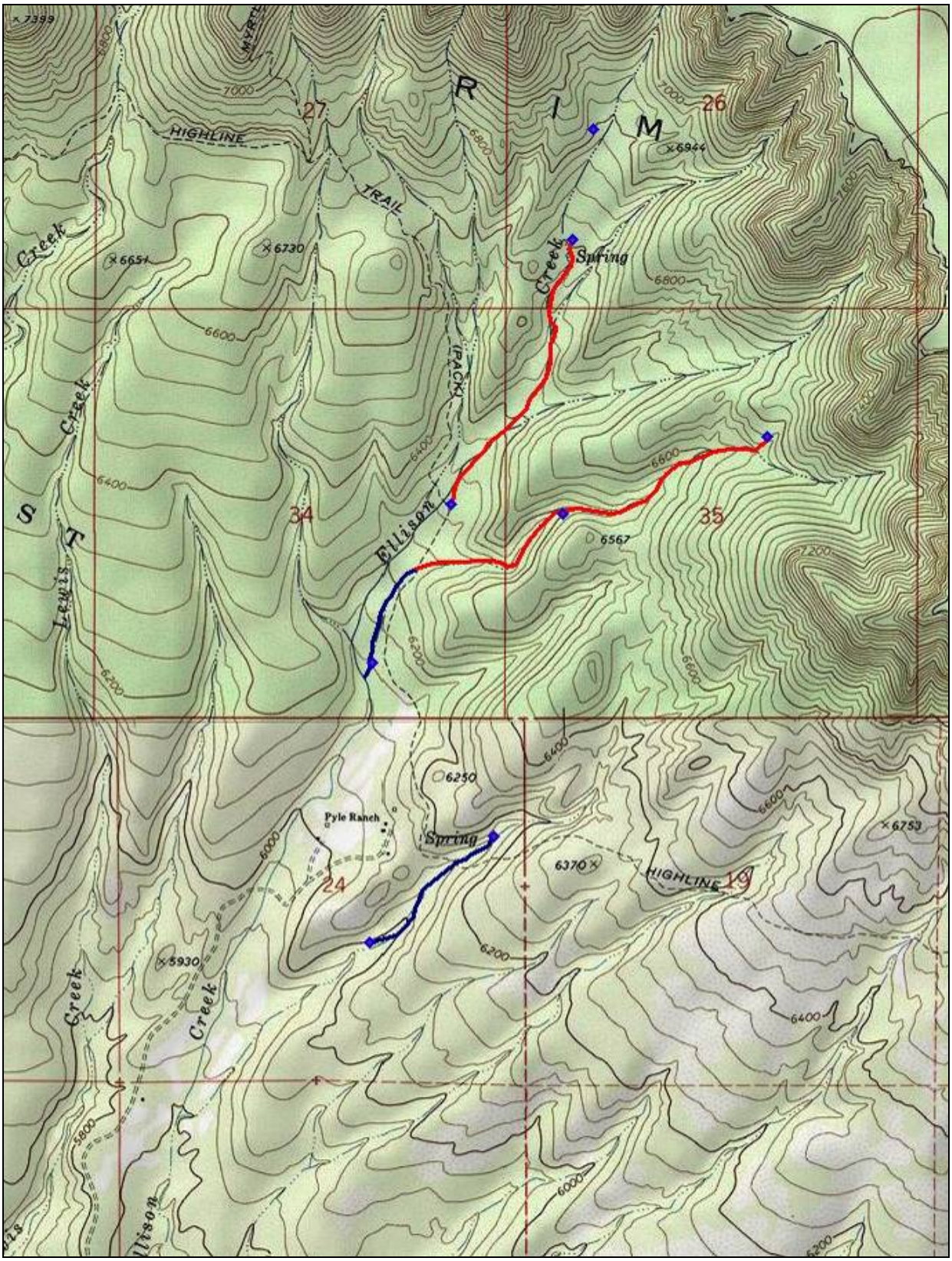
Map 3. Areas surveyed for Chiricahua leopard frogs on April 3-5, 2007. Red lines indicate areas surveyed during the day only. Blue lines indicate areas surveyed both day and night.



Map 4. Areas surveyed for Chiricahua leopard frogs on April 10-11, 2007. Red lines indicate areas surveyed during the day only. Blue lines indicate areas surveyed both day and night.



Map 5. Areas surveyed for Chiricahua leopard frogs on April 17-18, 2007. Red lines indicate areas surveyed during the day only. Blue lines indicate areas surveyed both day and night.



Map 6. Areas surveyed for Chiricahua leopard frogs on April 24, 2007. Red lines indicate areas surveyed during the day only. Blue lines indicate areas surveyed both day and night.