

San Antonio Creek,  
Indian Creek and  
Arroyo Hondo  
Fish Trapping Data Summary  
2004



San Francisco Public Utilities Commission  
Natural Resources and Lands Management Division  
Fisheries and Wildlife Section  
Sunol, CA



SFPUC. 2007. San Antonio Creek, Indian Creek and Arroyo Hondo Fish Trapping Data Summary 2004. San Francisco Public Utilities Commission, Natural Resources and Lands Management Division, Fisheries and Wildlife Section. Sunol, CA. 58 pp.

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December 2007





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### Introduction

Alameda Creek and its tributaries flow from the northwestern slopes of the Diablo Range to South San Francisco Bay. Although many of the streams within the upper reaches of the Alameda Creek watershed are ephemeral, the perennial nature of portions of the larger streams provide adequate habitat for a variety of native fishes. Some of the native species currently found in and upstream of Niles Canyon include Pacific lamprey (*Lampetra tridentata*), rainbow trout (*Oncorhynchus mykiss*), hitch (*Lavinia exilicauda*), California roach (*Lavinia symmetricus*), Sacramento blackfish (*Orthodon microlepidotus*), Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento sucker (*Catostomus occidentalis*), threespine stickleback (*Gasterosteus aculeatus*) and prickly sculpin (*Cottus asper*) (Buchan, *et al.* 1962).

Portions of upper Alameda Creek and some of its tributaries have been identified as probable historic steelhead trout (*Oncorhynchus mykiss*) spawning and rearing waters by Skinner (1962), but it has been speculated that a series of barriers in and downstream of Niles Canyon, along with water storage and delivery practices within the watershed, have led to the elimination of anadromous salmonid populations in the system (Bookman-Edmonston 1995). Recent genetic studies, on the other hand, indicate that relic, non-anadromous *O. mykiss* populations continue to exist in the Alameda Creek watershed (Nielsen and Fountain 1999).

With the relatively recent listing of central California steelhead by NOAA Fisheries, under the auspices of the U.S. Endangered Species Act, as a threatened Evolutionarily Significant Unit (NARA 1997), there has been a heightened public awareness in regards to the status of salmonids within Alameda Creek and its tributaries. To address the interests of the public, along with those of both private and government agencies affected by the central coast steelhead listing, the Alameda Creek Fisheries Restoration Workgroup (Workgroup) was established (Gunther *et al.* 2000).

The Workgroup has concluded, based on an assessment of the potential for re-establishing a self-sustaining population of anadromous steelhead trout to the Alameda Creek watershed, that restoration efforts are feasible (Gunther *et al.* 2000). This assessment concluded that there is a limited amount of suitable steelhead habitat in the system for spawning and juvenile rearing. Impassable migration barriers currently prevent steelhead from completing their life cycle, and the out-migration of smolts may be limited by water project operations. On the positive side, the watershed sustains resident rainbow trout populations that appear to be descendant from native steelhead.

Self-sustaining stocks of rainbow trout exist today in San Antonio (Figure 1) and Calaveras reservoirs (Figure 2), although very little is known about their population dynamics, biology and behavior. Genetic analyses have revealed that trout from the two bodies of water are more closely related to each other than to a variety of reference collections, and that they have a close

relationship to in-migrating adult steelhead recently captured in lower Alameda Creek (Nielsen 2003). Although it is not known whether the necessary traits of ancestral anadromous trout are retained in current reservoir rainbow trout, it is important to study these populations to determine their significance to the restoration process. A familiarity with the habits and environmental requirements of reservoir trout may be directly applicable to the re-establishment of an anadromous population. Their legacy may provide the potential for using landlocked fish to supplement an Alameda Creek steelhead run once passage and habitat issues have been resolved.

The goal of the fish-trapping project is to increase the understanding of resident rainbow trout populations in San Antonio and Calaveras reservoirs. The objectives of the study are to: 1) document the migratory timing of adult fish as they move out of the reservoirs and upstream to spawn, 2) determine how long adult trout remain in the streams before moving back down to the reservoirs, 3) document the timing of juvenile rainbow trout moving downstream toward the reservoirs, 4) examine correlations between fish movement and flow, water temperature and moon phase, 5) assess the proportion of juvenile trout that are displaying characteristics more similar to steelhead (i.e. smoltification) than to rainbow trout and 6) develop a data set that can be used to modify reservoir operations to support both trout in the reservoirs and steelhead once re-established in Alameda Creek and some of its tributaries.

This data summary represents the third full year of trapping following a pilot study that was conducted in the winter and spring of 2001. Following the 2002 trapping season (Enrix 2003), two major components were added to expand and improve the study. Prior to 2003, traps to catch upstream moving adults and all downstream moving fishes were setup only in San Antonio Creek above San Antonio Reservoir and the Arroyo Hondo above Calaveras Reservoir. In 2003, upstream and downstream traps were also deployed and monitored at Indian Creek, a slightly smaller tributary to San Antonio Reservoir, to examine its importance to the lake's rainbow trout population. To detail the length of time that individual adult rainbow trout spend upstream of the trap sites in San Antonio Creek, Indian Creek and the Arroyo Hondo, each upstream moving adult trout captured was tagged with a uniquely numbered Floy tag. Tag numbers were noted as marked fish were re-captured on their way back to the reservoirs. Non-tagged downstream moving adult trout (fish that moved upstream when traps were non-operational) were also tagged to maximize the number of marked fish for potential subsequent population estimate studies.

## **Trap Design, Installation and Operation**

The traps for upstream migrants (Figure 3) are designed to capture relatively large adult fishes, while letting smaller individuals pass through. Each trap consists of a single holding box and weir, both constructed of 1" x 2" galvanized wire fencing. The holding boxes are equipped with a trapdoor on the front to allow fishes in but not out, corner padding on the inside to protect fishes, and an access panel on top to get fishes out. The upstream holding boxes are installed with the trapdoor facing downstream, at the tail end of a relatively shallow pool, and secured with T-posts inserted into the creekbed. Weirs are installed, from each of the front corners of the holding box to the bank, in a downstream direction, using T-posts, braces and rope for support. The bottom, downstream edge of the box and the upstream side of the weirs are lined with sandbags to prevent fishes from passing beneath the setup. In an attempt to save gear during unexpected high flows, a safety line is tied from the holding box to a nearby tree or to an additional T-post placed out of the main flow.

A SFPUC biologist with a current California Department of Fish and Game issued Scientific Collecting Permit, along with a second biologist or volunteer, check each upstream trap daily. Once on site, traps are approached so as not to disturb any fishes immediately downstream of the set-up, and the presence of fishes is noted in the logbook. The holding box is checked to see if any fishes were caught. Captured fishes are removed and processed (see Fish Processing below) until the holding box is empty. Other organisms collected (usually western pond turtles) are taken out of the holding box and placed just upstream of the downstream migrant trap. Prior to leaving the site the trap is cleaned of debris, checked for damage, and the access panel is closed and secured.

The downstream migrant traps (Figure 4) are designed to capture fishes of all sizes. Each trap is made of one or two plywood holding boxes, a 100-foot length of 6" flexible irrigation pipe, a funnel and weir. The holding boxes have openings equipped with cam and groove fittings at each end to allow for fish passage. Because the intent is to capture both small and large fishes, there are no trapdoors. Fishes are kept from escaping by using a relatively long length of pipe (approximately 100-feet) between the funnel and the holding box, a perforated drop-pipe in each box, and a baffle to make the downstream end the boxes more desirable. Holding boxes have an access door on top to get fishes out. The funnel, that connects the irrigation pipe to the weir, is plywood, while the weir itself is constructed of 1" x 2" galvanized wire fencing lined with ¼-inch hardware cloth. Traps for downstream migrants are installed in a pool located directly below a 70- to 80-foot long riffle. The downstream most opening of the holding box is capped and the upstream opening is connected to one end of the irrigation pipe. Two holding boxes in tandem (connected by flexible PVC collars) are installed if an area is expected to produce large numbers of fishes. The funnel is placed, with the wide opening facing upstream, at the downstream end of a run, glide or pool that is above the riffle upstream of the holding box. The other end of the pipe is snaked through the thalweg of the riffle, secured to the funnel and then weighted down with rubble. Weirs are installed from each side of the funnel to the bank, in an upstream direction. At extremely low flows, 2' x 8' sheets of plywood are placed lengthwise along the lower edge of the weirs to help divert water through the funnel. The funnel and weirs are supported with T-posts, braces and ropes. The bottom, upstream edge of each weir and the front edge of the funnel are lined with sandbags.



Downstream traps are checked daily by a permitted biologist and a second biologist or volunteer. Upon arrival at the site, the majority of the creek flow through the funnel is blocked and each holding box is isolated. Any large fishes collected are individually removed, processed, revived, if necessary, and released, while smaller individuals are removed and processed in batches (see Fish Processing below). All turtles, crayfish, frogs, toads, snakes and other organisms are taken out of the holding boxes and released immediately downstream of the upstream migrant trap. Fishes trapped in the pipe at the time of processing are left in the pipe and not included in the day's dataset. The weir, funnel and holding boxes are cleaned and checked for damage, and the lids to the boxes securely closed prior to leaving the site.

### **Other On-Site Procedures**

In-situ water and air temperature loggers, set to take readings every 30-minutes, are placed at each trapping site for the duration of the annual monitoring effort. A single water and air temperature reading is also taken manually at all sites, each day that the traps are monitored. Manual data are only used if technical problems with the remote loggers develop.

At the start of the trapping season a vertical staff-gauge is attached to a T-post in the thalweg of each creek in the vicinity of the traps. The depth of the creeks, in inches, is recorded each day that the traps are checked. Flow data for Arroyo Hondo is available from USGS gage 11173200 ([http://waterdata.usgs.gov/ca/nwis/uv/?site\\_no=11173200&PARAMeter\\_cd=00065,00060](http://waterdata.usgs.gov/ca/nwis/uv/?site_no=11173200&PARAMeter_cd=00065,00060)). In San Antonio and Indian Creeks, water velocities are measured at regular intervals along a transect in each creek, perpendicular to the flow, with a Swiffer 3000 flow meter, and converted to total flow in cubic feet per second. Regression curves are used to convert daily depth readings to flow. However, insufficient stream flow profiles were collected in 2004 to construct acceptable stream flow regression curves at San Antonio or Indian Creeks. In previous years, data summary trending analyses have used stream flow data to identify trout movement correlations. Data summary graphs are presented with gage height data for all three creeks to maintain consistency within this report. Comparisons of gage height and stream flow data at Arroyo Hondo and of gage height between all three creeks indicate that gage height data are suitable to indicate correlations of fish movement.

When monitoring both the upstream and downstream traps, the attending biologist checks for and notes any conditions that may impair the effectiveness of each setup. Solutions to problems are planned as necessary and made when practical.

### **Fish Processing**

The fork length (FL) of each upstream and downstream moving rainbow trout is measured. When possible, the sex of adult trout is determined along with their stage of reproductive development (green, ripe, or spent). Juvenile trout are examined to determine their life stage (young-of-year [YOY], parr, partial-smolt, or smolt). Scales for future age analyses are removed from just below the dorsal fin of older YOY (>100mm FL), parr, smolt and adult rainbow trout. Floy tags are used to mark all adult trout, while ½ of every tagged fish's adipose fin is clipped to determine tag loss rates. Fish weights, in grams, are obtained from all juvenile trout using an



Ohaus CS2000 digital scale, while adult trout are measured in a tared 5 gallon water bucket with a Pesola Macro-Line spring scale.

The fork lengths of all other fishes collected are measured (total length for sculpin). Although all sculpin are enumerated, only about 20 percent of the total are measured when extremely large numbers are trapped. The sex of each adult Sacramento sucker is determined.

All upstream moving fishes are released above the downstream migrant trap, while all downstream moving fishes are released below the upstream migrant trap. Fishes are released in locations selected to provide refuge for resting.

### **Trapping Sites and Calendar**

*San Antonio Creek* – The San Antonio Creek traps for upstream moving adult fishes and downstream moving fishes (Figure 5) were located 1.3 miles upstream of San Antonio Reservoir at maximum pool (Figure 1), at an elevation of 530 feet (37° 35.14' N, 121° 47.32' W).

The trap for upstream migrants was installed on January 14, 2004. Upstream trap inspections were conducted daily when fishing, with the exception of January 29. The trap for upstream moving fishes was down and not fishing February 2 to 3 and from February 18 to March 1 due to storm flows. The trap was removed from service on May 4, 2004.

The equipment for capturing downstream migrant fishes was also deployed on January 14, 2004. Downstream trap inspections were conducted daily when fishing, with the exception of January 29. The trap was not fishing due to storm-related high flows on February 2 to 3 and from February 18 to March 2. The trap was not fishing due to the position of the downstream pipe interrupting flow on February 22. The trap was taken down and the survey ended on May 10, 2004.

*Indian Creek* – The upstream and downstream (Figure 6) migrant traps on Indian Creek were at an elevation of 510 feet, approximately 0.5 miles upstream of San Antonio Reservoir at maximum pool (Figure 1) (37° 34.73' N, 121° 48.56' W).

The trap for upstream migrants and the trap for downstream migrants were both installed and operational as of January 14, 2004. Both traps were checked daily when fishing, with the exception of January 29. Both traps were out of service due to storm flows from February 18 to March 2. The trap for upstream migrants was removed on May 5, followed by the removal of the downstream migrant trap on May 9, 2004.

The Indian Creek water temperature logger failed during deployment. Therefore, a seven-day running average was calculated from daily manual water temperature readings to reduce variability associated with measurement timing and positioning, and is referenced in the trapping data summary.

*Arroyo Hondo* – The trap site (Figure 7) on Arroyo Hondo was 0.4 miles upstream of Calaveras Reservoir at maximum pool (Figure 2), at an elevation of 777 feet (37° 27.79' N, 121° 46.33' W).

The trap for upstream migrants and the trap for downstream migrants were both installed and operational on January 20, 2004. The Arroyo Hondo flows throughout the year and the topography made trapping difficult due to dramatic flow fluctuations. Consequently, both traps were removed for a predicted storm from February 2 to February 9. Both Arroyo Hondo traps were blown out on February 17 and out of service until re-installation on March 9. Traps were not checked on May 10 due to impassable road conditions. Both traps were removed and the survey ended on May 28, 2004.

## **Data Summary**

### Upstream Migrant Traps

*San Antonio Creek* – The San Antonio Creek trap for upstream moving fishes operated during a total of 97 days (2,311 hours) in 2004. Biologists checked the trap on 96 days. The trap fished an average of 24.1 hours (range: 18.1 to 47.7 hours) per sampling period (fishing time between checks by biologists), with most downtime attributable to trap servicing. Only five upstream migrant fishes (all rainbow trout) were collected in the trap (Table 1) for a catch rate of less than 0.01 fish per hour.

The frequency of collecting adult rainbow trout moving upstream, over time, was examined in relation to creek gage height, average daily water temperature and moon phase. Although detecting patterns in fish movement at San Antonio Creek is difficult due to the small number of trout captured, all five of the upstream migrant trout were captured in March, in declining gage height after the season's peak gage height in mid-February (Figure 8). This event shut down fishing from February 18 to March 1. No fish were captured following a lesser storm event in early February. Average water temperatures in San Antonio Creek ranged between about 9 and 16 degrees Celsius during trapping operations. In general, stream temperatures increased gradually throughout the study, but showed declines associated with storm events, and a relatively sharp increase in temperature in early March following peak flow, after which all five of the captured upstream-migrating trout were collected. There were no obvious correlations between fish movement and moon phase. No upstream moving rainbow trout were collected after March.

*Indian Creek* – The trap for upstream migrant fishes in Indian Creek functioned for 95 days (2,233 hours) in 2004. Biologists checked the trap on 94 days. Fishing time averaged 24.0 hours per sampling period (range: 18.1 to 47.1 hours), and like the San Antonio Creek trap, most non-fishing time was due to active monitoring by SFPUC staff. A total of 14 rainbow trout were caught in the trap (Table 1), for a catch rate of less than 0.01 fish per hour. One Sacramento sucker was caught in the trap.

The movement of rainbow trout upstream was compared to creek gage height, seven-day running average water temperature, and moon phase. Trout were captured moving upstream in the declining gage height following the early February peak event, in maximum numbers (3 on February 18) during the increasing gage height of the second peak event in mid February, and more steadily during the declining gage height following the later event, which resulted in the

trap being out of service from February 18 to March 2 (Figure 9). Water temperature data were based on seven-day running averages of field measurements due to a failure of the deployed data logger. The running average water temperature gradually increased from 9 to 16 degrees Celsius over the period that trout were collected. There did not seem to be a relationship between water temperature and upstream fish movement. There also does not appear to be a relationship between moon phase and fish movement. There were no upstream moving rainbow trout observed after March 18, 2004.

*Arroyo Hondo* – The Arroyo Hondo trap for upstream migrant fishes was operational for a total of 98 days (2,326 hours) in 2004. Biologists checked the traps on 97 days. The traps fishing time averaged 24.2 hours per sampling period (range: 19.7 to 46.9 hours), with trap checks and maintenance accounting for the majority of the downtime. There were 26 rainbow trout (catch rate of almost 0.01 fish per hour) and one Sacramento sucker collected in the trap (Table 1).

Correlations between upstream moving rainbow trout and daily gage height, average daily water temperature and moon phase were examined for fish collected in the Arroyo Hondo. All of the trout caught in the upstream Arroyo Hondo trap were collected during the declining flows in late January and March following the mid-January peak flows, indicating a strong relationship between fish movement and flows (Figure 10). Average water temperatures gradually increased throughout the trapping period, with the exception of lower temperatures in early and late May due to low flows and an unseasonably cool air mass. The temperatures in the Arroyo Hondo were similar to those recorded in the other two creeks, ranging from 8 to 21 degrees Celsius. There was no apparent relationship between water temperature and trout movement. Peaks in the daily movement of trout heading upstream occurred throughout various phases of the moon, showing no apparent relationship to moon phase.

#### Downstream Migrant Traps

*San Antonio Creek* – The San Antonio Creek trap for downstream moving fishes operated for a total of 99 days (2,352 hours) in 2004. Biologist checked the traps on 98 days. The trap fished for an average of 23.8 hours per sampling period (range: 18.5 to 23.8 hours), with most downtime attributable to the trap being checked for catch and servicing. A total of 3,277 downstream migrant fishes were collected in the trap, with prickly sculpin (94 percent of the total) and juvenile rainbow trout (5 percent of the total) accounting for the bulk of the catch (Table 1). Only 29 adult rainbow trout were collected.

It was difficult to tell the difference between young-of-year (YOY) rainbow trout and small parr in San Antonio Creek. To separate the two for data analyses, a size frequency histogram was constructed (Figure 11). In San Antonio Creek, YOY were defined as rainbow trout smaller than or equal to 80 mm fork length, while fish measuring between 81 and 200 mm FL were considered one year old and older juveniles.

The frequency of collecting adult rainbow trout moving downstream, over time, was examined in relation to gage height, average daily water temperature and moon phase. The majority of the adult trout moving downstream were trapped during peaking gage heights and subsequent decreasing heights (Figure 12). The majority of downstream adult rainbow trout collected also

coincided with relatively sharp increases in daily average water temperature. Adult trout were collected moving downstream during all phases of the moon, although the greatest numbers of fish were observed preceding a full moon. These individual relationships are difficult to substantiate since the traps were not fishing from February 19 to March 2 when flows reached their seasonal maximum, directly preceding the period of peak fish collection.

One year old and older juvenile trout downstream movements were examined in relation to creek gage height and average daily water temperature. Parr and smolts were initially collected during the first peak flow event of early February, although there were greater numbers during the decreasing gage height following the maximum flows observed in late February (Figure 13). The majority of parr and smolts were collected between mid-March and mid-April. The greatest rate of fish movement (28 fish/day; more than twice any other day) was observed on March 26, coinciding with a brief, storm-related one-day increase in flows. Juvenile trout movement also appeared to be correlated with water temperature, with the majority of fish moving during a pronounced temperature increase in mid-March. Two sharp increases in downstream one and one-plus year juvenile fish movement were also observed during relatively sharp drops in temperature, with the lower temperatures likely a product of precipitation.

Only 23 young-of-year rainbow trout were observed moving downstream in San Antonio Creek in 2004. With the exception of three trout, collected on March 10, these fish were collected mid-through late April (Figure 14). The presence of YOY trout in the San Antonio Creek downstream migrant trap was also associated with average daily water temperature, and appears to be related to steady increases rather than a specific range of temperatures.

Prickly sculpin, the most numerous species trapped in San Antonio Creek, were collected in the downstream trap from mid-March through the end of the trapping season on May 9, 2004 (Figure 15). The majority of these fish were collected between mid-April and early May. No Sacramento sucker were trapped in San Antonio Creek in 2004.

*Indian Creek* – The trap for downstream migrant fishes in Indian Creek functioned for 96 days (2,237 hours) in 2004. Biologists checked the downstream trap on 95 days. Fishing time averaged 23.8 hours per sampling period (range: 18.4 to 48.5 hours), and like the San Antonio Creek trap, most non-fishing time was due to trap checking activity by SFPUC staff. A total of 5,239 fishes were collected in the trap, with juvenile Sacramento sucker (49 percent of the total) and juvenile rainbow trout (48 percent of the total) making up most of the catch (Table 1). Sixty-nine adult rainbow trout were collected.

A size frequency histogram was constructed for rainbow trout collected in Indian Creek to help distinguish YOY and parr/smolt size classes for data analyses (Figure 16). Young-of-year trout measured less than or equal to 60 mm fork length, while juvenile fish born previous to 2004 ranged between 101 and 250 mm FL. Parr and smolt were therefore easy to differentiate from younger fish by the clear gap between size classes represented.

The downstream movement of adult rainbow trout was evaluated in relation to creek gage height, average daily water temperature and moon phase. While the first of two peak flow events occurring in early and mid-February yielded no downstream adult trout movement, the majority

of the downstream moving fish captured were observed in March, during declining flows (Figure 17). As in San Antonio Creek, downstream fish movement peaked on March 26<sup>th</sup> with 10 fish collected during a brief, one-day increase in stream flow. The majority of downstream adult trout movement appeared to be correlated with gradually increasing average daily water temperatures. Fish were collected throughout various moon phases and downstream adult trout movement did not appear to be related. The trap for downstream moving fishes in Indian Creek was not operating from February 19 through March 2, directly preceding the collection of the majority of the downstream moving fishes, making it difficult to substantiate relationships with gage height, water temperature, or moon phase.

The downstream movement of juvenile rainbow trout was also looked at in relation to estimated creek flow and average daily water temperature. No downstream migrant parr and smolt (or partial smolt) were collected from the time that the trap was installed until early March (Figure 18). By early April the downstream trap had collected the majority of its one to one-plus aged trout for the season. Similar to downstream moving adult and juvenile trout in San Antonio Creek, and to downstream moving adult trout in Indian Creek, parr, partial smolt, and smolt downstream migration peaked on March 26, coincidental with a relatively minor increase in creek gage height. In general, downstream migrants were trapped during a period of gradual decline of creek gage height following the peak flow event and subsequent trap removal during mid- to late February. The downstream movement of one year old and older juvenile trout occurred during gradual increases in daily average water temperature through a range of approximately 13 to 16 degrees Celsius.

Young-of-year rainbow trout born in 2004 were collected in increasing numbers from April 13, peaking in abundance on April 28, and in declining numbers until the final day that water was observed flowing through the trap on May 6 (Figure 19). The downstream movement of YOY trout appears to be related to both steady decreases in flow and sustained water temperatures of greater than 15 degrees Celsius.

Although only one adult Sacramento sucker was collected moving upstream of San Antonio Reservoir, 32 adults and 2,571 juveniles were caught moving downstream (Table 1). The majority of adults were collected in early to late March and the juveniles were collected *en mass* from late April, peaking at 592 individuals on the last day of operation on May 6 (Figure 20). Downstream moving prickly sculpin were found in the Indian Creek trap throughout the spring, with abundances greatest from mid- to late March (Figure 21).

*Arroyo Hondo* – The Arroyo Hondo trap for upstream migrant fishes was operational for a total of 97 days (2,231 hours) in 2004. Biologists checked the traps on 96 days. The fishing time averaged 23.5 hours per sampling period (range: 19.9 to 44.6 hours), with trap checks and maintenance accounting for the majority of the downtime. There were 1,620 downstream moving fishes collected, with juvenile rainbow trout (65 percent of the total) and California roach (27 percent of the total) making up the majority of the catch (Table 1). There were 71 adult trout collected.

In order to separate Arroyo Hondo YOY rainbow trout from small parr born previous to 2004 for data analyses, a size frequency histogram was created (Figure 22). The resulting plot



distinguishes YOY as individuals between 11 and 80 mm fork length, while one year old and older trout measured between 91 and 240 mm fork FL. There was a clear gap separating size classes represented.

Relationships between downstream moving adult rainbow trout and mean daily flow, average daily water temperature and moon phase were examined for fish collected in the Arroyo Hondo. Due to the relatively larger size of the Arroyo Hondo and its characteristic flash flows, the traps for downstream moving fish were out of service for relatively longer periods than the other two studied creeks, adding to the difficulty of comparing fish movement to flow, water temperature or moon phase. Although one downstream moving adult rainbow trout was collected in February following the first peak stream flow event, the movement of fish appeared to increase following the reinstallation of traps after the late February/early March peak stream flow event (Figure 23). Fish movements reached maximum rates during the March 26 creek gage height increase as seen in other creeks for a variety of fish size classes. Otherwise, downstream adult trout movement occurred during decreasing flows from mid-March to mid-May. The majority of these fish were captured during gradually increasing stream water temperatures, between 16 and 20 degrees Celsius, except for a relatively sharp but brief decline in temperature during a single spring storm that resulted in maximum downstream movements. Fish moved throughout all moon phases, but rates increased during waxing crescent phases, with two clear peaks occurring during March and April.

The downstream movements of juvenile rainbow trout were examined in relation to mean daily creek flow and average daily water temperature. Downstream moving parr, partial smolt and smolt were collected in steadily decreasing numbers following the reinstallation of the downstream trap in mid-March until late May, indicating that the peak of downstream juvenile fish movement likely occurred while the trap was out of service in late February and early March (Figure 24). Fish movements coincide consistently and proportionately with steadily decreasing gage heights during this period. As seen in other fish size classes and creeks, downstream one and one-plus year old trout increased sharply on March 26 during a brief increase in stream flow. Temperature did not appear to influence the downstream movements of parr and smolt. The majority of fish were collected in gradually increasing daily average stream temperatures, between 16 and 21 degrees Celsius.

Young-of-year trout heading downstream were captured from mid-April through the end of the study period in late May, with the majority collected in mid- through late April and late May (Figure 25). YOY trout do not appear to be influenced by stream flows. Water temperatures consistently above 16 degrees Celsius appear to play a more important role in triggering downstream movements of YOY in Arroyo Hondo.

Only a single adult Sacramento sucker was captured when moving upstream, while 23 adults were caught in the downstream trap (Table 1). The majority of these fish were collected between early April and early May (Figure 26). California roach were collected in the downstream trap throughout the study, with peaks during early and late April (Figure 27).

### Tagged Adult Rainbow Trout

Not all upstream moving adult rainbow trout that were tagged were recaptured in the downstream traps, and not all downstream moving adult fish were tagged during their upstream migration. Upstream moving fish that were tagged but not recaptured may have migrated back to the reservoir when the downstream trap was down, they may have remained upstream or they may have perished. Downstream migrant adult trout that did not have tags (or adipose fin clips indicating that they were tagged but lost the tag) likely moved upstream of the trap site prior to the date trapping started or during a period of extremely high flow when the traps were down.

*San Antonio Creek* – A total of 37 adult rainbow trout were captured in San Antonio creek in 2004, including three fish rescued from between the traps and release upstream, two of which were subsequently caught moving downstream (Table 2). Five fish captures were made in the upstream trap and 29 were made in the downstream trap, representing 31 individual adult rainbow trout. Of these fish, 27 were tagged this year, while 4 had been tagged during previous years. Among the five upstream moving fish, two fish were tagged this year, two fish were tagged during previous years, and one fish was re-captured after briefly moving downstream. Of the 29 downstream moving fish, 22 were tagged this year moving downstream, two were initially tagged when caught between the traps and released upstream, three were tagged in the upstream trap, and two were tagged during previous years.

Two fish were caught in the downstream trap after being caught in the upstream trap (Table 2, Figure 28). The two fish spent one and two days upstream, respectively, averaging 1.5 days in the creek above the traps. A third fish remained upstream after being caught in the upstream trap March 10, the downstream trap March 12, and finally in the upstream trap again on March 13, so was assumed to be moving upstream and not included in the residence time calculation. Because all of the downstream moving adult trout were collected after the trap was pulled from February 2 to February 3 and blown out from February 13 to March 1, little can be inferred about the time these fish spent upstream of the traps. Downstream moving fish collected between March 3 and April 26 spent a minimum of 1 to 55 days in the creek, assuming there were no resident adult trout living in the stream, and that these downstream moving fish moved upstream prior to initial trap installation or as recently as the trap reinstallation on March 2.

*Indian Creek* – A total of 84 adult rainbow trout were caught in Indian Creek in 2004, including three fish caught between the traps and released upstream, of which only one was recaptured (Table 2). Thirteen fish captures were made in the upstream trap and 68 were made in the downstream trap, representing 77 individual fish. Of the 13 individual trout collected in the upstream trap, nine fish were tagged upon capture, three fish had been tagged during previous years, and one fish had initially been tagged upon capture in the downstream trap. This one fish was subsequently caught in the upstream trap, and then caught in the downstream trap a second time. Of the 67 individual adult trout collected in the downstream trap, 51 were tagged upon capture, 11 had been tagged during previous years, four had been initially captured in the upstream trap, and one fish was inadvertently released untagged.

Of the 12 adult rainbow trout determined to be migrating upstream, four fish (33%) were subsequently collected in the downstream trap, spending a minimum of one day, a maximum of

11 days, and an average of five days above the traps (Table 2, Figure 29). One fish was caught in the downstream trap, the upstream trap, and again in the downstream trap on consecutive days, and was therefore not considered to be migrating upstream during its capture. Of the 67 fish determined to be migrating downstream, 63 fish (94%) had not been captured when migrating upstream.

The only fish caught in the downstream trap in Indian Creek were collected after the trap had been pulled from February 2 to February 4 and blown out from February 19 to March 2. Similar to San Antonio Creek, little can therefore be inferred about the residence time of downstream moving fish in Indian Creek that were not previously captured moving upstream. These fish spent from at least one to 63 days in the creek, depending on the date of capture.

*Arroyo Hondo* – In Arroyo Hondo, a total of 97 adult rainbow trout were captured in 2004, including one mortality in the downstream trap (Table 2). No fish were captured between the traps. Twenty-six fish captures were made in the upstream trap and 71 were made in the downstream trap, representing 91 individuals. Of the 26 individual trout collected in the upstream trap, 24 were tagged upon capture and two of these fish had been tagged during previous years. Of the 70 individual adult trout collected moving through the downstream trap, 58 were tagged this year, seven were tagged during previous years, and five had been tagged moving through the upstream trap earlier in the same year. One mortality collected in the downstream trap did not require tagging.

Of the 26 adult rainbow trout caught moving upstream, five fish (19%) were subsequently collected in the downstream trap, spending a minimum of one day, a maximum of 33 days, and an average of 10.2 days above the traps (Table 2, Figure 29). Of the 70 fish caught moving downstream, 65 fish (93%) had not been captured when migrating upstream.

Because there are resident trout that remain in the Arroyo Hondo year-round (personal observation by Brian Sak, SFPUC Biologist), no assumptions can be made about the residence time of downstream-moving fish collected that were not first collected when moving upstream.

## Summary

- Upstream moving adult trout were collected in traps above both San Antonio and Calaveras reservoirs between early February and late April, while downstream moving adult trout were caught from mid-February through mid-May.
- The number of days that adult rainbow trout remained upstream of each of the trap sites was highly variable, ranging from one to two days in San Antonio Creek, one to 11 days in Indian Creek and one to 33 days in the Arroyo Hondo.
- Relatively few downstream migrant parr/smolt were captured in traps in mid- to late February in San Antonio Creek and Arroyo Hondo, with peak or increasing numbers collected in early March through April in all three creeks followed by lower numbers of parr/smolt as late as mid-May in Arroyo Hondo.
- Young-of-year rainbow trout first showed up in the downstream migrant traps in mid-March in San Antonio Creek, and were collected as late as the end of May in Arroyo Hondo. The largest numbers of fish were caught throughout the month of April and into mid-May. San Antonio Creek traps collected only 23 YOY, while Indian Creek and Arroyo Hondo traps collected YOY in relatively abundant quantities (2,389 and 849, respectively).
- Of the three variables examined (flow, water temperature and moon phase), the upstream movements of adult rainbow trout appears to be most closely correlated to flow, although low numbers of fish and the equipment's inability to fish over the entire range of flows encountered make it difficult to quantify cause-and-effect relationships. Most adult rainbow trout were caught during peak or declining flows.
- The majority of the downstream moving adult rainbow trout were collected during peak or dropping flows. One minor peak in gage height during generally decreasing flows, which was observed in all three creek gages on March 26, yielded the peak downstream adult trout movements in both Indian Creek and Arroyo Hondo. Although declining flows and the majority of downstream fish movement coincided with gradually increasing temperatures, unseasonably low late season temperatures made it difficult to determine a temperature threshold beyond which downstream moving trout were not observed. Temperatures generally did not stabilize above 20 degrees Celsius in any of the three creeks during the trapping period.
- There is some indication that the downstream movements of juvenile rainbow trout (one year old and older) is positively correlated to flow. In all three creeks, downstream parr and smolt movements were observed at or near the season maximum in March during a minor peak in gage height during a period of gradually decreasing flows. Downstream moving parr and smolt were observed moving to a lesser extent during earlier San Antonio and Arroyo Hondo peak flows (February). The number of juvenile trout collected declined as water temperatures approached 20 degrees Celsius.

- Downstream moving young-of-year rainbow trout displayed a negative relationship to flow, while their presence in the traps was closely tied to sustained increases in water temperature.



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Dan Foley	Art Hartinger	Steve Maiolini	Garth Smith	

**San Antonio Creek, Indian Creek and Arroyo Hondo  
Fish Trapping Data Summary 2004**

**TABLES and FIGURES**

**Table 1.** Total catch summary for 2004 trapping on San Antonio Creek, Indian Creek and Arroyo Hondo. Grayed out boxes indicate fishes that the upstream traps were not designed to catch.

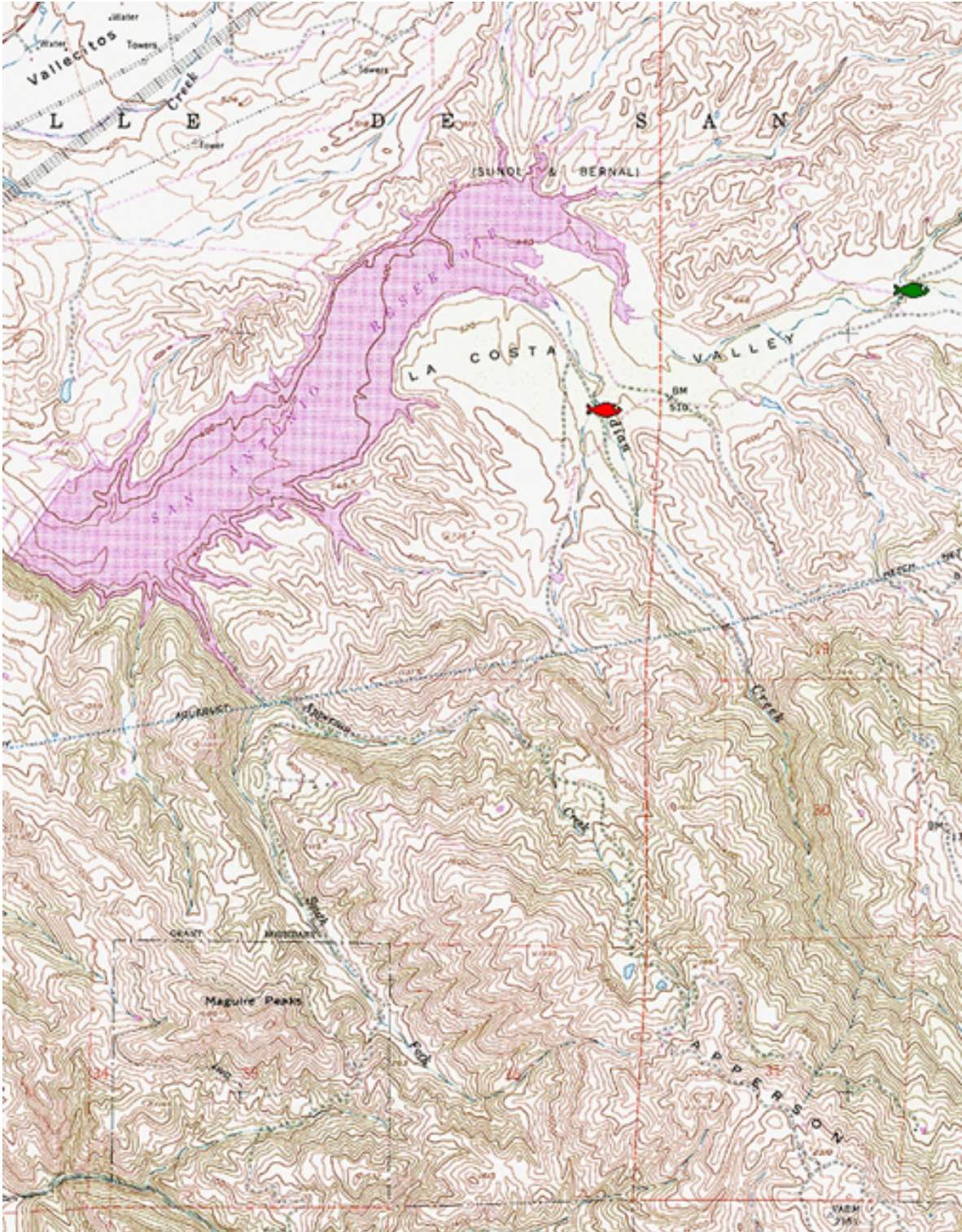
	San Antonio Creek		Indian Creek		Arroyo Hondo		Totals
	Upstream Moving Fish	Downstream Moving Fish	Upstream Moving Fish	Downstream Moving Fish	Upstream Moving Fish	Downstream Moving Fish	
bluegill	0	0	0	0	0	0	0
brown bullhead	0	0	0	0	0	0	0
common carp	0	0	0	0	0	0	0
California roach		0		0		443	443
fathead minnow		0		0		0	0
green sunfish	0	0	0	0	0	1	1
prickly sculpin		3,093		55		22	3,170
rainbow trout (adults)	5	29	14	69	26	71	214
<i>female - green</i>	2	1	2	2	8	2	17
<i>female - ripe</i>	3	2	5	12	7	5	34
<i>female - spent</i>	0	22	2	37	2	40	103
<i>female - not recorded</i>	0	0	0	0	0	0	0
<i>male - green</i>	0	0	0	0	0	0	0
<i>male - ripe</i>	0	1	3	8	9	5	26
<i>male - spent</i>	0	2	1	6	0	16	25
<i>male - not recorded</i>	0	0	0	0	0	2	2
<i>unknown</i>	0	1	1	4	0	1	7
rainbow trout (juveniles)		155		2,511		1,054	3,720
<i>young-of-year</i>		23		2,389		849	3,261
<i>parr</i>		40		14		42	96
<i>partial smolt</i>		70		65		106	241
<i>smolt</i>		22		37		55	114
<i>unknown</i>		0		6		2	8
Sacramento pikeminnow	0	0	0	1	0	6	7
Sacramento sucker	0	0	1	2,603	1	23	2,628
<i>adult - female</i>	0	0	1	6	1	9	17
<i>adult - male</i>	0	0	0	16	0	11	27
<i>adult - not recorded</i>	0	0	0	10	0	3	13
<i>juvenile</i>		0		2,571		0	2,571
<b>Totals</b>	<b>5</b>	<b>3,277</b>	<b>15</b>	<b>5,239</b>	<b>27</b>	<b>1,620</b>	<b>10,183</b>



**Table 2.** *Tagged adult rainbow trout tracking summary for 2004 trapping on San Antonio Creek, Indian Creek and Arroyo Hondo. All upstream moving fish were tagged if not tagged during previous years. All downstream moving fish that were not tagged on their way upstream or during previous years were tagged. The number of days that trout spent above the traps is based on fish that were tagged moving upstream and re-caught moving downstream.*

Number of Individual Fish	San Antonio Creek	Indian Creek	Arroyo Hondo
Caught Moving upstream	4	13	26
Caught Moving downstream	29	67	70
Moving up then re-caught moving down	2	4	5
<i>Tagged in 2004</i>	24	60	82
<i>Tagged in previous studies</i>	4	14	9
Fewest number of days fish above traps	1	1	1
Longest number of days fish above traps	2	11	33
Average number of days fish above traps	1.5	5.0	10.2

**Figure 1.** San Antonio Reservoir, San Antonio Creek and Indian Creek, with the location of trapping sites marked for each stream (green fish represents the San Antonio Creek site and red fish represents the Indian Creek site).





**Figure 2.** *Calaveras Reservoir and Arroyo Hondo, with the location of the trapping site marked for the stream (blue fish represents the Arroyo Hondo site).*



Figure 3. Configuration of trap designed to catch upstream moving fishes.

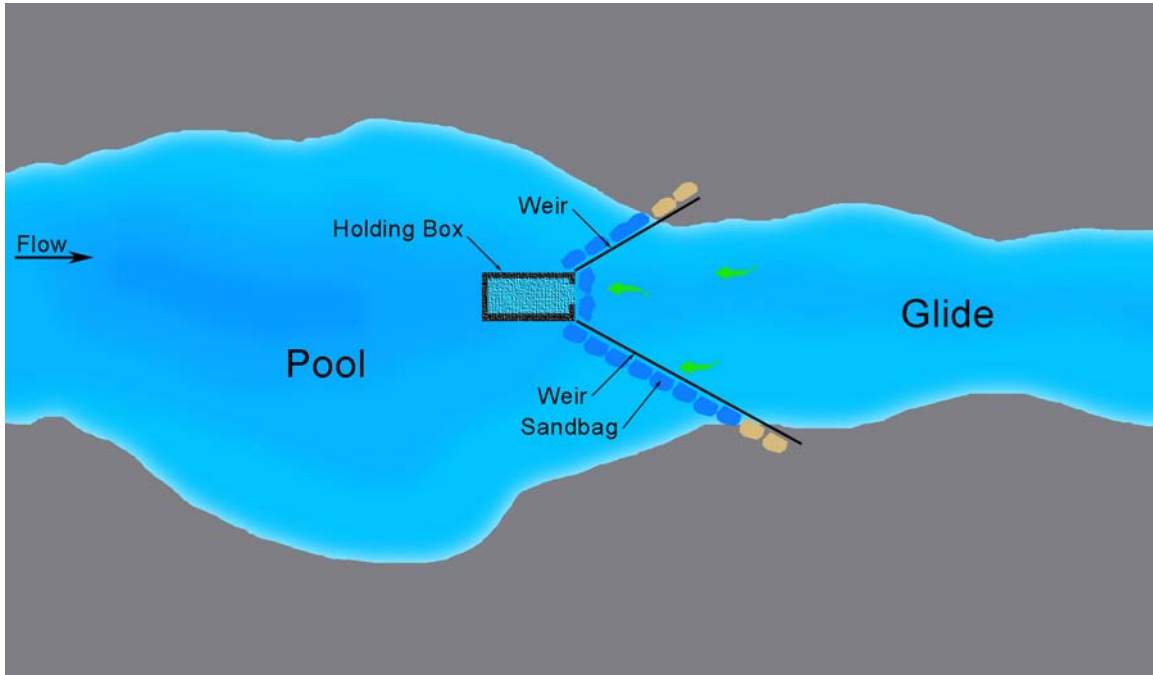
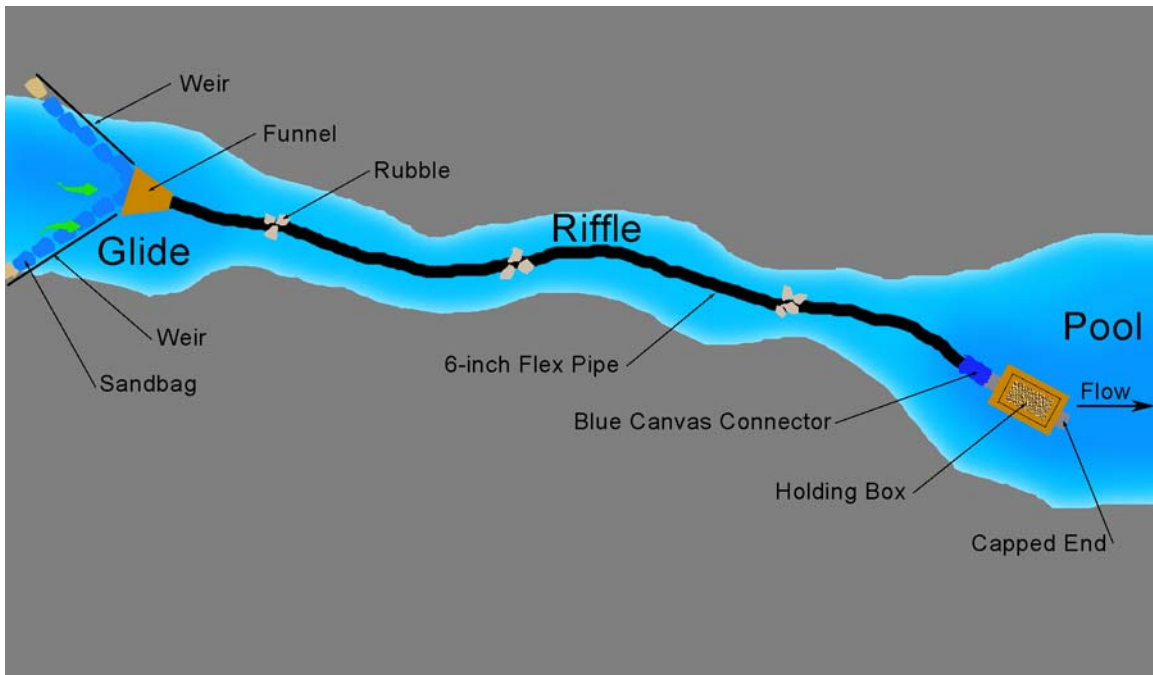


Figure 4. Configuration of trap designed to catch downstream moving fishes.





**Figure 5.** *San Antonio Creek trapping site – trap for upstream migrating fish, looking in an upstream direction.*



**Figure 6.** *Indian Creek trapping site – trap for upstream migrating fish, looking in an upstream direction.*

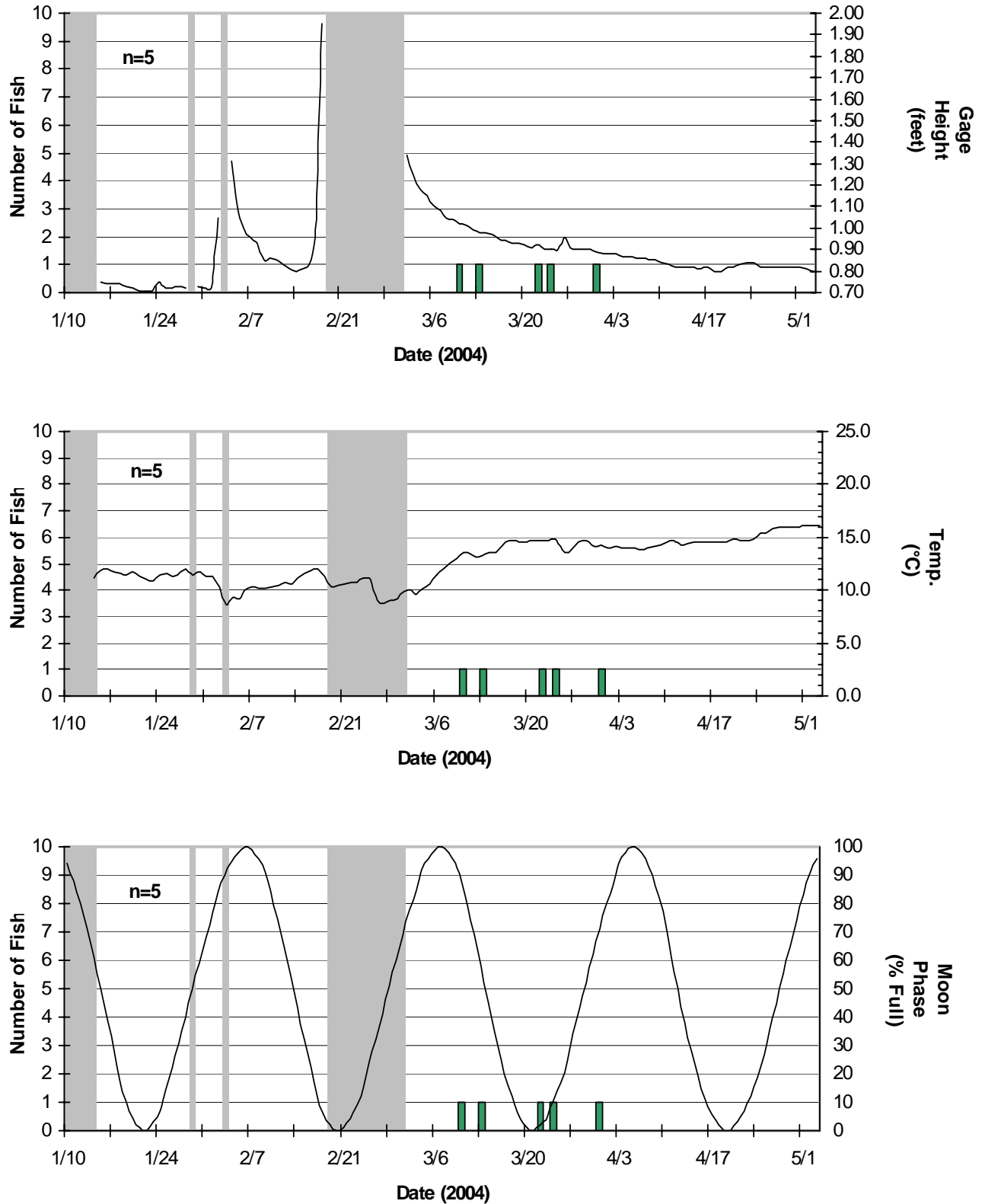


**Figure 7.** *Arroyo Hondo trapping site – trap for upstream migrating fish, looking in an upstream direction.*

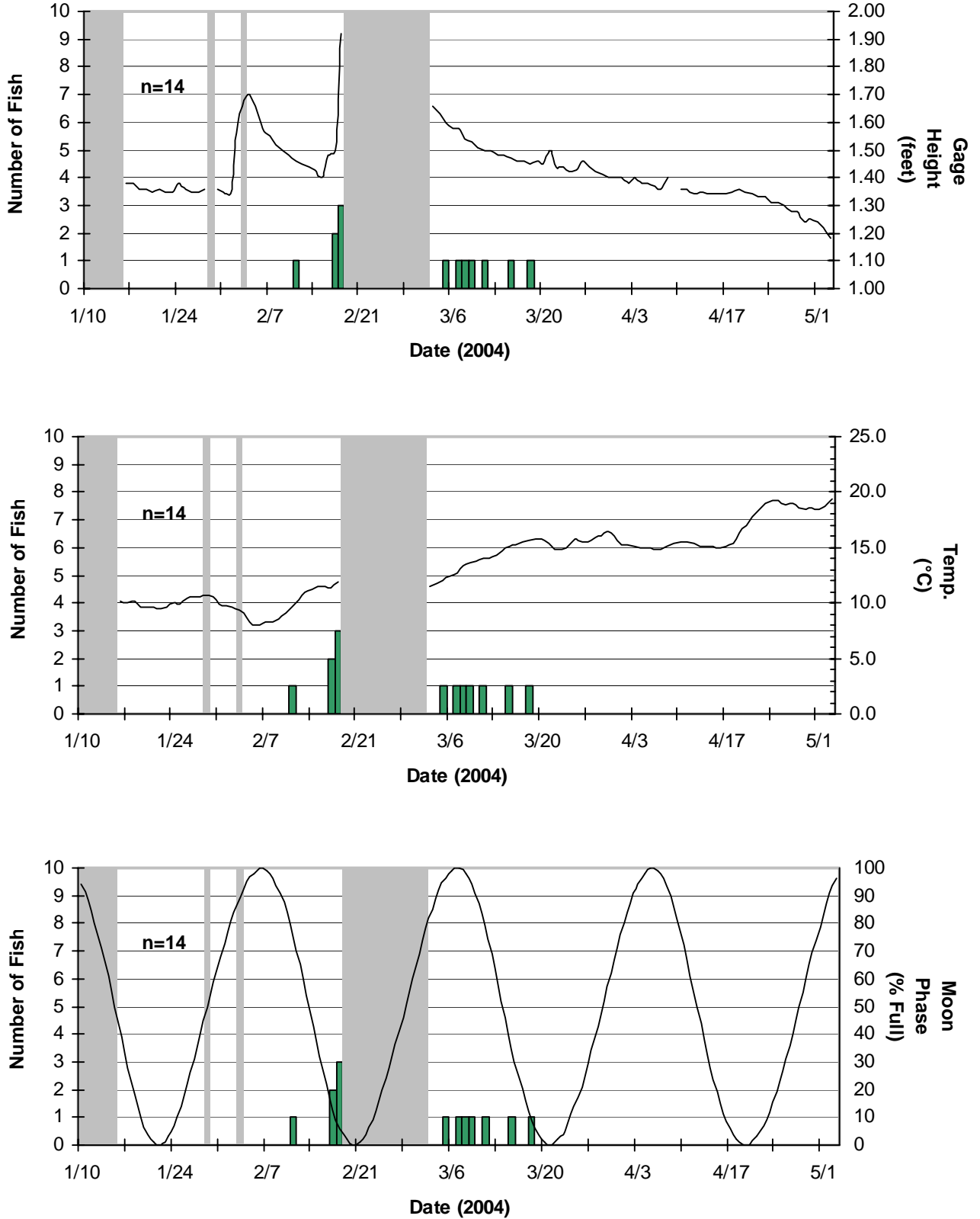




**Figure 8.** San Antonio Creek, upstream moving adult rainbow trout (green bars) compared to gage height feet (top), daily average water temperature degrees Celsius (middle), and percent full moon (bottom). Grey indicates no trapping.



**Figure 9.** Indian Creek, upstream moving adult rainbow trout (green bars) compared to gage height feet (top), daily average water temperature degrees Celsius (middle), and percent full moon (bottom). Grey indicates no trapping.



**Figure 10.** Arroyo Hondo, upstream moving adult rainbow trout (green bars) compared to gage height feet (top), daily average water temperature degrees Celsius (middle), and percent full moon (bottom). Grey indicates no trapping.

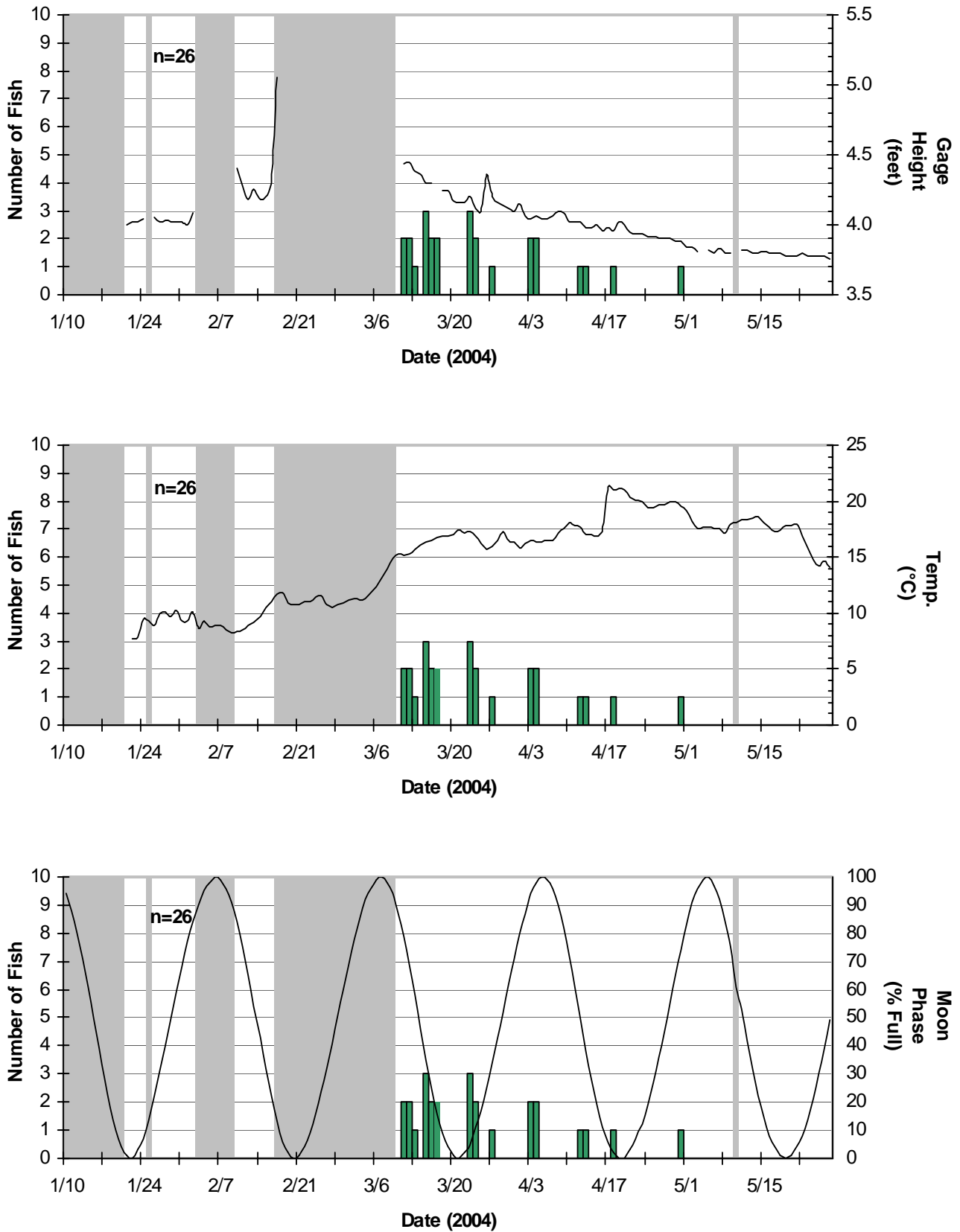


Figure 11. Rainbow trout size frequencies for all of the fish collected from San Antonio Creek.

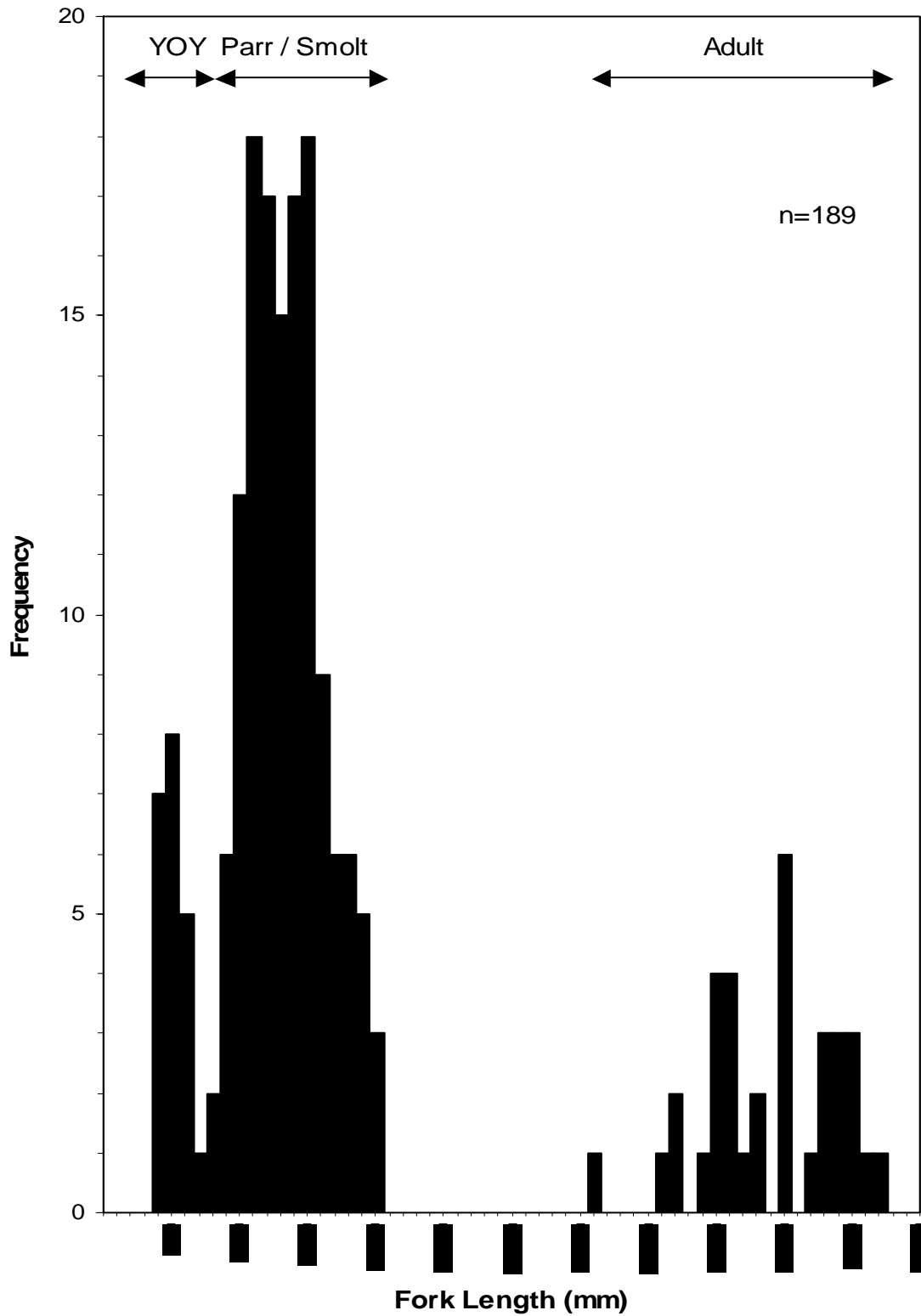


Figure 12. San Antonio Creek, downstream moving adult rainbow trout (green bars) compared to gage height feet (top), daily average temperature degrees Celsius (middle), and percent full moon (bottom). Grey indicates no trapping.

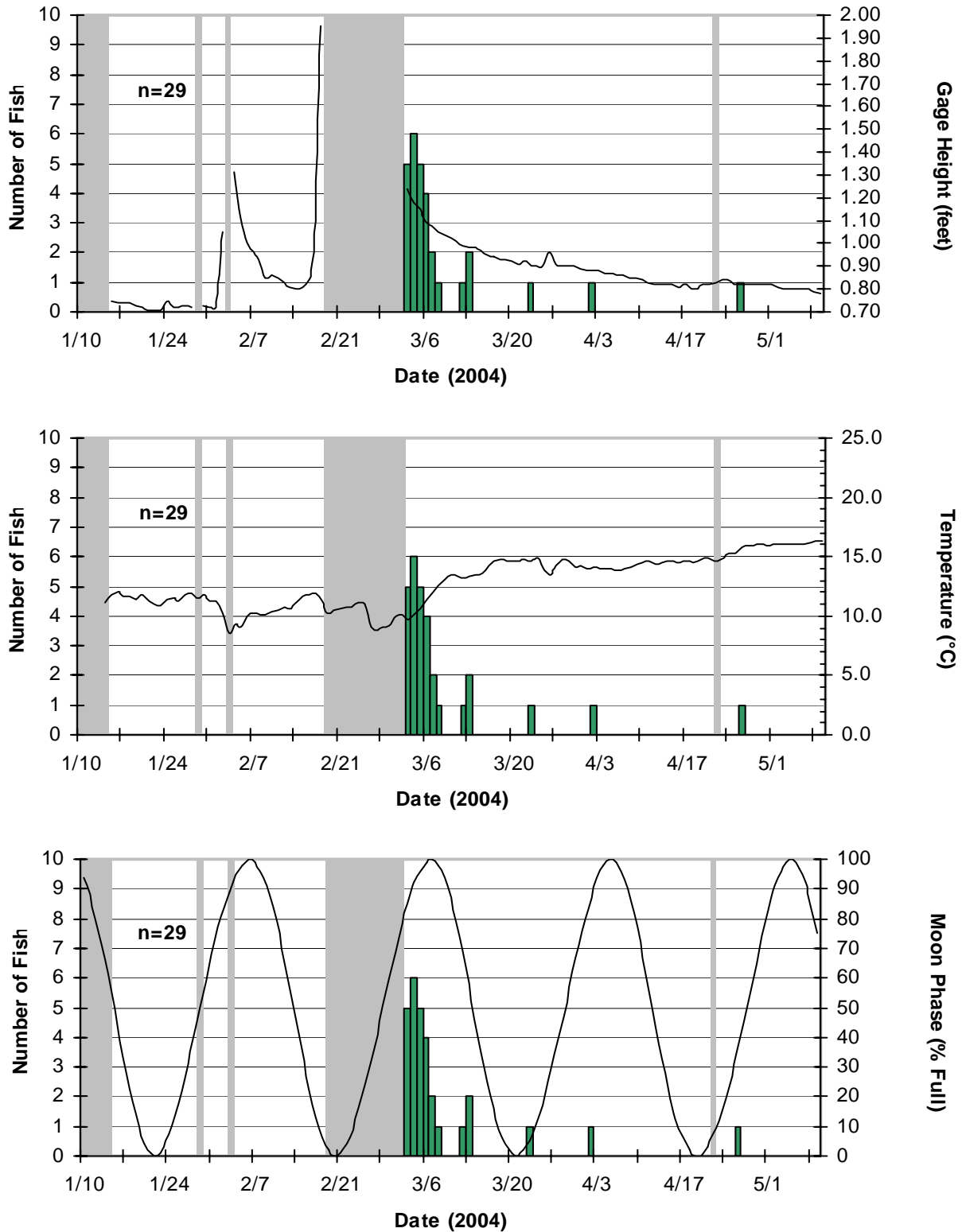
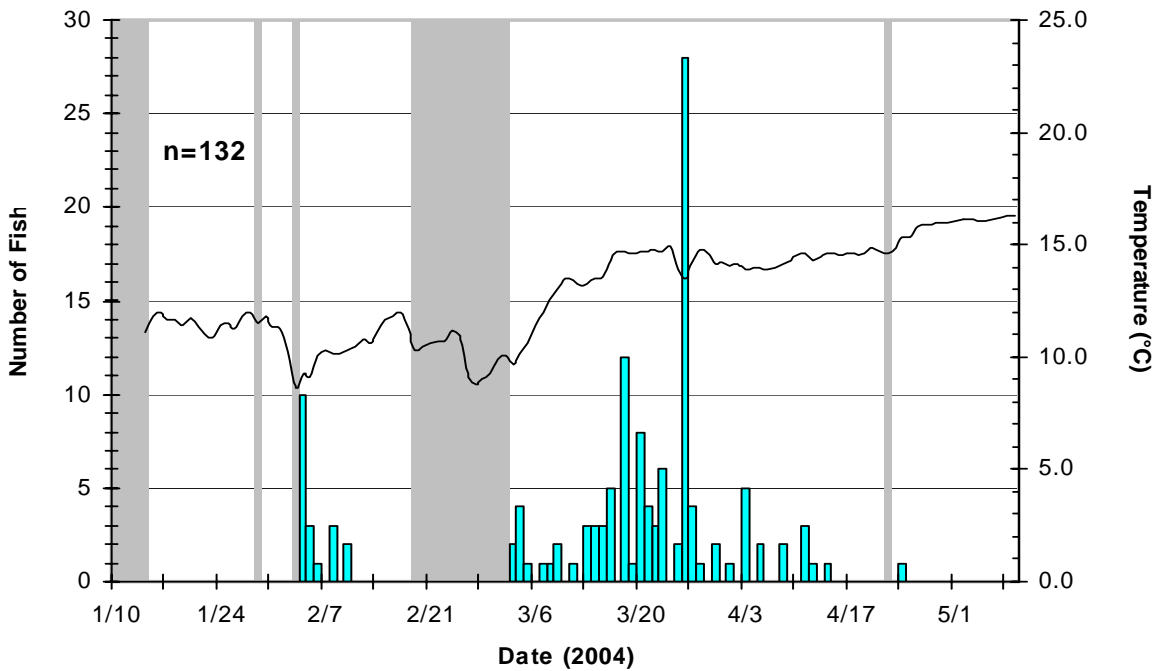
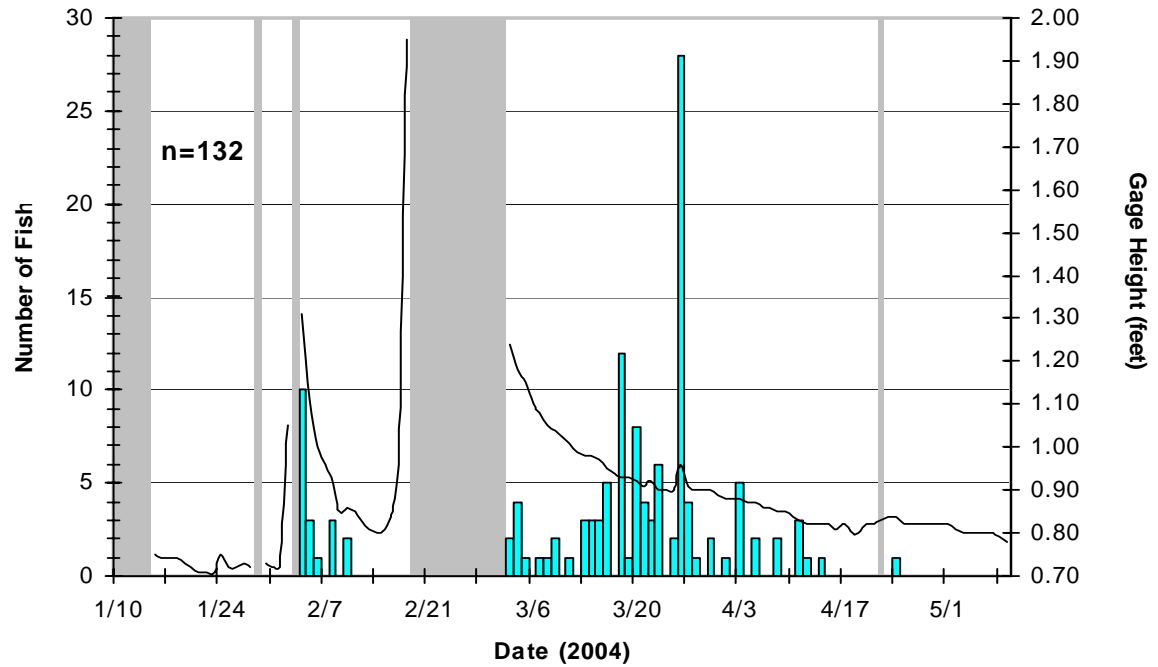
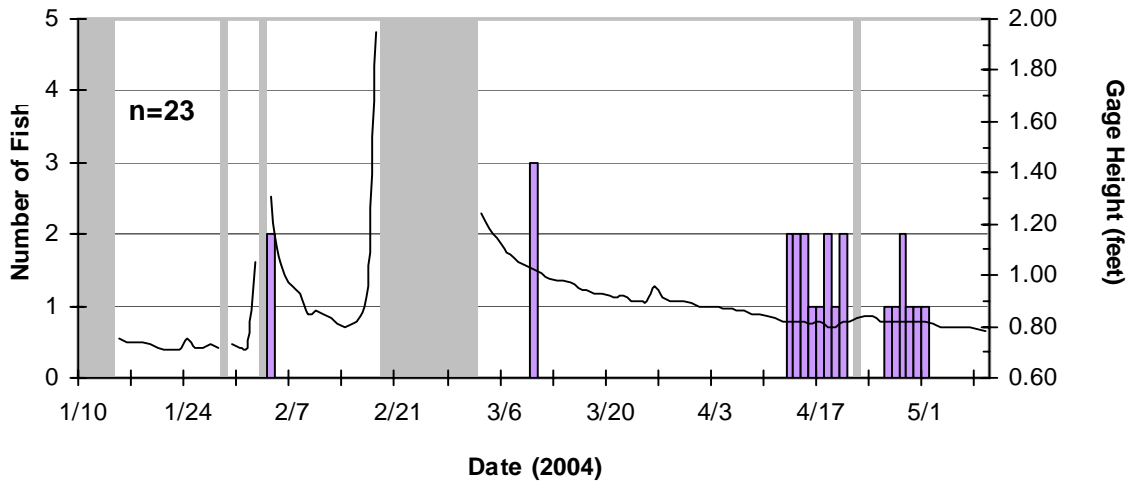


Figure 13. San Antonio Creek, downstream moving rainbow trout parr/smolt (blue bars) compared to gage height feet (above) and daily average temperature degrees Celsius (below). Grey indicates no trapping.



**Figure 14.** San Antonio Creek, downstream moving rainbow trout YOY (purple bars) compared to gage height feet (above) and daily average temperature degrees Celsius (below). Grey indicates no trapping.



**Figure 15.** San Antonio Creek, downstream moving prickly sculpin (pink bars). Grey indicates no trapping.

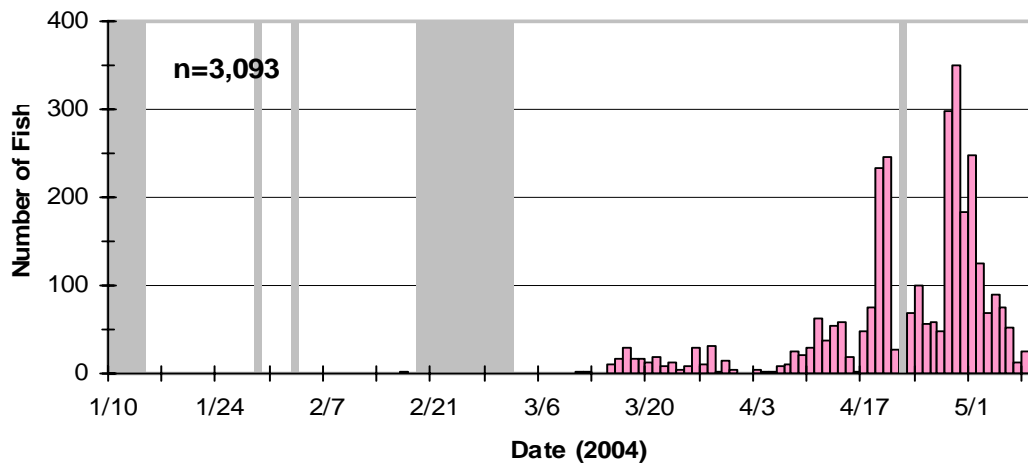
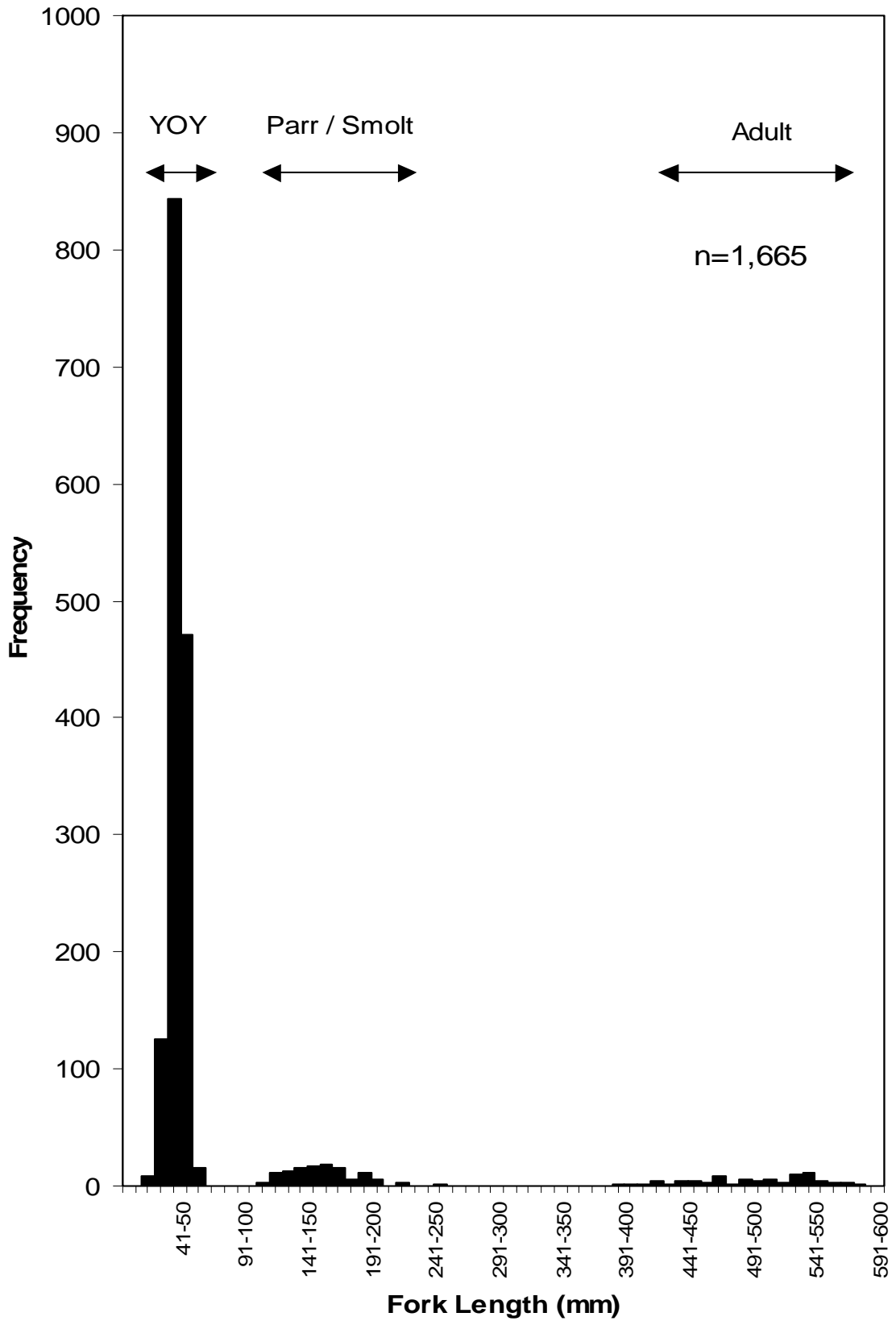


Figure 16. Rainbow trout size frequencies for all of the fish collected from Indian Creek.





**Figure 17.** Indian Creek, downstream moving adult rainbow trout (green bars) compared to gage height feet (top), daily average temperature degrees Celsius (middle), and percent full moon (bottom). Grey indicates no trapping.

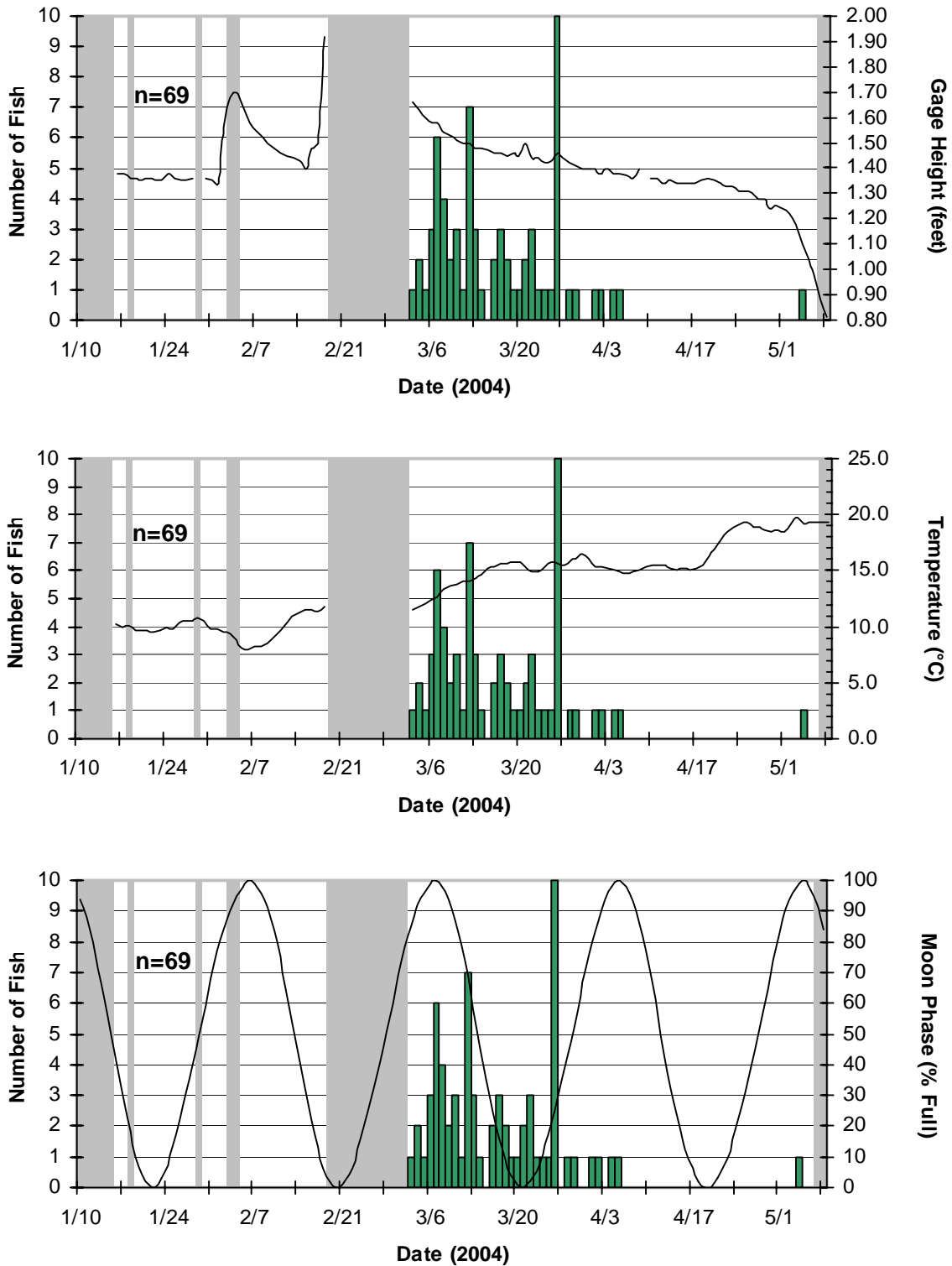
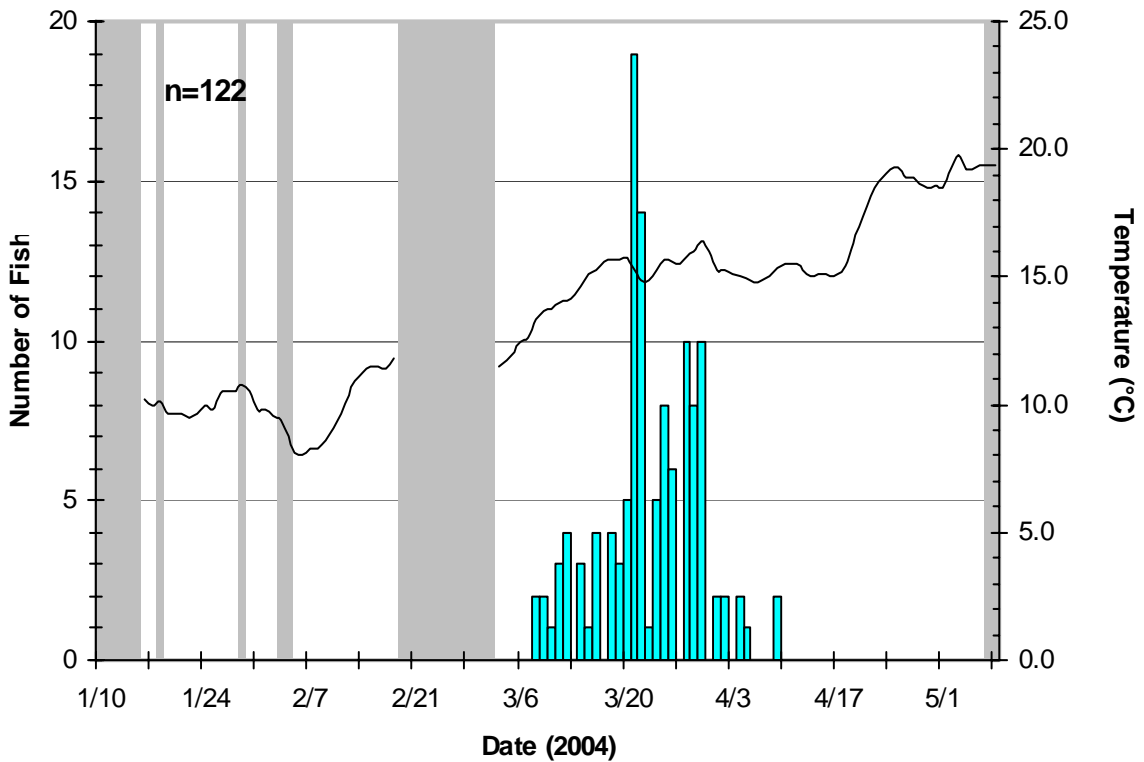
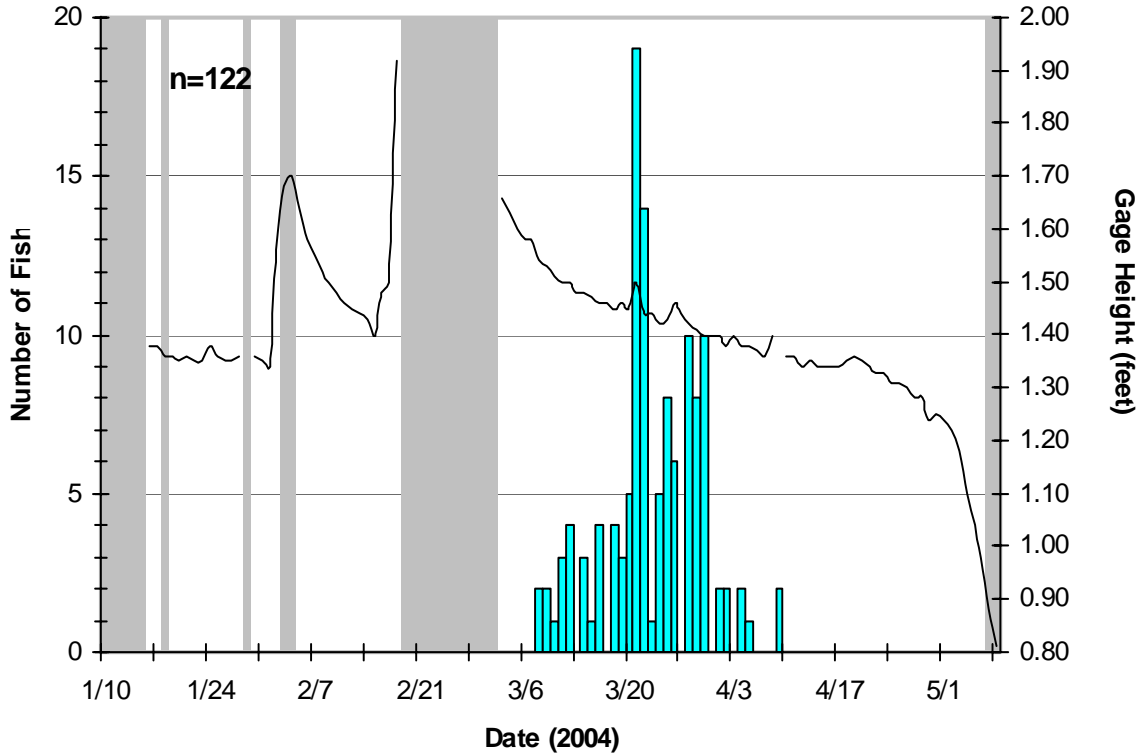


Figure 18. Indian Creek, downstream moving rainbow trout parr/smolt (blue bars) compared to gage height feet (above) and daily average temperature degrees Celsius (below). Grey indicates no trapping.



**Figure 19.** Indian Creek, downstream moving rainbow trout YOY (purple bars) compared to gage height feet (above) and daily average temperature degrees Celsius (below). Grey indicates no trapping.

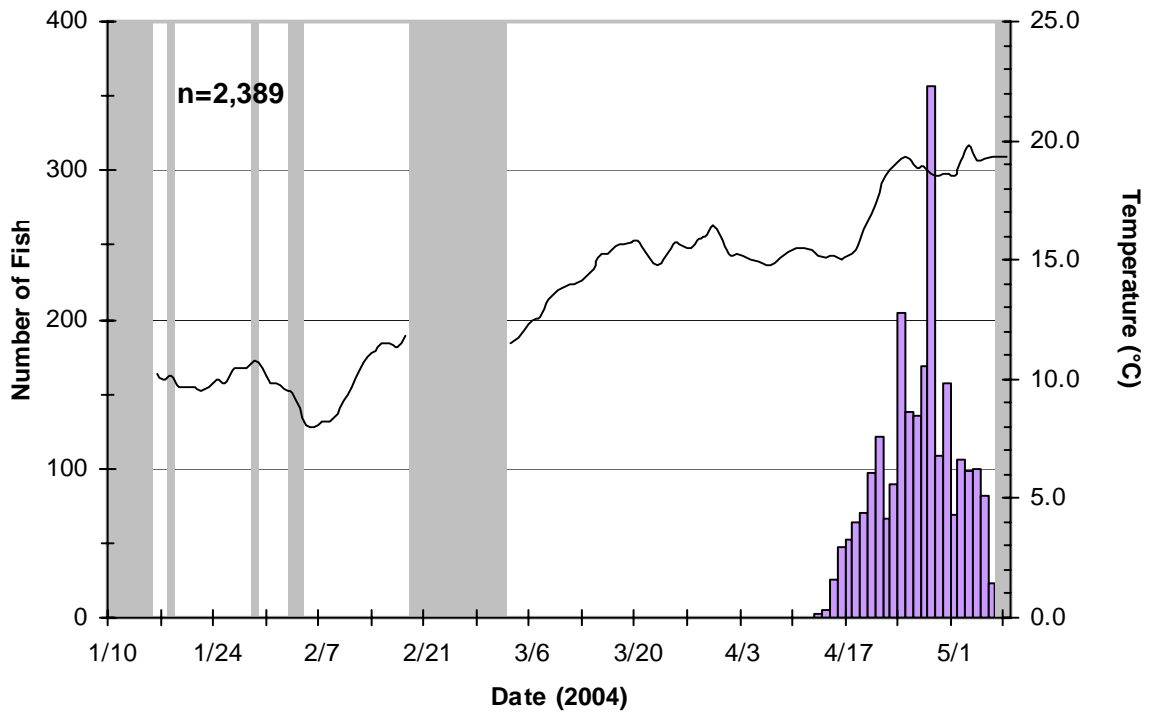
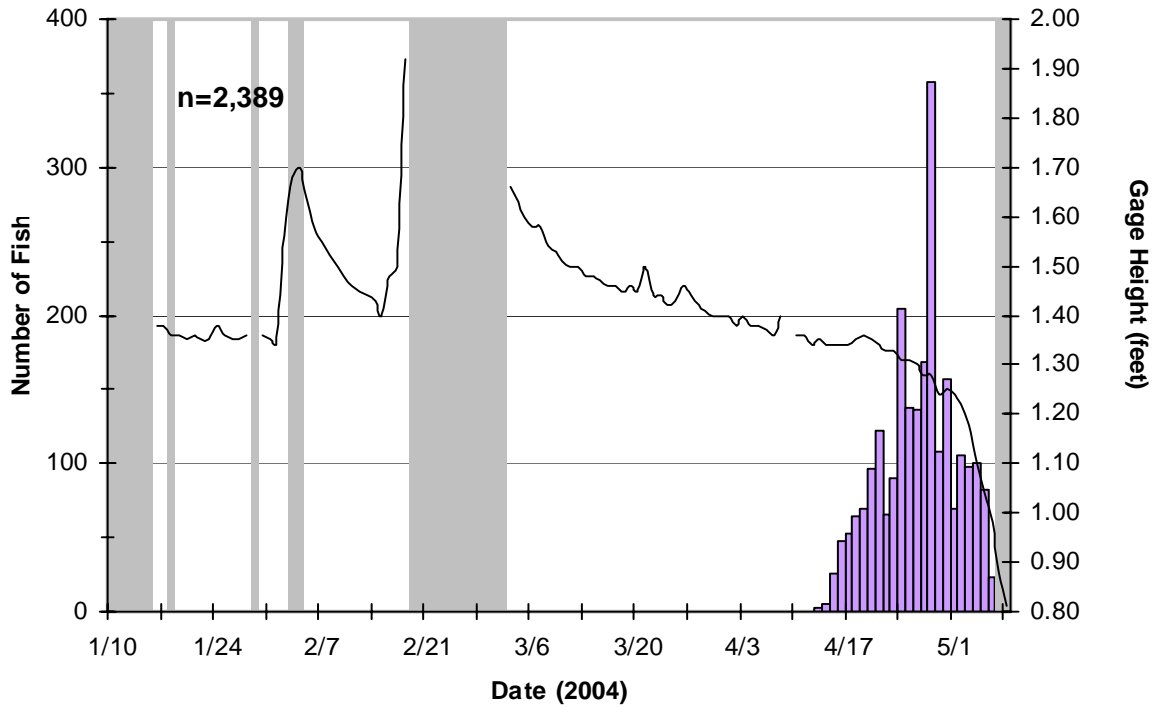


Figure 20. Indian Creek, downstream moving Sacramento sucker (gold bars). Grey indicates no trapping.

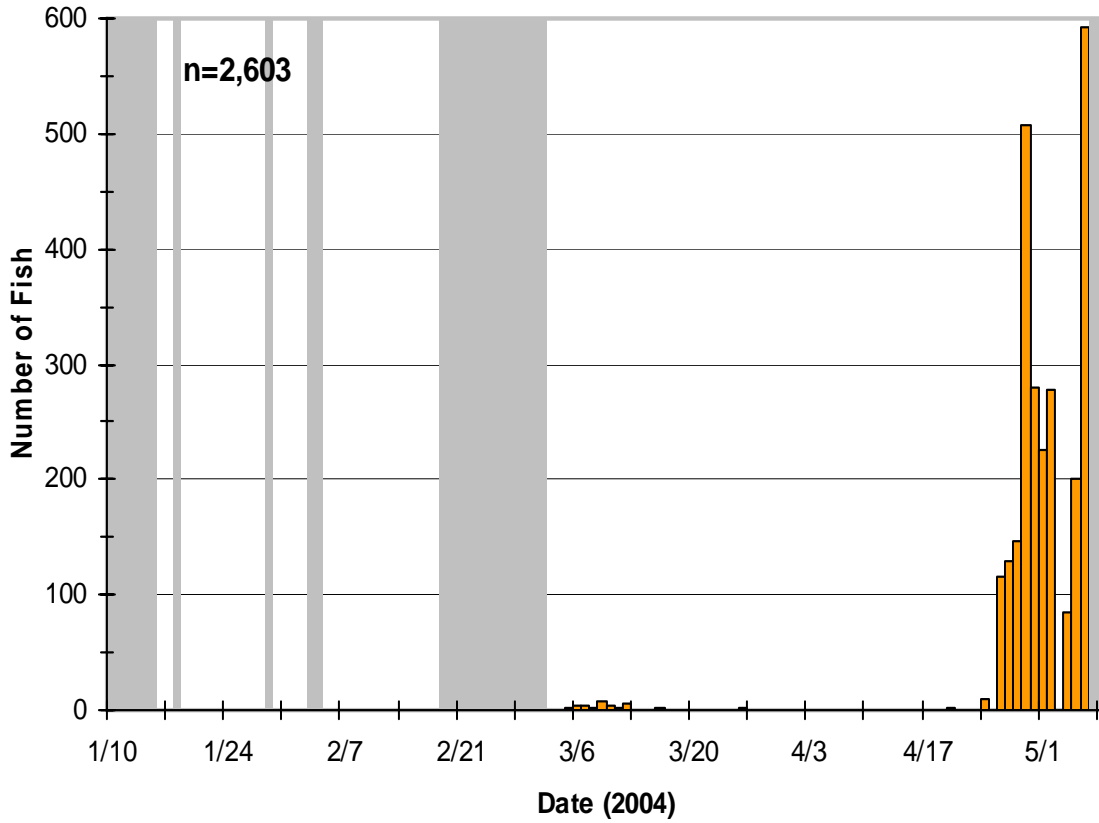


Figure 21. Indian Creek, downstream moving prickly sculpin (pink bars). Grey indicates no trapping.

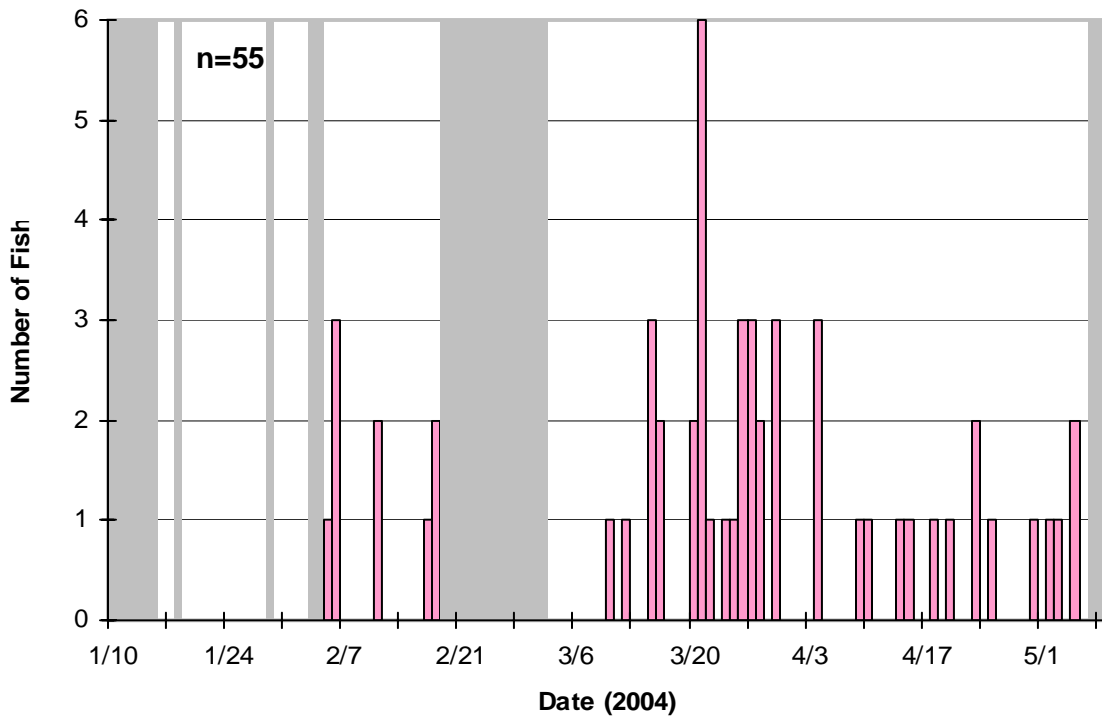


Figure 22. Rainbow trout size frequencies for all of the fish collected from Arroyo Hondo.

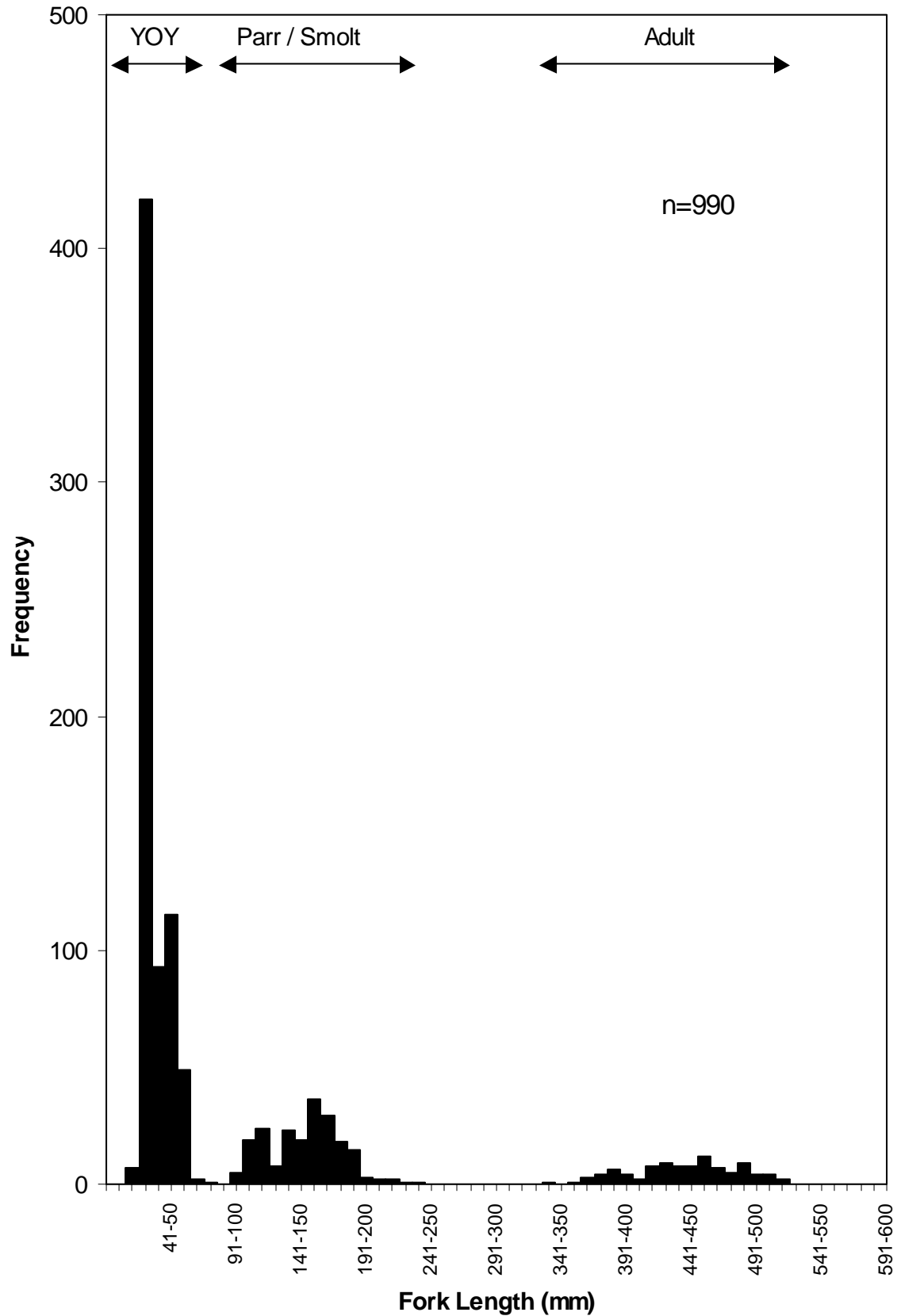
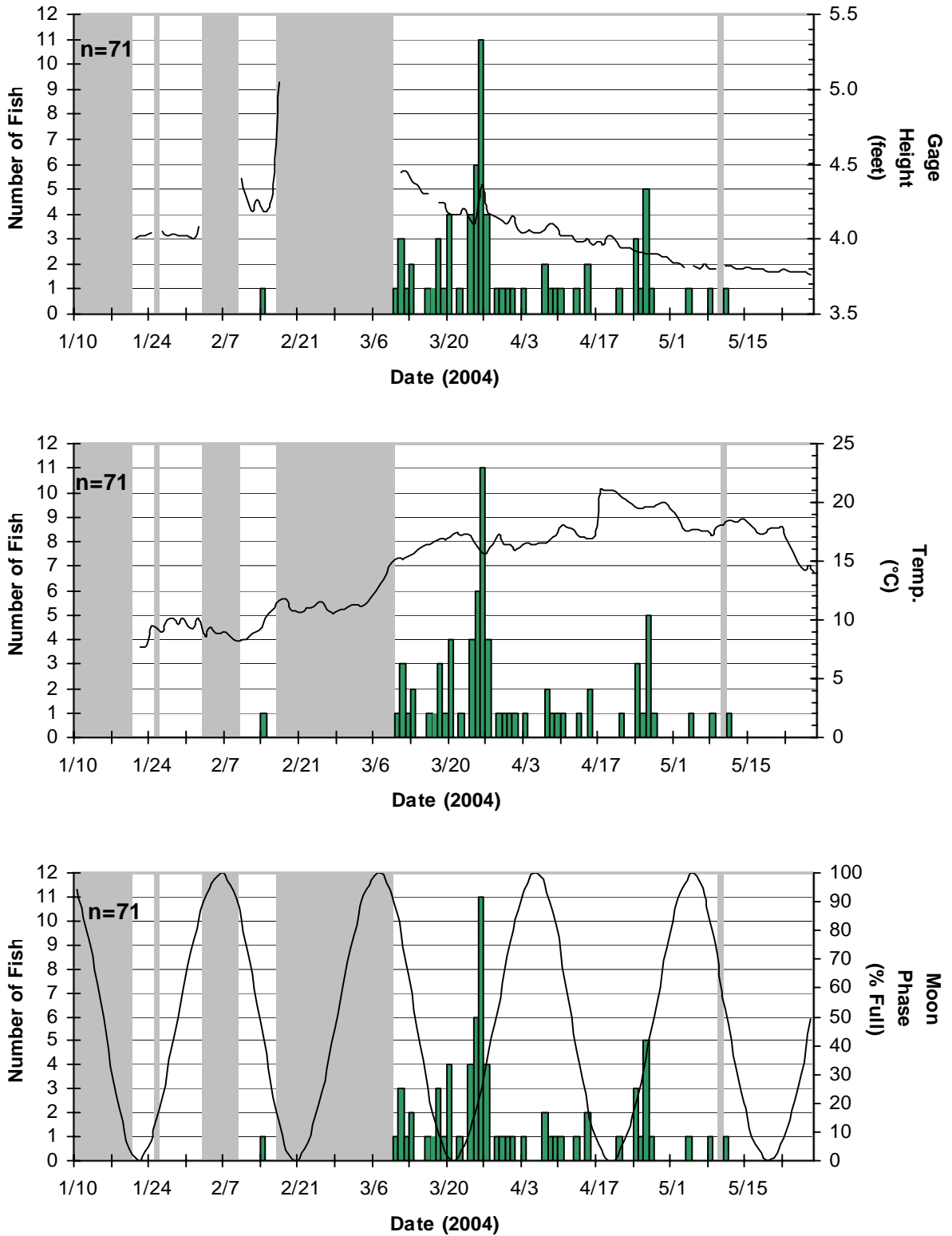


Figure 23. Arroyo Hondo, downstream moving adult rainbow trout (green bars) compared to gage height feet (top), daily average temperature degrees Celsius (middle), and percent full moon (bottom). Grey indicates no trapping.



**Figure 24.** Arroyo Hondo, downstream moving rainbow trout parr/smolt (blue bars) compared to gage height feet (above) and daily average temperature degrees Celsius (below). Grey indicates no trapping.

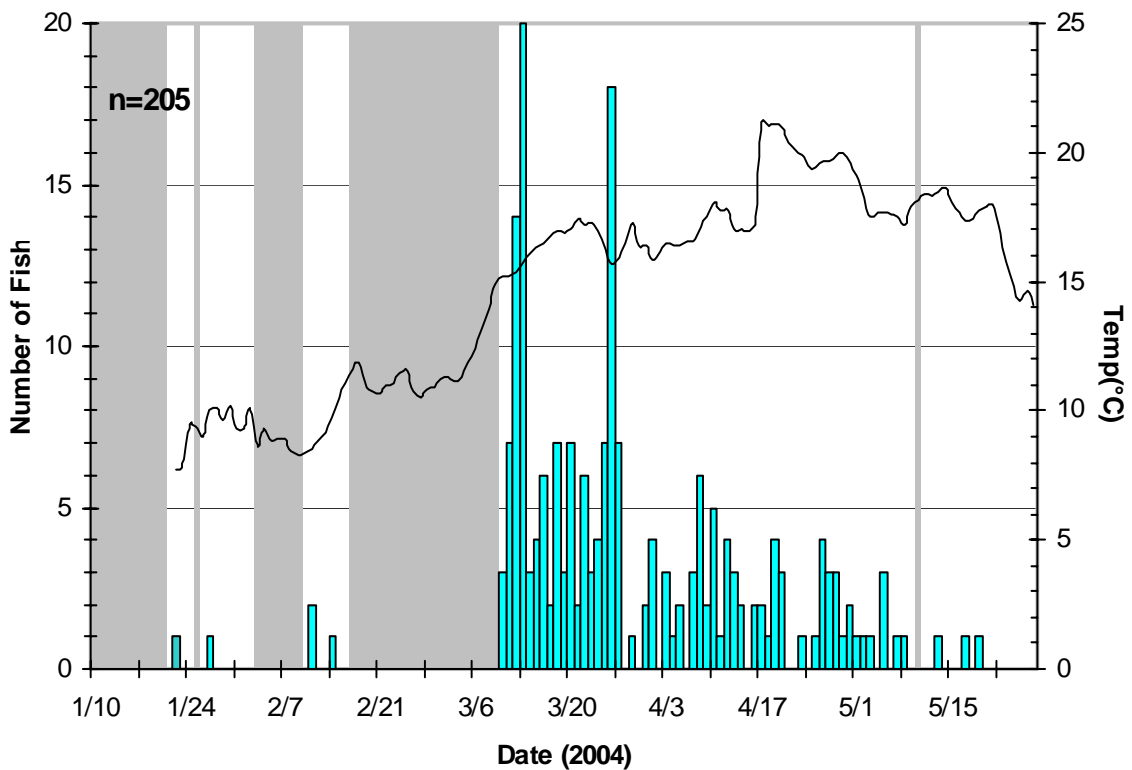
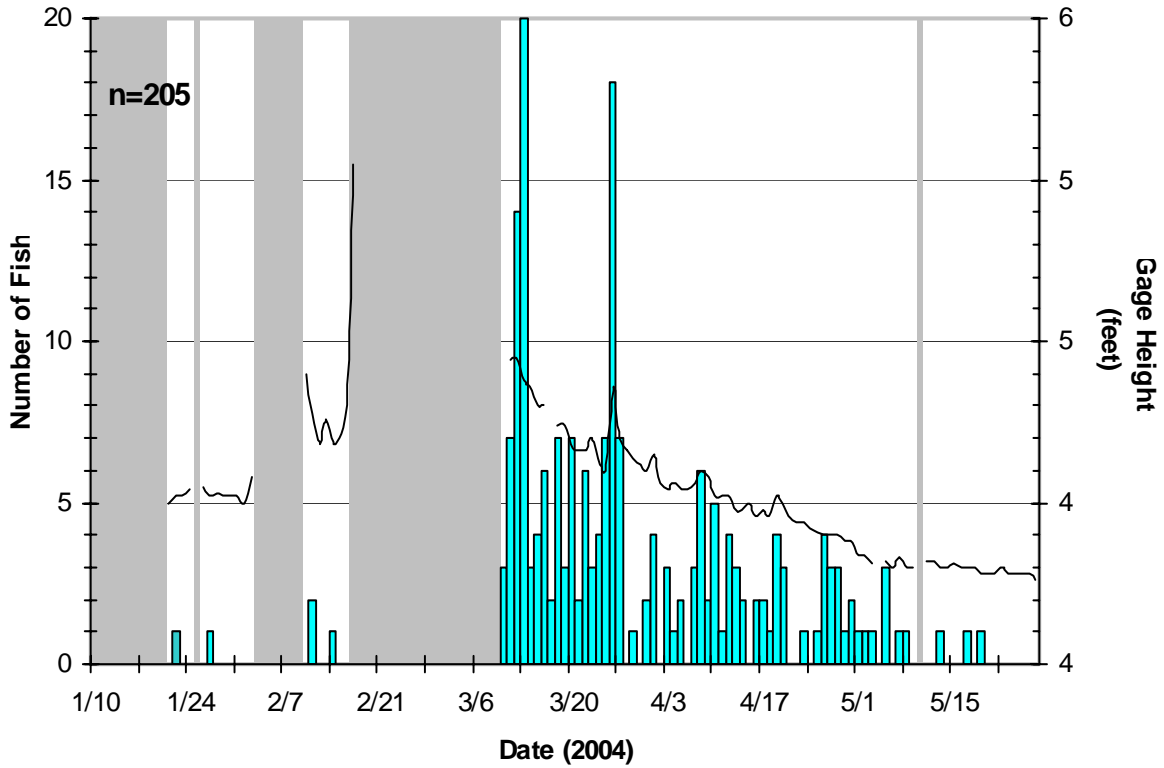


Figure 25. Arroyo Hondo, downstream moving rainbow trout YOY (purple bars) compared to gage height feet (above) and daily average temperature degrees Celsius (below). Grey indicates no trapping.

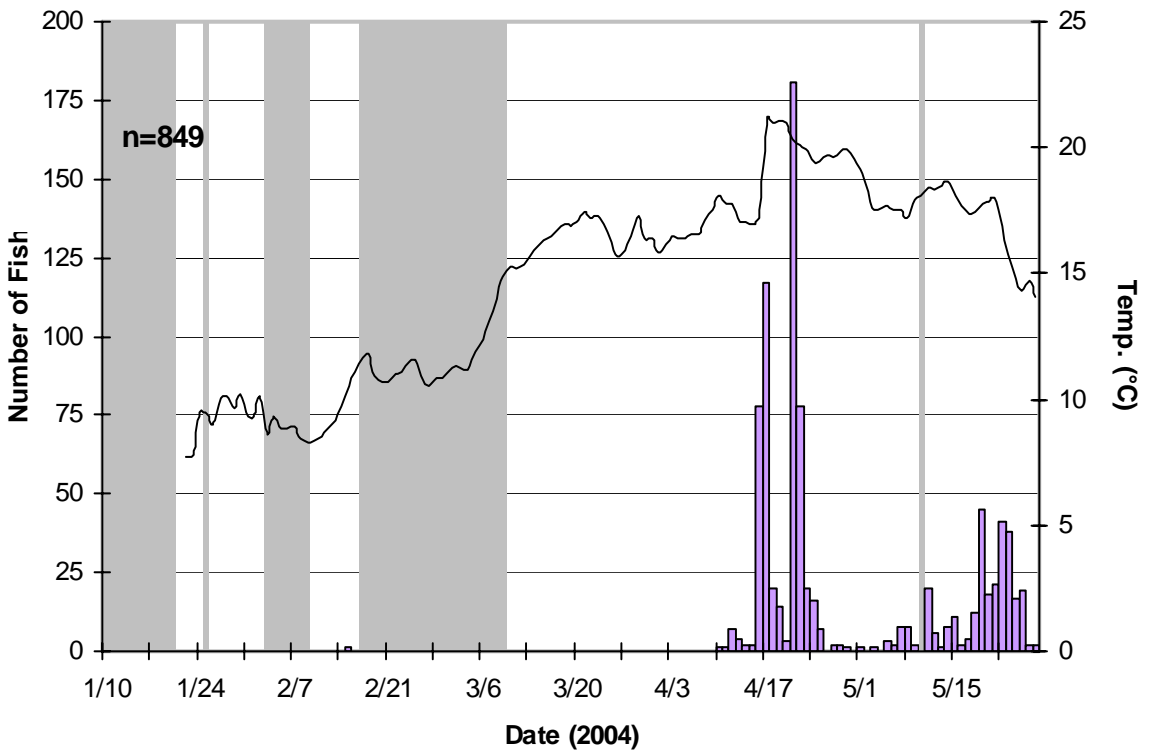
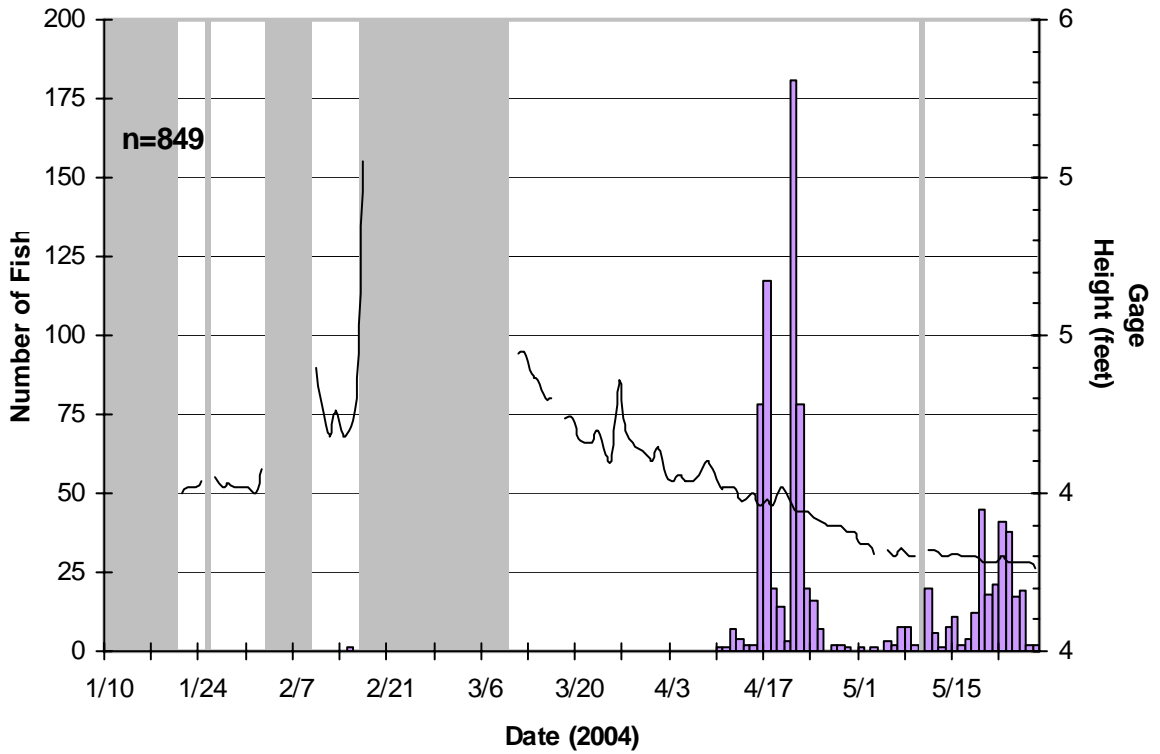




Figure 26. Arroyo Hondo, downstream moving Sacramento sucker (gold bars). Grey indicates no trapping.

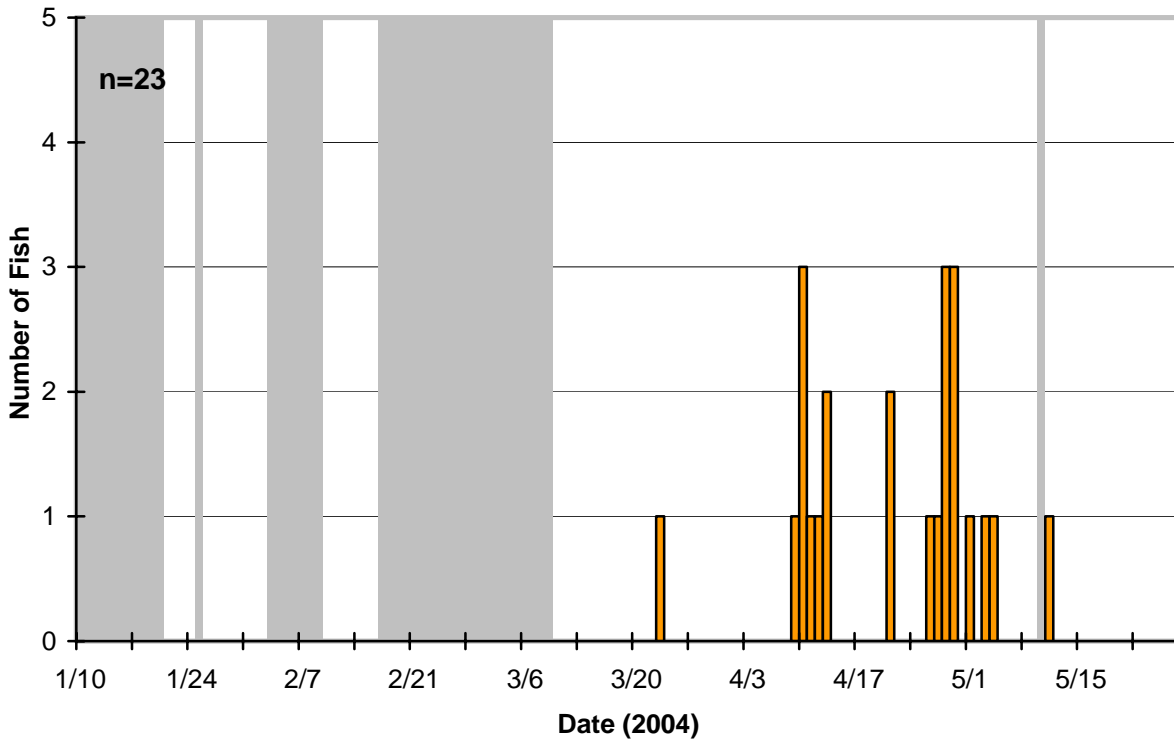
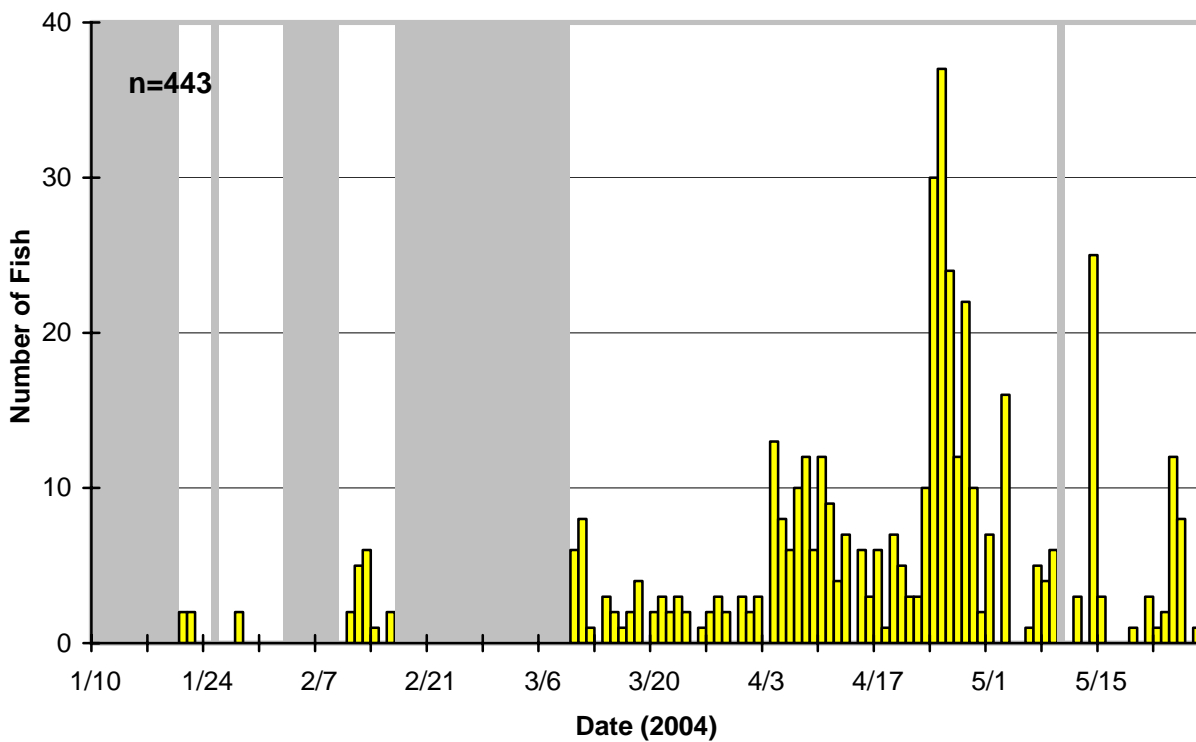
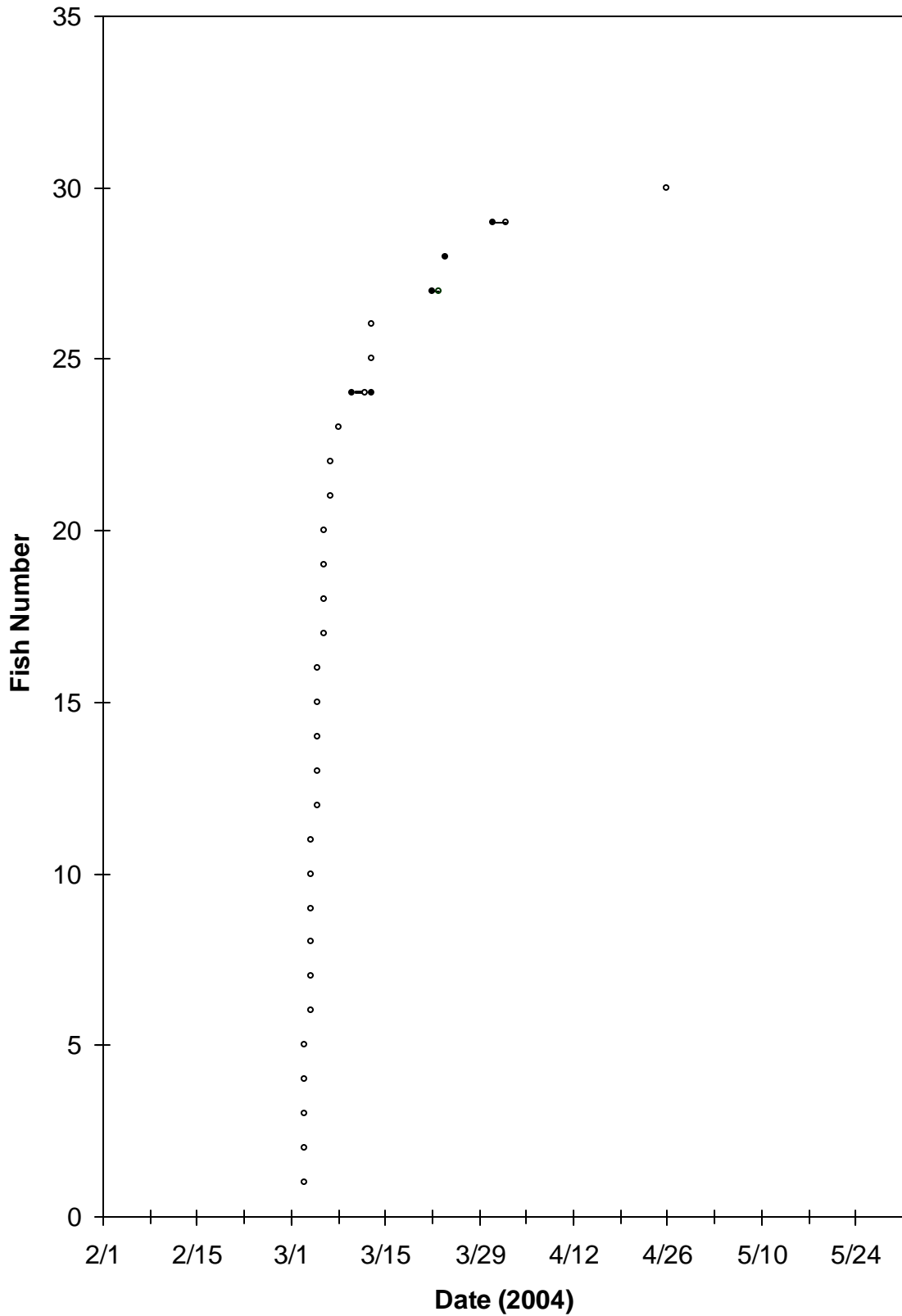


Figure 27. Arroyo Hondo, downstream moving California roach (yellow bars). Grey indicates no trapping.



**Figure 28.** *San Antonio Creek, adult rainbow trout trapping record. Closed circles represent fish moving upstream, while open circles represent fish moving downstream. Horizontal lines represent individual fish caught in both traps.*



**Figure 29.** Indian Creek, adult rainbow trout trapping record. Closed circles represent fish moving upstream, while open circles represent fish moving downstream. Horizontal lines represent individual fish caught in both traps.

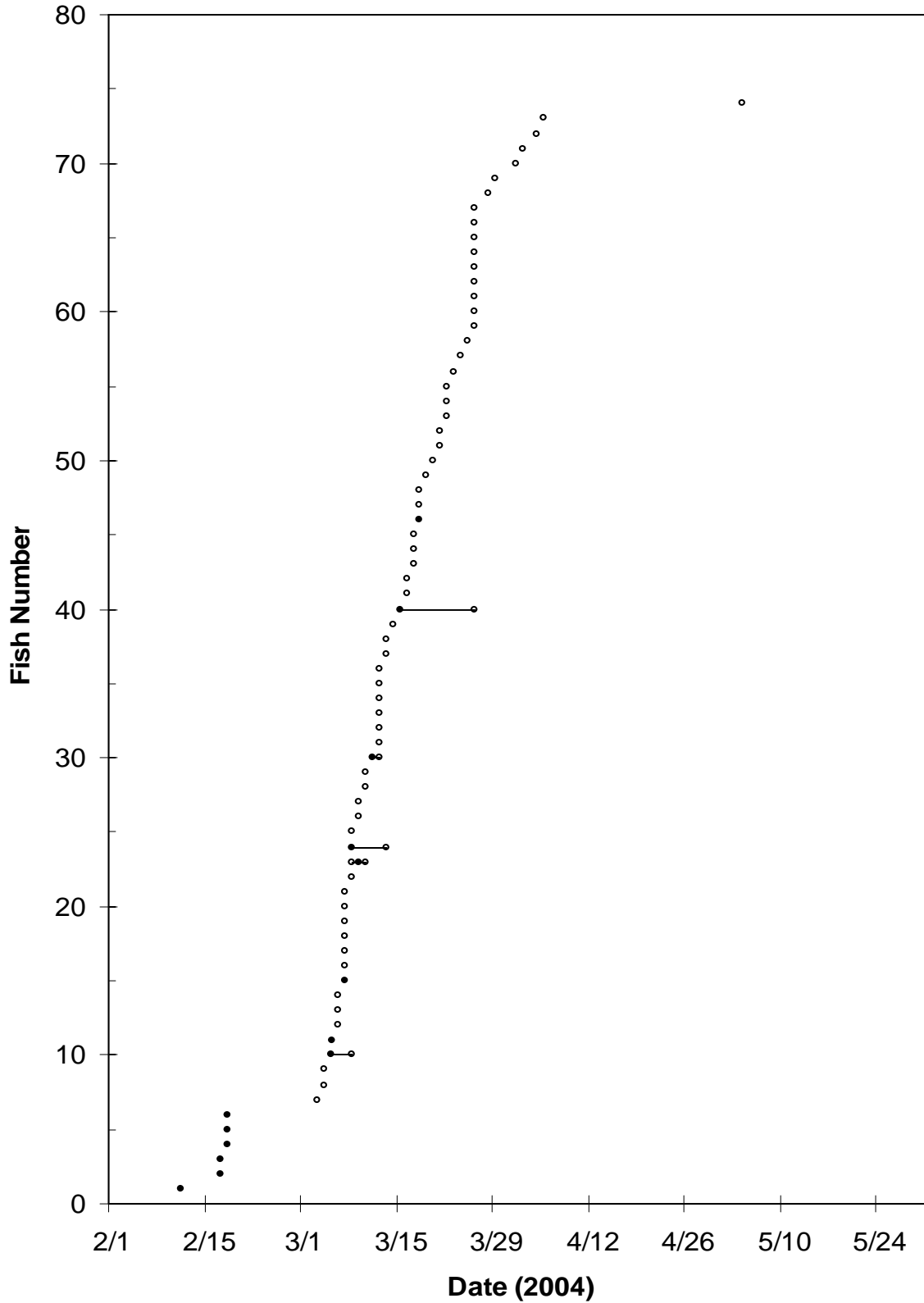
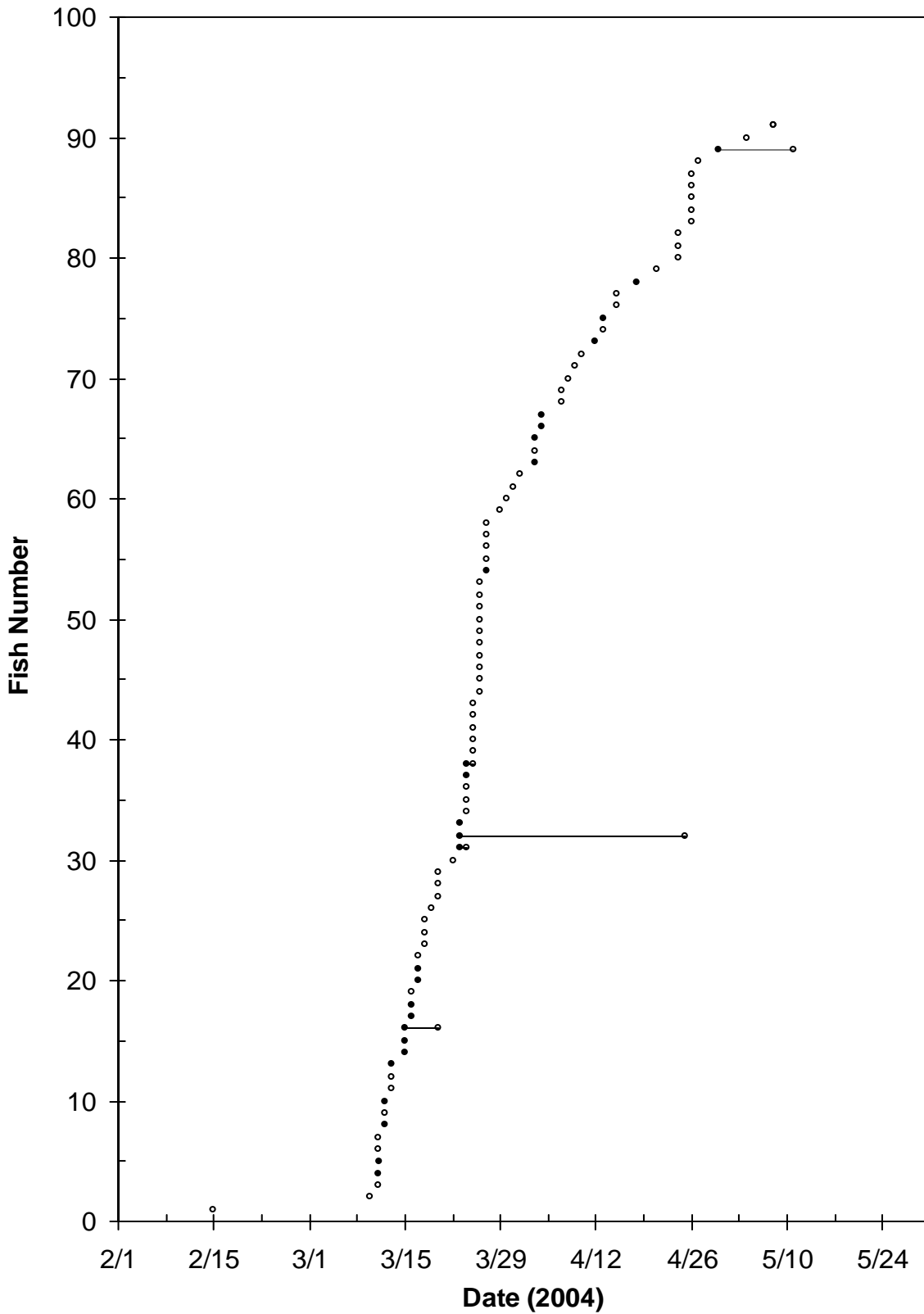


Figure 30. Arroyo Hondo, adult rainbow trout trapping record. Closed circles represent fish moving upstream, while open circles represent fish moving downstream. Horizontal lines represent individual fish caught in both traps.



Appendix A. Adult rainbow trout summary data.

Date	Permitted Biologist	Creek	Trap For Upstream or Downstream Moving Fish	Fishing Time (hrs)	Creek Stage (ft)	Flow (cfs)	Air Temp ("C)	Water Temp ("C)	Lunar Cycle	Total Number of Fish				All Trout		
										All Trout	Female	Male	Not Known	Min.	Max.	Avg.
<b>**INITIAL INSTALLATION OF SAN ANTONIO CREEK TRAP FOR UPSTREAM MOVING FISH**</b>																
1/15/2004	Sak, Brian	San Antonio Creek	For Upstream Moving Fish	23.3	0.75		9.0	11.8	last quarter	0	0	0	0			
1/16/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	22.5	0.74		9.0	12.0	waning crescent	0	0	0	0			
1/17/2004	Norris, Dot	San Antonio Creek	For Upstream Moving Fish	23.4	0.74		7.5	11.7	waning crescent	0	0	0	0			
1/18/2004	Conroy, Pat	San Antonio Creek	For Upstream Moving Fish	23.5	0.74		7.7	11.6	waning crescent	0	0	0	0			
1/19/2004	Kellogg, Mike	San Antonio Creek	For Upstream Moving Fish	24.2	0.73		7.5	11.4	waning crescent	0	0	0	0			
1/20/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	23.4	0.72		8.0	11.7	waning crescent	0	0	0	0			
1/21/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	24.2	0.71		7.0	11.3	new	0	0	0	0			
1/22/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	25.1	0.71		5.6	11.0	waxing crescent	0	0	0	0			
1/23/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	22.5	0.71		5.4	10.8	waxing crescent	0	0	0	0			
1/24/2004	Targart, Laura	San Antonio Creek	For Upstream Moving Fish	24.8	0.75		8.2	11.4	waxing crescent	0	0	0	0			
1/25/2004	Stolz, Jennifer	San Antonio Creek	For Upstream Moving Fish	23.3	0.72		7.6	11.5	waxing crescent	0	0	0	0			
1/26/2004	Kellogg, Mike	San Antonio Creek	For Upstream Moving Fish	24.4	0.72		7.0	11.3	waxing crescent	0	0	0	0			
1/27/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	23.8	0.73		11.0	11.8	waxing crescent	0	0	0	0			
1/28/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish	23.9	0.72		9.3	12.0	waxing crescent	0	0	0	0			
<b>**UPSTREAM TRAP NOT CHECKED**</b>																
1/29/2004																
1/30/2004	Chenus, Scott	San Antonio Creek	For Upstream Moving Fish	47.7	0.73		9.1	11.8	waxing gibbous	0	0	0	0			
1/31/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	24.0	0.72		7.5	11.3	waxing gibbous	0	0	0	0			
2/1/2004	Stolz, Jennifer	San Antonio Creek	For Upstream Moving Fish	24.2	0.72		7.2	11.3	waxing gibbous	0	0	0	0			
2/2/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish	26.9	1.05		9.1	10.3	waxing gibbous	0	0	0	0			
<b>**UPSTREAM TRAP PULLED ON 2/2/04 FOR PREDICTED STORM &amp; REINSTALLED ON 2/3/04**</b>																
2/3/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	22.3	1.31		8.6	9.3	waxing gibbous	0	0	0	0			
2/5/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish	24.3	1.11		6.8	9.1	waxing gibbous	0	0	0	0			
2/6/2004	Sak, Brian	San Antonio Creek	For Upstream Moving Fish	23.7	1.00		8.3	10.0	full	0	0	0	0			
2/7/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	22.8	0.96		6.9	10.3	waning gibbous	0	0	0	0			
2/8/2004	Conroy, Pat	San Antonio Creek	For Upstream Moving Fish	24.4	0.93		7.5	10.1	waning gibbous	0	0	0	0			
2/9/2004	Force, Sonya	San Antonio Creek	For Upstream Moving Fish	24.0	0.85		8.2	10.2	waning gibbous	0	0	0	0			
2/10/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	24.8	0.86		8.0	10.3	waning gibbous	0	0	0	0			
2/11/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish	23.6	0.85		6.6	10.4	waning gibbous	0	0	0	0			
2/12/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	23.4	0.83		7.7	10.7	waning gibbous	0	0	0	0			
2/13/2004	Kellogg, Mike	San Antonio Creek	For Upstream Moving Fish	26.8	0.81		7.8	10.6	last quarter	0	0	0	0			
2/14/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	22.3	0.80		8.7	11.1	waning crescent	0	0	0	0			
2/15/2004	Force, Sonya	San Antonio Creek	For Upstream Moving Fish	22.3	0.81		10.6	11.6	waning crescent	0	0	0	0			
2/16/2004	Kellogg, Mike	San Antonio Creek	For Upstream Moving Fish	25.0	0.84		13.9	11.8	waning crescent	0	0	0	0			
2/17/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	24.7	0.96		15.8	11.9	waning crescent	0	0	0	0			
2/18/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish	22.3	1.95		11.9	11.3	waning crescent	0	0	0	0			
<b>**UPSTREAM TRAP BLOWN OUT 2/16/04**</b>																
<b>**UPSTREAM TRAP NOT FISHING**</b>																
2/20/2004																
2/21/2004																
2/22/2004																
2/23/2004																
2/24/2004																
2/25/2004																
2/26/2004																
2/27/2004																
2/28/2004																
2/29/2004																
<b>**UPSTREAM TRAP REINSTALLED 3/1/04**</b>																
3/1/2004	Sak, Brian	San Antonio Creek	For Upstream Moving Fish	25.2	1.34		10.8	10.0	waxing gibbous	0	0	0	0			
3/3/2004	Kellogg, Mike	San Antonio Creek	For Upstream Moving Fish	18.1	1.24		10.1	9.7	waxing gibbous	0	0	0	0			
3/4/2004	Sak, Brian	San Antonio Creek	For Upstream Moving Fish	25.6	1.18		9.3	10.1	waxing gibbous	0	0	0	0			
3/5/2004	Sak, Brian	San Antonio Creek	For Upstream Moving Fish	22.7	1.15		10.0	10.6	waxing gibbous	0	0	0	0			
3/6/2004	Kellogg, Mike	San Antonio Creek	For Upstream Moving Fish	23.9	1.10		11.2	11.4	full	0	0	0	0			
3/7/2004	Force, Sonya	San Antonio Creek	For Upstream Moving Fish	24.3	1.08		13.3	12.0	waning gibbous	0	0	0	0			
3/8/2004	Norris, Dot	San Antonio Creek	For Upstream Moving Fish	23.3	1.05		13.6	12.5	waning gibbous	0	0	0	0			
3/9/2004	Stolz, Jennifer	San Antonio Creek	For Upstream Moving Fish	23.5	1.04		15.1	13.0	waning gibbous	0	0	0	0			
3/10/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	24.1	1.02		17.6	13.5	waning gibbous	1	1	0	0	495	495	--
3/11/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish	23.4	1.01		16.8	13.4	waning gibbous	0	0	0	0			
3/12/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	23.8	0.99		14.4	13.2	waning gibbous	0	0	0	0			
3/13/2004	Stolz, Jennifer	San Antonio Creek	For Upstream Moving Fish	23.3	0.98		16.0	13.3	last quarter	1	1	0	0	497	497	--
3/14/2004	Conroy, Pat	San Antonio Creek	For Upstream Moving Fish	23.7	0.98		15.2	13.5	waning crescent	0	0	0	0			
3/15/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish	23.7	0.97		17.5	13.6	waning crescent	0	0	0	0			
3/16/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	23.8	0.95		18.9	14.3	waning crescent	0	0	0	0			
3/17/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	24.4	0.94		16.9	14.7	waning crescent	0	0	0	0			
3/18/2004	Chenus, Scott	San Antonio Creek	For Upstream Moving Fish	23.8	0.93		15.4	14.7	waning crescent	0	0	0	0			
3/19/2004	Sak, Brian	San Antonio Creek	For Upstream Moving Fish	23.1	0.93		13.8	14.6	waning crescent	0	0	0	0			
3/20/2004	Norris, Dot	San Antonio Creek	For Upstream Moving Fish	23.3	0.92		14.5	14.7	new	0	0	0	0			
3/21/2004	Force, Sonya	San Antonio Creek	For Upstream Moving Fish	23.8	0.91		13.5	14.7	waxing crescent	0	0	0	0			
3/22/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish	24.2	0.92		12.7	14.8	waxing crescent	1	1	0	0	450	450	--
3/23/2004	Norris, Dot	San Antonio Creek	For Upstream Moving Fish	23.4	0.90		12.7	14.7	waxing crescent	0	0	0	0			
3/24/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	24.8	0.90		13.6	14.9	waxing crescent	1	1	0	0	465	465	--
3/25/2004	Chenus, Scott	San Antonio Creek	For Upstream Moving Fish	23.1	0.90		11.7	13.9	waxing crescent	0	0	0	0			
3/26/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	23.4	0.96		10.3	13.5	waxing crescent	0	0	0	0			
3/27/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	24.3	0.91		12.4	14.2	waxing crescent	0	0	0	0			
3/28/2004	Sak, Brian	San Antonio Creek	For Upstream Moving Fish	23.7	0.90		15.3	14.8	first quarter	0	0	0	0			
3/29/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	24.3	0.90		14.3	14.6	waxing gibbous	0	0	0	0			
3/30/2004	Sak, Brian	San Antonio Creek	For Upstream Moving Fish	22.2	0.90		12.1	14.1	waxing gibbous	0	0	0	0			
3/31/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	24.9	0.89		11.0	14.2	waxing gibbous	1	1	0	0	495	495	--
4/1/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish	24.1	0.88		11.8	14.0	waxing gibbous	0	0	0	0			
4/2/2004	Chenus, Scott	San Antonio Creek	For Upstream Moving Fish	23.0	0.88		13.8	14.2	waxing gibbous	0	0	0	0			
4/3/2004	Force, Sonya	San Antonio Creek	For Upstream Moving Fish	23.9	0.88		13.1	13.9	waxing gibbous	0	0	0	0			
4/4/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	25.1	0.87		11.3	14.0	waxing gibbous	0	0	0	0			
4/5/2004	Stolz, Jennifer	San Antonio Creek	For Upstream Moving Fish	22.2	0.87		11.5	14.0	full	0	0	0	0			
4/6/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	24.0	0.86		11.3	13.9	waning gibbous	0	0	0	0			
4/7/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	24.7	0.86		12.0	14.0	waning gibbous	0	0	0	0			
4/8/2004	Chenus, Scott	San Antonio Creek	For Upstream Moving Fish	23.2	0.85		12.8	14.1	waning gibbous	0	0	0	0			
4/9/2004	Norris, Dot	San Antonio Creek	For Upstream Moving Fish	23.2	0.85		14.6	14.3	waning gibbous	0	0	0	0			
4/10/2004	Sak, Brian	San Antonio Creek	For Upstream Moving Fish	25.0	0.84		15.7	14.5	waning gibbous	0	0	0	0			
4/11/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish	23.6	0.83		12.8	14.7	waning gibbous	0	0	0	0			
4/12/2004	Conroy, Pat	San Antonio Creek	For Upstream Moving Fish	22.8	0.82		12.9	14.3	last quarter	0	0	0	0			
4/13/2004	Kellogg, Mike	San Antonio Creek	For Upstream Moving Fish	24.1	0.82		12.1	14.4	waning crescent	0	0	0	0			
4/14/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish													

**San Antonio Creek, Indian Creek and Arroyo Hondo**

Date	Permitted Biologist	Creek	Trap For Upstream or Downstream Moving Fish	Fishing Time (hrs)	Creek Stage (ft)	Flow (cfs)	Air Temp (°C)	Water Temp (°C)*	Lunar Cycle	Total Number of Fish				All Trout		
										All Trout	Female	Male	Not Known	Min.	Max.	Avg.
4/17/2004	Conroy, Pat	San Antonio Creek	For Upstream Moving Fish	23.3	0.82		11.5	14.6	waning crescent	0	0	0	0			
4/18/2004	Forec, Sonya	San Antonio Creek	For Upstream Moving Fish	23.3	0.80		11.0	14.6	waning crescent	0	0	0	0			
4/19/2004	Stolz, Jennifer	San Antonio Creek	For Upstream Moving Fish	24.1	0.80		12.8	14.6	new	0	0	0	0			
4/20/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish	24.8	0.82		14.5	14.3	waxing crescent	0	0	0	0			
4/21/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	30.3	0.82		12.7	14.7	waxing crescent	0	0	0	0			
4/22/2004	Sak, Brian	San Antonio Creek	For Upstream Moving Fish	18.9	0.83		13.6	14.6	waxing crescent	0	0	0	0			
4/23/2004	Kellogg, Mike	San Antonio Creek	For Upstream Moving Fish	22.8	0.84		15.3	14.8	waxing crescent	0	0	0	0			
4/24/2004	Norris, Dot	San Antonio Creek	For Upstream Moving Fish	24.3	0.84		16.7	15.3	waxing crescent	0	0	0	0			
4/25/2004	Kellogg, Mike	San Antonio Creek	For Upstream Moving Fish	24.3	0.82		17.8	15.3	waxing crescent	0	0	0	0			
4/26/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	23.1	0.82		19.6	15.8	waxing crescent	0	0	0	0			
4/27/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	23.7	0.82		19.0	15.3	first quarter	0	0	0	0			
4/28/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	24.8	0.82		16.0	15.3	waxing gibbous	0	0	0	0			
4/29/2004	Horvath, Mike	San Antonio Creek	For Upstream Moving Fish	23.5	0.82		16.4	16.0	waxing gibbous	0	0	0	0			
4/30/2004	Brinkerhoff, Aaron	San Antonio Creek	For Upstream Moving Fish	23.7	0.82		15.2	16.0	waxing gibbous	0	0	0	0			
5/1/2004	Sak, Brian	San Antonio Creek	For Upstream Moving Fish	24.6	0.82		16.3	16.0	waxing gibbous	0	0	0	0			
5/2/2004	Forec, Sonya	San Antonio Creek	For Upstream Moving Fish	23.3	0.81		18.7	16.1	waxing gibbous	0	0	0	0			
5/3/2004	Bielski, Jason	San Antonio Creek	For Upstream Moving Fish	26.6	0.80		18.6	16.1	waxing gibbous	0	0	0	0			
5/4/2004	***UPSTREAM TRAP REMOVED FOR THE YEAR***															
1/14/2004	***INITIAL INSTALLATION OF SAN ANTONIO CREEK TRAP FOR DOWNSTREAM MOVING FISH***															
1/5/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	19.8	0.75		3.0	11.8	last quarter	0	0	19	0	0		
1/16/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	21.8	0.74		3.0	12.0	waning crescent	0	0	0	0	0		
1/17/2004	Norris, Dot	San Antonio Creek	For Downstream Moving Fish	20.3	0.74		7.5	11.7	waning crescent	0	0	0	0	0		
1/18/2004	Conroy, Pat	San Antonio Creek	For Downstream Moving Fish	23.5	0.74		7.7	11.6	waning crescent	0	0	0	0	0		
1/19/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	24.3	0.73		7.5	11.4	waning crescent	0	0	0	0	0		
1/20/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.3	0.72		8.0	11.7	waning crescent	0	0	0	0	0		
1/21/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	24.1	0.71		7.0	11.3	new	0	0	0	0	0		
1/22/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	25.5	0.71		5.6	11.0	waxing crescent	0	0	0	0	0		
1/23/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	22.4	0.71		5.4	10.8	waxing crescent	0	0	0	0	0		
1/24/2004	Targgart, Laura	San Antonio Creek	For Downstream Moving Fish	24.8	0.75		8.2	11.4	waxing crescent	0	0	0	0	0		
1/25/2004	Stolz, Jennifer	San Antonio Creek	For Downstream Moving Fish	23.3	0.72		7.6	11.5	waxing crescent	0	0	0	0	0		
1/26/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	24.5	0.72		7.0	11.3	waxing crescent	0	0	0	0	0		
1/27/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	23.8	0.73		11.0	11.8	waxing crescent	0	0	0	0	0		
1/28/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	23.8	0.72		3.3	12.0	waxing crescent	0	0	0	0	0		
1/29/2004	***DOWNSTREAM TRAP NOT CHECKED***															
1/30/2004	Chenuc, Scott	San Antonio Creek	For Downstream Moving Fish	47.8	0.73		3.1	11.8	waxing gibbous	0	0	0	0	0		
1/31/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	24.1	0.72		7.5	11.3	waxing gibbous	0	0	0	0	0		
2/1/2004	Stolz, Jennifer	San Antonio Creek	For Downstream Moving Fish	24.1	0.72		7.2	11.3	waxing gibbous	0	0	0	0	0		
2/2/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	26.8	1.05		3.1	10.3	waxing gibbous	0	0	0	0	0		
2/3/2004	***DOWNSTREAM TRAP PULLED ON 2/3/04 FOR PREDICTED STORM & REINSTALLED ON 2/5/04***															
2/4/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	21.0	1.31		8.6	9.3	waxing gibbous	0	0	0	0	0		
2/5/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	23.5	1.11		6.8	9.1	waxing gibbous	0	0	0	0	0		
2/6/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	22.3	1.00		8.3	10.0	full	0	0	0	0	0		
2/7/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	22.6	0.96		6.3	10.3	waning gibbous	0	0	0	0	0		
2/8/2004	Conroy, Pat	San Antonio Creek	For Downstream Moving Fish	24.3	0.93		7.5	10.1	waning gibbous	0	0	0	0	0		
2/9/2004	Forec, Sonya	San Antonio Creek	For Downstream Moving Fish	23.3	0.85		8.2	10.2	waning gibbous	0	0	0	0	0		
2/10/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	24.1	0.86		8.0	10.3	waning gibbous	0	0	0	0	0		
2/11/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	23.9	0.85		6.6	10.4	waning gibbous	0	0	0	0	0		
2/12/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.4	0.83		7.7	10.7	waning gibbous	0	0	0	0	0		
2/13/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	26.8	0.81		7.8	10.6	last quarter	0	0	0	0	0		
2/14/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	22.4	0.80		8.7	11.1	waning crescent	0	0	0	0	0		
2/15/2004	Forec, Sonya	San Antonio Creek	For Downstream Moving Fish	22.4	0.81		10.6	11.6	waning crescent	0	0	0	0	0		
2/16/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	24.3	0.84		13.9	11.8	waning crescent	0	0	0	0	0		
2/17/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	24.3	0.96		15.8	11.9	waning crescent	0	0	0	0	0		
2/18/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	22.5	1.95		11.9	11.3	waning crescent	0	0	0	0	0		
2/19/2004	***DOWNSTREAM TRAP BLOWN OUT ON 2/18/04***															
2/20/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/21/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/22/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/23/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/24/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/25/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/26/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/27/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/28/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/29/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/1/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/2/2004	***DOWNSTREAM TRAP REINSTALLED ON 3/2/04***															
3/3/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	18.5	1.24		10.1	9.7	waxing gibbous	5	4	1	0	356	455	431
3/4/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	24.3	1.18		3.3	10.1	waxing gibbous	6	4	2	0	420	540	505
3/5/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	21.1	1.15		10.0	10.6	waxing gibbous	5	5	0	0	420	560	519
3/6/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	23.3	1.10		11.2	11.4	full	4	3	0	1	412	568	512
3/7/2004	Forec, Sonya	San Antonio Creek	For Downstream Moving Fish	23.4	1.08		13.3	12.0	waning gibbous	2	2	0	0	480	520	500
3/8/2004	Norris, Dot	San Antonio Creek	For Downstream Moving Fish	22.5	1.05		13.6	12.5	waning gibbous	1	1	0	0	452	452	
3/9/2004	Stolz, Jennifer	San Antonio Creek	For Downstream Moving Fish	23.2	1.04		15.1	13.0	waning gibbous	0	0	0	0			
3/10/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	23.9	1.02		17.6	13.5	waning gibbous	0	0	0	0			
3/11/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	22.9	1.01		16.8	13.4	waning gibbous	0	0	0	0			
3/12/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.7	0.99		14.4	13.2	waning gibbous	1	1	0	0	435	435	--
3/13/2004	Stolz, Jennifer	San Antonio Creek	For Downstream Moving Fish	23.0	0.98		16.0	13.3	last quarter	2	2	0	0	473	500	487
3/14/2004	Conroy, Pat	San Antonio Creek	For Downstream Moving Fish	23.0	0.98		15.2	13.5	waning crescent	0	0	0	0			
3/15/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	23.8	0.97		17.5	13.6	waning crescent	0	0	0	0			
3/16/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.3	0.95		18.3	14.3	waning crescent	0	0	0	0			
3/17/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	23.8	0.94		16.9	14.7	waning crescent	0	0	0	0			
3/18/2004	Chenuc, Scott	San Antonio Creek	For Downstream Moving Fish	23.3	0.93		15.4	14.7	waning crescent	0	0	0	0			
3/19/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	23.3	0.93		13.8	14.6	waning crescent	0	0	0	0			
3/20/2004	Norris, Dot	San Antonio Creek	For Downstream Moving Fish	22.7	0.92		14.5	14.7	new	0	0	0	0			
3/21/2004	Forec, Sonya	San Antonio Creek	For Downstream Moving Fish	23.5	0.91		13.5	14.7	waxing crescent	0	0	0	0			
3/22/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	23.6	0.92		12.7	14.8	waxing crescent	0	0	0	0			
3/23/2004	Norris, Dot	San Antonio Creek	For Downstream Moving Fish	23.5	0.90		12.7	14.7	waxing crescent	1	1	0	0	452	452	--
3/24/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	23.8	0.90		13.6	14.3	waxing crescent	0	0	0	0			
3/25/2004	Chenuc, Scott	San Antonio Creek	For Downstream Moving Fish	23.1	0.90		11.7	13.3	waxing crescent	0	0	0	0			
3/26/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.4	0.96		10.3	13.5	waxing crescent	0	0	0	0			
3/27/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.7	0.91		12.4	14.2	waxing crescent	0	0	0	0			
3/28/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	23.1	0.90		15.3	14.8	first quarter	0	0	0	0			
3/29/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	23.7	0.90		14.3	14.6	waxing gibbous	0	0	0	0			
3/30/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	22.3	0.90		12.1	14.1	waxing gibbous	0	0	0	0			
3/31/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	24.7	0.89		11.0	14.2	waxing gibbous	0	0	0	0			
4/1/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	24.0	0.88		11.8	14.0	waxing gibbous	0	0	0	0			

## Fish Trapping Data Summary 2004

Date	Permitted Biologist	Creek	Trap For Upstream or Downstream Moving Fish	Fishing Time (hrs)	Creek Stage (ft)	Flow (cfs)	Air Temp (°C)	Water Temp (°C)	Lunar Cycle	Total Number of Fish				All Trout		
										All Trout	Female	Male	Not Known	Min.	Max.	Avg.
4/2/2004	Cheneu, Scott	San Antonio Creek	For Downstream Moving Fish	23.9	0.88		13.8	14.2	waxing gibbous	1	1	0	0	438	438	--
4/3/2004	Foree, Sonya	San Antonio Creek	For Downstream Moving Fish	23.9	0.88		13.1	13.9	waxing gibbous	0	0	0	0			
4/4/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	25.3	0.87		11.3	14.0	waxing gibbous	0	0	0	0			
4/5/2004	Stolz, Jennifer	San Antonio Creek	For Downstream Moving Fish	22.0	0.87		11.5	14.0	full	0	0	0	0			
4/6/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.8	0.86		11.3	13.9	waning gibbous	0	0	0	0			
4/7/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	24.3	0.86		12.0	14.0	waning gibbous	0	0	0	0			
4/8/2004	Cheneu, Scott	San Antonio Creek	For Downstream Moving Fish	23.2	0.85		12.8	14.1	waning gibbous	0	0	0	0			
4/9/2004	Norris, Dot	San Antonio Creek	For Downstream Moving Fish	23.3	0.85		14.6	14.3	waning gibbous	0	0	0	0			
4/10/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	24.6	0.84		15.7	14.5	waning gibbous	0	0	0	0			
4/11/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	23.3	0.83		12.8	14.7	waning gibbous	0	0	0	0			
4/12/2004	Conroy, Pat	San Antonio Creek	For Downstream Moving Fish	22.0	0.82		12.9	14.3	last quarter	0	0	0	0			
4/13/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	24.3	0.82		12.1	14.4	waning crescent	0	0	0	0			
4/14/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	23.1	0.82		13.3	14.6	waning crescent	0	0	0	0			
4/15/2004	Norris, Dot	San Antonio Creek	For Downstream Moving Fish	22.8	0.82		11.9	14.6	waning crescent	0	0	0	0			
4/16/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	24.2	0.81		11.3	14.5	waning crescent	0	0	0	0			
4/17/2004	Conroy, Pat	San Antonio Creek	For Downstream Moving Fish	23.0	0.82		11.5	14.6	waning crescent	0	0	0	0			
4/18/2004	Foree, Sonya	San Antonio Creek	For Downstream Moving Fish	23.4	0.80		11.0	14.6	waning crescent	0	0	0	0			
4/19/2004	Stolz, Jennifer	San Antonio Creek	For Downstream Moving Fish	23.4	0.80		12.8	14.6	new	0	0	0	0			
4/20/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	24.2	0.82		14.5	14.9	waxing crescent	0	0	0	0			
4/21/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	28.9	0.82		12.7	14.7	waxing crescent	0	0	0	0			
4/22/2004	<b>***DOWNSTREAM TRAP NOT FISHING DUE TO LACK OF FLOW THROUGH TUBING***</b>															
4/23/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish		0.84		15.3	14.8	waxing crescent	0	0	0	0			
4/24/2004	Norris, Dot	San Antonio Creek	For Downstream Moving Fish	23.3	0.84		16.7	15.3	waxing crescent	0	0	0	0			
4/25/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	23.8	0.82		17.8	15.3	waxing crescent	0	0	0	0			
4/26/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	22.5	0.82		19.6	15.8	waxing crescent	1	1	0	0	410	410	--
4/27/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	22.8	0.82		19.0	15.9	first quarter	0	0	0	0			
4/28/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	24.3	0.82		16.0	15.9	waxing gibbous	0	0	0	0			
4/29/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	22.9	0.82		16.4	16.0	waxing gibbous	0	0	0	0			
4/30/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	23.2	0.82		15.2	16.0	waxing gibbous	0	0	0	0			
5/1/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	24.3	0.82		16.3	16.0	waxing gibbous	0	0	0	0			
5/2/2004	Foree, Sonya	San Antonio Creek	For Downstream Moving Fish	22.9	0.81		18.7	16.1	waxing gibbous	0	0	0	0			
5/3/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	25.6	0.80		18.6	16.1	waxing gibbous	0	0	0	0			
5/4/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	22.3	0.80		15.5	16.1	full	0	0	0	0			
5/5/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	23.6	0.80		14.4	16.0	waning gibbous	0	0	0	0			
5/6/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	23.8	0.80		15.4	16.1	waning gibbous	0	0	0	0			
5/7/2004	Conroy, Pat	San Antonio Creek	For Downstream Moving Fish	23.2	0.80		16.2	16.2	waning gibbous	0	0	0	0			
5/8/2004	Cheneu, Scott	San Antonio Creek	For Downstream Moving Fish	23.3	0.79		15.2	16.3	waning gibbous	0	0	0	0			
5/9/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	25.6	0.78		14.5	16.3	waning gibbous	0	0	0	0			
5/10/2004	<b>***DOWNSTREAM TRAP REMOVED FOR THE YEAR***</b>															
1/15/2004	<b>***INITIAL INSTALLATION OF INDIAN CREEK TRAP FOR UPSTREAM MOVING FISH***</b>															
1/16/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	18.1	1.38		3.0	11.0	waning gibbous	0	0	0	0			
1/17/2004	Norris, Dot	Indian Creek	For Upstream Moving Fish	23.3	1.38		7.4	10.0	waning gibbous	0	0	0	0			
1/18/2004	Conroy, Pat	Indian Creek	For Upstream Moving Fish	23.7	1.36		7.3	10.0	waning gibbous	0	0	0	0			
1/19/2004	Kellogg, Mike	Indian Creek	For Upstream Moving Fish	24.4	1.36		7.4	10.0	waning gibbous	0	0	0	0			
1/20/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	23.1	1.35		7.9	10.0	waning gibbous	0	0	0	0			
1/21/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	24.4	1.36		6.5	9.0	new	0	0	0	0			
1/22/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	24.2	1.35		4.9	11.0	waxing crescent	0	0	0	0			
1/23/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	22.3	1.35		4.9	7.5	waxing crescent	0	0	0	0			
1/24/2004	Targgart, Laura	Indian Creek	For Upstream Moving Fish	23.0	1.38		8.3	10.0	waxing crescent	0	0	0	0			
1/25/2004	Stolz, Jennifer	Indian Creek	For Upstream Moving Fish	23.2	1.36		7.5	10.0	waxing crescent	0	0	0	0			
1/26/2004	Kellogg, Mike	Indian Creek	For Upstream Moving Fish	24.4	1.35		7.0	9.0	waxing crescent	0	0	0	0			
1/27/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	23.5	1.35		11.0	11.0	waxing crescent	0	0	0	0			
1/28/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	24.0	1.36		9.3	11.5	waxing crescent	0	0	0	0			
1/29/2004	<b>***UPSTREAM TRAPS NOT CHECKED***</b>															
1/30/2004	Cheneu, Scott	Indian Creek	For Upstream Moving Fish	47.1	1.36		9.1	11.0	first quarter	0	0	0	0			
1/31/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	23.9	1.35		7.4	10.5	waxing gibbous	0	0	0	0			
2/1/2004	Stolz, Jennifer	Indian Creek	For Upstream Moving Fish	23.3	1.34		6.9	10.0	waxing gibbous	0	0	0	0			
2/2/2004	Bielski, Jason	Indian Creek	For Upstream Moving Fish	27.3	1.56		8.8	10.5	waxing gibbous	0	0	0	0			
2/3/2004	<b>***UPSTREAM TRAP PULLED 2/3/04 AND REINSTALLED 2/5/04***</b>															
2/4/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	21.1	1.70		8.6	7.5	waxing gibbous	0	0	0	0			
2/5/2004	Bielski, Jason	Indian Creek	For Upstream Moving Fish	23.6	1.64		6.5	9.5	waxing gibbous	0	0	0	0			
2/6/2004	Sak, Brian	Indian Creek	For Upstream Moving Fish	22.8	1.58		8.4	9.5	full	0	0	0	0			
2/7/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	22.6	1.55		6.6	6.0	waning gibbous	0	0	0	0			
2/8/2004	Conroy, Pat	Indian Creek	For Upstream Moving Fish	25.3	1.52		7.2	6.0	waning gibbous	0	0	0	0			
2/9/2004	Foree, Sonya	Indian Creek	For Upstream Moving Fish	23.1	1.50		8.2	6.5	waning gibbous	0	0	0	0			
2/10/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	23.8	1.48		8.1	3.0	waning gibbous	0	0	0	0			
2/11/2004	Bielski, Jason	Indian Creek	For Upstream Moving Fish	23.9	1.46		6.4	9.0	waning gibbous	1	0	1	0	525	525	525
2/12/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	23.5	1.45		7.4	3.5	waning gibbous	1	0	0	1			
2/13/2004	Kellogg, Mike	Indian Creek	For Upstream Moving Fish	25.3	1.44		7.7	11.5	last quarter	0	0	0	0			
2/14/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	22.8	1.43		8.9	12.0	waning crescent	0	0	0	0			
2/15/2004	Foree, Sonya	Indian Creek	For Upstream Moving Fish	23.9	1.40		10.8	10.0	waning crescent	0	0	0	0			
2/16/2004	Kellogg, Mike	Indian Creek	For Upstream Moving Fish	23.9	1.48		13.4	11.5	waning crescent	0	0	0	0			
2/17/2004	Bielski, Jason	Indian Creek	For Upstream Moving Fish	24.5	1.50		15.6	13.0	waning crescent	2	1	1	0	535	545	540
2/18/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish		1.92		11.4	11.0	waning crescent	3	2	1	0	490	540	518
2/19/2004	<b>***UPSTREAM TRAP BLOWN OUT 2/19/04***</b>															
2/20/2004	<b>***UPSTREAM TRAP NOT FISHING***</b>															
2/21/2004	<b>***UPSTREAM TRAP NOT FISHING***</b>															
2/22/2004	<b>***UPSTREAM TRAP NOT FISHING***</b>															
2/23/2004	<b>***UPSTREAM TRAP NOT FISHING***</b>															
2/24/2004	<b>***UPSTREAM TRAP NOT FISHING***</b>															
2/25/2004	<b>***UPSTREAM TRAP NOT FISHING***</b>															
2/26/2004	<b>***UPSTREAM TRAP NOT FISHING***</b>															
2/27/2004	<b>***UPSTREAM TRAP NOT FISHING***</b>															
2/28/2004	<b>***UPSTREAM TRAP NOT FISHING***</b>															
2/29/2004	<b>***UPSTREAM TRAP NOT FISHING***</b>															
3/1/2004	<b>***UPSTREAM TRAP NOT FISHING***</b>															
3/2/2004	<b>***UPSTREAM TRAP REINSTALLED 3/2/04***</b>															
3/3/2004	Kellogg, Mike	Indian Creek	For Upstream Moving Fish	24.2	1.66		10.4	12.0	waxing gibbous	0	0	0	0			
3/4/2004	Sak, Brian	Indian Creek	For Upstream Moving Fish	26.0	1.63		9.0	12.5	waxing gibbous	0	0	0	0			
3/5/2004	Sak, Brian	Indian Creek	For Upstream Moving Fish	21.7	1.60		10.0	9.0	waxing gibbous	1	1	0	0	540	540	540
3/6/2004	Kellogg, Mike	Indian Creek	For Upstream Moving Fish	24.2	1.58		11.4	12.0	full	0	0	0	0			
3/7/2004	Foree, Sonya	Indian Creek	For Upstream Moving Fish	24.3	1.58		12.9	12.0	waning gibbous	1	0	1	0	440	440	440
3/8/2004	Norris, Dot	Indian Creek	For Upstream Moving Fish	23.7	1.54		13.4	13.0	waning gibbous	1	1	0	0	468	468	468
3/9/2004	Stolz, Jennifer	Indian Creek	For Upstream Moving Fish	23.3	1.53		14.8	14.0	waning gibbous	1	1	0	0	540	540	540
3/10/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	23.9	1.51		17.5	14.5	waning gibbous	0	0	0	0			
3/11/2004	Bielski, Jason	Indian Creek	For Upstream Moving Fish	24.0	1.50		16.5	14.0	waning gibbous	1	1	0	0	425	425	425
3/12/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	23.6	1.50		14.0	14.0	waning gibbous	0	0	0	0			



# San Antonio Creek, Indian Creek and Arroyo Hondo

Date	Permitted Biologist	Creek	Trap For Upstream or Downstream Moving Fish	Fishing Time (hrs)	Creek Stage (ft)	Flow (cfs)	Air Temp ("C)	Water Temp ("C)	Lunar Cycle	Total Number of Fish				All Trout		
										All Trout	Female	Male	Not Known	Min.	Max.	Avg.
3/13/2004	Stolz, Jennifer	Indian Creek	For Upstream Moving Fish	23.7	1.48		15.3	14.0	last quarter	0	0	0	0			
3/14/2004	Conroy, Pat	Indian Creek	For Upstream Moving Fish	23.8	1.48		15.1	13.0	waning crescent	0	0	0	0			
3/15/2004	Bielski, Jason	Indian Creek	For Upstream Moving Fish	23.7	1.47		17.3	14.5	waning crescent	1	1	0	0	465	465	465
3/16/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	23.5	1.46		18.7	14.5	waning crescent	0	0	0	0			
3/17/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	24.3	1.46		16.5	16.0	waning crescent	0	0	0	0			
3/18/2004	Chenuc, Scott	Indian Creek	For Upstream Moving Fish	24.3	1.45		15.6	16.5	waning crescent	1	1	0	0	443	443	443
3/19/2004	Sak, Brian	Indian Creek	For Upstream Moving Fish	23.4	1.46		13.5	17.5	waning crescent	0	0	0	0			
3/20/2004	Norris, Dot	Indian Creek	For Upstream Moving Fish	23.1	1.45		14.3	15.0	new	0	0	0	0			
3/21/2004	Forec, Sonya	Indian Creek	For Upstream Moving Fish	24.0	1.50		13.3	15.0	waxing crescent	0	0	0	0			
3/22/2004	Bielski, Jason	Indian Creek	For Upstream Moving Fish	23.7	1.44		12.5	15.0	waxing crescent	0	0	0	0			
3/23/2004	Norris, Dot	Indian Creek	For Upstream Moving Fish	24.2	1.44		12.5	15.0	waxing crescent	0	0	0	0			
3/24/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	24.3	1.42		13.6	16.5	waxing crescent	0	0	0	0			
3/25/2004	Chenuc, Scott	Indian Creek	For Upstream Moving Fish	23.8	1.43		10.3	13.5	waxing crescent	0	0	0	0			
3/26/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	22.8	1.46		3.7	14.0	waxing crescent	0	0	0	0			
3/27/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	25.3	1.44		12.2	15.0	waxing crescent	0	0	0	0			
3/28/2004	Sak, Brian	Indian Creek	For Upstream Moving Fish	23.6	1.42		15.3	18.0	first quarter	0	0	0	0			
3/29/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	23.6	1.41		14.3	18.0	waxing gibbous	0	0	0	0			
3/30/2004	Sak, Brian	Indian Creek	For Upstream Moving Fish	22.9	1.40		11.6	14.0	waxing gibbous	0	0	0	0			
3/31/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	25.1	1.40		10.3	16.0	waxing gibbous	0	0	0	0			
4/1/2004	Bielski, Jason	Indian Creek	For Upstream Moving Fish	23.5	1.40		11.2	16.0	waxing gibbous	0	0	0	0			
4/2/2004	Chenuc, Scott	Indian Creek	For Upstream Moving Fish	23.5	1.38		13.6	15.0	waxing gibbous	0	0	0	0			
4/3/2004	Forec, Sonya	Indian Creek	For Upstream Moving Fish	24.1	1.40		13.0	18.0	waxing gibbous	0	0	0	0			
4/4/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	24.3	1.38		10.7	15.0	waxing gibbous	0	0	0	0			
4/5/2004	Stolz, Jennifer	Indian Creek	For Upstream Moving Fish	22.0	1.38		11.0	13.0	full	0	0	0	0			
4/6/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	24.3	1.37		10.9	14.0	waning gibbous	0	0	0	0			
4/7/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	24.3	1.36		12.0	15.0	waning gibbous	0	0	0	0			
4/8/2004	Chenuc, Scott	Indian Creek	For Upstream Moving Fish	23.3	1.40		12.7	15.0	waning gibbous	0	0	0	0			
4/9/2004	Norris, Dot	Indian Creek	For Upstream Moving Fish	24.0			14.8	14.5	waning gibbous	0	0	0	0			
4/10/2004	Sak, Brian	Indian Creek	For Upstream Moving Fish	24.6	1.36		15.3	17.0	waning gibbous	0	0	0	0			
4/11/2004	Bielski, Jason	Indian Creek	For Upstream Moving Fish	24.1	1.36		12.2	15.5	waning gibbous	0	0	0	0			
4/12/2004	Conroy, Pat	Indian Creek	For Upstream Moving Fish	22.5	1.34		12.5	14.5	last quarter	0	0	0	0			
4/13/2004	Kellogg, Mike	Indian Creek	For Upstream Moving Fish	24.4	1.35		11.9	16.0	waning crescent	0	0	0	0			
4/14/2004	Bielski, Jason	Indian Creek	For Upstream Moving Fish	23.8	1.34		13.1	16.0	waning crescent	0	0	0	0			
4/15/2004	Norris, Dot	Indian Creek	For Upstream Moving Fish	23.4	1.34		11.3	15.0	waning crescent	0	0	0	0			
4/16/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	24.3	1.34		10.7	14.0	waning crescent	0	0	0	0			
4/17/2004	Conroy, Pat	Indian Creek	For Upstream Moving Fish	23.4	1.34		10.3	15.0	waning crescent	0	0	0	0			
4/18/2004	Forec, Sonya	Indian Creek	For Upstream Moving Fish	23.6	1.35		10.9	15.0	waning crescent	0	0	0	0			
4/19/2004	Stolz, Jennifer	Indian Creek	For Upstream Moving Fish	23.8	1.36		12.7	15.0	new	0	0	0	0			
4/20/2004	Bielski, Jason	Indian Creek	For Upstream Moving Fish	25.2	1.35		14.4	15.0	waxing crescent	0	0	0	0			
4/21/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	26.3	1.34		12.6	17.0	waxing crescent	0	0	0	0			
4/22/2004	Sak, Brian	Indian Creek	For Upstream Moving Fish	20.8	1.33		12.3	17.0	waxing crescent	0	0	0	0			
4/23/2004	Kellogg, Mike	Indian Creek	For Upstream Moving Fish	23.5	1.33		15.5	20.0	waxing crescent	0	0	0	0			
4/24/2004	Norris, Dot	Indian Creek	For Upstream Moving Fish	24.6	1.31		16.9	19.5	waxing crescent	0	0	0	0			
4/25/2004	Kellogg, Mike	Indian Creek	For Upstream Moving Fish	23.5	1.31		18.7	21.0	waxing crescent	0	0	0	0			
4/26/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	23.6	1.30		20.2	20.0	waxing crescent	0	0	0	0			
4/27/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	22.8	1.28		20.0	18.0	first quarter	0	0	0	0			
4/28/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	25.1	1.28		16.1	19.0	waxing gibbous	0	0	0	0			
4/29/2004	Horvath, Mike	Indian Creek	For Upstream Moving Fish	23.3	1.24		16.5	17.5	waxing gibbous	0	0	0	0			
4/30/2004	Brinkerhoff, Aaron	Indian Creek	For Upstream Moving Fish	22.6	1.25		15.6	17.0	waxing gibbous	0	0	0	0			
5/1/2004	Sak, Brian	Indian Creek	For Upstream Moving Fish	24.8	1.24		17.1	20.0	waxing gibbous	0	0	0	0			
5/2/2004	Forec, Sonya	Indian Creek	For Upstream Moving Fish	23.2	1.22		19.7	19.0	waxing gibbous	0	0	0	0			
5/3/2004	Bielski, Jason	Indian Creek	For Upstream Moving Fish	24.8	1.18		19.4	19.0	waxing gibbous	0	0	0	0			
5/4/2004	***UPSTREAM TRAP REMOVED FOR THE YEAR***															
1/15/2004	***INITIAL INSTALLATION OF INDIAN CREEK TRAP FOR DOWNSTREAM MOVING FISH***															
1/16/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	18.4	1.38		3.0	11.0	waning gibbous	0	0	0	0			
1/17/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	22.3	1.38		7.4	10.0	waning gibbous	0	0	0	0			
1/18/2004	***DOWNSTREAM TRAP NOT FISHING; TUBING CLAMP LEFT ON TRAP OVERNIGHT***															
1/19/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	24.1	1.36		7.4	10.0	waning gibbous	0	0	0	0			
1/20/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	23.0	1.35		7.3	10.0	waning gibbous	0	0	0	0			
1/21/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	24.4	1.36		6.5	3.0	new	0	0	0	0			
1/22/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	25.3	1.35		4.9	11.0	waxing crescent	0	0	0	0			
1/23/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	21.9	1.35		4.9	7.5	waxing crescent	0	0	0	0			
1/24/2004	Targgart, Laura	Indian Creek	For Downstream Moving Fish	25.2	1.38		8.3	10.0	waxing crescent	0	0	0	0			
1/25/2004	Stolz, Jennifer	Indian Creek	For Downstream Moving Fish	23.3	1.36		7.5	10.0	waxing crescent	0	0	0	0			
1/26/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	24.2	1.35		7.0	3.0	waxing crescent	0	0	0	0			
1/27/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	23.7	1.35		11.0	11.0	waxing crescent	0	0	0	0			
1/28/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	23.9	1.36		3.3	11.5	waxing crescent	0	0	0	0			
1/29/2004	***DOWNSTREAM TRAPS NOT CHECKED***															
1/30/2004	Chenuc, Scott	Indian Creek	For Downstream Moving Fish	48.5	1.36		3.1	11.0	first quarter	0	0	0	0			
1/31/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	24.2	1.35		7.4	10.5	waxing gibbous	0	0	0	0			
2/1/2004	Stolz, Jennifer	Indian Creek	For Downstream Moving Fish	23.8	1.34		6.3	10.0	waxing gibbous	0	0	0	0			
2/2/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	27.3	1.56		8.8	10.5	waxing gibbous	0	0	0	0			
2/3/2004	***DOWNSTREAM TRAP PULLED ON 2/3/04 AND REINSTALLED ON 2/5/04***															
2/4/2004	***DOWNSTREAM TRAP BLOWN OUT; TRAP REPAIRED 2/4/04***															
2/5/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	22.9	1.64		6.5	9.5	waxing gibbous	0	0	0	0			
2/6/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	22.8	1.58		8.4	3.5	full	0	0	0	0			
2/7/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	22.4	1.55		6.6		waning gibbous	0	0	0	0			
2/8/2004	Conroy, Pat	Indian Creek	For Downstream Moving Fish	25.0	1.52		7.2	6.0	waning gibbous	0	0	0	0			
2/9/2004	Forec, Sonya	Indian Creek	For Downstream Moving Fish	23.3	1.50		8.2	6.5	waning gibbous	0	0	0	0			
2/10/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	24.0	1.48		8.1	3.0	waning gibbous	0	0	0	0			
2/11/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	24.2	1.46		6.4	3.0	waning gibbous	0	0	0	0			
2/12/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	23.7	1.45		7.4	3.5	waning gibbous	0	0	0	0			
2/13/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	26.2	1.44		7.7	11.5	last quarter	0	0	0	0			
2/14/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	22.4	1.43		8.3	12.0	waning crescent	0	0	0	0			
2/15/2004	Forec, Sonya	Indian Creek	For Downstream Moving Fish	22.0	1.40		10.8	10.0	waning crescent	0	0	0	0			
2/16/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	24.8	1.48		13.4	11.5	waning crescent	0	0	0	0			
2/17/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	24.6	1.50		15.6	13.0	waning crescent	0	0	0	0			
2/18/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish		1.92		11.4	11.0	waning crescent	0	0	0	0			
2/19/2004	***DOWNSTREAM TRAP BLOWN OUT ON 2/19/04***															
2/20/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/21/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/22/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/23/2004	***DOWNSTREAM TRAP NOT FISHING***															



## Fish Trapping Data Summary 2004

Date	Permitted Biologist	Creek	Trap For Upstream or Downstream Moving Fish	Fishing Time (hrs)	Creek Stage (ft)	Flow (cfs)	Air Temp (°C)	Water Temp (°C)	Lunar Cycle	Total Number of Fish				All Trout		
										All Trout	Female	Male	Not Known	Min.	Max.	Avg.
2/24/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/25/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/26/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/27/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/28/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/29/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/1/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/2/2004	***DOWNSTREAM TRAP REINSTALLED ON 3/2/04***															
3/3/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	23.0	1.66		10.4	12.0	waxing gibbous	1	1	0	0	450	450	--
3/4/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	25.3	1.63		3.0	12.5	waxing gibbous	2	2	0	0	500	540	520
3/5/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	20.8	1.60		10.0	3.0	waxing gibbous	1	1	0	0	460	460	--
3/6/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	24.5	1.58		11.4	12.0	full	4	1	0	3	467	545	502
3/7/2004	Foree, Sonya	Indian Creek	For Downstream Moving Fish	23.8	1.58		12.9	12.0	waning gibbous	6	5	1	0	535	548	439
3/8/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	21.7	1.54		13.4	13.0	waning gibbous	4	1	3	0	535	552	543
3/9/2004	Stolz, Jennifer	Indian Creek	For Downstream Moving Fish	22.8	1.53		14.8	14.0	waning gibbous	2	2	0	0	468	525	437
3/10/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	22.8	1.51		17.5	14.5	waning gibbous	3	2	1	0	415	538	474
3/11/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	22.2	1.50		16.5	14.0	waning gibbous	1	0	0	1			
3/12/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	23.9	1.50		14.0	14.0	waning gibbous	7	6	1	0	430	580	522
3/13/2004	Stolz, Jennifer	Indian Creek	For Downstream Moving Fish	22.5	1.48		15.3	14.0	last quarter	3	2	1	0	463	490	472
3/14/2004	Conroy, Pat	Indian Creek	For Downstream Moving Fish	23.3	1.48		15.1	13.0	waning crescent	1	1	0	0	570	570	--
3/15/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	23.3	1.47		17.3	14.5	waning crescent	0	0	0	0			
3/16/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	23.8	1.46		18.7	14.5	waning crescent	2	1	1	0	528	540	534
3/17/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	23.5	1.46		16.5	16.0	waning crescent	3	3	0	0	420	555	487
3/18/2004	Chene, Scott	Indian Creek	For Downstream Moving Fish	23.3	1.45		15.6	16.5	waning crescent	2	1	1	0	535	560	548
3/19/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	23.3	1.46		13.5	17.5	waning crescent	1	1	0	0	405	405	--
3/20/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	23.5	1.45		14.3	15.0	new	1	1	0	0	432	432	--
3/21/2004	Foree, Sonya	Indian Creek	For Downstream Moving Fish	23.4	1.50		13.3	15.0	waxing crescent	2	2	0	0	450	510	480
3/22/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	23.3	1.44		12.5	15.0	waxing crescent	3	2	1	0	420	525	483
3/23/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	23.6	1.44		12.5	15.0	waxing crescent	1	1	0	0	464	464	--
3/24/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	23.4	1.42		13.6	16.5	waxing crescent	1	0	1	0	330	330	--
3/25/2004	Chene, Scott	Indian Creek	For Downstream Moving Fish	23.3	1.43		10.9	13.5	waxing crescent	1	1	0	0	391	391	--
3/26/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	22.8	1.46		3.7	14.0	waxing crescent	10	7	3	0	454	542	504
3/27/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	23.6	1.44		12.2	15.0	waxing crescent	0	0	0	0			
3/28/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	23.2	1.42		15.3	18.0	first quarter	1	1	0	0	442	442	--
3/29/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	22.8	1.41		14.3	18.0	waxing gibbous	1	1	0	0	435	435	--
3/30/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	22.5	1.40		11.6	14.0	waxing gibbous	0	0	0	0			
3/31/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	24.7	1.40		10.3	16.0	waxing gibbous	0	0	0	0			
4/1/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	23.3	1.40		11.2	16.0	waxing gibbous	1	1	0	0	505	505	--
4/2/2004	Chene, Scott	Indian Creek	For Downstream Moving Fish	23.8	1.38		13.6	15.0	waxing gibbous	1	1	0	0	418	418	--
4/3/2004	Foree, Sonya	Indian Creek	For Downstream Moving Fish	23.9	1.40		13.0	18.0	waxing gibbous	0	0	0	0			
4/4/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	25.2	1.38		10.7	15.0	waxing gibbous	1	1	0	0	440	440	--
4/5/2004	Stolz, Jennifer	Indian Creek	For Downstream Moving Fish	21.6	1.38		11.0	13.0	full	1	1	0	0	525	525	--
4/6/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	24.1	1.37		10.9	14.0	waning gibbous	0	0	0	0			
4/7/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	24.2	1.36		12.0	15.0	waning gibbous	0	0	0	0			
4/8/2004	Chene, Scott	Indian Creek	For Downstream Moving Fish	23.6	1.40		12.7	15.0	waning gibbous	0	0	0	0			
4/9/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	23.7			14.8	14.5	waning gibbous	0	0	0	0			
4/10/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	25.8	1.36		15.3	17.0	waning gibbous	0	0	0	0			
4/11/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	23.3	1.36		12.2	15.5	waning gibbous	0	0	0	0			
4/12/2004	Conroy, Pat	Indian Creek	For Downstream Moving Fish	22.0	1.34		12.5	14.5	last quarter	0	0	0	0			
4/13/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	24.7	1.35		11.3	16.0	waning crescent	0	0	0	0			
4/14/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	23.3	1.34		13.1	16.0	waning crescent	0	0	0	0			
4/15/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	23.3	1.34		11.3	15.0	waning crescent	0	0	0	0			
4/16/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	23.6	1.34		10.7	14.0	waning crescent	0	0	0	0			
4/17/2004	Conroy, Pat	Indian Creek	For Downstream Moving Fish	23.0	1.34		10.9	15.0	waning crescent	0	0	0	0			
4/18/2004	Foree, Sonya	Indian Creek	For Downstream Moving Fish	23.6	1.35		10.3	15.0	waning crescent	0	0	0	0			
4/19/2004	Stolz, Jennifer	Indian Creek	For Downstream Moving Fish	23.0	1.36		12.7	15.0	new	0	0	0	0			
4/20/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	23.7	1.35		14.4	15.0	waxing crescent	0	0	0	0			
4/21/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	27.0	1.34		12.6	17.0	waxing crescent	0	0	0	0			
4/22/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	20.3	1.33		12.9	17.0	waxing crescent	0	0	0	0			
4/23/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	22.8	1.33		15.5	20.0	waxing crescent	0	0	0	0			
4/24/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	24.9	1.31		16.3	19.5	waxing crescent	0	0	0	0			
4/25/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	23.6	1.31		18.7	21.0	waxing crescent	0	0	0	0			
4/26/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	22.8	1.30		20.2	20.0	waxing crescent	0	0	0	0			
4/27/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	22.3	1.28		20.0	18.0	first quarter	0	0	0	0			
4/28/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	25.1	1.28		16.1	19.0	waxing gibbous	0	0	0	0			
4/29/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	23.4	1.24		16.5	17.5	waxing gibbous	0	0	0	0			
4/30/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	23.0	1.25		15.6	17.0	waxing gibbous	0	0	0	0			
5/1/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	24.2	1.24		17.1	20.0	waxing gibbous	0	0	0	0			
5/2/2004	Foree, Sonya	Indian Creek	For Downstream Moving Fish	22.4	1.22		19.7	19.0	waxing gibbous	0	0	0	0			
5/3/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	24.1	1.18		19.4	19.0	waxing gibbous	0	0	0	0			
5/4/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	24.4	1.10		15.1		full	2	2	0	0	437	437	437
5/5/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	23.3	1.04		14.2		waning gibbous	0	0	0	0			
5/6/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	23.3	0.98		15.6	21.0	waning gibbous	0	0	0	0			
5/11/2004	***DOWNSTREAM TRAP NOT FISHING DUE TO LACK OF FLOW***															
5/18/2004	***DOWNSTREAM TRAP NOT FISHING DUE TO LACK OF FLOW***															
5/19/2004	***DOWNSTREAM TRAP REMOVED FOR THE YEAR***															
1/20/2004	***INITIAL INSTALLATION OF ARROYO HONDO TRAP FOR UPSTREAM MOVING FISH***															
1/21/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish		4.00	10.0			new	0	0	0	0			
1/22/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	25.3	4.02	9.6	1.82	7.7	waxing crescent	0	0	0	0			
1/23/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	21.7	4.02	9.0	4.41	7.8	waxing crescent	0	0	0	0			
1/24/2004	Targgart, Laura	Arroyo Hondo	For Upstream Moving Fish	23.3	4.04	11.0	7.39	9.5	waxing crescent	0	0	0	0			
1/25/2004	***UPSTREAM TRAP NOT CHECKED; ROADS INACCESSIBLE***															
1/26/2004	Kellogg, Mike	Arroyo Hondo	For Upstream Moving Fish	46.3	4.05	11.0	6.56	3.0	waxing crescent	0	0	0	0			
1/27/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	23.7	4.02	10.0	3.74	10.0	waxing crescent	0	0	0	0			
1/28/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	23.8	4.03	11.0	7.72	10.1	waxing crescent	0	0	0	0			
1/29/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	22.3	4.02	10.0	7.25	9.7	first quarter	0	0	0	0			
1/30/2004	Chene, Scott	Arroyo Hondo	For Upstream Moving Fish	25.9	4.02	10.0	8.01	10.2	waxing gibbous	0	0	0	0			
1/31/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	24.5	4.02	9.7	5.15	3.3	waxing gibbous	0	0	0	0			
2/1/2004	Stolz, Jennifer	Arroyo Hondo	For Upstream Moving Fish	21.7	4.00	9.2	6.66	3.3	waxing gibbous	0	0	0	0			
2/2/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	23.3	4.08	34.0	8.49	10.1	waxing gibbous	0	0	0	0			
2/13/2004	***UPSTREAM TRAP PULLED 3/2/04 FOR PREDICTED STORM***															
2/14/2004	***UPSTREAM TRAP NOT FISHING***															
2/15/2004	***UPSTREAM TRAP NOT FISHING***															
2/16/2004	***UPSTREAM TRAP NOT FISHING***															
2/17/2004	***UPSTREAM TRAP NOT FISHING***															
2/18/2004	***UPSTREAM TRAP NOT FISHING***															
2/19/2004	***UPSTREAM TRAP RE-INSTALLED***															
2/10/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	23.7	4.40	25.0	5.23	8.4	waning gibbous	0	0	0	0			
2/11/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	23.4	4.28	22.0	6.11	8.5	waning gibbous	0	0	0	0			
2/12/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	23.5	4.18	20.0	7.24	8.9	waning gibbous	0	0	0	0			
2/13/2004	Kellogg, Mike	Arroyo Hondo	For Upstream Moving Fish	20.2	4.26	19.0	7.68	9.1	last quarter	0	0	0	0			

**San Antonio Creek, Indian Creek and Arroyo Hondo**

Date	Permitted Biologist	Creek	Trap For Upstream or Downstream Moving Fish	Fishing Time (hrs)	Creek Stage (ft)	Flow (cfs)	Air Temp (°C)	Water Temp (°C)	Lunar Cycle	Total Number of Fish				All Trout		
										All Trout	Female	Male	Not Known	Min.	Max.	Avg.
2/14/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	28.0	4.18	17.0	8.45	3.7	waning crescent	0	0	0	0			
2/15/2004	Foree, Sonya	Arroyo Hondo	For Upstream Moving Fish	21.8	4.20	16.0	10.63	10.5	waning crescent	0	0	0	0			
2/16/2004	Kellogg, Mike	Arroyo Hondo	For Upstream Moving Fish	24.3	4.30	44.0	11.56	11.1	waning crescent	0	0	0	0			
2/17/2004	***UPSTREAM TRAP BLOWN OUT ON 2/17/04***															
2/18/2004	***UPSTREAM TRAP NOT FISHING***															
2/19/2004	***UPSTREAM TRAP NOT FISHING***															
2/20/2004	***UPSTREAM TRAP NOT FISHING***															
2/21/2004	***UPSTREAM TRAP NOT FISHING***															
2/22/2004	***UPSTREAM TRAP NOT FISHING***															
2/23/2004	***UPSTREAM TRAP NOT FISHING***															
2/24/2004	***UPSTREAM TRAP NOT FISHING***															
2/25/2004	***UPSTREAM TRAP NOT FISHING***															
2/26/2004	***UPSTREAM TRAP NOT FISHING***															
2/27/2004	***UPSTREAM TRAP NOT FISHING***															
2/28/2004	***UPSTREAM TRAP NOT FISHING***															
2/29/2004	***UPSTREAM TRAP NOT FISHING***															
3/1/2004	***UPSTREAM TRAP NOT FISHING***															
3/2/2004	***UPSTREAM TRAP NOT FISHING***															
3/3/2004	***UPSTREAM TRAP NOT FISHING***															
3/4/2004	***UPSTREAM TRAP NOT FISHING***															
3/5/2004	***UPSTREAM TRAP NOT FISHING***															
3/6/2004	***UPSTREAM TRAP NOT FISHING***															
3/7/2004	***UPSTREAM TRAP NOT FISHING***															
3/8/2004	***UPSTREAM TRAP NOT FISHING***															
3/9/2004	***UPSTREAM TRAP NOT FISHING***															
3/10/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	25.6		45.0	15.96	15.2	waning gibbous	2	0	2	0	455	470	463
3/11/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	22.5	4.44	35.0	13.37	15.2	waning gibbous	2	1	1	0	435	478	457
3/12/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	24.5	4.45	30.0	13.77	15.3	waning gibbous	0	0	0	0			
3/13/2004	Stolz, Jennifer	Arroyo Hondo	For Upstream Moving Fish	22.9	4.38	28.0	14.09	15.7	last quarter	1	1	0	0	430	430	--
3/14/2004	Conroy, Pat	Arroyo Hondo	For Upstream Moving Fish	23.8	4.36	25.0	15.34	16.1	waning crescent	0	0	0	0			
3/15/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	23.7	4.30	24.0	15.67	16.3	waning crescent	3	1	2	0	415	460	440
3/16/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	23.3	4.30	21.0	15.96	16.5	waning crescent	2	2	0	0	483	510	437
3/17/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	24.6		20.0	15.40	16.7	waning crescent	2	2	0	0	485	495	490
3/18/2004	Cheneu, Scott	Arroyo Hondo	For Upstream Moving Fish	23.3	4.24	18.0	16.24	16.3	waning crescent	0	0	0	0			
3/19/2004	Sak, Brian	Arroyo Hondo	For Upstream Moving Fish	23.0	4.24	18.0	13.89	16.3	waning crescent	0	0	0	0			
3/20/2004	Norris, Dot	Arroyo Hondo	For Upstream Moving Fish	23.3	4.17	17.0	14.93	17.0	new	0	0	0	0			
3/21/2004	Foree, Sonya	Arroyo Hondo	For Upstream Moving Fish	25.8	4.16	16.0	13.62	17.4	waxing crescent	0	0	0	0			
3/22/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	21.5	4.16	16.0	12.58	17.2	waxing crescent	0	0	0	0			
3/23/2004	Norris, Dot	Arroyo Hondo	For Upstream Moving Fish	24.5	4.20	16.0	12.46	17.3	waxing crescent	3	1	2	0	393	418	404
3/24/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	23.8	4.12	15.0	12.15	16.3	waxing crescent	2	1	1	0	415	520	468
3/25/2004	Cheneu, Scott	Arroyo Hondo	For Upstream Moving Fish	23.3	4.10	16.0	10.54	16.3	waxing crescent	0	0	0	0			
3/26/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	22.9	4.36	21.0	9.05	15.6	waxing crescent	0	0	0	0			
3/27/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	24.3	4.20	18.0	10.73	15.3	waxing crescent	1	1	0	0	458	458	--
3/28/2004	Sak, Brian	Arroyo Hondo	For Upstream Moving Fish	23.6	4.16	16.0	13.09	16.5	first quarter	0	0	0	0			
3/29/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	22.8	4.14	15.0	15.43	17.3	waxing gibbous	0	0	0	0			
3/30/2004	Sak, Brian	Arroyo Hondo	For Upstream Moving Fish	23.5	4.12	14.0	11.09	16.4	waxing gibbous	0	0	0	0			
3/31/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	25.3	4.10	13.0	10.32	16.4	waxing gibbous	0	0	0	0			
4/1/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	23.4	4.15	13.0	10.86	15.8	waxing gibbous	0	0	0	0			
4/2/2004	Cheneu, Scott	Arroyo Hondo	For Upstream Moving Fish	23.6	4.06	12.0	13.43	16.2	waxing gibbous	0	0	0	0			
4/3/2004	Foree, Sonya	Arroyo Hondo	For Upstream Moving Fish	23.3	4.04	12.0	13.03	16.5	waxing gibbous	2	2	0	0	380	430	405
4/4/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	24.1	4.06	12.0	10.90	16.4	waxing gibbous	2	1	1	0	460	488	474
4/5/2004	Stolz, Jennifer	Arroyo Hondo	For Upstream Moving Fish	20.8	4.04	11.0	10.45	16.4	full	0	0	0	0			
4/6/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	25.2	4.04	11.0	10.11	16.5	waning gibbous	0	0	0	0			
4/7/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	24.4	4.06	11.0	11.47	16.6	waning gibbous	0	0	0	0			
4/8/2004	Cheneu, Scott	Arroyo Hondo	For Upstream Moving Fish	22.6	4.10	11.0	12.67	17.1	waning gibbous	0	0	0	0			
4/9/2004	Norris, Dot	Arroyo Hondo	For Upstream Moving Fish	23.8	4.08	11.0	14.11	17.5	waning gibbous	0	0	0	0			
4/10/2004	Sak, Brian	Arroyo Hondo	For Upstream Moving Fish	25.4	4.02	10.0	15.86	18.1	waning gibbous	0	0	0	0			
4/11/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	25.0	4.02	9.3	12.83	17.8	waning gibbous	0	0	0	0			
4/12/2004	Conroy, Pat	Arroyo Hondo	For Upstream Moving Fish	21.3	4.02	9.6	12.62	17.7	last quarter	1	1	0	0	340	340	--
4/13/2004	Kellogg, Mike	Arroyo Hondo	For Upstream Moving Fish	24.3	3.98	9.5	10.95	17.0	waning crescent	1	1	0	0	412	412	--
4/14/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	22.9	3.98	9.4	12.51	17.1	waning crescent	0	0	0	0			
4/15/2004	Norris, Dot	Arroyo Hondo	For Upstream Moving Fish	24.5	4.00	9.3	10.48	16.9	waning crescent	0	0	0	0			
4/16/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	24.0	3.96	9.3	10.32	17.2	waning crescent	0	0	0	0			
4/17/2004	Conroy, Pat	Arroyo Hondo	For Upstream Moving Fish	23.3	3.98	9.3	10.15	21.2	waning crescent	0	0	0	0			
4/18/2004	Foree, Sonya	Arroyo Hondo	For Upstream Moving Fish	23.3	3.96	9.5	9.67	21.0	waning crescent	1	1	0	0	425	425	--
4/19/2004	Stolz, Jennifer	Arroyo Hondo	For Upstream Moving Fish	24.0	4.02	11.0	11.70	21.1	new	0	0	0	0			
4/20/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	23.8	4.00	10.0	13.54	21.0	waxing crescent	0	0	0	0			
4/21/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	21.2	3.95	9.7	11.61	20.4	waxing crescent	0	0	0	0			
4/22/2004	Sak, Brian	Arroyo Hondo	For Upstream Moving Fish	27.3	3.94	9.3	12.30	20.1	waxing crescent	0	0	0	0			
4/23/2004	Kellogg, Mike	Arroyo Hondo	For Upstream Moving Fish	25.2	3.94	8.7	14.37	19.9	waxing crescent	0	0	0	0			
4/24/2004	Norris, Dot	Arroyo Hondo	For Upstream Moving Fish	23.2	3.92	8.1	16.93	19.5	waxing crescent	0	0	0	0			
4/25/2004	Kellogg, Mike	Arroyo Hondo	For Upstream Moving Fish	25.2	3.91	7.5	18.86	19.4	waxing crescent	0	0	0	0			
4/26/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	22.1	3.90	7.2	20.47	19.7	waxing crescent	0	0	0	0			
4/27/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	22.3	3.90	6.8	19.76	19.6	first quarter	0	0	0	0			
4/28/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	25.4	3.90	6.5	16.47	19.9	waxing gibbous	0	0	0	0			
4/29/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	22.9	3.88	6.0	15.84	20.0	waxing gibbous	0	0	0	0			
4/30/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	23.4	3.88	5.8	15.57	19.5	waxing gibbous	1	1	0	0	430	430	--
5/1/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	24.5	3.84	5.7	17.52	19.1	waxing gibbous	0	0	0	0			
5/2/2004	Foree, Sonya	Arroyo Hondo	For Upstream Moving Fish	23.8	3.84	5.5	19.60	18.2	waxing gibbous	0	0	0	0			
5/3/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	25.2	3.81	5.1	19.27	17.5	waxing gibbous	0	0	0	0			
5/4/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	23.3		4.4	15.75	17.6	full	0	0	0	0			
5/5/2004	Kellogg, Mike	Arroyo Hondo	For Upstream Moving Fish	25.0	3.82	4.5	13.25	17.7	waning gibbous	0	0	0	0			
5/6/2004	Sak, Brian	Arroyo Hondo	For Upstream Moving Fish	24.1	3.80	4.6	14.43	17.6	waning gibbous	0	0	0	0			
5/7/2004	Conroy, Pat	Arroyo Hondo	For Upstream Moving Fish	21.8	3.83	4.6	15.66	17.5	waning gibbous	0	0	0	0			
5/8/2004	Cheneu, Scott	Arroyo Hondo	For Upstream Moving Fish	22.9	3.80	4.4	14.05	17.2	waning gibbous	0	0	0	0			
5/9/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	27.1	3.80	4.2	14.34	17.9	waning gibbous	0	0	0	0			
5/10/2004	***UPSTREAM TRAP NOT CHECKED***															
5/11/2004	Stolz, Jennifer	Arroyo Hondo	For Upstream Moving Fish	45.3	3.82	4.4	11.36	18.4	last quarter	0	0	0	0			
5/12/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	23.7	3.82	4.2	13.59	18.3	waning crescent	0	0	0	0			
5/13/2004	Conroy, Pat	Arroyo Hondo	For Upstream Moving Fish	23.2	3.80	4.0	14.56	18.5	waning crescent	0	0	0	0			
5/14/2004	Sak, Brian	Arroyo Hondo	For Upstream Moving Fish	25.2	3.80	3.8	15.44	18.6	waning crescent	0	0	0	0			
5/15/2004	Bielski, Jason	Arroyo Hondo	For Upstream Moving Fish	25.7	3.81	3.7	14.03	18.1	waning crescent	0	0	0	0			
5/16/2004	Conroy, Pat	Arroyo Hondo	For Upstream Moving Fish	19.7	3.80	3.5	13.79	17.7	waning crescent	0						

## Fish Trapping Data Summary 2004

Date	Permitted Biologist	Creek	Trap For Upstream or Downstream Moving Fish	Fishing Time (hrs)	Creek Stage (ft)	Flow (cfs)	Air Temp (°C)	Water Temp (°C)	Lunar Cycle	Total Number of Fish				All Trout		
										All Trout	Female	Male	Not Known	Min.	Max.	Avg.
5/21/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	23.9	3.78	3.3	13.07	18.0	waxing crescent	0	0	0	0			
5/22/2004	Kellogg, Mike	Arroyo Hondo	For Upstream Moving Fish	26.8	3.80	3.4	13.11	16.9	waxing crescent	0	0	0	0			
5/23/2004	Force, Sonya	Arroyo Hondo	For Upstream Moving Fish	23.3	3.78	3.6	13.49	15.8	waxing crescent	0	0	0	0			
5/24/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	26.4	3.78	3.5	13.62	14.8	waxing crescent	0	0	0	0			
5/25/2004	Horvath, Mike	Arroyo Hondo	For Upstream Moving Fish	22.3	3.78	3.3	14.83	14.3	waxing crescent	0	0	0	0			
5/26/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Upstream Moving Fish	25.1	3.78	3.1	16.24	14.7	waxing crescent	0	0	0	0			
5/27/2004	Chenev, Scott	Arroyo Hondo	For Upstream Moving Fish	22.6	3.76	3.1	17.52	14.1	first quarter	0	0	0	0			
5/28/2004	***UPSTREAM TRAP REMOVED FOR THE YEAR***															
1/20/2004	***INITIAL INSTALLATION OF ARROYO HONDO TRAP FOR DOWNSTREAM MOVING FISH***															
1/21/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	4.00	10.0				new	0	0	0	0			
1/22/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.5	4.02	9.6	1.82	7.7	waxing crescent	0	0	0	0			
1/23/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	21.0	4.02	9.0	4.41	7.8	waxing crescent	0	0	0	0			
1/24/2004	Targgart, Laura	Arroyo Hondo	For Downstream Moving Fish	25.5	4.04	11.0	7.99	9.5	waxing crescent	0	0	0	0			
1/25/2004	***DOWNSTREAM TRAP NOT CHECKED; ROADS INACCESSIBLE***															
1/26/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	22.9	4.05	11.0	6.56	9.0	waxing crescent	0	0	0	0			
1/27/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.6	4.02	10.0	9.74	10.0	waxing crescent	0	0	0	0			
1/28/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	23.5	4.03	11.0	7.72	10.1	waxing crescent	0	0	0	0			
1/29/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	22.5	4.02	10.0	7.25	9.7	first quarter	0	0	0	0			
1/30/2004	Chenev, Scott	Arroyo Hondo	For Downstream Moving Fish	25.6	4.02	10.0	8.01	10.2	waxing gibbous	0	0	0	0			
1/31/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	24.8	4.02	9.7	5.15	9.3	waxing gibbous	0	0	0	0			
2/1/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	22.6	4.00	9.2	6.66	9.3	waxing gibbous	0	0	0	0			
2/2/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	22.3	4.08	34.0	8.43	10.1	waxing gibbous	0	0	0	0			
2/3/2004	***DOWNSTREAM TRAP PULLED 2/3/04 FOR PREDICTED STORM***															
2/4/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/5/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/6/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/7/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/8/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/9/2004	***DOWNSTREAM TRAP RE-INSTALLED***															
2/10/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	25.0	4.40	25.0	5.23	8.4	waning gibbous	0	0	0	0			
2/11/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	23.4	4.28	22.0	6.11	8.5	waning gibbous	0	0	0	0			
2/12/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.4	4.18	20.0	7.24	8.9	waning gibbous	0	0	0	0			
2/13/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	19.9	4.26	19.0	7.68	9.1	last quarter	0	0	0	0			
2/14/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	28.5	4.18	17.0	8.45	9.7	waning crescent	1	0	0	1	465	465	--
2/15/2004	Force, Sonya	Arroyo Hondo	For Downstream Moving Fish	21.2	4.20	16.0	10.69	10.5	waning crescent	0	0	0	0			
2/16/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	24.9	4.30	44.0	11.56	11.1	waning crescent	0	0	0	0			
2/17/2004	***DOWNSTREAM TRAP BLOWN OUT ON 2/17/04***															
2/18/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/19/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/20/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/21/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/22/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/23/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/24/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/25/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/26/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/27/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/28/2004	***DOWNSTREAM TRAP NOT FISHING***															
2/29/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/1/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/2/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/3/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/4/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/5/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/6/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/7/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/8/2004	***DOWNSTREAM TRAP NOT FISHING***															
3/9/2004	***DOWNSTREAM TRAP REPAIRED***															
3/10/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	22.8		45.0	15.96	15.2	waning gibbous	1	1	0	0	370	370	--
3/11/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	21.7	4.44	35.0	13.37	15.2	waning gibbous	3	2	1	0	390	460	428
3/12/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.3	4.45	30.0	13.77	15.3	waning gibbous	1	1	0	0	457	457	--
3/13/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	22.9	4.38	28.0	14.09	15.7	last quarter	2	2	0	0	418	463	441
3/14/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	22.5	4.36	25.0	15.34	16.1	waning crescent	0	0	0	0			
3/15/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	23.3	4.30	24.0	15.67	16.3	waning crescent	0	0	0	0			
3/16/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.5	4.30	21.0	15.96	16.5	waning crescent	1	1	0	0	365	365	--
3/17/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	24.1	4.20	20.0	15.40	16.7	waning crescent	1	1	0	0	480	480	--
3/18/2004	Chenev, Scott	Arroyo Hondo	For Downstream Moving Fish	22.8	4.24	19.0	16.24	16.9	waning crescent	3	3	0	0	360	448	418
3/19/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	23.1	4.24	18.0	13.89	16.9	waning crescent	1	1	0	0	512	512	--
3/20/2004	Norris, Dot	Arroyo Hondo	For Downstream Moving Fish	22.3	4.17	17.0	14.93	17.0	new	4	3	1	0	426	504	456
3/21/2004	Force, Sonya	Arroyo Hondo	For Downstream Moving Fish	22.8	4.16	16.0	13.62	17.4	waxing crescent	0	0	0	0			
3/22/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	22.2	4.16	16.0	12.58	17.2	waxing crescent	1	1	0	0	460	460	--
3/23/2004	Norris, Dot	Arroyo Hondo	For Downstream Moving Fish	24.0	4.20	16.0	12.46	17.3	waxing crescent	0	0	0	0			
3/24/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	23.7	4.12	15.0	12.15	16.9	waxing crescent	4	2	2	0	380	440	406
3/25/2004	Chenev, Scott	Arroyo Hondo	For Downstream Moving Fish	22.6	4.10	16.0	10.54	16.3	waxing crescent	6	4	2	0	370	430	436
3/26/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish		4.36	21.0	9.05	15.6	waxing crescent	11	8	3	0	430	510	473
3/27/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.9	4.20	18.0	10.73	15.9	waxing crescent	4	1	3	0	385	485	427
3/28/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	22.3	4.16	16.0	13.09	16.3	first quarter	0	0	0	0			
3/29/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	22.4	4.14	15.0	15.43	17.5	waxing gibbous	1	0	1	0	378	378	--
3/30/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	22.8	4.12	14.0	11.09	16.4	waxing gibbous	1	1	0	0	382	382	--
3/31/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	24.9	4.10	13.0	10.32	16.4	waxing gibbous	1	1	0	0	435	435	--
4/1/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	22.3	4.15	13.0	10.86	15.8	waxing gibbous	1	0	1	0	420	420	--
4/2/2004	Chenev, Scott	Arroyo Hondo	For Downstream Moving Fish	23.5	4.06	12.0	13.43	16.2	waxing gibbous	1	1	0	0	400	400	--
4/3/2004	Force, Sonya	Arroyo Hondo	For Downstream Moving Fish	23.3	4.04	12.0	13.03	16.5	waxing gibbous	0	0	0	0			
4/4/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	24.5	4.06	12.0	10.90	16.4	waxing gibbous	0	0	0	0			
4/5/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	20.4	4.04	11.0	10.45	16.4	full	0	0	0	0			
4/6/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	24.6	4.04	11.0	10.11	16.5	waning gibbous	0	0	0	0			
4/7/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	24.2	4.06	11.0	11.47	16.6	waning gibbous	2	1	1	0	410	510	460
4/8/2004	Chenev, Scott	Arroyo Hondo	For Downstream Moving Fish	22.2	4.10	11.0	12.67	17.1	waning gibbous	1	0	1	0	484	484	--
4/9/2004	Norris, Dot	Arroyo Hondo	For Downstream Moving Fish	23.0	4.08	11.0	14.11	17.5	waning gibbous	1	0	1	0	486	486	--
4/10/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	24.7	4.02	10.0	15.86	18.1	waning gibbous	1	1	0	0	390	390	--
4/11/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	23.1	4.02	9.9	12.89	17.8	waning gibbous	0	0	0	0			
4/12/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	21.9	4.02	9.6	12.62	17.7	last quarter	0	0	0	0			
4/13/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	24.2	3.98	9.5	10.95	17.0	waning crescent	1	1	0	0	450	450	--
4/14/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	21.5	3.98	9.4	12.51	17.1	waning crescent	0	0	0	0			
4/15/2004	Norris, Dot	Arroyo Hondo	For Downstream Moving Fish	24.2	4.00	9.3	10.48	16.9	waning crescent	2	1	1	0	428	434	431
4/16/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	22.6	3.96	9.3	10.32	17.2	waning crescent	0	0	0	0			
4/17/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	22.6	3.98	9.3	10.15	21.2	waning crescent	0	0	0	0			

## San Antonio Creek, Indian Creek and Arroyo Hondo

Date	Permitted Biologist	Creek	Trap For Upstream or Downstream Moving Fish	Fishing Time (hrs)	Creek Stage (ft)	Flow (cfs)	Air Temp (°C)	Water Temp (°C)	Lunar Cycle	Total Number of Fish				All Trout		
										All Trout	Female	Male	Not Known	Min.	Max.	Avg.
4/18/2004	Force, Sonya	Arroyo Hondo	For Downstream Moving Fish	23.7	3.96	3.5	9.67	21.0	waning crescent	0	0	0	0			
4/19/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	23.5	4.02	11.0	11.70	21.1	new	0	0	0	0			
4/20/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	22.9	4.00	10.0	13.54	21.0	waxing crescent	0	0	0	0			
4/21/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	21.3	3.35	9.7	11.61	20.4	waxing crescent	1	1	0	0	435	435	--
4/22/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	26.3	3.94	9.3	12.30	20.1	waxing crescent	0	0	0	0			
4/23/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	23.0	3.94	8.7	14.37	19.9	waxing crescent	0	0	0	0			
4/24/2004	Norris, Dot	Arroyo Hondo	For Downstream Moving Fish	23.3	3.92	8.1	16.93	19.5	waxing crescent	3	3	0	0	412	474	439
4/25/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	23.8	3.91	7.5	18.86	19.4	waxing crescent	1	0	1	0	390	390	--
4/26/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	21.2	3.90	7.2	20.47	19.7	waxing crescent	5	2	3	0	425	470	448
4/27/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	20.8	3.90	6.8	19.76	19.6	first quarter	1	0	1	0	442	442	--
4/28/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	24.7	3.90	6.5	16.47	19.9	waxing gibbous	0	0	0	0			
4/29/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	22.0	3.88	6.0	15.84	20.0	waxing gibbous	0	0	0	0			
4/30/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	22.8	3.88	5.8	15.57	19.5	waxing gibbous	0	0	0	0			
5/1/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	23.8	3.84	5.7	17.52	19.1	waxing gibbous	0	0	0	0			
5/2/2004	Force, Sonya	Arroyo Hondo	For Downstream Moving Fish	23.6	3.84	5.5	19.60	18.2	waxing gibbous	0	0	0	0			
5/3/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	23.9	3.81	5.1	19.27	17.5	waxing gibbous	0	0	0	0			
5/4/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	23.3	3.82	4.4	15.75	17.6	full	1	1	0	0	450	450	--
5/5/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	24.6	3.82	4.5	13.25	17.7	waning gibbous	0	0	0	0			
5/6/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	22.8	3.80	4.6	14.43	17.6	waning gibbous	0	0	0	0			
5/7/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	21.6	3.83	4.6	15.66	17.5	waning gibbous	0	0	0	0			
5/8/2004	Chenue, Scott	Arroyo Hondo	For Downstream Moving Fish	22.1	3.80	4.4	14.05	17.2	waning gibbous	1	1	0	0	375	375	--
5/9/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	26.5	3.80	4.2	14.34	17.9	waning gibbous	0	0	0	0			
5/10/2004	**DOWNSTREAM TRAP NOT CHECKED**															
5/11/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	44.6	3.82	4.4	11.36	18.4	last quarter	1	1	0	0	478	478	--
5/12/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	21.8	3.82	4.2	13.59	18.3	waning crescent	0	0	0	0			
5/13/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	22.8	3.80	4.0	14.56	18.5	waning crescent	0	0	0	0			
5/14/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	25.2	3.80	3.8	15.44	18.6	waning crescent	0	0	0	0			
5/15/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	25.1	3.81	3.7	14.03	18.1	waning crescent	0	0	0	0			
5/16/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	20.3	3.80	3.5	13.79	17.7	waning crescent	0	0	0	0			
5/17/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	23.8	3.80	3.4	13.34	17.3	waning crescent	0	0	0	0			
5/18/2004	Chenue, Scott	Arroyo Hondo	For Downstream Moving Fish	23.0	3.80	3.4	13.30	17.5	waning crescent	0	0	0	0			
5/19/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	23.9	3.78	3.5	14.26	17.8	new	0	0	0	0			
5/20/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	22.8	3.78	3.5	13.77	17.9	waxing crescent	0	0	0	0			
5/21/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.7	3.78	3.3	13.07	18.0	waxing crescent	0	0	0	0			
5/22/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	26.0	3.80	3.4	13.11	16.3	waxing crescent	0	0	0	0			
5/23/2004	Force, Sonya	Arroyo Hondo	For Downstream Moving Fish	20.9	3.78	3.6	13.49	15.8	waxing crescent	0	0	0	0			
5/24/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	25.9	3.78	3.5	13.62	14.8	waxing crescent	0	0	0	0			
5/25/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	22.0	3.78	3.3	14.83	14.3	waxing crescent	0	0	0	0			
5/26/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	24.8	3.78	3.1	16.24	14.7	waxing crescent	0	0	0	0			
5/27/2004	Chenue, Scott	Arroyo Hondo	For Downstream Moving Fish	22.3	3.76	3.1	17.52	14.1	first quarter	0	0	0	0			
5/28/2004	**DOWNSTREAM TRAP REMOVED FOR THE YEAR**															

\* All air and water temperatures represent daily averages compiled from data loggers with the exception of Indian Creek Water temperatures recorded once daily during trap checks.



Appendix B. Juvenile rainbow trout summary data.

Date	Permitted Biologist	Creek	Trap For Upstream or Downstream Moving Fish	Fishing Time (hrs)	Creek Stage (ft)	Flow (cfs)	Air Temp (°C)	Water Temp (°C)	Lunar Cycle	Total Number YOY	YOY Fork Length (mm)			Total Number Parr / Smolt	Parr / Smolt Fork Length (mm)		
											Min.	Max.	Avg.		Min.	Max.	Avg.
1/14/2004	***INITIAL INSTALLATION OF SAN ANTONIO CREEK TRAP FOR DOWNSTREAM MOVING FISH***																
1/15/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	19.8	0.75		9.0	11.8	last quarter	0	0	0	0	0	0	0	0
1/16/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	21.8	0.74		9.0	12.0	waning crescent	0	0	0	0	0	0	0	0
1/17/2004	Norris, Dot	San Antonio Creek	For Downstream Moving Fish	23.3	0.74		7.5	11.7	waning crescent	0	0	0	0	0	0	0	0
1/18/2004	Conroy, Pat	San Antonio Creek	For Downstream Moving Fish	23.5	0.74		7.7	11.6	waning crescent	0	0	0	0	0	0	0	0
1/19/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	24.3	0.73		7.5	11.4	waning crescent	0	0	0	0	0	0	0	0
1/20/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.3	0.72		8.0	11.7	waning crescent	0	0	0	0	0	0	0	0
1/21/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	24.1	0.71		7.0	11.3	new	0	0	0	0	0	0	0	0
1/22/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	25.5	0.71		5.6	11.0	waxing crescent	0	0	0	0	0	0	0	0
1/23/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	22.4	0.71		5.4	10.8	waxing crescent	0	0	0	0	0	0	0	0
1/24/2004	Targgart, Laura	San Antonio Creek	For Downstream Moving Fish	24.8	0.75		8.2	11.4	waxing crescent	0	0	0	0	0	0	0	0
1/25/2004	Stolz, Jennifer	San Antonio Creek	For Downstream Moving Fish	23.3	0.72		7.6	11.5	waxing crescent	0	0	0	0	0	0	0	0
1/26/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	24.5	0.72		7.0	11.3	waxing crescent	0	0	0	0	0	0	0	0
1/27/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	23.8	0.73		11.0	11.8	waxing crescent	0	0	0	0	0	0	0	0
1/28/2004	Bielzki, Jason	San Antonio Creek	For Downstream Moving Fish	23.8	0.72		9.3	12.0	waxing crescent	0	0	0	0	0	0	0	0
1/29/2004	***DOWNSTREAM TRAP NOT CHECKED***																
1/30/2004	Chenu, Scott	San Antonio Creek	For Downstream Moving Fish	47.8	0.73		9.1	11.8	waxing gibbous	0	0	0	0	0	0	0	0
1/31/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	24.1	0.72		7.5	11.3	waxing gibbous	0	0	0	0	0	0	0	0
2/1/2004	Stolz, Jennifer	San Antonio Creek	For Downstream Moving Fish	24.1	0.72		7.2	11.3	waxing gibbous	0	0	0	0	0	0	0	0
2/2/2004	Bielzki, Jason	San Antonio Creek	For Downstream Moving Fish	26.8	1.05		9.1	10.3	waxing gibbous	0	0	0	0	0	0	0	0
2/3/2004	***DOWNSTREAM TRAP PULLED ON 2/3/04 FOR PREDICTED STORM & REINSTALLED ON 2/3/04***																
2/4/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	21.0	1.31		8.6	9.3	waxing gibbous	2	76	78	77	10	90	164	115
2/5/2004	Bielzki, Jason	San Antonio Creek	For Downstream Moving Fish	23.5	1.11		6.8	9.1	waxing gibbous	0	0	0	0	3	86	143	105
2/6/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	22.3	1.00		8.3	10.0	full	0	0	0	0	1	37	37	--
2/7/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	22.6	0.96		6.9	10.3	waning gibbous	0	0	0	0	0	0	0	0
2/8/2004	Conroy, Pat	San Antonio Creek	For Downstream Moving Fish	24.3	0.93		7.5	10.1	waning gibbous	0	0	0	0	3	125	161	143
2/9/2004	Force, Sonya	San Antonio Creek	For Downstream Moving Fish	23.3	0.85		8.2	10.2	waning gibbous	0	0	0	0	0	0	0	0
2/10/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	24.1	0.86		8.0	10.3	waning gibbous	0	0	0	0	2	130	144	137
2/11/2004	Bielzki, Jason	San Antonio Creek	For Downstream Moving Fish	23.9	0.85		6.6	10.4	waning gibbous	0	0	0	0	0	0	0	0
2/12/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.4	0.83		7.7	10.7	waning gibbous	0	0	0	0	0	0	0	0
2/13/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	26.8	0.81		7.8	10.6	last quarter	0	0	0	0	0	0	0	0
2/14/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	22.4	0.80		8.7	11.1	waning crescent	0	0	0	0	0	0	0	0
2/15/2004	Force, Sonya	San Antonio Creek	For Downstream Moving Fish	22.4	0.81		10.6	11.6	waning crescent	0	0	0	0	0	0	0	0
2/16/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	24.9	0.84		13.9	11.8	waning crescent	0	0	0	0	0	0	0	0
2/17/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	24.3	0.96		15.8	11.9	waning crescent	0	0	0	0	0	0	0	0
2/18/2004	Bielzki, Jason	San Antonio Creek	For Downstream Moving Fish	22.5	1.95		11.9	11.3	waning crescent	0	0	0	0	0	0	0	0
2/19/2004	***DOWNSTREAM TRAP BLOWN OUT ON 2/19/04***																
2/20/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/21/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/22/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/23/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/24/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/25/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/26/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/27/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/28/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/29/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/1/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/2/2004	***DOWNSTREAM TRAP REINSTALLED ON 3/2/04***																
3/3/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	18.5	1.24		10.1	9.7	waxing gibbous	0	0	0	0	2	123	200	162
3/4/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	24.3	1.18		9.3	10.1	waxing gibbous	0	0	0	0	4	101	158	140
3/5/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	21.1	1.15		10.0	10.6	waxing gibbous	0	0	0	0	1	149	143	--
3/6/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	23.3	1.10		11.2	11.4	full	0	0	0	0	0	0	0	0
3/7/2004	Force, Sonya	San Antonio Creek	For Downstream Moving Fish	23.4	1.08		13.3	12.0	waning gibbous	0	0	0	0	1	155	155	--
3/8/2004	Norris, Dot	San Antonio Creek	For Downstream Moving Fish	22.5	1.05		13.6	12.5	waning gibbous	0	0	0	0	1	192	192	--
3/9/2004	Stolz, Jennifer	San Antonio Creek	For Downstream Moving Fish	23.2	1.04		15.1	13.0	waning gibbous	0	0	0	0	2	131	145	138
3/10/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	23.9	1.02		17.6	13.5	waning gibbous	3	38	67	53	0	0	0	0
3/11/2004	Bielzki, Jason	San Antonio Creek	For Downstream Moving Fish	22.9	1.01		16.8	13.4	waning gibbous	0	0	0	0	1	135	135	--
3/12/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	22.7	0.99		14.4	13.2	waning gibbous	0	0	0	0	0	0	0	0
3/13/2004	Stolz, Jennifer	San Antonio Creek	For Downstream Moving Fish	23.0	0.98		16.0	13.3	last quarter	0	0	0	0	3	105	173	145
3/14/2004	Conroy, Pat	San Antonio Creek	For Downstream Moving Fish	23.0	0.98		15.2	13.5	waning crescent	0	0	0	0	3	158	161	160
3/15/2004	Bielzki, Jason	San Antonio Creek	For Downstream Moving Fish	23.8	0.97		17.5	13.6	waning crescent	0	0	0	0	3	96	141	119
3/16/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.3	0.95		18.9	14.3	waning crescent	0	0	0	0	5	105	171	132
3/17/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	23.8	0.94		16.9	14.7	waning crescent	0	0	0	0	0	0	0	0
3/18/2004	Chenu, Scott	San Antonio Creek	For Downstream Moving Fish	23.3	0.93		15.4	14.7	waning crescent	0	0	0	0	12	102	137	131
3/19/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	23.3	0.93		13.8	14.6	waning crescent	0	0	0	0	1	166	166	--
3/20/2004	Norris, Dot	San Antonio Creek	For Downstream Moving Fish	22.7	0.92		14.5	14.7	new	0	0	0	0	8	83	150	111
3/21/2004	Force, Sonya	San Antonio Creek	For Downstream Moving Fish	23.5	0.91		13.5	14.7	waxing crescent	0	0	0	0	4	85	152	110
3/22/2004	Bielzki, Jason	San Antonio Creek	For Downstream Moving Fish	23.6	0.92		12.7	14.8	waxing crescent	0	0	0	0	3	97	120	107
3/23/2004	Norris, Dot	San Antonio Creek	For Downstream Moving Fish	23.5	0.90		12.7	14.7	waxing crescent	0	0	0	0	6	119	187	153
3/24/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	23.8	0.90		13.6	14.9	waxing crescent	0	0	0	0	0	0	0	0
3/25/2004	Chenu, Scott	San Antonio Creek	For Downstream Moving Fish	23.1	0.90		11.7	13.9	waxing crescent	0	0	0	0	2	98	116	113
3/26/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.4	0.96		10.3	13.5	waxing crescent	0	0	0	0	28	35	187	133
3/27/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.7	0.91		12.4	14.2	waxing crescent	0	0	0	0	4	97	183	142
3/28/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	23.1	0.90		15.3	14.8	first quarter	0	0	0	0	1	132	132	--
3/29/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	23.7	0.90		14.3	14.6	waxing gibbous	0	0	0	0	0	0	0	0
3/30/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	22.3	0.90		12.1	14.1	waxing gibbous	0	0	0	0	2	95	146	121
3/31/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	24.7	0.89		11.0	14.2	waxing gibbous	0	0	0	0	0	0	0	0
4/1/2004	Bielzki, Jason	San Antonio Creek	For Downstream Moving Fish	24.0	0.88		11.8	14.0	waxing gibbous	0	0	0	0	1	106	106	--
4/2/2004	Chenu, Scott	San Antonio Creek	For Downstream Moving Fish	23.9	0.88		13.8	14.2	waxing gibbous	0	0	0	0	0	0	0	0
4/3/2004	Force, Sonya	San Antonio Creek	For Downstream Moving Fish	23.3	0.88		13.1	13.9	waxing gibbous	0	0	0	0	5	90	140	121
4/4/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	25.3	0.87		11.3	14.0	waxing gibbous	0	0	0	0	0	0	0	0
4/5/2004	Stolz, Jennifer	San Antonio Creek	For Downstream Moving Fish	22.0	0.87		11.5	14.0	full	0	0	0	0	2	131	138	135
4/6/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	23.8	0.86		11.3	13.9	waning gibbous	0	0	0	0	0	0	0	0
4/7/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	24.3	0.86		12.0	14.0									

**San Antonio Creek, Indian Creek and Arroyo Hondo**

Date	Permitted Biologist	Creek	Trap For Upstream or Downstream Moving Fish	Fishing Time (hrs)	Creek Stage (ft)	Flow (cfs)	Air Temp (°C)	Water Temp (°C)	Lunar Cycle	Total Number YOY	YOY Fork Length (mm)			Total Number Parr / Smolt	Parr / Smolt Fork Length (mm)		
											Min.	Max.	Avg.		Min.	Max.	Avg.
4/17/2004	Conroy, Pat	San Antonio Creek	For Downstream Moving Fish	23.0	0.82		11.5	14.6	waning crescent	1	41	41	0	0			
4/18/2004	Forec, Sonya	San Antonio Creek	For Downstream Moving Fish	23.4	0.80		11.0	14.6	waning crescent	2	31	40	35.5	0			
4/19/2004	Stolz, Jennifer	San Antonio Creek	For Downstream Moving Fish	23.4	0.80		12.8	14.6	new	1	42	42	0	0			
4/20/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	24.2	0.82		14.5	14.3	waxing crescent	2	43	45	44	0			
4/21/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	28.3	0.82		12.7	14.7	waxing crescent	0	0	0	0	0			
4/22/2004	***DOWNSTREAM TRAP NOT FISHING DUE TO LACK OF FLOW THROUGH TUBING***																
4/23/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish		0.84		15.3	14.8	waxing crescent	0	0	0	0	0			
4/24/2004	Norris, Dot	San Antonio Creek	For Downstream Moving Fish	23.3	0.84		16.7	15.3	waxing crescent	0	0	0	0	1	142	142	--
4/25/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	23.8	0.82		17.8	15.3	waxing crescent	0	0	0	0	0			
4/26/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	22.5	0.82		19.6	15.8	waxing crescent	1	49	49	0	0			
4/27/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	22.8	0.82		19.0	15.3	first quarter	1	54	54	0	0			
4/28/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	24.3	0.82		16.0	15.3	waxing gibbous	2	45	59	52	0			
4/29/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	22.9	0.82		16.4	16.0	waxing gibbous	1	50	50	0	0			
4/30/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	23.2	0.82		15.2	16.0	waxing gibbous	1	55	55	0	0			
5/1/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	24.3	0.82		16.3	16.0	waxing gibbous	1	54	54	0	0			
5/2/2004	Forec, Sonya	San Antonio Creek	For Downstream Moving Fish	22.3	0.81		18.7	16.1	waxing gibbous	0	0	0	0	0			
5/3/2004	Bielski, Jason	San Antonio Creek	For Downstream Moving Fish	25.6	0.80		18.6	16.1	waxing gibbous	0	0	0	0	0			
5/4/2004	Brinkerhoff, Aaron	San Antonio Creek	For Downstream Moving Fish	22.3	0.80		15.5	16.1	full	0	0	0	0	0			
5/5/2004	Kellogg, Mike	San Antonio Creek	For Downstream Moving Fish	23.6	0.80		14.4	16.0	waning gibbous	0	0	0	0	0			
5/6/2004	Sak, Brian	San Antonio Creek	For Downstream Moving Fish	23.8	0.80		15.4	16.1	waning gibbous	0	0	0	0	0			
5/7/2004	Conroy, Pat	San Antonio Creek	For Downstream Moving Fish	23.2	0.80		16.2	16.2	waning gibbous	0	0	0	0	0			
5/8/2004	Cheneu, Scott	San Antonio Creek	For Downstream Moving Fish	23.3	0.79		15.2	16.3	waning gibbous	0	0	0	0	0			
5/9/2004	Horvath, Mike	San Antonio Creek	For Downstream Moving Fish	25.6	0.78		14.5	16.3	waning gibbous	0	0	0	0	0			
5/10/2004	***DOWNSTREAM TRAP REMOVED FOR THE YEAR***																
1/15/2004	***INITIAL INSTALLATION OF INDIAN CREEK TRAP FOR DOWNSTREAM MOVING FISH***																
1/16/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	18.4	1.38		9.0	11.0	waning gibbous	0	0	0	0	0			
1/17/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	22.9	1.38		7.4	10.0	waning gibbous	0	0	0	0	0			
1/18/2004	***DOWNSTREAM TRAP NOT FISHING; TUBING CLAMP LEFT ON TRAP OVERNIGHT***																
1/19/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	24.1	1.36		7.4	10.0	waning gibbous	0	0	0	0	0			
1/20/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	23.0	1.35		7.9	10.0	waning gibbous	0	0	0	0	0			
1/21/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	24.4	1.36		6.5	9.0	new	0	0	0	0	0			
1/22/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	25.3	1.35		4.9	11.0	waxing crescent	0	0	0	0	0			
1/23/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	21.3	1.35		4.9	7.5	waxing crescent	0	0	0	0	0			
1/24/2004	Targgart, Laura	Indian Creek	For Downstream Moving Fish	25.2	1.38		8.3	10.0	waxing crescent	0	0	0	0	0			
1/25/2004	Stolz, Jennifer	Indian Creek	For Downstream Moving Fish	23.3	1.36		7.5	10.0	waxing crescent	0	0	0	0	0			
1/26/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	24.2	1.35		7.0	9.0	waxing crescent	0	0	0	0	0			
1/27/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	23.7	1.35		11.0	11.0	waxing crescent	0	0	0	0	0			
1/28/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	23.9	1.36		9.3	11.5	waxing crescent	0	0	0	0	0			
1/29/2004	***DOWNSTREAM TRAPS NOT CHECKED***																
1/30/2004	Cheneu, Scott	Indian Creek	For Downstream Moving Fish	48.5	1.36		9.1	11.0	first quarter	0	0	0	0	0			
1/31/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	24.2	1.35		7.4	10.5	waxing gibbous	0	0	0	0	0			
2/1/2004	Stolz, Jennifer	Indian Creek	For Downstream Moving Fish	23.8	1.34		6.9	10.0	waxing gibbous	0	0	0	0	0			
2/2/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	27.3	1.56		8.8	10.5	waxing gibbous	0	0	0	0	0			
2/3/2004	***DOWNSTREAM TRAP PULLED ON 2/3/04 AND REINSTALLED ON 2/5/04***																
2/4/2004	***DOWNSTREAM TRAP BLOWN OUT; TRAP REPAIRED 2/4/04***																
2/5/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	22.3	1.64		6.5	9.5	waxing gibbous	0	0	0	0	0			
2/6/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	22.8	1.58		8.4	9.5	full	0	0	0	0	0			
2/7/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	22.4	1.55		6.6		waning gibbous	0	0	0	0	0			
2/8/2004	Conroy, Pat	Indian Creek	For Downstream Moving Fish	25.0	1.52		7.2	6.0	waning gibbous	0	0	0	0	0			
2/9/2004	Forec, Sonya	Indian Creek	For Downstream Moving Fish	23.3	1.50		8.2	6.5	waning gibbous	0	0	0	0	0			
2/10/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	24.0	1.48		8.1	9.0	waning gibbous	0	0	0	0	0			
2/11/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	24.2	1.46		6.4	9.0	waning gibbous	0	0	0	0	0			
2/12/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	23.7	1.45		7.4	9.5	waning gibbous	0	0	0	0	0			
2/13/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	26.2	1.44		7.7	11.5	last quarter	0	0	0	0	0			
2/14/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	22.4	1.43		8.9	12.0	waning crescent	0	0	0	0	0			
2/15/2004	Forec, Sonya	Indian Creek	For Downstream Moving Fish	22.0	1.40		10.8	10.0	waning crescent	0	0	0	0	0			
2/16/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	24.8	1.48		13.4	11.5	waning crescent	0	0	0	0	0			
2/17/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	24.6	1.50		15.6	13.0	waning crescent	0	0	0	0	0			
2/18/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	*	1.92		11.4	11.0	waning crescent	0	0	0	0	0			
2/19/2004	***DOWNSTREAM TRAP BLOWN OUT ON 2/16/04***																
2/20/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/21/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/22/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/23/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/24/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/25/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/26/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/27/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/28/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/29/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/1/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/2/2004	***DOWNSTREAM TRAP REINSTALLED ON 3/2/04***																
3/3/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	23.0	1.66		10.4	12.0	waxing gibbous	0	0	0	0	0			
3/4/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	25.9	1.63		9.0	12.5	waxing gibbous	0	0	0	0	0			
3/5/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	20.8	1.60		10.0	9.0	waxing gibbous	0	0	0	0	0			
3/6/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	24.5	1.58		11.4	12.0	full	0	0	0	0	0			
3/7/2004	Forec, Sonya	Indian Creek	For Downstream Moving Fish	23.8	1.58		12.9	12.0	waning gibbous	0	0	0	0	0			
3/8/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	21.7	1.54		13.4	13.0	waning gibbous	0	0	0	0	2	190	250	220
3/9/2004	Stolz, Jennifer	Indian Creek	For Downstream Moving Fish	22.8	1.53		14.8	14.0	waning gibbous	0	0	0	0	2	194	215	205
3/10/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	22.8	1.51		17.5	14.5	waning gibbous	0	0	0	0	1	190	190	--
3/11/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	22.2	1.50		16.5	14.0	waning gibbous	0	0	0	0	3	140	162	151
3/12/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	23.9	1.50		14.0	14.0	waning gibbous	0	0	0	0	4	136	183	160
3/13/2004	Stolz, Jennifer	Indian Creek	For Downstream Moving Fish	22.5	1.48		15.9	14.0	last quarter	0	0	0	0	0			
3/14/2004	Conroy, Pat	Indian Creek	For Downstream Moving Fish	23.3	1.48		15.1	13.0	waning crescent	0	0	0	0	3	164	217	191
3/15/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	23.3	1.47		17.3	14.5	waning crescent	0	0	0	0	1	155	155	--
3/16/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	23.8	1.46		18.7	14.5	waning crescent	0	0	0	0	4	142	131	163
3/17/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	23.5	1.46		16.5	16.0	waning crescent	0	0	0	0	0			
3/18/2004	Cheneu, Scott	Indian Creek	For Downstream Moving Fish	23.3	1.45		15.6	16.5	waning crescent	0	0	0	0	4	161	198	180
3/19/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	23.3	1.46		13.5	17.5	waning crescent	0	0	0	0	3	136	173	156
3/20/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	23.5	1.45		14.3	15.0	new	0	0	0	0	5	117	173	152
3/21/2004	Forec, Sonya	Indian Creek	For Downstream Moving Fish	23.4	1.50		13.3	15.0	waxing crescent	0	0	0	0	19	105	190	144
3/22/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	23.3	1.44		12.5	15.0	waxing crescent	0	0	0	0	14	119	220	153
3/23/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	23.6	1.44		12.5	15.0	waxing crescent	0	0	0	0	1	155	155	--
3/24/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	23.4	1.42		13.6	16.5	waxing crescent	0	0	0	0	5	135	163	148
3/25/2004	Cheneu, Scott	Indian Creek	For Downstream Moving Fish	23.3	1.43		10.9	13.5	waxing crescent	0	0	0	0	8	107	185	145
3/26/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	22.8	1.46		9.7	14.0	waxing crescent	0	0	0	0	6	122	190	150
3/27/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	23.6	1.44		12.2	15.0	waxing crescent	0	0	0	0	0			

## Fish Trapping Data Summary 2004

Date	Permitted Biologist	Creek	Trap For Upstream or Downstream Moving Fish	Fishing Time (hrs)	Creek Stage (ft)	Flow (cfs)	Air Temp (°C)	Water Temp (°C)	Lunar Cycle	Total Number YOY	YOY Fork Length (mm)			Total Number Parr / Smolt	Parr / Smolt Fork Length (mm)		
											Min.	Max.	Avg.		Min.	Max.	Avg.
3/28/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	23.2	1.42		15.3	18.0	first quarter	0	0	0	0	10	116	132	151
3/29/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	22.8	1.41		14.3	18.0	waxing gibbous	0	0	0	0	8	123	180	145
3/30/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	22.5	1.40		11.6	14.0	waxing gibbous	0	0	0	0	10	117	160	130
3/31/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	24.7	1.40		10.3	16.0	waxing gibbous	0	0	0	0	0			
4/1/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	23.3	1.40		11.2	16.0	waxing gibbous	0	0	0	0	2	123	141	132
4/2/2004	Cheneu, Scott	Indian Creek	For Downstream Moving Fish	23.8	1.38		13.6	15.0	waxing gibbous	0	0	0	0	2	112	132	122
4/3/2004	Force, Sonya	Indian Creek	For Downstream Moving Fish	23.9	1.40		13.0	18.0	waxing gibbous	0	0	0	0	0			
4/4/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	25.2	1.38		10.7	15.0	waxing gibbous	0	0	0	0	2	152	167	160
4/5/2004	Stolz, Jennifer	Indian Creek	For Downstream Moving Fish	21.6	1.38		11.0	13.0	full	0	0	0	0	1	143	143	--
4/6/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	24.1	1.37		10.9	14.0	waning gibbous	0	0	0	0	0			
4/7/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	24.2	1.36		12.0	15.0	waning gibbous	0	0	0	0	0			
4/8/2004	Cheneu, Scott	Indian Creek	For Downstream Moving Fish	23.6	1.40		12.7	15.0	waning gibbous	0	0	0	0	0			
4/9/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	23.7			14.8	14.5	waning gibbous	0	0	0	0	2	137	158	148
4/10/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	25.8	1.36		15.9	17.0	waning gibbous	0	0	0	0	0			
4/11/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	23.3	1.36		12.2	15.5	waning gibbous	1	27	27	0	0			
4/12/2004	Conroy, Pat	Indian Creek	For Downstream Moving Fish	22.0	1.34		12.5	14.5	last quarter	0	0	0	0	0			
4/13/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	24.7	1.35		11.9	16.0	waning crescent	2	22	31	26.5	0			
4/14/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	23.3	1.34		13.1	16.0	waning crescent	5	26	31	29	0			
4/15/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	23.3	1.34		11.3	15.0	waning crescent	26	22	39	29.5	0			
4/16/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	23.6	1.34		10.7	14.0	waning crescent	47	22	38	32.1	0			
4/17/2004	Conroy, Pat	Indian Creek	For Downstream Moving Fish	23.0	1.34		10.9	15.0	waning crescent	53	22	49	31	0			
4/18/2004	Force, Sonya	Indian Creek	For Downstream Moving Fish	23.6	1.35		10.9	15.0	waning crescent	64	18	40	30.3	0			
4/19/2004	Stolz, Jennifer	Indian Creek	For Downstream Moving Fish	23.0	1.36		12.7	15.0	new	70	19	45	33.9	0			
4/20/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	23.7	1.35		14.4	15.0	waxing crescent	0	0	0	0	0			
4/21/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	27.0	1.34		12.6	17.0	waxing crescent	60	27	45	36.6	0			
4/22/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	20.3	1.33		12.9	17.0	waxing crescent	66	24	47	37.3	0			
4/23/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	22.8	1.33		15.5	20.0	waxing crescent	89	26	46	39.2	0			
4/24/2004	Norris, Dot	Indian Creek	For Downstream Moving Fish	24.3	1.31		16.9	19.5	waxing crescent	204	28	51	39.2	0			
4/25/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	23.6	1.31		18.7	21.0	waxing crescent	138	23	52	40.9	0			
4/26/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	22.8	1.30		20.2	20.0	waxing crescent	46	26	48	40.2	0			
4/27/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	22.3	1.28		20.0	18.0	first quarter	60	30	48	40.1	0			
4/28/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	25.1	1.28		16.1	19.0	waxing gibbous	80	29	50	41.1	0			
4/29/2004	Horvath, Mike	Indian Creek	For Downstream Moving Fish	23.4	1.24		16.5	17.5	waxing gibbous	26	21	50	37.9	0			
4/30/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	23.0	1.25		15.6	17.0	waxing gibbous	0	0	0	0	0			
5/1/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	24.2	1.24		17.1	20.0	waxing gibbous	60	21	52	38.2	0			
5/2/2004	Force, Sonya	Indian Creek	For Downstream Moving Fish	22.4	1.22		19.7	19.0	waxing gibbous	106	29	55	42.4	0			
5/3/2004	Bielski, Jason	Indian Creek	For Downstream Moving Fish	24.1	1.18		19.4	19.0	waxing gibbous	50	34	51	40.7	0			
5/4/2004	Brinkerhoff, Aaron	Indian Creek	For Downstream Moving Fish	24.4	1.10		15.1		full	25	27	47	35.1	0			
5/5/2004	Kellogg, Mike	Indian Creek	For Downstream Moving Fish	23.3	1.04		14.2		waning gibbous	82	24	52	36.7	0			
5/6/2004	Sak, Brian	Indian Creek	For Downstream Moving Fish	23.0	0.98		15.6	21.0	waning gibbous	23	25	50	35.8	0			
5/7/2004	Conroy, Pat	Indian Creek	For Downstream Moving Fish	0.0	0.88		16.3	20.0	waning gibbous	0	0	0	0	0			
5/8/2004	Cheneu, Scott	Indian Creek	For Downstream Moving Fish	0.0	0.81		14.9	17.0	waning gibbous	0	0	0	0	0			
5/9/2004	***DOWNSTREAM TRAP REMOVED FOR THE YEAR***																
12/01/2004	***INITIAL INSTALLATION OF ARROYO HONDO TRAP FOR DOWNSTREAM MOVING FISH***																
1/21/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	unknown	4.00	10.0			new	0				0			
1/22/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.5	4.02	3.6	1.82	7.7	waxing crescent	0				1	108	108	--
1/23/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	21.0	4.02	3.0	4.41	7.8	waxing crescent	0				0			
1/24/2004	Targgart, Laura	Arroyo Hondo	For Downstream Moving Fish	25.5	4.04	11.0	7.99	9.5	waxing crescent	0				0			
1/25/2004	***DOWNSTREAM TRAP NOT CHECKED; ROADS INACCESSIBLE***																
1/26/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	22.9	4.05	11.0	6.56	9.0	waxing crescent	0				0			
1/27/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.6	4.02	10.0	3.74	10.0	waxing crescent	0				1	115	115	--
1/28/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	23.5	4.03	11.0	7.72	10.1	waxing crescent	0				0			
1/29/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	22.5	4.02	10.0	7.25	9.7	first quarter	0				0			
1/30/2004	Cheneu, Scott	Arroyo Hondo	For Downstream Moving Fish	25.6	4.02	10.0	8.01	10.2	waxing gibbous	0				0			
1/31/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	24.8	4.02	3.7	5.15	9.3	waxing gibbous	0				0			
2/1/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	22.6	4.00	3.2	6.66	9.3	waxing gibbous	0				0			
2/2/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	22.3	4.08	34.0	8.49	10.1	waxing gibbous	0				0			
2/3/2004	***DOWNSTREAM TRAP PULLED 2/3/04 FOR PREDICTED STORM***																
2/4/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/5/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/6/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/7/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/8/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/9/2004	***DOWNSTREAM TRAP RE-INSTALLED***																
2/10/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	25.0	4.40	25.0	5.23	8.4	waning gibbous	0				0			
2/11/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	23.4	4.28	22.0	6.11	8.5	waning gibbous	0				2	105	238	172
2/12/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.4	4.18	20.0	7.24	8.9	waning gibbous	0				0			
2/13/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	19.9	4.26	19.0	7.68	9.1	last quarter	0				0			
2/14/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	28.5	4.18	17.0	8.45	9.7	waning crescent	0				1	128	128	--
2/15/2004	Force, Sonya	Arroyo Hondo	For Downstream Moving Fish	21.2	4.20	16.0	10.69	10.5	waning crescent	1	42	42	--	0			
2/16/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	24.9	4.30	44.0	11.56	11.1	waning crescent	0				0			
2/17/2004	***BLOW-OUT OF DOWNSTREAM TRAP 2/17/04***																
2/18/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/19/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/20/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/21/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/22/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/23/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/24/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/25/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/26/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/27/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/28/2004	***DOWNSTREAM TRAP NOT FISHING***																
2/29/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/1/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/2/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/3/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/4/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/5/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/6/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/7/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/8/2004	***DOWNSTREAM TRAP NOT FISHING***																
3/9/2004	***DOWNSTREAM TRAP REPAIRED***																
3/10/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	22.8		45.0	15.96	15.2	waning gibbous	0				3	108	156	127
3/11/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	21.7	4.44	35.0	13.37	15.2	waning gibbous	0				7	118	212	158
3/12/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.3	4.45	30.0	13.77	15.3	waning gibbous	0				14	94	178	148
3/13/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	22.9	4.38	28.0	14.09	15.7	last quarter	0				20	115	215	152



# San Antonio Creek, Indian Creek and Arroyo Hondo

Date	Permitted Biologist	Creek	Trap For Upstream or Downstream Moving Fish	Fishing Time (hrs)	Creek Stage (ft)	Flow (cfs)	Air Temp (°C)	Water Temp (°C)	Lunar Cycle	Total Number YOY	YOY Fork Length (mm)			Total Number Parr / Smolt	Parr / Smolt Fork Length (mm)		
											Min.	Max.	Avg.		Min.	Max.	Avg.
3/14/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	22.5	4.36	25.0	15.34	16.1	waning crescent	0				3	153	165	158
3/15/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	23.3	4.30	24.0	15.67	16.3	waning crescent	0				4	108	158	141
3/16/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.5	4.30	21.0	15.96	16.5	waning crescent	0				6	105	175	138
3/17/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	24.1		20.0	15.40	16.7	waning crescent	0				2	91	119	105
3/18/2004	Chenu, Scott	Arroyo Hondo	For Downstream Moving Fish	22.8	4.24	19.0	16.24	16.9	waning crescent	0				7	115	222	149
3/19/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	23.1	4.24	18.0	13.89	16.9	waning crescent	0				3	134	171	156
3/20/2004	Norris, Dot	Arroyo Hondo	For Downstream Moving Fish	22.3	4.17	17.0	14.93	17.0	new	0				7	109	175	135
3/21/2004	Forec, Sonya	Arroyo Hondo	For Downstream Moving Fish	22.8	4.16	16.0	13.62	17.4	waxing crescent	0				2	110	125	118
3/22/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	22.2	4.16	16.0	12.58	17.2	waxing crescent	0				6	158	186	173
3/23/2004	Norris, Dot	Arroyo Hondo	For Downstream Moving Fish	24.0	4.20	16.0	12.46	17.3	waxing crescent	0				3	116	165	147
3/24/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	23.7	4.12	15.0	12.15	16.9	waxing crescent	0				4	101	167	133
3/25/2004	Chenu, Scott	Arroyo Hondo	For Downstream Moving Fish	22.6	4.10	16.0	10.54	16.3	waxing crescent	0				7	103	130	138
3/26/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	4.36	21.0	3.05	15.6	waxing crescent	0					18	109	132	153
3/27/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.9	4.20	18.0	10.73	15.9	waxing crescent	0				7	97	132	148
3/28/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	22.3	4.16	16.0	13.09	16.5	first quarter	0				0			
3/29/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	22.4	4.14	15.0	15.43	17.3	waxing gibbous	0				1	140	140	--
3/30/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	22.8	4.12	14.0	11.09	16.4	waxing gibbous	0				0			
3/31/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	24.3	4.10	13.0	10.32	16.4	waxing gibbous	0				2	168	181	175
4/1/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	22.3	4.15	13.0	10.86	15.8	waxing gibbous	0				4	166	205	185
4/2/2004	Chenu, Scott	Arroyo Hondo	For Downstream Moving Fish	23.5	4.06	12.0	13.43	16.2	waxing gibbous	0				0			
4/3/2004	Forec, Sonya	Arroyo Hondo	For Downstream Moving Fish	23.3	4.04	12.0	13.03	16.5	waxing gibbous	0				3	135	160	148
4/4/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	24.5	4.06	12.0	10.90	16.4	waxing gibbous	0				1	176	176	--
4/5/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	20.4	4.04	11.0	10.45	16.4	full	0				2	142	155	149
4/6/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	24.6	4.04	11.0	10.11	16.5	waning gibbous	0				0			
4/7/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	24.2	4.06	11.0	11.47	16.6	waning gibbous	0				3	152	180	164
4/8/2004	Chenu, Scott	Arroyo Hondo	For Downstream Moving Fish	22.2	4.10	11.0	12.67	17.1	waning gibbous	0				6	107	188	160
4/9/2004	Norris, Dot	Arroyo Hondo	For Downstream Moving Fish	23.0	4.08	11.0	14.11	17.5	waning gibbous	0				2	156	134	175
4/10/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	24.7	4.02	10.0	15.86	18.1	waning gibbous	2	24	39	61.5	4	104	175	126
4/11/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	23.1	4.02	9.9	12.89	17.8	waning gibbous	10	23	26	24.3	1	144	144	--
4/12/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	21.9	4.02	9.6	12.62	17.7	last quarter	7	21	24	22.9	4	105	136	116
4/13/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	24.2	3.98	9.5	10.95	17.0	waning crescent	4	15	25	22	3	104	181	151
4/14/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	21.5	3.98	9.4	12.51	17.1	waning crescent	2	24	26	25	2	133	168	151
4/15/2004	Norris, Dot	Arroyo Hondo	For Downstream Moving Fish	24.2	4.00	9.3	10.48	16.9	waning crescent	2	24	24	24	0			
4/16/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	22.6	3.96	9.3	10.32	17.2	waning crescent	78	20	26	24	2	113	165	133
4/17/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	22.6	3.98	9.3	10.15	21.2	waning crescent	117	20	42	23	2	115	171	149
4/18/2004	Forec, Sonya	Arroyo Hondo	For Downstream Moving Fish	23.7	3.96	9.5	9.67	21.0	waning crescent	20	22	24	22.9	1	165	165	--
4/19/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	23.5	4.02	11.0	11.70	21.1	new	14	21	21	24.3	4	123	185	164
4/20/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	22.9	4.00	10.0	13.54	21.0	waxing crescent	3	25	25	25	3	160	188	173
4/21/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	21.3	3.95	9.7	11.61	20.4	waxing crescent	41	22	26	24.5	0			
4/22/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	26.3	3.94	9.3	12.30	20.1	waxing crescent	48	21	31	24.6	0			
4/23/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	23.0	3.94	8.7	14.97	19.9	waxing crescent	20	22	31	25.7	1	161	161	--
4/24/2004	Norris, Dot	Arroyo Hondo	For Downstream Moving Fish	23.3	3.92	8.1	16.93	19.5	waxing crescent	16	21	52	26.5	0			
4/25/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	23.8	3.91	7.5	18.86	19.4	waxing crescent	7	22	29	25.1	1	152	152	--
4/26/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	21.2	3.90	7.2	20.47	19.7	waxing crescent	0				4	109	137	119
4/27/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	20.8	3.90	6.8	19.76	19.6	first quarter	0				3	105	161	128
4/28/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	24.7	3.90	6.5	16.47	19.9	waxing gibbous	0				3	112	187	156
4/29/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	22.0	3.88	6.0	15.84	20.0	waxing gibbous	1	26	26	--	1	168	168	--
4/30/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	22.8	3.88	5.8	15.57	19.5	waxing gibbous	0				2	141	144	143
5/1/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	23.8	3.84	5.7	17.52	19.1	waxing gibbous	1	33	33	--	1	120	120	--
5/2/2004	Forec, Sonya	Arroyo Hondo	For Downstream Moving Fish	23.6	3.84	5.5	19.60	18.2	waxing gibbous	0				1	165	165	--
5/3/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	23.9	3.81	5.1	19.27	17.5	waxing gibbous	1	32	32	--	1	165	165	--
5/4/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	23.3		4.4	15.75	17.6	full	0				0			
5/5/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	24.6	3.82	4.5	13.25	17.7	waning gibbous	3	30	44	36	3	132	175	148
5/6/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	22.8	3.80	4.6	14.43	17.6	waning gibbous	2	23	34	28.5	0			
5/7/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	21.6	3.83	4.6	15.66	17.5	waning gibbous	8	23	36	27.3	1	153	153	--
5/8/2004	Chenu, Scott	Arroyo Hondo	For Downstream Moving Fish	22.1	3.80	4.4	14.05	17.2	waning gibbous	22	22	53	34.3	1	114	114	--
5/9/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	26.5	3.80	4.2	14.34	17.9	waning gibbous	2	33	43	38	0			
5/10/2004	***DOWNSTREAM TRAP NOT CHECKED***																
5/11/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	44.6	3.82	4.4	11.36	18.4	last quarter	20	26	48	34.7	0			
5/12/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	21.8	3.82	4.2	13.59	18.3	waning crescent	6	26	55	39.6	0			
5/13/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	22.8	3.80	4.0	14.56	18.5	waning crescent	1	53	53	--	1	144	144	--
5/14/2004	Sak, Brian	Arroyo Hondo	For Downstream Moving Fish	25.2	3.80	3.8	15.44	18.6	waning crescent	8	26	50	39.1	0			
5/15/2004	Bielski, Jason	Arroyo Hondo	For Downstream Moving Fish	25.1	3.81	3.7	14.03	18.1	waning crescent	11	24	46	35.5	0			
5/16/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	20.3	3.80	3.5	13.79	17.7	waning crescent	2	33	43	38	0			
5/17/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	23.8	3.80	3.4	13.34	17.3	waning crescent	5	22	35	37.8	0			
5/18/2004	Chenu, Scott	Arroyo Hondo	For Downstream Moving Fish	23.0	3.80	3.4	13.30	17.5	waning crescent	12	33	48	37.6	0			
5/19/2004	Conroy, Pat	Arroyo Hondo	For Downstream Moving Fish	23.9	3.78	3.5	14.26	17.8	new	45	23	62	43.3	1	204	204	--
5/20/2004	Stolz, Jennifer	Arroyo Hondo	For Downstream Moving Fish	22.8	3.78	3.5	13.77	17.9	waxing crescent	18	21	56	39.7	0			
5/21/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	23.7	3.78	3.3	13.07	18.0	waxing crescent	21	24	74	46.7	0			
5/22/2004	Kellogg, Mike	Arroyo Hondo	For Downstream Moving Fish	26.0	3.80	3.4	13.11	16.9	waxing crescent	41	23	56	44.5	0			
5/23/2004	Forec, Sonya	Arroyo Hondo	For Downstream Moving Fish	20.9	3.78	3.6	13.49	15.8	waxing crescent	38	24	58	40.2	0			
5/24/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	25.9	3.78	3.5	13.62	14.8	waxing crescent	17	35	60	45.6	0			
5/25/2004	Horvath, Mike	Arroyo Hondo	For Downstream Moving Fish	22.0	3.78	3.3	14.83	14.3	waxing crescent	19	30	60	43.5	0			
5/26/2004	Brinkerhoff, Aaron	Arroyo Hondo	For Downstream Moving Fish	24.8	3.78	3.1	16.24	14.7	waxing crescent	2	36	52	44	0			
5/27/2004	Chenu, Scott	Arroyo Hondo	For Downstream Moving Fish	22.3	3.76	3.1	17.52	14.1	first quarter	2	46	49	47.5	0			
5/28/2004	***DOWNSTREAM TRAP REMOVED FOR THE YEAR***																