

EXPERIMENTAL AUGMENTATION AND MONITORING OF RIO GRANDE SILVERY
MINNOW IN THE MIDDLE RIO GRANDE, NEW MEXICO

Annual Report 2005



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EXECUTIVE SUMMARY

Rio Grande silvery minnow (*Hybognathus amarus*) was historically found in the mainstem Rio Grande and its larger tributaries (Rio Chama and Jemez River) from near Española, New Mexico to the Gulf of Mexico, and in the Pecos River from Santa Rosa, New Mexico downstream to its confluence with the Rio Grande in Texas (Bestgen and Platania 1991). Recently, Rio Grande silvery minnow was found in the Middle Rio Grande, New Mexico (MRGNM) below Cochiti Dam downstream to Elephant Butte Reservoir, representing 283 km (176 mi) or 5-7% of its historical range. Within the last several years, continued river drying in Isleta and San Acacia reaches had dramatically decreased densities; where by 2003 Angostura Reach had the highest catch rates of Rio Grande silvery minnow (Dudley, et al. 2004). Direct and indirect evidence indicates that augmentation efforts in the Angostura Reach are partially contributing to the increase in upstream catch rates. In comparison, 7 years ago it was estimated more than 70% of Rio Grande silvery minnow inhabited the San Acacia Reach (San Acacia diversion dam downstream to Elephant Butte Reservoir) (U.S. Fish and Wildlife Service 1999). With frequent river intermittency downstream of Isleta Dam and unknown population status above Angostura Dam, these areas currently do not provide adequate and/or continuous habitat conditions. Environmental factors exacerbated by human interaction have reduced the continually flowing range of Rio Grande silvery minnow to the Angostura Reach (below Angostura Dam to Isleta Dam), which is only 65 km (40.4 mi) or 1% of its historic range. Nevertheless, the potential for intermittency should not outweigh the potential for continued occupation and existence in the downstream reaches.

Throughout much of its historic and current range, the decline of Rio Grande silvery minnow may be attributed to modification of stream discharge and altered sediment loads, channel desiccation, obstructions to upstream movement (i.e., impoundments and diversion dams), channelization, competition and predation by nonnative species, and water quality degradation (U.S. Fish and Wildlife Service 1999). There are doubtless other factors that have affected and are continuing to affect Rio Grande silvery minnow, but river intermittency on a nearly annual basis within the remaining range hampers effective management efforts.

Since June of 2002, 562,885 hatchery-raised Rio Grande silvery minnow have been augmented into the MRGNM. Along with favorable spring snowmelt flows for spawning and recruitment in 2004 and 2005, these efforts have resulted in increased catch rates of young-of-year Rio Grande silvery minnow initially in the Angostura Reach, but increases were seen in all reaches in 2005. In 2005, catch rate of Rio Grande silvery minnow at our 12 monitoring sites throughout our release range was 31.06 fish/100 m², compared with 2004 (0.99 fish/100 m²), and 2003 (0.37 fish/100 m²). Direct and indirect information indicates that hatchery raised individuals can be released back to the wild with adequate retention in or near original release sites, can experience survival of at least 2 years after release, and ultimately can contribute to future spawning efforts.

In 2005, we evaluated different release strategies such as time of year, time of day, specific release habitats, and various hatchery environments (natural outdoor ponds vs. indoor facilities). All this information will add to the knowledge needed for future conservation while providing active management strategies for the Middle Rio Grande and potential re-establishment sites, including the Big Bend region of Texas.

INTRODUCTION

Beginning in June 2002, the New Mexico Fishery Resources Office (NMFRO) began experimental augmentation and monitoring of juvenile and adult Rio Grande silvery minnow in the Middle Rio Grande, New Mexico (MRGNM). This progress report summarizes findings between June 2004 and December 2005, with a summary over the life of the project since 2002. Sampling efforts focused on the evaluation of experimental stocking success of Rio Grande silvery minnow reared in captive propagation facilities and released throughout the current range.

Emergency efforts in 1996, 1998, and 1999 located an estimated 11,000 adult and juvenile Rio Grande silvery minnow (*Hybognathus amarus*) in isolated pools downstream of San Acacia Dam. These fish were transported to upstream locations in Isleta and Angostura reaches and released. However, the small number of individuals salvaged in emergency efforts was relatively minor compared to the extent of habitat loss in the Rio Grande. Thus, relocation of adult Rio Grande silvery minnow may not contribute substantially to reestablishment and long-term population viability within permanently flowing reaches.

From May to June 2000, an estimated 204,000 larval and 414 adult Rio Grande silvery minnow were stocked by personnel from the Museum of Southwestern Biology near the New Mexico Highway 6 Bridge in Los Lunas and U.S. Highway 550 Bridge in Bernalillo. Larval fish were the result of captive spawning of wild adults from the San Acacia Reach. After spawning, surviving adults were returned to the river. However, the continued benefits of these stocking attempts are unknown and evaluations of translocations and other stocking attempts are needed to provide guidance for future management.

This current effort reflects management needs identified in the Middle Rio Grande Endangered Species Program (Program), Item A.2.2 for the Rio Grande silvery minnow as well as the Rio Grande Silvery Minnow Recovery Plan (RGSMRP; U.S. Fish and Wildlife Service 1999). These include development and refinement of augmentation protocols for use in the middle Rio Grande (Task 8b) and annual monitoring of augmented populations as identified as a needed task (Task 8d) by the Program and RGSMRP, respectively.

The ultimate goal of augmentation efforts is to re-establish self-sustaining populations of Rio Grande silvery minnow in the MRGNM and throughout its former range. The long-term benefits of this study are to: 1) augment populations within the MRGNM; 2) evaluate stocking efforts and provide a better understanding for propagation methods, stocking times and methods; and 3) evaluate monitoring efforts needed for Rio Grande silvery minnow populations.

The specific objectives of this experimental augmentation and monitoring plan are to:

- 1) Determine survival of stocked Rio Grande silvery minnow.
- 2) Determine temporal and spatial upstream and downstream movement of stocked Rio Grande silvery minnow within and among reaches.
- 3) Identify and characterize river reaches where retention and survival of stocked Rio Grande silvery minnow are maximized.
- 4) Evaluate how (and amount) augmentation of Rio Grande silvery minnow is affecting subsequent recruitment.
- 5) Provide guidance for augmentation activities to maximize survival of Rio Grande silvery minnow.

Success of this experimental augmentation will be determined by the ability to meet these objectives. These actions will allow better management decisions to be made in regard to the future stocking of Rio Grande silvery minnow throughout its current and historical range.

METHODS

Study Area

This investigation concentrates on areas relative to release locations in Angostura, Isleta, and San Acacia reaches (Figure 1, Table 1). Angostura Reach (61 km) extends from Angostura Diversion Dam (River Mile (RM) 209.7) to Isleta Diversion Dam (RM 169.3) and includes the cities of Bernalillo, Corrales, and Albuquerque. Isleta Reach (90 km) extends from Isleta Diversion Dam to San Acacia Diversion Dam. This reach includes the southern portion of Isleta Pueblo, cities of Bosque Farms, Valencia, Los Lunas, Belen, and smaller villages such as La Joya, and Bernardo, along with Sevilleta National Wildlife Refuge, all within Bernalillo, Valencia, and Socorro counties. The San Acacia Reach (roughly 76 km) extends from San Acacia Diversion Dam to the headwaters of Elephant Butte Reservoir (the exact location of the lower boundary varies depending upon reservoir water-surface elevation). This reach is relatively remote, including only the city of Socorro and villages of San Acacia, Lemitar, Escondida, and San Antonio along with Bosque del Apache National Wildlife Refuge, all within Socorro County.

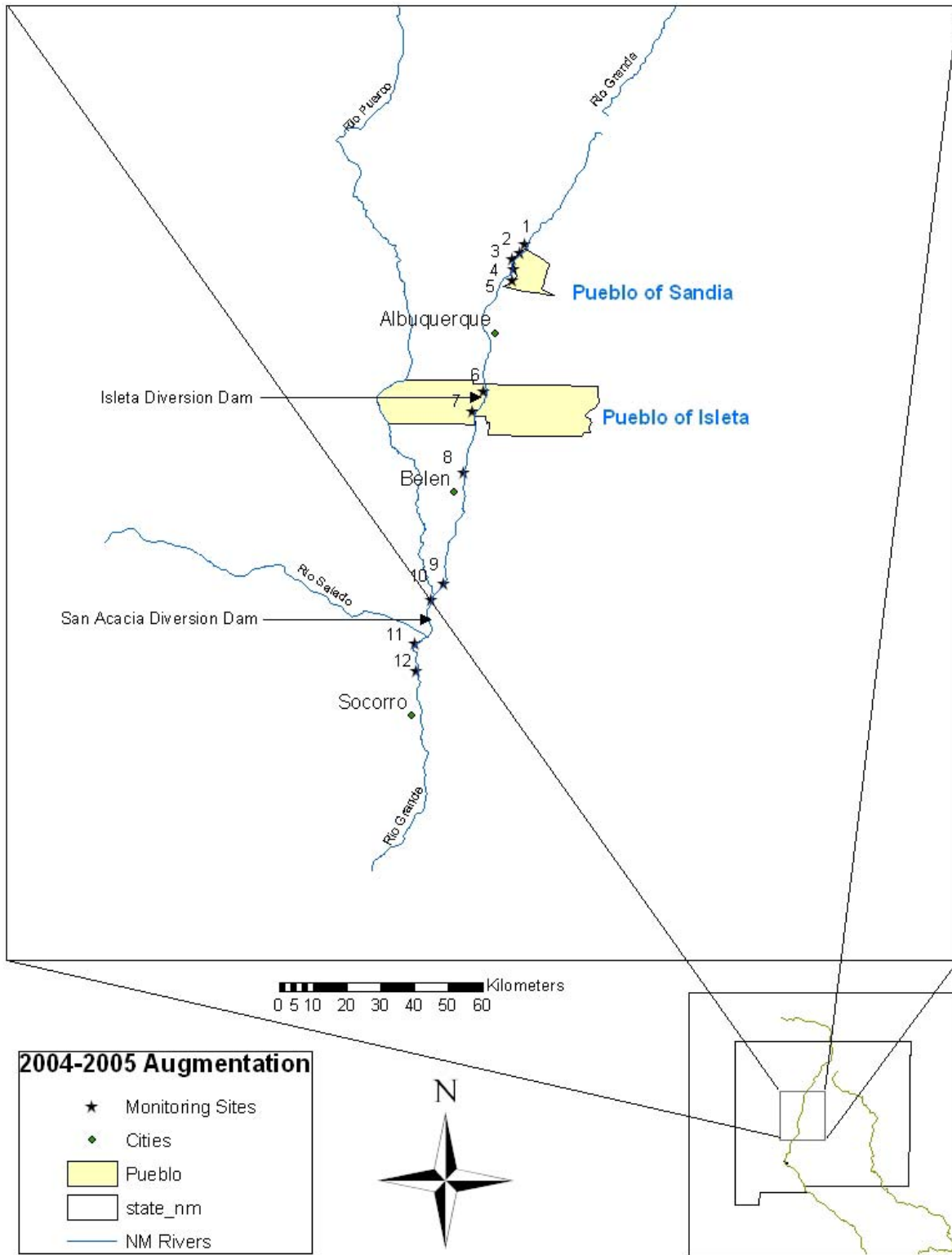


Figure 1. Map of study area.

Augmentation

All released fish were propagated and/or reared at Dexter National Fish Hatchery and Technology Center (Dexter), New Mexico State University – A Mountain Facility, Albuquerque Biological Park (Biopark), or the U.S. Fish and Wildlife Service – NMFRO, with the majority of these from Dexter or the Biopark. Released fish in fall 2004 and throughout 2005 originated from two sources: 1) wild-captured eggs reared in hatchery; or 2) eggs of wild stock. All stocked fish were marked using a Visible Implant Elastomer (VIE) tag. The VIE tag is a soft pliable tag that is injected into each fish. Fish released on different dates were marked with a different VIE color and/or body position (Table 2). In addition, fish were uniquely marked from those released in previous years. Few Rio Grande silvery minnow survive past age-2 in the wild (U.S. Fish and Wildlife Service, 1999), but use of different colors and body positions ensured differentiation between age classes during monitoring.

In fall 2004 and spring 2005, the majority of released fish originated from method #2, eggs of wild stock. Wild-captured eggs are the priority source for the propagation activities, but in 2004 eggs captured in the wild did not satisfy the required number suggested for release in fall 2004 and spring 2005. Therefore, both Dexter and the Biopark engaged in captive propagation of wild-caught adults. In 2005, egg capture from the wild again did not satisfy production goals so captive propagation was also used to meet production goals for fall 2005 and spring 2006 releases.

Several release sites were chosen within each reach based on access, habitat quality, and relative position to diversion structures. In addition to previous release sites with the Angostura Reach (U.S. 550 - Corrales, Central Bridge, Rio Bravo, and Bridge Street), additional release sites in Isleta (U.S. 60 Bridge - Rio Puerco confluence) and San Acacia reaches (between San Acacia diversion dam and Lemitar) were added in fall 2005 to expand augmentation efforts. These additional release sites were selected from sections of the Isleta and San Acacia reaches that had a high expectation of remaining wet throughout the irrigation season, despite intermittent conditions. Beginning in 2006, recapture information from these additional release sites in other reaches will allow us to examine potential differences in survival and site retention between reaches.

Instream Cage Experiment

To assess the effects of the riverine conditions on immediate (28-day) post-augmentation survival and tag retention, a series (n=2) of livecars (1.3m x 1.3m x 1.3m delta mesh seine material) were placed at a site within the Angostura Reach (River Mile 177.0) concurrent with the November 2005 augmentation. Each livecar was constructed of small mesh (3 mm) to facilitate water flow but prevent escape of fish. The containers were constructed with a 3mm mesh cover to prevent predation by birds and provide cover. The livecars were placed 20 m apart along the shoreline in 0.5-1.0 m deep, low-velocity (< 0.5m/sec) habitat, with tumbleweeds placed inside each cage to provide additional cover. This is the typical winter habitat association for Rio Grande silvery minnow (Watts, et. al 2002). The cages were placed at the site several days prior to study to condition the livecars by establishing algal growth throughout the cage. At each hatchery, fish were given one of four VIE tag colors to assess stocking protocols. There

were a total of 200 fish, 100 from each hatchery split into 4 groups of 25 placed in the livecars. Each hatchery group was identified by differing VIE location and these groups were split between the cages to alleviate any potential cage effect on results. Evaluations occurred at the 1, 7, 14, 21, and 28-day point during the study. At all but the 28-day period, only cursory observations were made to prevent added stress and disturbance to the livecars. On the 28th day, a full examination was made of both livecars. All remaining fish were removed from the livecars and examined for VIE mark color/location and survival. All live fish remaining were then immediately released.

In addition to the fish placed in the livecars, equal numbers of fish were retained in aquaria at NMFRO as control groups. These fish were subjected to the same pre-augmentation conditions as the instream cage individuals, including VIE marking, hauling, and handling. This control allowed examination of potential differences between effects of pre-augmentation activities and post-augmentation riverine conditions on survival and tag retention. A 28-day examination of the aquaria fish was made to evaluate survival and tag retention. These aquaria fish will be held for up to 12 months for extended tag retention examination.

Post-Augmentation Monitoring

Monitoring of stocked fish involved specific post-stocking surveys at 1-month intervals to determine survival, growth and movement. These efforts were also used to collect secondary information on fish community structure and habitat use. Fish were collected with a 3 m x 1.8 m, 3 mm mesh seine. Length of individual seine hauls were measured to the nearest 0.1 meter to estimate sampling effort, which was calculated by multiplying the distance of each seine haul by the width of the seine (3 m). All mesohabitat types were sampled within each reach with a minimum of 30 seine hauls at each sampling location, except at high flows when safe wading was difficult or during intermittent conditions when seinable habitat was limited. A qualitative description was made of mesohabitat type, depth, and velocity within each seine haul. Water quality parameters were measured (pH, conductivity, water temperature, air temperature, total dissolved solids, and salinity) at each monitoring site, before and after each visit. Standard and total lengths were measured from a minimum of 10 Rio Grande silvery minnow per site, including marked and unmarked individuals. All other fish captured were identified and enumerated for each individual seine haul in the field and subsequently released. Scientific and common names are arranged in phylogenetic order and follow Nelson et al. (2004), except where subspecies are noted. The use of subspecific epithets reflects the importance of geographical subdivisions in evolution.

Table 1. Augmentation monitoring site descriptions between June 2004 December 2005.

Site #	Site Name	Description
Angostura Reach		
1	U.S. Highway 550 Bridge	New Mexico, Sandoval County, Rio Grande, RM 203.5
2	Sandia Bosque Line 14	New Mexico, Sandoval County, Rio Grande, Pueblo of Sandia, 1.5 miles downstream of U.S. 550 Bridge crossing, RM 202.0.
3	Sandia PNM Gasline	New Mexico, Sandoval County, Rio Grande, Pueblo of Sandia, 3.6 miles downstream of U.S. 550 Bridge crossing, RM 199.9.
4	Lomitas Negras	New Mexico, Sandoval County, Rio Grande, below Rio Ranch #3 Wastewater Treatment Plant Outfall, RM 198.3
5	Dixon Road	New Mexico, Sandoval County, Rio Grande, at Sandia Wasteway Outfall, RM 196.0
6	Atrisco Outfall	New Mexico, Bernalillo County, Rio Grande, Pueblo of Isleta, 1.9 miles upstream of Isleta Diversion Dam, RM 171.2.
Isleta Reach		
7	Alejandro Gate	New Mexico, Valencia County, Rio Grande, Pueblo of Isleta, 2.7 miles downstream of Isleta Diversion Dam, RM 166.6.
8	Tomé	New Mexico, Valencia County, Rio Grande, 12.6 miles downstream of Isleta Diversion Dam, RM 156.7
9	U.S. Highway 60 Bridge	New Mexico, Socorro County, Rio Grande, 14.1 miles upstream of San Acacia Diversion Dam, RM 130.6
10	Rio Puerco Confluence	New Mexico, Socorro County, Rio Grande, 10.4 miles upstream of San Acacia Diversion Dam, RM 126.5
San Acacia Reach		
11	San Acacia Diversion Dam	New Mexico, Socorro County, Rio Grande, 500 ft. downstream of San Acacia Diversion Dam, RM 116.1
12	Lemitar	New Mexico, Socorro County, Rio Grande, 8 miles downstream of San Acacia Diversion Dam, RM 108.0

Protocol Design

A study design was implemented beginning in fall 2004 to compare different techniques associated with releasing Rio Grande silvery minnow and to perfect stocking protocol. The goal was to compare four factors including release time of day (day or night), release method (single or multiple location), season (fall or spring), and hatchery source (Biopark or Dexter). The season of release can also be defined as the age of fish when released (6 months or 1 year) as all fish originate from spawning events in or around May of each year. To compare recapture rates of different release techniques, a normalized density (D_{normal}) was computed for each sample as,

$$D_{\text{normal}} = (R / 100 \text{ m}^2) * (S_{\text{initial}} / S_{\text{max}}),$$

where R = number of recaptures in the sample, S_{initial} = number of fish initially stocked for the unique mark in question, and S_{max} = maximum number of fish stocked during study. This normalized density allowed for accurate comparisons between different stocking densities. PROC MIXED (SAS 1996), a mixed model procedure, was used to analyze these data. Multilevel or mixed effects models are commonly applied to hierarchical data such as these (Goldstein 2003). Release time of day (day or night), release method (single or multiple location), season (fall or spring), and hatchery source (Biopark or Dexter) were each treated as a random block effect in a 4-factor complete randomized block design. The normalized density data were analyzed as repeated measures with multiple comparisons using least square means to compare within group effects. The significance level for protocol design was set at $\alpha = 0.10$. This significance level is preferred for field studies of this nature where high variability in catch rates would cause a Type II error, which is to accept the null hypothesis when a real difference occurs.

Length-Frequency

Standard lengths of captured Rio Grande silvery minnow were compared by sampling trip to evaluate the potential differences in growth rates. The Petersen method of length-frequency analysis was used to estimate age groups (Isaac 1990, Devries and Frie 1996). In this method, the frequency of individuals was plotted as a function of 2 mm standard length increments for each monthly monitoring sample. Age was then assigned to each individually measured fish. Similarly, the known age of recaptured marked and measured Rio Grande silvery minnow was assigned to each individual. Linear regression was used to compare the potential differences between and among marked and unmarked fish by plotting standard length against estimated (or known) ages. The regression coefficient β , or slope is also used as an estimate of instantaneous growth, or in this case monthly growth rate since each sample is spaced approximately one month apart. The Student's t was used to test the hypothesis about equality of two population regression coefficients, or in this case, the equality of growth rates between and among marked and unmarked Rio Grande silvery minnow. The significance level for length-frequency regression analyses was set at $\alpha = 0.05$. This significance level is preferred for analyses of this nature when larger sample sizes are the type of analysis are adequate to prevent a Type I error, which is to reject the null hypothesis when there is no real difference.

Survival

Estimates of initial (28-d) survival were obtained from the in-stream cage study conducted in November 2005. Groups of tagged fish from Dexter and Biopark were split equally into cages with similar groups held as control in aquaria at NMFRO. These estimates were then combined with recapture rates by month to construct a survival table and compare relative survival of released fish. Recapture rates take into account tag retention and apparent survival (survival and emigration). Emigration is not separated from survival, but is estimated to be minimal (2.5%). Beginning and ending numbers of VIE marked Rio Grande silvery minnow that are estimated to be alive at that time period within the sites collected.

Field trials were used to assess potential stress effects of augmentation activities relative to survival. A series (n=4) of livecars (4'x4'x4') were placed into an area of the Rio Grande receiving perennial water and representing natural conditions as near as possible. These structures were placed at the site two weeks before beginning the tests to condition the chambers by establishing algal growth (food supply) throughout the cage. The livecars were constructed with small mesh (1/8") to facilitate water flow but prevent escape of fish. The containers were covered to prevent depredation but provide access to fish for sample collections and feeding. A subsample (25) of fish to be released from each group or VIE color were collected and placed in each cage or tank. Final evaluation occurred at the end of the study (28-d) to characterize the survival response and estimates for each lot of fish.

Movement

Recapture data were used to conduct an examination of the overall distance traveled. Expected and observed recapture probabilities were analyzed with chi-square (χ^2) tests. Expected values assumed no net movement and were assigned to each monitoring site based on the relative frequencies at date of release. In addition, recapture information to date (through December 2005) from other research was summarized (Appendix A).

Fish Community

A summary table of the entire fish collections for the current study period (June 2004 to December 2005) was constructed with observations made for each species including the status of the species (native or introduced), total number of individuals, relative percentage of each species, percent occurrence in individual seine hauls, and density (fish / 100 m²). Observations were also made on the total number of species, total effort, and uncommon species.

Habitat Characteristics

Mesohabitats were classified using unique codes to identify their characteristics (Table 2.) Depth, velocity, and substrate descriptions were also noted for each seine haul to further characterize habitat associations (Table 3.) These classifications allowed for an examination of habitat availability and habitat associations by Rio Grande silvery minnow.

Table 2. Mesohabitat and feature definitions used for seine haul descriptions

Mesohabitats

Run – Fluvial habitat with direction of flow generally parallel with the adjacent shore. Dominant mesohabitat with varying depths and velocities.

Riffle – Fluvial habitat with flow direction generally parallel with the adjacent shore, shallow and with higher gradient than adjacent habitats.

Plunge – A turbulent pool created by water spilling over a feature such as riffle, dune, or debris pile.

Bank – Flowing habitat along a submerged feature similar to shoreline that is parallel to flow.

Confluence – Turbulent pool created at the junction of two flowing channels.

Pool – Fluvial habitat with direction generally parallel to adjacent shore, deeper and slower than adjacent habitats.

Backwater – Non-fluvial habitat found at downstream end of abandoned channels.

Forewater – Non-fluvial habitat found at abandoned inlets of high flow channels.

Embayment – Transitional habitat between fluvial and non-fluvial habitats with minimal velocities, perpendicular to adjacent river bank.

Isolated Pool – An abandoned, off-channel, remnant pool sometimes fed by subsurface seepage

Features

Shoreline – Interface between water and dry land without undercut, angle more than 90 degrees.

Debris Pile – Instream obstruction to flow, commonly formed by tumbleweeds, downed trees, or rootwads.

Eddy – turbulent zone within a mesohabitat, with upstream flow direction

Undercut – Shoreline with angle less than 90 degrees, creating overhead cover.

Table 3. Depth, velocity, and substrate categories used in habitat descriptions.

Depth (meters)

Low – less than 0.3 m, ankle deep
Medium – 0.3 to 0.6 m, knee deep
Deep – greater than 0.6 m

Velocity (meters per second)

0 – 0.0 m/sec, slackwater (no visible current)
Slow – 0.3 m/sec, low velocity
Medium – 0.3 to 0.6 m/sec, average velocity
Deep – greater than 0.6 m/sec, surface tension usually broken and audible

Substrate (dominant particle size in millimeters)

Silt – less than 0.02 mm
Sand – 0.02 to 2 mm
Gravel – 2 to 64 mm
Cobble – 64 to 256 mm
Boulder – greater than 256 mm
Vegetation – substrate covered in vegetation

RESULTS

Augmentation

Between June 2004 to December 2005, a total of 320,762 Rio Grande silvery minnow were marked and released into the MRGNM. Releases occurred in fall 2004, with additional releases in spring and fall 2005 (Table 2). Releases in fall 2004 and spring 2005 mirrored previous releases in the Angostura Reach, with fall 2005 releases in all three reaches (Angostura, Isleta, and San Acacia) at selected sites which had a relatively low probability of intermittency and thus would provide the highest potential of contributing to the population.

Table 4. Rio Grande silvery minnow release since 2002 administered by NMFRO.

VIE color	Body Location	Released	Release Site (RM)	Release Date
orange	right, predorsal	2,082	Alameda	June 2002
orange	left, predorsal	41,500	Corrales	December 2002
green	left, predorsal	61,118	Bernalillo	January 2003
red	left, predorsal	22,266	Rio Rancho	April 2003
yellow	right, predorsal	48,513	Corrales	January 2004
red	right, predorsal	56,644	Bernalillo	April 2004
green	right, predorsal	8,500	Bernalillo	April 2004
orange	right, predorsal	1,500	Bernalillo	April 2004
yellow	right, anal	9,622	Bernalillo	November 2004
red	right, anal	8,639	Corrales	November 2004
orange	right, anal	7,845	Bernalillo	November 2004
green	right, anal	6,956	Corrales	November 2004
yellow	left, anal	6,245	Bernalillo	November 2004
red	left, anal	7,006	Corrales	November 2004
orange	left, anal	6,065	Bernalillo	November 2004
green	left, anal	6,879	Corrales	November 2004
yellow	left, predorsal	6,237	Central Bridge	Oct-Nov 2004
yellow	left, predorsal	475	Rio Bravo	January 2005
orange	right, predorsal	1,540	Rio Bravo	January 2005
white	right, anal	5,000	Corrales	April 2005
purple	right, anal	5,000	Bernalillo	April 2005
pink	right, anal	5,654	Corrales	April 2005
blue	right, anal	5,011	Bernalillo	April 2005
white	left, anal	11,080	Corrales	April 2005
purple	left, anal	8,800	Bernalillo	April 2005
pink	left, anal	10,026	Corrales	April 2005
blue	left, anal	10,242	Bernalillo	April 2005
green	left, dorsal	10,357	Rio Bravo	April 2005
orange	left, predorsal	227	Bridge Street	July 2005
orange	right, predorsal	21	Bridge Street	July 2005
orange	right, predorsal	20,000	Bernalillo	September 2005
white	right, predorsal	14,853	Bernalillo	November 2005
purple	right, predorsal	13,921	Bridge Street	November 2005
pink	right, predorsal	15,715	Bernalillo	November 2005
blue	right, predorsal	16,282	Bridge Street	November 2005
white	left, predorsal	21,000	Lemitar	November 2005
purple	left, predorsal	28,986	Bernardo	November 2005
pink	left, predorsal	25,642	Lemitar	November 2005
blue	left, predorsal	25,436	Bernardo	November 2005
TOTAL		562,885		

Instream Cage Study

The monitoring events at 1, 7, 14, and 21 days post-release resulted in only one dead individual observed. Therefore, results are reported from the final examination at the termination of the study at 28 days (4 weeks). Habitat conditions at the site were consistent throughout the study period. Discharge estimates from the nearest U.S. Geological Survey gage located 6.4 miles upstream (Rio Grande at Albuquerque, station 08330000), ranged between 527 and 997 cfs (Figure 2). Because of the placement of the study site, at no time during the study were the livecars in danger of being flooded or drying at the reported discharges.

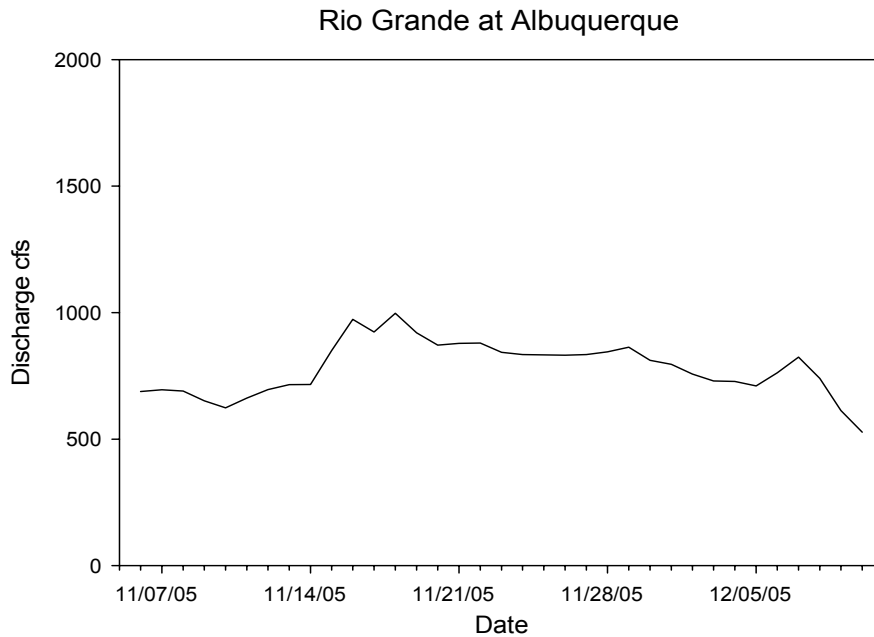


Figure 2. Discharge estimates from the Rio Grande at Albuquerque gage during the instream cage experiment.

For the instream cage fish, 4-week overall survival was 71.5%. The Biopark individuals had significantly higher ($P = 0.01$) mean survival (89.0%) than that of the Dexter individuals (59.0%). Of remaining live fish from instream cages, overall tag retention was 99.3%.

For the aquaria samples, 4-week overall survival was 98.0%. The Dexter individuals had significantly higher ($P = 0.01$) mean survival (100.0%) than that of the Biopark individuals (89.0%). Of remaining live fish from aquaria, overall tag retention was 94.5%.

Based on the study design and the fact that groups were split in the cages, it was impossible to compare differences in instream cage tag retention between facilities because individuals that had lost their tags could not be assigned to any particular group. When combined, instream cage and aquaria overall mean tag retention was 97.3%, with no significant difference between them.

Post-Augmentation Monitoring

There were a total of 31,457 Rio Grande silvery minnow collected between June 2004 and December 2005 (Table 3, Figure 4), including 312 that were positively identified as previously released individuals (Table 4). Rio Grande silvery minnow represented 45.3% of all fish captured, were collected in 31.4% of all seine hauls with an overall catch rate of 23.52 individuals/100 m² (Table 3). Of the 312 marked individuals recaptured, the majority (n=118) were recaptures from the fall 2004 release (Table 4). Over the sampling period, catch rates varied for Rio Grande silvery minnow, with the largest collection of 12,696 individuals occurring in July of 2005. Marked individuals were captured in every month. Overall, 15.0% of age 1 or older Rio Grande silvery minnow were recaptured individuals. Catch rates varied between sites, with the highest number of marked Rio Grande silvery minnow recaptures (N = 85) occurring at RM 202.0 (Sandia Line 14) in the Angostura Reach. The largest collections (N = 376) of adult unmarked Rio Grande silvery minnow were captured at RM 196.0 (Dixon Road), with the largest young of year collections (N = 6,778) at RM 166.6 in the Isleta Reach at Alejandro Gate.

Table 5. Status, numbers, percent of total, percent occurrence, and density for all species collected at all sites combined between June 2004 and December 2005. For status, N=native and I=introduced. Subspecific names include citations below.

Species	Status	N	% of Total	Percent Occurrence	Density (fish/100m ²)
gizzard shad <i>Dorosoma cepedianum</i>	I	3	<0.1	<0.1	<0.01
red shiner <i>Cyprinella lutrensis lutrensis</i>	N	10,785	15.5	28.6	8.06
common carp <i>Cyprinus carpio</i>	I	1,287	1.9	5.3	0.96
Rio Grande silvery minnow <i>Hybognathus amarus</i>	N	31,457	45.3	31.4	23.52
fathead minnow <i>Pimephales promelas</i>	N	2,555	3.7	10.5	1.91
flathead chub <i>Platygobio gracilis gulonella</i> ^a	N	2,590	3.7	15.1	1.94
longnose dace <i>Rhinichthys cataractae cataractae</i> ^b	N	1,566	2.3	8.1	1.17
river carpsucker <i>Carpionodes carpio elongatus</i> ^c	N	1,336	1.9	3.4	1.00
white sucker <i>Catostomus commersoni</i>	I	6,498	9.4	9.0	4.86
black bullhead <i>Ameiurus melas</i>	I	2	<0.1	<0.1	<0.01
yellow bullhead <i>Ameiurus natalis</i>	I	88	0.1	0.7	0.07
channel catfish <i>Ictalurus punctatus</i>	I	1,590	2.3	8.7	1.19
western mosquitofish <i>Gambusia affinis</i>	I	9,250	13.3	11.5	6.92
white bass <i>Morone chrysops</i>	I	151	0.2	1.3	0.11
green sunfish <i>Lepomis cyanellus</i>	I	8	<0.1	0.1	0.01
bluegill <i>Lepomis macrochirus speciosus</i> ^d	N	78	0.1	0.5	0.06
spotted bass <i>Micropterus punctulatus</i>	I	4	<0.1	<0.1	<0.01
largemouth bass <i>Micropterus salmoides</i>	I	111	0.2	0.7	0.08
white crappie <i>Pomoxis annularis</i>	I	24	<0.1	0.2	0.02
yellow perch <i>Perca flavescens</i>	I	24	<0.1	0.2	0.02
walleye <i>Sander vitreus</i>	I	11	<0.1	0.1	0.01
TOTAL		69,418	100.0	62.3	51.91

^a Olund and Cross (1961)

^b Jenkins and Burkhead (1993)

^c Trautman (1981)

^d Hubbs and Lagler (1958), Avise and Smith (1974)

Table 6. Number of marked Rio Grande silvery minnow recaptured by site between June 2004 and December 2005, identified by release season-year (total released).

Site	River Mile	RGSM recaptures by release period				
		< 2004 (126,966)	Spring 04 (115,157)	Fall 04 (65,494)	Spring 05 (73,185)	Fall 05 (182,032)
U.S. 550 Bridge	203.8	0	7	14	14	0
Sandia Line 14	202.0	1	9	35	15	13
Sandia PNM Gasline	199.9	0	2	26	8	10
Lomitas Negras	198.3	2	8	7	3	2
Dixon Road	195.5	0	0	13	1	0
Atrisco Outfall	171.2	1	0	2	1	0
Alejandro Gate	166.6	0	0	0	1	2
Tome	156.7	0	0	0	0	0
U.S. 60 Bridge	130.6	0	0	0	0	22
Rio Puerco Confl.	126.5	0	0	0	0	26
Below SADD	116.1	0	0	0	0	1
Lemitar	108.0	0	0	0	0	18
Total	-	4	43	118	50	97
Percent Recapture		0.003%*	0.037%	0.180%	0.068%	0.053%

*this percentage only represents recaptures during the current sampling period

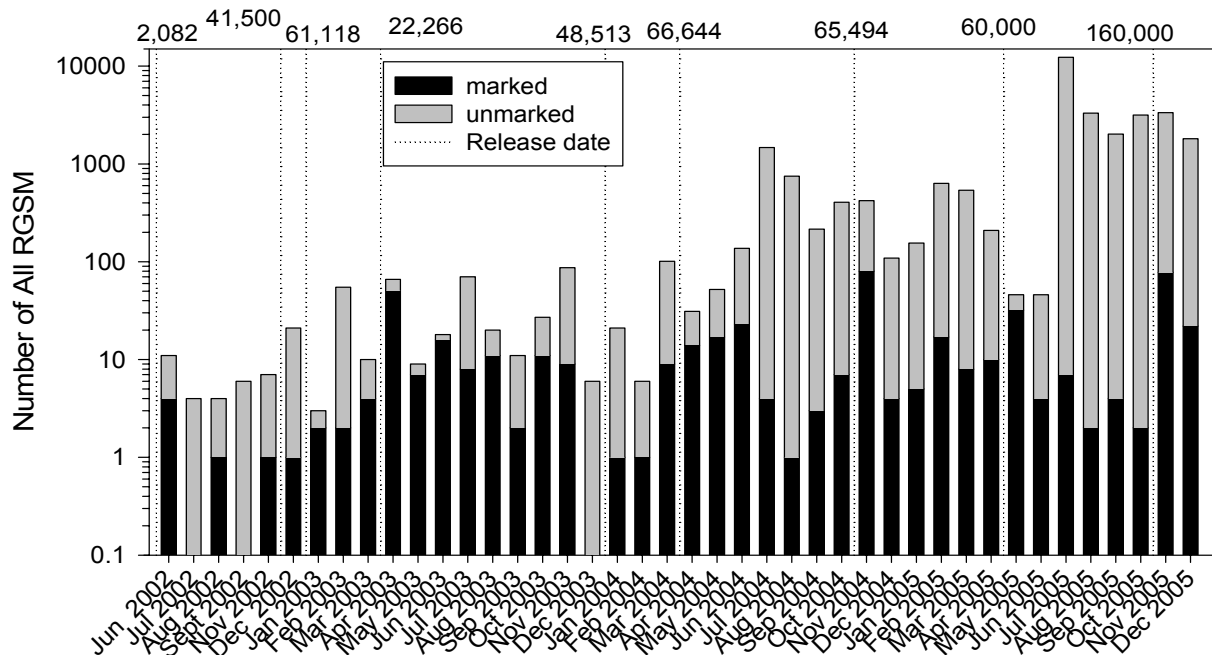


Figure 3. Number of unmarked and marked Rio Grande silvery minnow captured by date through 2005. Dashed lines represent release dates and number of individuals released.

Protocol Design

The releases for fall 2004 and spring 2005 were designed to allow for analysis of protocol design (Table 5). Recaptures during monthly monitoring were used to compare groups. Every effort was made to split groups of released fish for each season/hatchery into relatively equal numbers, with the normalized density allowing for accurate analysis regardless of sample size.

Table 7. Stocking information for protocol design analysis.

VIE color	Tag Location	Released	Time of Day	Method	Source	Season
yellow	right, anal	9,622	day	single	Dexter	Fall
red	right, anal	8,639	day	multiple	Dexter	Fall
orange	right, anal	7,845	night	single	Dexter	Fall
green	right, anal	6,956	night	multiple	Dexter	Fall
yellow	left, anal	6,245	day	single	Biopark	Fall
red	left, anal	7,006	day	multiple	Biopark	Fall
orange	left, anal	6,065	night	single	Biopark	Fall
green	left, anal	6,879	night	multiple	Biopark	Fall
white	right, anal	5,000	day	single	Biopark	Spring
purple	right, anal	5,000	day	multiple	Biopark	Spring
pink	right, anal	5,654	night	single	Biopark	Spring
blue	right, anal	5,011	night	multiple	Biopark	Spring
white	left, anal	11,080	day	single	Dexter	Spring
purple	left, anal	8,800	day	multiple	Dexter	Spring
pink	left, anal	10,026	night	single	Dexter	Spring
blue	left, anal	10,242	night	multiple	Dexter	Spring

When comparing overall differences in techniques, the 4-way comparison (Time of day*Method*Source*Season) was non-significant. Of the four possible 3-way comparisons, one was significant, Time of day*Method*Season (P = 0.07, DF = 180). Only four of the 28 post-hoc comparisons were significant (Table 6.), and three of these had one release combination in common (Night*Single*Fall). These results are difficult to interpret and likely have little biological significance, but all four significant results suggest that fall releases were more effective than spring releases.

Table 8. Differences (t) of Least Square Means (Recaptures / 100 m²) for Time*Release*Season 3-way comparison.

Time	Release	Season	>	Time	Release	Season	t	Pr > t
Day	Multiple	Fall	>	Day	Multiple	Spring	1.67	0.0980
Night	Single	Fall	>	Day	Multiple	Spring	2.26	0.0265
Night	Single	Fall	>	Night	Single	Spring	1.84	0.0688
Night	Single	Fall	>	Night	Multiple	Spring	2.17	0.0330

None of the six possible 2-way comparisons were significant. That leads us to the tests of main effects, which is the goal of the protocol design experiment and easiest to interpret. None of the 4 main effects (time of day, release method, hatchery source, or season) revealed any significant differences.

For release method, single-point releases (0.06020 recaptures / 100 m²) resulted in higher recapture rates than multiple-point releases (0.03547 recaptures / 100 m²), but non-significant (P = 0.14). For hatchery source, Biopark releases (0.06071 recaptures / 100 m²) resulted in higher recapture rates than Dexter releases (0.03496 recaptures / 100 m²), but non-significant (P = 0.13).

For season, fall (November 2004) releases (0.05978 recaptures / 100 m²) resulted in higher recapture rates than spring (April 2005) releases (0.03496 recaptures / 100 m²), but again non-significant (P = 0.20). There are many factors that could explain these slight differences, but an obvious reason would be that there were more opportunities (13 and 8 recapture events, respectively) to recapture marked fish, but the majority of recaptures occurred within the first 6 months of a release. In addition other factors such as habitat conditions and density of wild populations prior to release. Fish movement is decreased during winter due to low water temperatures and released fish are more likely to remain near release sites during this period. Also, sampling effectiveness is increased during winter months as fish are concentrated in low-velocity structure habitat and are easily captured. In addition, there are specific sampling locations where there is a high probability of capturing Rio Grande silvery minnow every time these locations are sampled at low water temperatures.

For time of day, there were no significant differences between day and night releases. Based on these initial results, the suggested time of day to release fish should be based on other factors such as biologist preference and safety. If only for safety concerns, releases should only occur during daylight hours.

Length-frequency

There were 2,450 unmarked and 188 marked Rio Grande silvery minnow in the length-frequency dataset captured between December 2004 and December 2005. For unmarked Rio Grande silvery minnow, the regression (F=2507.594, 2489 df) was significant (P < 0.05), with an R square value of 0.502. For marked Rio Grande silvery minnow, the regression (F=105.321, 187 df) was significant (P < 0.05), with an R square value of 0.362. Unmarked Rio Grande silvery minnow had a significantly lower (P < 0.05) estimated growth rate (1.991 mm/month) than marked Rio Grande silvery minnow (2.241 mm/month) (Figure 4).

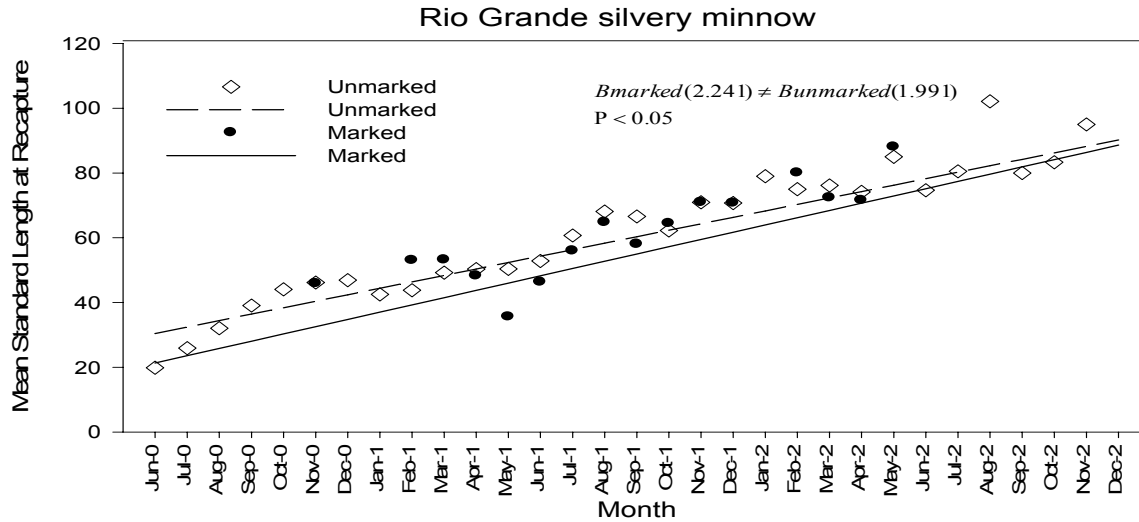


Figure 4. Comparison of unmarked and marked Rio Grande silvery minnow standard lengths at recapture.

Within the marked Rio Grande silvery minnow group, further examination revealed that there were significant differences between seasons of release when comparing estimated growth rate. Of the 188 marked Rio Grande silvery minnow in the dataset, 177 could be assigned to either a fall (November-December) or spring (March-April) release schedule, as some smaller releases have occurred outside this time frame represented by surplus adults that had already been used in captive propagation activities. Of the 177 used in this analysis, 81 were recaptured from fall releases and 96 were recaptured from spring releases. For fall recaptures, the regression ($F = 100.583$, 80 df) was significant ($P < 0.05$), with an R square value of 0.560. For spring recaptures, the regression ($F = 66.949$, 96 df) was significant ($P < 0.05$), with an R square value of 0.416. Fall recaptures had a significantly lower ($P < 0.05$) estimated growth rate (2.050 mm/month) than spring recaptures (3.724 mm/month) (Figure 5). This is expected and can be explained by the water temperatures and growing conditions during the first 6 months after each release when most of the recaptures occurred.

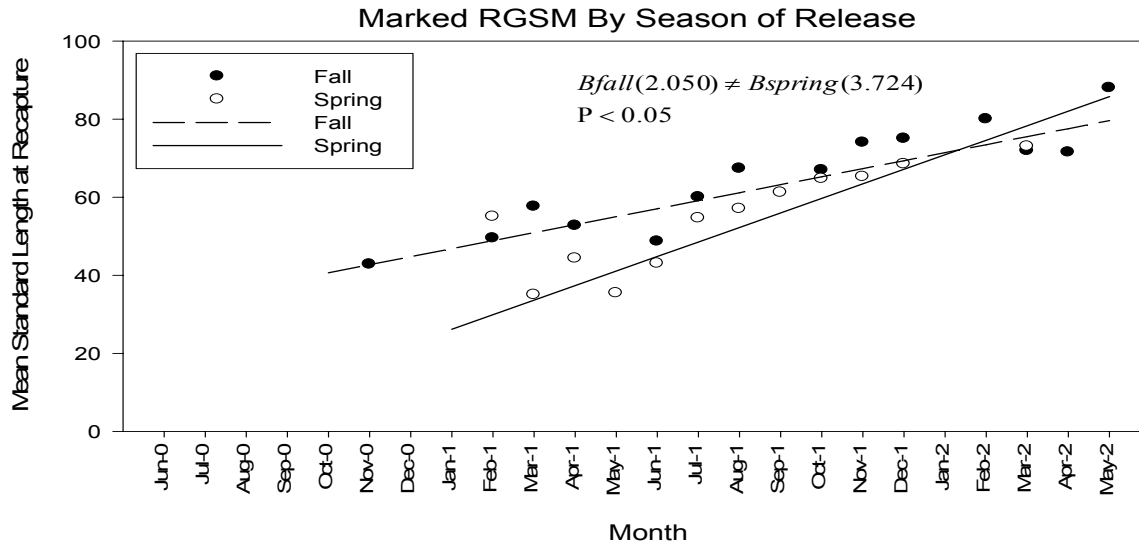


Figure 5. Comparison of marked Rio Grande silvery minnow standard lengths at recapture by season of release (fall vs. spring).

Upon examination of the length-frequency data by collection, there appears to be a minimum of two age classes of Rio Grande silvery minnow at any one time, generally represented by ages 1 and 2 individuals between January and June of any given year and ages 0 and 1 between June and December with additional individuals up to age 3, based on assigned length groups (Figures 6-8). There is variation in growth rates among years, with decreasing average standard lengths between 2003 and 2005 which corresponds to increasing densities.

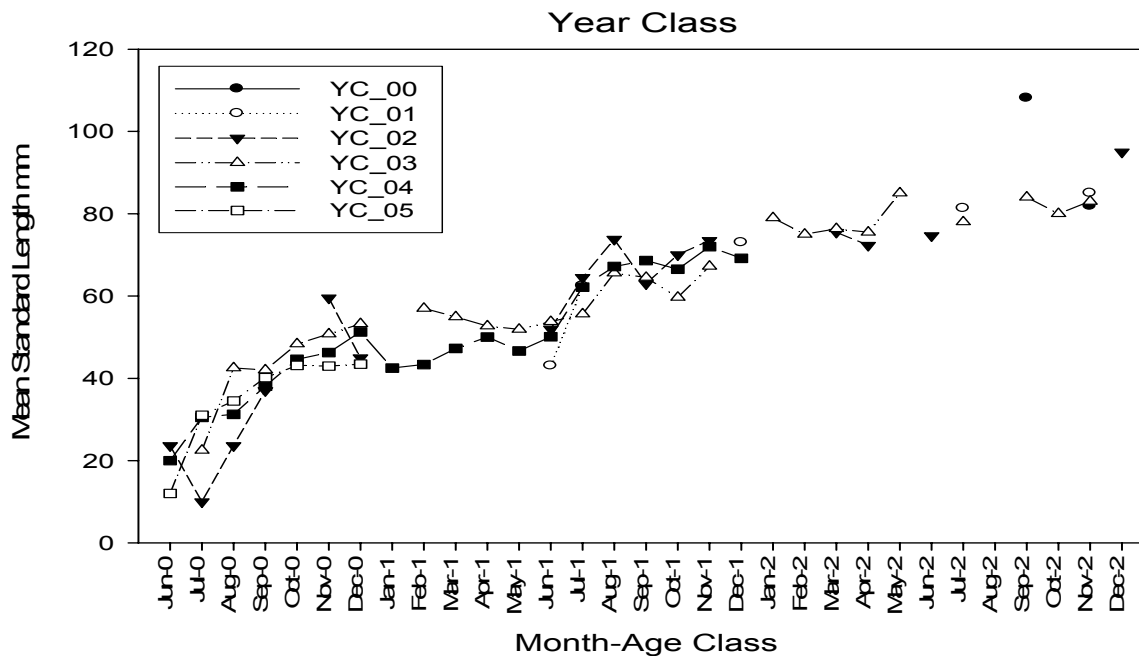


Figure 6. Year class growth as inferred from length-class data collected from unmarked Rio Grande silvery minnow.

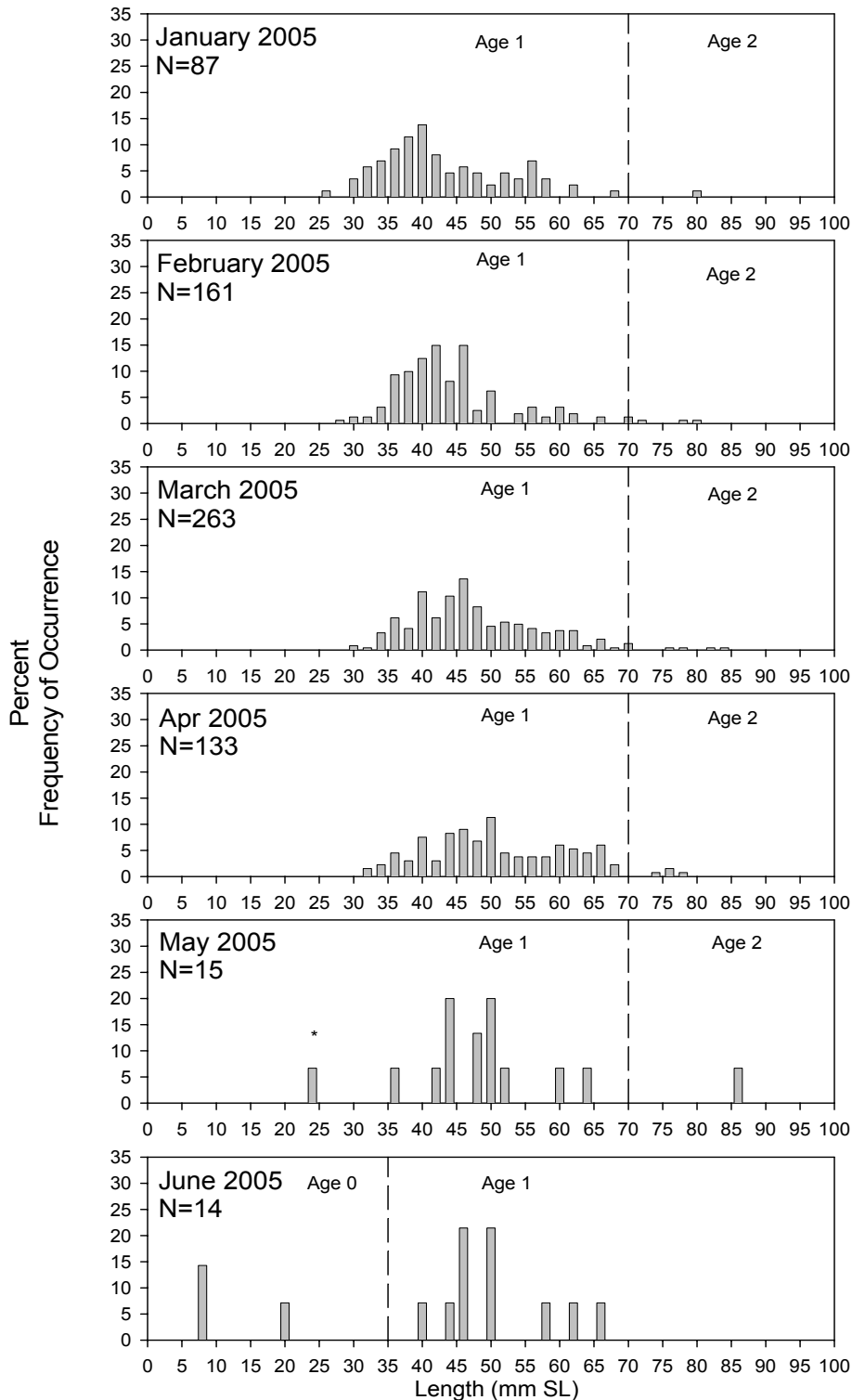


Figure 7. Length-frequency histograms of unmarked Rio Grande silvery minnow captured between January and June 2005. Dashed lines represent estimated breaks between year classes. * Single May 2005 individual (24 mm SL) likely represents VIE tagged individual that lost tag after release in April 2005

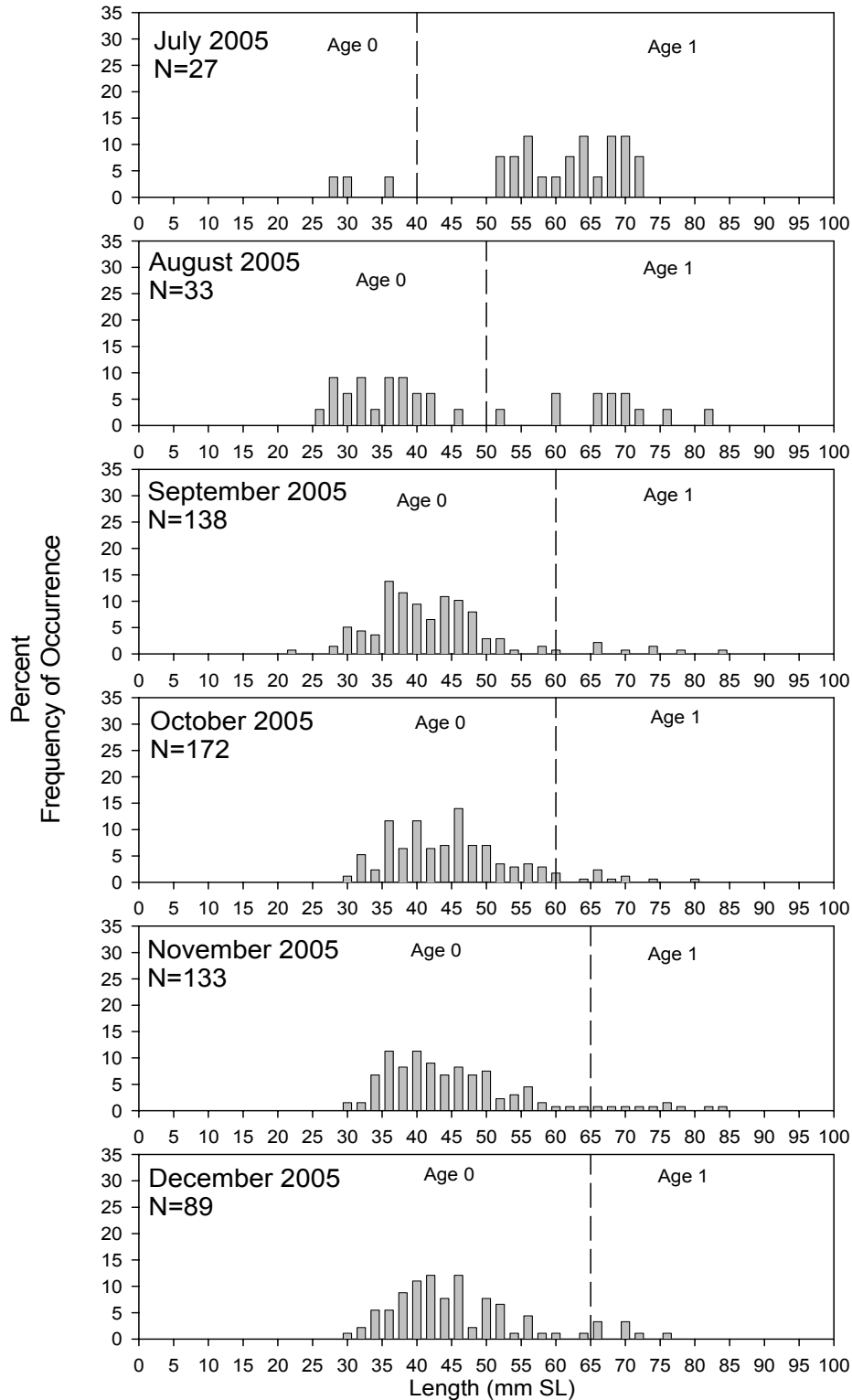


Figure 8. Length-frequency histograms of unmarked Rio Grande silvery minnow captured between July and December 2005. Dashed lines represent estimated breaks between year classes.

Survival

Survival estimates from the cage study were combined with recapture rates by month to construct a survival table and compare relative survival of released fish. Recapture rates take into account tag retention and apparent survival (survival and emigration). Emigration is not separated from survival, but is estimated to be minimal based on movement results (2.5%). Beginning and ending numbers are estimates of VIE marked Rio Grande silvery minnow that are estimated to be alive at that time period within the sites collected.

As reported earlier (Instream Cage Study) 28-d cage survival was estimated at 71.5%. Differences in monthly recapture rates were used to estimate change in densities, or monthly survival. The most recent release with adequate recapture information was the release in November 2004. To compare, monthly recapture estimates from all unmarked individuals was used to estimate unmarked monthly survival. Monthly survival estimates from VIE marked individuals released in November 2004 was 66.2% similar but slightly higher compared to unmarked individual monthly survival of 64.7%. Life tables (Tables 7-8) were constructed to model survival and estimate numbers of fish present at time of spawn (May).

Table 9. Life table of VIE marked Rio Grande silvery minnow released in November 04.

Age in months	Begin	Survival Rate (estimate = p)	End	Density / 100 m ²
6 November	17,523*	0.715 (cage study)	12,529	0.5036
7 December	12,529	0.662 (density)	8,292	0.3333
8 January	8,292	0.662 (density)	5,488	0.2206
9 February	5,488	0.662 (density)	3,632	0.1460
10 March	3,632	0.662 (density)	2,404	0.0966
11 April	2,404	0.662 (density)	1,591	0.0639
12 May (spawn)	1,591	0.662 (density)	1,053	0.0423

Cage (28-d) $p = 0.715$, density $p = 0.662$, ($r^2 = 0.43$), Log10 regression

* set same as November estimate from Table 8 (below) for comparison

Table 10. Life table of unmarked Rio Grande silvery minnow from all samples (02-05).

Age (months)	Begin	Survival Rate (estimate = p)	End	Density / 100 m ²
2 July	100,000	0.647 (density)	64,700	1.1397
3 August	64,700	0.647	41,861	0.2670
4 September	41,861	0.647	27,084	0.1203
5 October	27,084	0.647	17,523	0.1928
6 November	17,523*	0.647	11,338	0.3514
7 December	11,338	0.647	7,335	0.2167
8 January	7,335	0.647	4,746	0.0278
9 February	4,746	0.647	3,071	0.0800
10 March	3,071	0.647	1,987	0.0726
11 April	1,987	0.647	1,285	0.0155
12 May (spawn)	1,285	0.647	832	0.0085

Monthly mean $p = 0.647$ from density estimates, ($r^2 = 0.80$), Log10 regression

*Number used in Table 7 (above) for comparison

Movement

Examination of the recapture data from releases in November 2004 and April 2005 (most recent releases with adequate recapture information) indicated that fish movement was minimal after release. Of the 165 recaptures from the November 2004 and April 2005 releases, 97.5% (161) of the recaptures were within the release area (Table 9). Although minimal, it did appear that there was some downstream displacement immediately following release as previously suggested from hoop-net monitoring conducted in 2001 and 2002 (Remshardt and Davenport 2003). Monitoring at sites downstream of all release locations resulted in only four recaptures. These recaptures occurred at one site at the downstream end of the Angostura Reach and one site at the upper end of the Isleta Reach. Based on these recaptures, maximum distance traveled from release to recapture (RM 203.8 to 166.6) was 37.2 miles downstream. From this information, it appears released Rio Grande silvery minnow between the ages of 6 and 10 months may exhibit downstream dispersal following release, but the majority remains near release locations. This information is based on batch mark recaptures, therefore only overall movement can be reported. Individual movements would require individual marks such as PIT tags and a major increase in recapture effort. This information is limited to the age of the released fish in question as fish movements of fish younger than 6 months cannot be inferred from this information.

Chi-square (χ^2) test indicate significant differences (χ^2 229.7, 5df, $P < 0.05$) from expected. The null hypothesis is that released individuals will remain at their release location. Although there is significant movement between release sites, with apparent downstream movement from the RM 203.5 release site to RM 202.0 and 199.9, these are still relatively near original release sites, only 3.6 RM apart.

Table 11. χ^2 table for movement observations.

River Mile of Release	Number Released	Expected %	Observed % (N)	χ^2
203.5	60,078	55.08%	25.6% (54)	15.0
202.0	12,248	11.23%	34.4% (44)	35.0
199.9	12,248	11.23%	26.3% (39)	22.6
198.3	12,248	11.23%	5.6% (10)	3.9
196.0	12,248	11.23%	8.1% (14)	1.1
< 196.0	0	0.1%	2.4% (4)	152.1
Total	109,070	100.0%	100.0% (165)	229.7, 5df, P < 0.05

Fish Community

From January 2005 to December 2005, 6,314 seine hauls totaling 133,729.3 m² were conducted. In these samples, 69,418 individuals representing 21 species were collected (Table 4). Most fish names in this report are those in the American Fisheries Society's "A List of Common and Scientific Names of Fishes from the United States and Canada" (AFS 1991). Updates and use of subspecific names include additional citations. Native cyprinids such as red shiner (*Cyprinella*

lutrensis lutrensis) (Matthews 1987), Rio Grande silvery minnow, fathead minnow (*Pimephales promelas*), flathead chub (*Platygobio gracilis gulonella*) (Olund and Cross 1961), and longnose dace (*Rhinichthys cataractae cataractae*) (Jenkins and Burkhead 1993) represented 70.5% of all individuals collected. Rio Grande silvery minnow were the numerically dominant species of the fish community, accounting for 45.3% of all fish collected.

Although the total number of species (21) collected remained the same compared to 2003-04 (June 2003-May 2004), there was replacement of a single collection of goldfish (*Carassius auratus*) with two collections of gizzard shad (*Dorosoma cepedianum*). With the exception of Rio Grande silvery minnow, catch rates of all other native fish decreased in 2004-05 compared to previous years. Introduced species catch rates were also lower in 2004-05 (13.81/100 m²), compared to 2003-04 (16.60/ 100 m²). All of these changes in species densities were likely a result of the increased spring discharges which favored Rio Grande silvery minnow reproduction and recruitment to the exclusion of almost every other species.

Habitat Characteristics

A wide variety of habitats were sampled in order to reflect closely the range of habitat availability in the Rio Grande. There were no distinctions in habitat associations when comparing marked and unmarked Rio Grande silvery minnow. Summaries therefore reflect Rio Grande silvery minnow collections as a whole. Mesohabitats that were more associated with Rio Grande silvery minnow collections included low velocity habitats such as pools, backwaters, isolated pools, and embayments (Figure 9.). Rio Grande silvery minnow were more associated with mesohabitats that included features. Some features were especially important, such as shorelines, undercuts, shoreline/debris piles, eddy shorelines, and shorelines with vegetation (Figure 10.).

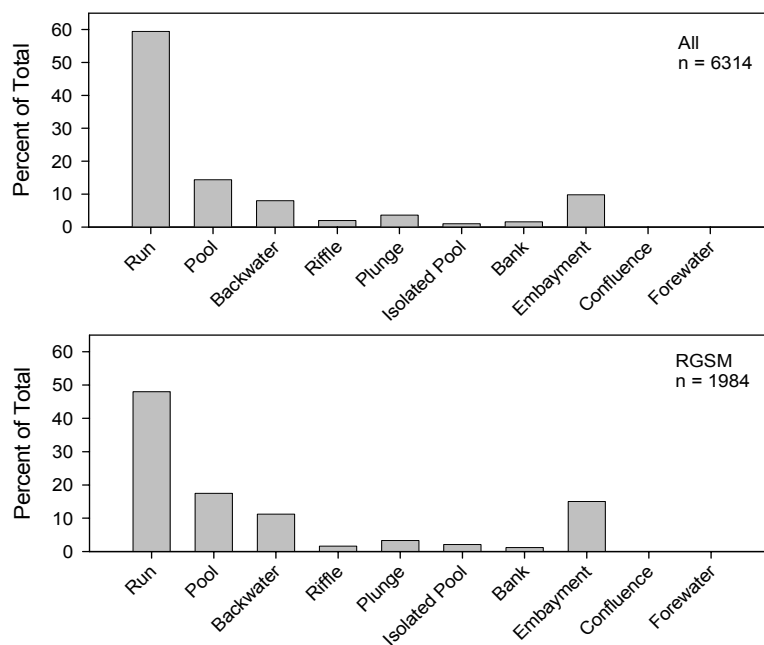


Figure 9. Mesohabitat types associated with all (top) and RGSM samples (bottom).

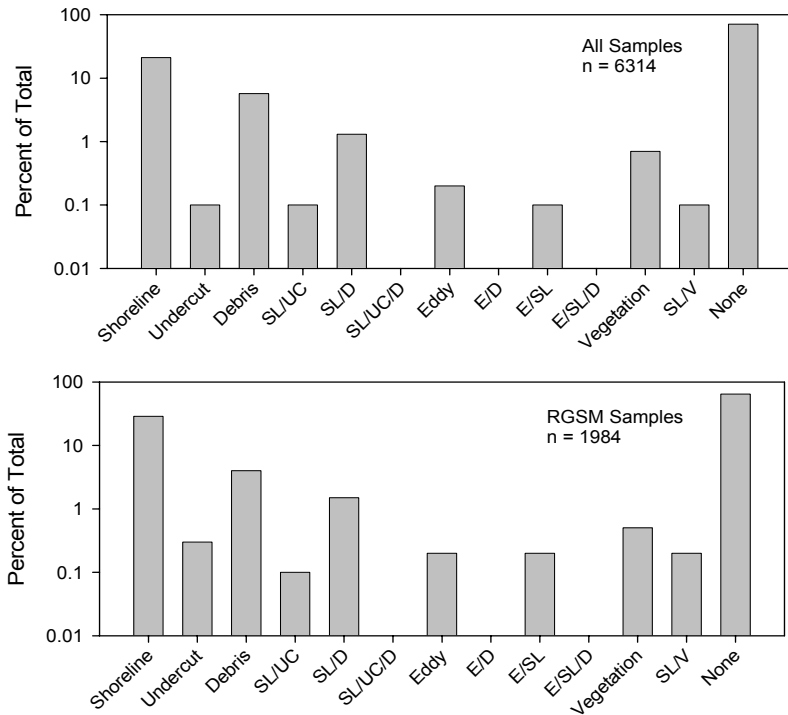


Figure 10. Features associated with all (top) and RGSM (bottom) samples. Abbreviations for combinations of features are shoreline (SL), Undercut (UC), Debris (D), Eddy (E), and Vegetation (V).

In addition to mesohabitat typing, we also categorized samples based on depth/velocity ranges. When comparing habitats based on depth and velocity categories, results again indicated that Rio Grande silvery minnow were generally more associated with habitats of low to medium depth and no or slow velocity (Table 12.). Alternatively, there were less associated with medium velocity / medium-deep depth habitats and all fast velocity habitats regardless of depth (Table 12.).

		Velocity				
			No Velocity	Slow	Medium	Fast
Depth	Low	RGSM Only All	9.1 + 5.5	20.6 + 14.4	8.4 = 8.7	0.8 - 1.3
	Medium	RGSM Only All	7.8 + 4.5	19.1 + 16.1	15.9 - 21.4	2.0 - 4.3
	Deep	RGSM Only All	2.4 = 2.3	6.5 = 6.8	6.1 - 9.3	1.4 - 5.3

Table 12. Percentages within each category of depth and velocity observations in seine hauls. Symbols represent significant differences ($p < 0.05$) between all collections and those with Rio Grande silvery minnow. Occurrence + “more than expected”, - “less than expected”, and = “expected”.

The overall distribution of substrate types reflected the dominance of sand in the Rio Grande (Figure 11.). Within habitats that contained Rio Grande silvery minnow, sand substrate dominated the collections but was associated than available. In comparison, Rio Grande silvery minnow were associated with silt substrate more than available.

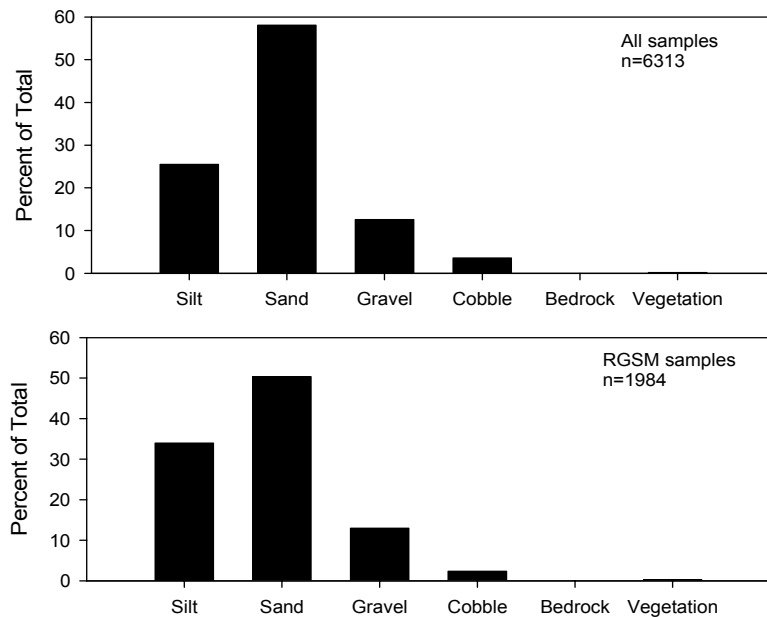


Figure 11. Percent of Total substrate observations in all samples and in samples with Rio Grande silvery minnow between June 2004 and December 2005.

DISCUSSION

Augmentation efforts in 2005 are now in the fourth year in the Middle Rio Grande, New Mexico. Since 2002, 562,885 Rio Grande silvery minnow have been released. The cumulative effects of these releases have resulted in increased numbers of Rio Grande silvery minnow being collected throughout the occupied range. Standard population monitoring being conducted throughout the current range of the species by other investigators has shown similar results (Dudley, et al. 2005). There was an increase in total numbers of Rio Grande silvery minnow collected throughout all age classes (0.99 fish/100 m² in 2002, 0.37 fish/100 m² in 2003) when comparing 2005 results to those between 2002 and 2004. The majority of this increase was due to increased capture of young-of-year individuals. Of age-1 or older fish, 34.6% were marked in 2003-2004 compared with 15.0% in 2004-2005.

Protocol design tests indicated some differences, with other non-significant results requiring increased sample sizes and future monitoring. None of the 4 main effects (time of day, release method, hatchery source, or season revealed any statistically significant differences, but there may be some biological differences in release method, hatchery source, and season. For release method, single-point releases resulted in nearly double the recapture rate of multiple-point releases. This may be a result of the increased handling that is required for multiple-point releases. For multiple-point releases, fish were either bagged or dipped into livewells and coolers onto rafts and were distributed into low-velocity habitats. The increased handling and time in transport (up to 4 hours on the raft) may have resulted in lower survival and subsequently lower recapture rates.

For hatchery source, Biopark releases may result in higher recapture rates than Dexter releases. There are several factors that could explain these differences including condition of fish, handling techniques, and length of transit. Results from the cage study in November 2005 confirmed that Biopark fish had higher survival. Fulton condition factor (Ktl) has been calculated from select lots of fish in past years with variable results. Between 2002 and 2005, several measurements of Dexter fish resulted in condition factors (Ktl) between 0.91-1.22 (Catherine Sykes, Manuel Ulibarri, pers. comm.). In 2004 similar measurement of Biopark fish resulted in condition factor (Ktl) of 0.72 (Joel Lusk, pers. comm.). These results indicate that recent stocking of fish from Dexter had higher condition factors than those from the Biopark. If condition was the primary factor in survival, then one would predict higher survival for Dexter fish but the opposite has been the case. It appears that condition factors are adequate and do not negatively affect survival of released Rio Grande silvery minnow. The condition of the released fish would obviously affect survival (and therefore higher recapture rates), but silvery minnow from both facilities are continually examined for condition and disease, and few irregularities have been noted. Improvements in diet and propagation techniques for Rio Grande silvery minnow since 2001 have led to successful growth and survival rates at both facilities. Future research is needed to develop standard condition factors (Ktl) for wild as well as hatchery fish to accurately assess the relative condition of stocked individuals and the effect that condition has on survival.

All other factors being equal, changes in water chemistry and the time in transit and were other potential differences. Source water for Dexter is pumped from a series of wells on the hatchery

while Biopark source water is domestic City of Albuquerque water that has been treated for fish culture. Both facilities have excellent water quality conditions but can be different than Rio Grande water in many ways. Nevertheless, care is taken during release to adequately temper the fish to river conditions and slowly adjust source water to river water at the release site. Changes in water chemistry and dissolved oxygen levels may be more important than temperature (Piper, et. al 1982) and are always performed even at similar water temperatures. Future investigation should clarify these differences if any do occur. A typical Dexter transport results in 6-8 hours on a distribution truck versus 1-3 hours for Biopark, with protocols followed in loading and hauling to reduce stress. Future investigations by other researchers are focusing on transport techniques (load density, salt, etc.) to try and improve hauling conditions.

For season, fall may be more beneficial than spring releases. One reason would be that there were more opportunities (13 and 8 recapture events, respectively) to recapture marked fish with the majority of recaptures occurring within the first 6 months of a release in addition to other factors such as habitat conditions and density of wild populations prior to release. Fish movement and ability to seek out preferred habitats is decreased during late spring due to lower water temperatures and released fish may experience lower survival during colder temperatures observed in late spring compared to the relatively warmer temperatures in late summer. Results from decreased swimming performance (Bestgen et al., 2003), decreased growth rates (Platania 2000), and shifts to lower velocity habitats (Watts, et al. 2002; Dudley and Platania 1997; Remshardt and Tashjian 2005) for Rio Grande silvery minnow in colder water temperatures (15° C and below, typically observed between November and May) verify the positive and often complete correlation between increased metabolic activity and increasing water temperatures (Platania 2000). Also, sampling effectiveness is increased during winter months as fish are concentrated in low-velocity structure habitat and are easily captured. There are several locations at sites where Rio Grande silvery minnow are routinely collected, including released individuals.

For time of day, there were no significant differences between day and night releases. Based on these initial results, the suggested time of day to release fish should be based on other factors such as biologist preference and safety. If only for safety concerns, releases should only occur during daylight hours.

From length-frequency data, it appears that there is variation between years in growth rates. Between 2003 and 2005, there was a slight decrease of 5-10 mm/month of average standard lengths of age 0 individuals. Two factors that could explain this shift include differences in spawning dates (earliest in 2003) and subsequent densities related to survival rates (highest in 2005).

Survival estimates from the instream cage experiment and recapture rates show similar survival rates between marked and unmarked individuals, if not slightly higher for VIE marked individuals. Overall, this indicates that released individuals are acclimating well to natural conditions. Combined with limited movement results, excellent results have been observed and can be expected in future augmentation efforts for Rio Grande silvery minnow under similar conditions.

Movement information from this study builds on similar results collected in 2002 by Platania, et al. (2003). Our recapture rates at or downstream of release sites were higher (95% compared to 77%) but still indicated that the majority of released fish exhibited some downstream dispersal. Recaptures from this study indicated maximum distance traveled of 37.2 miles downstream while Platania, et al. (2003) recorded maximum downstream dispersal of 15.6 miles. Also similarly, the recapture rate of marked fish was negatively correlated with the distance from the respective release site (Platania, et al. 2003). That is, as you move downstream of the release site, you can expect to recapture fewer marked individuals.

Evidence indicates that released fish are contributing to increased genetic diversity, especially in the Angostura Reach (Turner and Osborne 2006). Unknown contributions from second and third generation released individuals downstream have undoubtedly been negatively affected by intermittency in 2002, 2003, 2004, and 2005.

As previously mentioned, we began releasing Rio Grande silvery minnow in the lower reaches (Isleta and San Acacia) in fall of 2005. We have begun collecting recapture information from these other releases and will evaluate these additional release sites for potential differences in survival and site retention between reaches in 2006.

Status and distribution of Rio Grande silvery minnow in Cochiti Reach must be further documented to accurately assess status of the species. The MRGNM is separated into four reaches separated by upstream structures: Cochiti Dam, Angostura, Isleta, and San Acacia diversion dams (Figure 1). Cochiti Reach has not been sampled since 1994 (Platania 1995). Rio Grande silvery minnow may still be present in Cochiti Reach, although likely reduced in abundance compared with historic collections. Within Cochiti Reach, Rio Grande silvery minnow were last collected on Cochiti Pueblo in 1988 (Platania 1993), and on Santo Domingo and San Felipe Pueblos in 1994 (Platania 1995). This would require permission from and cooperation with Cochiti, Santo Domingo, and San Felipe Pueblos. Surveys since 1992 indicate that populations in Angostura, Isleta, and San Acacia reaches continued to decline through 2003, with increases noted in the last two years in response to favorable hydrological conditions and augmentation.

Egg dispersal models used by Dudley (2004) predicted that the vast majority of reproductive effort would be transported hundreds of kilometers downstream during typical spawning conditions in the Rio Grande. Therefore, long-term persistence of Rio Grande silvery minnow in the Middle Rio Grande, New Mexico will likely depend, in part, on continued augmentation for the near-term.

RECOMMENDATIONS

1. Release fish in September/October of first year of growth, when 40 mm SL is reached.
2. Release fish during daylight hours.
3. Only fish from augmentation program should be released. (i.e., no salvage transport to upstream reaches).
4. Target specific areas for release, expecting > 90% of surviving individuals to disperse downstream no more than 10 -15 km.
5. For future augmentation efforts, target preferred densities at spawning expecting monthly survival rates of 65%, with annual survival rates of 0.5%.

As a direct result of this project, since June of 2002, over 500,000 Rio Grande silvery minnow have been augmented into Rio Grande within the Angostura Reach. These efforts are continuing in 2006 and from this information we are able to provide information as to the best stocking procedures to aide in the conservation of Rio Grande silvery minnow. Secondary information is also being collected on survival, growth, and retention of released fish. Direct and indirect information indicates that hatchery raised individuals can be released back to the wild with excellent retention (97.5%) in or near original release sites, can expect survival of at least 2 years after release, and ultimately can contribute to future spawning efforts.

Within the next year, continued releases and increased monitoring will provide information as to the best conditions for releases and dispersal. Poor results from calcein marking and identification will require Rio Grande silvery minnow released in the future to only be VIE marked for identification. In 2006-2007, we will be focusing on inter-reach movement of released Rio Grande silvery minnow and potential movement through diversion structures, with effort in all three reaches. All this information will add to the knowledge needed for future conservation while providing active management strategies for the Middle Rio Grande and potential re-establishment sites.

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Appendix A.

Recapture information of Rio Grande silvery minnow June 2004 – December 2005 from augmentation monitoring including other researchers (2005 only).

Field #	N	Recapture Date	Recapture Location (RM)	Number of Days Post-Release	Distance Traveled (RM)*
41,500		Orange Left Dorsal Released 9 December 2002 PNM Gasline RM 199.0			
WJR213	1	16 June 2004	Lomitas Negras (198.3)	555	-1.6
BOR	1	15 February 2005	Alameda Bridge (192.2)	799	-7.7
RKD05-038	1	24 February 2005	Central Bridge (183.4)	808	-16.5
BOR	1	24 February 2005	Los Lunas (161.4)	808	-38.5
WJR05-284	1	2 May 2005	Lomitas Negras (198.3)	875	-1.6
61,118		Green Left Dorsal Released 2 January 2003 PNM Gasline RM 200.0			
WJR215	1	16 June 2004	Sandia Line 14 (202.0)	555	2.0
RKD05-016	2	25 January 2005	Rio Bravo (178.3)	754	-21.7
BOR	1	18 February 2005	Barelas Bridge (181.6)	777	-18.4
RKD05-037	4	24 February 2005	Rio Bravo (178.3)	784	-21.7
RKD05-038	11	24 February 2005	Central Bridge (183.4)	784	-16.6
RKD05-058	7	17 March 2005	Rio Bravo (178.3)	805	-21.7
22,266		Red Left Dorsal Released 3 April 2003 PNM Gasline RM 200.0			
WJR05-305	1	5 July 2005	Atrisco Outfall (171.2)	824	-28.8
48,513		Yellow Right Dorsal Released 3 January 2004 Sandia Pueblo RM 199.9			
ES	1	12 September 2005	Alameda Bridge (192.2)	618	-7.7
ES	1	4 November 2005	Campbell Avenue (186.2)	671	-13.7
8,500		Green Right Dorsal Released 4 April 2004 U.S. 550 – Alameda Bridge RM 203.5 – 192.2			
WJR213	4	16 June 2004	Lomitas Negras (198.3)	73	0
WJR238	1	14 September 2004	U.S. 550 Bridge (203.5)	163	0
WJR05-268	1	14 February 2005	Lomitas Negras (198.3)	316	0
BOR	1	15 February 2005	Alameda Bridge (192.2)	317	0
BOR	1	16 February 2005	Montaño Bridge (187.9)	318	-4.3
ES	1	14 September 2005	Peralta Wasteway (152.5)	528	-39.7

56,644

**Red Right Dorsal
Released 4 April 2004
U.S. 550 – Alameda Bridge
RM 203.5 – 192.2**

WJR214	2	16 June 2004	U.S. 550 Bridge (203.5)	73	0
WJR215	10	16 June 2004	Sandia Line 14 (202.0)	73	0
WJR220	2	12 July 2004	U.S. 550 Bridge (203.5)	99	0
WJR221	1	12 July 2004	Sandia Line 14 (202.0)	99	0
WJR222	1	12 July 2004	PNM Gasline (199.9)	99	0
WJR237	1	13 September 2004	Sandia Line 14 (202.0)	162	0
WJR242	1	18 October 2004	U.S. 550 Bridge (203.5)	197	0
WJR244	4	18 October 2004	PNM Gasline (199.9)	197	0
HEW04-01	1	21 October 2004	Lomitas Negras (198.3)	200	0
WJR05-268	1	14 February 2005	Lomitas Negras (198.3)	316	0

1,500

**Orange Right Dorsal
Released 15 April 2004
U.S. 550 Bridge
RM 203.5**

WJR213	3	16 June 2004	Lomitas Negras (198.3)	62	-5.2
WJR215	2	16 June 2004	Sandia Line 14 (202.0)	62	-1.5
WJR227	1	9 August 2004	U.S. 550 Bridge (203.5)	116	0
WJR235	1	13 September 2004	Lomitas Negras (198.3)	151	-5.2
HEW04-01	1	21 October 2004	Lomitas Negras (198.3)	189	-5.2
SRD159	1	22 November 2004	Lomitas Negras (198.3)	221	-5.2
WJR05-268	1	14 February 2005	Lomitas Negras (198.3)	305	-5.2
WJR05-270	1	14 February 2005	PNM Gasline (199.9)	305	-3.6
RKD05-042	1	25 February 2005	Rio Rancho (200.0)	316	-3.5
SRD05-009	1	8 March 2005	Lomitas Negras (198.3)	327	-5.2
ES	1	4 November 2005	Campbell Avenue (186.2)	568	-17.3
ES	2	28 November 2005	Campbell Avenue (186.2)	592	-11.3
WJR05-279	1	4 April 2005	Sandia Line 14 (202.0)	62	-1.5

6,712

**Yellow Left Dorsal
Released Oct 2004 – Jan 2005
Central - Rio Bravo
RM 183.4 - 178.3**

BOR	1	24 February 2005	Los Lunas (161.4)	50	-16.9
WJR05-276	2	4 April 2005	Dixon Road (196.0)	89	12.6

6,245

**Yellow Left Anal
Released 3 November 2004
U.S. 550 Bridge
RM 203.5**

SRD156	2	22 November 2004	U.S. 550 Bridge (203.5)	19	-7.5
SRD157	6	22 November 2004	Sandia Line 14 (202.0)	19	-2.5
SRD158	4	22 November 2004	PNM Gasline (199.9)	19	-3.6
WJR05-262	1	18 January 2005	Sandia Line 14 (202.0)	76	-1.5
WJR05-267	1	14 February 2005	Dixon Road (196.0)	103	-7.5
WJR05-273	2	16 February 2005	Alejandro Gate (166.6)	105	-36.9
SRD05-008	1	8 March 2005	Dixon Road (196.0)	125	-36.9

9,622

Yellow Right Anal
Released 3 November 2004
U.S. 550 Bridge
RM 203.5

SRD156	2	22 November 2004	U.S. 550 Bridge (203.5)	19	0
SRD157	5	22 November 2004	Sandia Line 14 (202.0)	19	-1.5
SRD158	4	22 November 2004	PNM Gasline (199.9)	19	-3.6
WJR253	1	20 December 2004	Dixon Road (196.0)	47	-7.5
WJR255	2	20 December 2004	Sandia Line 14 (202.0)	47	-1.5
SRD05-010	1	8 March 2005	Sandia Line 14 (202.0)	125	-1.5

7,006

Red Left Anal
Released 3 November 2004
U.S. 550 – Alameda Bridge
RM 203.5-192.2

SRD156	2	22 November 2004	U.S. 550 Bridge (203.5)	19	0
SRD157	2	22 November 2004	Sandia Line 14 (202.0)	19	0
SRD158	7	22 November 2004	PNM Gasline (199.9)	19	0
SRD159	2	22 November 2004	Lomitas Negras (198.3)	19	0
WJR05-267	3	14 February 2005	Dixon Road (196.0)	103	0
SRD05-007	1	7 March 2005	Atrisco Outfall (171.2)	124	-21.0
WJR-5-277	1	4 April 2005	Lomitas Negras (198.3)	152	0
WJR05-279	1	4 April 2005	Sandia Line 14 (202.0)	152	0

8,639

Red Right Anal
Released 3 November 2004
U.S. 550 – Alameda Bridge
RM 203.5-192.2

SRD158	5	22 November 2004	PNM Gasline (199.9)	19	0
SRD159	1	22 November 2004	Lomitas Negras (198.3)	19	0
WJR05-259	1	18 January 2005	Dixon Road (196.0)	76	0
WJR05-269	1	14 February 2005	Sandia Line 14 (202.0)	103	0
RKD05-042	1	25 February 2005	Rio Rancho (200.0)	114	0
SRD05-008	1	8 March 2005	Dixon Road (196.0)	125	0
SRD05-009	1	8 March 2005	Lomitas Negras (198.3)	125	0
WJR05-277	1	4 April 2005	Sandia Line 14 (202.0)	152	0

6,065

Orange Left Anal
Released 5 November 2004
U.S. 550 Bridge
RM 203.5

SRD156	2	22 November 2004	U.S. 550 Bridge (203.5)	17	0
SRD157	5	22 November 2004	Sandia Line 14 (202.0)	17	-1.5
SRD158	2	22 November 2004	PNM Gasline (199.9)	17	-3.6
WJR05-262	1	18 January 2005	Sandia Line 14 (202.0)	74	-3.6
WJR05-263	1	18 January 2005	PNM Gasline (199.9)	74	-1.5
RKD05-021	2	26 January 2005	Rio Rancho (200.0)	82	-3.5
WJR05-267	1	14 February 2005	Dixon Road (196.0)	101	-5.2
RKD05-037	2	24 February 2005	Rio Bravo (178.3)	111	-25.2
RKD05-038	1	24 February 2005	Central Avenue (183.4)	111	-20.1
RKD05-042	1	25 February 2005	Rio Rancho (200.0)	112	-3.5
WJR05-277	1	4 April 2005	Lomitas Negras (198.3)	150	-5.2
WJR05-280	1	4 April 2005	PNM Gasline (199.9)	150	-3.6
WJR05-286	1	5 May 2005	Sandia Line 14 (202.0)	181	-1.5
RKD05-126	1	28 June 2005	Rio Rancho (200.0)	235	-3.5

7,845

**Orange Right Anal
Released 5 November 2004
U.S. 550 Bridge
RM 203.5**

SRD156	8	22 November 2004	U.S. 550 Bridge (203.5)	17	0
SRD157	10	22 November 2004	U.S. 550 Bridge (203.5)	17	0
SRD158	3	22 November 2004	U.S. 550 Bridge (203.5)	17	0
WJR256	1	20 December 2004	PNM Gasline (199.9)	45	-3.6
WJR05-270	2	14 February 2005	PNM Gasline (199.9)	101	-3.6
RKD05-037	1	24 February 2005	Rio Bravo (178.3)	111	-25.2
RKD05-038	1	24 February 2005	Central Bridge (183.4)	111	-20.1
RKD05-042	4	25 February 2005	Rio Rancho (200.0)	112	-3.5
SRD05-009	1	8 March 2005	Lomitas Negras (198.3)	123	-5.2
RKD05-063	2	18 March 2005	Rio Rancho (200.0)	133	-3.5
WJR05-279	2	4 April 2005	Sandia Line 14 (202.0)	150	-1.5

6,879

**Green Left Anal
Released 5 November 2004
U.S. 550 – Alameda Bridge
RM 203.5-192.2**

SRD157	1	22 November 2004	Sandia Line 14 (202.0)	17	0
SRD158	1	22 November 2004	PNM Gasline (199.9)	17	0
WJR05-263	1	18 January 2005	PNM Gasline (199.9)	74	0
RKD05-021	2	26 January 2005	Rio Rancho (200.0)	82	0
WJR05-267	1	14 February 2005	Dixon Road (196.0)	101	0

6,956

**Green Right Anal
Released 5 November 2004
U.S. 550 – Alameda Bridge
RM 203.5-192.2**

SRD157	3	22 November 2004	Sandia Line 14 (202.0)	17	0
SRD158	2	22 November 2004	PNM Gasline (199.9)	17	0
WJR05-267	2	14 February 2005	Dixon Road (196.0)	101	0
RKD05-038	3	24 February 2005	Central Bridge (183.4)	111	-7.8
SRD05-007	1	8 March 2005	Atrisco Outfall (171.2)	122	-21.0
RKD05-063	2	18 March 2005	Rio Rancho (200.0)	133	0

5,000

**White Right Anal
Released 12 April 2005
U.S. 550 – Alameda Bridge
RM 203.5-192.2**

WJR05-285	1	2 May 2005	PNM Gasline (199.9)	20	0
WJR05-286	2	2 May 2005	Sandia Line 14 (202.0)	20	0

11,080

**White Left Anal
Released 12 April 2005
U.S. 550 – Alameda Bridge
RM 203.5-192.2**

WJR05-285	2	2 May 2005	PNM Gasline (199.9)	20	0
WJR05-286	1	2 May 2005	Sandia Line 14 (202.0)	20	0

5,000			Purple Right Anal Released 12 April 2005 U.S. 550 Bridge RM 203.5		
WJR05-287	13	2 May 2005	U.S. 550 Bridge (203.5)	20	0
WJR05-296	2	6 June 2005	U.S. 550 Bridge (203.5)	55	0
WJR05-311	1	6 July 2005	Sandia Line 14 (202.0)	85	-1.5
LTT05-03	1	11 October 2005	U.S. 550 Bridge (203.5)	182	0
8,800			Purple Left Anal Released 12 April 2005 U.S. 550 Bridge RM 203.5		
WJR05-296	2	6 June 2005	U.S. 550 Bridge (203.5)	55	0
WJR05-346	1	12 September 2005	U.S. 550 Bridge (203.5)	153	0
WJR05-367	1	12 December 2005	Sandia Line 14 (202.0)	244	-1.5
5,654			Pink Right Anal Released 13 April 2005 U.S. 550 Bridge RM 203.5		
WJR05-285	3	2 May 2005	PNM Gasline (199.9)	19	0
WJR05-308	1	6 July 2005	Dixon Road (196.0)	84	0
WJR05-348	1	12 September 2005	PNM Gasline (199.9)	152	0
ES	3	15 September 2005	Alameda Bridge (192.2)	155	0
WJR05-354	2	15 November 2005	Lomitas Negras (198.3)	216	0
ES	1	28 November 2005	Alameda Bridge (192.2)	229	0
10,026			Pink Left Anal Released 13 April 2005 U.S. 550 Bridge RM 203.5		
WJR05-285	1	2 May 2005	PNM Gasline (199.9)	19	0
WJR05-286	1	2 May 2005	Sandia Line 14 (202.0)	19	0
RKD05-105	2	27 May 2005	Rio Rancho (200.0)	44	0
WJR05-309	1	6 July 2005	Lomitas Negras (198.3)	84	0
WJR05-311	1	6 July 2005	Sandia Line 14 (202.0)	84	0
WJR05-367	1	12 December 2005	Sandia Line 14 (202.0)	243	0
5,011			Blue Right Anal Released 13 April 2005 U.S. 550 Bridge RM 203.5		
WJR05-287	6	2 May 2005	U.S. 550 Bridge (203.5)	19	0
10,242			Blue Left Anal Released 13 April 2005 U.S. 550 Bridge RM 203.5		
RKD05-083	1	20 April 2005	U.S. 550 Bridge (203.8)	7	0.3
RKD05-084	1	20 April 2005	Rio Rancho (200.0)	7	-3.5
RKD05-104	1	27 May 2005	U.S. 550 Bridge (203.8)	44	0.3
WJR05-311	1	6 July 2005	Sandia Line 14 (202.0)	84	-1.5
WJR05-367	2	12 December 2005	Sandia Line 14 (202.0)	243	-1.5

10,357		Green Left Dorsal Released 26 May 2005 Rio Bravo Boulevard RM 178.3			
WJR05-305	1	5 July 2005	Atrisco Outfall (171.2)	40	-7.1
BOR	1	18 August 2005	Callabacitas Arroyo (191.2)	84	12.9
SRD05-079	1	14 September 2005	Alejandro Gate (166.6)	111	-11.7
20,000		Orange Right Dorsal Released 12 September 2005 U.S. 550 Bridge RM 203.5			
LTT05-04	1	11 October 2005	Sandia Line 14 (202.0)	29	-1.5
WJR05-355	1	15 November 2005	PNM Gasline (199.9)	64	-3.6
WJR05-363	1	18 November 2005	U.S. 550 Bridge (203.5)	67	0
21,000		White Left Dorsal Released 7 November 2005 Lemitar – Socorro RM 108.0-100.4			
WJR05-358	18	17 November 2005	Lemitar (108.0)	10	0
28,986		Purple Left Dorsal Released 7 November 2005 U.S. 60 Bridge RM 130.6			
WJR05-360	3	17 November 2005	Rio Puerco Confluence (126.5)	10	-4.1
WJR05-361	22	17 November 2005	U.S. Highway 60 Bridge (130.6)	10	0
25,642		Pink Left Dorsal Released 7 November 2005 Socorro RM 100.4			
RKD05-252	2	14 November 2005	Socorro (RM 100.4)	7	0
25,436		Blue Left Dorsal Released 7 November 2005 U.S. 60 Bridge – Rio Puerco RM 130.6 - 126.5			
RKD05-255	4	14 November 2005	Above San Acacia Dam (116.8)	7	-9.7
RKD05-260	1	14 November 2005	380 Bridge (87.1)	7	-39.4
WJR05-359	1	17 November 2005	Below San Acacia Dam (116.1)	10	-10.4
WJR05-360	20	17 November 2005	Rio Puerco Confluence (126.5)	10	0
WJR05-373	3	14 December 2005	Rio Puerco Confluence (126.5)	37	0
14,853		White Right Dorsal Released 8 November 2005 U.S. 550 Bridge – Montaña RM 203.5 – 187.9			
WJR05-353	1	15 November 2005	Lomitas Negras (198.3)	7	0
ES	2	28 November 2005	Alameda (192.2)	20	0
ES	2	1 December 2005	Alameda (192.2)	23	0

21,000			Pink Right Dorsal		
			Released 8 November 2005		
			U.S. 550 Bridge		
			RM 203.5		
WJR05-353	1	15 November 2005	Lomitas Negras (198.3)	7	-5.2
WJR05-354	9	15 November 2005	Sandia Line 14 (202.0)	7	-1.5
ES	2	28 November 2005	Alameda (192.2)	20	-11.3
ES	1	1 December 2005	Alameda (192.2)	23	-11.3
WJR05-367	4	12 December 2005	Sandia Line 14 (202.0)	34	-1.5
WJR05-368	10	12 December 2005	PNM Gasline (199.9)	34	-3.6

21,000			Blue Right Dorsal		
			Released 12 September 2005		
			Barelas Bridge – Los Padillas		
			RM 181.6 -173.0		
WJR05-357	1	16 November 2005	Alejandro Gate (166.6)	8	6.4
WJR05-370	1	13 December 2005	Alejandro Gate (166.6)	35	6.4

* calculated as the minimum unidirectional distance between release and recapture points within the river channel

NMFRO Augmentation Monitoring Collection #'s (WJR, LTT, SRD, HEW)

ASIRF Population Monitoring Collection #'s R. Dudley (RKD)

BOR Electrofishing Surveys - M. Porter (BOR)

New Mexico Ecological Services Salvage – M. Hatch (ES)

Appendix B.
Ichthyofaunal composition of June 2004 – December 2005 Rio Grande silvery minnow
augmentation monitoring surveys

Lomitas Negras

16 June 2004

WJR213

40 seine hauls

Effort: 951.6 m²

Personnel: Jason Remshardt, Stephanie M. Coleman, Leeanna Torres, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	337
Cyprinidae	<i>Cyprinus carpio</i>	17
Cyprinidae	<i>Hybognathus amarus</i>	17
Cyprinidae	<i>Pimephales promelas</i>	17
Cyprinidae	<i>Platygobio gracilis</i>	5
Cyprinidae	<i>Rhinichthys cataractae</i>	5
Catostomidae	<i>Carpiodes carpio</i>	12
Catostomidae	<i>Catostomus commersoni</i>	1922
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	8
Percidae	<i>Sander vitreus</i>	8

U.S. 550 Bridge

16 June 2004

WJR214

40 seine hauls

Effort: 900.6 m²

Personnel: W. Jason Remshardt, Stephanie M. Coleman, Leeanna Torres, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	278
Cyprinidae	<i>Cyprinus carpio</i>	4
Cyprinidae	<i>Hybognathus amarus</i>	14
Cyprinidae	<i>Platygobio gracilis</i>	3
Cyprinidae	<i>Rhinichthys cataractae</i>	13
Catostomidae	<i>Catostomus commersoni</i>	316
Percidae	<i>Sander vitreus</i>	1

Sandia Line 14

16 June 2004

WJR215

39 seine hauls

Effort: 984.6 m²

Personnel: W. Jason Remshardt, Stephanie M. Coleman, Leeanna Torres, NMFRO; Scott Bulgrin, C. Garcia, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	373
Cyprinidae	<i>Cyprinus carpio</i>	80
Cyprinidae	<i>Hybognathus amarus</i>	38
Cyprinidae	<i>Pimephales promelas</i>	14
Cyprinidae	<i>Platygobio gracilis</i>	4
Cyprinidae	<i>Rhinichthys cataractae</i>	2
Catostomidae	<i>Catostomus commersoni</i>	900
Poeciliidae	<i>Gambusia affinis</i>	59
Percidae	<i>Sander vitreus</i>	1

Sandia PNM Gasline

16 June 2004

WJR216

20 seine hauls

Effort: 446.7 m²

Personnel: Jason Remshardt, Stephanie M. Coleman, Leeanna Torres, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	106
Cyprinidae	<i>Platygobio gracilis</i>	3
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Catostomidae	<i>Catostomus commersoni</i>	138
Ictaluridae	<i>Ictalurus punctatus</i>	1

Dixon Road

16 June 2004

WJR217

10 seine hauls

Effort: 235.8 m²

Personnel: W. Jason Remshardt, Stephanie M. Coleman, Leeanna Torres, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	15
Cyprinidae	<i>Cyprinus carpio</i>	2
Catostomidae	<i>Catostomus commersoni</i>	72
Poeciliidae	<i>Gambusia affinis</i>	10
Centrarchidae	<i>Lepomis macrochirus</i>	13
Centrarchidae	<i>Micropterus salmoides</i>	1
Centrarchidae	<i>Pomoxis annularis</i>	10

Lomitas Negras

12 July 2004

WJR219

21 seine hauls

Effort: 258 m²

Personnel: W. Jason Remshardt, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	66
Cyprinidae	<i>Cyprinus carpio</i>	11
Cyprinidae	<i>Hybognathus amarus</i>	681
Cyprinidae	<i>Pimephales promelas</i>	22
Cyprinidae	<i>Platygobio gracilis</i>	1
Cyprinidae	<i>Rhinichthys cataractae</i>	4
Catostomidae	<i>Carpionodes carpio</i>	37
Catostomidae	<i>Catostomus commersoni</i>	100
Ictaluridae	<i>Ictalurus punctatus</i>	9
Poeciliidae	<i>Gambusia affinis</i>	60

U.S. 550 Bridge

12 July 2004

WJR220

40 seine hauls

Effort: 947.7 m²

Personnel: W. Jason Remshardt, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	164
Cyprinidae	<i>Cyprinus carpio</i>	2
Cyprinidae	<i>Hybognathus amarus</i>	240
Cyprinidae	<i>Pimephales promelas</i>	2
Cyprinidae	<i>Platygobio gracilis</i>	47
Cyprinidae	<i>Rhinichthys cataractae</i>	19
Catostomidae	<i>Carpiodes carpio</i>	2
Catostomidae	<i>Catostomus commersoni</i>	200
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	1

Sandia Line 14

12 July 2004

WJR221

40 seine hauls

Effort: 892.2 m²

Personnel: W. Jason Remshardt, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	59
Cyprinidae	<i>Cyprinus carpio</i>	34
Cyprinidae	<i>Hybognathus amarus</i>	480
Cyprinidae	<i>Pimephales promelas</i>	39
Cyprinidae	<i>Platygobio gracilis</i>	13
Catostomidae	<i>Carpiodes carpio</i>	3
Catostomidae	<i>Catostomus commersoni</i>	108
Poeciliidae	<i>Gambusia affinis</i>	696

Sandia PNM Gasline

12 July 2004

WJR222

40 seine hauls

Effort: 924.6 m²

Personnel: W. Jason Remshardt, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	171
Cyprinidae	<i>Cyprinus carpio</i>	4
Cyprinidae	<i>Hybognathus amarus</i>	41
Cyprinidae	<i>Pimephales promelas</i>	11
Cyprinidae	<i>Platygobio gracilis</i>	9
Cyprinidae	<i>Rhinichthys cataractae</i>	10
Catostomidae	<i>Carpiodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	84
Ictaluridae	<i>Ictalurus punctatus</i>	4
Poeciliidae	<i>Gambusia affinis</i>	17

Atrisco Outfall

13 July 2004

WJR223

40 seine hauls Effort: 1080.3 m²

Personnel: W. Jason Remshardt, Cody M. Robertson, NMFRO; Doug Smithwood, Cody Walker, Danielle Pecastaing, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Clupeidae	<i>Dorosoma cepedianum</i>	1
Cyprinidae	<i>Cyprinella lutrensis</i>	70
Cyprinidae	<i>Cyprinus carpio</i>	286
Cyprinidae	<i>Hybognathus amarus</i>	3
Cyprinidae	<i>Pimephales promelas</i>	5
Cyprinidae	<i>Platygobio gracilis</i>	11
Catostomidae	<i>Carpionodes carpio</i>	3
Catostomidae	<i>Catostomus commersoni</i>	47
Ictaluridae	<i>Ameiurus natalis</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	54
Poeciliidae	<i>Gambusia affinis</i>	42
Centrarchidae	<i>Lepomis macrochirus</i>	1

Alejandro Gate

13 July 2004

WJR224

40 seine hauls Effort: 1269 m²

Personnel: W. Jason Remshardt, Cody M. Robertson, NMFRO; Doug Smithwood, Cody Walker, Danielle Pecastaing, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	224
Cyprinidae	<i>Cyprinus carpio</i>	4
Cyprinidae	<i>Hybognathus amarus</i>	29
Cyprinidae	<i>Pimephales promelas</i>	126
Cyprinidae	<i>Platygobio gracilis</i>	5
Catostomidae	<i>Carpionodes carpio</i>	98
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	75
Poeciliidae	<i>Gambusia affinis</i>	211
Centrarchidae	<i>Lepomis macrochirus</i>	1
Centrarchidae	<i>Micropterus salmoides</i>	4

Lomitas Negras

9 August 2004

WJR226

40 seine hauls

Effort: 874.2 m²

Personnel: W. Jason Remshardt, Jason E. Davis, Leeanna Torres, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	68
Cyprinidae	<i>Hybognathus amarus</i>	42
Cyprinidae	<i>Pimephales promelas</i>	4
Cyprinidae	<i>Platygobio gracilis</i>	10
Cyprinidae	<i>Rhinichthys cataractae</i>	13
Catostomidae	<i>Carpionodes carpio</i>	100
Catostomidae	<i>Catostomus commersoni</i>	17
Ictaluridae	<i>Ameiurus natalis</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	20
Poeciliidae	<i>Gambusia affinis</i>	175
Centrarchidae	<i>Micropterus salmoides</i>	2
Centrarchidae	<i>Pomoxis annularis</i>	1

U.S. 550 Bridge

9 August 2004

WJR227

40 seine hauls

Effort: 907.8 m²

Personnel: W. Jason Remshardt, Jason E. Davis, Leeanna Torres, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	53
Cyprinidae	<i>Hybognathus amarus</i>	71
Cyprinidae	<i>Platygobio gracilis</i>	70
Cyprinidae	<i>Rhinichthys cataractae</i>	59
Catostomidae	<i>Catostomus commersoni</i>	9
Ictaluridae	<i>Ictalurus punctatus</i>	12
Poeciliidae	<i>Gambusia affinis</i>	6

Sandia Line 14

9 August 2004

WJR228

40 seine hauls

Effort: 813.6 m²

Personnel: W. Jason Remshardt, Jason E. Davis, Leeanna Torres, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	140
Cyprinidae	<i>Hybognathus amarus</i>	87
Cyprinidae	<i>Pimephales promelas</i>	8
Cyprinidae	<i>Platygobio gracilis</i>	99
Cyprinidae	<i>Rhinichthys cataractae</i>	6
Catostomidae	<i>Carpionodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	11
Ictaluridae	<i>Ameiurus natalis</i>	3
Ictaluridae	<i>Ictalurus punctatus</i>	11
Poeciliidae	<i>Gambusia affinis</i>	42

Sandia PNM Gasline

9 August 2004

WJR229

40 seine hauls

Effort: 898.8 m²

Personnel: W. Jason Remshardt, Jason E. Davis, Leeanna Torres, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	64
Cyprinidae	<i>Hybognathus amarus</i>	129
Cyprinidae	<i>Pimephales promelas</i>	12
Cyprinidae	<i>Platygobio gracilis</i>	36
Cyprinidae	<i>Rhinichthys cataractae</i>	29
Catostomidae	<i>Carpiodes carpio</i>	6
Catostomidae	<i>Catostomus commersoni</i>	17
Ictaluridae	<i>Ictalurus punctatus</i>	7
Poeciliidae	<i>Gambusia affinis</i>	23

Dixon Road

9 August 2004

WJR230

40 seine hauls

Effort: 899.1 m²

Personnel: W. Jason Remshardt, Jason E. Davis, Leeanna Torres, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	66
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	38
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	76
Cyprinidae	<i>Rhinichthys cataractae</i>	9
Catostomidae	<i>Carpiodes carpio</i>	11
Catostomidae	<i>Catostomus commersoni</i>	16
Ictaluridae	<i>Ameiurus natalis</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	22
Poeciliidae	<i>Gambusia affinis</i>	51

Atrisco Outfall

10 August 2004

WJR231

40 seine hauls

Effort: 995.1 m²

Personnel: W. Jason Remshardt, Leeanna Torres, Cody M. Robertson, NMFRO; Cody Walker, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	192
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Pimephales promelas</i>	48
Cyprinidae	<i>Platygobio gracilis</i>	1
Catostomidae	<i>Carpiodes carpio</i>	12
Catostomidae	<i>Catostomus commersoni</i>	44
Ictaluridae	<i>Ameiurus natalis</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	36
Poeciliidae	<i>Gambusia affinis</i>	71

Alejandro Gate

10 August 2004

WJR232

10 seine hauls

Effort: 222 m²

Personnel: W. Jason Remshardt, Leeanna Torres, Cody M. Robertson, NMFRO; Cody Walker, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Clupeidae	<i>Dorosoma cepedianum</i>	1
Cyprinidae	<i>Cyprinella lutrensis</i>	436
Cyprinidae	<i>Cyprinus carpio</i>	12
Cyprinidae	<i>Hybognathus amarus</i>	382
Cyprinidae	<i>Pimephales promelas</i>	81
Cyprinidae	<i>Platygobio gracilis</i>	1
Catostomidae	<i>Carpiodes carpio</i>	156
Catostomidae	<i>Catostomus commersoni</i>	24
Ictaluridae	<i>Ameiurus natalis</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	228
Poeciliidae	<i>Gambusia affinis</i>	541

Dixon Road

13 September 2004

WJR234

40 seine hauls

Effort: 1004.4 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Hilary E. Watts, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	172
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	38
Cyprinidae	<i>Pimephales promelas</i>	10
Cyprinidae	<i>Platygobio gracilis</i>	63
Cyprinidae	<i>Rhinichthys cataractae</i>	7
Catostomidae	<i>Carpiodes carpio</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	8
Poeciliidae	<i>Gambusia affinis</i>	169

Lomitas Negras

13 September 2004

WJR235

40 seine hauls

Effort: 840.9 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Hilary E. Watts, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	126
Cyprinidae	<i>Cyprinus carpio</i>	3
Cyprinidae	<i>Hybognathus amarus</i>	42
Cyprinidae	<i>Pimephales promelas</i>	16
Cyprinidae	<i>Platygobio gracilis</i>	77
Cyprinidae	<i>Rhinichthys cataractae</i>	8
Catostomidae	<i>Carpiodes carpio</i>	102
Catostomidae	<i>Catostomus commersoni</i>	5
Ictaluridae	<i>Ictalurus punctatus</i>	32
Poeciliidae	<i>Gambusia affinis</i>	64
Centrarchidae	<i>Lepomis macrochirus</i>	1

Sandia PNM Gasline

13 September 2004

WJR236

40 seine hauls

Effort: 818.7 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Hilary E. Watts, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	128
Cyprinidae	<i>Hybognathus amarus</i>	20
Cyprinidae	<i>Pimephales promelas</i>	18
Cyprinidae	<i>Platygobio gracilis</i>	66
Cyprinidae	<i>Rhinichthys cataractae</i>	17
Catostomidae	<i>Carpionodes carpio</i>	14
Catostomidae	<i>Catostomus commersoni</i>	9
Ictaluridae	<i>Ictalurus punctatus</i>	9
Poeciliidae	<i>Gambusia affinis</i>	112

Sandia Line 14

13 September 2004

WJR237

40 seine hauls

Effort: 1013.4 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Hilary E. Watts, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	60
Cyprinidae	<i>Hybognathus amarus</i>	15
Cyprinidae	<i>Platygobio gracilis</i>	21
Cyprinidae	<i>Rhinichthys cataractae</i>	6
Catostomidae	<i>Carpionodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	7
Poeciliidae	<i>Gambusia affinis</i>	6

U.S. 550 Bridge

14 September 2004

WJR238

40 seine hauls

Effort: 892.5 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Hilary E. Watts, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	271
Cyprinidae	<i>Hybognathus amarus</i>	73
Cyprinidae	<i>Pimephales promelas</i>	4
Cyprinidae	<i>Platygobio gracilis</i>	118
Cyprinidae	<i>Rhinichthys cataractae</i>	26
Catostomidae	<i>Carpionodes carpio</i>	5
Catostomidae	<i>Catostomus commersoni</i>	8
Ictaluridae	<i>Ictalurus punctatus</i>	11
Poeciliidae	<i>Gambusia affinis</i>	108

Atrisco Outfall

14 September 2004

WJR240

40 seine hauls

Effort: 1001.4 m²

Personnel: W. Jason Remshardt, Hilary E. Watts, NMFRO; Cody Walker, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	255
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	3
Catostomidae	<i>Carpiodes carpio</i>	43
Catostomidae	<i>Catostomus commersoni</i>	4
Ictaluridae	<i>Ictalurus punctatus</i>	16
Poeciliidae	<i>Gambusia affinis</i>	9
Centrarchidae	<i>Lepomis spp</i>	1

Alejandro Gate

14 September 2004

WJR241

15 seine hauls

Effort: 368.1 m²

Personnel: W. Jason Remshardt, Hilary E. Watts, NMFRO; Cody Walker, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	41
Cyprinidae	<i>Cyprinus carpio</i>	3
Cyprinidae	<i>Hybognathus amarus</i>	29
Cyprinidae	<i>Pimephales promelas</i>	15
Catostomidae	<i>Carpiodes carpio</i>	31
Ictaluridae	<i>Ictalurus punctatus</i>	34
Poeciliidae	<i>Gambusia affinis</i>	62

U.S. 550 Bridge

18 October 2004

WJR242

40 seine hauls

Effort: 933.9m²

Personnel: W.J. Remshardt, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	340
Cyprinidae	<i>Cyprinus carpio</i>	2
Cyprinidae	<i>Hybognathus amarus</i>	93
Cyprinidae	<i>Platygobio gracilis</i>	91
Cyprinidae	<i>Rhinichthys cataractae</i>	39
Catostomidae	<i>Catostomus commersoni</i>	3
Ictaluridae	<i>Ictalurus punctatus</i>	15
Poeciliidae	<i>Gambusia affinis</i>	17

Sandia Line 14

18 October 2004

WJR243

40 seine hauls

Effort: 907.5m²

Personnel: W.J. Remshardt, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	66
Cyprinidae	<i>Hybognathus amarus</i>	28
Cyprinidae	<i>Pimephales promelas</i>	24
Cyprinidae	<i>Platygobio gracilis</i>	46
Cyprinidae	<i>Rhinichthys cataractae</i>	8
Catostomidae	<i>Catostomus commersoni</i>	2
Ictaluridae	<i>Ictalurus punctatus</i>	7
Poeciliidae	<i>Gambusia affinis</i>	28

Sandia PNM Gasline

18 October 2004

WJR244

40 seine hauls

Effort: 846.6m²

Personnel: W.J. Remshardt, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	113
Cyprinidae	<i>Cyprinus carpio</i>	2
Cyprinidae	<i>Hybognathus amarus</i>	222
Cyprinidae	<i>Pimephales promelas</i>	18
Cyprinidae	<i>Platygobio gracilis</i>	56
Cyprinidae	<i>Rhinichthys cataractae</i>	3
Catostomidae	<i>Carpiodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	2
Ictaluridae	<i>Ictalurus punctatus</i>	12
Poeciliidae	<i>Gambusia affinis</i>	220

Dixon Road

18 October 2004

WJR245

40 seine hauls

Effort: 964.2m²

Personnel: W.J. Remshardt, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	91
Cyprinidae	<i>Hybognathus amarus</i>	16
Cyprinidae	<i>Pimephales promelas</i>	5
Cyprinidae	<i>Platygobio gracilis</i>	29
Cyprinidae	<i>Rhinichthys cataractae</i>	8
Catostomidae	<i>Carpiodes carpio</i>	4
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	4
Poeciliidae	<i>Gambusia affinis</i>	56

Atrisco Outfall

19 October 2004

WJR246

40 seine hauls

Effort: 941.1m²

Personnel: W.J. Remshardt, H.E. Watts, L. Torres; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	171
Cyprinidae	<i>Pimephales promelas</i>	23
Cyprinidae	<i>Platygobio gracilis</i>	2
Catostomidae	<i>Carpiodes carpio</i>	23
Catostomidae	<i>Catostomus commersoni</i>	2
Ictaluridae	<i>Ictalurus punctatus</i>	25
Poeciliidae	<i>Gambusia affinis</i>	110

Alejandro Gate

19 October 2004

WJR247

40 seine hauls

Effort: 936.9m²

Personnel: W.J. Remshardt, H.E. Watts, L. Torres; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	199
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	27
Cyprinidae	<i>Pimephales promelas</i>	22
Catostomidae	<i>Carpiodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	4
Poeciliidae	<i>Gambusia affinis</i>	316

Tomé

19 October 2004

WJR248

40 seine hauls

Effort: 819.0m²

Personnel: W.J. Remshardt, H.E. Watts, L. Torres; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	15
Cyprinidae	<i>Hybognathus amarus</i>	1
Cyprinidae	<i>Pimephales promelas</i>	3
Catostomidae	<i>Carpiodes carpio</i>	2
Poeciliidae	<i>Gambusia affinis</i>	17

Lomitas Negras

21 October 2004

HEW04-01

40 seine hauls

Effort: 777.0m²

Personnel: H.E. Watts, L. Torres, J.E. Davis; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	41
Cyprinidae	<i>Hybognathus amarus</i>	14
Cyprinidae	<i>Pimephales promelas</i>	8
Cyprinidae	<i>Platygobio gracilis</i>	29
Cyprinidae	<i>Rhinichthys cataractae</i>	4
Catostomidae	<i>Carpionodes carpio</i>	202
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	14
Poeciliidae	<i>Gambusia affinis</i>	2

U.S. 550 Bridge

22 November 2004

SRD156

40 seine hauls

Effort: 927.0m²

Personnel: S.R. Davenport, H.E. Watts, D.W. Furr, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	147
Cyprinidae	<i>Hybognathus amarus</i>	73
Cyprinidae	<i>Pimephales promelas</i>	9
Cyprinidae	<i>Platygobio gracilis</i>	87
Cyprinidae	<i>Rhinichthys cataractae</i>	49
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	14
Poeciliidae	<i>Gambusia affinis</i>	1

Sandia Line 14

22 November 2004

SRD157

40 seine hauls

Effort: 930.6m²

Personnel: S.R. Davenport, H.E. Watts, D.W. Furr, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	104
Cyprinidae	<i>Hybognathus amarus</i>	38
Cyprinidae	<i>Pimephales promelas</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	57
Cyprinidae	<i>Rhinichthys cataractae</i>	13
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	7
Poeciliidae	<i>Gambusia affinis</i>	1

Sandia PNM Gasline

22 November 2004

SRD158

40 seine hauls

Effort: 852.3m²

Personnel: S.R. Davenport, H.E. Watts, D.W. Furr, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	134
Cyprinidae	<i>Hybognathus amarus</i>	212
Cyprinidae	<i>Pimephales promelas</i>	14
Cyprinidae	<i>Platygobio gracilis</i>	161
Cyprinidae	<i>Rhinichthys cataractae</i>	31
Ictaluridae	<i>Ictalurus punctatus</i>	27
Poeciliidae	<i>Gambusia affinis</i>	17

Lomitas Negras

22 November 2004

SRD159

41 seine hauls

Effort: 742.2m²

Personnel: S.R. Davenport, H.E. Watts, D.W. Furr, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	31
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	25
Cyprinidae	<i>Pimephales promelas</i>	6
Cyprinidae	<i>Platygobio gracilis</i>	55
Cyprinidae	<i>Rhinichthys cataractae</i>	7
Catostomidae	<i>Carpionodes carpio</i>	2
Catostomidae	<i>Catostomus commersoni</i>	3
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	29
Centrarchidae	<i>Lepomis macrochirus</i>	2
Centrarchidae	<i>Micropterus salmoides</i>	1
Centrarchidae	<i>Pomoxis annularis</i>	3

Dixon Road

23 November 2004

WJR249

40 seine hauls

Effort: 932.1m²

Personnel: W.J. Remshardt, S.R. Davenport, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	141
Cyprinidae	<i>Hybognathus amarus</i>	15
Cyprinidae	<i>Pimephales promelas</i>	54
Cyprinidae	<i>Platygobio gracilis</i>	7
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Catostomidae	<i>Catostomus commersoni</i>	2
Ictaluridae	<i>Ictalurus punctatus</i>	2
Poeciliidae	<i>Gambusia affinis</i>	38
Centrarchidae	<i>Lepomis macrochirus</i>	2

Atrisco Outfall

23 November 2004

WJR250

40 seine hauls

Effort: 880.5m²

Personnel: W.J. Remshardt, S.R. Davenport, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	37
Cyprinidae	<i>Pimephales promelas</i>	4
Cyprinidae	<i>Platygobio gracilis</i>	2
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Catostomidae	<i>Carpiodes carpio</i>	11
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	9
Poeciliidae	<i>Gambusia affinis</i>	29

Alejandro Gate

23 November 2004

WJR251

40 seine hauls

Effort: 699.0m²

Personnel: W.J. Remshardt, S.R. Davenport, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	46
Cyprinidae	<i>Hybognathus amarus</i>	56
Cyprinidae	<i>Pimephales promelas</i>	12
Catostomidae	<i>Carpiodes carpio</i>	7
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	21
Poeciliidae	<i>Gambusia affinis</i>	9

Tomé

23 November 2004

WJR252

41 seine hauls

Effort: 847.2m²

Personnel: W.J. Remshardt, S.R. Davenport, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	8
Cyprinidae	<i>Pimephales promelas</i>	7

Atrisco Outfall

15 December 2004

SRD160

41 seine hauls

Effort: 952.2m²

Personnel: S.R. Davenport, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	89
Cyprinidae	<i>Pimephales promelas</i>	10
Cyprinidae	<i>Platygobio gracilis</i>	5
Catostomidae	<i>Carpiodes carpio</i>	12
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	1

Alejandro Gate

15 December 2004

SRD161

40 seine hauls

Effort: 940.2m²

Personnel: S.R. Davenport, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	55
Cyprinidae	<i>Hybognathus amarus</i>	62
Cyprinidae	<i>Pimephales promelas</i>	27
Cyprinidae	<i>Platygobio gracilis</i>	3
Catostomidae	<i>Carpionodes carpio</i>	2
Poeciliidae	<i>Gambusia affinis</i>	14

Dixon Road

20 December 2004

WJR253

40 seine hauls

Effort: 956.7m²

Personnel: W.J. Remshardt, L. Torres, NMFRO; S. Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	15
Cyprinidae	<i>Hybognathus amarus</i>	7
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	11
Poeciliidae	<i>Gambusia affinis</i>	3

Lomitas Negras

20 December 2004

WJR254

41 seine hauls

Effort: 954.0m²

Personnel: W.J. Remshardt, L. Torres, NMFRO; S. Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	12
Cyprinidae	<i>Hybognathus amarus</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	11
Catostomidae	<i>Carpionodes carpio</i>	8
Catostomidae	<i>Catostomus commersoni</i>	2
Poeciliidae	<i>Gambusia affinis</i>	1
Centrarchidae	<i>Lepomis macrochirus</i>	1

Sandia Line 14

20 December 2004

WJR255

40 seine hauls

Effort: 1037.4m²

Personnel: W.J. Remshardt, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	13
Cyprinidae	<i>Hybognathus amarus</i>	27
Cyprinidae	<i>Pimephales promelas</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	10
Poeciliidae	<i>Gambusia affinis</i>	2

Sandia PNM Gasline20 December 2004 WJR256 40 seine hauls Effort: 946.5m²

Personnel: W.J. Remshardt, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	3
Cyprinidae	<i>Hybognathus amarus</i>	7
Cyprinidae	<i>Pimephales promelas</i>	4
Cyprinidae	<i>Platygobio gracilis</i>	4
Catostomidae	<i>Catostomus commersoni</i>	1

Tomé21 December 2004 WJR257 40 seine hauls Effort: 791.1m²

Personnel: W.J. Remshardt, L. Torres, H.E. Watts, C.M. Robertson; NMFRO

NO FISH COLLECTED

U.S. 550 Bridge21 December 2004 WJR258 40 seine hauls Effort: 842.1m²

Personnel: W.J. Remshardt, L. Torres, H.E. Watts, C.M. Robertson; NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	15
Cyprinidae	<i>Hybognathus amarus</i>	5
Cyprinidae	<i>Rhinichthys cataractae</i>	5
Cyprinidae	<i>Platygobio gracilis</i>	10
Catostomidae	<i>Catostomus commersoni</i>	1

Dixon Road18 January 2005 WJR05-259 40 seine hauls Effort: 1065.0 m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	18
Cyprinidae	<i>Hybognathus amarus</i>	2
Cyprinidae	<i>Platygobio gracilis</i>	5
Catostomidae	<i>Carpiodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	2
Poeciliidae	<i>Gambusia affinis</i>	7

Lomitas Negras18 January 2005 WJR05-260 40 seine hauls Effort: 774.6 m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	4
Cyprinidae	<i>Hybognathus amarus</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	7
Catostomidae	<i>Carpiodes carpio</i>	57
Ictaluridae	<i>Ictalurus punctatus</i>	3
Centrarchidae	<i>Micropterus salmoides</i>	2

U.S. 550 Bridge

18 January 2005

WJR05-261

40 seine hauls

Effort: 770.4 m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	22
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	3
Catostomidae	<i>Carpiodes carpio</i>	2

Sandia Line 14

18 January 2005

WJR05-262

40 seine hauls

Effort: 860.4 m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	85
Cyprinidae	<i>Hybognathus amarus</i>	89
Cyprinidae	<i>Pimephales promelas</i>	4
Cyprinidae	<i>Platygobio gracilis</i>	22
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Catostomidae	<i>Catostomus commersoni</i>	7

Sandia PNM Gasline

18 January 2005

WJR05-263

40 seine hauls

Effort: 764.4 m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	69
Cyprinidae	<i>Hybognathus amarus</i>	47
Cyprinidae	<i>Platygobio gracilis</i>	42
Cyprinidae	<i>Rhinichthys cataractae</i>	4
Catostomidae	<i>Catostomus commersoni</i>	2

Rio Grande @ Isleta, Atrisco Outfall

20 January 2005

WJR05-264

40 seine hauls

Effort: 775.2 m²

Personnel: W. Jason Remshardt, Leeanna Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	108
Cyprinidae	<i>Hybognathus amarus</i>	7
Cyprinidae	<i>Pimephales promelas</i>	8
Catostomidae	<i>Carpiodes carpio</i>	3
Poeciliidae	<i>Gambusia affinis</i>	1

Rio Grande @ Isleta, Alejandro Gate

20 January 2005

WJR05-265

40 seine hauls

Effort: 887.4 m²

Personnel: W. Jason Remshardt, Leeanna Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	103
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	6
Cyprinidae	<i>Pimephales promelas</i>	7
Catostomidae	<i>Carpiodes carpio</i>	4
Poeciliidae	<i>Gambusia affinis</i>	1

Tomé

20 January 2005

WJR05-266

40 seine hauls

Effort: 839.1 m²

Personnel: W. Jason Remshardt, Leeanna Torres, Cody M. Robertson, NMFRO; Barbara Coulter, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	12
Cyprinidae	<i>Hybognathus amarus</i>	3
Cyprinidae	<i>Pimephales promelas</i>	8
Poeciliidae	<i>Gambusia affinis</i>	1

Dixon Road

14 February 2005

WJR05-267

40 seine hauls

Effort: 985.2 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	22
Cyprinidae	<i>Hybognathus amarus</i>	315
Cyprinidae	<i>Pimephales promelas</i>	2
Cyprinidae	<i>Platygobio gracilis</i>	14
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	2
Poeciliidae	<i>Gambusia affinis</i>	3

Lomitas Negras

14 February 2005

WJR05-268

40 seine hauls

Effort: 887.4 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	14
Cyprinidae	<i>Hybognathus amarus</i>	93
Cyprinidae	<i>Pimephales promelas</i>	17
Cyprinidae	<i>Platygobio gracilis</i>	22
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Catostomidae	<i>Carpiodes carpio</i>	5
Catostomidae	<i>Catostomus commersoni</i>	4
Poeciliidae	<i>Gambusia affinis</i>	2

Sandia Line 14

14 February 2005

WJR05-269

40 seine hauls

Effort: 787.8 m²

Personnel: Stephen R. Davenport, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	50
Cyprinidae	<i>Hybognathus amarus</i>	49
Cyprinidae	<i>Pimephales promelas</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	8
Cyprinidae	<i>Rhinichthys cataractae</i>	3
Catostomidae	<i>Catostomus commersoni</i>	3

Sandia PNM Gasline

14 February 2005

WJR05-270

40 seine hauls

Effort: 976.8 m²

Personnel: Stephen R. Davenport, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	23
Cyprinidae	<i>Hybognathus amarus</i>	96
Cyprinidae	<i>Pimephales promelas</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	54
Cyprinidae	<i>Rhinichthys cataractae</i>	11
Ictaluridae	<i>Ictalurus punctatus</i>	1

U.S. 550 Bridge

15 February 2005

WJR05-271

40 seine hauls

Effort: 831.0 m²

Personnel: W. Jason Remshardt, Leeanna Torres, D. Weston Furr, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	41
Cyprinidae	<i>Hybognathus amarus</i>	34
Cyprinidae	<i>Pimephales promelas</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	24
Cyprinidae	<i>Rhinichthys cataractae</i>	20
Catostomidae	<i>Catostomus commersoni</i>	5

Rio Grande @ Isleta, Atrisco Outfall

16 February 2005

WJR05-272

40 seine hauls

Effort: 933.3 m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	56
Cyprinidae	<i>Hybognathus amarus</i>	9
Cyprinidae	<i>Pimephales promelas</i>	19
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Catostomidae	<i>Carpiodes carpio</i>	9
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	9
Poeciliidae	<i>Gambusia affinis</i>	1
Centrarchidae	<i>Micropterus salmoides</i>	1

Rio Grande @ Isleta, Alejandro Gate

16 February 2005

WJR05-273

40 seine hauls

Effort: 847.2 m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	62
Cyprinidae	<i>Hybognathus amarus</i>	33
Cyprinidae	<i>Pimephales promelas</i>	20
Cyprinidae	<i>Platygobio gracilis</i>	3
Catostomidae	<i>Carpiodes carpio</i>	17
Ictaluridae	<i>Ictalurus punctatus</i>	40

Tomé

16 February 2005

WJR05-274

40 seine hauls

Effort: 896.1 m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	4
Cyprinidae	<i>Hybognathus amarus</i>	4
Cyprinidae	<i>Pimephales promelas</i>	8

Tomé

7 March 2005

SRD05-005

40 seine hauls

Effort: 800.4 m²

Personnel: Stephen R. Davenport, D. Weston Furr, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	10
Cyprinidae	<i>Pimephales promelas</i>	4
Ictaluridae	<i>Ictalurus punctatus</i>	3

Rio Grande @ Isleta, Alejandro Gate

7 March 2005

SRD05-006

41 seine hauls

Effort: 999.2 m²

Personnel: Stephen R. Davenport, D. Weston Furr, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	324
Cyprinidae	<i>Hybognathus amarus</i>	18
Cyprinidae	<i>Pimephales promelas</i>	49
Cyprinidae	<i>Platygobio gracilis</i>	1
Cyprinidae	<i>Rhinichthys cataractae</i>	2
Catostomidae	<i>Carpiodes carpio</i>	4
Catostomidae	<i>Catostomus commersoni</i>	1
Poeciliidae	<i>Gambusia affinis</i>	26

Rio Grande @ Isleta, Atrisco Outfall

7 March 2005

SRD05-007

41 seine hauls

Effort: 1014.0 m²

Personnel: Stephen R. Davenport, D. Weston Furr, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	55
Cyprinidae	<i>Hybognathus amarus</i>	2
Cyprinidae	<i>Pimephales promelas</i>	2
Cyprinidae	<i>Platygobio gracilis</i>	1
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Catostomidae	<i>Carpionodes carpio</i>	4
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	2

Dixon Road

8 March 2005

SRD05-008

40 seine hauls

Effort: 1046.7 m²

Personnel: Stephen R. Davenport, Leeanna L. Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	146
Cyprinidae	<i>Hybognathus amarus</i>	46
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	11
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	1

Lomitas Negras

8 March 2005

SRD05-009

40 seine hauls

Effort: 1037.1 m²

Personnel: Stephen R. Davenport, Leeanna L. Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	22
Cyprinidae	<i>Hybognathus amarus</i>	308
Cyprinidae	<i>Pimephales promelas</i>	16
Cyprinidae	<i>Platygobio gracilis</i>	29
Cyprinidae	<i>Rhinichthys cataractae</i>	4
Catostomidae	<i>Catostomus commersoni</i>	6
Ictaluridae	<i>Ameiurus natalis</i>	1
Poeciliidae	<i>Gambusia affinis</i>	3
Centrarchidae	<i>Lepomis cyanellus</i>	2
Centrarchidae	<i>Micropterus punctulatus</i>	3
Centrarchidae	<i>Micropterus salmoides</i>	1
Centrarchidae	<i>Pomoxis annularis</i>	1

Sandia Line 14

8 March 2005

SRD05-010

40 seine hauls

Effort: 985.2 m²

Personnel: Stephen R. Davenport, Leeanna L. Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	160
Cyprinidae	<i>Hybognathus amarus</i>	60
Cyprinidae	<i>Pimephales promelas</i>	5
Cyprinidae	<i>Platygobio gracilis</i>	14
Cyprinidae	<i>Rhinichthys cataractae</i>	6
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	1
Centrarchidae	<i>Micropterus salmoides</i>	1

Sandia PNM Gasline

8 March 2005

SRD05-011

40 seine hauls

Effort: 935.4 m²

Personnel: Stephen R. Davenport, Leeanna L. Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	10
Cyprinidae	<i>Hybognathus amarus</i>	56
Cyprinidae	<i>Pimephales promelas</i>	2
Cyprinidae	<i>Platygobio gracilis</i>	18
Cyprinidae	<i>Rhinichthys cataractae</i>	22
Catostomidae	<i>Catostomus commersoni</i>	2
Ictaluridae	<i>Ictalurus punctatus</i>	1

U.S. 550 Bridge

10 March 2005

WJR05-275

40 seine hauls

Effort: 1091.1 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	95
Cyprinidae	<i>Hybognathus amarus</i>	47
Cyprinidae	<i>Pimephales promelas</i>	11
Cyprinidae	<i>Platygobio gracilis</i>	12
Cyprinidae	<i>Rhinichthys cataractae</i>	14
Catostomidae	<i>Catostomus commersoni</i>	8
Poeciliidae	<i>Gambusia affinis</i>	2

Dixon Road

4 April 2005

WJR05-276

40 seine hauls

Effort: 948.9 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	156
Cyprinidae	<i>Hybognathus amarus</i>	18
Cyprinidae	<i>Pimephales promelas</i>	13
Cyprinidae	<i>Platygobio gracilis</i>	16
Cyprinidae	<i>Rhinichthys cataractae</i>	2
Catostomidae	<i>Catostomus commersoni</i>	9
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	2
Centrarchidae	<i>Micropterus salmoides</i>	2

Lomitas Negras

4 April 2005

WJR05-277

40 seine hauls

Effort: 1162.2 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	12
Cyprinidae	<i>Hybognathus amarus</i>	41
Cyprinidae	<i>Pimephales promelas</i>	21
Cyprinidae	<i>Platygobio gracilis</i>	79
Cyprinidae	<i>Rhinichthys cataractae</i>	8
Catostomidae	<i>Catostomus commersoni</i>	5
Centrarchidae	<i>Lepomis macrochirus</i>	12
Centrarchidae	<i>Micropterus salmoides</i>	4

U.S. 550 Bridge

4 April 2005

WJR05-278

40 seine hauls

Effort: 885.0 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	51
Cyprinidae	<i>Hybognathus amarus</i>	14
Cyprinidae	<i>Pimephales promelas</i>	14
Cyprinidae	<i>Rhinichthys cataractae</i>	30
Catostomidae	<i>Catostomus commersoni</i>	5

Sandia Line 14

4 April 2005

WJR05-279

40 seine hauls

Effort: 818.7 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	108
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	82
Cyprinidae	<i>Pimephales promelas</i>	8
Cyprinidae	<i>Platygobio gracilis</i>	21
Cyprinidae	<i>Rhinichthys cataractae</i>	9
Catostomidae	<i>Catostomus commersoni</i>	8
Ictaluridae	<i>Ictalurus punctatus</i>	2
Centrarchidae	<i>Micropterus salmoides</i>	1

Sandia PNM Gasline

4 April 2005

WJR05-280

40 seine hauls

Effort: 914.4 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	62
Cyprinidae	<i>Hybognathus amarus</i>	32
Cyprinidae	<i>Pimephales promelas</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	47
Cyprinidae	<i>Rhinichthys cataractae</i>	43
Catostomidae	<i>Catostomus commersoni</i>	5
Ictaluridae	<i>Ictalurus punctatus</i>	1

Tomé

6 April 2005

WJR05-281

40 seine hauls

Effort: 1006.2 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, NMFRO; Ted Olguin, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	24
Cyprinidae	<i>Hybognathus amarus</i>	8
Cyprinidae	<i>Pimephales promelas</i>	37
Catostomidae	<i>Carpiodes carpio</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	7

Rio Grande @ Isleta, Alejandro Gate

6 April 2005

WJR05-282

40 seine hauls

Effort: 834.0 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, NMFRO; Ted Olguin, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	299
Cyprinidae	<i>Hybognathus amarus</i>	13
Cyprinidae	<i>Pimephales promelas</i>	23
Cyprinidae	<i>Platygobio gracilis</i>	2
Catostomidae	<i>Carpionodes carpio</i>	9
Catostomidae	<i>Catostomus commersoni</i>	2
Ictaluridae	<i>Ictalurus punctatus</i>	7
Poeciliidae	<i>Gambusia affinis</i>	5

Rio Grande @ Isleta, Atrisco Outfall

6 April 2005

WJR05-283

40 seine hauls

Effort: 899.4 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, NMFRO; Ted Olguin, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	125
Cyprinidae	<i>Hybognathus amarus</i>	1
Cyprinidae	<i>Pimephales promelas</i>	5
Catostomidae	<i>Carpionodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	12
Ictaluridae	<i>Ictalurus punctatus</i>	9
Poeciliidae	<i>Gambusia affinis</i>	3
Centrarchidae	<i>Lepomis macrochirus</i>	1

Lomitas Negras

2 May 2005

WJR05-284

40 seine hauls

Effort: 735.0 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	2
Cyprinidae	<i>Hybognathus amarus</i>	2
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	18
Cyprinidae	<i>Rhinichthys cataractae</i>	8
Catostomidae	<i>Carpionodes carpio</i>	1
Poeciliidae	<i>Gambusia affinis</i>	2
Centrarchidae	<i>Micropterus salmoides</i>	1

Sandia PNM Gasline

2 May 2005

WJR05-285

42 seine hauls

Effort: 533.1 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	11
Cyprinidae	<i>Hybognathus amarus</i>	13
Cyprinidae	<i>Pimephales promelas</i>	2
Cyprinidae	<i>Platygobio gracilis</i>	58
Cyprinidae	<i>Rhinichthys cataractae</i>	2
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ameiurus melas</i>	1
Poeciliidae	<i>Gambusia affinis</i>	23

Sandia Line 14

2 May 2005

WJR05-286

40 seine hauls

Effort: 638.4 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	33
Cyprinidae	<i>Hybognathus amarus</i>	10
Cyprinidae	<i>Pimephales promelas</i>	2
Cyprinidae	<i>Platygobio gracilis</i>	4
Cyprinidae	<i>Rhinichthys cataractae</i>	3

U.S. 550 Bridge

2 May 2005

WJR05-287

40 seine hauls

Effort: 843.3 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	8
Cyprinidae	<i>Hybognathus amarus</i>	19
Cyprinidae	<i>Pimephales promelas</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	6
Cyprinidae	<i>Rhinichthys cataractae</i>	9
Catostomidae	<i>Catostomus commersoni</i>	1
Poeciliidae	<i>Gambusia affinis</i>	18

Dixon Road

2 May 2005

WJR05-288

14 seine hauls

Effort: 97.2 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	8
Poeciliidae	<i>Gambusia affinis</i>	1
Centrarchidae	<i>Lepomis cyanellus</i>	1
Centrarchidae	<i>Lepomis macrochirus</i>	4
Centrarchidae	<i>Micropterus salmoides</i>	2

Rio Grande @ Isleta, Atrisco Outfall3 May 2005 WJR05-289 20 seine hauls Effort: 408.0 m²

Personnel: W. Jason Remshardt, Cody M. Robertson, D. Chris Kitcheyan, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Poeciliidae	<i>Gambusia affinis</i>	1

Rio Grande @ Isleta, Alejandro Gate3 May 2005 WJR05-290 20 seine hauls Effort: 388.2 m²

Personnel: W. Jason Remshardt, Cody M. Robertson, D. Chris Kitcheyan, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	4
Cyprinidae	<i>Hybognathus amarus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	74
Centrarchidae	<i>Lepomis macrochirus</i>	3
Centrarchidae	<i>Micropterus salmoides</i>	1

Rio Grande @ Isleta, Atrisco Outfall2 June 2005 WJR05-292 31 seine hauls Effort: 491.7 m²

Personnel: W. Jason Remshardt, D. Weston Furr, James E. Brooks, NMFRO; Cody Walker, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	42
Cyprinidae	<i>Hybognathus amarus</i>	2
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	3
Poeciliidae	<i>Gambusia affinis</i>	1

Rio Grande @ Isleta, Alejandro Gate2 June 2005 WJR05-293 20 seine hauls Effort: 244.2 m²

Personnel: W. Jason Remshardt, D. Weston Furr, James E. Brooks, NMFRO; Cody Walker, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	2
Cyprinidae	<i>Cyprinus carpio</i>	18*(11)
Cyprinidae	<i>Hybognathus amarus</i>	904*(904)
Cyprinidae	<i>Pimephales promelas</i>	4
Catostomidae	<i>Catostomus commersoni</i>	14*(10)
Centrarchidae	<i>Micropterus salmoides</i>	6*(6)
Poeciliidae	<i>Gambusia affinis</i>	119*(117)

Lomitas Negras6 June 2005 WJR05-294 28 seine hauls Effort: 454.1m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	1
Cyprinidae	<i>Cyprinus carpio</i>	172
Cyprinidae	<i>Pimephales promelas</i>	10
Cyprinidae	<i>Platygobio gracilis</i>	4

Sandia Line 146 June 2005 WJR05-295 31 seine hauls Effort: 617.5 m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Hybognathus amarus</i>	3
Cyprinidae	<i>Pimephales promelas</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	5
Cyprinidae	<i>Rhinichthys cataractae</i>	8
Catostomidae	<i>Catostomus commersoni</i>	49

U.S. 550 Bridge6 June 2005 WJR05-296 40 seine hauls Effort: 810.3 m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia; Peter David, NMESFO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	6
Cyprinidae	<i>Hybognathus amarus</i>	7
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	9
Cyprinidae	<i>Rhinichthys cataractae</i>	8
Catostomidae	<i>Catostomus commersoni</i>	445

Sandia PNM Gasline6 June 2005 WJR05-297 40 seine hauls Effort: 926.1 m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia; Peter David, NMESFO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	6
Cyprinidae	<i>Hybognathus amarus</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	46
Cyprinidae	<i>Rhinichthys cataractae</i>	3
Catostomidae	<i>Catostomus commersoni</i>	2

Dixon Road6 June 2005 WJR05-298 15 seine hauls Effort: 165.3 m²

Personnel: W. Jason Remshardt, D. Weston Furr, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia; Peter David, NMESFO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinus carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	5
Poeciliidae	<i>Gambusia affinis</i>	3
Centrarchidae	<i>Micropterus salmoides</i>	1

U.S. Highway 60 Bridge

7 June 2005

WJR05-299

40 seine hauls

Effort: 642.9 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	44
Cyprinidae	<i>Cyprinus carpio</i>	7*(2)
Cyprinidae	<i>Hybognathus amarus</i>	5*(4)
Cyprinidae	<i>Pimephales promelas</i>	19*(14)
Catostomidae	<i>Carpiodes carpio</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	8*(3)

Rio Puerco Confluence

7 June 2005

WJR05-300

24 seine hauls

Effort: 341.4 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinus carpio</i>	3*(3)
Cyprinidae	<i>Cyprinella lutrensis</i>	22*(6)
Cyprinidae	<i>Hybognathus amarus</i>	35*(7)
Cyprinidae	<i>Pimephales promelas</i>	10*(9)
Cyprinidae	<i>Platygobio gracilis</i>	3*(1)
Catostomidae	<i>Carpiodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	1
Poeciliidae	<i>Gambusia affinis</i>	234*(192)

Lemitar

7 June 2005

WJR05-301

41 seine hauls

Effort: 682.2 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Clupeidae	<i>Dorosoma cepedianum</i>	1
Cyprinidae	<i>Cyprinella lutrensis</i>	6
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	9*(4)
Cyprinidae	<i>Pimephales promelas</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	2
Poeciliidae	<i>Gambusia affinis</i>	2*(2)

Rio Grande @ Isleta, Atrisco Outfall

5 July 2005

WJR05-305

40 seine hauls

Effort: 864.6 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Leeanna L. Torres, NMFRO; Cody Walker, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	8
Cyprinidae	<i>Cyprinus carpio</i>	16
Cyprinidae	<i>Hybognathus amarus</i>	1837*(35)
Cyprinidae	<i>Pimephales promelas</i>	57*(8)
Cyprinidae	<i>Platygobio gracilis</i>	5
Cyprinidae	<i>Rhinichthys cataractae</i>	2
Catostomidae	<i>Carpiodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	33*(1)
Poeciliidae	<i>Gambusia affinis</i>	10*(2)
Moronidae	<i>Morone chrysops</i>	13
Centrarchidae	<i>Micropterus salmoides</i>	1
Percidae	<i>Perca flavescens</i>	1

Rio Grande @ Isleta, Alejandro Gate

5 July 2005

WJR05-306

40 seine hauls

Effort: 680.1 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Leeanna L. Torres, NMFRO; Cody Walker, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	27
Cyprinidae	<i>Cyprinus carpio</i>	5
Cyprinidae	<i>Hybognathus amarus</i>	2539*(15)
Cyprinidae	<i>Pimephales promelas</i>	43*(1)
Catostomidae	<i>Catostomus commersoni</i>	32
Ictaluridae	<i>Ictalurus punctatus</i>	14
Poeciliidae	<i>Gambusia affinis</i>	7*(7)
Moronidae	<i>Morone chrysops</i>	1

Tomé

5 July 2005

WJR05-307

40 seine hauls

Effort: 701.1 m²

Personnel: W. Jason Remshardt, Stephen R. Davenport, Leeanna L. Torres, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	15
Cyprinidae	<i>Cyprinus carpio</i>	22
Cyprinidae	<i>Hybognathus amarus</i>	986*(5)
Cyprinidae	<i>Pimephales promelas</i>	23*(19)
Catostomidae	<i>Catostomus commersoni</i>	7
Poeciliidae	<i>Gambusia affinis</i>	7
Moronidae	<i>Morone chrysops</i>	1

Dixon Road

6 July 2005

WJR05-308

40 seine hauls

Effort: 772.8 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	82
Cyprinidae	<i>Cyprinus carpio</i>	41
Cyprinidae	<i>Hybognathus amarus</i>	1134
Cyprinidae	<i>Pimephales promelas</i>	63
Cyprinidae	<i>Platygobio gracilis</i>	2
Cyprinidae	<i>Rhinichthys cataractae</i>	25
Catostomidae	<i>Carpiodes carpio</i>	2
Catostomidae	<i>Catostomus commersoni</i>	315
Poeciliidae	<i>Gambusia affinis</i>	1
Moronidae	<i>Morone chrysops</i>	10
Centrarchidae	<i>Lepomis macrochirus</i>	1
Centrarchidae	<i>Micropterus salmoides</i>	7
Percidae	<i>Perca flavescens</i>	4

Lomitas Negras

6 July 2005

WJR05-309

40 seine hauls

Effort: 662.4 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	31*(2)
Cyprinidae	<i>Cyprinus carpio</i>	24
Cyprinidae	<i>Hybognathus amarus</i>	799
Cyprinidae	<i>Pimephales promelas</i>	63
Cyprinidae	<i>Platygobio gracilis</i>	2
Cyprinidae	<i>Rhinichthys cataractae</i>	25
Catostomidae	<i>Carpiodes carpio</i>	15
Catostomidae	<i>Catostomus commersoni</i>	501
Poeciliidae	<i>Gambusia affinis</i>	129*(6)
Moronidae	<i>Morone chrysops</i>	4
Centrarchidae	<i>Lepomis cyanellus</i>	1
Centrarchidae	<i>Micropterus salmoides</i>	3
Percidae	<i>Perca flavescens</i>	2

U.S. 550 Bridge

6 July 2005

WJR05-310

40 seine hauls

Effort: 799.8 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	17
Cyprinidae	<i>Cyprinus carpio</i>	17
Cyprinidae	<i>Hybognathus amarus</i>	999*(9)
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	4
Cyprinidae	<i>Rhinichthys cataractae</i>	37
Catostomidae	<i>Carpiodes carpio</i>	154
Poeciliidae	<i>Gambusia affinis</i>	19
Moronidae	<i>Morone chrysops</i>	28
Percidae	<i>Perca flavescens</i>	7

Sandia Line 14

6 July 2005

WJR05-311

40 seine hauls

Effort: 720.6 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	69
Cyprinidae	<i>Cyprinus carpio</i>	42
Cyprinidae	<i>Hybognathus amarus</i>	429
Cyprinidae	<i>Pimephales promelas</i>	2
Cyprinidae	<i>Platygobio gracilis</i>	4
Cyprinidae	<i>Rhinichthys cataractae</i>	11
Catostomidae	<i>Catostomus commersoni</i>	154
Poeciliidae	<i>Gambusia affinis</i>	19
Moronidae	<i>Morone chrysops</i>	28

Sandia PNM Gasline

6 July 2005

WJR05-312

40 seine hauls

Effort: 723.9 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	53
Cyprinidae	<i>Cyprinus carpio</i>	21
Cyprinidae	<i>Hybognathus amarus</i>	416*(5)
Cyprinidae	<i>Pimephales promelas</i>	15
Cyprinidae	<i>Platygobio gracilis</i>	17
Cyprinidae	<i>Rhinichthys cataractae</i>	35
Catostomidae	<i>Carpiodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	168
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	10
Moronidae	<i>Morone chrysops</i>	4

Lemitar

7 July 2005

WJR05-313

40 seine hauls

Effort: 726.0 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	19*(2)
Cyprinidae	<i>Cyprinus carpio</i>	7
Cyprinidae	<i>Hybognathus amarus</i>	977*(26)
Cyprinidae	<i>Pimephales promelas</i>	8
Cyprinidae	<i>Platygobio gracilis</i>	7
Catostomidae	<i>Carpiodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	5
Ictaluridae	<i>Ictalurus punctatus</i>	2
Poeciliidae	<i>Gambusia affinis</i>	19*(5)
Moronidae	<i>Morone chrysops</i>	1

Rio Puerco Confluence

7 July 2005

WJR05-314

40 seine hauls

Effort: 658.5 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	26*(6)
Cyprinidae	<i>Cyprinus carpio</i>	17
Cyprinidae	<i>Hybognathus amarus</i>	1286*(8)
Cyprinidae	<i>Pimephales promelas</i>	390
Cyprinidae	<i>Platygobio gracilis</i>	5
Cyprinidae	<i>Rhinichthys cataractae</i>	2
Catostomidae	<i>Carpiodes carpio</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	6
Poeciliidae	<i>Gambusia affinis</i>	227*(2)
Moronidae	<i>Morone chrysops</i>	11
Centrarchidae	<i>Micropterus salmoides</i>	1

U.S. Highway 60 Bridge

7 July 2005

WJR05-315

40 seine hauls

Effort: 703.8 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	35
Cyprinidae	<i>Cyprinus carpio</i>	63
Cyprinidae	<i>Hybognathus amarus</i>	1404*(7)
Cyprinidae	<i>Pimephales promelas</i>	79*(2)
Cyprinidae	<i>Platygobio gracilis</i>	2
Catostomidae	<i>Carpiodes carpio</i>	2
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ameiurus natalis</i>	12
Ictaluridae	<i>Ictalurus punctatus</i>	11
Poeciliidae	<i>Gambusia affinis</i>	234
Moronidae	<i>Morone chrysops</i>	3
Centrarchidae	<i>Micropterus salmoides</i>	27
Percidae	<i>Perca flavescens</i>	1

U.S. Highway 60 Bridge

8 August 2005

WJR05-332

40 seine hauls

Effort: 847.5 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Jason E. Davis, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	105
Cyprinidae	<i>Cyprinus carpio</i>	47
Cyprinidae	<i>Hybognathus amarus</i>	370
Cyprinidae	<i>Pimephales promelas</i>	78
Cyprinidae	<i>Platygobio gracilis</i>	6
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Catostomidae	<i>Carpiodes carpio</i>	2
Ictaluridae	<i>Ameiurus natalis</i>	26
Ictaluridae	<i>Ictalurus punctatus</i>	18
Poeciliidae	<i>Gambusia affinis</i>	239
Moronidae	<i>Morone chrysops</i>	1

Rio Puerco Confluence

8 August 2005

WJR05-333

40 seine hauls

Effort: 782.7 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Jason E. Davis, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	63
Cyprinidae	<i>Cyprinus carpio</i>	3
Cyprinidae	<i>Hybognathus amarus</i>	328
Cyprinidae	<i>Pimephales promelas</i>	35
Cyprinidae	<i>Platygobio gracilis</i>	2
Catostomidae	<i>Carpionodes carpio</i>	8
Catostomidae	<i>Catostomus commersoni</i>	4
Ictaluridae	<i>Ameiurus natalis</i>	2
Ictaluridae	<i>Ictalurus punctatus</i>	39
Poeciliidae	<i>Gambusia affinis</i>	194

Dixon Road

15 August 2005

WJR05-334

40 seine hauls

Effort: 886.5 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	46
Cyprinidae	<i>Cyprinus carpio</i>	15
Cyprinidae	<i>Hybognathus amarus</i>	271
Cyprinidae	<i>Pimephales promelas</i>	63
Cyprinidae	<i>Platygobio gracilis</i>	11
Cyprinidae	<i>Rhinichthys cataractae</i>	69
Catostomidae	<i>Carpionodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	82
Ictaluridae	<i>Ameiurus natalis</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	2
Poeciliidae	<i>Gambusia affinis</i>	241
Moronidae	<i>Morone chrysops</i>	11

Lomitas Negras

15 August 2005

WJR05-335

30 seine hauls

Effort: 581.4 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	48
Cyprinidae	<i>Cyprinus carpio</i>	12
Cyprinidae	<i>Hybognathus amarus</i>	109
Cyprinidae	<i>Pimephales promelas</i>	7
Cyprinidae	<i>Platygobio gracilis</i>	1
Cyprinidae	<i>Rhinichthys cataractae</i>	40
Catostomidae	<i>Carpionodes carpio</i>	4
Catostomidae	<i>Catostomus commersoni</i>	17
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	286
Moronidae	<i>Morone chrysops</i>	5
Centrarchidae	<i>Lepomis megalotis</i>	4
Centrarchidae	<i>Micropterus punctulatus</i>	1

U.S. 550 Bridge

15 August 2005

WJR05-336

30 seine hauls

Effort: 703.5 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	114
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	272
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	24
Cyprinidae	<i>Rhinichthys cataractae</i>	82
Catostomidae	<i>Catostomus commersoni</i>	13
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	2

Sandia Line 14

15 August 2005

WJR05-337

30 seine hauls

Effort: 722.4 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	54
Cyprinidae	<i>Hybognathus amarus</i>	80
Cyprinidae	<i>Pimephales promelas</i>	4
Cyprinidae	<i>Platygobio gracilis</i>	9
Cyprinidae	<i>Rhinichthys cataractae</i>	32
Catostomidae	<i>Catostomus commersoni</i>	10
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	21
Percidae	<i>Perca flavescens</i>	2

Sandia PNM Gasline

15 August 2005

WJR05-338

30 seine hauls

Effort: 558.3 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	55
Cyprinidae	<i>Hybognathus amarus</i>	80
Cyprinidae	<i>Pimephales promelas</i>	4
Cyprinidae	<i>Platygobio gracilis</i>	9
Cyprinidae	<i>Rhinichthys cataractae</i>	33
Catostomidae	<i>Catostomus commersoni</i>	10
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	21
Percidae	<i>Perca flavescens</i>	2

Lemitar

16 August 2005

WJR05-339

30 seine hauls

Effort: 569.7 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	27
Cyprinidae	<i>Cyprinus carpio</i>	5
Cyprinidae	<i>Hybognathus amarus</i>	402
Cyprinidae	<i>Pimephales promelas</i>	23
Cyprinidae	<i>Platygobio gracilis</i>	36
Ictaluridae	<i>Ictalurus punctatus</i>	15
Poeciliidae	<i>Gambusia affinis</i>	96

San Acacia Diversion Dam

16 August 2005

WJR05-340

30 seine hauls

Effort: 564.9 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	8
Cyprinidae	<i>Cyprinus carpio</i>	2
Cyprinidae	<i>Hybognathus amarus</i>	13
Cyprinidae	<i>Pimephales promelas</i>	7
Cyprinidae	<i>Platygobio gracilis</i>	21
Cyprinidae	<i>Rhinichthys cataractae</i>	2
Catostomidae	<i>Carpiodes carpio</i>	2
Ictaluridae	<i>Ameiurus natalis</i>	3
Ictaluridae	<i>Ictalurus punctatus</i>	127
Poeciliidae	<i>Gambusia affinis</i>	5
Moronidae	<i>Morone chrysops</i>	1

Tomé

16 August 2005

WJR05-341

30 seine hauls

Effort: 561.3 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	19
Cyprinidae	<i>Cyprinus carpio</i>	11
Cyprinidae	<i>Hybognathus amarus</i>	169
Cyprinidae	<i>Pimephales promelas</i>	23
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Catostomidae	<i>Carpiodes carpio</i>	2
Ictaluridae	<i>Ictalurus punctatus</i>	5
Poeciliidae	<i>Gambusia affinis</i>	13
Moronidae	<i>Morone chrysops</i>	1
Centrarchidae	<i>Micropterus salmoides</i>	1

Rio Grande @ Isleta, Alejandro Gate

16 August 2005

WJR05-342

30 seine hauls

Effort: 588.0 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	29
Cyprinidae	<i>Cyprinus carpio</i>	5
Cyprinidae	<i>Hybognathus amarus</i>	866
Cyprinidae	<i>Pimephales promelas</i>	38
Cyprinidae	<i>Platygobio gracilis</i>	2
Catostomidae	<i>Carpiodes carpio</i>	15
Catostomidae	<i>Catostomus commersoni</i>	3
Ictaluridae	<i>Ameiurus natalis</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	4
Poeciliidae	<i>Gambusia affinis</i>	65
Moronidae	<i>Morone chrysops</i>	6

Rio Grande @ Isleta, Atrisco Outfall

16 August 2005

WJR05-343

30 seine hauls

Effort: 665.7 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	14
Cyprinidae	<i>Hybognathus amarus</i>	15
Cyprinidae	<i>Pimephales promelas</i>	12
Cyprinidae	<i>Rhinichthys cataractae</i>	6
Catostomidae	<i>Carpiodes carpio</i>	11
Catostomidae	<i>Catostomus commersoni</i>	4
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	27
Moronidae	<i>Morone chrysops</i>	2

Dixon Road

12 September 2005

WJR05-344

40 seine hauls

Effort: 910.8 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	20
Cyprinidae	<i>Cyprinus carpio</i>	3
Cyprinidae	<i>Hybognathus amarus</i>	52
Cyprinidae	<i>Pimephales promelas</i>	7
Cyprinidae	<i>Platygobio gracilis</i>	4
Cyprinidae	<i>Rhinichthys cataractae</i>	9
Catostomidae	<i>Catostomus commersoni</i>	7
Poeciliidae	<i>Gambusia affinis</i>	81
Moronidae	<i>Morone chrysops</i>	1
Centrarchidae	<i>Micropterus salmoides</i>	3
Percidae	<i>Sander vitreus</i>	1

Lomitas Negras

12 September 2005

WJR05-345

40 seine hauls

Effort: 789.3 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	76
Cyprinidae	<i>Hybognathus amarus</i>	104
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	7
Cyprinidae	<i>Rhinichthys cataractae</i>	26
Catostomidae	<i>Catostomus commersoni</i>	2
Poeciliidae	<i>Gambusia affinis</i>	157

U.S. 550 Bridge

12 September 2005

WJR05-346

40 seine hauls

Effort: 789.6 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	67
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	293
Cyprinidae	<i>Pimephales promelas</i>	5
Cyprinidae	<i>Platygobio gracilis</i>	19
Cyprinidae	<i>Rhinichthys cataractae</i>	81
Catostomidae	<i>Carpionodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	13
Poeciliidae	<i>Gambusia affinis</i>	48

Sandia Line 14

12 September 2005

WJR05-347

40 seine hauls

Effort: 843.0 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	61
Cyprinidae	<i>Cyprinus carpio</i>	21
Cyprinidae	<i>Hybognathus amarus</i>	63
Cyprinidae	<i>Pimephales promelas</i>	4
Cyprinidae	<i>Platygobio gracilis</i>	7
Cyprinidae	<i>Rhinichthys cataractae</i>	19
Catostomidae	<i>Catostomus commersoni</i>	8
Poeciliidae	<i>Gambusia affinis</i>	301
Centrarchidae	<i>Lepomis macrochirus</i>	2
Centrarchidae	<i>Micropterus salmoides</i>	6

Sandia PNM Gasline

12 September 2005

WJR05-348

40 seine hauls

Effort: 817.8 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	27
Cyprinidae	<i>Cyprinus carpio</i>	3
Cyprinidae	<i>Hybognathus amarus</i>	33
Cyprinidae	<i>Pimephales promelas</i>	7
Cyprinidae	<i>Platygobio gracilis</i>	2
Cyprinidae	<i>Rhinichthys cataractae</i>	7
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	2
Moronidae	<i>Morone chrysops</i>	1

Lemitar

13 September 2005

WJR05-349

40 seine hauls

Effort: 986.4 m²

Personnel: W. Jason Remshardt, Cody M. Robertson, Leeanna L. Torres, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	13
Cyprinidae	<i>Cyprinus carpio</i>	11
Cyprinidae	<i>Hybognathus amarus</i>	195
Cyprinidae	<i>Pimephales promelas</i>	13
Cyprinidae	<i>Platygobio gracilis</i>	10
Cyprinidae	<i>Rhinichthys cataractae</i>	2
Catostomidae	<i>Catostomus commersoni</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	26
Poeciliidae	<i>Gambusia affinis</i>	7

San Acacia Diversion Dam

13 September 2005

WJR05-350

40 seine hauls

Effort: 842.7 m²

Personnel: W. Jason Remshardt, Cody M. Robertson, Leeanna L. Torres, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	2
Cyprinidae	<i>Cyprinus carpio</i>	21
Cyprinidae	<i>Hybognathus amarus</i>	36
Cyprinidae	<i>Pimephales promelas</i>	5
Cyprinidae	<i>Platygobio gracilis</i>	13
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Ictaluridae	<i>Ameiurus natalis</i>	2
Ictaluridae	<i>Ictalurus punctatus</i>	64
Poeciliidae	<i>Gambusia affinis</i>	20

U.S. Highway 60 Bridge

13 September 2005

WJR05-351

40 seine hauls

Effort: 759.0 m²

Personnel: W. Jason Remshardt, Cody M. Robertson, Leeanna L. Torres, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	47
Cyprinidae	<i>Cyprinus carpio</i>	9
Cyprinidae	<i>Hybognathus amarus</i>	115
Cyprinidae	<i>Pimephales promelas</i>	9
Ictaluridae	<i>Ameiurus natalis</i>	16
Ictaluridae	<i>Ictalurus punctatus</i>	30
Poeciliidae	<i>Gambusia affinis</i>	68
Moronidae	<i>Morone chrysops</i>	4

Rio Grande @ Isleta, Atrisco Outfall

14 September 2005

SRD05-078

30 seine hauls

Effort: 880.5 m²

Personnel: Stephen R. Davenport, D. Chris Kitcheyan, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	14
Cyprinidae	<i>Hybognathus amarus</i>	17
Cyprinidae	<i>Pimephales promelas</i>	12
Cyprinidae	<i>Platygobio gracilis</i>	2
Cyprinidae	<i>Rhinichthys cataractae</i>	4
Catostomidae	<i>Carpiodes carpio</i>	2
Catostomidae	<i>Catostomus commersoni</i>	6
Ictaluridae	<i>Ameiurus natalis</i>	4
Ictaluridae	<i>Ictalurus punctatus</i>	4
Poeciliidae	<i>Gambusia affinis</i>	103
Moronidae	<i>Morone chrysops</i>	1
Centrarchidae	<i>Pomoxis annularis</i>	2

Rio Grande @ Isleta, Alejandro Gate

14 September 2005

SRD05-079

30 seine hauls

Effort: 933.0 m²

Personnel: Stephen R. Davenport, D. Chris Kitcheyan, Cody M. Robertson, NMFRO; Cody Walker, Pueblo of Isleta

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	133
Cyprinidae	<i>Cyprinus carpio</i>	10
Cyprinidae	<i>Hybognathus amarus</i>	750
Cyprinidae	<i>Pimephales promelas</i>	25
Cyprinidae	<i>Platygobio gracilis</i>	4
Catostomidae	<i>Carpiodes carpio</i>	2
Catostomidae	<i>Catostomus commersoni</i>	2
Ictaluridae	<i>Ictalurus punctatus</i>	11
Poeciliidae	<i>Gambusia affinis</i>	150
Moronidae	<i>Morone chrysops</i>	2

Rio Puerco Confluence

14 September 2005

SRD05-080

40 seine hauls

Effort: 804.0 m²

Personnel: Stephen R. Davenport, D. Chris Kitcheyan, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	24
Cyprinidae	<i>Cyprinus carpio</i>	7
Cyprinidae	<i>Hybognathus amarus</i>	296
Cyprinidae	<i>Pimephales promelas</i>	12
Catostomidae	<i>Carpiodes carpio</i>	1
Ictaluridae	<i>Ameiurus natalis</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	34
Poeciliidae	<i>Gambusia affinis</i>	300

Tomé

15 September 2005

SRD05-081

7 seine hauls

Effort: 174.3 m²

Personnel: W. Jason Remshardt, Leeanna Torres, Stephen R. Davenport, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	63
Cyprinidae	<i>Cyprinus carpio</i>	6
Cyprinidae	<i>Hybognathus amarus</i>	75
Cyprinidae	<i>Pimephales promelas</i>	69
Catostomidae	<i>Carpiodes carpio</i>	5
Ictaluridae	<i>Ictalurus punctatus</i>	6
Poeciliidae	<i>Gambusia affinis</i>	38

Dixon Road

11 October 2005

LTT05-01

40 seine hauls

Effort: 1013.1 m²

Personnel: Leeanna L. Torres, Stephen R. Davenport, NMFRO; Scott Bulgrin, Mark Morales, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	20
Cyprinidae	<i>Cyprinus carpio</i>	23
Cyprinidae	<i>Hybognathus amarus</i>	347
Cyprinidae	<i>Pimephales promelas</i>	4
Cyprinidae	<i>Platygobio gracilis</i>	37
Cyprinidae	<i>Rhinichthys cataractae</i>	29
Catostomidae	<i>Carpionodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	6
Ictaluridae	<i>Ictalurus punctatus</i>	2
Poeciliidae	<i>Gambusia affinis</i>	52

Lomitas Negras

11 October 2005

LTT05-02

40 seine hauls

Effort: 837.3 m²

Personnel: Leeanna L. Torres, Stephen R. Davenport, NMFRO; Scott Bulgrin, Mark Morales, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	17
Cyprinidae	<i>Cyprinus carpio</i>	5
Cyprinidae	<i>Hybognathus amarus</i>	104
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	2
Cyprinidae	<i>Rhinichthys cataractae</i>	2
Catostomidae	<i>Carpionodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	5
Ictaluridae	<i>Ictalurus punctatus</i>	1
Poeciliidae	<i>Gambusia affinis</i>	306
Centrarchidae	<i>Lepomis cyanellus</i>	2
Centrarchidae	<i>Pomoxis annularis</i>	5
Percidae	<i>Perca flavescens</i>	1

U.S. 550 Bridge

11 October 2005

LTT05-03

40 seine hauls

Effort: 889.2 m²

Personnel: Leeanna L. Torres, Stephen R. Davenport, NMFRO; Scott Bulgrin, Mark Morales, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	44
Cyprinidae	<i>Cyprinus carpio</i>	2
Cyprinidae	<i>Hybognathus amarus</i>	183
Cyprinidae	<i>Platygobio gracilis</i>	16
Cyprinidae	<i>Rhinichthys cataractae</i>	228
Catostomidae	<i>Carpionodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	9
Ictaluridae	<i>Ictalurus punctatus</i>	2
Poeciliidae	<i>Gambusia affinis</i>	1

Sandia Line 14

11 October 2005

LTT05-04

40 seine hauls

Effort: 850.2 m²

Personnel: Leeanna L. Torres, Stephen R. Davenport, NMFRO; Scott Bulgrin, Mark Morales, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	39
Cyprinidae	<i>Cyprinus carpio</i>	3
Cyprinidae	<i>Hybognathus amarus</i>	196
Cyprinidae	<i>Pimephales promelas</i>	8
Cyprinidae	<i>Platygobio gracilis</i>	7
Cyprinidae	<i>Rhinichthys cataractae</i>	28
Catostomidae	<i>Catostomus commersoni</i>	5
Ictaluridae	<i>Ictalurus punctatus</i>	3
Poeciliidae	<i>Gambusia affinis</i>	197
Centrarchidae	<i>Lepomis cyanellus</i>	1
Centrarchidae	<i>Pomoxis annularis</i>	1

Sandia PNM Gasline

11 October 2005

LTT05-05

31 seine hauls

Effort: 602.4 m²

Personnel: Leeanna L. Torres, Stephen R. Davenport, NMFRO; Mark Morales, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	42
Cyprinidae	<i>Hybognathus amarus</i>	146
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	10
Cyprinidae	<i>Rhinichthys cataractae</i>	75
Catostomidae	<i>Catostomus commersoni</i>	3
Ictaluridae	<i>Ictalurus punctatus</i>	2
Poeciliidae	<i>Gambusia affinis</i>	25

Rio Grande @ Isleta, Atrisco Outfall

12 October 2005

LTT05-06

30 seine hauls

Effort: 960.0 m²

Personnel: Leeanna Torres, Stephen R. Davenport, D. Chris Kitcheyan, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	34
Cyprinidae	<i>Cyprinus carpio</i>	2
Cyprinidae	<i>Hybognathus amarus</i>	12
Cyprinidae	<i>Pimephales promelas</i>	2
Cyprinidae	<i>Platygobio gracilis</i>	5
Cyprinidae	<i>Rhinichthys cataractae</i>	3
Catostomidae	<i>Carpiodes carpio</i>	3
Ictaluridae	<i>Ictalurus punctatus</i>	5
Poeciliidae	<i>Gambusia affinis</i>	65

Rio Grande @ Isleta, Alejandro Gate

12 October 2005

LTT05-07

30 seine hauls

Effort: 1002.6 m²

Personnel: Leeanna Torres, Stephen R. Davenport, D. Chris Kitcheyan, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	32
Cyprinidae	<i>Cyprinus carpio</i>	2
Cyprinidae	<i>Hybognathus amarus</i>	1143
Cyprinidae	<i>Pimephales promelas</i>	13
Ictaluridae	<i>Ictalurus punctatus</i>	3
Poeciliidae	<i>Gambusia affinis</i>	181
Moronidae	<i>Morone chrysops</i>	1

Tomé

12 October 2005

LTT05-08

7 seine hauls

Effort: 681.0 m²

Personnel: Leeanna Torres, Stephen R. Davenport, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	8
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	139
Cyprinidae	<i>Pimephales promelas</i>	7
Cyprinidae	<i>Platygobio gracilis</i>	3
Catostomidae	<i>Carpiodes carpio</i>	2
Poeciliidae	<i>Gambusia affinis</i>	29

Lemitar

13 October 2005

LTT05-09

35 seine hauls

Effort: 862.5 m²

Personnel: Leeanna Torres, Stephen R. Davenport, Jason E. Davis, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	6
Cyprinidae	<i>Cyprinus carpio</i>	5
Cyprinidae	<i>Hybognathus amarus</i>	489
Cyprinidae	<i>Pimephales promelas</i>	4
Cyprinidae	<i>Platygobio gracilis</i>	7
Ictaluridae	<i>Ictalurus punctatus</i>	17
Poeciliidae	<i>Gambusia affinis</i>	20

San Acacia Diversion Dam

13 October 2005

LTT05-10

35 seine hauls

Effort: 873.6 m²

Personnel: Leeanna Torres, Stephen R. Davenport, Jason E. Davis, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	3
Cyprinidae	<i>Cyprinus carpio</i>	6
Cyprinidae	<i>Hybognathus amarus</i>	34
Cyprinidae	<i>Pimephales promelas</i>	5
Cyprinidae	<i>Platygobio gracilis</i>	7
Cyprinidae	<i>Rhinichthys cataractae</i>	10
Ictaluridae	<i>Ictalurus punctatus</i>	35

Rio Puerco Confluence

13 October 2005

LTT05-11

35 seine hauls

Effort: 945.6 m²

Personnel: Leeanna Torres, Stephen R. Davenport, Jason E. Davis, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	4
Cyprinidae	<i>Cyprinus carpio</i>	6
Cyprinidae	<i>Hybognathus amarus</i>	246
Cyprinidae	<i>Pimephales promelas</i>	8
Cyprinidae	<i>Platygobio gracilis</i>	9
Ictaluridae	<i>Ameiurus natalis</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	77
Poeciliidae	<i>Gambusia affinis</i>	138

U.S. Highway 60 Bridge

13 October 2005

LTT05-12

35 seine hauls

Effort: 873.6 m²

Personnel: Leeanna Torres, Stephen R. Davenport, Jason E. Davis, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	41
Cyprinidae	<i>Cyprinus carpio</i>	17
Cyprinidae	<i>Hybognathus amarus</i>	123
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	1
Ictaluridae	<i>Ameiurus natalis</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	17
Poeciliidae	<i>Gambusia affinis</i>	14

Dixon Road

15 November 2005

WJR05-352

40 seine hauls

Effort: 729.6 m²

Personnel: W. Jason Remshardt, D. Weston Furr, NMFRO; Scott Bulgrin, Mark Morales, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	19
Cyprinidae	<i>Hybognathus amarus</i>	133
Cyprinidae	<i>Pimephales promelas</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	33
Cyprinidae	<i>Rhinichthys cataractae</i>	1
Catostomidae	<i>Catostomus commersoni</i>	1
Poeciliidae	<i>Gambusia affinis</i>	32
Moronidae	<i>Morone chrysops</i>	1

Lomitas Negras

15 November 2005

WJR05-353

40 seine hauls

Effort: 770.1 m²

Personnel: W. Jason Remshardt, D. Weston Furr, NMFRO; Scott Bulgrin, Mark Morales, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	1
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	144
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	8
Catostomidae	<i>Carpionodes carpio</i>	1
Poeciliidae	<i>Gambusia affinis</i>	62
Moronidae	<i>Morone chrysops</i>	3
Centrarchidae	<i>Lepomis cyanellus</i>	2

Sandia Line 14

16 November 2005

WJR05-354

40 seine hauls

Effort: 826.5 m²

Personnel: W. Jason Remshardt, D. Weston Furr, NMFRO; Scott Bulgrin, Mark Morales, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	49
Cyprinidae	<i>Cyprinus carpio</i>	3
Cyprinidae	<i>Hybognathus amarus</i>	269
Cyprinidae	<i>Pimephales promelas</i>	10
Cyprinidae	<i>Platygobio gracilis</i>	9
Cyprinidae	<i>Rhinichthys cataractae</i>	4
Catostomidae	<i>Carpionodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	5
Poeciliidae	<i>Gambusia affinis</i>	25
Moronidae	<i>Morone chrysops</i>	1

Sandia PNM Gasline

16 November 2005

WJR05-355

40 seine hauls

Effort: 803.1 m²

Personnel: W. Jason Remshardt, D. Weston Furr, NMFRO; Scott Bulgrin, Mark Morales, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	26
Cyprinidae	<i>Cyprinus carpio</i>	3
Cyprinidae	<i>Hybognathus amarus</i>	157
Cyprinidae	<i>Pimephales promelas</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	22
Cyprinidae	<i>Rhinichthys cataractae</i>	5
Catostomidae	<i>Carpiodes carpio</i>	1
Catostomidae	<i>Catostomus commersoni</i>	4
Poeciliidae	<i>Gambusia affinis</i>	9
Moronidae	<i>Morone chrysops</i>	1

Rio Grande @ Isleta, Atrisco Outfall

16 November 2005

WJR05-356

40 seine hauls

Effort: 863.1 m²

Personnel: W. Jason Remshardt, Leeanna Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	8
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	7
Cyprinidae	<i>Pimephales promelas</i>	5
Cyprinidae	<i>Platygobio gracilis</i>	10
Cyprinidae	<i>Rhinichthys cataractae</i>	3
Poeciliidae	<i>Gambusia affinis</i>	49
Centrarchidae	<i>Lepomis macrochirus</i>	11
Centrarchidae	<i>Micropterus salmoides</i>	1

Rio Grande @ Isleta, Alejandro Gate

16 November 2005

WJR05-357

40 seine hauls

Effort: 769.8 m²

Personnel: W. Jason Remshardt, Leeanna Torres, Cody M. Robertson, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	53
Cyprinidae	<i>Hybognathus amarus</i>	863
Cyprinidae	<i>Pimephales promelas</i>	2
Cyprinidae	<i>Platygobio gracilis</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	7
Poeciliidae	<i>Gambusia affinis</i>	196
Centrarchidae	<i>Lepomis macrochirus</i>	1

Lemitar

17 November 2005

WJR05-358

40 seine hauls

Effort: 654.3 m²

Personnel: W. Jason Remshardt, Leeanna Torres, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinus carpio</i>	4
Cyprinidae	<i>Hybognathus amarus</i>	718
Cyprinidae	<i>Pimephales promelas</i>	10
Cyprinidae	<i>Platygobio gracilis</i>	7
Ictaluridae	<i>Ictalurus punctatus</i>	10
Poeciliidae	<i>Gambusia affinis</i>	29

San Acacia Diversion Dam

17 November 2005

WJR05-359

40 seine hauls

Effort: 620.4 m²

Personnel: W. Jason Remshardt, Leeanna Torres, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	8
Cyprinidae	<i>Cyprinus carpio</i>	4
Cyprinidae	<i>Hybognathus amarus</i>	282
Cyprinidae	<i>Pimephales promelas</i>	22
Cyprinidae	<i>Platygobio gracilis</i>	33
Cyprinidae	<i>Rhinichthys cataractae</i>	4
Ictaluridae	<i>Ameiurus natalis</i>	6
Ictaluridae	<i>Ictalurus punctatus</i>	32
Moronidae	<i>Morone chrysops</i>	2

Rio Puerco Confluence

17 November 2005

WJR05-360

40 seine hauls

Effort: 746.1 m²

Personnel: W. Jason Remshardt, Leeanna Torres, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	1
Cyprinidae	<i>Cyprinus carpio</i>	7
Cyprinidae	<i>Hybognathus amarus</i>	254
Cyprinidae	<i>Pimephales promelas</i>	9
Cyprinidae	<i>Platygobio gracilis</i>	11
Ictaluridae	<i>Ictalurus punctatus</i>	57
Poeciliidae	<i>Gambusia affinis</i>	197

U.S. Highway 60 Bridge

17 November 2005

WJR05-361

40 seine hauls

Effort: 709.2 m²

Personnel: W. Jason Remshardt, Leeanna Torres, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	14
Cyprinidae	<i>Cyprinus carpio</i>	3
Cyprinidae	<i>Hybognathus amarus</i>	223
Cyprinidae	<i>Pimephales promelas</i>	3
Cyprinidae	<i>Platygobio gracilis</i>	2
Ictaluridae	<i>Ameiurus natalis</i>	2
Ictaluridae	<i>Ictalurus punctatus</i>	50
Poeciliidae	<i>Gambusia affinis</i>	5

Tomé

18 November 2005

WJR05-362

40 seine hauls

Effort: 792.0 m²

Personnel: W. Jason Remshardt, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	3
Cyprinidae	<i>Hybognathus amarus</i>	209

U.S. 550 Bridge

18 November 2005

WJR05-363

40 seine hauls

Effort: 798.0 m²

Personnel: W. Jason Remshardt, D. Weston Furr, NMFRO

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	32
Cyprinidae	<i>Cyprinus carpio</i>	4
Cyprinidae	<i>Hybognathus amarus</i>	115
Cyprinidae	<i>Platygobio gracilis</i>	46
Cyprinidae	<i>Rhinichthys cataractae</i>	9
Poeciliidae	<i>Gambusia affinis</i>	2
Moronidae	<i>Morone chrysops</i>	2
Centrarchidae	<i>Pomoxis annularis</i>	1

Dixon Road

12 December 2005

WJR05-364

30 seine hauls

Effort: 602.1 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Pimephales promelas</i>	2
Cyprinidae	<i>Platygobio gracilis</i>	2
Catostomidae	<i>Catostomus commersoni</i>	1
Poeciliidae	<i>Gambusia affinis</i>	2

Lomitas Negras

12 December 2005

WJR05-365

30 seine hauls

Effort: 563.1 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	5
Cyprinidae	<i>Hybognathus amarus</i>	1
Cyprinidae	<i>Platygobio gracilis</i>	1
Cyprinidae	<i>Rhinichthys cataractae</i>	2
Catostomidae	<i>Catostomus commersoni</i>	2
Poeciliidae	<i>Gambusia affinis</i>	283
Centrarchidae	<i>Lepomis macrochirus</i>	7

U.S. 550 Bridge

12 December 2005

WJR05-366

30 seine hauls

Effort: 622.2 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Platygobio gracilis</i>	1
Cyprinidae	<i>Rhinichthys cataractae</i>	1

Sandia Line 14

12 December 2005

WJR05-367

30 seine hauls

Effort: 646.2 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	19
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	368
Cyprinidae	<i>Pimephales promelas</i>	16
Cyprinidae	<i>Platygobio gracilis</i>	2
Catostomidae	<i>Catostomus commersoni</i>	9
Poeciliidae	<i>Gambusia affinis</i>	12
Centrarchidae	<i>Lepomis macrochirus</i>	1
Centrarchidae	<i>Micropterus salmoides</i>	1

Sandia PNM Gasline

12 December 2005

WJR05-368

30 seine hauls

Effort: 594.6 m²

Personnel: W. Jason Remshardt, Leeanna L. Torres, NMFRO; Scott Bulgrin, Mark Morales, Pueblo of Sandia

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	5
Cyprinidae	<i>Hybognathus amarus</i>	549
Cyprinidae	<i>Platygobio gracilis</i>	2
Cyprinidae	<i>Rhinichthys cataractae</i>	1

Rio Grande @ Isleta, Atrisco Outfall13 December 2005 WJR05-369 30 seine hauls Effort: 435.3 m²

Personnel: W. Jason Remshardt, Leeanna Torres, D. Weston Furr, NMFRO; Megan Osborne, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Platygobio gracilis</i>	2
Catostomidae	<i>Carpiodes carpio</i>	1
Poeciliidae	<i>Gambusia affinis</i>	1
Centrarchidae	<i>Lepomis macrochirus</i>	5
Centrarchidae	<i>Micropterus salmoides</i>	1

Rio Grande @ Isleta, Alejandro Gate13 December 2005 WJR05-370 30 seine hauls Effort: 488.7 m²

Personnel: W. Jason Remshardt, Leeanna Torres, D. Weston Furr, NMFRO; Megan Osborne, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	89
Cyprinidae	<i>Cyprinus carpio</i>	2
Cyprinidae	<i>Hybognathus amarus</i>	51
Cyprinidae	<i>Pimephales promelas</i>	22
Cyprinidae	<i>Platygobio gracilis</i>	2
Catostomidae	<i>Carpiodes carpio</i>	1
Poeciliidae	<i>Gambusia affinis</i>	129

Tomé13 December 2005 WJR05-371 30 seine hauls Effort: 659.4 m²

Personnel: W. Jason Remshardt, Leeanna Torres, D. Weston Furr, NMFRO; Megan Osborne, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	5
Cyprinidae	<i>Hybognathus amarus</i>	140
Cyprinidae	<i>Pimephales promelas</i>	2
Cyprinidae	<i>Platygobio gracilis</i>	1
Poeciliidae	<i>Gambusia affinis</i>	3

U.S. Highway 60 Bridge13 December 2005 WJR05-372 30 seine hauls Effort: 492.3 m²

Personnel: W. Jason Remshardt, Leeanna Torres, D. Weston Furr, NMFRO; Megan Osborne, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	60
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	278
Cyprinidae	<i>Pimephales promelas</i>	13
Cyprinidae	<i>Platygobio gracilis</i>	1
Ictaluridae	<i>Ameiurus natalis</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	27

Rio Puerco Confluence

14 December 2005

WJR05-373

30 seine hauls

Effort: 501.6 m²

Personnel: W. Jason Remshardt, Leeanna Torres, Cody M. Robertson, NMFRO; Megan Osborne, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	21
Cyprinidae	<i>Cyprinus carpio</i>	2
Cyprinidae	<i>Hybognathus amarus</i>	299
Cyprinidae	<i>Pimephales promelas</i>	6
Poeciliidae	<i>Gambusia affinis</i>	100

San Acacia Diversion Dam

14 December 2005

WJR05-374

30 seine hauls

Effort: 521.7 m²

Personnel: W. Jason Remshardt, Leeanna Torres, Cody M. Robertson, NMFRO; Megan Osborne, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Cyprinella lutrensis</i>	6
Cyprinidae	<i>Cyprinus carpio</i>	1
Cyprinidae	<i>Hybognathus amarus</i>	23
Cyprinidae	<i>Pimephales promelas</i>	5
Cyprinidae	<i>Platygobio gracilis</i>	2
Catostomidae	<i>Carpionodes carpio</i>	1
Ictaluridae	<i>Ictalurus punctatus</i>	1

Lemitar

14 December 2005

WJR05-375

30 seine hauls

Effort: 490.5 m²

Personnel: W. Jason Remshardt, Leeanna Torres, Cody M. Robertson, NMFRO; Megan Osborne, UNM

<u>Family</u>	<u>Species</u>	<u>N</u>
Cyprinidae	<i>Hybognathus amarus</i>	102
Cyprinidae	<i>Pimephales promelas</i>	5
Cyprinidae	<i>Platygobio gracilis</i>	5
Ictaluridae	<i>Ictalurus punctatus</i>	2

Appendix C. Water quality measurements by collection number. For detailed site information, cross-reference with Appendix B.

Collno = collection number; Temp = water temperature (C); DO = dissolved oxygen (mg/l); SpC = specific conductance ($\mu\text{s}/\text{cm}$); TDS = total dissolved solids (mg/l); Sal = salinity (ppt); pH = pH; Air = air temperature (C)

Collno	Temp	DO	SpC	TDS	Sal	pH	Air
HEW04-01	13.72	4.84	.39	.25	.20	7.91	n/a
LTT05-01	13.28	11.08	.35	.23	.18	8.68	12.00
LTT05-02	14.86	9.55	.37	.24	.19	9.26	n/a
LTT05-03	15.50	n/a	n/a	n/a	n/a	n/a	n/a
LTT05-04	16.00	n/a	n/a	n/a	n/a	n/a	n/a
LTT05-05	16.00	n/a	n/a	n/a	n/a	n/a	n/a
LTT05-06	12.64	10.38	.40	.25	.20	9.33	n/a
LTT05-07	14.46	11.14	.43	.26	.22	9.44	n/a
LTT05-08	16.14	10.00	.43	.27	.22	9.63	n/a
LTT05-09	14.12	10.57	.51	.33	.26	9.70	n/a
LTT05-10	14.10	10.82	.53	.34	.27	9.79	n/a
LTT05-11	15.18	9.98	.45	.29	.23	9.87	n/a
LTT05-12	17.07	8.79	.45	.29	.23	9.84	n/a
SRD05-005	9.07	9.33	.35	.22	.17	7.79	n/a
SRD05-006	10.42	9.93	.37	.24	.19	8.20	n/a
SRD05-007	13.84	10.63	.39	.25	.20	8.37	n/a
SRD05-008	7.88	10.55	.35	.23	.17	8.54	n/a
SRD05-009	9.23	11.08	.38	.24	.19	8.54	n/a
SRD05-010	8.42	14.75	.37	.24	.18	8.52	n/a
SRD05-078	18.14	7.51	.44	.28	.22	6.70	n/a
SRD05-079	21.25	7.69	.42	.27	.21	6.90	n/a
SRD05-080	25.90	6.55	.62	.40	.32	6.85	n/a
SRD05-081	12.40	8.02	.43	.28	.22	6.94	n/a
SRD156	7.69	6.59	.33	.21	.16	7.46	n/a
SRD157	8.66	5.47	.33	.21	.16	7.92	n/a
SRD158	9.49	5.75	.33	.21	.16	8.11	15.00
SRD159	9.78	5.43	.34	.22	.17	8.02	16.00
SRD160	3.83	5.05	.34	.21	.17	7.18	6.00
SRD161	4.99	5.85	.37	.24	.18	8.14	n/a
WJR05-259	3.92	11.67	.31	.20	.15	8.45	5.00
WJR05-260	4.41	12.65	.32	.21	.16	8.49	5.00
WJR05-261	3.95	13.20	.31	.20	.15	8.35	14.50
WJR05-262	4.68	12.96	.32	.20	.16	8.42	16.00
WJR05-263	5.23	12.63	.31	.20	.15	8.56	16.00
WJR05-264	5.84	11.80	.38	.24	.19	8.51	n/a
WJR05-265	7.37	11.81	.41	.26	.20	8.54	13.00
WJR05-266	8.07	11.92	.42	.27	.21	8.69	n/a
WJR05-267	6.29	11.51	.37	.24	.18	8.39	n/a
WJR05-268	6.40	11.05	.38	.24	.19	8.78	n/a
WJR05-269	5.80	12.16	.36	.23	.18	8.81	n/a
WJR05-270	6.54	11.37	.36	.23	.18	8.81	n/a
WJR05-271	7.12	13.07	.33	.21	.16	8.48	16.00
WJR05-272	9.84	10.38	.38	.24	.19	8.47	n/a

Collno	Temp	DO	SpC	TDS	Sal	pH	Air
WJR05-273	10.51	11.62	.39	.25	.20	8.61	19.00
WJR05-274	12.32	10.04	.40	.26	.20	8.84	n/a
WJR05-275	8.35	6.31	.35	n/a	.20	n/a	11.00
WJR05-276	9.80	7.63	.32	.21	.16	8.39	15.00
WJR05-277	10.13	8.00	.34	.22	.17	8.74	17.50
WJR05-278	9.04	9.19	.33	.21	.16	8.64	n/a
WJR05-279	9.92	9.22	.34	.22	.17	8.55	n/a
WJR05-280	10.89	9.42	.33	.21	.16	8.48	24.00
WJR05-281	9.81	8.42	.41	.26	.20	8.25	16.00
WJR05-282	12.42	6.17	.41	.26	.21	8.72	20.00
WJR05-283	13.72	6.91	.37	.23	.18	8.65	20.00
WJR05-284	10.66	4.11	.23	.15	.11	8.12	n/a
WJR05-285	11.04	3.58	.23	.15	.11	8.89	12.35
WJR05-286	14.00	n/a	n/a	n/a	n/a	n/a	n/a
WJR05-287	12.22	3.51	.24	.15	.11	8.98	n/a
WJR05-288	13.81	3.57	.31	.20	.15	9.00	n/a
WJR05-289	11.88	n/a	.26	.16	.12	8.86	10.31
WJR05-290	14.58	1.93	.39	.25	.20	8.90	16.00
WJR05-291	13.99	2.18	.27	.17	.13	9.16	19.00
WJR05-292	15.89	8.03	.27	.18	.13	7.48	27.00
WJR05-293	18.40	7.80	.21	.13	.10	7.76	n/a
WJR05-294	15.83	9.92	.18	.12	.08	7.34	n/a
WJR05-295	16.57	n/a	.18	.11	n/a	n/a	n/a
WJR05-296	18.50	n/a	n/a	n/a	n/a	n/a	23.00
WJR05-298	19.00	n/a	n/a	n/a	n/a	n/a	n/a
WJR05-299	19.33	8.63	.22	.14	.10	7.32	n/a
WJR05-300	20.28	8.09	.32	.21	.16	7.62	n/a
WJR05-301	22.68	8.25	.24	.16	.12	7.69	n/a
WJR05-305	20.00	8.01	.27	.17	.13	7.10	n/a
WJR05-306	23.83	8.48	.26	.17	.13	7.36	n/a
WJR05-307	27.23	8.00	.25	.16	.12	7.38	n/a
WJR05-308	20.69	8.70	.18	.12	.08	7.13	n/a
WJR05-309	21.22	8.58	.20	.13	.09	7.23	n/a
WJR05-310	22.20	8.24	.18	.12	.08	7.28	n/a
WJR05-311	23.05	8.28	.18	.12	.09	7.36	n/a
WJR05-312	23.40	8.53	.19	.12	.08	7.33	n/a
WJR05-313	25.06	6.85	.31	.20	.15	6.91	n/a
WJR05-314	26.63	7.78	.40	.26	.20	7.45	n/a
WJR05-315	27.85	8.11	.27	.17	.13	7.64	n/a
WJR05-332	23.85	9.37	.49	n/a	.20	n/a	n/a
WJR05-333	27.40	8.55	.54	n/a	.30	n/a	n/a
WJR05-334	21.35	9.00	.30	n/a	.10	n/a	n/a
WJR05-335	23.05	8.80	.34	n/a	.20	n/a	n/a
WJR05-336	23.15	8.60	.29	n/a	.10	n/a	n/a
WJR05-337	24.10	8.06	.40	n/a	.10	n/a	n/a
WJR05-338	24.85	7.71	.30	n/a	.10	n/a	n/a

Collno	Temp	DO	SpC	TDS	Sal	pH	Air
WJR05-339	22.45	7.59	.74	n/a	.40	n/a	n/a
WJR05-340	22.70	8.18	.71	n/a	.35	n/a	n/a
WJR05-341	26.85	5.42	.40	n/a	.20	n/a	n/a
WJR05-342	27.50	6.55	.40	n/a	.20	n/a	n/a
WJR05-343	28.35	6.71	.36	n/a	.20	n/a	n/a
WJR05-344	18.91	7.57	.30	.19	.14	6.48	n/a
WJR05-345	21.37	7.46	.34	.22	.17	6.85	n/a
WJR05-346	21.83	7.99	.29	.19	.14	7.03	n/a
WJR05-347	22.66	8.39	.30	.19	.15	7.07	n/a
WJR05-348	23.16	8.38	.30	.19	.15	7.01	n/a
WJR05-349	17.01	8.51	.91	.58	.48	6.48	n/a
WJR05-350	18.36	8.57	.75	.48	.39	6.77	n/a
WJR05-351	21.56	7.93	.51	.33	.26	6.97	n/a
WJR05-352	10.55	11.86	.27	.24	.18	8.70	n/a
WJR05-353	10.75	12.16	.28	.25	.19	8.55	n/a
WJR05-354	7.88	12.42	.35	.23	.17	8.67	n/a
WJR05-355	8.14	12.37	.36	.23	.17	8.74	n/a
WJR05-356	8.93	13.10	.60	.20	.19	8.65	n/a
WJR05-357	10.32	11.94	.43	.28	.21	8.57	n/a
WJR05-358	6.37	13.46	.36	.36	.27	8.61	n/a
WJR05-359	8.10	12.61	.68	.44	.33	8.62	n/a
WJR05-360	8.77	12.64	.52	.34	.25	8.60	n/a
WJR05-361	9.07	12.76	.43	.33	.25	8.63	n/a
WJR05-362	7.50	12.82	.47	.30	.23	8.56	n/a
WJR05-363	9.24	12.41	.35	.23	.17	8.59	n/a
WJR05-364	1.46	15.95	.40	.26	.19	8.67	n/a
WJR05-365	3.94	14.49	.46	.30	.22	8.52	n/a
WJR05-366	3.67	15.37	.38	.24	.18	9.03	n/a
WJR05-367	4.07	14.86	.38	.25	.18	9.02	n/a
WJR05-368	4.33	14.81	.38	.25	.18	9.06	n/a
WJR05-369	5.74	13.49	.32	.32	.24	8.53	6.00
WJR05-370	7.38	12.73	.51	.33	.25	8.55	n/a
WJR05-371	8.04	13.02	.53	.34	.26	8.68	n/a
WJR05-372	7.78	13.05	.56	.36	.27	8.73	n/a
WJR05-373	4.16	13.93	.56	.36	.27	8.71	n/a
WJR05-374	7.55	13.02	.74	.48	.37	8.65	n/a
WJR05-375	6.63	13.87	.63	.41	.31	8.75	n/a
WJR210	22.26	6.42	.33	.21	.16	8.84	19.06
WJR211	26.27	7.55	.40	.25	.21	9.34	25.68
WJR212	31.09	8.11	.38	.24	.19	9.66	29.01
WJR213	19.73	8.26	.26	.17	.13	9.89	22.25
WJR214	19.79	9.83	.26	.16	.12	9.78	n/a
WJR215	22.26	6.42	.33	.21	.16	8.84	19.06
WJR216	22.62	8.84	.26	.17	.13	9.65	n/a
WJR217	25.19	9.04	.27	.17	.13	9.69	n/a
WJR219	23.32	8.21	.28	.18	.14	n/a	n/a

Collno	Temp	DO	SpC	TDS	Sal	pH	Air
WJR220	23.44	7.48	.28	.18	.13	n/a	n/a
WJR221	25.01	7.73	.29	.18	.14	n/a	n/a
WJR222	26.59	6.73	.28	.18	.14	n/a	n/a
WJR223	24.48	6.98	.30	.20	.15	n/a	n/a
WJR224	28.03	6.88	.40	.26	.20	n/a	n/a
WJR226	21.48	7.80	.34	.22	.17	7.32	n/a
WJR227	23.37	7.08	.30	.19	.15	7.91	n/a
WJR228	25.43	7.42	.31	.20	.15	8.09	n/a
WJR229	27.91	7.27	.31	.20	.15	8.25	n/a
WJR230	30.80	6.61	.32	.20	.16	8.23	n/a
WJR231	22.47	7.37	.56	.32	.27	7.86	n/a
WJR232	27.67	5.71	.81	.52	.42	7.57	n/a
WJR234	18.89	8.30	.32	.20	.15	7.39	n/a
WJR235	21.60	8.22	.36	.23	.18	8.40	n/a
WJR236	23.70	8.03	.32	.20	.15	8.58	n/a
WJR237	23.92	7.75	.31	.20	.15	8.61	n/a
WJR238	18.71	7.74	.31	.20	.15	8.44	n/a
WJR240	27.54	7.07	.56	.36	.29	8.61	n/a
WJR241	28.62	12.54	.45	.29	.23	9.90	n/a
WJR242	12.36	6.73	.33	.21	.16	7.52	n/a
WJR243	12.71	7.11	.33	.21	.16	7.88	n/a
WJR244	14.29	6.27	.33	.21	.16	8.08	n/a
WJR245	16.27	5.31	.36	.23	.18	8.26	n/a
WJR246	12.55	5.71	.51	.33	.26	8.00	n/a
WJR247	15.61	6.08	.48	.31	.25	8.24	n/a
WJR248	17.30	5.16	.47	.30	.24	8.26	n/a
WJR249	8.42	5.77	.32	.20	.15	8.04	1.00
WJR250	8.59	6.27	.31	.20	.15	7.97	n/a
WJR252	10.13	5.79	.40	.25	.20	7.84	n/a
WJR253	3.14	n/a	.31	.20	.15	7.99	5.00
WJR254	3.42	6.21	.31	.20	.15	8.47	n/a
WJR255	3.82	6.17	.30	.19	.15	8.47	n/a
WJR256	4.51	5.97	.30	.19	.15	8.44	n/a
WJR257	4.20	5.74	.39	.25	.19	7.95	n/a
WJR258	3.73	5.86	.30	.19	.15	8.26	1.00