CENTRAL ARIZONA PROJECT

2025

BIOLOGY

ANNUAL REPORT

Central Arizona Water Conservation District
Water Transmission Division

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FLATHEAD CATFISH REMOVED FROM CUNNINGHAM WASH SIPHON

YOUNG COYOTE AT CAP HEADQUARTERS

PUMPING PLANT AND TURNOUT ABBREVIATIONS

MWP	MARK WILMER PUMPING PLANT
BSH	BOUSE HILLS PUMPING PLANT
LHQ	LITTLE HARQUAHALA PUMPING PLANT
HSY	HASSAYAMPA PUMPING PLANT
WAD	WADDELL PUMP/GENERATING PLANT
SGL	SALT GILA PUMPING PLANT
BRD	BRADY PUMPING PLANT
PIC	PICACHO PUMPING PLANT
RED	RED ROCK PUMPING PLANT
TWP	TWIN PEAKS PUMPING PLANT
SAN	SANDARIO PUMPING PLANT
BRW	BRAWLEY PUMPING PLANT
SXV	SAN XAVIER PUMPING PLANT
BLK	BLACK MOUNTAIN PUMPING PLANT
SROTO	SANTA ROSA TURNOUT
CMATO	CENTRAL MAIN TURNOUT
SMATO	SOUTH MAIN TURNOUT

MULE DEER AT LAKE PLEASANT

CAP BIOLOGY PROGRAM

The CAP Biology Program was created in 2011 to address the variety of biological issues that can affect CAP's 40,000 acres of property, the 336-mile aqueduct, and CAP's ability to deliver water. The program focuses on a long-term monitoring program to provide responsible management recommendations based on sound techniques and robust data.

2025 was the second-hottest year on record, with frequent triple-digit days and extremely warm nights. Although annual precipitation was near normal overall, the record setting precipitation in November offset the very dry conditions early in the year. CAP's water supply continued to be low, with approximately 872,000 acre-feet delivered.

The long-term monitoring program implemented by the Biology Program was designed to document environmentally driven changes and quantify the responses of the organisms that utilize the CAP system. Continued monitoring will enable data-driven management decisions as we navigate increasingly erratic weather patterns and water shortage conditions that are expected to become more common in the coming years.

In 2025, the Biology Program focused on continued monitoring of quagga mussel infestations, managing and treating aquatic vegetation within the CAP intake channel, and relocating fish in support of inspections and maintenance activities. Low water supply volumes, combined with hot and relatively dry spring and summer conditions, contributed to algae and rock snot blooms in locations and levels not previously observed. Caddisflies were also a greater nuisance to residents living along the canal compared to recent years. Finally, wildlife encounters within CAP fencelines were higher than previous years, likely due to reduced precipitation and limited natural water sources.

The following annual report is a summary of the work completed in 2025, as well as strategies for monitoring and research in 2026.

GREAT BLUE HERON AT LAKE PLEASANT

QUAGGA MUSSELS ATTACHED TO THE WALLS OF THE BUCKSKIN TUNNEL

QUAGGA MUSSELS

BACKGROUND

The Western invasion of quagga mussels was first discovered in Lake Mead on the Colorado River in January 2007. Soon thereafter, the mussels were found throughout the Lower Colorado River from Lake Mead to Yuma, including CAP's water source, Lake Havasu. In early 2008, microscopic young quagga mussels (veligers) were observed in plankton samples in the CAP aqueduct and its storage reservoir, Lake Pleasant. When CAP began intensively monitoring the mussels in 2009, large numbers of veligers were found throughout the system, but few adult mussels were found.

Although it was originally hypothesized that various factors would restrict mussel invasion in the aqueduct, adult settlement has occurred throughout the system. In most cases, infestations do not impact water deliveries or maintenance of the system. However, there are some instances when more critical systems are affected. CAP's typical response is to increase maintenance frequency (e.g. cleaning of filtration systems, strainers, and cooling systems) to ensure reliability. However, more severe infestation issues within the cooling water systems at MWP has created the need for a more aggressive chemical treatment approach.

MONITORING APPROACH

Quagga mussel infestations and impacts within pumping plants are monitored with monthly bio-box checks. Trash rack inspections are completed annually at MWP and WAD, and a three-year rotation at other plants. In 2025, BRD, PIC, RED, and SXV were inspected. In addition, plant and aqueduct personnel report irregular findings related to quagga mussels. Finally, the chemical injection system installed at MWP (2021) to treat the cooling water system is evaluated annually using a videoscope.

FINDINGS

Prior to 2022, the bio-box at MWP experienced very high infestations of quagga mussels throughout the year. However, in 2022 most of the piping within the pumping plant was replaced with copper, which tends to "repel" mussels. There has not been a single quagga in the MWP bio-box since that transition. Settlement plates and other equipment in the MWP forebay were infested with quagga, indicating Colorado River populations continue to be persistent, but the lack of quagga in the bio-box is a positive sign that infestations within the pumping plant are minimal.

In 2025, the SGL bio-box was the only location where quagga mussels were observed in appreciable numbers. Because detections occurred only from August through December, their presence was likely associated with Lake Pleasant releases that began in mid-June. Quagga mussels were also observed at HSY; however, detections were minimal (<25 individuals). A single quagga was observed at LHQ in December.

Trash rack inspections at MWP (June) showed relatively heavy fouling from vegetation, freshwater sponge, and colonial hydroid (*Cordylophora*) on racks that did not have a rake system installed (U1, U5, and U6), but light fouling on other units. Quagga attachment was light on each of the six units. At WAD, an older ROV was used for inspections, so video was difficult to evaluate. However, there appeared to be some level of fouling from hydroids and quagga mussels. Despite this fouling, there were no reports of restricted water flow. Southern plants had decreasing fouling progressively downstream, as BRD had a moderate infestation of large quagga, hydroids, and green algae. PIC had a light infestation large quagga, but RED and SXV had no visible quagga attachment on trash racks. No levels of fouling required attention.

A chemical treatment system installed on the MWP cooling water systems in 2021 provides a continuous, low-dose application of a copper-based molluscicide (EarthTec®) to control quagga mussel attachment and other biofouling organisms. The dosage was initially set at 0.75 ppm and, after demonstrating effective control for three years, was reduced to 0.5 ppm in 2024. Annual videoscope inspections of the MWP unit cooling systems have continued to document the absence of quagga mussel attachment and colonial hydroid fouling in all unit coolers.

Prior to implementation of the treatment program, unit coolers were routinely disassembled and power washed at considerable cost. The comparatively inexpensive chemical treatment has eliminated the need for mechanical cleaning, and no forced outages related to unit overheating have occurred since the program began in 2021.

QUAGGA ATTACHMENT ON U5 TRASHRACK AT BRD

GOLDEN MUSSELS

Golden mussels (*Limnoperna fortunei*) were first detected in the San Joaquin Delta of northern California in October 2024 and have rapidly spread throughout waterways in the state (California Invaders: Golden Mussel). It is widely anticipated that they will eventually reach the Colorado River and, subsequently, the CAP system. These mussels have broader environmental tolerances than quagga mussels and pose a potential risk to water conveyance infrastructure. In 2025, CAP monitored for golden mussels using settlement plates in the MWP intake channel, and none were detected.

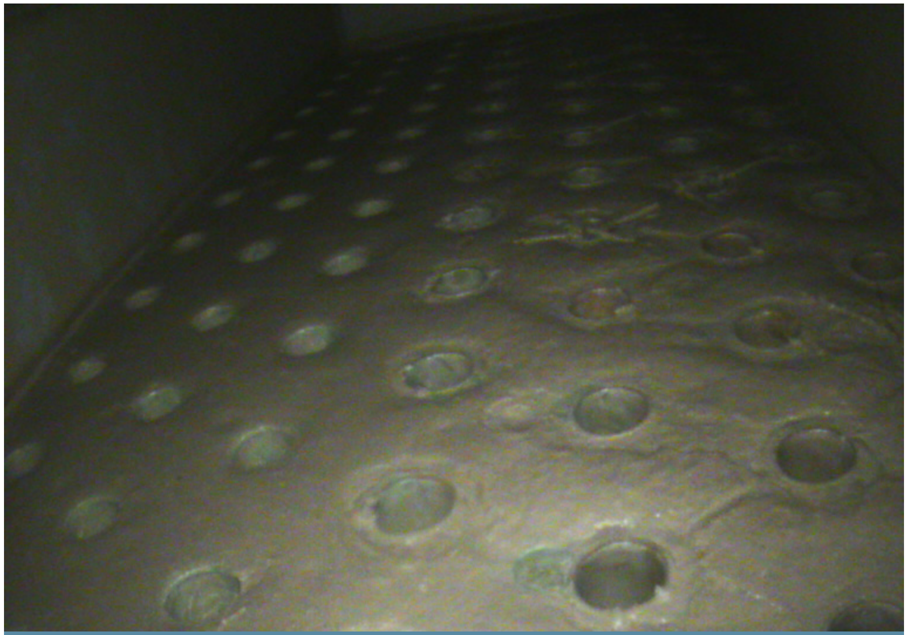
STRATEGIES FOR 2026

Bio-boxes were installed at all pumping plants in 2008 and 2009 and have been continuously monitored since that time. Although occasional spikes in quagga mussel infestation have been observed in various bio-boxes over the years, only MWP demonstrated a sustained population. Following the transition to copper piping at MWP in 2022, no quagga have been detected in that bio-box. Given the limited information gained from continued bio-box monitoring, the program will be discontinued in 2026. Bio-box infrastructure will remain in case the monitoring program is resumed.

Annual inspections of trash racks and the MWP cooling water system will continue in 2026. Because infestations within turnouts appear to be more prolific, likely due to lower flow velocities, methods to more routinely monitor infestation rates in these locations will be evaluated. Maintenance personnel and stakeholders will continue to be relied upon to report issues so they can be addressed promptly as they arise. The effectiveness of the chemical injection system will also continue to be monitored.

Settlement plates in the MWP forebay will be monitored quarterly to detect golden mussel presence.

QUAGGA ATTACHMENT TO SETTLEMET PLATES AT MWP



UNIT 4 COOLER AT MWP AFTER 36 MONTHS OF TREATMENT WITH EARTHTEC.

AQUATIC VEGETATION - MWP

BACKGROUND

Prior to 2008, local observations indicate that little to no aquatic vegetation was present in Lake Havasu. Since that time, however, vegetation growth has increased substantially and has become problematic for both recreational users and reservoir operations. Coincidentally, quagga mussels were first detected in the Colorado River system around the same period.

Although a direct causal relationship between quagga mussels and increased vegetation growth has not been established, it is widely believed that the quagga population has contributed to improved water clarity and subsequently altered nutrient dynamics within the reservoir. Increased light penetration and nutrient redistribution may have created favorable conditions for aquatic vegetation growth.

During the summer and early fall, senescing vegetation detaches and accumulates at the water surface. These floating plants and mats become entrained into the CAP intake channel, where they can impede flow, foul infrastructure, and threaten the reliability of pump systems. In some cases, excessive vegetation can impact CAP's ability to convey water efficiently and reliably.

To prevent weed mats from approaching and impacting the pumping plant, CAP began collecting and disposing of the mats in 2010 using a combination of a weed harvesting boat and a long-reach excavator. In 2019, CAP began treating the vegetation with an aquatic herbicide to reduce the risk posed by the weed mats. Utliizing both mechanical and chemical approaches in recent years has successfully minimized the impacts of the weed growth.

The distribution and density of aquatic vegetation within the CAP intake channel has been mapped using sonar since 2012. The mapping helps weed harvesting crews to target problematic areas and identify areas in need of treatment (herbicide). Mapping also provides a long-term "picture" of how vegetation growth has changed over time and helps CAP to understand what changes might occur as river conditions fluctuate.

SMALL MATS OF VEGETATION WITHIN THE CAP INTAKE CHANNEL IN 2024.

VEGETATION SAMPLING IN MWP INTAKE CHANNEL

MONITORING AND TREATMENT APPROACH

Aquatic vegetation growth was monitored from April through September within the 65-acre CAP intake channel using downscan sonar and StructureScan (Lowrance HDS Live 9). Data was uploaded to BioBase® to create bathymetric maps and vegetation heat maps. Random spot grab samples were also collected with a thatch rake to identify dominant plant species.

During the "weed season" (July through September), CAP weed harvesting crews were on stand-by to collect any floating vegetation mats using the weed harvesting boat. In late June, a targeted herbicide treatment was applied to approximately 16 acres of the intake channel using both liquid and granular forms of endothall.

FINDINGS

Weed growth within the MWP Intake Channel in 2025 was comparable to 2024 and remained well below levels observed prior to 2023. The high turbidity resulting from the 2023 Alamo Lake releases reduced light penetration and inhibited aquatic vegetation establishment. Residual effects of those conditions continued to suppress vegetation growth in 2025.

Mapping and pre-treatment sampling conducted prior to the late-June application indicated that naiad growth in deeper water was just beginning to establish, while pondweed in shallower areas was already well developed, in some locations growing from the bottom to the surface (>20 ft). A granular herbicide (Aquathol® Super K) was applied in deeper water to prevent the establishment and expansion of spiny and southern naiad, while a liquid herbicide (Cascade®) was applied in shallower areas to eliminate established pondweed species. Both treatments were highly effective, resulting in near-complete control of existing vegetation and minimizing late-season regrowth. As a result of the successful weed treatment, CAP crews did not collect any floating weed material in 2025, which allowed maintenance crews to focus their efforts in other critical areas.

STRATEGIES FOR 2026

Monthly mapping of the intake channel will continue in 2026 and the herbicide treatment will be replicated, targeting specific areas of heavy growth. The treatment will be completed in June, prior to the weeds reaching the water surface. Pre- and post-treatment vegetation coverage and plant height will be mapped bi-weekly to evaluate the effectiveness of the treatment.

AQUATIC VEGETATION TREATMENT IN THE MWP INTAKE CHANNEL – JUNE 2025

FILAMENTOUS ALGAE GROWTH IN POOL 19 - JULY 2025

AQUATIC VEGETATION - AQUEDUCT

BACKGROUND

Weed growth within the aqueduct has historically been sporadic, though at times substantial. Filamentous algae periodically blooms in various sections of the canal, while rooted aquatic vegetation is generally limited to areas with slower water velocities.

Chemical controls have not been used to suppress aquatic vegetation within the canal; instead, grass carp serve as the primary biological control method. Prior to 2012, significant aquatic vegetation growth upstream of BSH required mechanical removal. Since then, aggressive stocking of grass carp within that 26-mile reach, and throughout the CAP system, has effectively eliminated vegetative growth.

Filamentous algae is not effectively controlled by grass carp; however, growth is typically not substantial enough to warrant treatment due to its relatively short life span.

TRIPLOID (STERILE) GRASS CARP ARE STOCKED TO PROVIDE VEGETATION CONTROL

MONITORING AND TREATMENT APPROACH

Visual inspections are conducted periodically by aqueduct crews, and any potential issues are reported to CAP's Biologist. CAP stakeholders also provide information when vegetation impacts turnouts. Algae growth in the Waddell Canal is documented using a time-lapse camera. Aquatic vegetation within the aqueduct is controlled through the use of triploid (sterile) grass carp.

FINDINGS

In 2025, there was no rooted aquatic vegetation growth observed in the canal. Grass carp stocking was primarily focused downstream of BSH (Pool 2), where there were potential operational limitations in 2024 caused by excessive algae growth. Although filamentous algae is not a preferred food source for grass carp, it was believed that they would provide some level of control. In total, 3,350 fish were stocked in the western portion of the CAP system, with approximately 2,000 fish released into Pool 2 and the remainder stocked into Pool Bouse and Pool 15 (downstream of HSY).

In the Waddell Canal, just downstream of Lake Pleasant, typical filamentous algae growth was observed in late summer. This growth generally follows summer discharges from Lake Pleasant, when reduced flows and nutrient-rich water from the lower portions of the lake create favorable conditions for algae development.

In December 2025, additional algae growth was observed in these sections following short-term lake releases in November associated with canal maintenance activities. Downstream stakeholders did not report any operational issues related to algae growth in 2025.

STRATEGIES FOR 2026

Aqueduct crews and other field personnel will continue to visually monitor the system for rooted aquatic vegetation and filamentous algae growth. Any problematic growth will be reported to the CAP Biologist, who will communicate with stakeholders as necessary. Time-lapse cameras will continue to document vegetation growth in the Waddell Canal and in the section of canal near CAP Headquarters. Grass carp stockings in 2026 will be concentrated in the Waddell Canal and the southern portion of the system.

FILAMENTOUS ALGAE GROWTH IN WADDELL CANAL – SEPTEMBER 2025

TRIPLOID GRASS CARP ARE STOCKED INTO THE CANAL IN SMALL BATCHES FROM A CUSTOM 300-GALLON HAULING TANK

CADDISFLIES

BACKGROUND

In 2004, a nuisance insect issue was reported to CAP by residents in Phoenix and Scottsdale. The insects were identified as *Smicridea*, a common genus of caddisfly indigenous to the Colorado River. Although 2004 was the first documented complaint from nearby residents, reports indicate that caddisflies were present in relatively high numbers in the CAP system as early as 1993. It is likely that seasonal swarms have occurred since the canal was constructed, but went largely unnoticed because residential development had not yet expanded adjacent to the canal.

The emergence of large numbers of adult caddisflies creates a nuisance, as they swarm around people and can make outdoor dining and other activities uncomfortable during peak periods. Caddisflies do not bite or sting, and they are not considered a disease vector.

CAP has investigated various control strategies over the years. A 2011 report by RNT Consultants concluded that stocking catfish in the CAP may provide a practical means of reducing caddisfly populations. As a result, CAP has stocked channel catfish since 2011 as a biological control measure. While stocking does not eliminate nuisance swarms, it has provided some level of relief for residents living adjacent to the canal.

CADDISFLIES ON THE WATER SURFACE AT RED IN OCTOBER 2025

MONITORING AND TREATMENT APPROACH

Channel catfish are stocked annually during early March. In 2025, approximately 6,800 catfish were released into the canal in the Phoenix Metropolitan area. The fish averaged 8-12 inches in length and weighed approximately one-half pound each.

CAP records the names and addresses of residents who submit concerns through CAP's website or contact staff regarding caddisfly activity. This information is used to identify areas where swarms are creating significant nuisance conditions and to help target catfish stocking efforts.

In addition, CAP's Biologist communicates regularly with local and national specialists to exchange information and evaluate potential control strategies.

FINDINGS

In 2025, CAP received notifications from neighbors regarding caddisflies in April and October, primarily from residents living near Pool 21 (downstream of I-17). The main complaint was that caddisflies were swarming in backyards. Field crews also observed significant adult swarms in late summer 2025 in the southern portion of the CAP.

Catfish stockings in early 2025 were concentrated in North Phoenix, where most public notifications have originated in recent years. Target population numbers for each canal section are determined based on the estimated severity of the caddisfly issue, previous stockings, and estimated mortality rates. Future stockings will focus on maintaining these population levels in each canal section.

STRATEGIES FOR 2026

Catfish continue to provide some level of caddisfly control, which appears to improve when smaller fish are stocked. In 2026, CAP will continue to stock small catfish (approximately one-half pound) in targeted areas of Phoenix and Scottsdale (Pools 20-24). CAP will also maintain communications with researchers studying caddisfly control techniques and will consider additional mitigation measures if warranted.

CATFISH ARE STOCKED IN PROBLEMATIC AREAS FOR CADDISFLY CONTROL

CYMBELLA ("ROCK SNOT")

BACKGROUND

Since the time of their discovery in the CAP (1997), stalk-forming diatoms have occasionally become a nuisance for both CAP and its stakeholders. Cymbella (aka rock snot) can cause issues when attached to the canal liner, as the long stalks create excessive friction and reduce the flow of water. When the stalks detach, they float to the surface and form mats of organic material that may be drawn into pumping plants. Critical filters, strainers, and pumps have the potential to become clogged, which in turn affects the ability to properly cool motor components and provide service water throughout the plant. CAP water users can also be impacted, as clogged intakes (turnouts), filters, strainers, and pumps reduce their ability to effectively deliver water to end users.

MONITORING AND TREATMENT APPROACH

CAP field crews and stakeholders are asked to report any instances of rock snot observed in the canal. If necessary, mechanical removal is used to scrape the canal liner or remove material from the water surface.

FINDINGS

In 2025, CAP experienced an unusually large bloom of rock snot from I-17 to CAP Headquarters during February - April. The mats of organic material floated downstream and accumulated at check stations. Due to the potential for creating operational issues for both CAP and downstream water users, as well as aesthetic issues for neighborhoods along the canal, a vacuum truck was used to remove the material from the water surface (at Check 23). Other than this event, only minor blooms were noted during the remainder of the year.

STRATEGIES FOR 2026

Field personnel will continue to report any observed Cymbella growth and CAP's Biologist will periodically check specific areas for activity. If necessary, mechanical removal will be utilized. Efforts will continue in determining operational control that may minimize growth of Cymbella in the future.

CYMBELLA MATS AT CAP HEADQUARTERS IN MARCH 2025

ROCK SNOT MAT AT CHECK 23 IN APRIL 2025

SEDIMENT

BACKGROUND

During the design phase of the CAP, it was recognized that sediment deposition could be problematic. Engineers looked into the inclusion of structures like sediment traps and desilting plants, but ultimately determined that they were ineffective. Instead, forebays were designed to collect sediment near the intakes and it was suggested that regular cleaning would ensure that sediment deposition did not become a problem. However, due to costs, logistics, and the perception that sediment was not causing operational or maintenance issues, there was no formal removal process implemented.

Over the years, attempts have been made to remove sediment when it appears to be excessive. Removal methods have included clamshell dredging, highline buckets, pump dredges, “mucking” with loaders and excavators, and “vacuuming” using divers. Although each method has had various levels of success, most would consider these attempts to be ineffective and inefficient. Furthermore, there is considerable debate as to whether sediment removal is even necessary.

CAP’s Water Operations team has indicated that water deliveries are rarely affected by sediment deposition. However, from a maintenance perspective, anecdotal evidence suggests that the sediment renders flow meters inoperable, clogs strainers and filters, causes premature wear to critical components (such as wear rings, impellers, and casings), degrades piping in cooling water systems, and causes wear and misalignment to trash rake systems. Nonetheless, increased maintenance and replacement of parts has not been quantified with data, so the impact of sediment deposition remains disputable.

SEDIMENT (TURBIDITY) INCREASED IN THE WESTERN PORTION OF THE CAP AFTER MONSOON STORMS

MONITORING AND TREATMENT APPROACH

Bathymetric mapping is conducted in each forebay and major turnout on an annual basis (since 2013) to quantify the amount of sediment and to help better understand patterns in sediment deposition. Data from the mapping is used to estimate total sediment volume in each forebay. Sediment removal is only attempted when accumulation is determined to be excessive and when there is logistic opportunities, such as a forebay dewatering.

FINDINGS

In 2025, estimated sediment deposition in the canal system continued an upward trend. In 2013, the estimated sediment volume in the system was 78,105 cubic yards. By 2025, that volume had increased by approximately 71 percent to 133,315 cubic yards. Sediment volumes in the western portion of the aqueduct remained relatively stable from 2024 to 2025; however, most central and southern pumping plants and turnouts experienced increased sediment deposition. The largest increases were observed at WAD and SGL, each rising by approximately 13 percent compared to 2024 estimates.

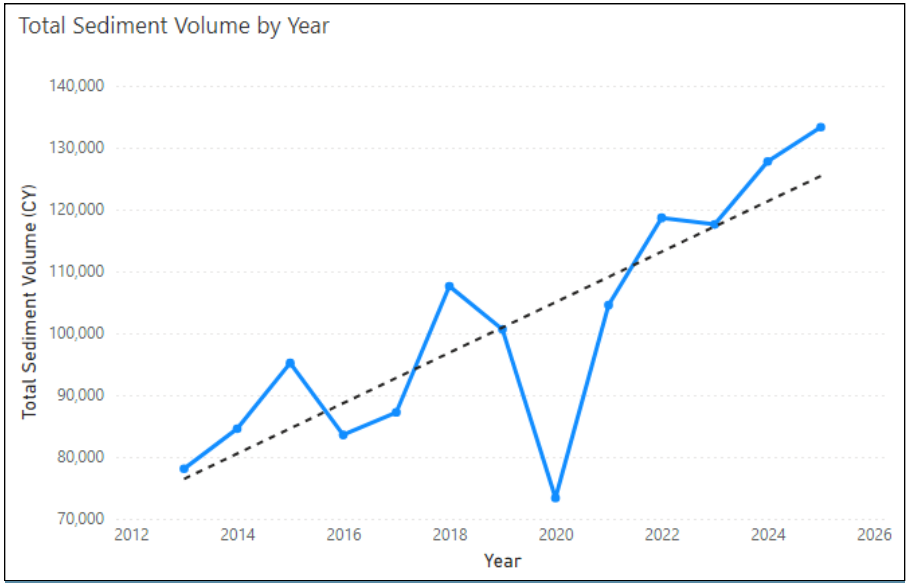
Two separate storm events in 2025 resulted in atypical sediment deposition in the canal. The first event occurred in October, when a localized storm near Wittmann generated heavy runoff in a wash adjacent to the canal. An overchute functioned as designed, allowing water to pass over the canal. However, a culvert on the downstream side was obstructed with vegetation and debris, causing sediment-laden water to backflow into the canal.

The second event occurred in November near Tonopah. Intense rainfall flooded O&M roads and produced excessive runoff through drainage culverts that ultimately discharged into the canal. Although the drainage system operated as intended, the unusually large volume of runoff transported significant sediment into the canal.

STRATEGIES FOR 2026

Sediment mapping in the pumping plant forebays will continue to evaluate long-term trends and assess the effects of storm events such as those experienced in 2025. The results of this monitoring will help identify areas where sediment accumulation is occurring and where targeted sediment removal may be beneficial to maintain operational efficiency.

HEAVY FALL RAINS CAUSED FLOODING ALONG THE CANAL, WHICH BROUGHT SEDIMENT INTO THE CANAL THROUGH DRAINAGE CULVERTS



ESTIMATED ANNUAL SEDIMENT DEPOSITION IN THE CAP SYSTEM. THE DECREASE IN 2020 REFLECTS THE ~21,000 CY REMOVAL OF SEDIMENT FROM SGL

FISH RELOCATION

BACKGROUND

Siphons on the CAP System are enclosed pipelines that convey water beneath obstacles such as rivers, washes, and major roadways. Similarly, tunnels convey water through mountainous terrain. To maintain operational integrity, these structures are periodically dewatered for inspection, maintenance, and repair.

Fish, especially catfish, frequently inhabit siphons and tunnels because they provide protection from sunlight and typically contain cooler water temperatures. If fish are not removed prior to dewatering and maintenance activities, they will likely perish. In addition to preserving life, fish removal reduces slipping and tripping hazards and prevents the odors and off-gassing that can create unsafe or intolerable working conditions for inspection and maintenance crews. Also, stocked fish represent a relativley large expense to CAP and if fish are allowed to perish, they must be replaced.

REMOVAL APPROACH

Although each structure is unique, dewatering is typically accomplished by installing stoplogs at the upstream and downstream ends to isolate the structure. Once isolated, the water level is gradually lowered to allow safe access. When depths reach approximately 18 inches, crews enter the structure to remove and relocate fish.

Seines and dip nets are used to herd fish toward a designated extraction point. Fish are counted and identified to species, then placed into baskets or buckets and lifted through a manhole using a crane. In tunnels, fish are removed from the downstream opening. They are subsequently transferred into aerated transport tanks and relocated to a designated upstream or downstream canal location for release. Any mortalities are collected and properly disposed.

FISH WERE SEINED FROM EACH STRUCTURE, PLACED IN A “FISH BASKET”, AND RELOCATED DOWNSTREAM

FINDINGS

In 2025, the Buckskin Tunnel, Cunningham Wash Siphon, Burnt Mountain Tunnel, and Agua Fria Siphon each required fish removal prior to scheduled inspections. The following fish were removed and relocated from each siphon:

Buckskin Tunnel (January 2025):

- 105 Striped Bass
- 40 Grass Carp

Burnt Moutain Tunnel (January 2025):

- 80 Common Carp
- 30 Channel Catfish
- 5 Largemouth Bass
- 3 Grass Carp
- 1 Flathead Catfish
- 1 Redear Sunfish

Cunningham Wash Siphon (January 2025):

- 65 Channel Catfish
- 5 Common Carp
- 2 Smallmouth Bass
- 2 Flathead Catfish
- 1 Redear Sunfish

Agua Fria Siphon (July 2025)*

- 700 Channel Catfish
- 6 Common Carp
- 2 Largemouth Bass

* Dewatering was accomplished 15 hours prior to the scheduled removal. The Biologist was not made aware of this, and the fish were left stranded in shallow water with extremely warm temperatures and low oxygen levels. No fish survived.

STRATEGIES FOR 2026

The Agua Fria Siphon is scheduled for maintenance in July 2026. Steps will be taken to ensure that fish are removed in a timely manner so that mortalities do not occur.

FISH WERE "RESCUED" FROM BUCKSKIN TUNNEL IN THE 2025 INSPECTION

FIVE-YEAR FISH SAMPLING

BACKGROUND

In consultation with the U.S. Fish and Wildlife Service, the 1994 Biological Opinion concluded that the proposed delivery of CAP water to users in central Arizona was likely to jeopardize the continued existence of the threatened spikedace and loach minnow, as well as the endangered Gila topminnow and razorback sucker, and was likely to adversely modify designated critical habitat.

As a result of that consultation, several Reasonable and Prudent Alternatives (RPAs) were developed. One RPA required annual monitoring for non-native fish species within the CAP canal system. The purpose of this monitoring was to establish baseline data on the presence and distribution of non-native fishes and to detect changes in species composition or distribution over time.

From 1996 through 2010, the Bureau of Reclamation conducted annual surveys at designated canal sites and prepared reports documenting sampling methods and results.
After evaluating 15 years of data, the U.S. Fish and Wildlife Service determined that annual sampling was not providing meaningful new information and subsequently revised the monitoring requirement to a five-year interval.

SAMPLING RESULTS

The Bureau of Reclamation provides detailed monitoring results in its periodic reports, which are available upon request. In general, fish numbers observed during the 2025 sampling period were low—likely due to limitations in sampling efficiency within the canal environment. No new non-native species were detected, and species distribution remained unchanged since the 2020 sampling effort.

The next five-year sampling will occur in 2030.

LARGEMOUTH BASS COLLECTED DURING THE FIVE-YEAR FISH SURVEYS

DEER RESCUED FROM WATER IN 2025

WILDLIFE ENCOUNTERS

BACKGROUND

During construction of the CAP, it was recognized that the canal would create a man-made barrier across important wildlife corridors. This barrier had the potential to disrupt migration patterns, fragment wildlife populations, and restrict access to natural water sources. To address these concerns, wildlife bridges were constructed at strategic locations to maintain movement corridors. In addition, drainage structures were designed to be wildlife-friendly, and water developments were installed at several sites to help ensure continued access to fresh water.

Despite these efforts, wildlife occasionally gain access to the canal through damaged fencelines, gaps beneath fencing, or gates that are inadvertently left open. When this occurs, CAP staff and Protective Services personnel respond promptly to herd or safely remove the animals from the area. Unfortunately, in some instances, animals are unable to be recovered before entering the canal, where strong currents can result in mortality.

The Arizona Game and Fish Department requires CAP to maintain a Wildlife Services permit authorizing the handling and relocation of wildlife encountered within the canal system. As a condition of this permit, CAP must submit an annual report documenting wildlife encounters and related response actions.

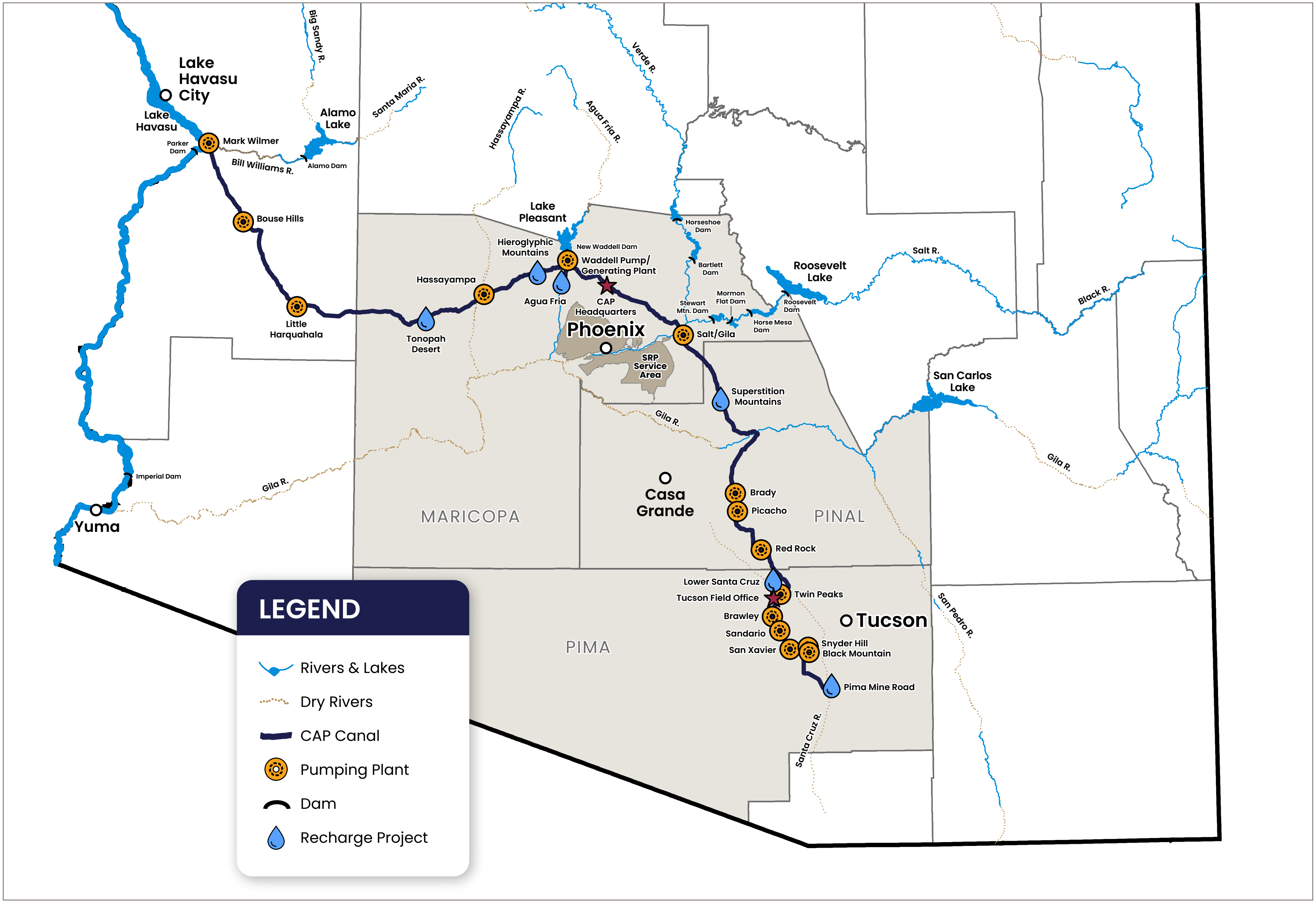
2025 ENCOUNTERS

In typical years, CAP responds to fewer than six encounters involving medium- to large-sized mammals (e.g., coyote, javelina, mule deer, and bighorn sheep). In 2025, there were 10 such encounters. Eight involved mule deer and two involved bighorn sheep; unfortunately, only two of the animals were able to be safely recovered.

Although this represents only a modest increase compared to previous years, it may be attributable to reduced availability of natural water sources due to low precipitation, combined with higher-than-normal temperatures, which can increase wildlife movement in search of water.

BIGHORN SHEEP HERDED FROM INSIDE THE SECURITY FENCING IN 2025

CAP SYSTEM MAP



2025
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