

SALINAS RIVER FLOOD MITIGATION

A unified voice expressing a pathway forward for Salinas Valley Agriculture.

Landowners, farm operations, vineyards, and ranches along the Salinas River in Monterey County experienced significant flooding in January and March 2023 due to successive atmospheric river precipitation events. Damages in the January flood event totaled more than \$330 million with over 15,000 acres flooded or impacted. March flood damages will be more extensive as newly planted crop acres flooded that were previously not inundated; the totals for both acres flooded and farmland damages will increase considerably once tallied, however early estimates predict over \$1 billion in damages. Farmworker wages have also been lost.

Because the Salinas River channel has not been adequately maintained for capacity flow since the late 1990s causing vegetation and sediment build-up, the floods of 2023 (which were only a third of the flow rate of the catastrophic 1995 flood event) could have reached the City of Salinas had the storm events equaled the precipitation that triggered the 1995 flood event. In 1995, the flow rate of the Salinas River reached 90,000 cubic feet per second (cfs) while in March 2023 the flow rate was only 30,000 cfs. River channel capacity and habitat quality has been reduced in the past two decades by restrictive permit requirements by public agencies. With the current trajectory of weather patterns, another flood will happen in the near future; we must take preventative action now to protect people, land, infrastructure, and the environment.

Collectively and in unison, we request of our State Legislators and Governor for an immediate emergency work permit to:

- Restore the Salinas River channel through selective and targeted vegetation management;
- Maintain and improve levees along the Salinas River channel that have sustained damage or deteriorated in the recent flood events, with access from both sides of the levee structures;
- Manage sediment and sandbars to improve flow capacity and increase depth of main low-flow channel for increased fish passage and protection from future flooding.

These improvements can be achieved through a River Channel Emergency Work Permit, good for 36 months from the date of issuance, which allows for more concerted efforts in constrained areas of the Salinas River channel, equal to the permit issued after the 1995 flood event.

For the long-term management of the Salinas River channel, protecting the region from the massive impacts and expense of future flooding, we request the following:

- Develop broader scope modifications of existing River Channel Maintenance Permits;
- Apply a scientific approach to on-going channel maintenance through data-driven experience and reestablishment of the historical baseline for river channel flow capacity;
- Implement sensible maintenance program practices and objectives for continuing work plans, providing incentives for landowner participation;
- Protect private property, including the river channel, adjacent farmland and homes, while also protecting public infrastructure;
- Improve river environment benefits for all uses.

We request that the following agencies and organizations commit staff, with the capacity to discuss and make high-level decisions, to sit down with Salinas River stakeholders in the first week of May 2023 in Salinas. The focus of this meeting would be to discuss the permitting of the immediate opportunities outlined above and to lay the foundation for the long-term management goals. We request that all come ready to collaborate and make decisions: California Department of Fish & Wildlife (CDFW), Central Coast Regional Water Quality Control Board, Army Corps of Engineers, National Oceanic & Atmospheric Administration (NOAA), National Marine Fisheries Service, Monterey County Water Resources Agency, Monterey County Supervisors, State and Federal elected officials

representing the Salinas Valley region, Resource Conservation District of Monterey County, and agricultural associations (as representatives for stakeholders along the river channel).

Landowners and farm operations indicate they will perform needed river channel improvements to protect their farmland and vineyards, provided there are incentives to do so; other waterways such as the Arroyo Seco and Gabilan Creek also need channel maintenance work. The continuation of work plans, rather than 5-year permit limitations, is essential to the success of concerted channel maintenance along the entire reach of the Salinas River. Implementation of an emergency permit in turn will allow farmworkers to return to their jobs quickly and the entire economy to recovery.

We ask that agencies with jurisdiction over the Salinas River Channel environment provide the funding for the studies and permits necessary to ensure a long-term program can achieve the necessary flow capacity for flood control while balancing the environmental benefits. Together, we can protect lives and property, reduce economic loss, enhance the environment, and prevent costly remediation efforts.

We are ready to work with necessary agencies and stakeholders to begin this work immediately. We seek a long-term solution to Salinas River flood control management; working together we can achieve a working environment that achieves multiple beneficial goals.

SUPPORTED BY:



Salinas Valley Water Coalition



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**SALINAS RIVER FLOOD MITIGATION
REQUEST TO ALL AGENCIES MANAGING THE SALINAS RIVER IN MONTEREY
COUNTY**

Salinas Valley landowners, farm operations, ranches, vineyards, packers, and processors (stakeholders) appreciate the involvement of our regional, state, and federal agencies related to discussions on flood mitigation for the Salinas River channel.

At the meeting on May 5th, there was participation from multiple agencies involved with jurisdiction and permitting on the Salinas River: Army Corps of Engineers, Central Coast Regional Water Quality Control Board, CA Department of Fish & Wildlife, National Oceanic & Atmospheric Administration, National Marine Fisheries Service, CA State Water Resources Control Board, and US Environmental Protection Agency.

As stated at the meeting, an immediate term maintenance program is needed to mitigate the impacts of flood events that occurred in January and March of 2023; significant land was flooded, levees failed, and millions in economic impacts have been inflicted on the local community.

The Salinas River Channel Maintenance Program from 1995-2008 was designed to accommodate an adaptive management approach to channel maintenance. During these 14 years, Channel Maintenance Program (CMP) participants and regulatory agencies collaborated to streamline the permitting process and adjusted protocols to reduce program costs and improve the effectiveness of management of the Salinas River. Throughout this period of master permits, landowners and farm operators performed the river channel maintenance work voluntarily and at their own expense. As the river has many different facets to its channel, specific work was performed as appropriate to the river channel; this included non-native vegetation management and removal, trimming and control of native vegetation, sediment management of sandbars and constriction points, as well as trash removal. Not all landowners and farm operators performed the same level or work or activities, and not all stretches of the river channel were maintained. Overall, landowners and farm operators were satisfied with the level of maintenance activities during this period.

The Salinas River Channel Coalition commissioned the report *Salinas River Channel Maintenance Program Review* (2008), prepared by Entrix Environmental Consultants to address specific geomorphic and riparian issues regarding channel maintenance activities, and provided the report to the Coalition members, the resources agencies, and the public to review the status of the program at that time.

With the river channel being privately owned, the complexities of managing the CMP increases with multiple agencies providing objectives and permits. What is evident to stakeholders after the flooding events of 2023 is that the Salinas River channel is not being maintained for management of prescribed flow amounts from the baseline determination of 77,000 cubic feet per second (cfs) in the unconstrained reach and 30,000 cfs in the constrained reach, as specified in the 2008 Entrix review report. The Floodplain Management Report (updated 2014) by Monterey County Water Resources Agency notes a 10-year flood level in the Salinas River at 35,000 cfs, higher than the maximum threshold of the 2023 flood flows.

The river flows of 2023 were less than 30,000 cfs as measured at the Spreckels gauge. Stakeholders firmly believe that river channel capacity has been diminished in the last two decades due to limited activity of maintenance. This is evidenced in the considerable growth of native and non-native vegetation along with sandbar and sediment build up in the main flow (or low flow) and secondary channels of the river.

The Salinas River is a highly modified ecosystem due to the construction and operation of two dams and reservoirs, built in the 1950s and 1960s. Prior to these dams, the river flowed mostly during and after precipitation and was a dry river bed for a substantial portion of each year. With the channelization of the river bed in the late 1940s and early 1950s, levees were built to help control these precipitation flows away from farmland, municipalities, and public infrastructure. Vegetation growth in the river channel was minimal because there were no reservoir water releases year-round; only when these water releases became standard (and mandatory) practice did expansive growth of vegetation take place, particularly with the non-native *Arundo donax* planted for bank stabilization.

After the 1995 flood event, concerted work in the Salinas River channel (estimated at 35% of the channel reaches) increased flow capacity and minimized the flooding impact seen just three years later in 1998. This demonstrates that with proper management of flow capacity, flooding during precipitation events can be contained, controlled, or avoided in many instances.

Costs of the CMP relative to work permitting, scope limitations (primarily only secondary channels), and bio-monitoring have contributed to a steady attrition of landowners and farm operators attempting channel maintenance on their land.

Stakeholders also believe that habitat in the river channel can be improved by concerted annual efforts to maintain the channel for increased fish passage and wildlife habitat. The main flow channel is not as deep as it once was, has many areas where vegetative dams prevent flow or divert flows to spread out, warming the water, and fish counts have been minimal or non-existent in the entire river channel due to dry conditions during drought. There are multiple benefits in providing concerted channel maintenance work in a continuous cycle.

Monitoring for fish passage has proven to be inaccurate; traditional counting methods such as REDDS are unreliable and infeasible as the river has an extremely episodic flow regime and high bed loads. There is widespread uncertainty about the magnitude of normal fluctuations in adult steelhead populations and the biological mechanism for expression of life-history. More research is needed to uncover the true survival rates of adult steelhead in the river channel given the fluctuations in flow, degradation of habitat, and years of dry river channel due to drought. Note that the viability assessment of steelhead on the Salinas River was last completed in 2016 and specifically stated that this research is one of the informational gaps.

Stakeholders desire that the *Arundo* should be eradicated from the low flow and many of the secondary river channels, as well as tributaries; the Salinas River is not the only channel experiencing the negative impacts of this non-native vegetation. When *Arundo* grows, it creates a root base around native plants, causing an uplift by raising plants and disrupting the natural floodplain; it also changes how a river flows because it

creates a thick wall, making the water squeeze through a smaller gap. *Arundo* consumes a lot of water, makes wildfires burn hotter, crowds out native species, and increases the threat of flooding. Removing this constant threat to the environment should be the highest priority, along with sediment management in the main flow channel and many of the secondary flow channels and tributaries. This eradication effort will require more than just mowing and retreatment, but a substantial effort to control heavily impacted areas where *Arundo* remains the only vegetation after crowding-out native species. While the Resource Conservation District of Monterey County continues to execute an effective removal program, the reality is that more needs to be done along the entire river channel from Soledad and Gonzales to the coastal outlet area.

Considerable debris has washed down the channel and built up along banks and turns of the low-flow river channel, both vegetative debris and trash. This debris will inhibit future water flows, cause further erosion of banks, and impede fish passage in several areas, leading to more uncertainty about river channel environmental quality and habitat sustainability.

Tributaries, such as Gabilan Creek^[1] and San Lorenzo River, have similar issues and require channel maintenance work. Flash flooding along these tributaries only compounds the capacity flow restrictions in the Salinas River channel.

During the recent drought years, the dry river channel experienced numerous homeless encampments along riverbank areas; these conditions contributed to environmental degradation in the river channel and created considerable debris and trash that has washed down the river channel. This type of trespass on private property consistently occurs and remains an unacceptable condition of river habitat management for stakeholders; incursions into the river habitat have contributed to considerable trash and destruction of the environment.

Stakeholders request permission from all agencies to perform immediate term maintenance work in the Salinas River channel (in general terms, more details provided below):

- Removal of debris deposited by flood waters
 - Controlled burning of vegetative debris
 - Removal and proper disposal of trash items
- Return river channel to baseline flow capacity at 77,000 cfs in the unconstrained reach and 30,000 cfs in the constrained reach (as established in 2008 Entrix review report) with up to 300-foot channel width in low-flow unconstrained reaches
- Control of willows and other vegetation in and around low-flow channel, sandbar areas, and tributaries, with removal as needed, without mitigation; provide shade and refuge for fish passage as feasible
- Removal of up to 5 million cubic yards of sediment from low-flow, secondary channels, and tributaries annually, during all times the channels are dry

^[1] While not a direct tributary of the Salinas River, Gabilan Creek feeds into Carr Lake and then into the slough areas west of Salinas; this creek experienced significant flooding in 2023 due to lack of vegetative and sediment management.

- Removal and eradication of *Arundo donax* in all channels, including tributaries, without mitigation; consider controlled burning as method to reduce *Arundo* stands as a pilot program
- Enhancement of low-flow channel for fish passage by deepening channel in targeted areas
- Rebuilding of levees damaged during 2023 floods; improvement and reinforcement of levees, as needed
- Enhance levee protections for petroleum production facilities
- Re-establish secondary channels where river channel alternations have occurred, including areas where the low flow channel has been abandoned
- Stabilize river channel banks along secondary channels to facilitate sediment scour during flow events
- Limited observations by bio-monitors during work activities (pre-activity surveys only)

The immediate term maintenance work area is defined as the Salinas River mainstem from the Highway 1 Bridge, River Mile (RM) 2, upstream to RM 94, including portions of the tributaries, Gonzales Slough (at RM 31.6), Bryant Canyon Channel (at RM 47.1), and San Lorenzo Creek (at RM 69.0), for a total of approximately 94 linear miles.

The immediate term maintenance program is an interim step towards a longer-term approach to managing the river for multiple benefits, including flood risk reduction, groundwater recharge, habitat, and water quality improvement. The immediate focus of this program would be deferred channel maintenance, invasive species control, and trash removal.

Descriptions of immediate term maintenance program tasks:

- **Sediment Management**

Sediment management is proposed in areas characteristic of depositional environment where transverse, lateral, and point bars form the predominant channel pattern and where channel has fallen below capacity requirements due to deposition of sediments and heavy vegetative growth (choke points), which need to be identified by individual landowners. The intention is to restore the detention and conveyance capacity of the river at choke points, while sustaining a mature river/riparian corridor. Accordingly, sediment removal would occur in those areas below the toe of the riverbank that are either dry or no less than nine (9) inches above any standing water.

Sediment management would be accomplished using heavy equipment such as bulldozer or excavator. Sediment removed from the river channel would be moved outside the stream channel and either relocated on the property or hauled off-site using 10-20 cubic yard dump trucks (this activity may require a mining permit or emergency declaration from Monterey County).

- **Vegetation Management and Sustainability**

Native vegetation management can be conducted as a program activity with adequate assessment and designation of areas to work as determined by the land owner.

This activity includes selectively removing native vegetation. Techniques include using a scraper, mower, bulldozer, excavator, truck or similar equipment to remove the vegetation above the ground. Techniques for vegetation management will be determined in a “design” process to target management in the most effective areas. Roots will be left intact as much as possible.

Non-native vegetation, including *Arundo donax*, that has overtaken many reaches of the Salinas River, forming enormous monocultures in the lower 70 miles, would be removed as part of the immediate term maintenance program. Removal would occur mechanically using fixed tooth or hammer flail mowing attachment mounted on tractor, in conjunction with herbicide application. Herbicide treatments would involve the cut-stump method or a foliar herbicide application.

Biomass removed would be moved outside the stream channel and either chipped using drum chipper or mowed and placed on the property, burned, or hauled off-site using 10-20 cubic yard dump trucks. Controlled burning of large stands of *Arundo* in the river channel would be utilized as a more effective management process (pilot program).

- **Obstruction Removal from Channel, Drainage Facilities, Structures, and Tributaries**

Under the immediate term maintenance program, obstructions impacting the capacity of drainage facilities, tributaries, or structures such as culverts or bridges would be removed to allow them to function as intended. The activities are necessary to ensure proper function and sustainability of the channel system and structures, and do not otherwise alter or expand the existing system. Repair of any culverts, if necessary, would occur. Hand tools would be utilized to facilitate removal of small debris; chain saws or reciprocating saws to cut large materials such as logs and trees to manageable size; and tractors to pull the large materials out of or away from the facilities. Debris removed would be moved outside the stream channel and chipped and placed on the property, burned, or hauled off-site using 10-20 cubic yard dump trucks.

In instances of large debris piles in turn reaches, controlled burns in place would be utilized to reduce vegetative debris piles.

- **Erosion Control and Stream Bank Sustainability Management**

The banks of the river would be graded, reshaped and revegetated, as needed, immediately following the sediment, non-native vegetation, and noxious weed removal activities to ensure stability. The banks of the river would be shaped with an excavator and finished with hand tools. The final bank configuration would be further stabilized with bank stabilizing vegetation and other

bioengineering controls. Erosion and sediment control blankets would be used, if necessary, to allow vegetation to be established in critical areas requiring stabilization. Grading of any roads and other exposed pathways to the river would be conducted to minimize erosion.

- **Trash Removal**

Activities such as removal of trash would be performed as channel management. Access to the river would be through existing roads and pathways; grading of any roads and other exposed pathways to the river would be conducted to minimize erosion. Mechanical removal of larger trash objects would be accomplished with minimal impacts to vegetation and the river channel.

Coordination and collaboration with other programs, including the Resource Conservation District-Monterey County (which has already secured approvals and permits for their Arundo and Tamarisk removal program) and the Natural Resources Conservation Service (which has an existing stream bank management program for tributaries) would be essential to this immediate term management program.

Maintenance activities undertaken pursuant to this immediate term maintenance program will incorporate a range of measures to minimize and/or avoid identified adverse impacts on the environment. CMP work will incorporate Best Management Practices (BMP's) identified previously in the approved Environmental Impact Report, and 'good neighbor' policies intended to reduce effects of maintenance activities on neighboring land uses, as applicable and feasible, such as measures to include erosion control and stream bank stabilization, trash removal, utilization of existing access ramps and roads for stream access, disposal of collected removed sediment and vegetation primarily deposited in other upland areas of the property.

Conclusion – “The Ask”

The concern is immediate; with predictions of an El Nino event forming for next winter, the likelihood that another set of atmospheric rivers will occur in the Salinas River watershed is high. Preparations for flood control and mitigation need to be accomplished through CMP work this year.

All agencies are requested to review this list of tasks and provide permission, through an emergency waiver or permit, to stakeholders to provide this work on their property in the Salinas River channel and tributaries.

Your earliest response is appreciated!