

Salinas River Stream Maintenance Program Effectiveness Assessment

Presentation to MCWRA Board

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Outline

- ◆ Program Overview and Background
- ◆ Program Participation
- ◆ Results of Effectiveness Analysis
- ◆ Conclusions and Next Steps



Program Overview & Background

- ◆ Multi-benefit approach to vegetation and sediment management
 - ◆ Creation of up to 126 secondary channels and maintenance of 3 tributaries in seven River Management Units
 - ◆ Arundo control as mitigation for program impacts
- ◆ Full program began in 2016 after “Demonstration Project”



Program Overview & Background

- ◇ MCWRA held 404 General Permit (USACE) and 401 Certification (CCWQCB), RCDMC held Routine Maintenance Agreement (CDFW).
- ◇ 401 and 404 transferred to RCDMC within last year
- ◇ RCDMC managing program in collaboration with RMU Association and Farm Bureau
- ◇ MCWRA supporting program through consultation and Professional Services Agreement with RCDMC
 - ◇ Goes through FY 2025/26



Participation and Total Area Treated

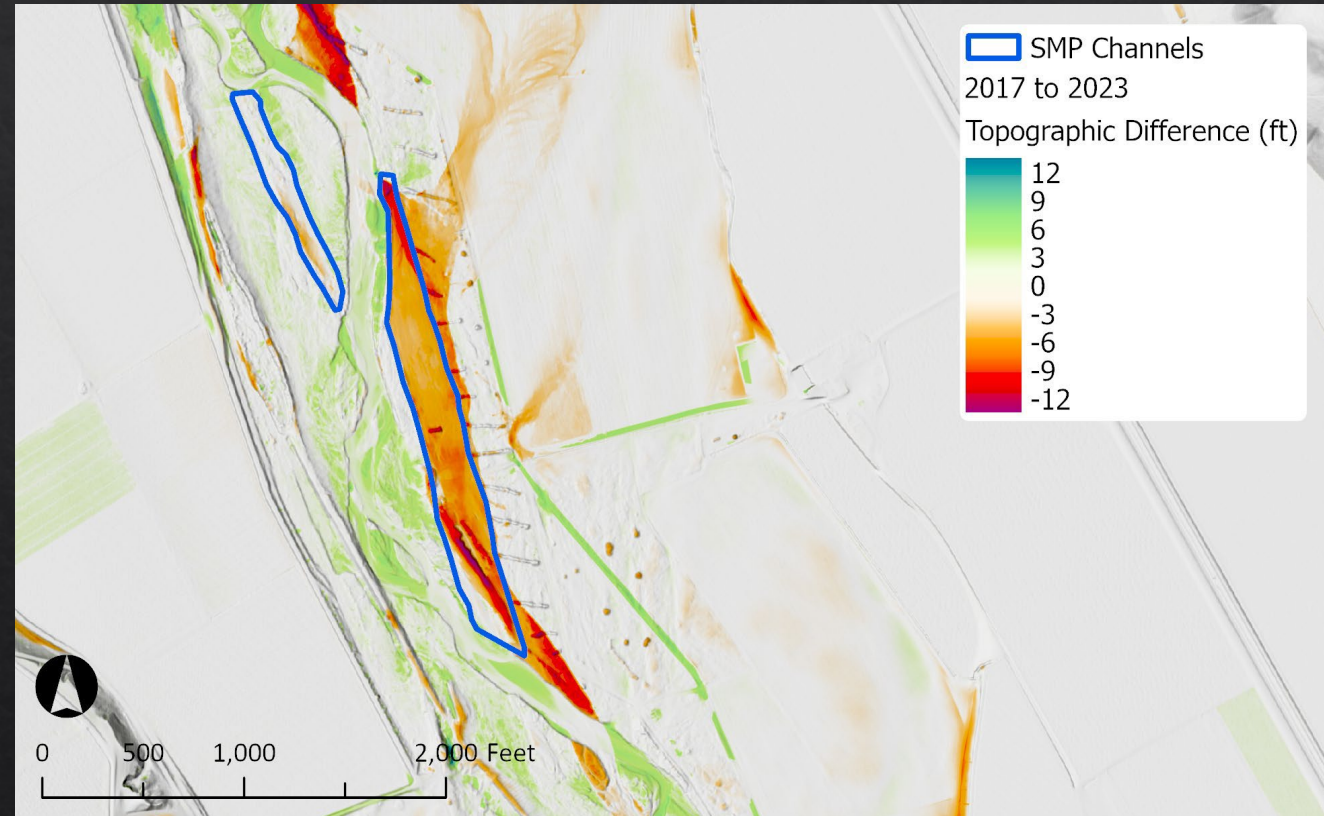
- ◇ 38 out of 126 secondary channels and 1 tributary (San Lorenzo Creek) have participated for one or more years over the 9 years (31%).
- ◇ 148 acres of vegetation + 130 acres of arundo (inside and outside secondary channels)

Year	Total # MAs	RMUs	Total Area Worked Annually (acres)	Total New Area Worked Annually (acres)
Prior Ph 1	-	-	37.9	37.9
2016	23	1,3,4,5,6	108.5	70.6
2017	17	1,3,4,6	98.6	22.1
2018	17	1,2,3,4,5,6	92.7	2.1
2019	22	1,2,3,4,6	120.4	21.4
2020	24	1,2,3,4,6	124.4	6.17
2021	23	1,2,3,4,6	123.08	1.24
2022	27	1,2,3,4,5,6	126.44	16.40
2023	21	1,3,4,5,6	116.40	26.50
2024	22	1,3,4,5,6	118.76	8.97

Effectiveness Assessment: Is the Stream Maintenance Program Working?

Are the maintenance areas functioning as designed?

- ◆ FlowWest compared topographic data in secondary channels before and after flow events
- ◆ Analysis found vegetation removal, sediment removal, and grading increase likelihood of sediment scour.



Are the secondary channels functioning as designed?

- ◆ Secondary channels are “activating” during moderate flow events, creating braided channel
- ◆ [Possible groundwater benefit under investigation]



Are the secondary channels functioning as designed?

- ◇ River has shifted away from banks into maintained secondary channels
- ◇ Reduces bank erosion
- ◇ Levee breaching observed in 2023 in areas where vegetation is thick and secondary channels were not present



Does the observed extent of flooding match hydraulic model predictions?

- ◆ 42,800 cfs at Spreckles considered 10-year event
- ◆ 2023 gage at Spreckels = 23,300 cfs
- ◆ [Note: gages may not accurately measure flood events!]
- ◆ Used aerial imagery of March 2023 event from Copernicus Data Space Ecosystem to compare observed vs. modeled



Does the observed extent of flooding match hydraulic model predictions?



Modeled 5-year Flow Depths RMU 1, King City

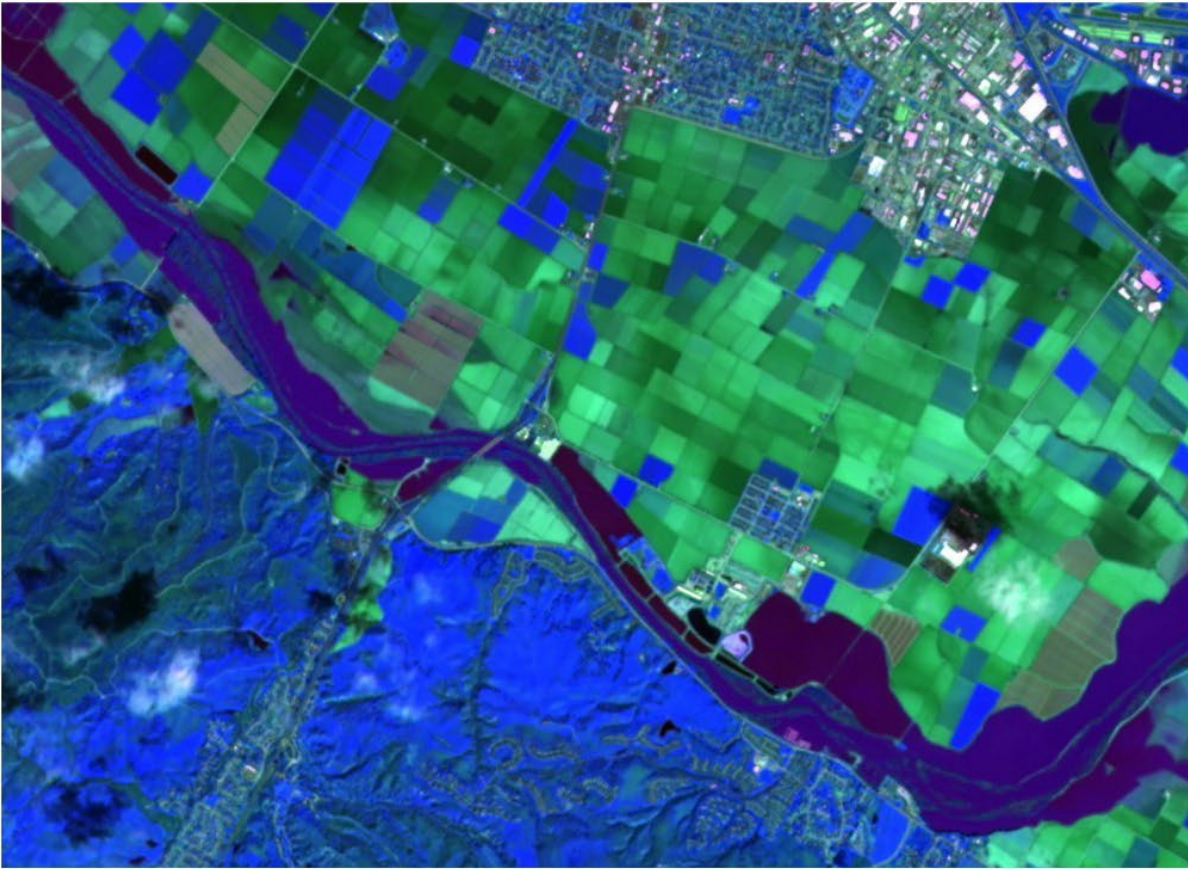


Copernicus Data Ecosystem 2023 flood event



Modeled 10-year Flow Depths RMU 1, King City

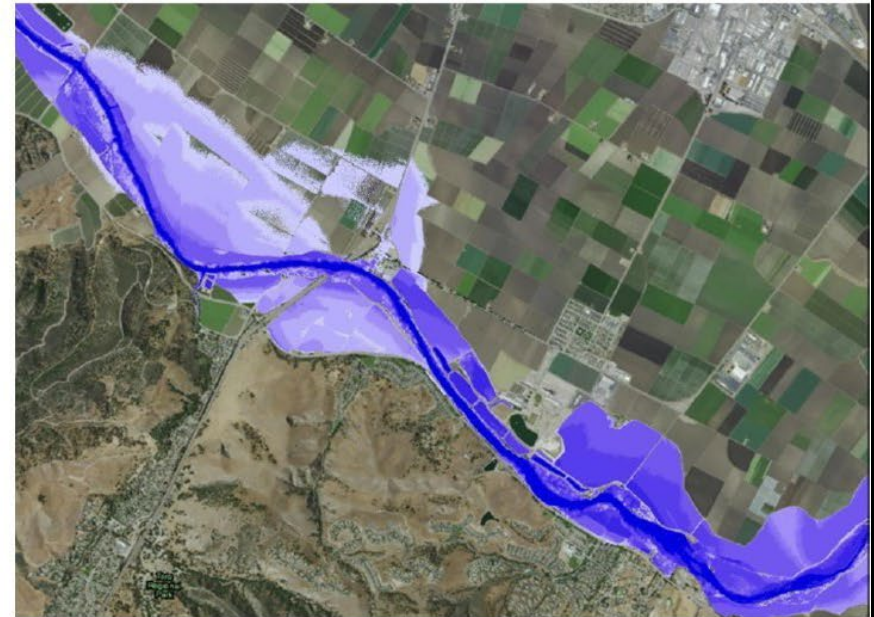
Does the observed extent of flooding match hydraulic model predictions?



Copernicus Data Ecosystem flood event 2023



Modeled 5-year Flow Depths RMU 6, Salinas



Modeled 10-year Flow Depths RMU 6, Salinas

Is the SMP affecting beneficial uses and habitat function?

- ◆ Arundo mitigation has opened space for native vegetation and increased habitat diversity



Is the SMP affecting beneficial uses and habitat function?

- ❖ Wildlife monitoring study showed increased detections in treated areas
- ❖ Flooding and drought have much greater effects on wildlife and habitat



Conclusions

Stream Maintenance Program

- ◆ Stream Maintenance Program is effective in reducing localized flood damage in areas where it has been implemented [not a flood prevention program!]
- ◆ Difficult to assess full program effectiveness due to low participation
- ◆ Species and habitats are not adversely impacted

Next Steps

- ◆ Renewing SMP permits
- ◆ Continue to work with participants and partners to improve and streamline program
- ◆ Continue to seek external funding and support for program
- ◆ Increase participation

SALINAS RIVER

STREAM MAINTENANCE PROGRAM



GROWN & HARVESTED BY
RIVER MANAGEMENT ASSOCIATION &
RCD OF MONTEREY COUNTY

Conclusions

Overall Flood Risk in Salinas Valley

- ◆ Factors that contribute to flooding
 - ◆ Vegetation growth in the riparian zone (especially arundo!)
 - ◆ Narrowing of greater channel through increased ag development
 - ◆ Poor quality of private levees/berms
 - ◆ (Did not see increased sedimentation in greater channel over time)
- ◆ What else can we do to reduce flood risk?
 - ◆ Arundo eradication (apx 2/3 of 1500 acre infestation under control)
 - ◆ Investigate off-channel water detention
 - ◆ Improve levee/berm quality

RCD of Monterey County will continue working with multiple partners to address challenges around flooding in the Salinas Valley.

Thank you to MCWRA and other partners for your collaboration!

