

**Adaptive Management of Old and  
Middle River (OMR) Flows for  
April-May 2012**

*(per the joint stipulation)*

## Stipulation Timeline

- **January 12<sup>th</sup>** – Approved joint stipulation filed (approved by court on January 19<sup>th</sup>)
- **February 3<sup>rd</sup>** – Technical workshop on 2012 acoustic-tagging studies
- **February 7<sup>th</sup>** – Technical workshop on OMR management
- **March 16<sup>th</sup>** – NMFS issues technical memorandum on OMR adaptive management per the stipulation:  
*[http://swr.nmfs.noaa.gov/ocap/2012\\_stipulation.htm](http://swr.nmfs.noaa.gov/ocap/2012_stipulation.htm)*
- **April 1<sup>st</sup> – May 31<sup>st</sup>** – Implementation of OMR management per the technical memorandum, including operation of a rock barrier at the head of Old River.

## April-May OMR Management Overview

Management approach under joint stipulation	Period	OMR range	OMR to be implemented
PTM modeling results	April 1- April 7	-1,250 to -3,500	TBD
PTM modeling results	April 8- April 14	-1,250 to -3,500	TBD
“sentinel” steelhead	April 15 – April 30	-1,250 to -3,500	-3,500* cfs
“sentinel” steelhead	May 1 – May 14	-1,250 to -5,000	-1,250* cfs
“sentinel” steelhead	May 15 – May 31	-1,250 to -5,000	-5,000* cfs

*\* -1,250 cfs OMR will be targeted if exposure trigger hit*

## April-May OMR Management Overview

Old and Middle River flow management may be controlled by other regulatory or operational constraints such as:

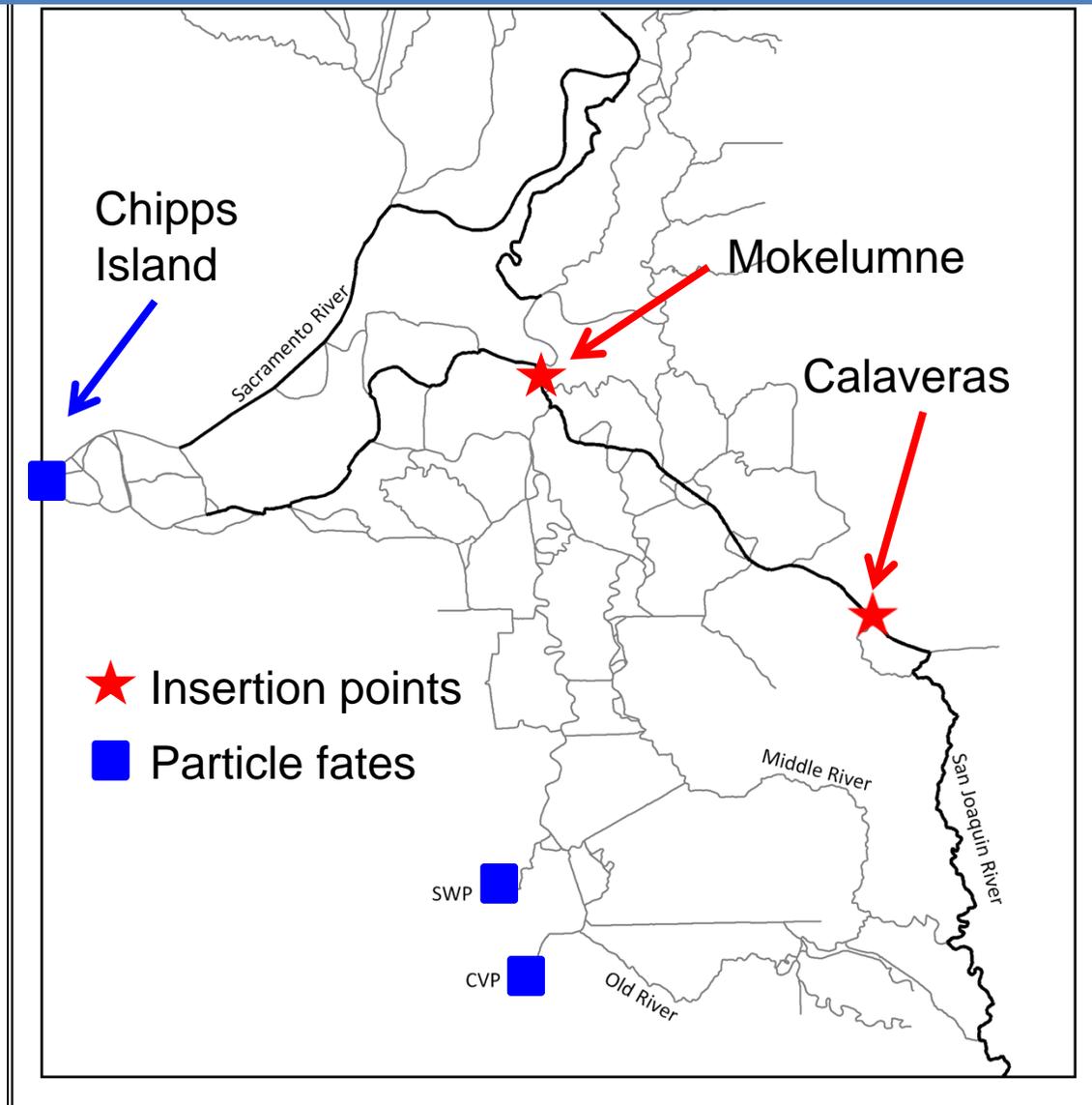
- Action IV.2.3 from the NMFS BiOp
- Action 3 of the FWS BiOp
- Water quality standards in D-1641
- Health and safety export levels

# PTM approach to OMR management

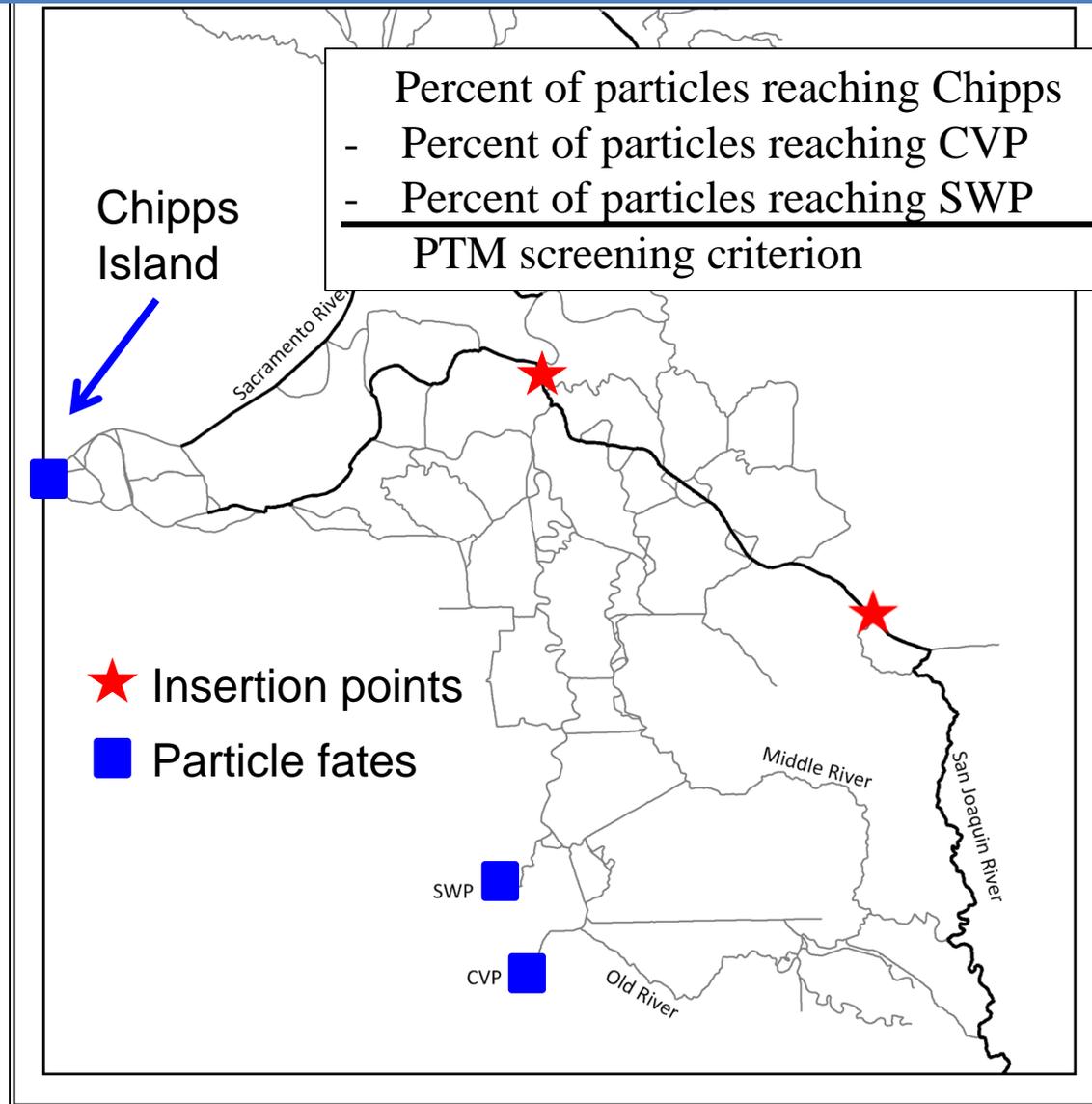
A PTM screening criterion will be used to compare three potential operations scenarios to a “baseline” scenario

- Includes particle fates expected to be sensitive to both mainstem San Joaquin River flow and flows in south delta channels
- Includes particles inserted near mouths of the Calaveras and Mokelumne rivers

# PTM approach to OMR management



# PTM approach to OMR management



# PTM approach to OMR management

Scenario	Barrier Condition	Operations
Baseline	OUT	Inflow:export ratio per Action IV.2.1
Potential operations scenario 1	IN	Less negative OMR
Potential operations scenario 2	IN	Intermediate OMR
Potential operations scenario 3	IN	More negative OMR

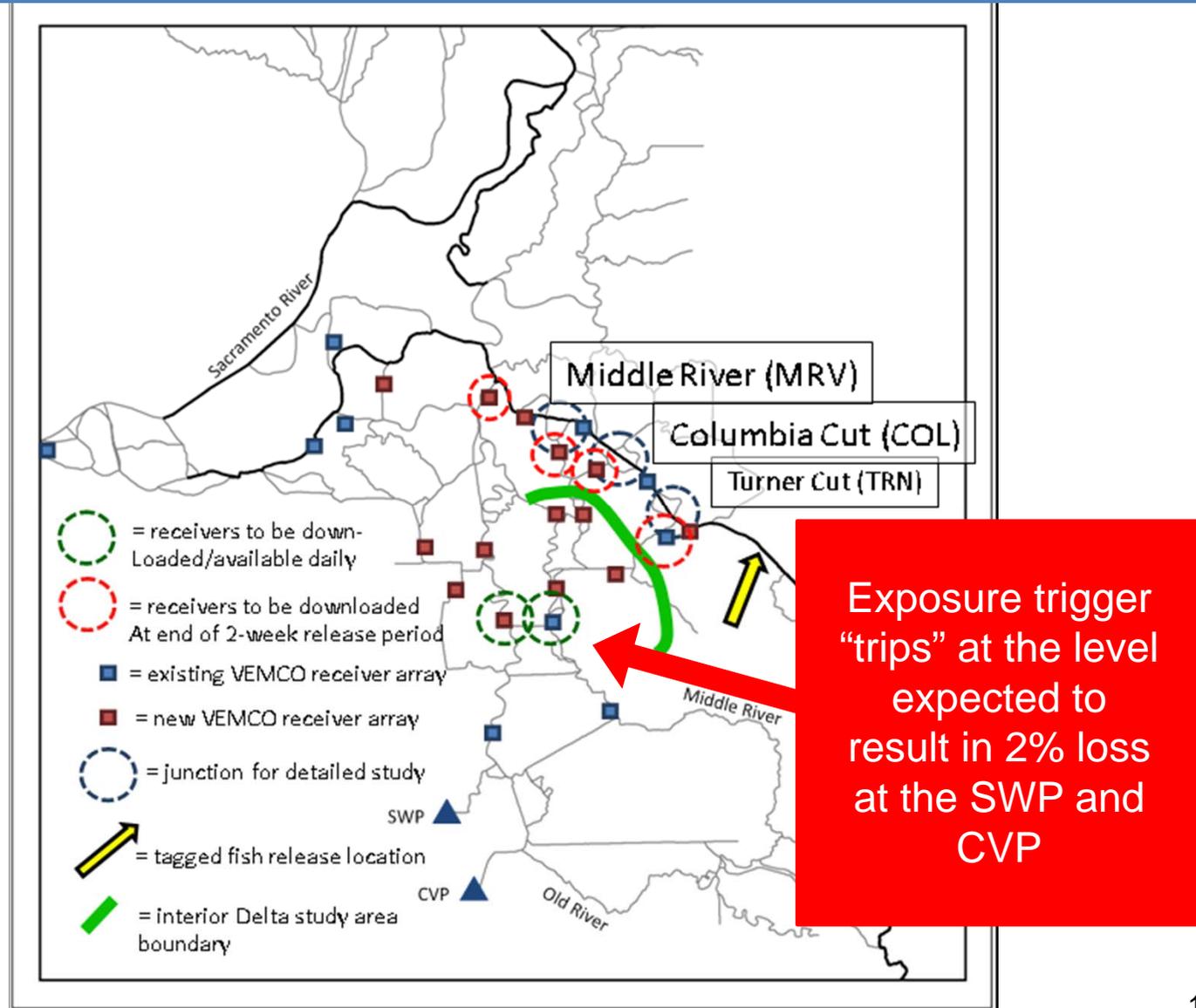
## “Sentinel” steelhead approach to OMR management

- EXPERIMENTAL INFORMATION: Initial OMR levels
- PROTECTION OF STEELHEAD: -1,250 OMR, if exposure trigger exceeded

Management approach under joint stipulation	Period	OMR range	Initial OMR to be implemented
“sentinel” steelhead	April 15 – April 30	-1,250 to -3,500	-3,500* cfs
“sentinel” steelhead	May 1 – May 14	-1,250 to -5,000	-1,250* cfs
“sentinel” steelhead	May 15 – May 31	-1,250 to -5,000	-5,000* cfs

*\* -1,250 cfs OMR will be targeted if exposure trigger hit*

# “Sentinel” steelhead approach to OMR management



# “Sentinel” steelhead approach to OMR management

Key trigger components	Value
Number of Acoustically Tagged Fish Released Per Release Group	168
Assumed fraction of fish entering the CVP or SWP that enter the SWP (assumed equal to SWP exports as fraction of total exports)	0.5
Assumed survival rate per km between the Railroad Cut receivers and the CVP & SWP	97%
Railroad Cut Trigger (Number of tagged fish)	9
Railroad Cut Trigger (Percentage of Tagged Fish Released)	5%
<i>CVP or SWP Entry Trigger (Number of tagged fish)*</i>	6
<i>CVP or SWP Entry Trigger (Percentage of Tagged Fish Released)*</i>	3%

*\* Data may not be available to use the CVP or SWP entry trigger in 2012*

## Additional Slides

- PTM data and graph from actual DWR data used by DOSS on 3/27

# PTM approach to OMR management

Data provided by DWR to NMFS on 3/26/2012

OMR Scenario	Chipps %	CVP %	SWP %	PTM screening criterion
Baseline	13	0	0	13
-1,250	14	0	0	14
-2,000	13	3	3	7
-3,500	10	13	16	-18

BUFFER: Any operations scenario with a criterion no more than 5 points more negative than the baseline (in this case, **no more negative than 9**) is acceptable under the PTM approach.

# PTM approach to OMR management

Data provided by DWR to NMFS on 3/26/2012

