
Central Delta Intakes -- fish effects

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Introduction

- Charge to DEFT
 - ◆ Comparison to Alternatives
 - ◆ Comparison to Hood
 - ◆ 'Red Flag' review
- DEFT Process

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Options considered

Option A - MacDonald Island

- ◆ South delta emphasis
- ◆ Water quality target

Option B – Bacon Island

- ◆ EWA history and uses
- ◆ Supply reliability target

Option AB

Phasing and Interactions

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Biological Considerations

- Delta smelt adults and young
- Salmonids
 - ◆ Steelhead and spring-run
 - ◆ Fry
 - ◆ San Joaquin smolts
- Striped bass
 - ◆ Wet years
 - ◆ Dry years
- Splittail

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Assumptions

- ▣ Effective screens without salvage
- ▣ ERP screens of delta agricultural diversions in place so CD only adds consolidation
- ▣ Operated to reduce impact

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Potential benefits

- ▣ Eliminate post-screen mortality
- ▣ Tidal dispersion effects
- ▣ Large channel effects
- ▣ Spatial flex
- ▣ Temporal flex (B and AB only)
- ▣ South Delta barrier effects
- ▣ South delta consolidation

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Potential Detriments

- Greater exposure of populations
- Does not address hydrodynamic effects
- Reduces fish density information

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Detrimental Hypotheses

stage	Delta smelt		Salmonids				Striped bass		Split tail
	adults	young	fry	San Joaquin	Spring run	Steel Head	wet	dry	Young
Direct expose	++	++	+	++	++	++	++	+	+
qwest	+	++	0 to +	+	+	+	++	++	0 to +
Info lack.	++	+	0	+	0	0	0	0	+

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Beneficial Hypotheses

stage	Delta smelt		Salmonids				Striped bass		Split tail
	adults	young	fry	San Joaquin	Spring run	Steel Head	wet	dry	Young
No salvage	++	++	+	+	+	+	0	+	+
Tidal Disp.	+	+	+	+	0	+	0	+	+
Large Channel	+	+	0	+	+	+	+	+	++
Spatial Flex	++	++	0	0	0	0	0	+	+
Time shift	++	++	0	++	+	+	+	++	+
Barrier Impacts	0	+ to ++	0	0 to +	0	0	+	0	+
Ag Control	0 to +	0 to +	0	0	0	0	0 to +	0	+

Observations/Conclusions

- Quantitative assessment of benefits/detriments impossible at present
- Potential benefits/detriments most applicable for estuarine species
- Least for salmonids
- Size and operational sensitive

Next Steps

- Some modeling could be done before ROD
- △ Little likelihood of firm conclusions
- CMARP connection
- Integration with:
 - ◆ ISI, SD, WQ, EWA, Hood, ERP

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