

Budd Inlet refined modeling scenarios Briefing for Deschutes Advisory Group

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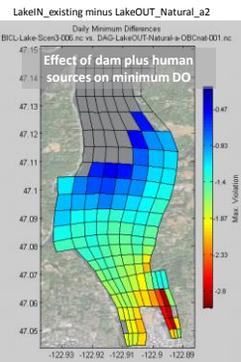
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Questions regarding criteria

1. Can Budd Inlet meet water quality standards with the Capitol Lake dam **in** with all possible point and nonpoint source reductions within the model domain and outside the model domain?
2. Would Budd Inlet meet water quality standards with the Capitol Lake dam **out** with all existing anthropogenic source reductions inside and outside the model domain?

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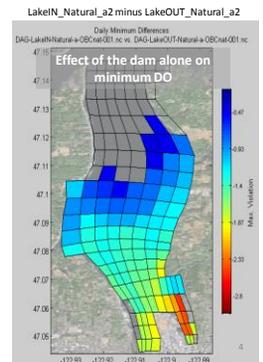
Q1. Can Budd Inlet meet water quality standards with the Capitol Lake dam in with all possible point and nonpoint source reductions within the model domain and outside the model domain?



- The dam *plus* all other human sources cause minimum DO in East Bay to drop by **>2.5 mg/L** and much of Budd to drop by **>0.2 mg/L**
- Natural conditions:
 - No dam
 - No boundary anthro, no WWTPs, no nonpoint sources
- Compared to
 - With dam
 - With boundary anthro, with WWTPs, with nonpoint sources

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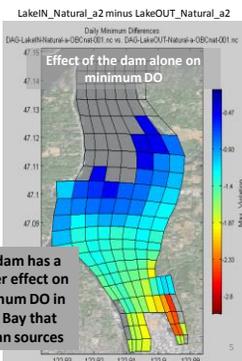
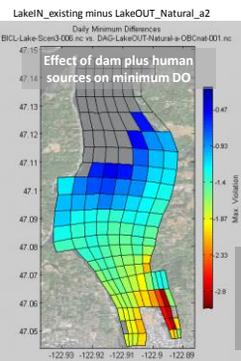
Q1. Can Budd Inlet meet water quality standards with the Capitol Lake dam in with all possible point and nonpoint source reductions within the model domain and outside the model domain?



- No. The dam alone, even with all other human sources controlled, causes minimum DO in East Bay to drop by **>2 mg/L** and much of Budd to drop by **>0.2 mg/L**
- Natural conditions:
 - No dam
 - No boundary anthro, no WWTPs, no nonpoint sources
- Compared to
 - With dam
 - No boundary anthro, no WWTPs, no nonpoint sources

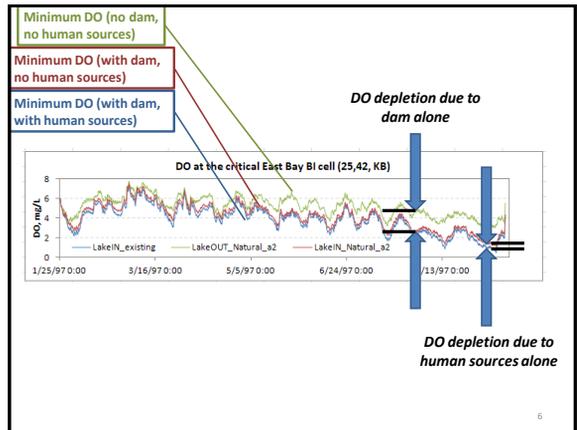
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Q1. Can Budd Inlet meet water quality standards with the Capitol Lake dam in with all possible point and nonpoint source reductions within the model domain and outside the model domain?



The dam has a greater effect on minimum DO in East Bay than human sources

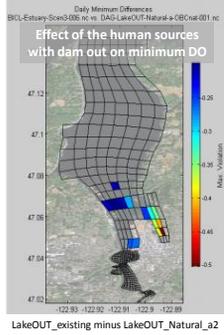
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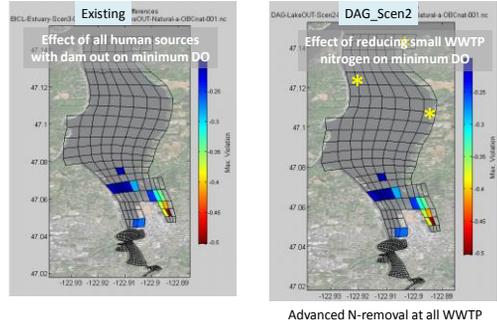
Q2. Would Budd Inlet meet water quality standards with the Capitol Lake dam out ?

- No. Human sources cause minimum DO in East Bay to drop by **~0.5 mg/L**
- Natural conditions:
 - No dam
 - No boundary anthro, no WWTPs, no nonpoint sources
- Compared to
 - No dam
 - With boundary anthro, with WWTPs, with nonpoint sources

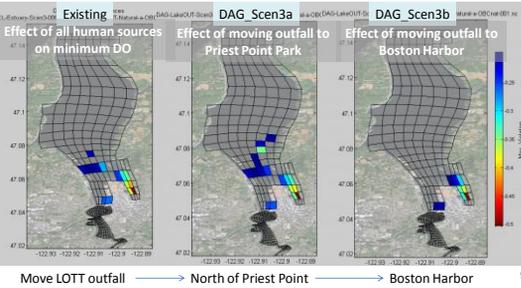
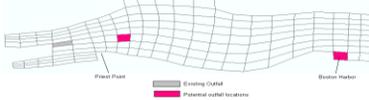


What combinations of point and nonpoint source reductions are needed within the model domain and outside the model domain?

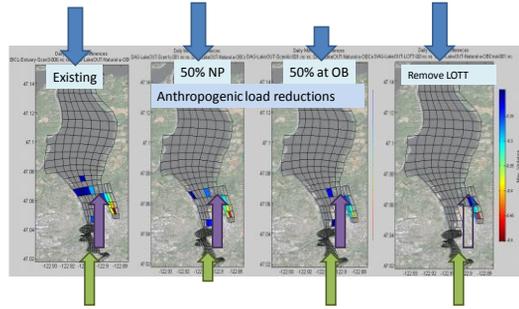
Anthropogenic point source reductions within the model domain (advanced N-removal at all WWTPs)



Anthropogenic point source relocation within the model domain (all with dam out)

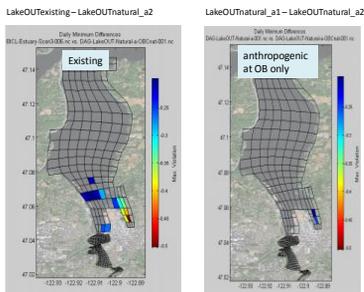


What combinations of point and nonpoint source reductions are needed within the model domain and outside the model domain?



What combinations of point and nonpoint source reductions are needed within the model domain and outside the model domain?

What is the impact of open boundary anthropogenic load on DO violations in the LakeOUT scenario?



- Puget Sound wide Model : predict anthropogenic loads at Edmonds (delta_N at Edmonds)
- South and Central Sound Model: predict anthropogenic loads at Budd Inlet OB (delta N at BI_OB)

Next steps

