FFMP Salinity Study

DRBC's RFAC Meeting

May 14, 2020

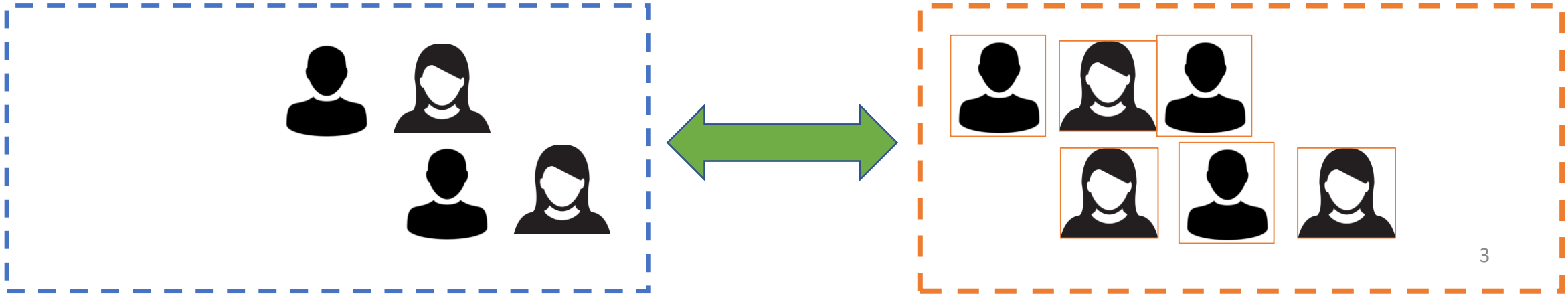
Overview

- Background
  - The purpose of this study is to evaluate the impacts and conditions resulting from:

    “detachment of releases from the New York City Delaware Reservoirs from the position of the salt front during drought emergency and to replace the benefit that New York City releases have with respect to the salt front with an alternative methodology or methodologies that will provide comparable protection for existing resources within the Basin” (Section IV.3.a.i, FFMP2017).
- Proposed Study
  - ✓ Funded (outside sources)
  - ✓ Leverages multiple studies and expertise
  - ✓ Finished on time for negotiations (most likely)
  - ✓ Collaborative
  - ✓ Answers most of DPWG questions
  - ✓ Uses state of the science

Team Dynamics

- Multidisciplinary, multiagency team has been assembled to provide objective recommendations based on sound science
  - Accomplish more together than could be completed separately
  - Use complimentary tools in parallel
  - Integrate different tools with collaboration
  - Align work with each participating group's mission and function
  - Share interim results
  - Explore options for an external peer review panel



Approach Benefits

RESULTS AVAILABILITY

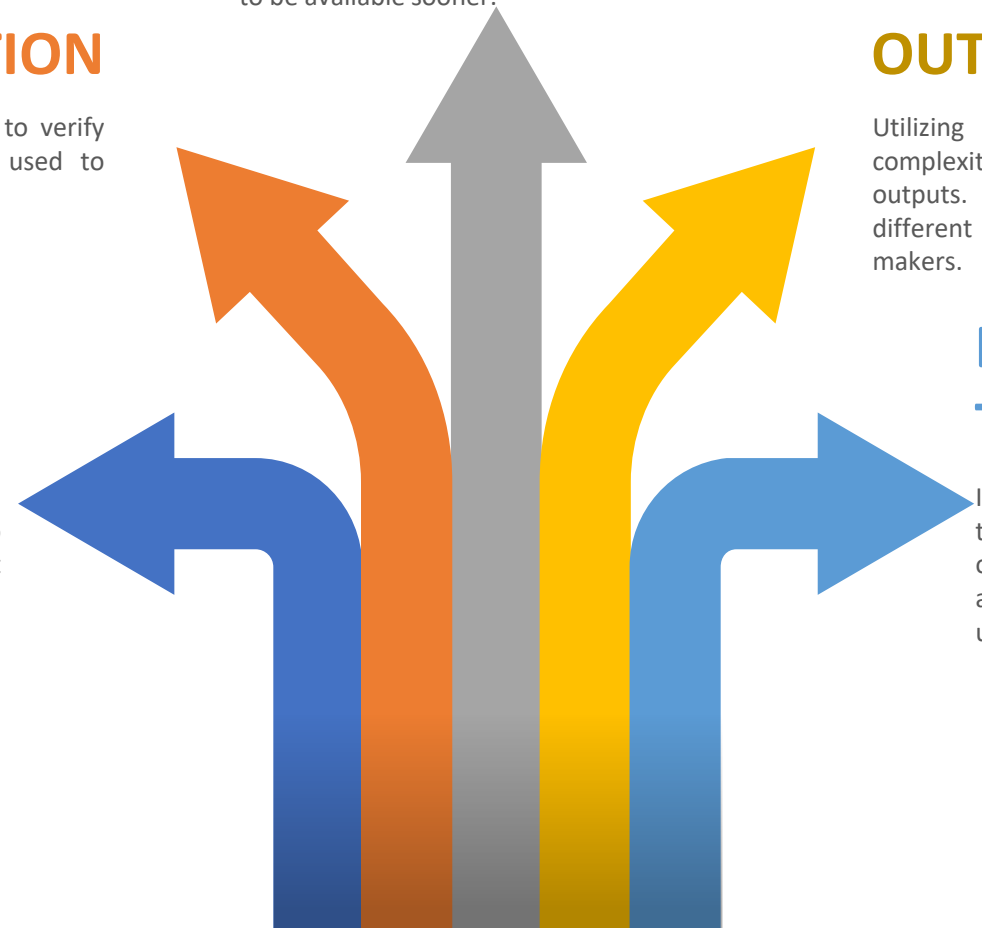
Parallelization allows preliminary results to be available sooner.

MODEL VERIFICATION

Suite of models can be used to verify results. Results can also be used to inform model parameters.

COARSE AND REFINED OUTPUTS

Utilizing multiple tools and multiple complexities will result in varied outputs. These may be available at different times needed for decision makers.



INFORMED MODEL RUNS

Screening level tools can inform more complex models. Scenario testing can be narrowed to most promising.

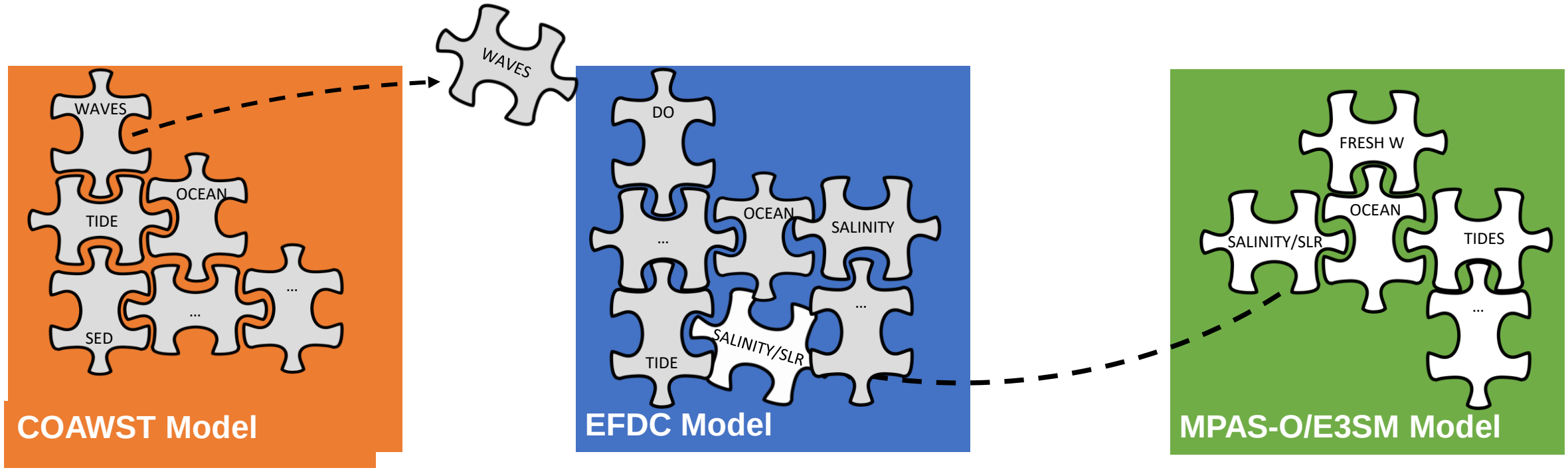
BACKUP TOOLS

If a tool proposed is determined to provide unacceptable results, other tools can be considered and may already be ready for usage.

How do the pieces connect?

Are waves important?

Is increasing salinity due to sea level rise important?



Qualifiers

Schedule

- Defined by agency performing work
- May depend on external funding

Limitations

- Customizability
- Breadth (extent of concepts)
- Number of alternatives/scenarios
- Agency resources
- Habitat not specifically addressed

Synthesis

- Integrated document not funded or assigned

Phase 1: Model and Scenario Development

- Model Assumptions
- Model Calibration, Sensitivity and Refinement
- Metrics Development
- Flow Management Alternatives
- Scenario Development

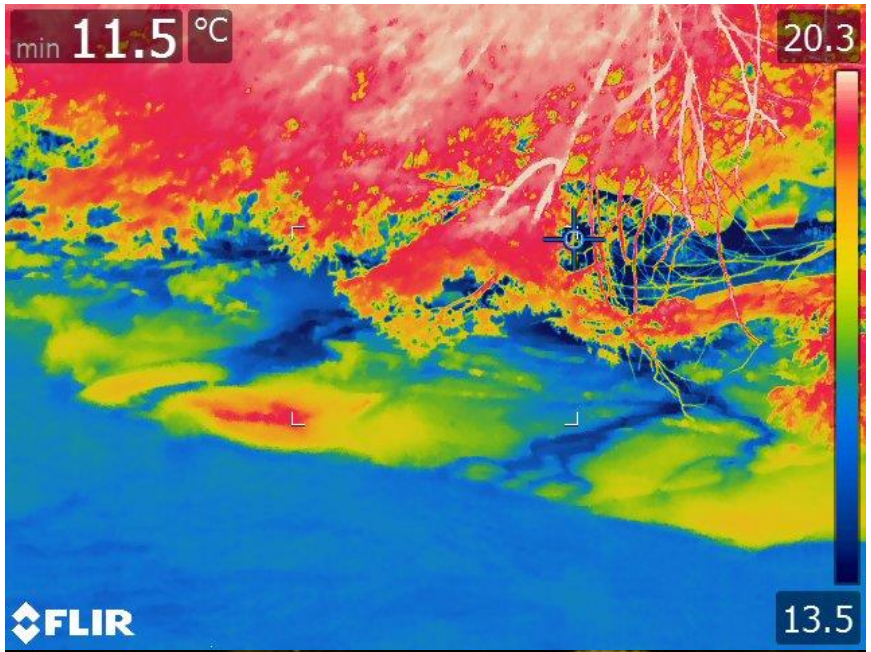
Phase 2: Scenario Analyses

- Dynamics/Physics Analyses
  - COAWST: Dynamics, sensitivity, SLR
  - EFDC: Sensitivity, SLR
  - MPAS-O/E3SM: Dynamics, long-term climate change, SLR
- Flow Management Alternatives Analyses
  - DRB-PST: Screening
  - DRB-PST-DYNHYD-Toxi5: More detailed screening
  - EFDC: Detailed estuary scenario testing (limited alternatives)
  - CWMS: Scenario watershed testing (limited alternatives)
- Climate Change (hydrology input, non-SLR)
  - CWMS (HEC-HMS)

Use of any model listed is not guaranteed. Use of a model is not constrained by what is listed. A model may or may not be used for all options listed.

Ecology/Habitat

- Not specifically addressed with separate model(s)
- Options to determine impacts
  - Surrogates –ex flow and depth from CWMS)
  - Literature review – SEF charge?
  - Future work – uncertain timelines



Phase 3: Reporting

- Documentation provided by individual agencies
  - Reports required for agency project
  - Memoranda of decree party specific work
- Synthesis Document (Integrated)
  - Determine if needed at a later date
  - Requires additional funding and resources

Coordination and Communication

- Quarterly Meetings for Interagency Salinity Study Team (Team)
- Progress meetings with the DPWG and Team will occur at regular intervals.
- DPWG will meet to provide input and feedback on items such as, but not limited to, model assumptions, metrics and flow management alternatives
- Meetings with RFAC, SEF and other stakeholders will occur to present study results or to solicit public input

Comment Period and Next Steps

Verbal comments accepted today

Written comments (encouraged) accepted through June 5th. Submit to klrussell@usgs.gov and Amy.Shallcross@drbc.gov

Comments compiled from today's discussion and written comments

Submitted to Decree Parties for review and consideration for incorporation into final documents

Final documents and future draft documents related to studies will be shared at upcoming RFAC meetings.