A Process for Setting, Managing, and Monitoring Environmental Windows for Dredging Projects

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Some Introductory Observations

- Windows: is there anything you haven't already heard today?
  - Environmental windows and seasonal restrictions
  - One in a portfolio of management tools
  - Seductively simple …
  - 80%
- On The Need For Consistency, Predictability, Reliability.
  - Windows are set at the District level.
  - Wide variations in the process of setting windows.
    - In the number of projects for which there are windows.
    - In use of science in setting windows.
    - In monitoring the efficacy of windows.

Some Introductory Observations

- Our Process
  - Was designed for Federally-mandated projects--i.e. for projects for which the question is not whether to dredge, or not…but when to dredge.
  - Exploits existing data and information.
  - Can be incorporated into existing stakeholder processes
- Criteria for judging processes...

Some Introductory Observations

- Deciding whether, or not, to dredge is not a scientific question…although science can help IF the decision is framed properly.
  - Technical dimensions
  - Richard Feynman
- Stakeholders→scientists (what's at risk, when are they least vulnerable, what are the thresholds?)→Engineers (here's what we recommend to reduce stressors.)→Scientists (recommend windows) →stakeholders (decide.)

Some Introductory Observations

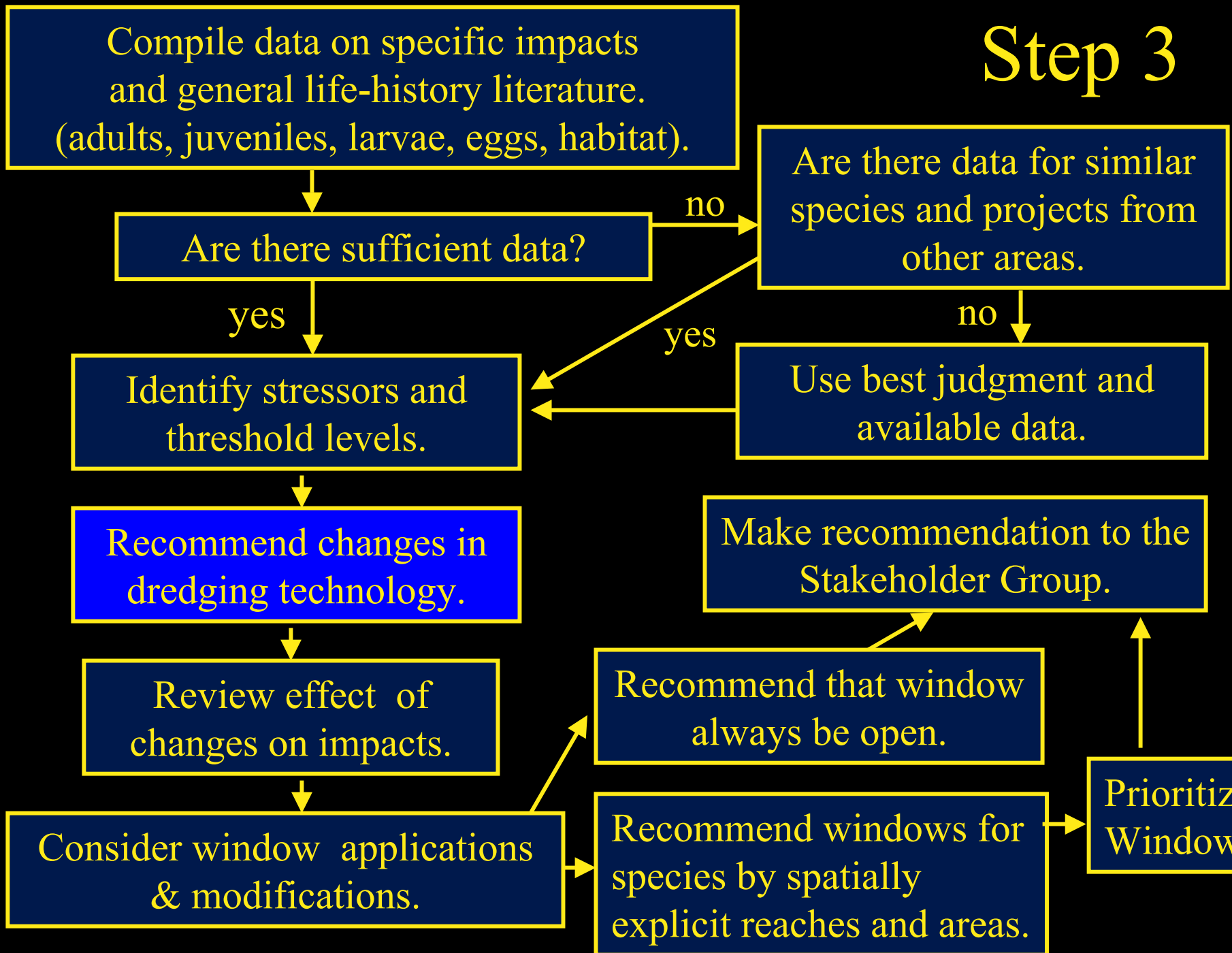
- **Primary Stressors Generated During Dredging and Disposal:**
  - **Entrainment**…fish, eggs, larvae, juveniles; sea turtles and other threatened or endangered species.
  - **Suspended Sediments & Turbidity…**
  - **Resuspension of Buried Contaminated Sediments…**
  - **Sedimentation…**
  - **Habitat Loss…**
  - **Collisions with Marine Mammals…**

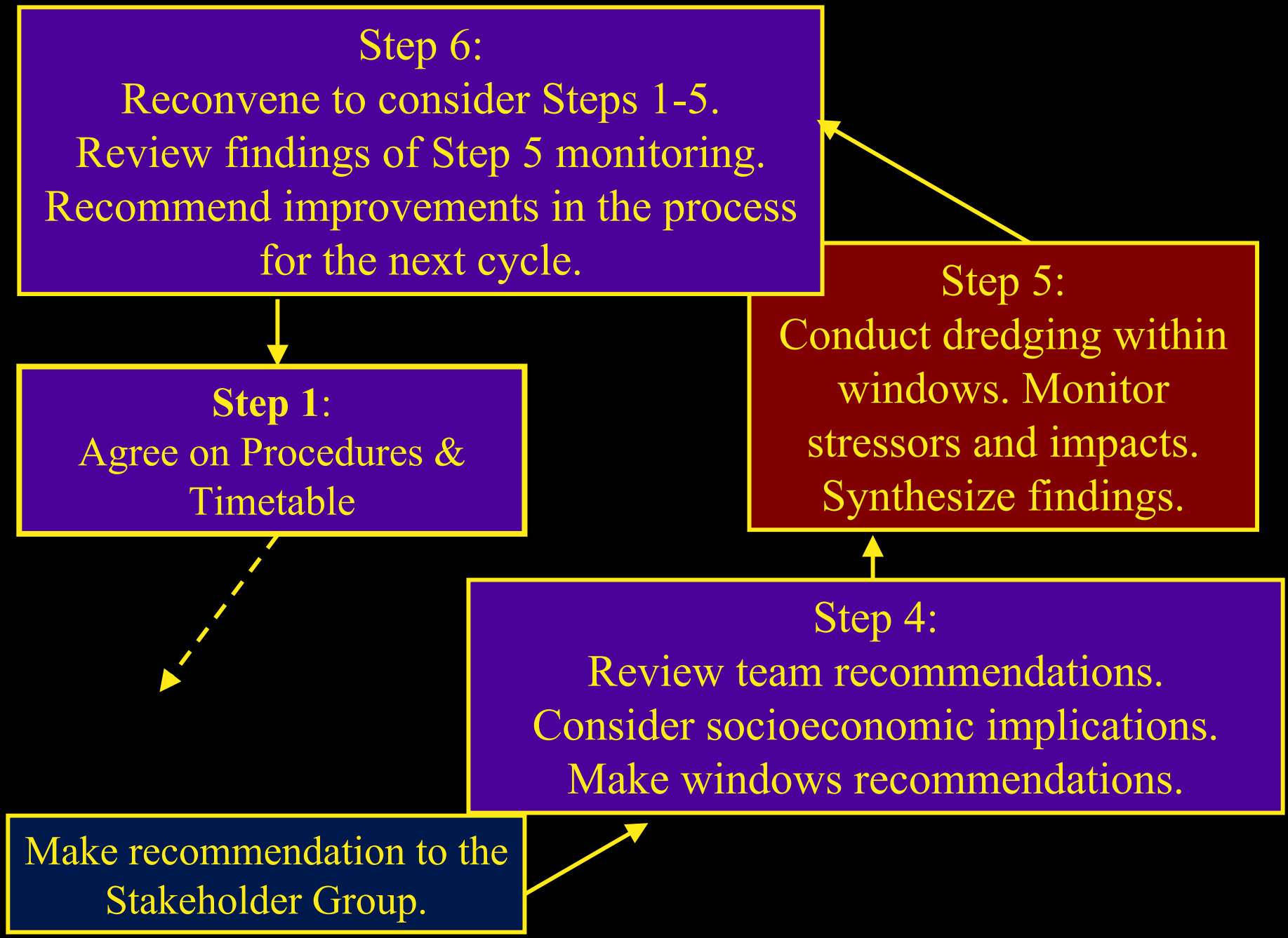
The Recommended Process For Setting, Managing, And Monitoring Environmental Windows For Dredging Projects

Step 1:
Stakeholders
Convene.
Agree on Procedures
& Timetable

Step 2:
Consider Project Details.
Are Windows in Place?
Identify Resources of Concern.
Appoint Science & Engineering
Teams

Step 3


Compile data on specific impacts and general life-history literature. (adults, juveniles, larvae, eggs, habitat).
Are there sufficient data?
no
Are there data for similar species and projects from other areas.
yes
no
yes
Use best judgment and available data.
Identify stressors and threshold levels.
Recommend changes in dredging technology.
Make recommendation to the Stakeholder Group.
Review effect of changes on impacts.
Recommend that window always be open.
Consider window applications & modifications.
Recommend windows for species by spatially explicit reaches and areas.
Prioritize Windows.


Step 6:
Reconvene to consider Steps 1-5.
Review findings of Step 5 monitoring.
Recommend improvements in the process for the next cycle.
Step 5:
Conduct dredging within windows. Monitor stressors and impacts.
Synthesize findings.
Step 1:
Agree on Procedures & Timetable
Step 4:
Review team recommendations.
Consider socioeconomic implications.
Make windows recommendations.
Make recommendation to the Stakeholder Group.

The Study Process

- Survey designed and distributed at two national meetings:
  - Sea Grant Conference on Dredged Material Management: Options and Environmental Considerations. (MIT, Dec. 2000)
  - National Dredging Team Conference, Jacksonville, Jan 2000)
- Case studies were conducted in 10 Corps Districts to determine independently how the Corps viewed the existing process for setting windows and how NOAA viewed it. (Mobile, Galveston, Norfolk, Baltimore, Detroit, New England, New York, San Francisco, New Orleans, Rock Island)

The Study Process

- A Conference Designed and Conducted by the Committee Using Input From Surveys, Case Studies, From the Two Conferences, And, Expertise and Experience of Committee Members.
- Conference Strategy:
  - Development of the proposed process through successive approximations.
  - Presentation of a draft template in the opening session and presentation of a series of revised templates to a reaction panel (USACE + NOAA + EPA + State Resource Agency Rep)

Some Selected and Streamlined Key Findings and Recommendations From the Report

Selected Findings & Recommendations

- **Finding**: Dredging and disposal activities are only one of a number of human activities that affect the nation's waterways.
- **Recommendation**: They need to be evaluated within this context. Decision-making should be broadly based.

Selected Findings & Recommendations

- **Finding:** Environmental windows are one of a number of tools reducing the environmental impacts of dredging and disposal operations and for increasing the efficiency and effectiveness of those operations.
- **Recommendation**: All tools, including windows, should be considered in designing a management plan for carrying out dredging and disposal operations.

Selected Findings & Recommendations

- **Finding:** Existing processes for setting, managing, and monitoring environmental windows vary widely from region to region.
- **Recommendation**: The proposed process should be pilot tested in a small number of districts that cover the existing range of natural environments, living resources, and socio-political contexts.

Selected Findings & Recommendations

- **Finding**: We know far more about the effects of dredging and disposal than many believe. A series of syntheses around a suite of questions not only would generate valuable information, but highlight areas where existing research is needed. We do too much repetitive research.
- **Recommendation**: All existing scientific data and information should be exploited in evaluating and setting windows as part of an overall management strategy for dredging and disposal operations.

Selected Findings & Recommendations

- **Finding**: The most difficult step in the process recommended is Step 4--Recommending a plan of action--because it requires a balancing of scientific, economic, and societal considerations.
- **Finding:** Structured decision-making tools should be evaluated and the one or two most promising selected for additional testing, research and refinement for use in the process recommended.

Selected Findings & Recommendations

- **Finding:** All windows should be viewed as subject to change on the basis of new data and information that should be incorporated routinely into the windows-setting process.
- **Recommendation**: The windows-setting process should reflect the principle of adaptive management. That is, as new data and information are acquired and experience is gained, they should be fed back into the process.

Committee Members

- Henry J. Bokuniewicz, University at Stony Brook
- Peter F. Bontadelli, Jr., PFB Associates
- Robert J. Diaz, Virginia Institute of Marine Science
- Marcello H. Garcia, University of Illinois at Urbana
- Ram K. Mohan, Blasland, Bouck, & Lee
- Denise J. Reed, University of New Orleans
- Jerry R. Schubel, Chair; New England Aquarium
- Susan-Marie Stedman, NOAA
- Nils E. Stolpe, Garden State Seafood Assn.
- John B. Torgan, Save the Bay, Providence, RI
- Thomas H. Wakeman III, Port Authority of NY and NJ
- Michael P. Weinstein, NJ Marine Sciences Consortium

Key Findings & Recommendations

- **Finding:** Some resource agencies do not have adequate funding to fulfill their mandates under the law and participate fully in the windows-setting process in a timely way.
- **Recommendation:** Additional funding should be allocated to resource agencies to ensure full, thorough, and active participation in the window-setting process.