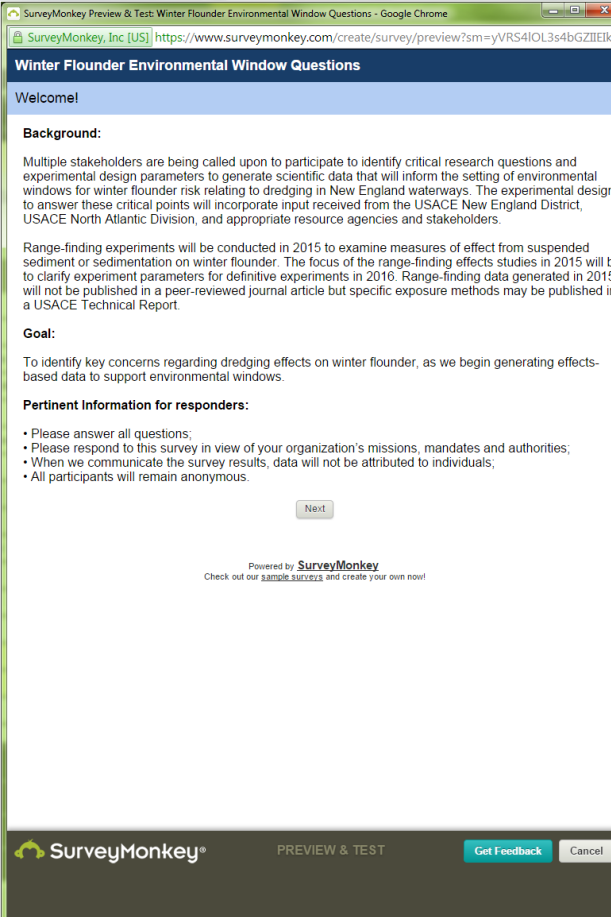


Winter Flounder Environmental Window Questionnaire

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Vicksburg, MS

5 and 11 Dec 2014



The screenshot shows a web browser window with the title "SurveyMonkey Preview & Test: Winter Flounder Environmental Window Questions - Google Chrome". The URL is "https://www.surveymonkey.com/create/survey/preview?sm=yVRS4IOL3s4bGZIEIk...". The page content includes a "Welcome!" header, a "Background:" section with text about stakeholder participation and experimental design, a "Goal:" section about identifying concerns, and a "Pertinent Information for responders:" section with a list of instructions. A "Next" button is visible below the instructions. The footer of the page features the SurveyMonkey logo, the text "PREVIEW & TEST", and two buttons: "Get Feedback" and "Cancel".



Responses

- Date opened: Friday, November 7, 2014
- Date closed: Friday, November 20, 2014
- Sent to: 42
- Complete Responses: 20

Organization	Responses
Connecticut-Dept of Energy and Env Prot	2
Maine-Dept of Trans	1
Massachusetts-Div of Mar Fish	2
Massachusetts-Ofc of Coastal Zone Mgmt	1
NOAA-Ntl Mar Fish Svc	3
Rhode Island-Dept of Env Mgmt	1
USACE-Eng Res Dev Center	1
USACE-New England Dist	7
USEPA-Ofc Res and Dev	2
Total: 9	Total: 20



Q2: Which is the most important species for which dredging effects should be studied in New England waters?

Answered: 20 Skipped: 0 Comments: 8

100%
Winter
Flounder

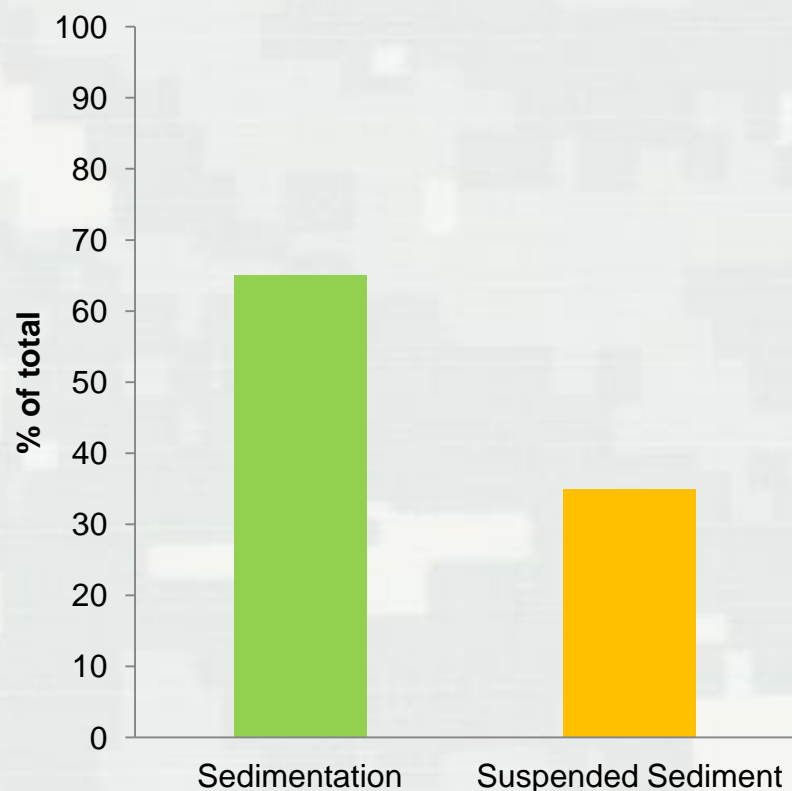
Species collected from comments (in order of no importance)

Alewife
American lobster
American shad
Atlantic salmon
Atlantic sturgeon
Blueback herring
Cod
Rainbow smelt
Shellfish
Shortnose sturgeon
Total: 10



Q3: Which is the most important exposure pathway critical to improving our understanding of winter flounder risk?

Answered: 20 Skipped: 0 Comments: 5

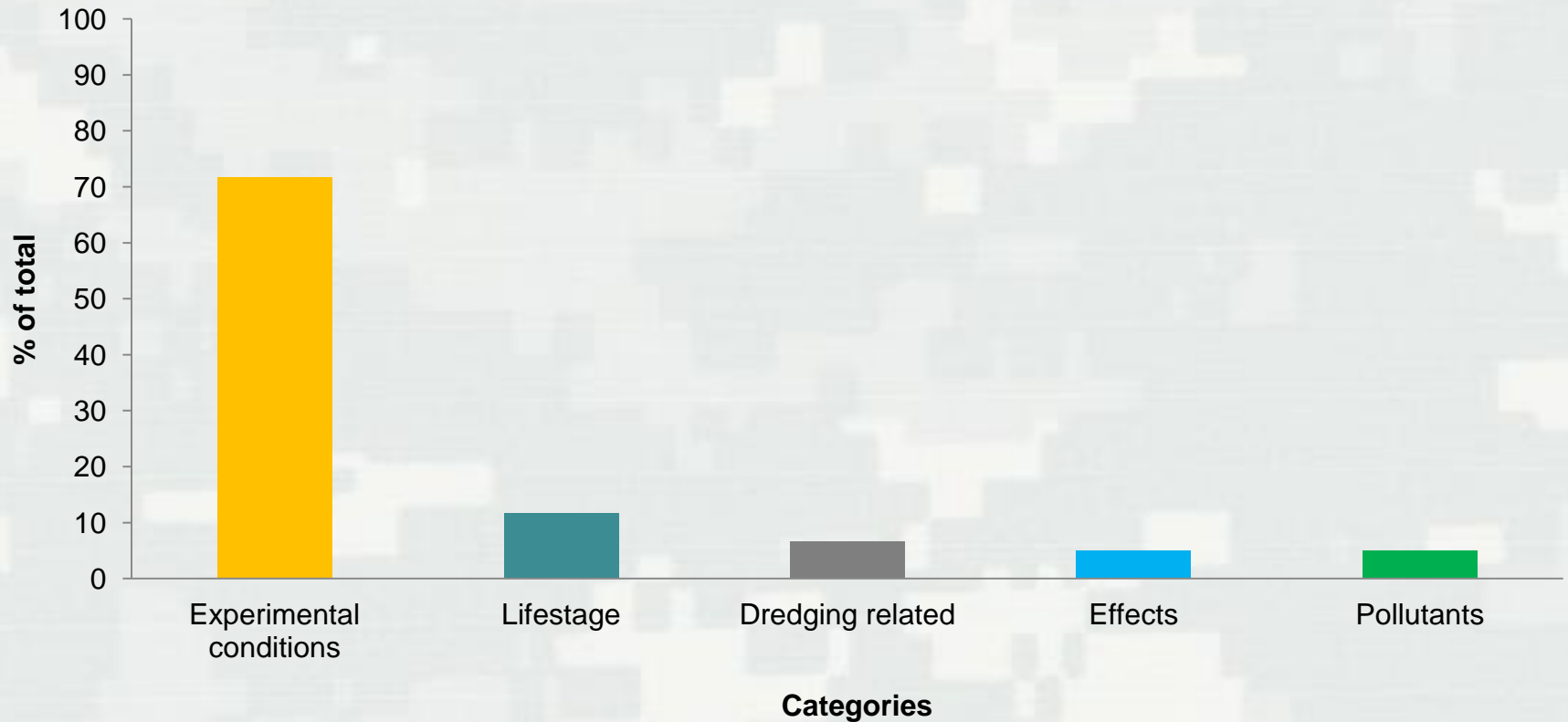


Comments
Why is only one pathway considered? Multiple pathways likely exist and can have cumulative, additive, and synergistic effects.
Suspended sediments is also a concern from resource agencies.
Both sedimentation and suspended sediments effect eggs and larvae
Both are critical pieces of the puzzle that go together
Both sedimentation and suspended sediments



Q4: What are the top experimental execution concerns for the exposure pathway selected in Question #3? For example, this could be depth of sediment in a sedimentation experiment or length of exposure in a suspended sediment experiment.

Answered: 20 Skipped: 0



Q4: What are the top experimental execution concerns for the exposure pathway selected in Question #3? For example, this could be depth of sediment in a sedimentation experiment or length of exposure in a suspended sediment experiment.

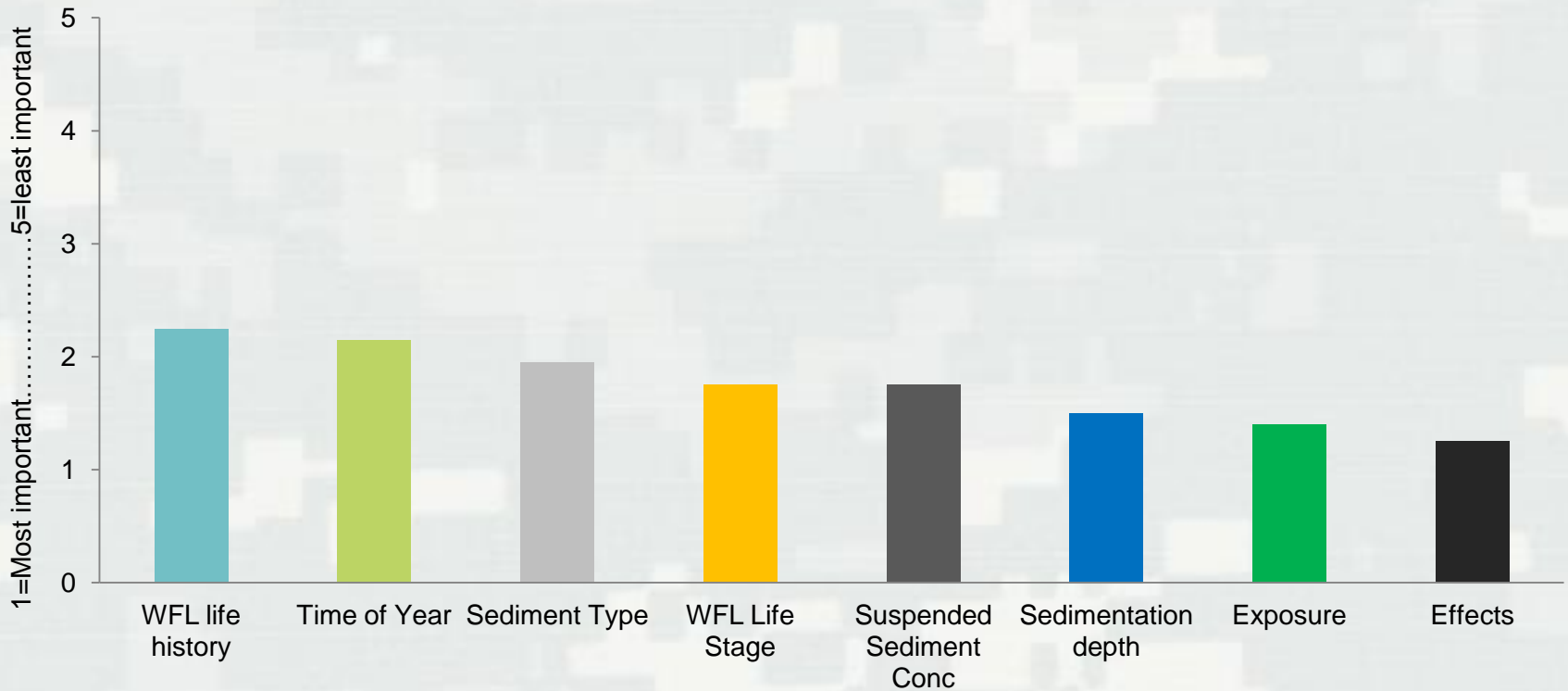
Answered: 20 Skipped: 0

Experimental Conditions (43)	Dredging (4)	Effects (3)	Lifestage (7)	Pollutants (3)
Dissolved Oxygen	Mechanical impacts	Sedimentation	Short/long term impacts	Bioaccumulation in sediments
Exposure duration	Repeated impacts from routine waiver of time of year windows by dredgers	TSS thresholds	Sedimentation hatch success	Exposure
Sediment characteristics	Distance from the source		Larval stage	Synergistic effects
Sedimentation depth	Cumulative impacts of sedimentation from near-shore dumping		Mechanism of injury	
Sedimentation duration			Morphological effects	
Sedimentation rate			Development effects	
Simulate ambient conditions			Time of life stage vs. sedimentation	
Time of year				
TSS concentration				
TSS duration				

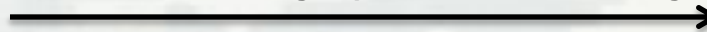


Q5: What are the most important data gaps hindering our understanding of dredging effects on winter flounder?

Answered: 20 Skipped: 0 Comments: 7



*In order of increasing importance from left to right



Q6: What is the most important winter flounder life stage associated with dredging that should be studied preferentially?

Answered: 20 Skipped: 0 Comments: 5

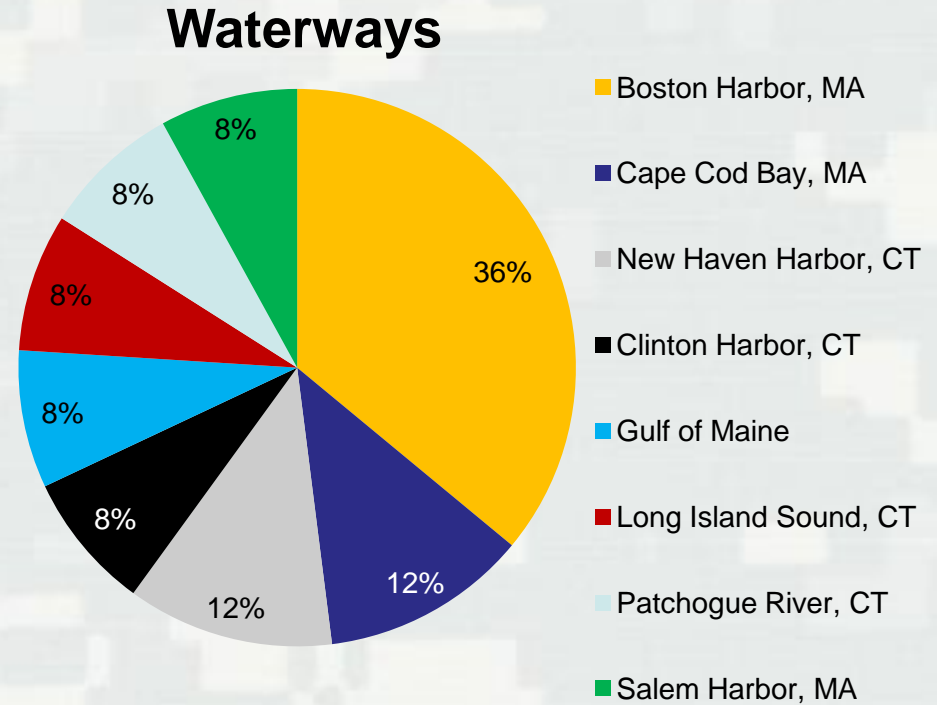
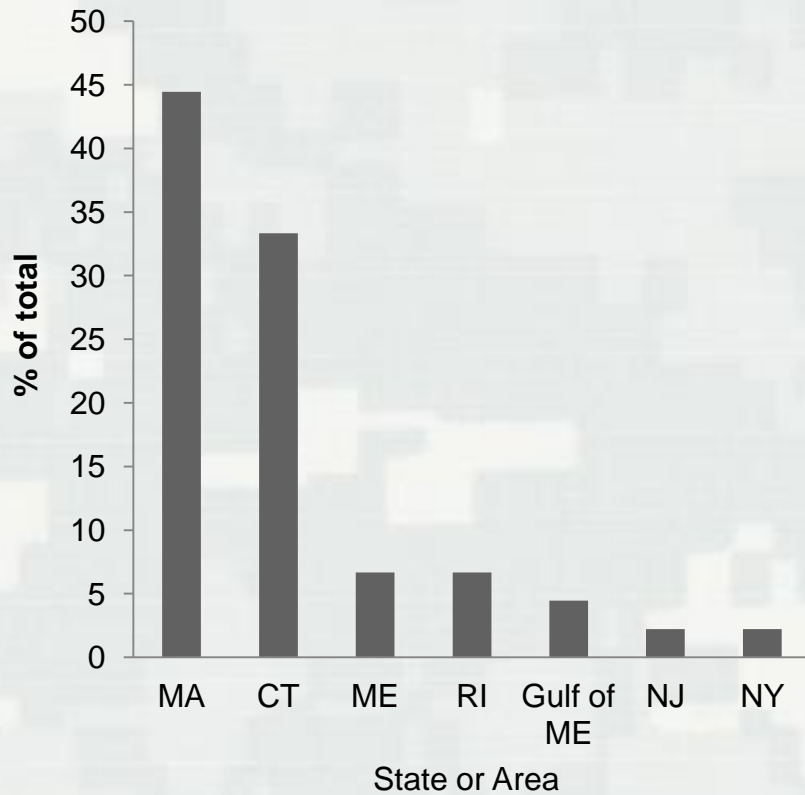


*In order of increasing importance from left to right



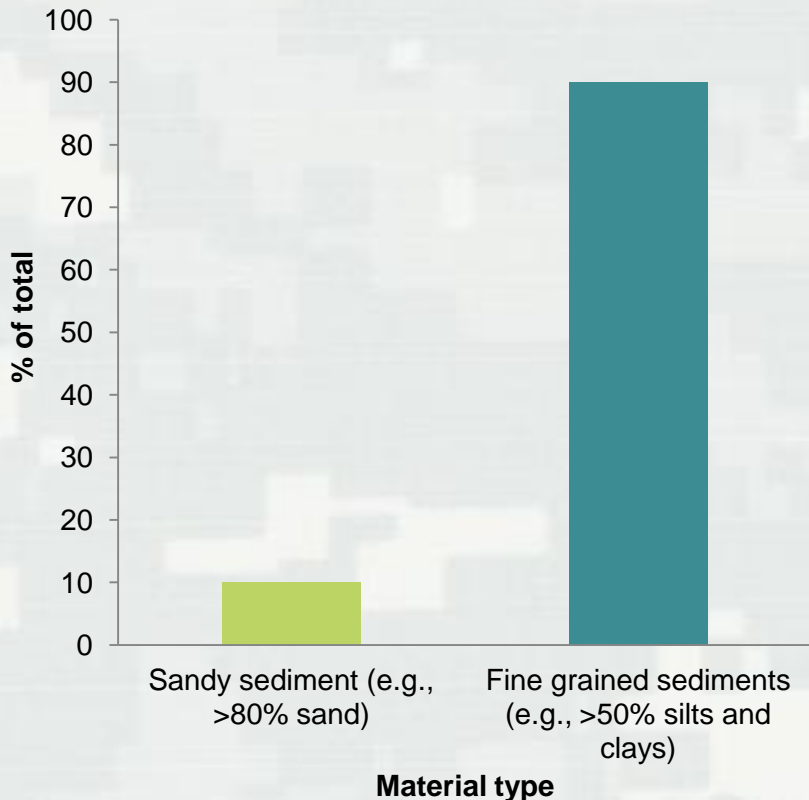
Q7: Which waterway locations where maintenance dredging routinely occurs should uncontaminated sediment be collected for study and deemed appropriate for this work (identify waterways where the EW being imposed is due to potential WFL impacts, in decreasing level of importance)?

Answered: 17 Skipped: 3



Q8: What sediment type(s) are of most concern for winter flounder exposure?

Answered: 20 Skipped: 0 Comments: 4

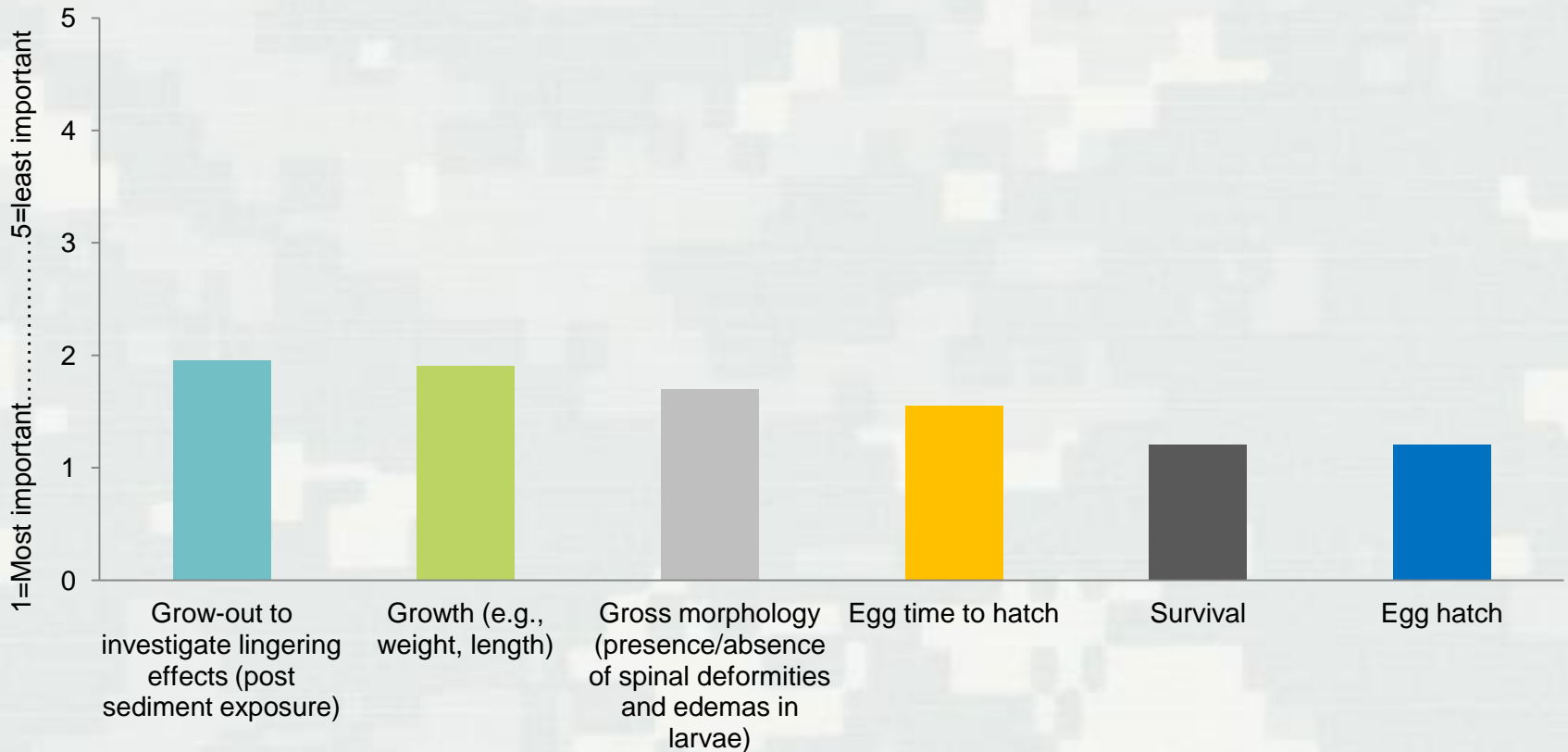


Comments
All dredged sediment of any classification
Habitats with macro vegetation where eggs attach and juveniles shelter
Equal concern; fine grained most frequently encountered a maintenance dredging sites
Fine-grained contaminated sediment would be of interest



Q9: Endpoints to be measured during the proposed study will be decided up front and their selection will depend on the life stage, type of dredging impact (suspended sediment/sedimentation), and other factors. With this in mind, which lethal and sublethal endpoints do you consider most important to measure?

Answered: 20 Skipped: 0 Comments: 1 (behavioral impacts should also be measured)

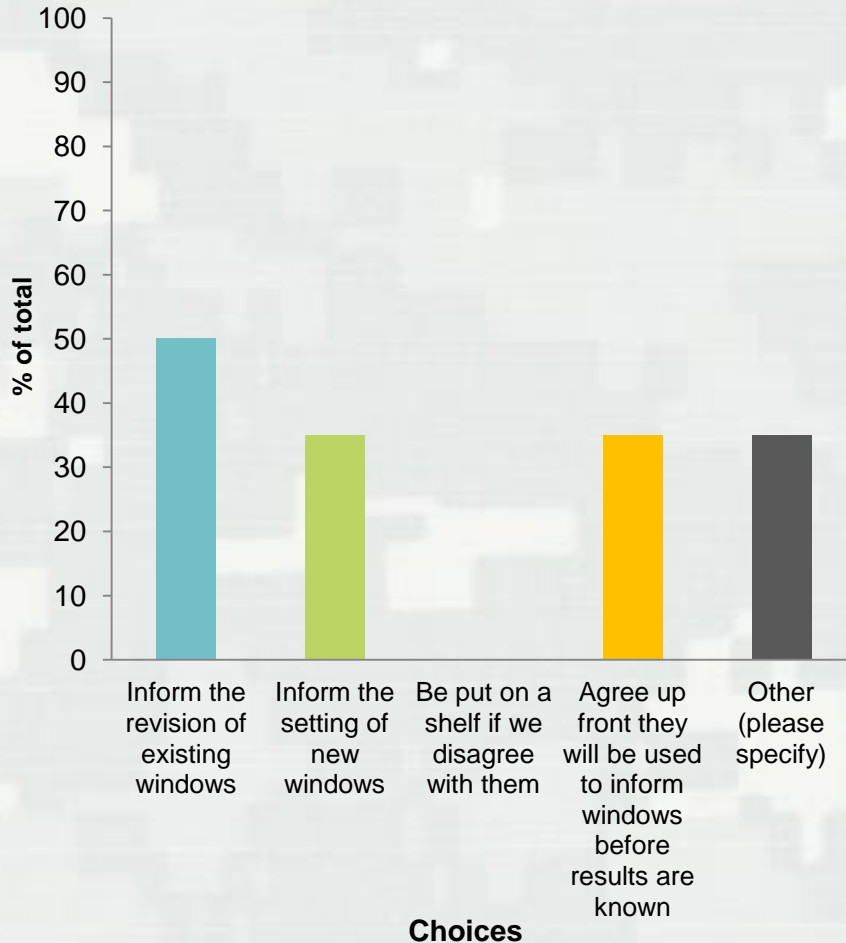


*In order of increasing importance from left to right



Q10: How should the effects results be used?

Answered: 20 Skipped: 0 Comments: 7



Comments
Should be considered along with existing research that has already been conducted.
Since the intended study will not be published in a peer-reviewed journal, the results should be considered gray literature and advisory only. Deference to peer-reviewed publications, to the extent possible, should drive dredging windows.
Need to show field data that verifies the experimental results...there have been extensions of dredge windows etc. Such situations should require sampling before/after to look for effects shown by experimental research. Then discussion could begin on windows.
The usefulness of these data is directly proportional to the repeatability of the results. A single trial may be informative but is not adequate for resource management decision making.
Inform the TOY restrictions as appropriate.
The results should be used in context with other published research and with consideration of what effects the ultimately utilized methodology is capable of detecting.
This study would, in general, inform existing windows. It might lead to revisions (less or more stringent) or simply justify what is in place.

Q11: Use this box to comment on specific questions (include question number) or other Environmental Windows issues.

Answered: 8 Skipped: 12

Summary of comments

1. Concerned about survey set up; what's the purpose; why aren't other species being considered; study is being designed to affect the window in turn incorporating bias into the study; site specific information needed; behavioral impacts important; climate change; stakeholders and experts should be used to help design the study; has the existing literature been reviewed.
2. Need to know depth of sedimentation that impacts eggs; extent of sediment deposition from a typical dredge event; location of eggs in the estuary; at least a good estimate of the depth of sedimentation that impacts eggs is needed.
3. Unclear why USACE is only considering one effects pathway; fair to prioritize those pathways in developing the scope of the study; but restricting the identification of important effects pathways doesn't seem prudent.
4. Need to know if there are effects whether they are significant or not.



Q11 cont'd: Use this box to comment on specific questions (include question number) or other EW issues.

Answered: 8 Skipped: 12

Summary of comments

5. EWs must be acknowledged as a compromising action; fish abundance, distribution, & reproduction cannot be controlled but a dredge operation can; long term impacts caused by a dredge operation may not be readily apparent until years later; discussion should include permitting practices beyond dredging to look at the waterway as a whole; Environmental concerns just as important as economic
6. Need to know more about all the items listed in question 5; the result of this work may not modify the time of the window but may allow exceptions to the work that can be performed in the window.
7. Q10 EWs largely justified by unpublished NMFS 1995-1996 lab study; proposed work is similar in scope & will help update results; 1st step is lab study-then look in field to confirm findings; Q3 selected TSS because Berry et al. completed work with egg survival & sedimentation; larval fish exposed to TSS= priority; Q6 all larval life stages important as NMFS found decreasing effect of TSS with older larvae
8. Q3 Sedimentation of the egg stage will help answer questions; Q7 not knowledgeable about the relevant waterways; Q9 NY district conducted extensive study examining WFL egg and larval morphology for specimens collected in the field near industrial areas; found no effect; this endpoint may not provide informative results.



Study Design Elements

Based on results of questionnaire responses:

- Guide conduct of range-finding studies (to define experimental parameters) in 2015
- Winter flounder
- Early life stages
- Sedimentation effects
- Use uncontaminated sediments from 2 or more locations with differing grain sizes



Group Discussion Points

Range-finding Study Elements:

- WFL sources:
 - ▶ UNH (Elizabeth Fairchild)
 - ▶ NOAA (Sandy Hook, NJ)
- Choice of sediment collection locations (MA, etc.)
- WFL egg shipping success
- Control and measurement of sediment depth
- Calibration and measure of system performance



Group Discussion Points

Experimental conditions:

- Exposure duration
- Temperature
- Endpoints (survival, growth, hatchability)
- Grow-out endpoints
- Others?

