MSiT Final Workshop

Note, slides do not reflect all activities, and select slides and images were removed.

MSiT Workshop

MSiT Project Process

Initial Survey

Workshop, part 1

Workshop, part 2

Product evaluation

Final workshop

Product submission to SFEWS

We are here

Product sections

1. Introduction
2. Background
3. Scientific Outcomes
   - 3.1 Bay shallows are a critical source of marsh sediment
   - 3.2 Tides and waves move sediment across the bay-marsh edge
   - 3.3 Tidal creek pathways can provide a net export of sediment
   - 3.4 Protective effects of marsh vegetation depend on species and season
4. Discussion and Conclusions

Guide page (page 1)

estimate of time spent on each question 3 min

Background refresher

Here is where you will find the concepts the graphic is intended communicate, along with any background information for understanding it.

Open-ended comments

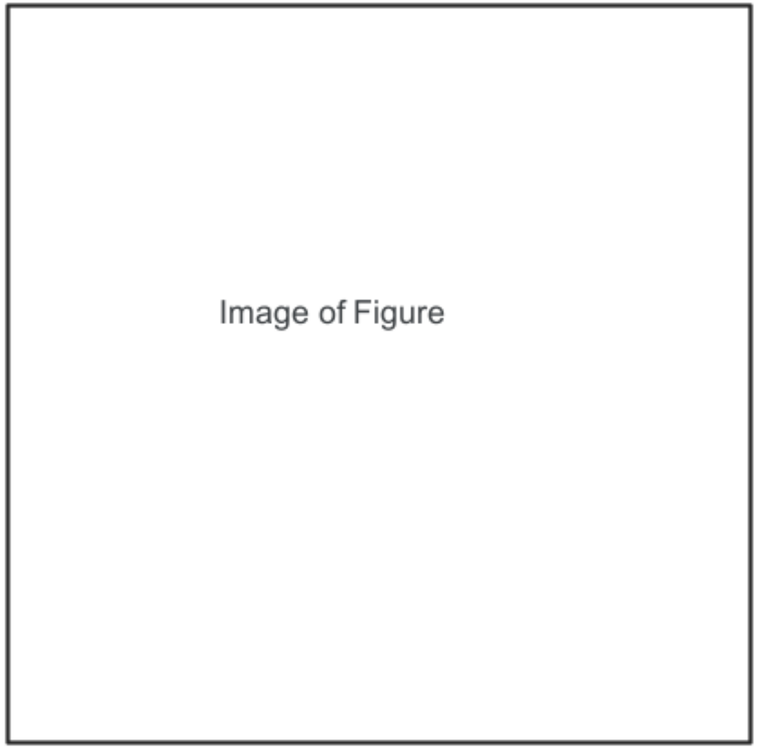
place sticky notes within this green box with any comments you would like to make

I'm an open-ended comment!

Focus: Here is where you will find the element of the graphic on which we would like feedback. It is the element on which you should focus your attention for this page and base your voting. (remember you can zoom in (found on the top left))

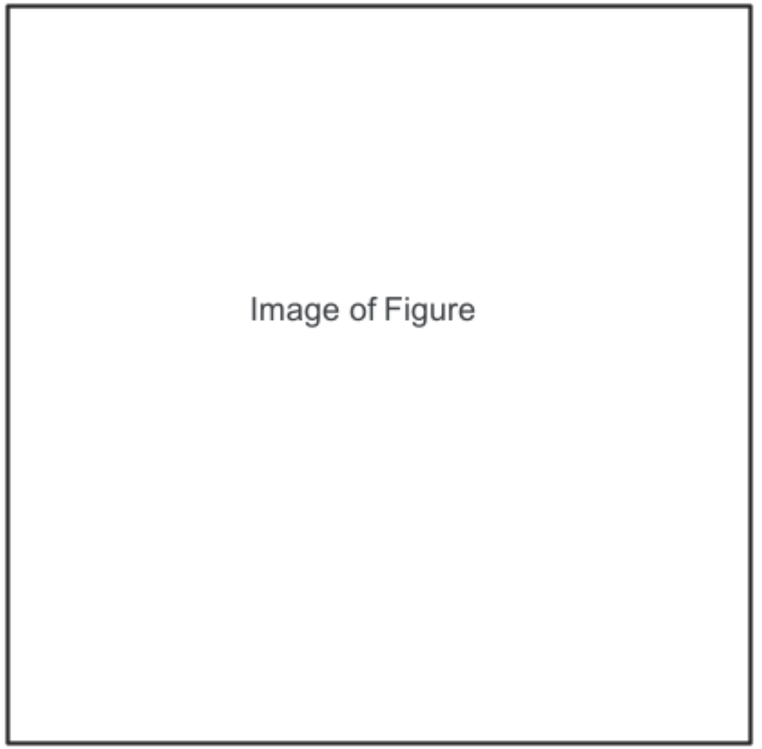
Option A:

description of option



Option B:

description of option



Votes for Option A:

draw a check mark here to vote

Votes for Option B:

draw a check mark here to vote

SSC variability (page 2)

5 min

Background refresher

Suspended sediment concentration (SSC) varies over multiple spatial and temporal scales and depends on wave conditions. This figure should convey the magnitude of the SSC variability in Bay shallows over a tidal cycle with and without "wavy" conditions. It should lead to the conclusion that point measurements of SSC need to be taken in context and that timeseries are a better indication of SSC conditions.

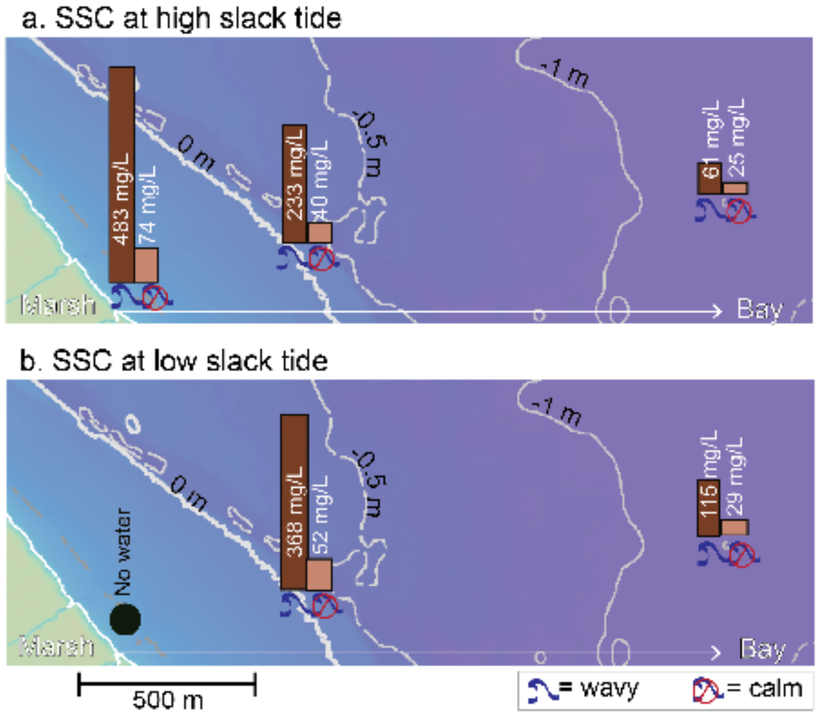
Open-ended comments

place sticky notes within this green box with any comments you would like to make

Focus: Bathymetry contours. Please only vote based on preference regarding contours (remember you can zoom in (found on the top left))

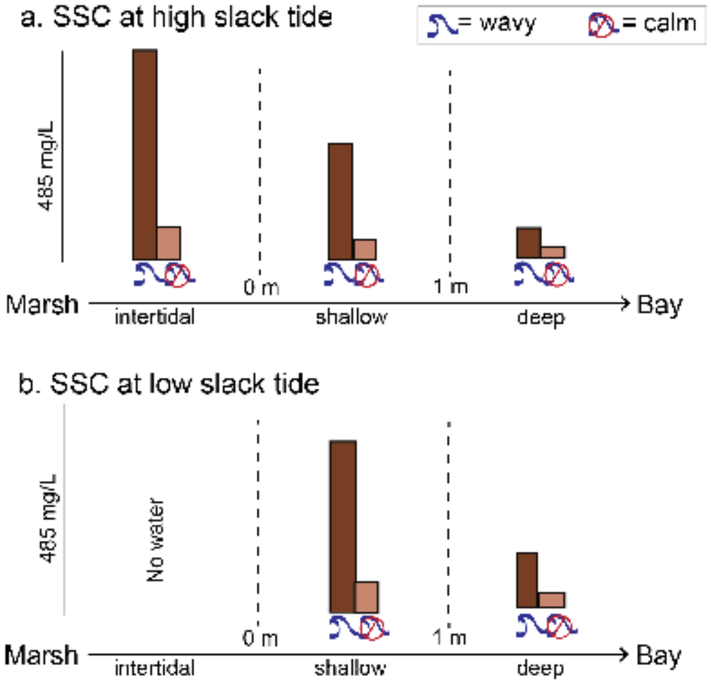
Option A:

This figure shows the sampling locations on a bathymetric map of the shallows outside of China Camp. Sediment surface elevation is shown by color, and contours show isobaths.



Option B:

This figure simplifies the contours and removes the background image. Locations are indicated by zone rather than spatial position. One advantage is that SSC magnitude can be denoted by the y-axis, removing the need for labels.



Votes for Option A:

draw a check mark here to vote

Votes for Option B:

draw a check mark here to vote

SSC variability (page 3)

3 min

Background refresher

Suspended sediment concentration (SSC) varies over multiple spatial and temporal scales and depends on wave conditions. This figure should convey the magnitude of the SSC variability in Bay shallows over a tidal cycle with and without "wavy" conditions. It should lead to the conclusion that point measurements of SSC need to be taken in context and that timeseries are a better indication of SSC conditions.

Open-ended comments

place sticky notes within this green box with any comments you would like to make

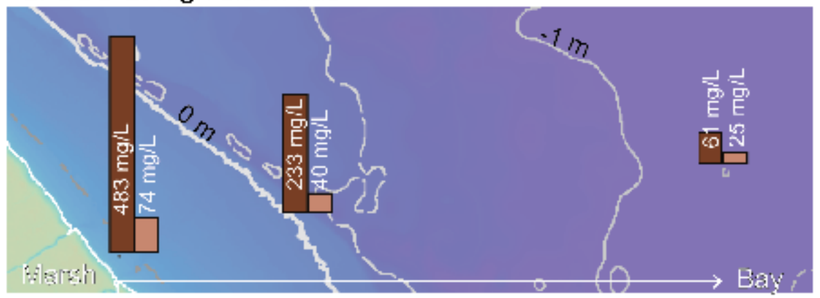
Focus:

Quantities being compared side by side vs. adjacent panels.

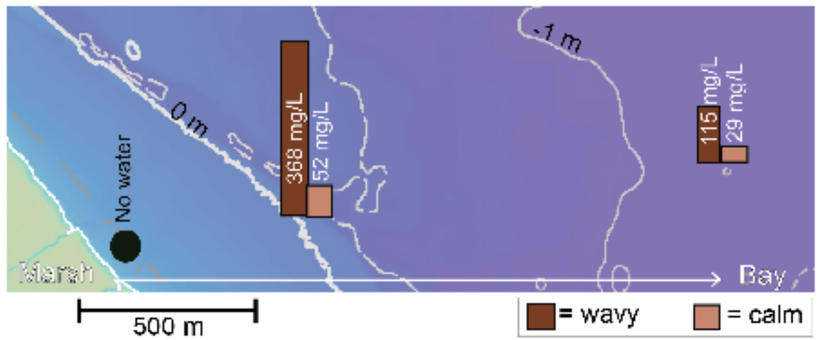
Option A:

This figure has wavy vs. calm conditions side by side in each panel. The panels show two tide conditions (low slack and high slack).

a. SSC at high slack tide



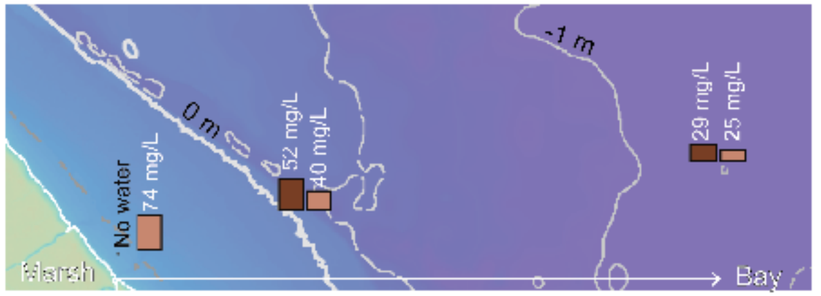
b. SSC at low slack tide



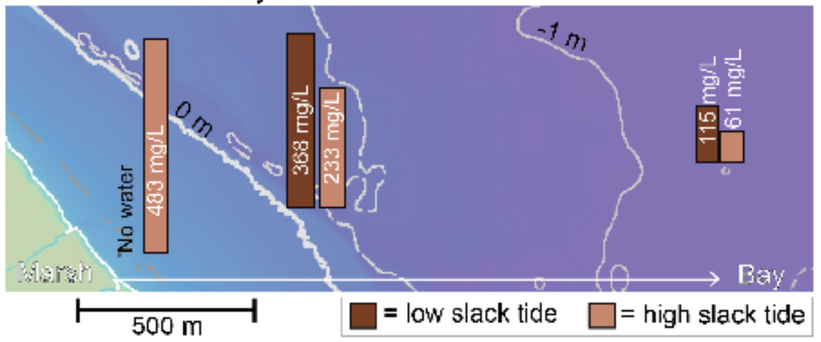
Option B:

This figure has low slack vs. high slack side by side in each panel. The panels show two wave conditions (wavy and calm).

a. SSC under calm conditions



b. SSC under wavy conditions



Votes for Option A:

draw a check mark here to vote

Votes for Option B:

draw a check mark here to vote

SSC variabilty (page 4)

2 min

Background refresher

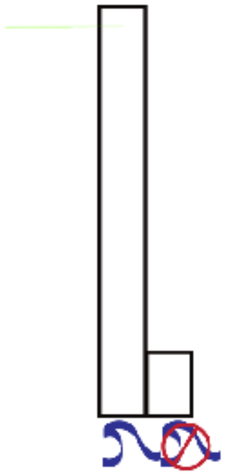
Suspended sediment concentration (SSC) varies over multiple spatial and temporal scales and depends on wave conditions. This figure should convey the magnitude of the SSC variability in Bay shallows over a tidal cycle with and without "wavy" conditions. It should lead to the conclusion that point measurements of SSC need to be taken in context and that timeseries are a better indication of SSC conditions.

Open-ended comments

place sticky notes within this green box with any comments you would like to make

Focus: Designation (symbol, color) used to indicate that the sample was collected under calm or wavy conditions.

Option A:



= wavy

= calm

Votes for Option A:

draw a check mark here to vote

Option B:

= wavy

= calm

Votes for Option B:

draw a check mark here to vote

Option C:

= wavy

= calm

Votes for Option C:

draw a check mark here to vote

Creek SSF (page 5)

5 min (this slide and the next)

Background refresher

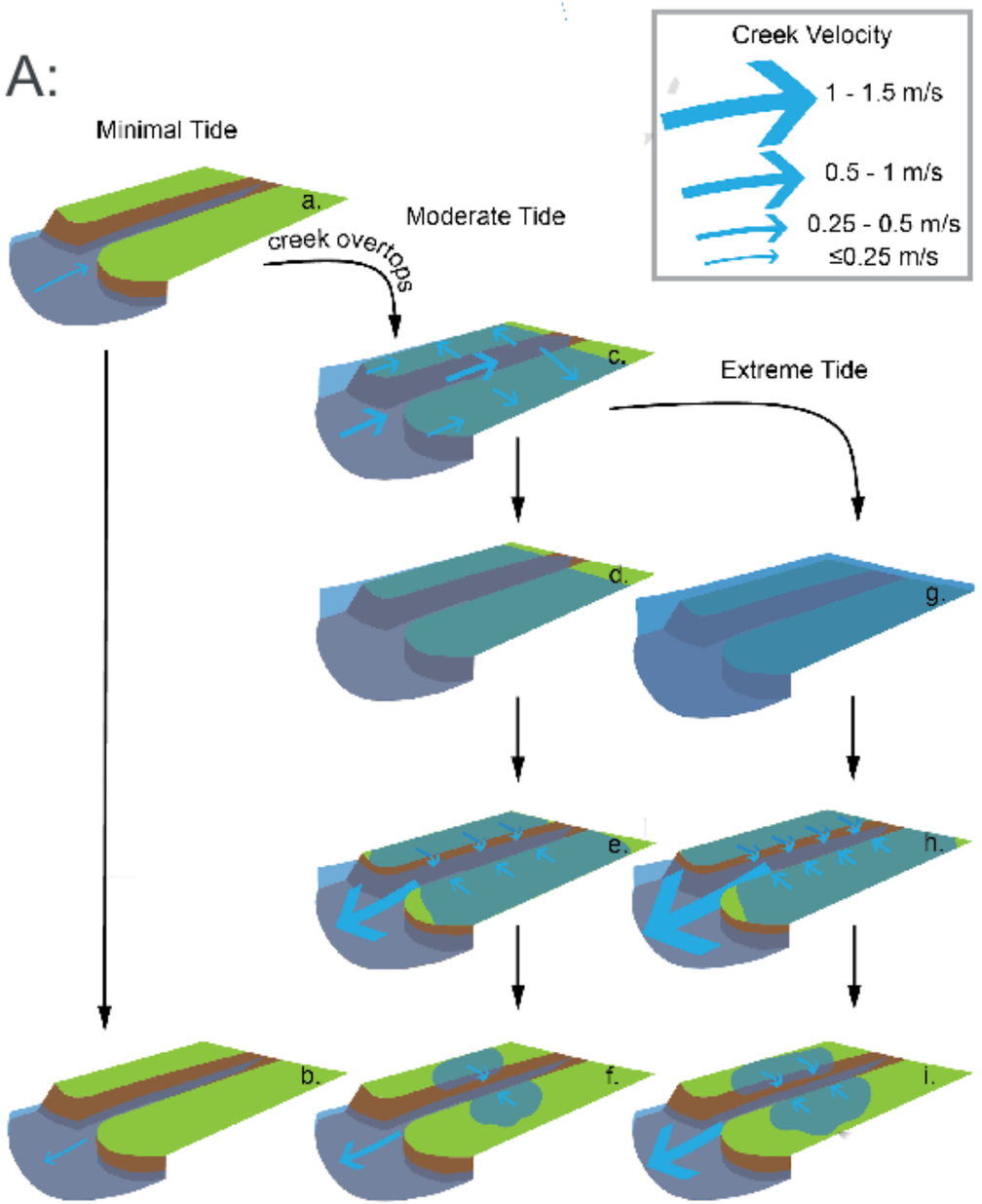
Measurements at China Camp indicate a net export of sediment from creeks during large tides. Sediment import through creeks only occured with moderate tides and wavy conditions (which increase SSC). This figure should communicate the step-by-step process that causes these different outcomes in sediment flux. The idea is that if the processes are understood, the parts that are applicable to other locations can be more easily identified.

Open-ended comments

place sticky notes within this green box with any comments you would like to make

Focus: Three tidal cases presented together or individually with more text (spread out over two jamboard pages; option B is on the next page).

Option A:



This figure shows different tidal cases (small, moderate, and extreme) side by side and does not inculde additional text.

Option B

Votes for Option A:

draw a check mark here to vote

Creek SSF (page 6)

5 min (this slide and the previous)

Background refresher

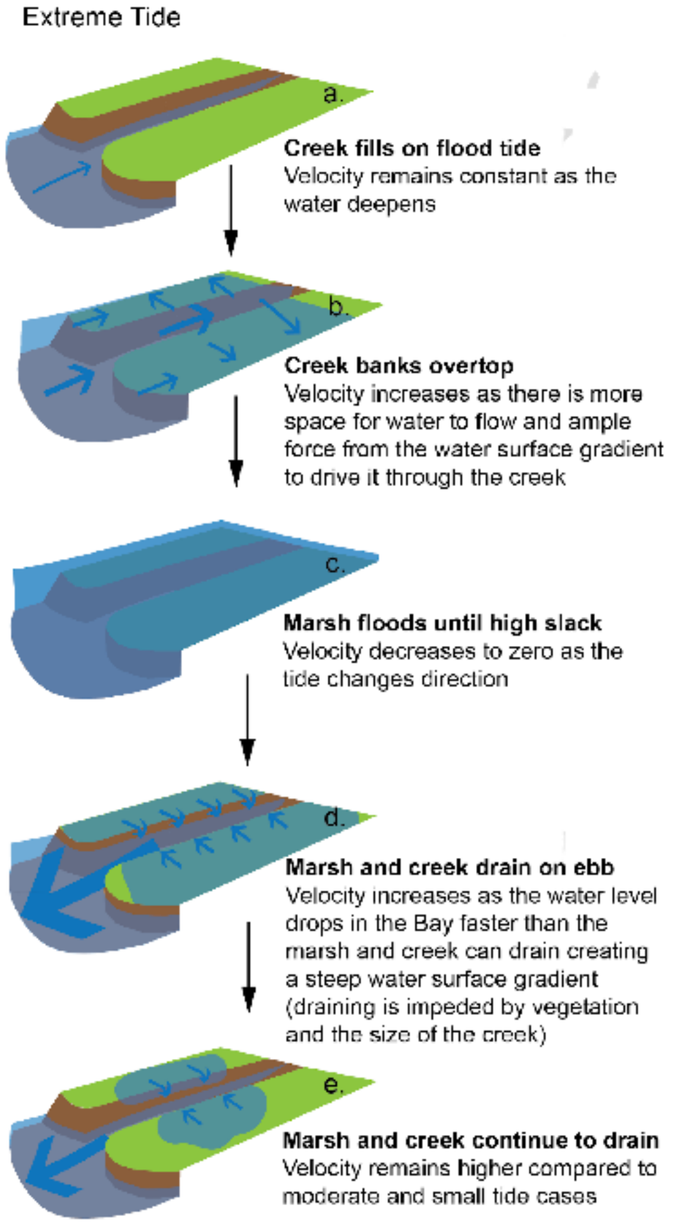
Measurements at China Camp indicate a net export of sediment from creeks during large tides. Sediment import through creeks only occured with moderate tides and wavy conditions (which increase SSC). This figure should communicate the step-by-step process that causes these different outcomes in sediment flux. The idea is that if the processes are understood, the parts that are applicable to other locations can be more easily identified.

Open-ended comments

place sticky notes within this green box with any comments you would like to make

Focus: Three tidal cases presented together or individually with more text (spread out over two jamboard pages; option A is on the previous page).

Option B:



This figure focuses on one tidal case (extreme) and has additional text. A similar figure would be made for the small and moderate tidal cases.

Votes for Option B:

draw a check mark here to vote

Creek SSF (page 7)

3 min

Background refresher

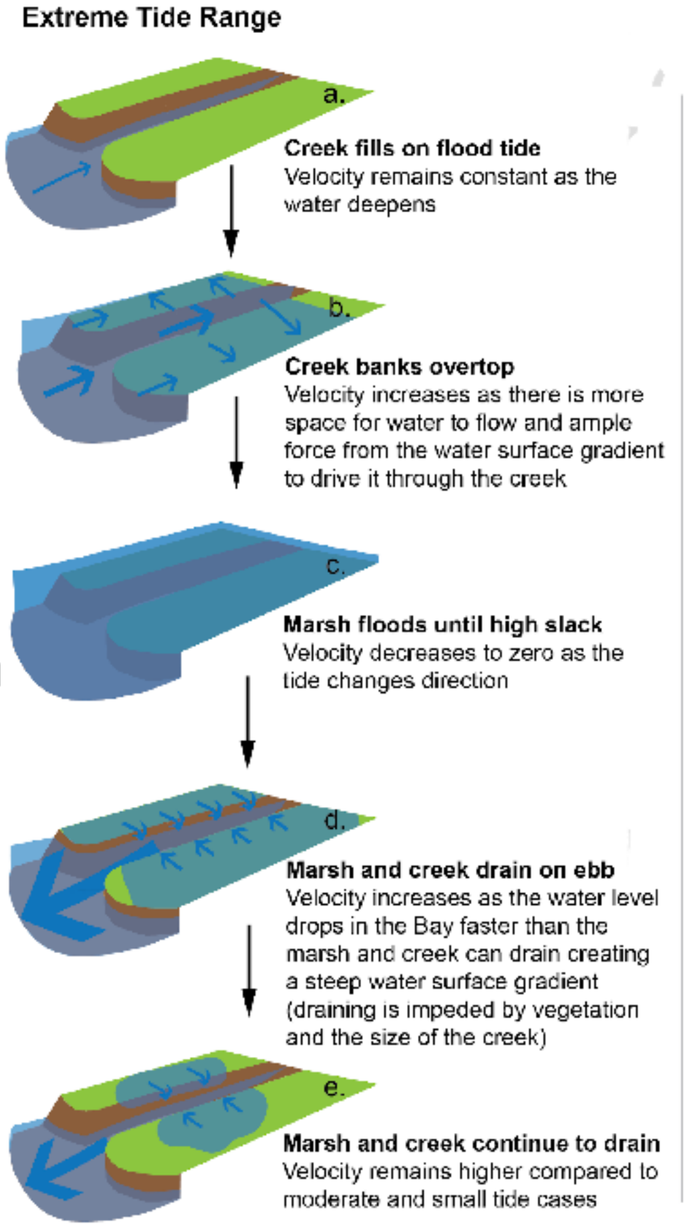
Measurements at China Camp indicate a net export of sediment from creeks during large tides. Sediment import through creeks only occured with moderate tides and wavy conditions (which increase SSC). This figure should communicate the step-by-step process that causes these different outcomes in sediment flux. The idea is that if the processes are understood, the parts that are applicable to other locations can be more easily identified.

Open-ended comments

place sticky notes within this green box with any comments you would like to make

Focus: Inclusion of water surface gradient indicator.

The diagrams on the right panel indicate the water surface gradient, which is the driver of marsh flooding and draining. However additional diagrams may make it too busy.



Votes for including water surface gradient:

draw a check mark here to vote

Votes for NOT including water surface gradient:

draw a check mark here to vote

Creek SSF (page 8)

5 min

Background refresher

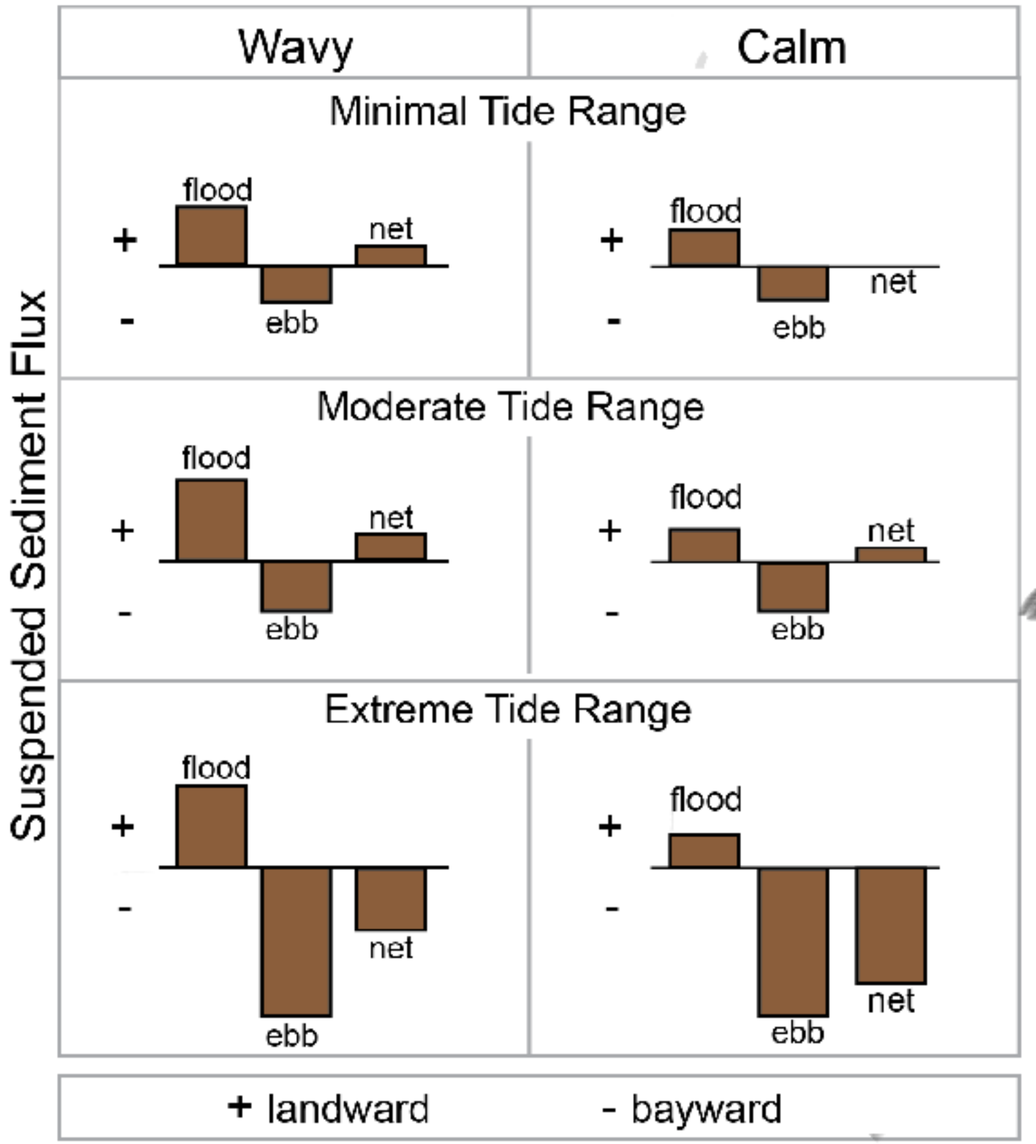
Measurements at China Camp indicate a net export of sediment from creeks during large tides. Sediment import through creeks only occured with moderate tides and wavy conditions (which increase SSC). This figure should communicate the step-by-step process that causes these different outcomes in sediment flux. The idea is that if the processes are understood, the parts that are applicable to other locations can be more easily identified.

Open-ended comments

place sticky notes within this green box with any comments you would like to make

Focus: Content. Is the content of this new diagram easy to understand?

This diagram shows the SSF outcomes of three tide ranges under two conditions (wavy and calm). Can it be conveyed via text alone or is another diagram needed?



Votes for "yes, it works":

draw a check mark here to vote

Votes for "needs improvement":

draw a check mark here to vote

Wave attenuation (page 9)

7 min

Background refresher

Wave height measurments show that cordgrass and pickleweed attenuate waves to different degrees, largely due to their different morphology. The comparison is complicated by the fact they exist in different parts of the marsh, and therefore, experience different inundation. This figure should show that at moderate inundation levels pickleweed is more effective than cordgrass in reducing wave height, and it should point out the different conditions experienced and limits of the comparison.

Open-ended comments

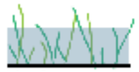
place sticky notes within this green box with any comments you would like to make

Focus: Ease of interpretation. Which option communicates the message (given in background refresher) most easily?

Option A:

Width of vegetation required for 50% wave height reduction

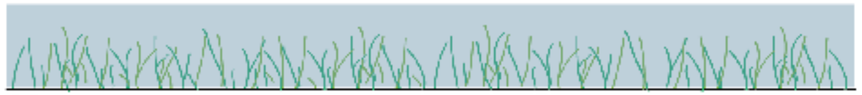
Cordgrass: Pickleweed:



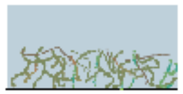
4.4 m

3.9 m

At low water depths, waves travel comparable distances through pickleweed and cordgrass for equal attenuation.



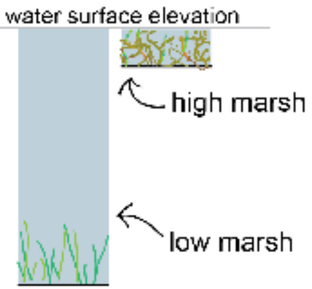
32 m



6.2 m

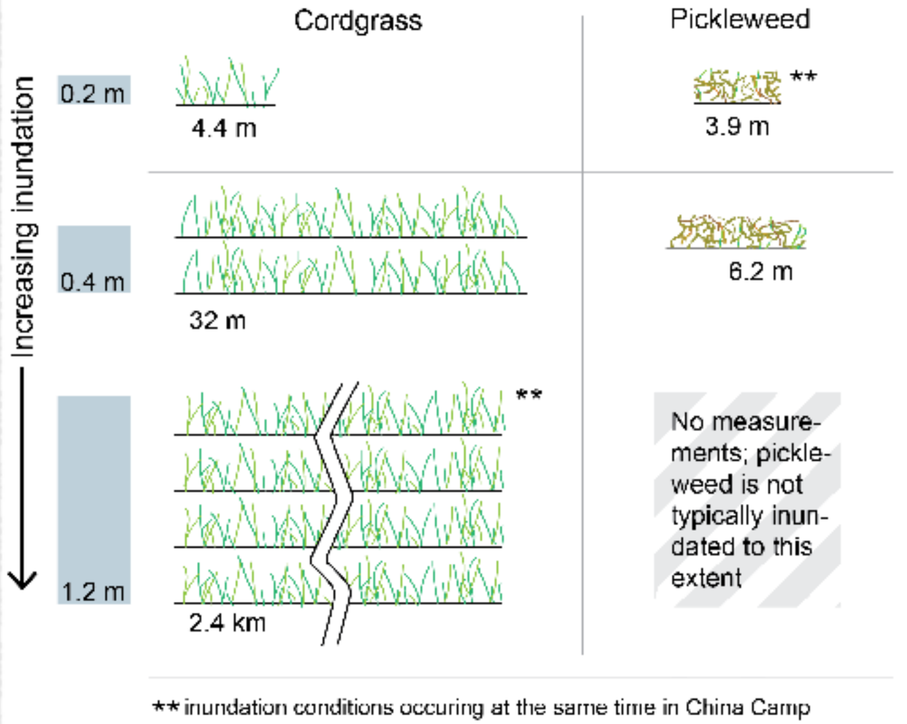
At moderate water depths, waves must travel farther over cordgrass than pickleweed to be attenuated to the same extent.

At high water depths, comparisons are not possible. When the low marsh is deeply inundated, the high marsh has low water levels.



Option B:

Width of vegetation required for 50% wave height reduction



** inundation conditions occuring at the same time in China Camp

Votes for Option A:

draw a check mark here to vote

Votes for Option B:

draw a check mark here to vote

SSF Callout Box (page 10)

7 min

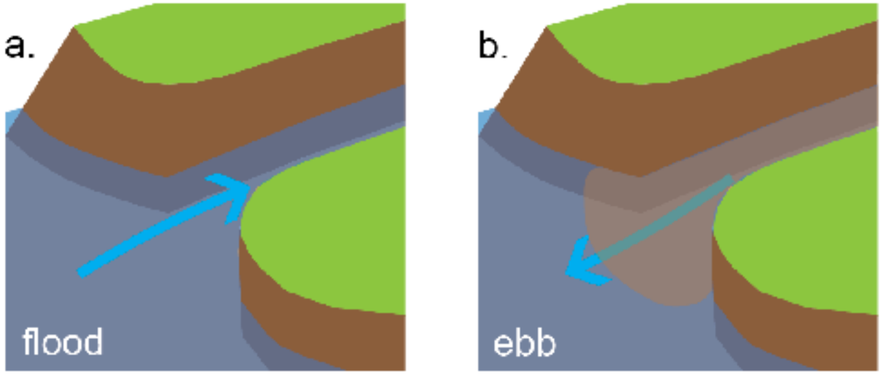
Background refresher

We state in the text that the increase in suspended sediment flux out of creeks on the ebb tide is driven by an increase in both advective and dispersive flux. Multiple reviewers identified the need for a callout box to define advective and dispersive flux. This callout box would be separate from the text but would be located on near its reference in the text, so a reader could easily find it.

Open-ended comments

Focus: Content. Is the content of this callout box easy to understand while conveying the necessary level of detail?

Breaking down suspended sediment flux (SSF): SSF is the mass of sediment in suspension transported past a cross section (e.g., mouth of a tidal creek) per unit time. Adding up the product SSF and the sampling interval (Δt) over a longer time yields cumulative, or net, SSF. If we gather data over multiple tidal cycles, we can determine the tidally averaged SSF.



Two primary processes driving SSF are advection and dispersion. Advection is transport by the mean or tidally averaged flow. Dispersive flux is the average of the correlation between deviations from the tidally averaged flow and SSC. For example, in a. and b. above, although the tidally averaged flow is zero, there is a net bayward SSF. Therefore, the advective flux is zero, and the dispersive flux is responsible for the transport. In tidal systems, where tidal currents are much greater than the tidal average, dispersive transport can be very important.

Votes for "yes, it works":

draw a check mark here to vote

Votes for "needs improvement":

draw a check mark here to vote

Broad comments and management implications (page 11) 5 min

Free space: