What are key regional questions the WRMP can address in the near-term (3-5 years)?

Level 1 Habitat Mapping
- What are the Acreages tidal marsh habitat and acreages of restoration in progress - TH
- Comparison of current wetlands v. what is planned for restoration CG
- What has been the impact of RA funded projects? could be displayed as marsh area protected, restored, enhanced, birds produced, plant communities established. -JKW
- Where is high tide refugia for listed species lacking? (VKB) **
- What has been the impact of JV-sponsored projects in terms of marsh area protected, restored, bird metrics, etc. -JKW
- How much tidal wetlands are located within 2 miles of socially vulnerable communities? - TH

Level 1 Hydrogeomorphology
- Elevation capital across Network sites. CM
- Is marsh veg, extent, edge, and channel complexity changing? KT

Level 3 Hydrogeomorphology
- Accretion vs. SLR rates regionally. -CMC
- How do rates of accretion and shoreline change differ throughout the estuary? - CT
- How quickly are restored marshes accreting? -JKW
- What are the tidal ranges in the baylands, and how do they shift in response to interannual and intraseasonal drivers? CT *
- What is the salinity around the bay edge and major channels? - JKW

Level 1 Vegetation
- Compare change rate of veg change or project, reference, and benchmark sites MV
- Has there been any significant change in vegetation in Benchmark sites during past 3-5 years MV
- Is marsh veg, extent, edge, and channel complexity changing? KT
- What is the current extent of native versus non-native estuarine vegetation & associated habitats?
- what is the distribution of vegetation communities across the estuary (at a scale that will be useful to detect upcoming habitat changes)?   JC

Level 3 Birds/Fish
- There may be enough data to do some comparison of regional differences in benchmark, reference sites for some areas of the Bay. Levi has done some of this already (aws)
- [LL] FFH: (1) How do indicator metrics vary among regions? (2) How have indicator metrics varied over time within regions (3) How do indicator metrics vary among

sampling strategies
- What is the abundance and distribution of tidal marsh dependent birds, including non-T&E spp. -JKW
- Abundance and distribution of listed species, especially as it relates to connectivity issues. VKB
- How have tidal marsh dependent birds responded to SLR adaptation measures. -JKW
- LL Re Fish Communities/Indicators/Metrics (1) establish regional comparative baselines in fish community metrics [has never been done] *

Other
- What parameters of interest are linked to wetland functions, but differently by region? -DSE
- Can monitoring be designed to extend up and into the Delta? - DSE
- What are the stated benefits of restoration projects, and to what degree are they actually being provided? Is access to sites/benefits distributed equitably? AT
- How are people accessing and using wetlands in the Estuary? - Sasha HL
- Which features, that can be controlled by managers (channels, channel shape, depth profiles, ratios of floodplain:open water), are beneficial for wetlands? -DSE

What are examples of key data analyses/visualizations the WRMP should develop?

Level 1 Habitat Mapping
- Habitat maps for all the sites - GM
- Detailed vegetation/habitat maps which link to ecosystem functions/benefits JC
- Wetland and ecotone elevation maps to guide future restoration and enhancements to benefit key species. Include high tide refugia as per VKB comment-JA
- How 30 years of wetland restoration, invasive Spartina control, and other factors have changed habitat distribution in the baylands. CT
- Map of tidal breach sites with year breached. -JKW

Level 1 Vegetation
- Project site vegetation colonization rates - Change in vegetation over time at project site. GM
- Distribution of non-native vegetation, ideally by dominant species or community/alliance reflecting non-nativeness
- Map of gumplant (Grindelia) cover (good as leading indicator for birds). -JKW *
- Amount of tidal marsh vegetation/restoration in relation to estuary blueprint or other regional goals? - TH

Level 1 Hydrogeomorphology
- Regional comparison of rates of accretion and shoreline change - CT
- Similar to TH: wetlands in relation to flood risk, shoreline erosion. AT

Level 3 Hydrogeomorphology
- Regional comparison of rates of accretion and shoreline change - CT
- Query database - look up tables - KT

Level 3 Fish/Birds
- [LL] FFH visualizations: plots & associated maps showing regional, temporal, and gear-based variation in various indicator metrics (#, biomass, diversity, structure)

Other
- Analysis of proposed monitoring parameters- if not significantly correlated with desired outcomes/responses, don't recommend it for monitoring-DSE
- Infographic to communicate human uses of/relationships with sites (Tribes, communities). DC **
- Where there is public access, WRMP signage about indicators of interest to visitors, similar to OEHHA's fish advisory (https://twitter.com/oehha/status/1427755081 -Sasha HL *

What are key regional data gaps and low-hanging fruit the WRMP can address with legacy/existing and/or new data?

Level 1 Habitat Mapping
- Data gap: regional high tide refugial habitat availability (VKB)
- Accurate polygons of restoration projects (based on christina's comment today) - TH

Level 3 Hydrogeomorphology
- Need to compile continuous salinity data especially for bay edge and up major channels. this is key for bird habitat modeling/forecasting. -JKW
- Spatially explicit distribution of salinity
- Leverage existing work to establish SET sites/add sites to complement existing sites

Level 3 Vegetation
- Specific quantitative data at Benchmark sites that are currently lacking MV
- Data that will address leading indicators at short time scales MV

Level 2 CRAM
- Tying CRAM to tier 3 data...suggest working with Fish Restoration Program - DSE
- CRAM across Network Sites. -CMC
- CRAM - both legacy and new data - CT

Level 3 Fish/Birds
- FFH subgroup has compiled a database with existing data. Would be helpful if the WRMP could take that next step of analyzing the data. The analysis could use the same

indicators as the State of the Estuary Report for fish (e.g. diversity, spatial distribution, etc.) and could support that work. (aws)

- We know how fish communities in Suisun and LSB have been shifting over time - what about the North Bay? CT
- Eden Landing is developing their monitoring plan for Phase II for fish. This effort could be coordinated with LL's ongoing work in the South Bay to provide some comparative new data in another priority watershed for fish. (aws)
- Compile and analyze regional avian datasets to evaluate response to restoration, density, regional distribution. Can leverage and support SOE and SFBJV efforts (SD)

What are examples of information products (report cards, etc.) that the WRMP should develop?

- Monitoring data format guidelines and metadata - essentially a long term data management plan. It will save enormous amounts of time combining incoming datasets. -DSE *
- Spatial files (shapefiles and/or rasters) for the key indicators + metadata *
- An interactive simple website/tool with all the indicators present together for comparisons and overlays, EcoAtlas-style perhaps.
- A database of key sites with key information from diff. management & monitoring questions. This could be used by others for truthing/validation of other studies
- Within EcoAtlas, is there a way to build a focused report? Also really like the State of the Estuary report card style- just expand? (VKB)
- Make these outputs very basic at first. Better to provide needed datasets/maps that will be used by others to answer specific questions. Highlight those products. rely on State and Pulse of the Estuary and others to do the report card type outputs. -JKW
- To the extent possible, leveraging existing platforms (the State of the Estuary Report comes to mind) to communicate findings/information. DC
- Coastal Georgia Ecosystem Report Card - GM
- Heatmap of were change is happening the quickest/slowest (could be for shoreline change, accretion, vegetation colonization, fish abundance ect) Gm
    - Yes, ability to look at accretion and erosion-JA

Who can help deliver data about these sites?

Site	People who knows the site
Rush Ranch	Matt Ferner, NERR * for fish Tejay O'Rear *Anna Deck, SF Bay NERR MV *Brenda Grewell, USDA (plants) (VKB) *FRP- DSE *Point Blue for bird monitoring at various sites. -JKW
Hill Slough (Existing)	Michelle Orr/Damien Kunz ESA *Sarah Estrella CDFW MV *Laureen Thompson, CDFW (VKB)

Peytonia Slough Marsh	Sarah Estrella CDFW MV *FRP- DSE
Wings Landing	Elaine Jeu, DWR *FRP- DSE *fish - Stacey Sherman
Hill Slough (Restoration)	Michelle Orr/Damien Kunz ESA *Sarah Estrella, CDFW *FRP-DSE *Point Blue for bird monitoring at various sites. -JKW
Older Raccoon Island	Christina Toms, Stuart Siegel *Point Blue for bird monitoring at various sites. -JKW
Newer Raccoon Island	Christina Toms, Stuart Siegel *Point Blue for bird monitoring at various sites. -JKW
Bull Island	Christina Toms, Stuart Siegel
Napa Plant Site	Renee Spenst, DU
Cullinan Ranch	Renee Spenst, DU *Also Meg Marriott, USFWS
China Camp	Matt Ferner, NERR *Anna Deck, SF Bay NERR MV *(fish) Delta Juvenile Fish Monitoring Program jonathan_speegle@fws.gov or 209-334-2968 *Point Blue for bird monitoring at various sites. -JKW
Outer McInnis Marsh	Linda Tong, SCC *Katie Smith, WRA (VKB) *Point Blue for bird monitoring at various sites. -JKW
Hamilton Wetlands	Michelle Orr//Damien Kunz, ESA
Wildcat Creek Marsh	Julian Wood (Point Blue); Susan De La Cruz, USGS? *Point Blue for bird monitoring at various sites. -JKW
San Pablo Creek Marsh	Julian Wood, Point Blue for access ideas *Point Blue for bird monitoring at various sites. -JKW
Dotson Family Marsh (Existing) aka Giant Marsh	Matt Graul, EBRPD
Dotson Family Marsh (Restoration)	Matt Graul, EBRPD *Marilyn Latta? Kathy Boyer?
Whale's Tail South	Jessie Lacy, Karen Thorne USGS; John Krause CDFW
Cargill Mitigation Marsh	
Pond 2A	Napa Sonoma I"m assuming *Point Blue for bird monitoring at various sites. -JKW

Pond 3	Napa Sonoma I"m assuming
Pond 6A	Napa Sonoma I"m assuming
Older Warm Springs Marsh	USFWS
Calaveras Point	USFWS
Coyote Triangle Marsh	USFWS
Pond A21	Dave Halsing/Donna Ball/ USFWS John Callaway USF
Pond A6	Dave Halsing/Donna Ball/USFWS
Pond A17	Dave Halsing/Donna Ball/USFWS
Warm Springs Marsh Restoration	Michelle Orr/Damien Kunz ESA