DELTA CONSERVANCY BRIEFING REGARDING

THE DELTA RESTORATION NETWORK

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BRIEFING SUMMARY

The Delta Restoration Network proposes a hub organization to adaptively manage Delta restoration within regional conservation strategies that support technical analysis and stakeholder participation.

Here's why: Every restoration action will have profound effects within and beyond their boundaries that change with time. Restored land-water connections will generate cascading Delta-wide effects on hydrodynamics, geomorphology, chemistry, and ecology. Restorations will be strongly affected by restorations that came before and after. Incremental restoration progress will continuously change the overall Delta baseline including the ecosystem effects of Delta flows. Delta community stakeholders require deference and consideration on multiple feasibility issues that value the Delta-as-place. Given the complexity and reach of restoration effects, *choices about sequence, location, design, pace, and scale of restorations will strongly influence long term outcomes*. We must invest in working analysis and decision support systems that can hold complexity for scientists and stakeholders and envision alternative restoration futures that meet the co-equal goals.

A commensurate response: The DRN proposes to embrace the intrinsic complexity of Delta restoration with continuous development and participatory application of *Delta regional conservation strategies*. Conservation strategies are adaptively managed learning and decision support systems that integrate people, best available scientific understanding, and analysis tools. They consider the unique ecosystem drivers, local knowledge, historical ecosystem functions, current land use, land use histories and flood control requirements of priority Delta restoration areas. Conservation strategies are at once dynamic strategic vision and practical feasibility assessment systems. They are not a product. Rather, they are continuous learning and technical assessment environments that take in changing social, economic, and landscape conditions to continuously refine alternative restoration futures. They spell out tradeoffs among options and clarify management and policy decision points. They assure that the multitude of restoration projects add up to effective native species conservation, water supply reliability, and thriving Delta communities and economies.

Mission: To co-produce knowledge and strategies among collaborative agency, stakeholder, and NGO teams on alternative restoration futures for the Delta. The DRN envisions a multi-disciplinary technical and stakeholder working environment where data synthesis, GIS based assessments, and systems models are integrated and continuously applied to meeting the co-equal goals.

Regional conservation strategies support two parallel purposes:

1. *Early action restoration* of individual property acquisitions requires effective designs now that support prescribed regulatory outcomes. For example, the salmon and delta smelt biological opinions require restorations that subsidize regional food web carrying capacity, and provide spawning and rearing habitat. In particular, project proponents require multidisciplinary modeling analysis to maximize ecosystem services and learning. This purpose is the logical evolution of ERP DRERIP conceptual modeling for restoration assessment.
2. *Landscape-scale strategies* promote aquatic connections among tidal marsh, floodplain, and riparian corridor habitats that are relevant to native species life history. They encourage diverse landscape patterns and processes that support competitive advantage and resilience of native species and natural communities in the face of continuous change. They are inherently long-term and emphasize trajectories of hydrogeomorphological change in the context of working landscape imperatives. Working at natural process scales is likely more self-sustaining, effective, and less costly over time.

Regional conservation strategies integrate three primary components:

1. A dynamic inventory of regional ecosystem, infrastructure, demographic, and economic attributes. Information is maintained in an open GIS framework.
2. An assessment of how target species adapted to historical ecological functions. Resulting pattern and process metrics can guide acquisition choices and restoration performance measurement.
3. A feasibility assessment system that facilitates broad stakeholder and policy input into the multiple factors that affect restoration outcomes and Delta community prosperity.

Integration of technical analysis and decision support: Envisioning alternative future restoration scenarios requires two related analyses. *First*, adaptive change management requires considerable technical analysis of multiple interacting factors. We must fully embrace the breadth and depth of social and ecosystem complexity to understand the implications of feasible alternatives. This requires skillful application of tools that integrate data synthesis, GIS analysis, and Delta systems models of processes and economics. *Second*, Delta stakeholders and policy people must actively participate in alternative future scenario building by engaging restoration complexity in tractable ways. A hub organization for restoration adaptive management must offer the Delta community a receptive

environment for challenging and improving regional restoration scenarios based on local knowledge and economic imperatives. The objective would be to create a home for a continuous and substantive dialogue about the terms and conditions of mutual agreements about alternative Delta futures.

Hub organization: A restoration "hub" organization would be the vessel for coordinating technical analysis and stakeholders input. Modeled initially on the "DRERIP" restoration evaluation process, the organization structure would emphasize multidisciplinary technicians and translators with demonstrated system knowledge, specific modeling, GIS, programming, and collaborative science experience. Future restoration scenario building could be directed by a Delta Restoration Network overseeing a minimum of organization hierarchy. Like the cogs in a wheel, the hub would also rely on interagency experts to engage as needed on synthesis and conceptual model building (perhaps based on the NCEAS model). It would leverage existing model integration tools and expertise from regional NGO's (e.g. TNC Delta EFT, SFEI Eco Atlas, and OSU Envision). Consultants and university labs with demonstrated process modeling and decision analysis expertise would build analysis tools (contracting must be simplified). Delta stakeholder representatives would help develop feasibility assessment approaches that could be built into decision analysis systems.

Early hub activities would include technical support for in-process restoration actions. In parallel, first-version conservation strategies would be built for each priority restoration area. Workshops for gathering local knowledge should occur early and often. Candidate approaches for alternative future scenario modeling would be assessed. These should be spatially explicit, capture policy alternatives, report restoration performance metrics, and visualize results.