Table 1. Important environmental attributes that would be expected to change in the Delta with changes in infrastructure (e.g. conveyance facilities), along with indicators of change in that attribute, metrics for interpreting change and measurements used to comprise the metrics.

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| ***Important Environmental Attribute*** | ***Assessment: Indicators*** | ***Evaluation: Metrics*** | ***Monitoring:***  ***Measurements*** |  |
| **Water Quality** | Source of water | Major ions, nitrate, ammonia, salinity, boron | USGS Network variables. |  |
| **Food** | Zooplankton | Copepod abundance and biomass:  .. LSZ in summer & fall  ..Delta, Suisun Bay and Marsh channels in winter and spring |  |  |
| **Food** | phytoplankton | ..Functional groups (abundance); ..size fractionation;  ..Chlorophyll;  .. Carbon exports and carbon balances. | Incident light, phytoplankton sampling, chlorophyll  carbon |  |
| **Hydrodynamics**  Relevant to anadromous salmonids | Fall run access to Bay: San Joaquin | a.SJR flow/exports | SJR flows at Vernalis & Stockton (when);  Exports (when);  Barrier in or out | 1 |
| **Hydrodynamics**  Relevant to anadromous salmonids | Fall run access to Bay: Sacramento | Sacto:  % time OMR is negative.  Sac R. Flow | Sac R. flows at Rio Vista  Condition of Delta Cross Channel  OMR flow | 1 |
| **Hydrodynamics**  Relevant to anadromous salmonids | Adult migration corridor: Connect Bay to SJR | Each Yr: Are there 10 days with inflows >1/3 of exports in Sept. & Oct.\* | Exports relative to inflow at Vernalis | 1 |
| **Hydrodynamics**  Relevant to  Exports: Indirect | Zone of influence of facilities during critical times for species of concern. | a.Various averages (daily, 5-day, 14-day, seasonal) of OMR flows.  b. daily export flow.  c. Daily Vernalis, Stockton DWSC, and QWEST flows.  d. Delta Transfer Flow.  e. Averaged flows through entrance gates of CCFB.  f. Delta gate and barrier positions.  g. Outmigrating smolt route selection and reach-specific losses as a function of flow and exports..  h. Vernalis Flow: export ratio during spring | a. Tidal (15-min) flows in Old and Middle Rivers.  b. Hourly pumping rates (CVP and SWP).  c. Tidal flows in San Joaquin River (at Vernalis, Stockton, and Jersey Pt).  d. DCC and Georgiana Sl. flows.  e. Tidal flows through entrance channel to CCFB.  f. Delta gate and barrier operations and culvert flows (DCC and HORB especially).  g. Acoustic tagging studies. | 1 |

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| ***Important Environmental Attribute*** | ***Assessment: Indicators*** | ***Evaluation: Metrics*** | ***Monitoring:***  ***Measurements*** |  |
| **Delta habitat** | Suitable delta habitat for salmonids | a. Monthly average flows, turbidity and temperature, when and where salmon are in Delta….Metric is monthly average (Apr-Jun) | \*\*\*\* Network: temperature; salinity, turbidity, instantaneous flows (IF), suspended sediments, TOC, chlorophyll, nutrients including ammonia, oxygen at most North Delta sites on 15 minute time interval. at: Sutter, Cache slough, Steamboat, Freeport, below Freeport, Delta Cross Channel dates or PC, Georgiana slough flows. | = |
| **Habitat** | SAV distribution | Change in total area covered by SAV across years. Use delta-wide and regional coverage and electrofishing densities to estimate total population. | Overall coverage (% cover, total area covered), and coverage within each Delta region. |  |
| Temperature | Regional & seasonal variation in in nearshore temperature. | 1. Adults: Duration where temps are 27-30 degC. 2. Juveniles: Duration where temps are 30-32 degC. 3. # days below 10degC |  |
| Turbidity | Regional & seasonal variation in temp. in nearshore areas. Compare average temps and temp range between SAV & non-SAV nearshore areas. | Days/seasons/regions where turbidity >10NTU. |  |
| **Habitat:**  Specific to Delta smelt | Amount and location of Delta smelt habitat by season/life stage | Habitat area or index | Catch per trawl, salinity, turbidity, temperature from all surveys, and continuous monitoring data. |  |
| **Predation:**  Population Trends in large mouth bass | a. abundance estimates for total population across years;  b. Regional abundance estimates juvenile and for piscivorous pop’n | **a.** Number of LMB in salvage;  b.total CPUE from efishing efforts across years;  c.E-fishing densities of fish > 125mm FL (piscivorous) and juveniles (<125mm) for each major Delta region | a. 1. Salvage  b. 2. Build on DFG e-fish datasets ( |  |
|  | Trends across years in the LMB caught in fishing tournaments;; | Catch-per-unit-effort in tournaments; |  | 1 |
| **Contamination** | Chemical contamination: Se and Hg | Trends in selenium and mercury exposure | Monthly clam samples from Suisun Bay analyzed for Se and stable isotopes of C & N. Model Se in sturgeon.  At 5 years, sturgeon organs | 1. |

Table 2. Characteristics of critical fish populations that might respond to changing the infrastructure of water diversion in the Delta.

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| ***Important Environmental Attribute*** | ***Assessment: Indicators*** | ***Evaluation: Metrics*** | ***Monitoring:***  ***Measurements*** | ***Feasibility*** |
| **Anadromouos salmonids** | Migrating salmonid populations: Landward & seaward | a.Number & size at date from each river/stream;  b.cohort replacement or JP | a. Counts and size of fish in traps and trawls;  b. carcass counts | 2 |
| Anadromous salmonids | Exports: Direct | Take at export facilities/Juvenile production | a.Salvage7  b. Carcass survey for production  c. Fecundity estimates based on size (JPE). | 1 |
| Delta smelt | Index of abundance by region and date ; location and seasonal movement. | Catch per unit effort by region and date. | All surveys | 1 |
| Delta smelt | Adult Reproductive condition | Distribution, Fecundity, Intersex. | Spring Kodiak trawl | 1 |
| Delta smelt, longfin smelt | Losses at export facilities: Index of direct mortality of adults | Adult salvage divided by previous fall midwater trawl catch/trawl | Salvage at federal and state facilities | 1 |
| Longfin smelt | Abundance index in relation to flow | Annual population in relation to X2 or log of Delta outflow | FMWT mean catch/trawl | 1 |
| Sacramento splittail | population dynamics | Monthly salvage densities at SWP and CVP. | Daily salvage densities at CVP and SWP | 1 |