## Step 5: Standardised outputs

Below is an excerpt from the draft decision-making framework technical report.

### Method

A workshop was held with an end-user (Adrienne Rumbelow, DEW) and hydrologist/modeler (Claire Sims, DEW) to identify visual model outputs (time series, rasters etc.) that would supplement and provide greater granularity (temporal or spatial) to the tabular results of the decision-making framework. The objective of the workshop was to identify these supplementary model outputs and standardise them within documentation inclusive of the decision-making framework.

To support the workshop, visual outputs from the Coorong Dynamics Model produced for the Coorong Infrastructure Investigations project and from the 1-D Coorong Hydrodynamics Model for Annual Operations Outlooks were presented to help select the most informative outputs. Presented model outputs included:

* Time (daily) series at water stations along the Coorong
* Time (daily) series using lagoon-averages
* Daily longitudinal extent of the Coorong meeting an environmental condition
* Longitudinal plots: average value for time period longitudinally along the Coorong
* Rasters of an environmental condition(s) over the system

For each indicator of critical CPS and threat status, the following information was recorded within the workshop to inform post-processing of model simulations to develop visual outputs:

* Need: Whether an output supplementary to the tabular framework was required.
* Style: Style of output that best supports decision-making, i.e. time series, raster, other
* Time step: Time step (daily or monthly etc.) for graphing (if output is a time series)
* Space: Spatial bounds considered for the output, are how space will be segregated for an output
* Measure: How the measure of an indicator is to be post-processed
* Duration: Maximum time period to be output for a time series before another graph facet is required, i.e. two facets would be needed if two years’ worth of data were to be graphed to improve readability.

### Results

The outcomes of the workshop documented in Table 2.15 will inform post-processing of model simulations to develop visual outputs that will support management decision-making. The visual outputs considered to be required to support management decision-making are presented for the test run of the Coorong decision-making framework in section 4.2.2.

Table 2.15. Information required to support post-processing of model outputs in to standardised visual outputs.

| Indicator | Output |
| --- | --- |
| Salinity | **Need**: Required  **Style**: Time series  **Time** **step**: Daily  **Space**: Murray estuary, Coorong North Lagoon split into thirds, Coorong South Lagoon split into thirds.  **Measure**: Average daily salinity across longitudinal transect  **Duration**: 12-months |
| Murray Mouth connectivity | **Need**: Not required  **Comment**: Daily cumulative flow (in or out) across the Murray Mouth may be useful to inform targeted operations. |
| Flow (River Murray discharge) | **Need**: Required  **Style**: Time series  **Time** **step**: Daily  **Measure**: Flow (ML/day) across all barrages  **Duration**: 12-months |
| Flow (Salt Creek discharge) | **Need**: Required  **Style**: Time series  **Time** **step**: Daily  **Measure**: Flow (ML/day) across all barrages  **Duration**: 12-months |
| Water level (Coorong South Lagoon) | **Need**: Required  **Style**: Time series  **Time** **step**: Daily  **Space**: Murray estuary, Coorong North Lagoon split into thirds, Coorong South Lagoon split into thirds.  **Measure**: Average daily WL across the polygon.  **Duration**: 12-months |
| Salt Creek fishway operation | **Need**: Required  **Style**: Time series  **Time** **step**: Daily  **Space**: Salt Creek/Coorong South Lagoon  **Measure**: Salt Creek flow is >3 ML/day and CSL is >+0.4 m AHD or >2 ML/day and CSL is >+0.8 m AHD, 1=conditions met and 0 = conditions not met.  **Duration**: 12-months |
| Water depth (inundation area) | **Need**: Not required.  **Comment**: Adequately accounted for within the tabular results of the framework. |
| Water depth (<10 cm area) | **Need**: Required  **Style**: Time series  **Time** **step**: Daily  **Space**: Murray estuary, Coorong North Lagoon split into thirds, Coorong South Lagoon split into thirds.  **Measure**: Average daily salinity across polygon  **Duration**: 12-months |
| Macroalgae (Ulva HSI) | **Need**: Required  **Style (1)**: Raster  **Space (1)**: Combined area of the last third of the Coorong North Lagoon and fist third of the Coorong South Lagoon.  **Measure (1)**: HSI value over model period for each scenario or delta-map showing comparison of two scenarios.  **Style (2)**: Transect plot  **Space (2)**: Longitudinal transect of the Coorong  **Measure (2)**: HSI value over model period. |
| Sediment condition (oxygen penetration depth) | **Need**: Not required.  **Comment**: Adequately accounted for within the tabular results of the framework. |
| Ruppia (HSI) | **Need**: Required  **Style (1)**: Raster  **Space (1)**: entire system  **Measure (1)**: HSI output for each life stage and the asexual and sexual lifecycle  **Style (2)**: Transect plot  **Space (2)**: Longitudinal transect of the Coorong  **Measure (2)**: HSI value over model period. |
| Chl-a | **Need**: Not required.  **Comment**: Adequately accounted for within the tabular results of the framework. |
| TN & TP (balance) | **Need**: Not required.  **Comment**: Adequately accounted for within the tabular results of the framework. |
| Dissolved oxygen | **Need**: Not required.  **Comment**: Adequately accounted for within the tabular results of the framework. |