

Phase 6 Model Structure

Average Load + Δ Inputs * Sensitivity

★

Land Use Acres

★

BMPs

★

Land to Water

★

Stream Delivery

★

River Delivery

Direct Loads

Delivered N or P Load for a Land Use Within a Segment

CBP Climate Analysis System

```

graph TD
    OT([Observed Trends]) --> CCS([Creation of future climate scenarios])
    SS([Scenario selection]) --> DM([Downscaling Method])
    DM --> CCS
    CCS --> PRFS([Process-based response of flow and sediment])
    CCS --> SRS([Specified response to flow and sediment])
    SS --> HRC([Human responses to climate change])
    HRC --> SRS
    PRFS --> EPBM([Estuarine Process-based model])
    SRS --> EPBM
    HRC --> EPBM
    EPBM --> EWQS([Effect on water quality standards])
    EPBM --> MEA([Management Effort Adjustment])
  
```


Watershed Model

increased precipitation volume = ↑
 increased precipitation intensity = ↑
 increase in temp and evapotranspiration = ↓

WQ Sediment Transport Model

increased watershed loads = ↑
 increased temperature = ↑
 increased sea level rise = ↓
 increased watershed flows = ↓

2018

- STAC Workshop
- Climate Resiliency WG to investigate BMP response
- Jurisdictions provide narrative in WIP3s on climate strategies
- Modeling WG develop climate scenarios

2019

- Water Quality GIT, Modeling WG, Climate Resiliency WQ direct Modeling team to develop climate change assessment for TMDL

2020

- Technical Review of Models

2021

- Climate change considerations will be implemented into the 2022-2023 milestones.

February

- Climate Topics

April

- Climate Topics

July

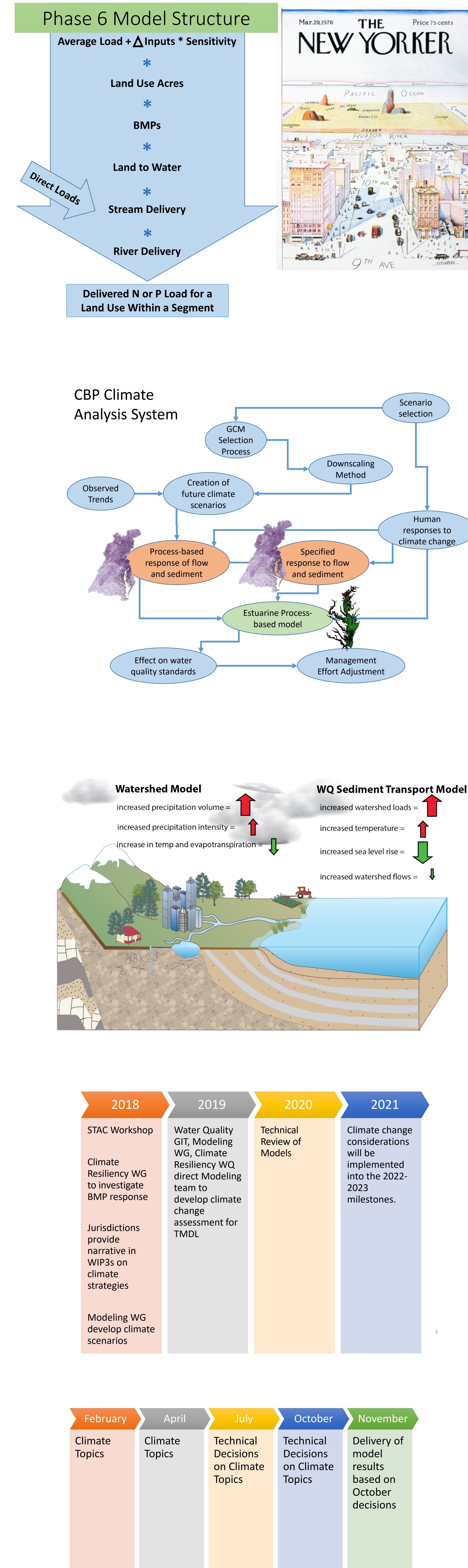
- Technical Decisions on Climate Topics

October

- Technical Decisions on Climate Topics

November

- Delivery of model results based on October decisions



Climate Change Processes and Dependencies

Model
Data Set
Endpoint
Project/Decision

Complete

In Process

Unknown

Not Assessed

GCMs

Selection of RCP

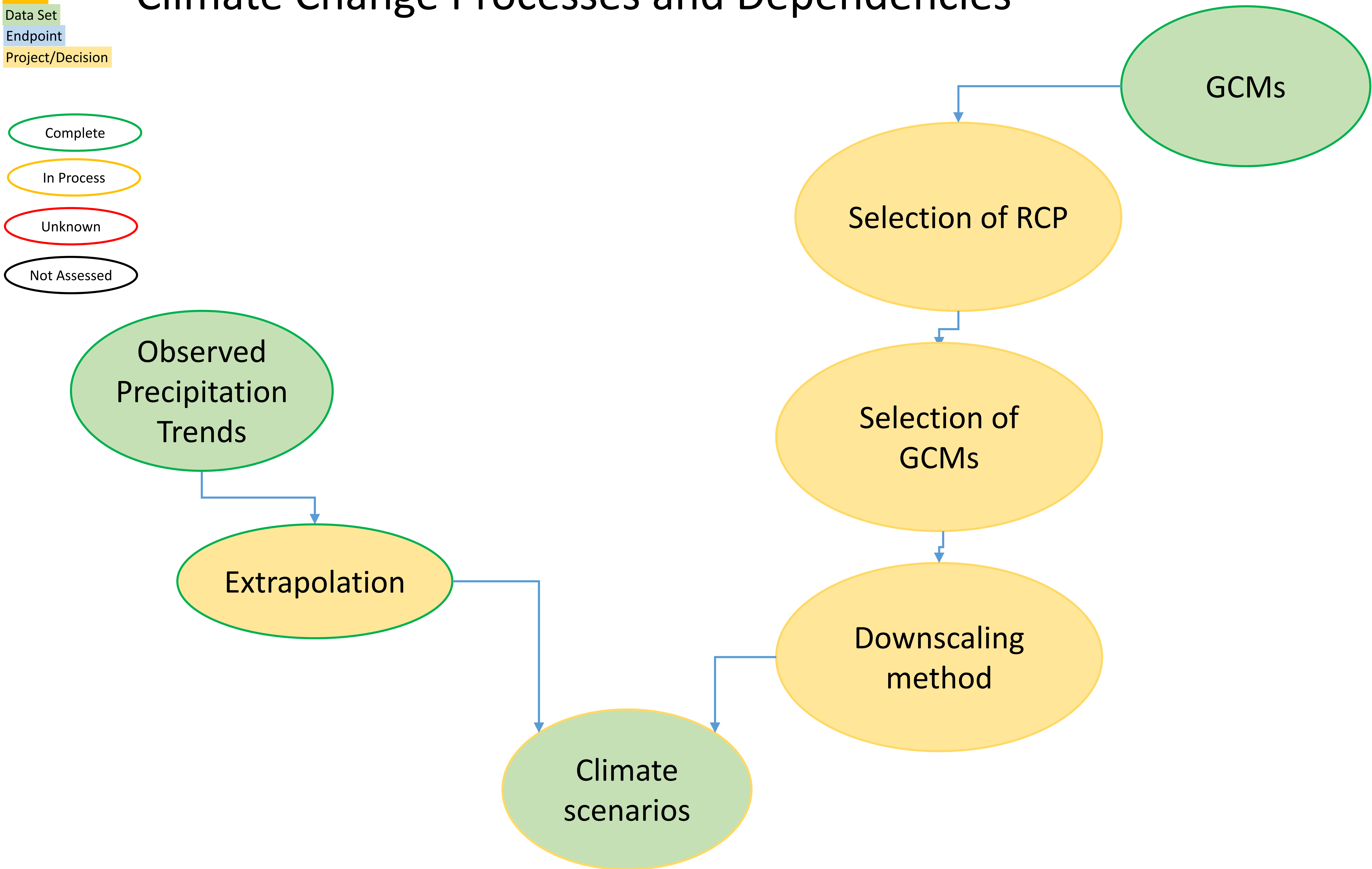
Selection of
GCMs

Downscaling
method

Observed
Precipitation
Trends

Extrapolation

Climate
scenarios



Phase 6 Model Structure

Average Load + Δ Inputs * Sensitivity

- Land Use Acres
- BMPs
- Land to Water
- Stream Delivery
- River Delivery

Direct Loads

Delivered N or P Load for a Land Use Within a Segment

CBP Climate Analysis System

```

graph TD
    ObservedTrends[Observed Trends] --> Creation[Creation of future climate scenarios]
    GCM[GCM Selection Process] --> Creation
    Creation --> Downscaling[Downscaling Method]
    Downscaling --> Creation
    Scenario[Scenario selection] --> Downscaling
    Scenario --> Human[Human responses to climate change]
    Human --> Specified[Specified response to flow and sediment]
    Specified --> Estuarine[Estuarine Process-based model]
    Creation --> Process[Process-based response of flow and sediment]
    Process --> Estuarine
    Estuarine --> Effect[Effect on water quality standards]
    Effect --> Management[Management Effort Adjustment]
    Management --> Estuarine
  
```

Watershed Model

increased precipitation volume = ↑

increased precipitation intensity = ↑

increase in temp and evapotranspiration = ↓

WQ Sediment Transport Model

increased watershed loads = ↑

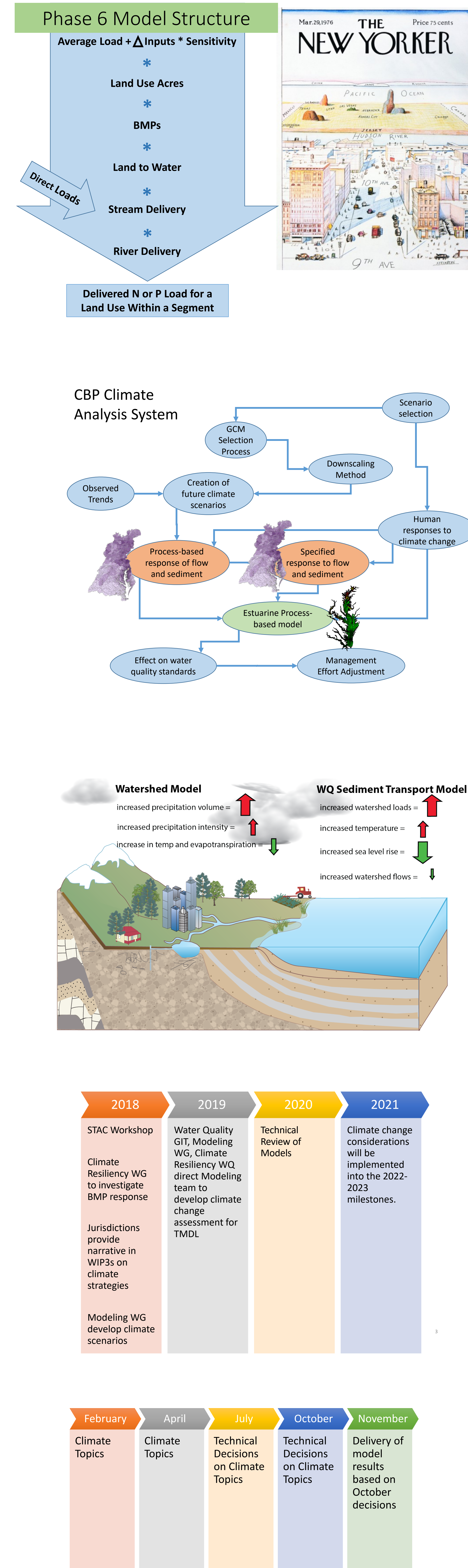
increased temperature = ↑

increased sea level rise = ↓

increased watershed flows = ↓

2018	2019	2020	2021
STAC Workshop Climate Resiliency WG to investigate BMP response Jurisdictions provide narrative in WIP3s on climate strategies Modeling WG develop climate scenarios	Water Quality GIT, Modeling WG, Climate Resiliency WQ direct Modeling team to develop climate change assessment for TMDL	Technical Review of Models	Climate change considerations will be implemented into the 2022-2023 milestones.

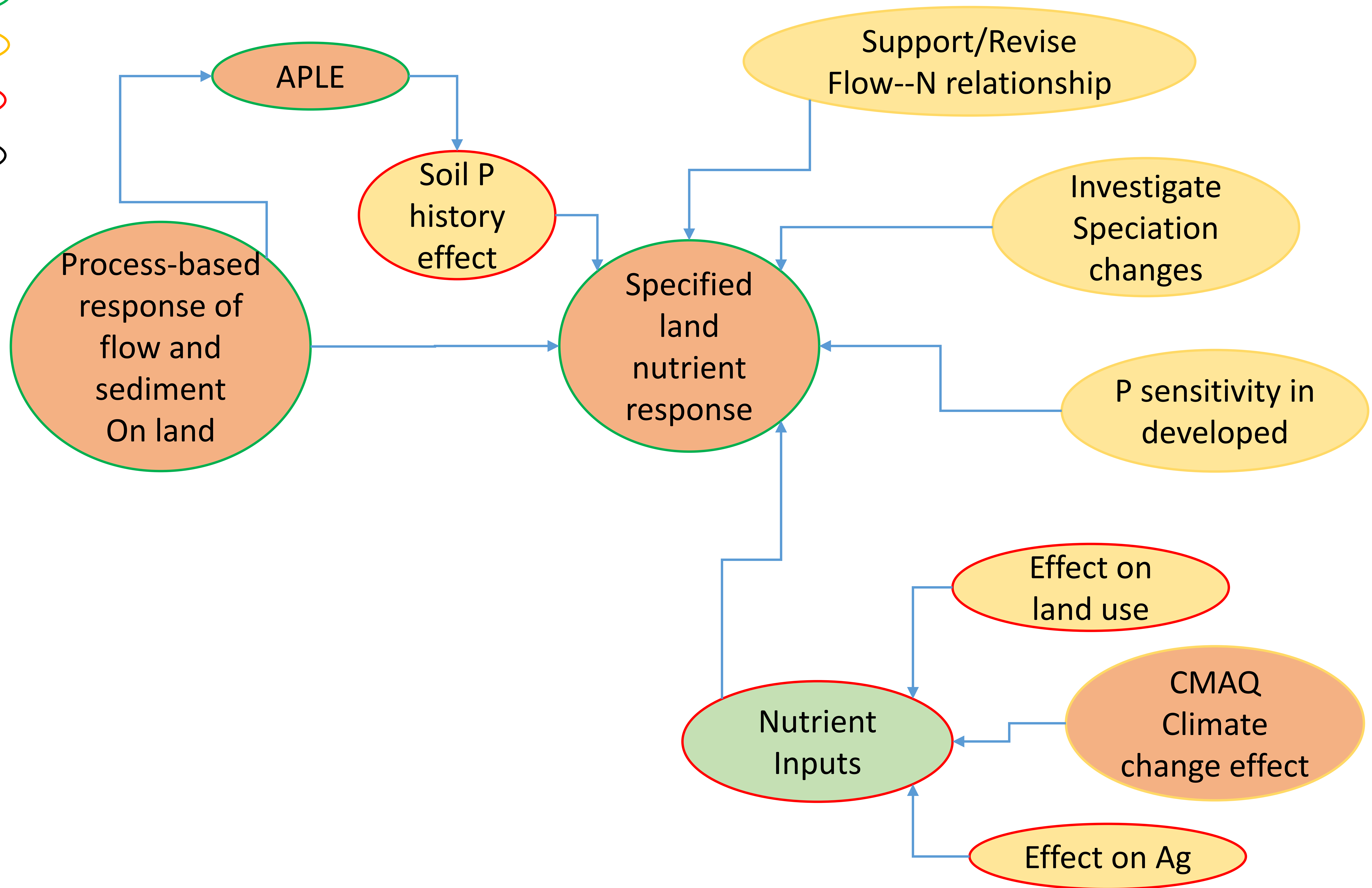
February	April	July	October	November
Climate Topics	Climate Topics	Technical Decisions on Climate Topics	Technical Decisions on Climate Topics	Delivery of model results based on October decisions



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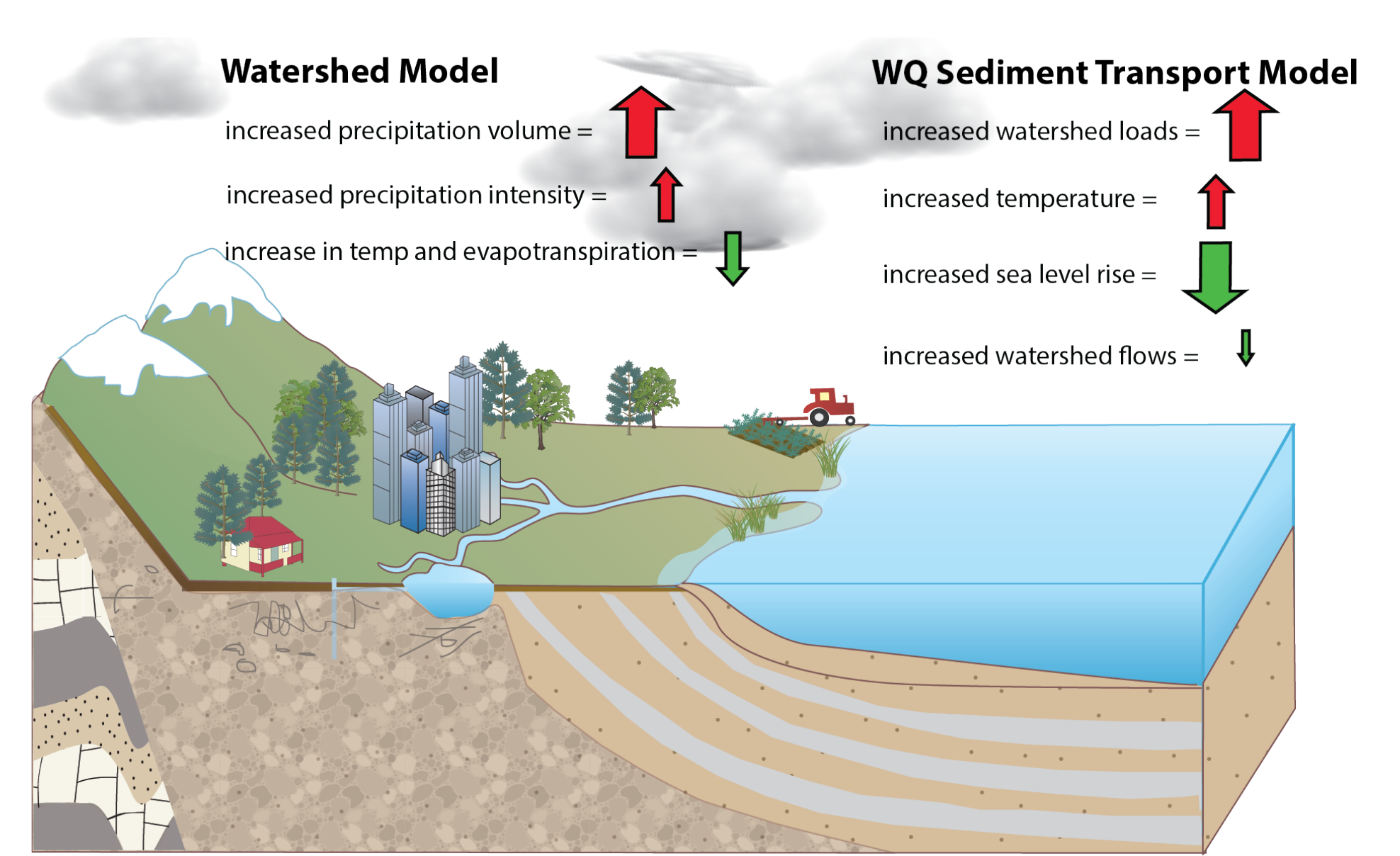
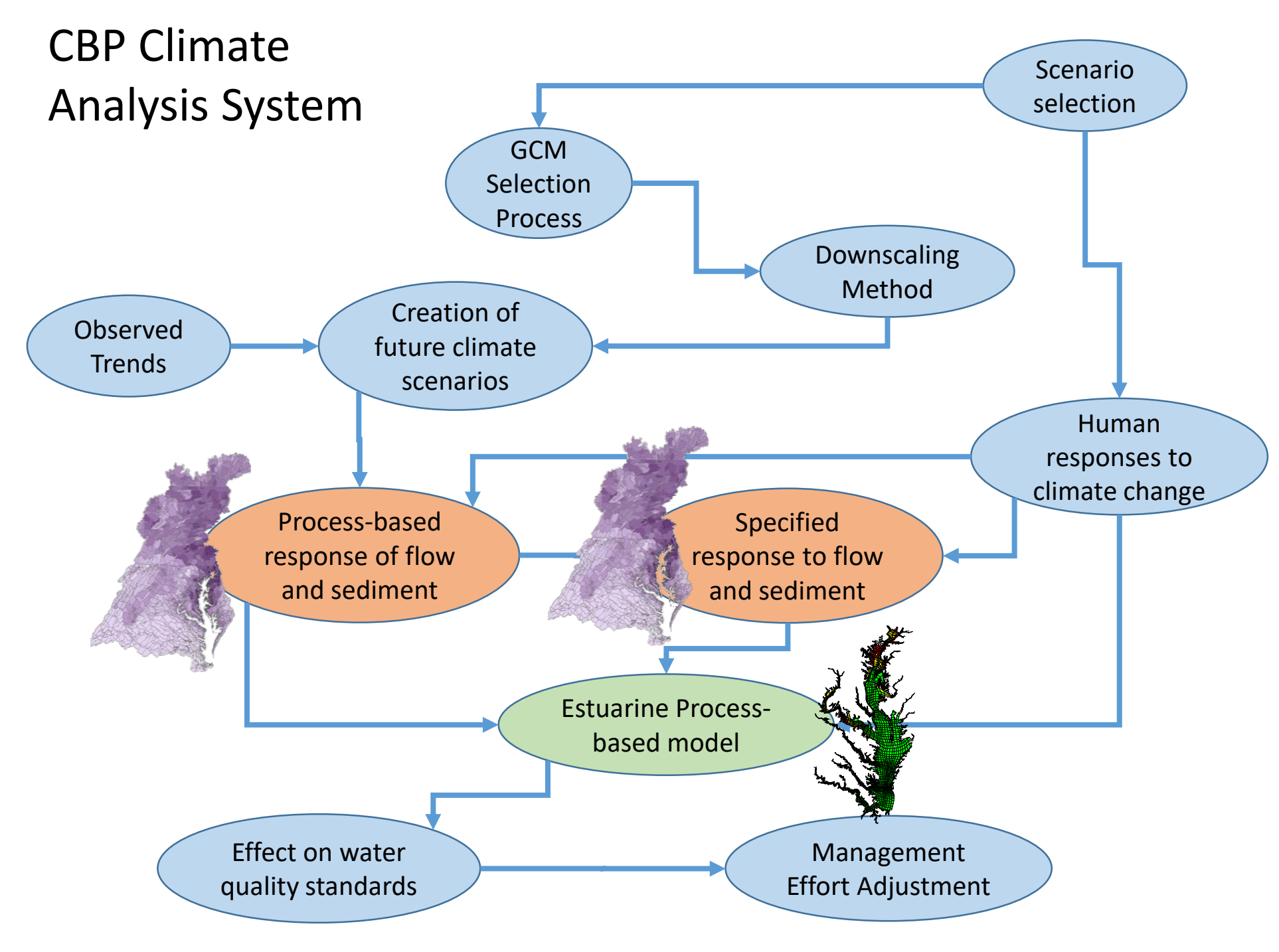
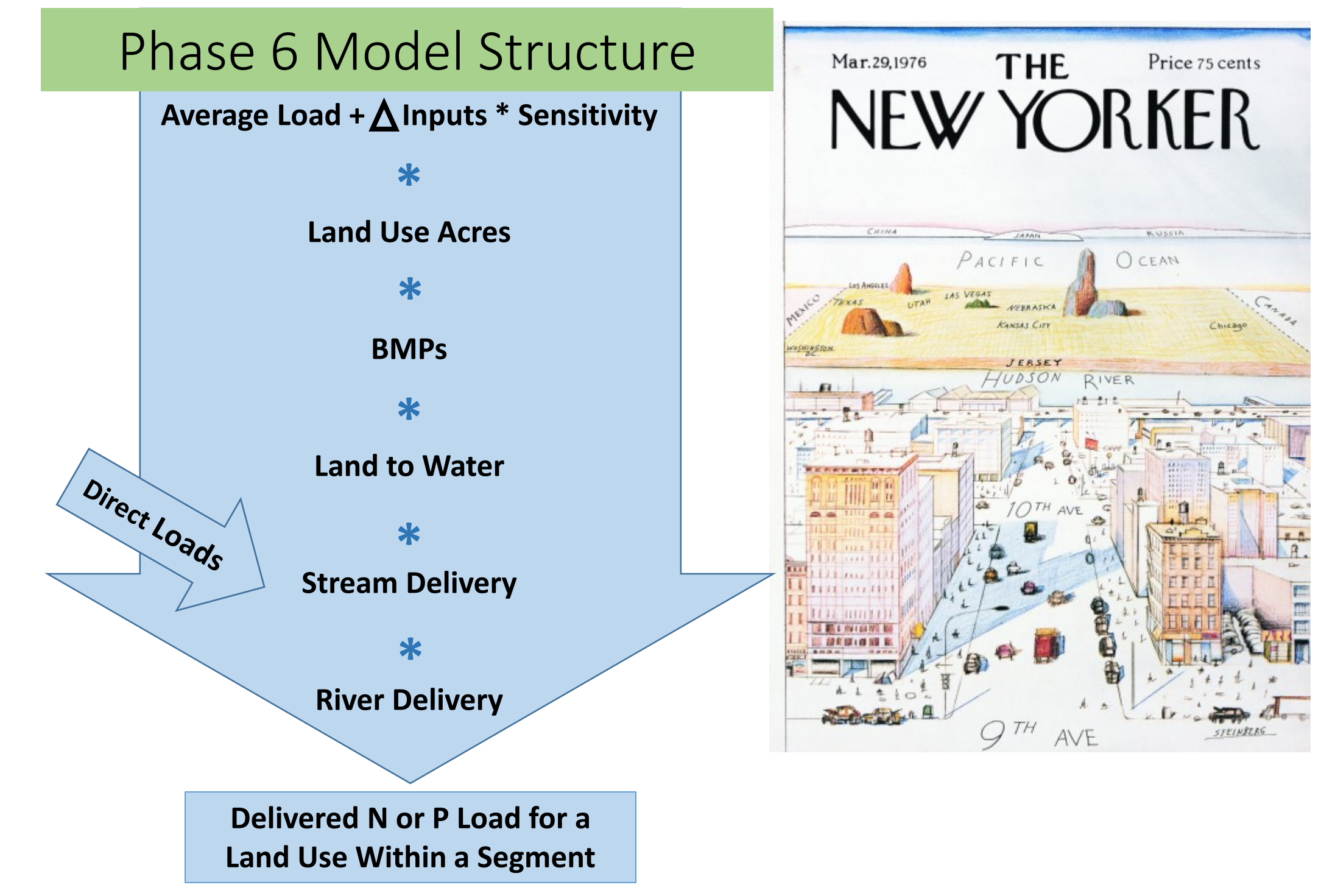
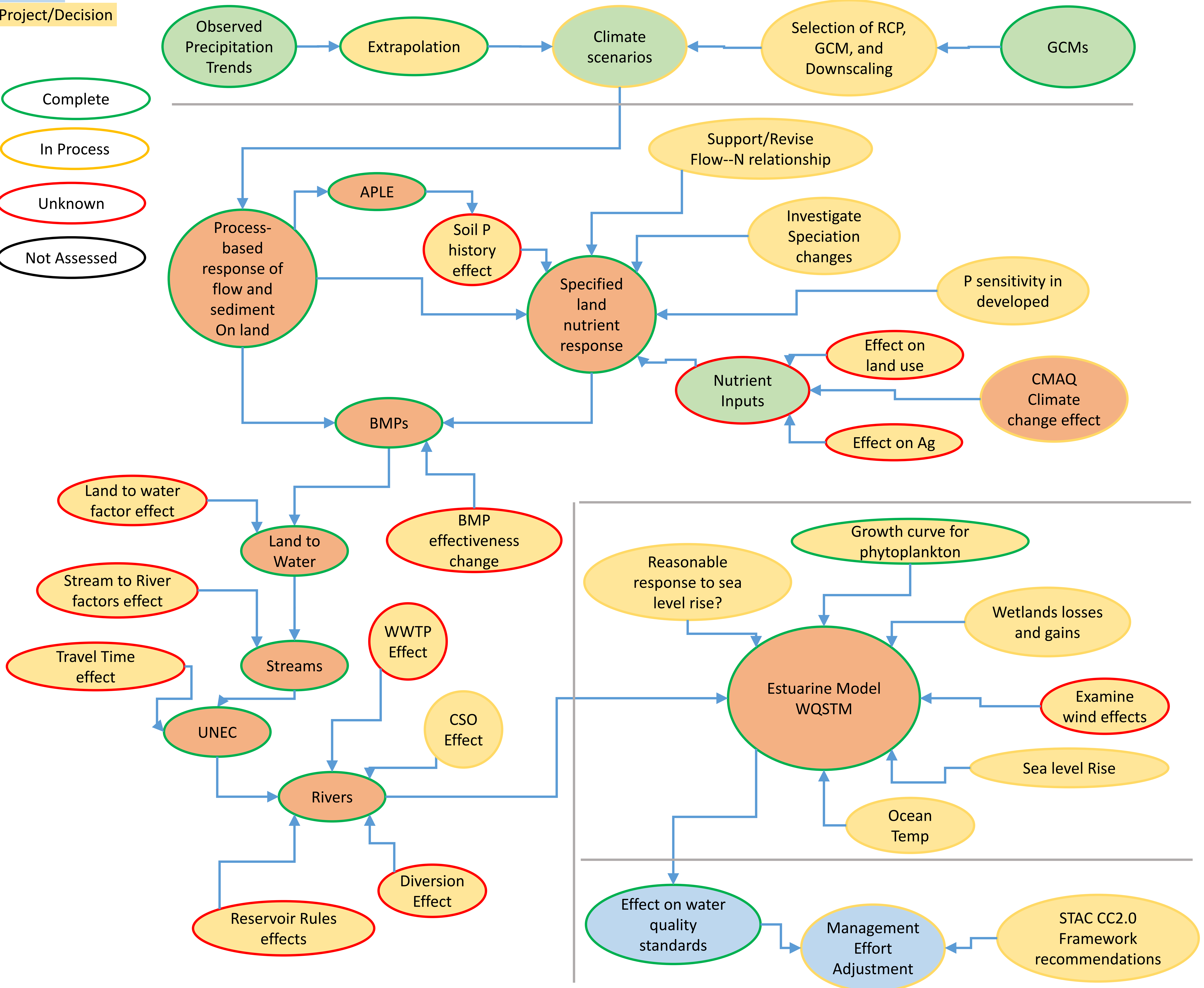
Climate Change Processes and Dependencies



Climate Change Processes and Dependencies

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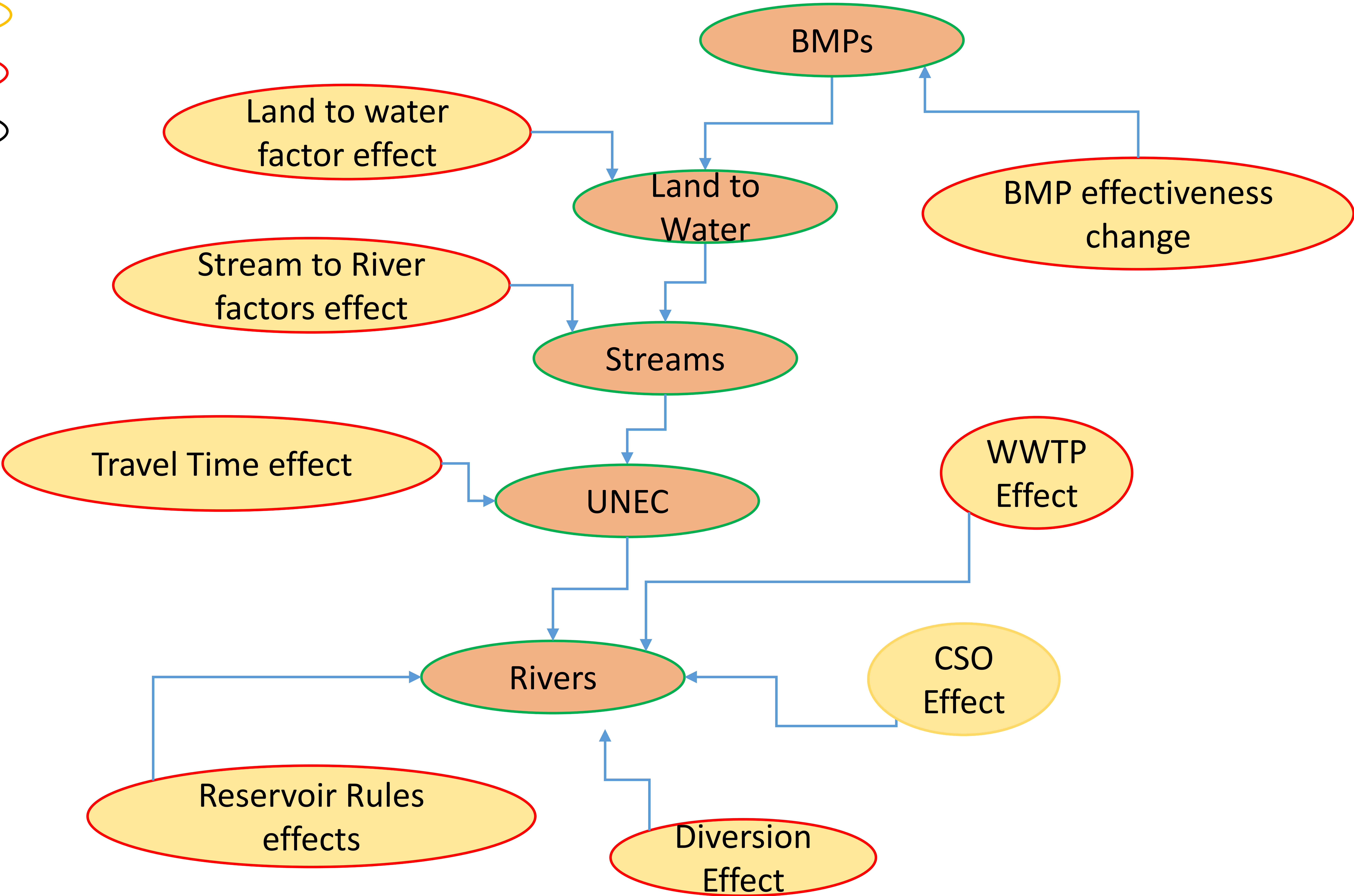
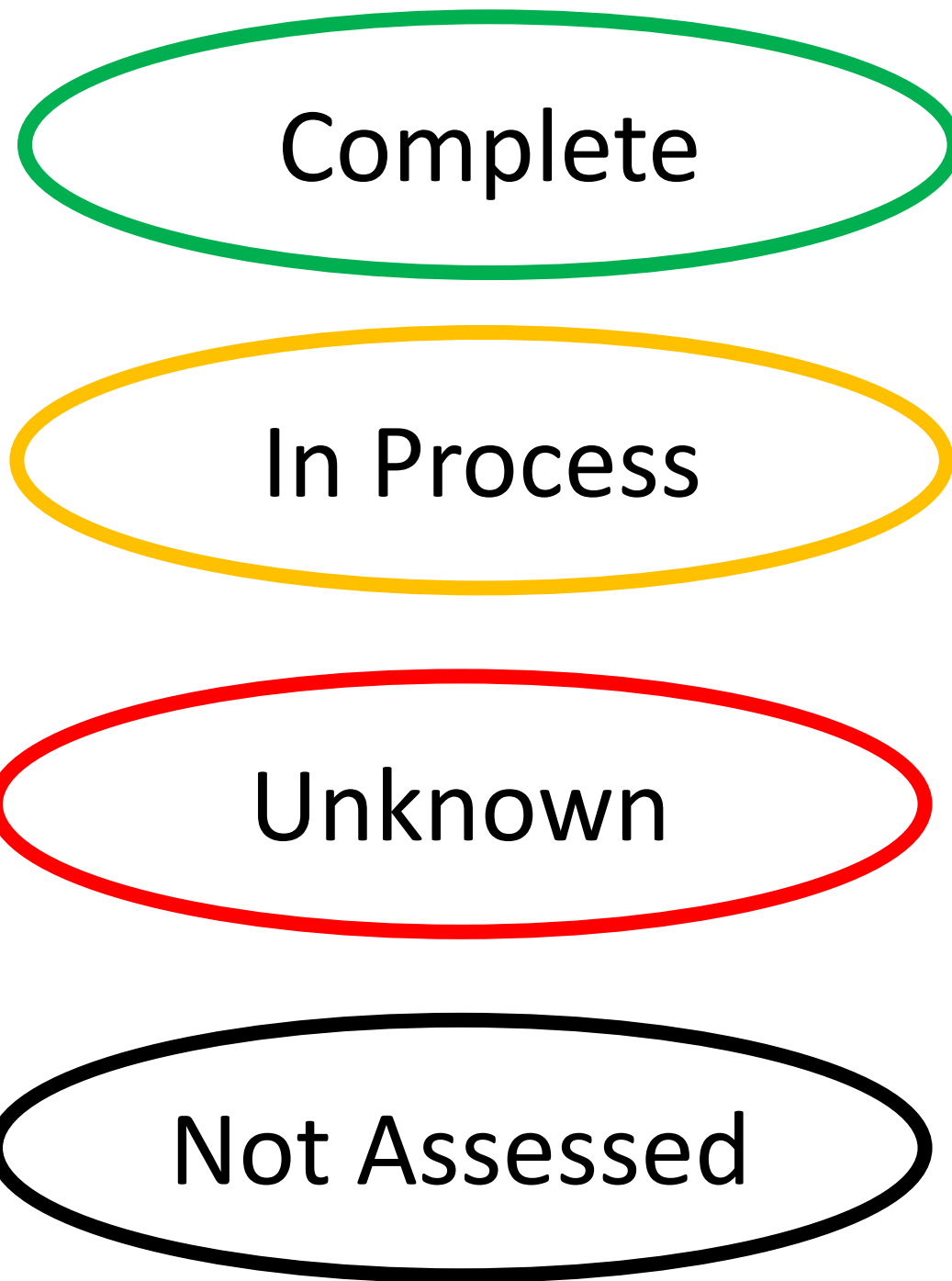


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Climate Resiliency WG to investigate BMP response			
Jurisdictions provide narrative in WIP3s on climate strategies			
Modeling WG develop climate scenarios			

February	April	July	October	November
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Climate Change Processes and Dependencies

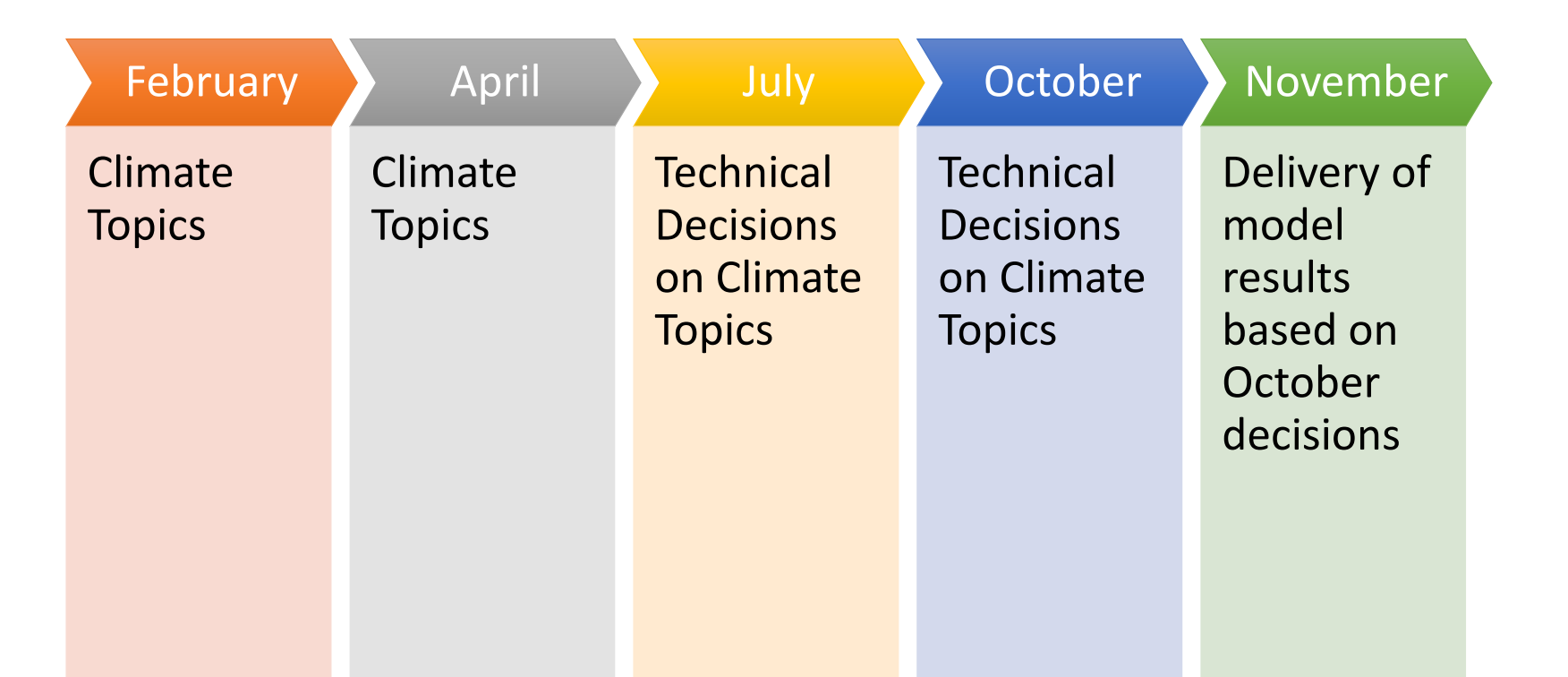
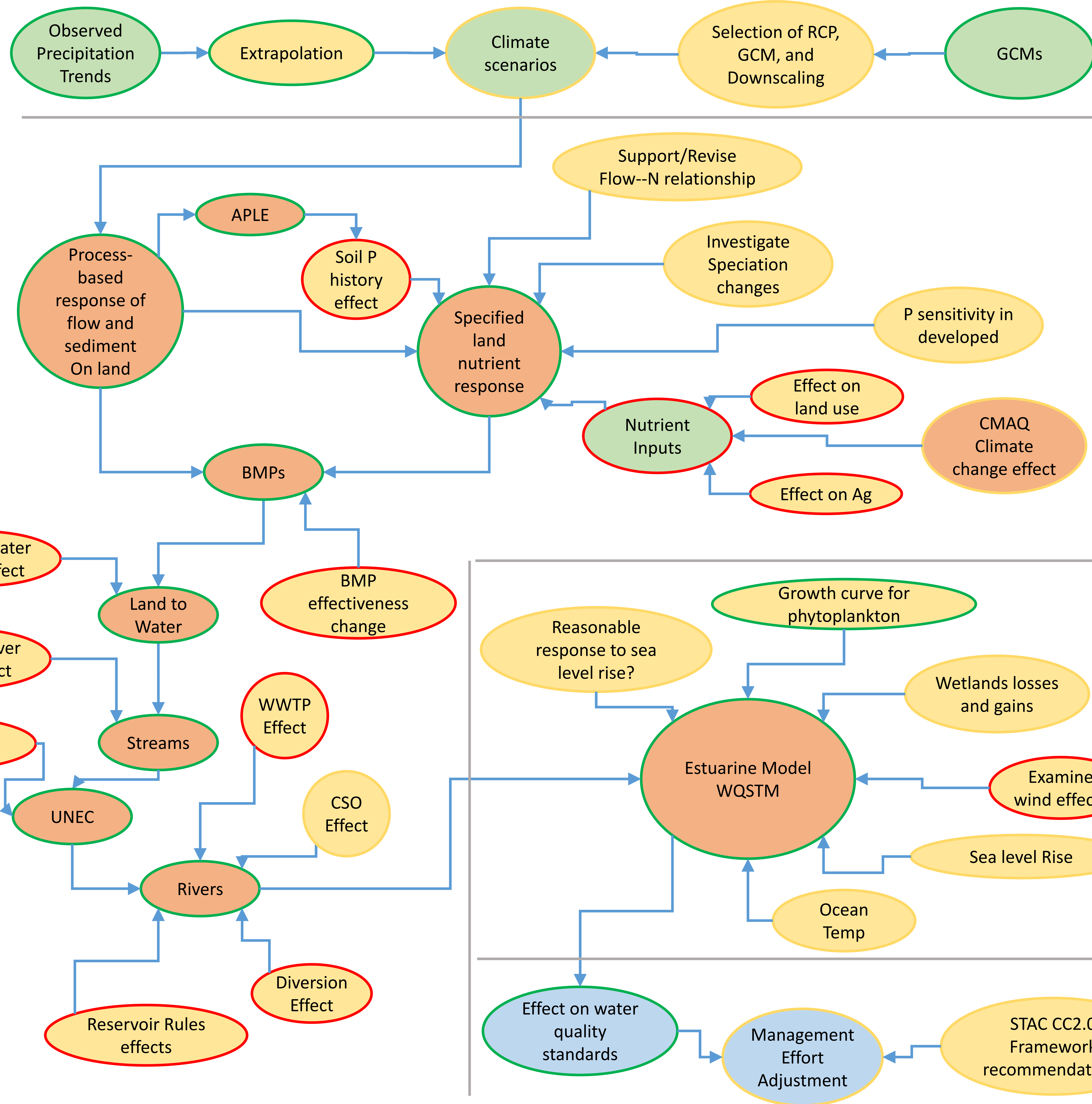


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Climate Change Processes and Dependencies

