Elevation: 30,000 ft

Problem Statement (re: winter-run ("wr") Chinook salmon)

Goal Increase wr Abundance

Goal Increase wr spawning dist.

Goal Improve wr Pop. Stability

Goal Restore wr Life History Diversity

Objective: increase existing wr pop to a mean of __ by [date]

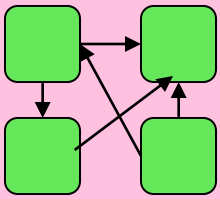
Objective: Establish __ new pop'ns of wr by [date]

Objective: No declines of ≥ __% in 1 generation for any pop by [date] (existing) or w/i [date] yrs of est. (new)

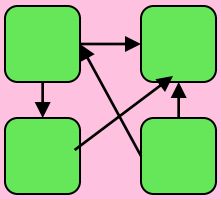
Objective: Spawner age: >__% 3+ years >__% 4+ years

BDCP Objective: Increase existing wr pop to a mean of ___ by [date]

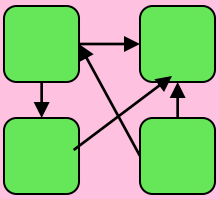
Conceptual Model Salmonids



Conceptual Model Hydrodynamics



Conceptual Model Floodplain



Assumed Stressor

Assumed Stressor

Assumed Stressor

Desired Change

Desired Change

Desired Change

Conservation Measure

Conservation Measure

Outcomes (projected)

Outcomes (actual)

Outcomes (projected)

Metric

Metric

Analysis

Elevation: 3,000 ft

Objective: wr abundance

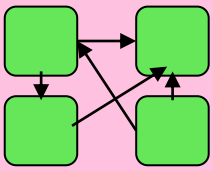
GOAL
Increase wr chinook abundance

Objective:
increase existing wr pop to a mean ___ by [date]

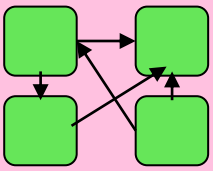
BDCP Objective:
Increase existing wr pop to a mean of ___ by ___ [date]

Metric[1]

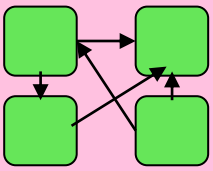
Conceptual Model
Chinook salmon



Conceptual Model
Floodplain



Conceptual Model
Hydrodynamics



Stressor:
Adult migration efficiency

Metric[2]

Stressor:
Survival through delta

Stressor:
Egg/larval success

Desired Change

Desired Change (target)
Increase survival of wr juveniles/smolt through Delta by 30% w/i 10 yrs of implementation

Desired Change

Conservation Measure
Yolo bypass/notch Fremont weir

Conservation Measure
Real-time adjustments to operations to reduce entrainment made possible by intensive monitoring of juvenile migration (including real-time genetic monitoring and otolith analysis)

Conservation Measure
Targeted predator removal from wr migration corridors

Hypotheses
Re: CM effects

Outcomes (projected)

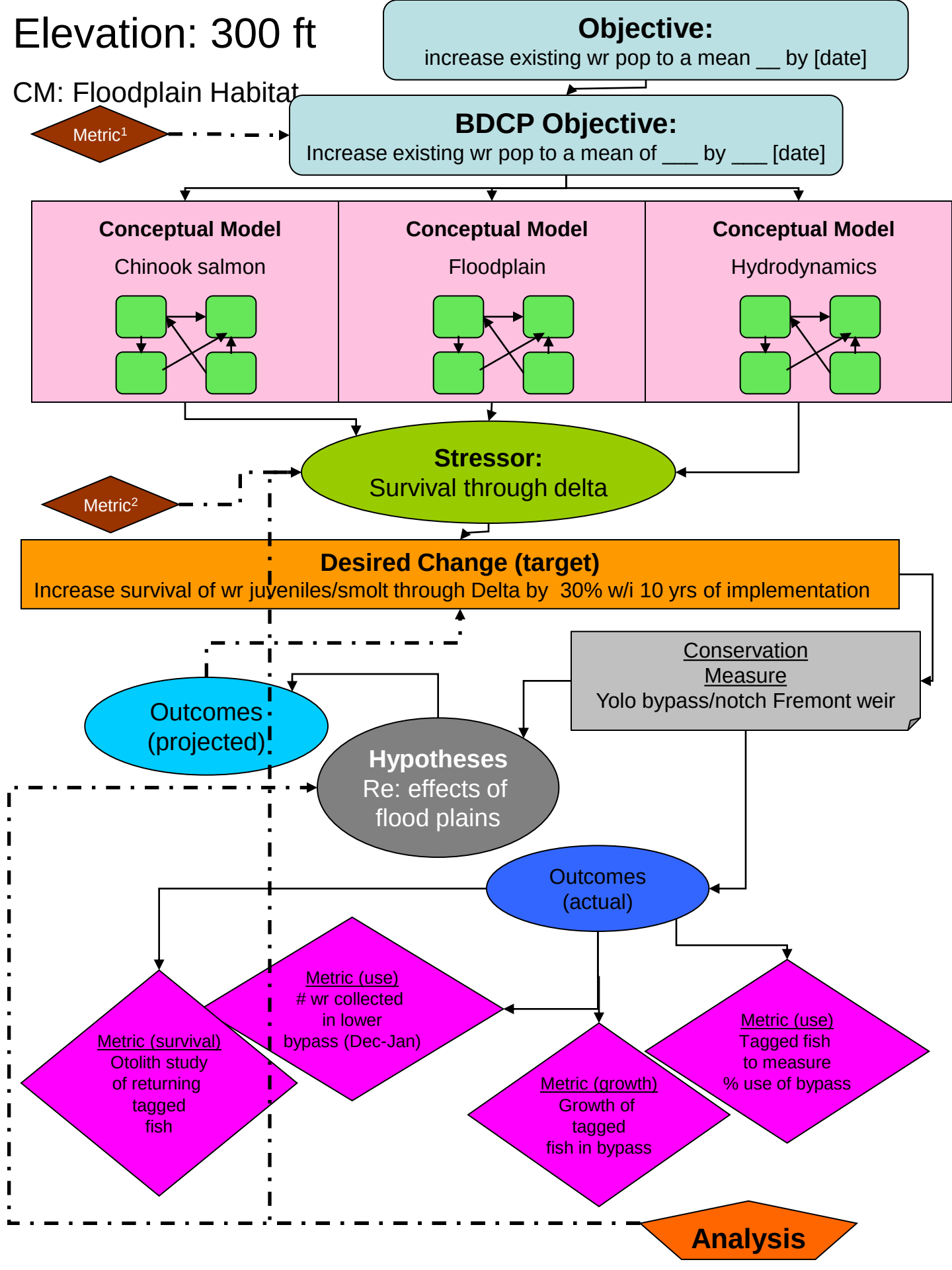
Outcomes (actual)

Hypotheses
Re: CM effects

Outcomes (projected)

Metrics

Analysis


Elevation: 300 ft
CM: Floodplain Habitat
Objective:
increase existing wr pop to a mean __ by [date]
Metric1
BDCP Objective:
Increase existing wr pop to a mean of ___ by ___ [date]
Conceptual Model
Chinook salmon
Conceptual Model
Floodplain
Conceptual Model
Hydrodynamics
Stressor:
Survival through delta
Metric2
Desired Change (target)
Increase survival of wr juveniles/smolt through Delta by 30% w/i 10 yrs of implementation
Conservation Measure
Yolo bypass/notch Fremont weir
Outcomes (projected)
Hypotheses
Re: effects of flood plains
Outcomes (actual)
Metric (use)
wr collected in lower bypass (Dec-Jan)
Metric (survival)
Otolith study of returning tagged fish
Metric (growth)
Growth of tagged fish in bypass
Metric (use)
Tagged fish to measure % use of bypass
Analysis

Elevation: 300 ft

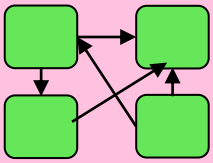
CM: Reduce Entrainment

Objective:
increase existing wr pop to a mean __ by [date]

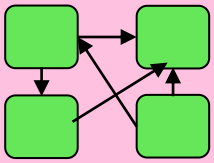
Metric[1]

BDCP Objective:
Increase existing wr pop to a mean of ___ by ___ [date]

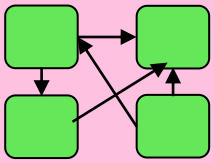
Conceptual Model
Chinook salmon



Conceptual Model
Floodplain



Conceptual Model
Hydrodynamics



Metric[2]

Stressor:
Survival through delta

Desired Change (target)
Increase survival of wr juveniles/smolt through Delta by 30% w/i 10 yrs of implementation

Outcomes (projected)

Hypotheses
Re: effects of flood plains

Conservation Measure
Reduce entrainment through improved monitoring

Outcomes (actual)

Metric
Ability to address a series of questions about habitat use, timing, and position of migrating salmonids
AND, does any of this vary by run?

Analysis

Elevation: 300 ft

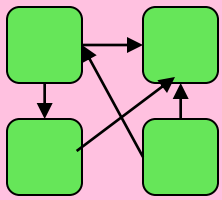
CM: Predator Control

Objective: Increase existing wr pop to a mean __ by [date]

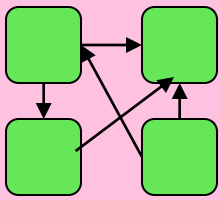
Metric[1]

BDCP Objective:
Increase existing wr pop to a mean of ___ by ___ [date]

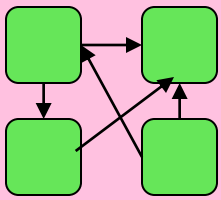
Conceptual Model
Chinook salmon



Conceptual Model
Floodplain



Conceptual Model
Hydrodynamics



Metric[2]

Stressor:
Survival through delta

Desired Change (target)
Increase survival of wr juveniles/smolt through Delta by 30% w/i 10 yrs of implementation

Outcomes (projected)

Hypotheses
Re: effects of Predator control

Conservation Measure
Targeted Predator Control

Outcomes (actual)

Metric (growth)
Relative use of different migratory paths through Delta

Metric (use)
Relative surv. of tagged fish migrating through removal zones

Analysis