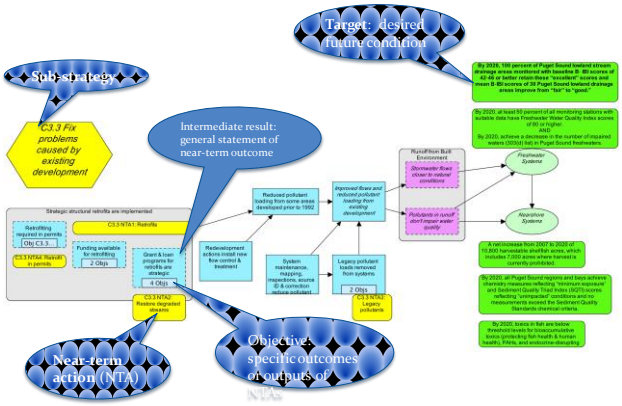
« Cover photo: Creative Commons, courtesy of Ingrid Taylar on Flickr.

Appendix A:
Strategy Diagrams

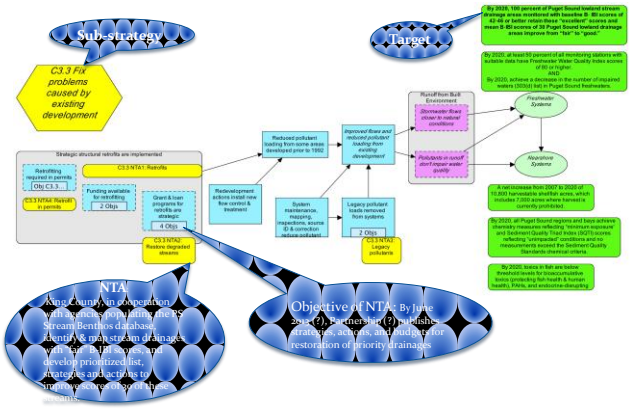
Logic Models for Strategies and Actions

Throughout the Action Agenda Strategies sections you will see graphical depictions of the relationship between strategies, actions, pressures, on the ecosystem, ecosystem conditions, and recovery targets in the form of "results chains." In the following "results chains", or logic models, yellow polygons identify strategies and actions from the Action Agenda that we believe will contribute significantly towards meeting a target. Arrows to the blue boxes describe the intermediate results the strategies and actions are expected to achieve. The purple boxes show the reduced pressure on the ecosystem that is expected to occur; the green ovals show the areas of the ecosystem where the change will be observed; and the dark green square shows the recovery targets. Examples are included below:

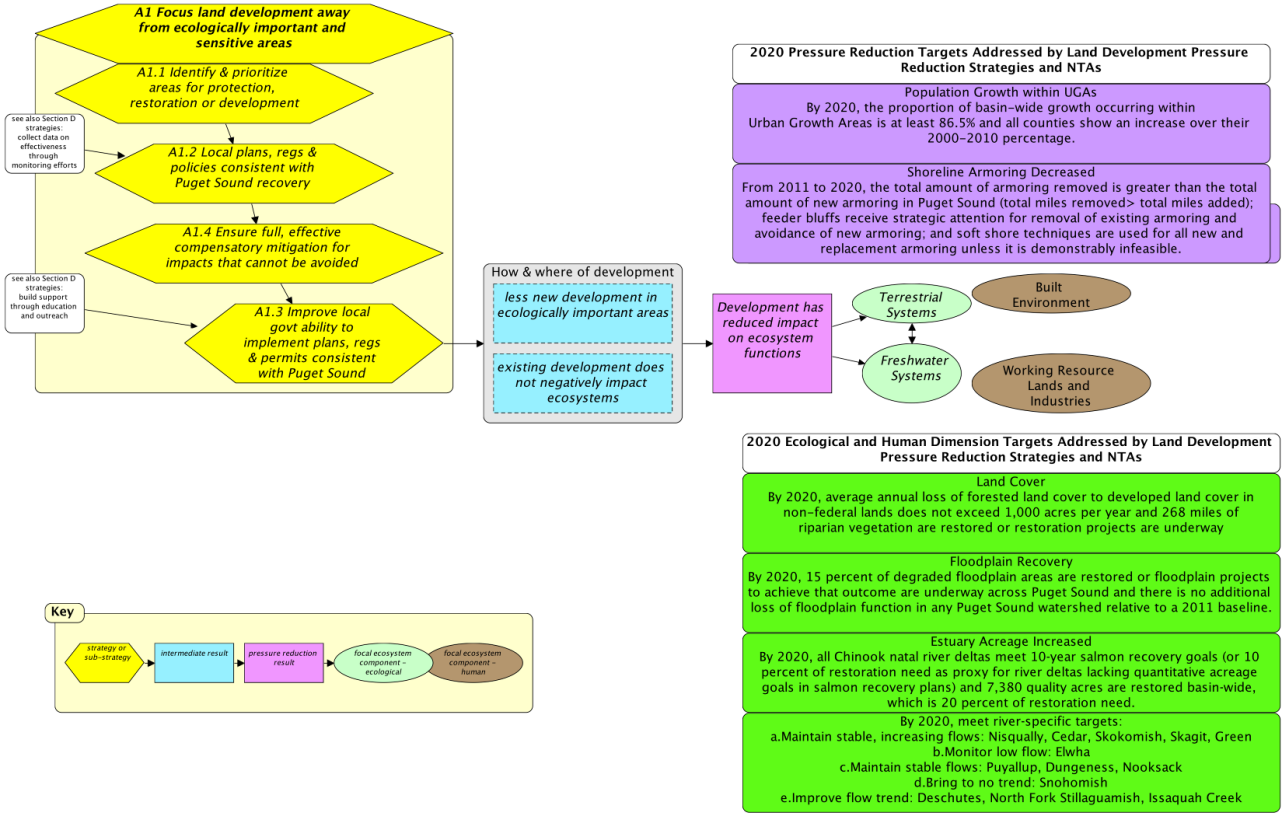
Logic models as "results chains"



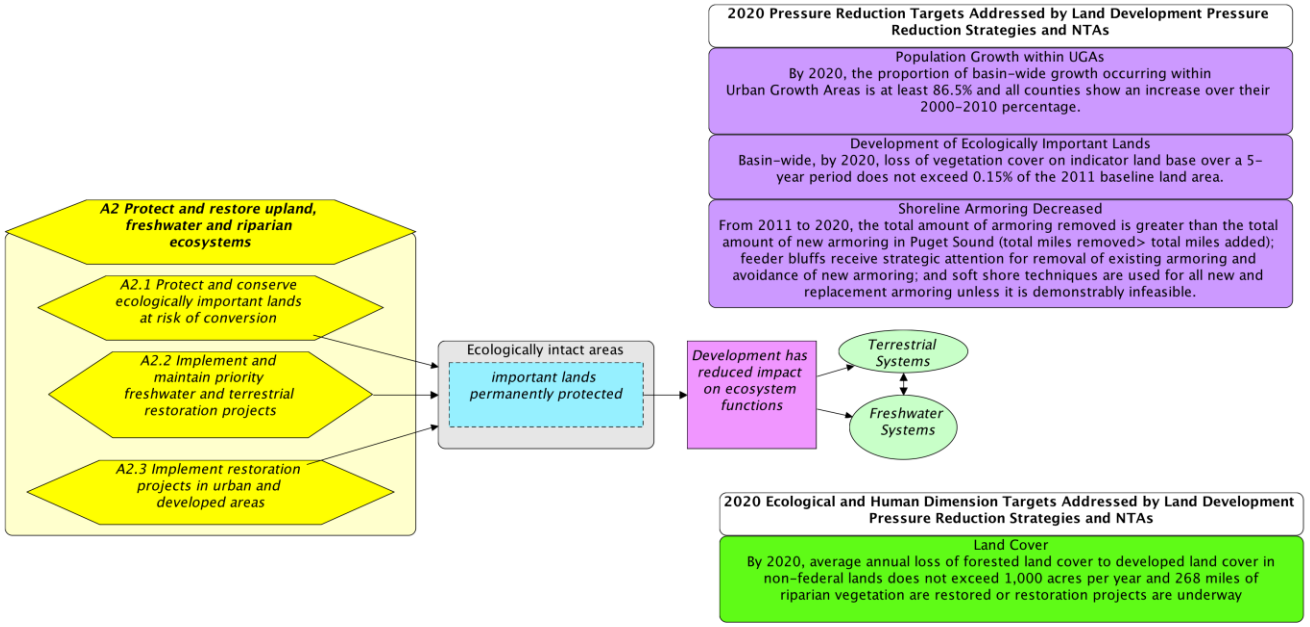
Example results chain for a sub-strategy



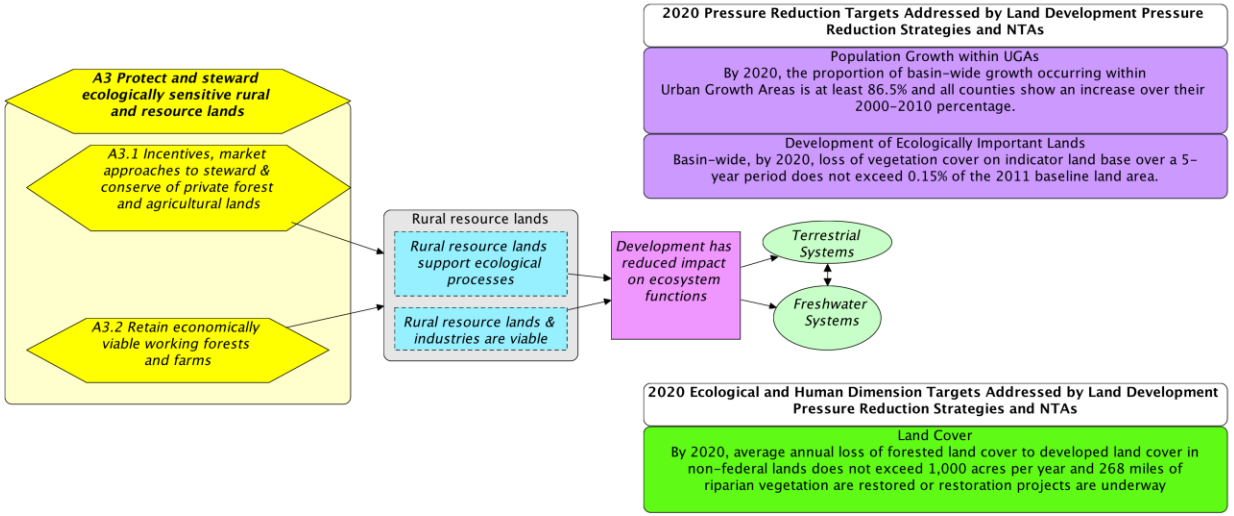
A1. Focus land development away from ecologically important and sensitive areas



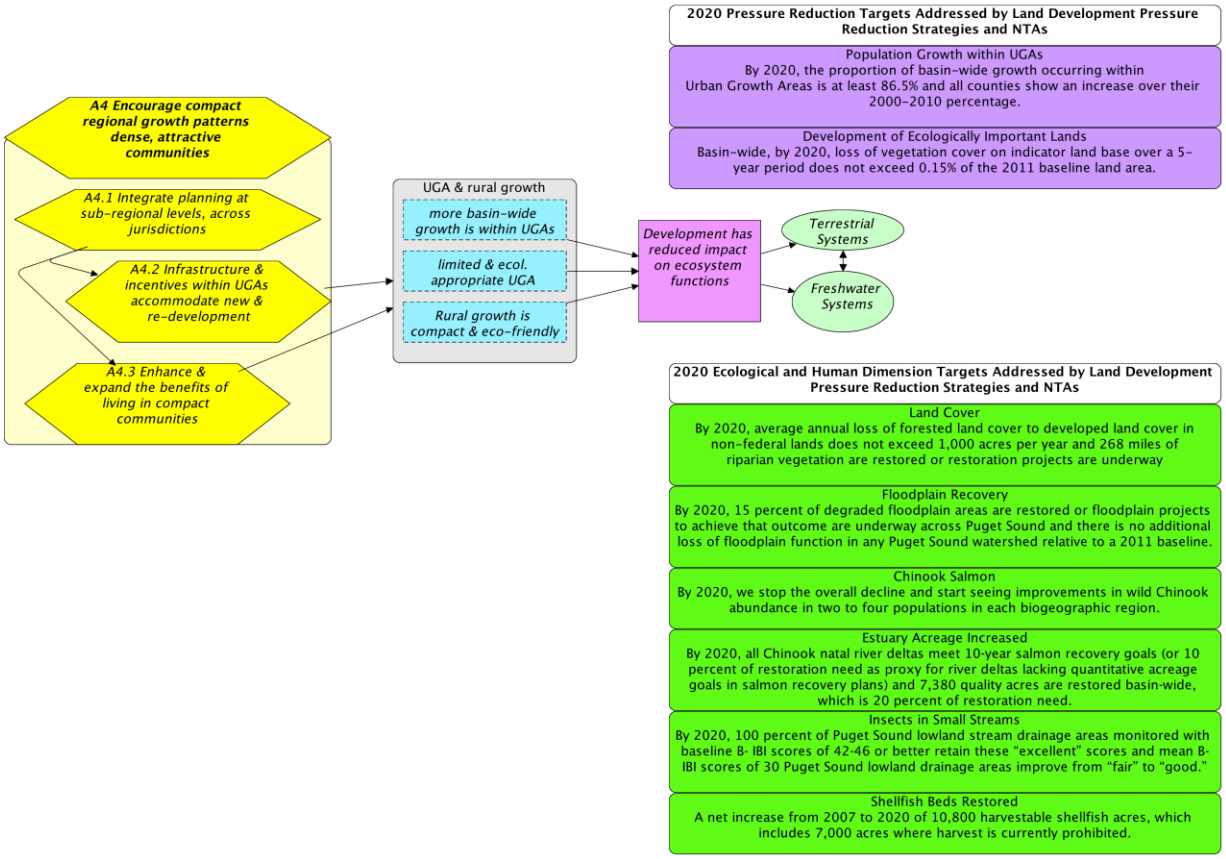
A2. Protect and restore upland, freshwater and riparian ecosystems



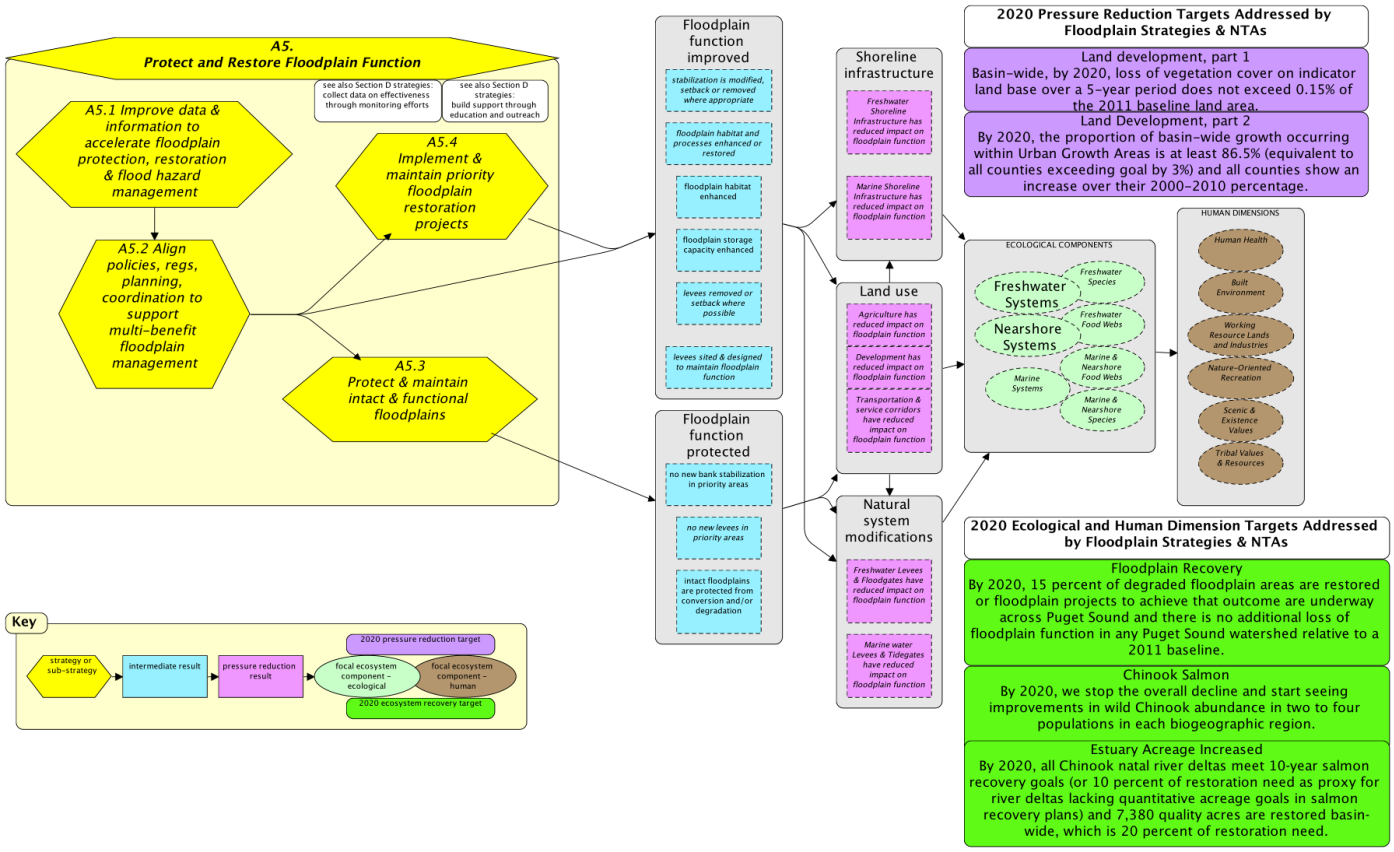
A3. Protect and steward ecologically sensitive rural and resource lands



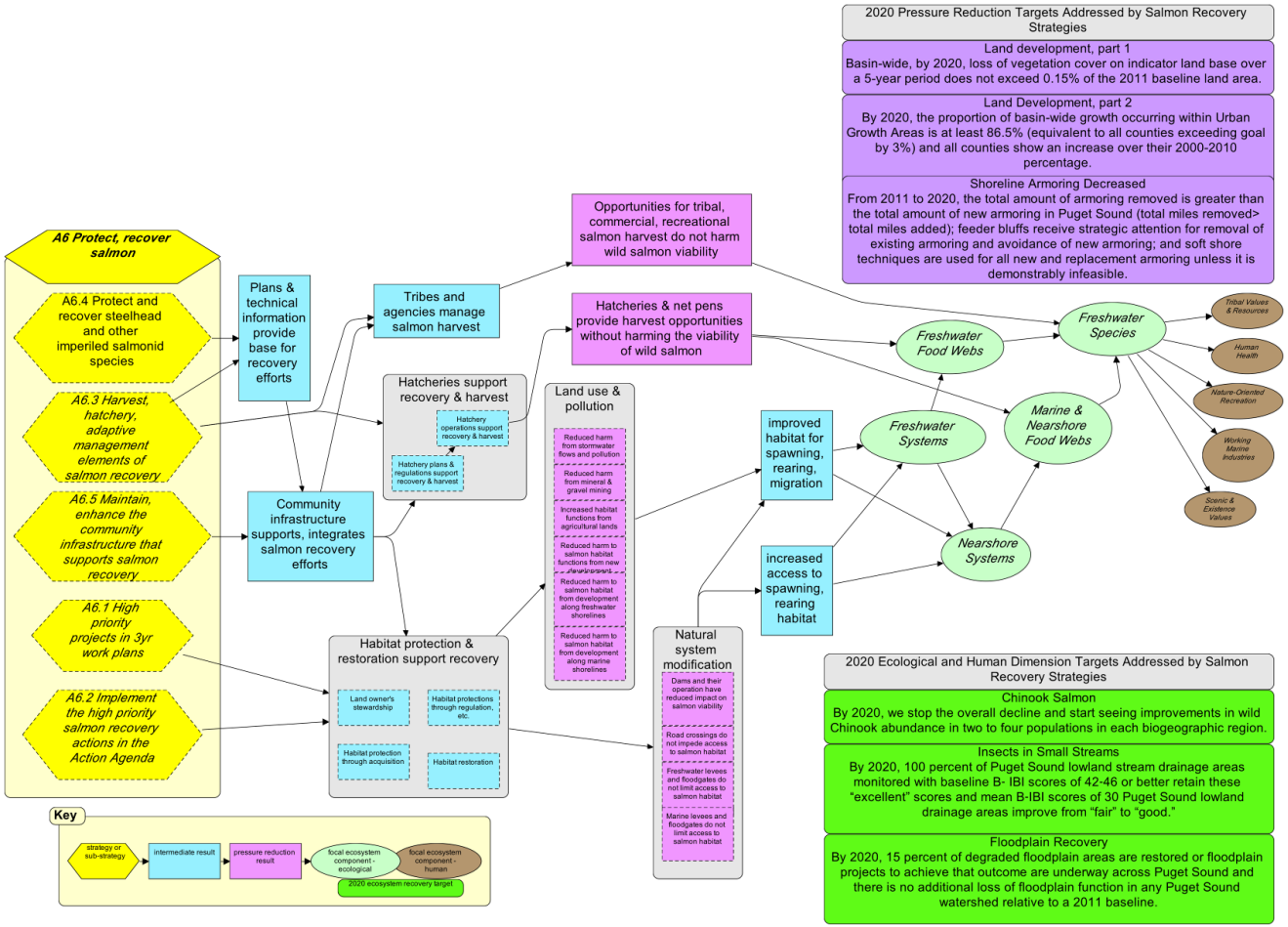
A4. Encourage compact regional growth patterns and create dense, attractive and mixed-use and transit-oriented communities



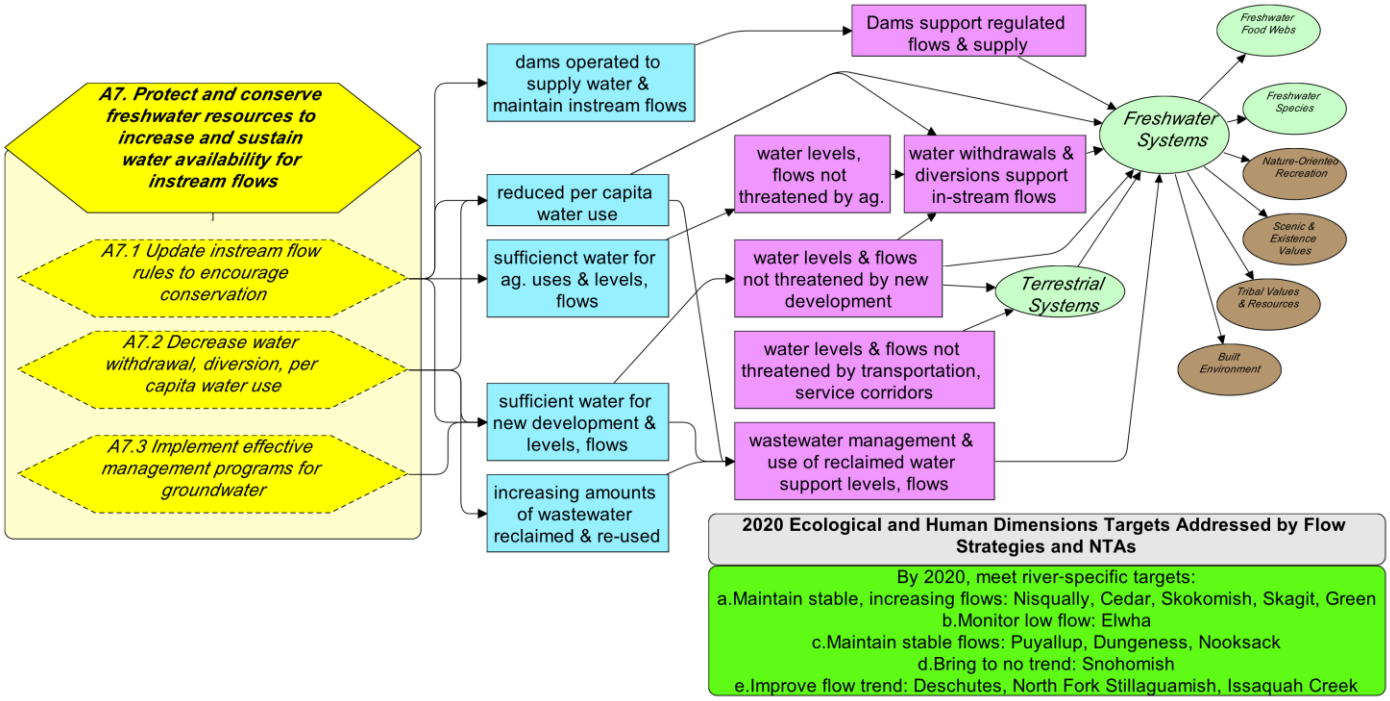
A5. Protect and restore floodplain function



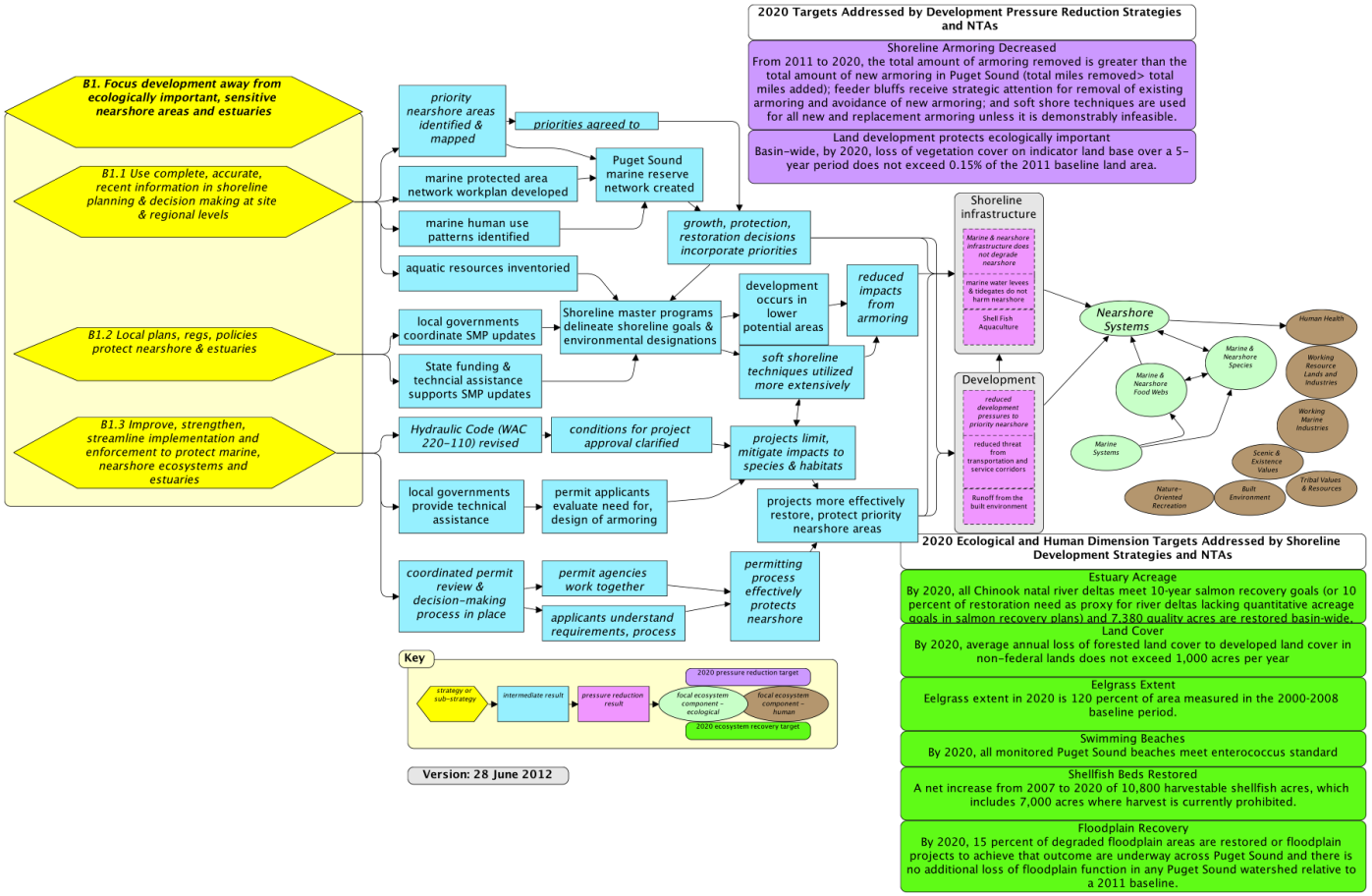
A6. Protect and recover salmon



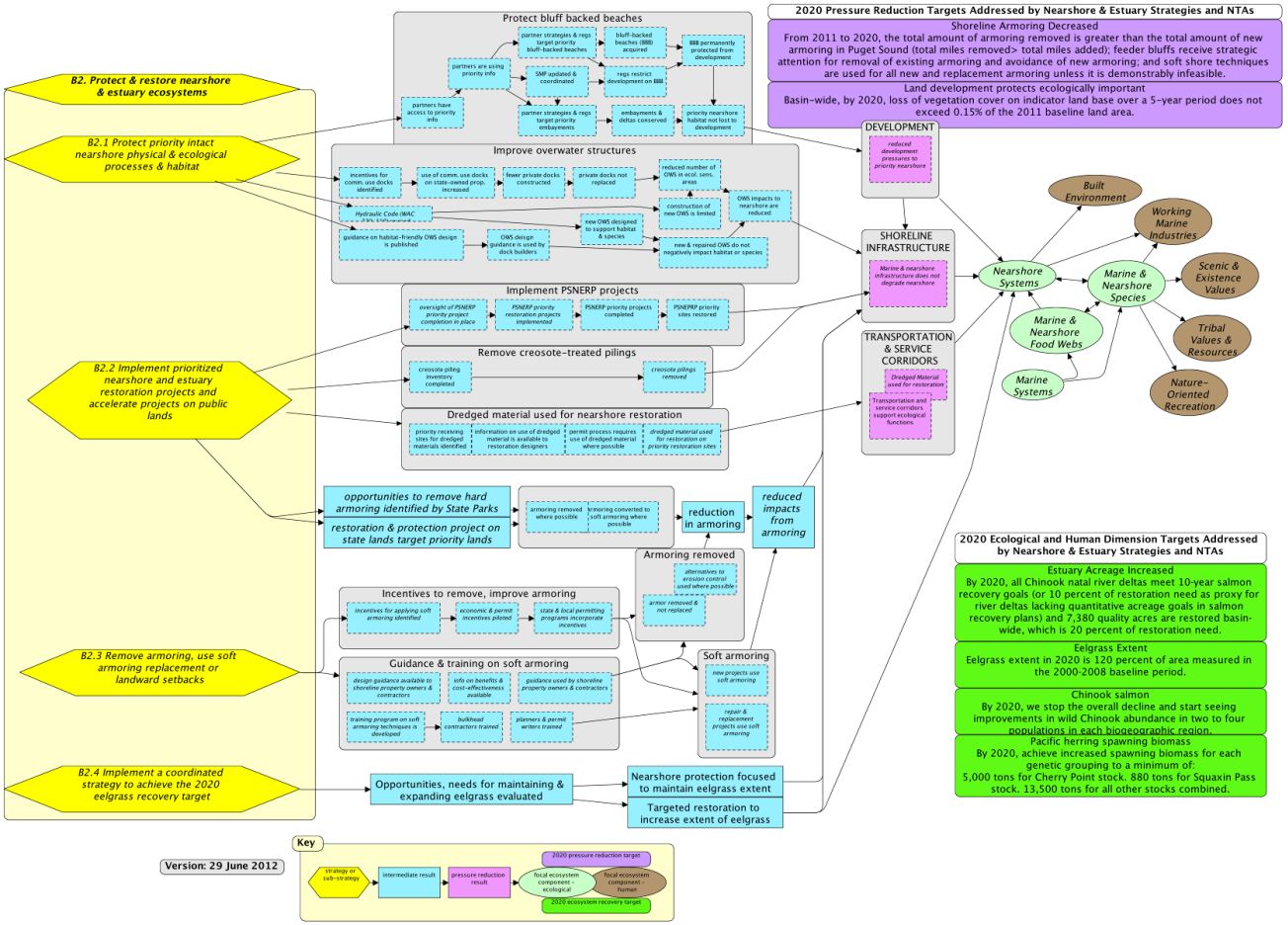
A7. Protect and conserve freshwater resources to increase and sustain water availability for instream flows



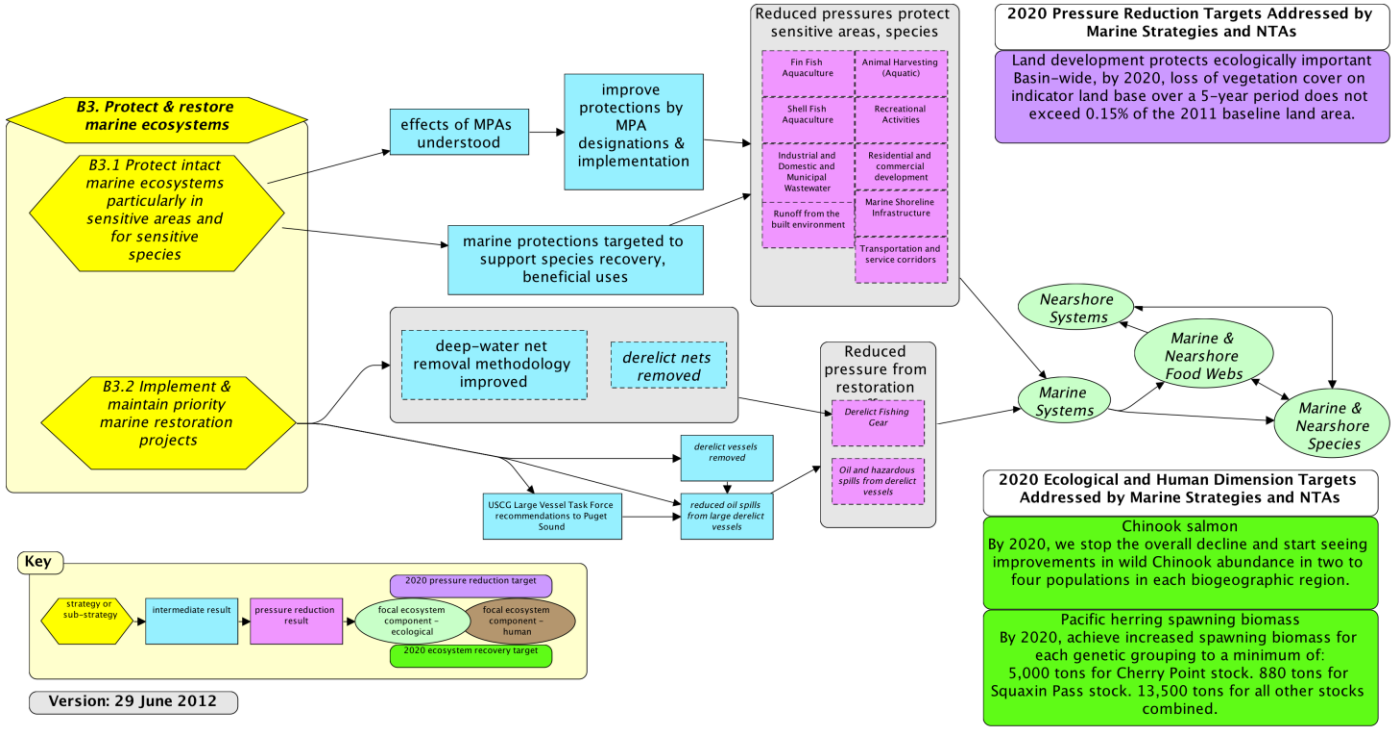
B1. Focus development away from ecologically important and sensitive nearshore areas and estuaries



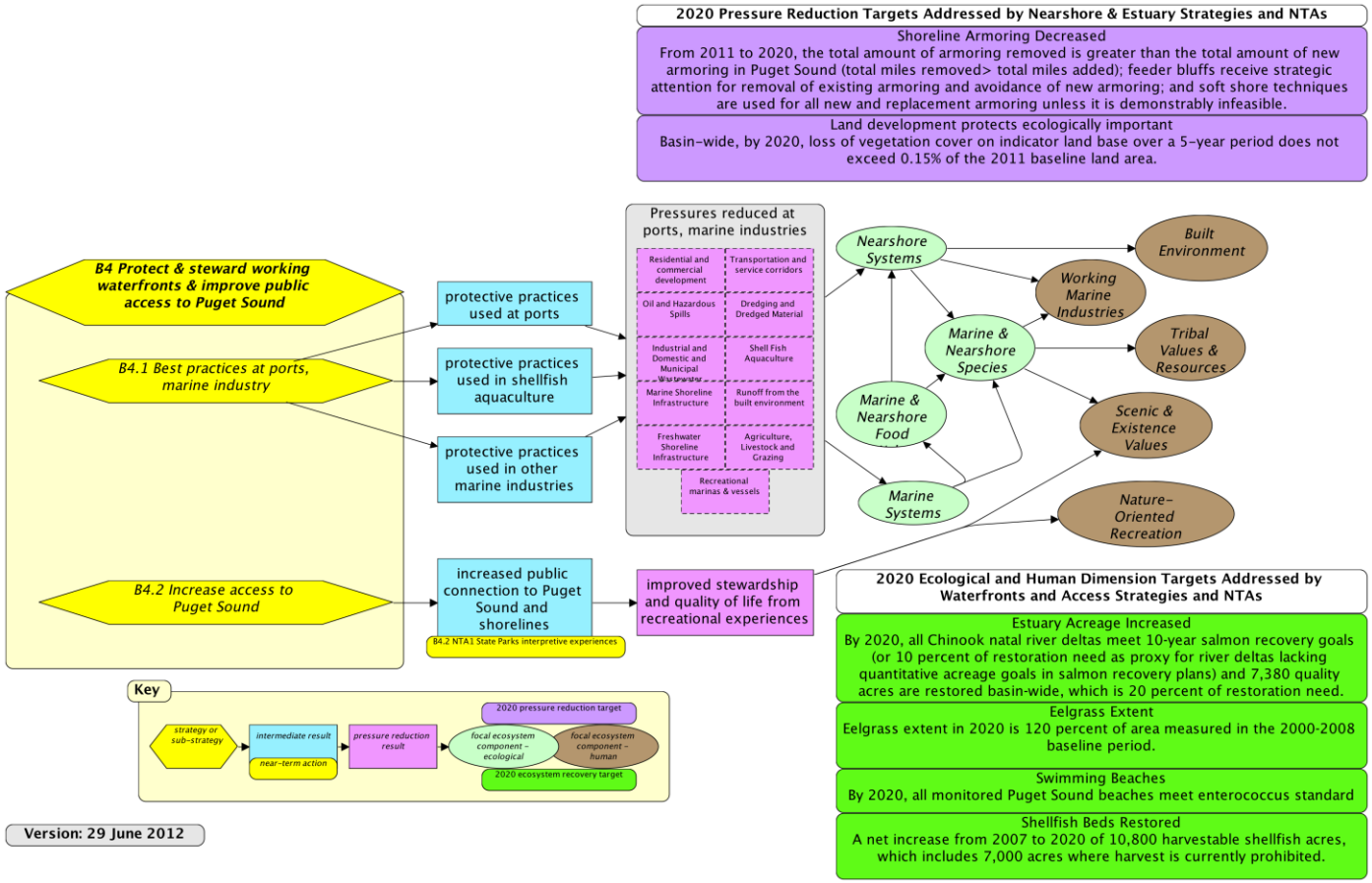
B2. Protect and restore nearshore and estuary ecosystems



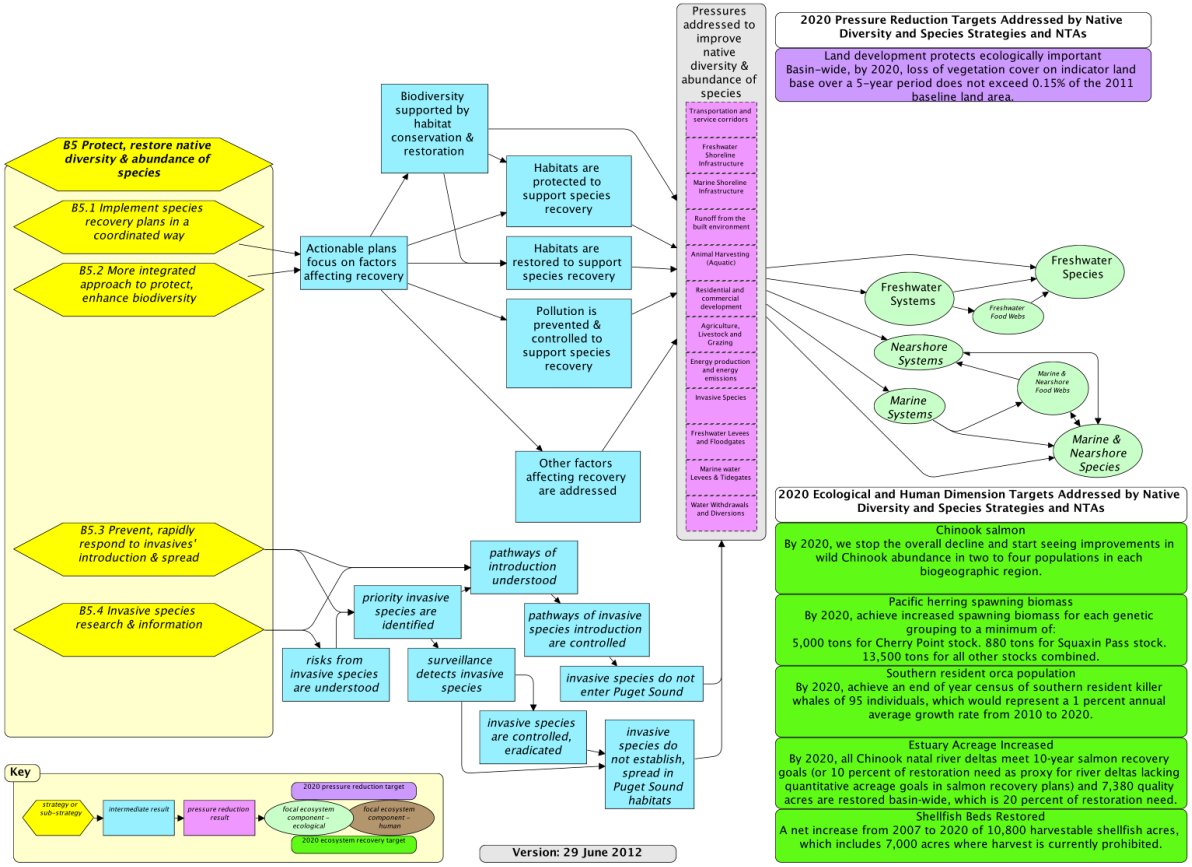
B3. Protect and restore marine ecosystems



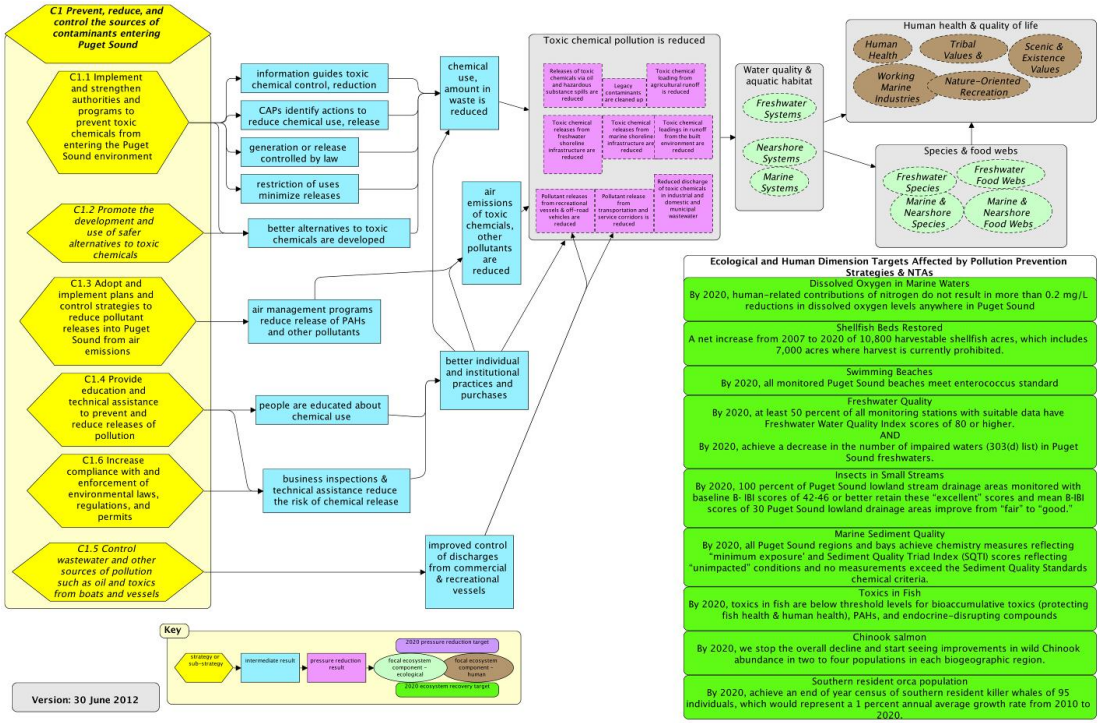
B4. Protect and steward working waterfronts and improve public access to Puget Sound



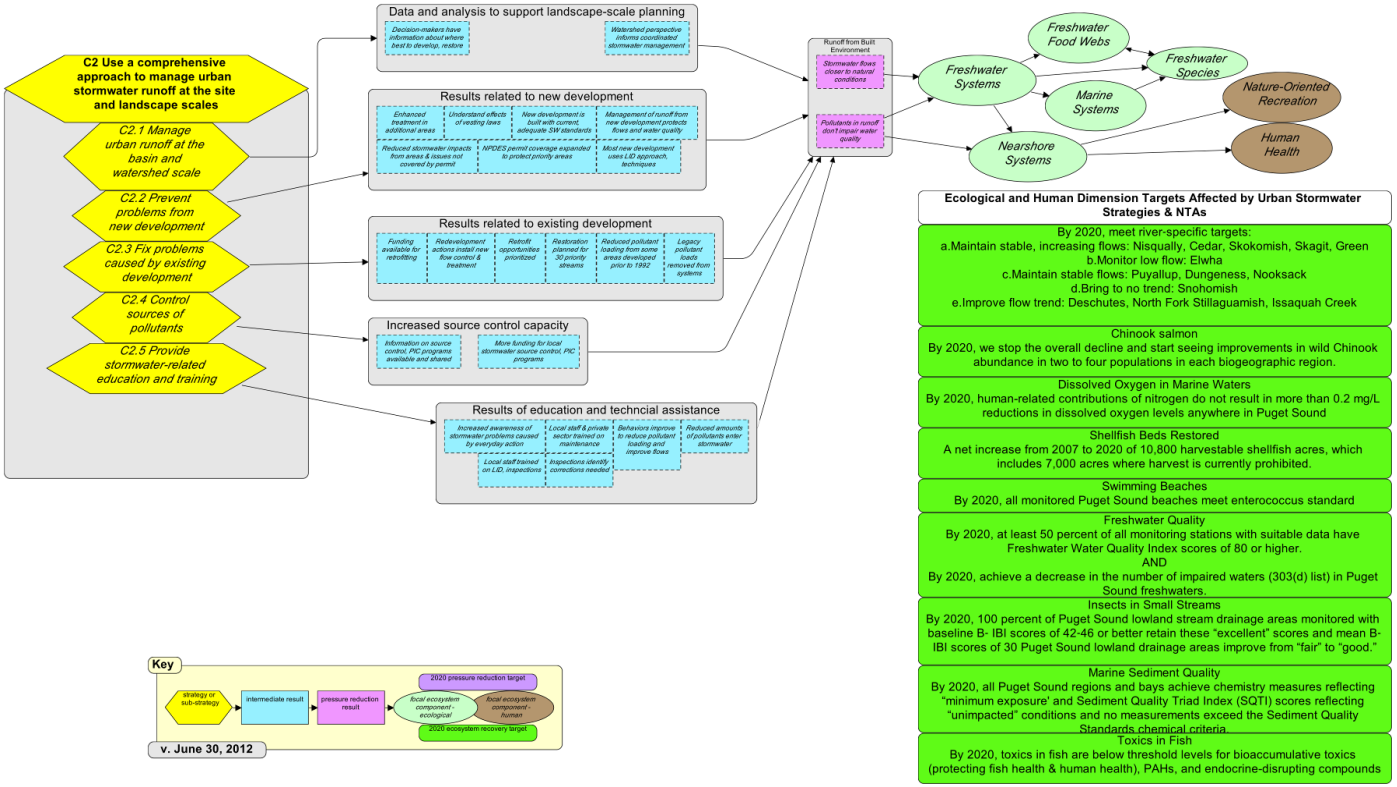
B5. Protect and restore the native diversity and abundance of Puget Sound species



C1. Prevent, reduce, and control the sources of contaminants entering Puget Sound



C2. Use a comprehensive approach to manage urban stormwater runoff at the site and landscape scales



Ecological and Human Dimension Targets Affected by Urban Stormwater Strategies & NTAs

By 2020, meet river-specific targets:
a.Maintain stable, increasing flows: Nisqually, Cedar, Skokomish, Skagit, Green
b.Monitor low flow: Elwha
c.Maintain stable flows: Puyallup, Dungeness, Nooksack
d.Bring to no trend: Snohomish
e.Improve flow trend: Deschutes, North Fork Stillaguamish, Issaquah Creek

Chinook salmon
By 2020, we stop the overall decline and start seeing improvements in wild Chinook abundance in two to four populations in each biogeographic region.

Dissolved Oxygen in Marine Waters
By 2020, human-related contributions of nitrogen do not result in more than 0.2 mg/L reductions in dissolved oxygen levels anywhere in Puget Sound

Shellfish Beds Restored
A net increase from 2007 to 2020 of 10,800 harvestable shellfish acres, which includes 7,000 acres where harvest is currently prohibited.

Swimming Beaches
By 2020, all monitored Puget Sound beaches meet enterococcus standard

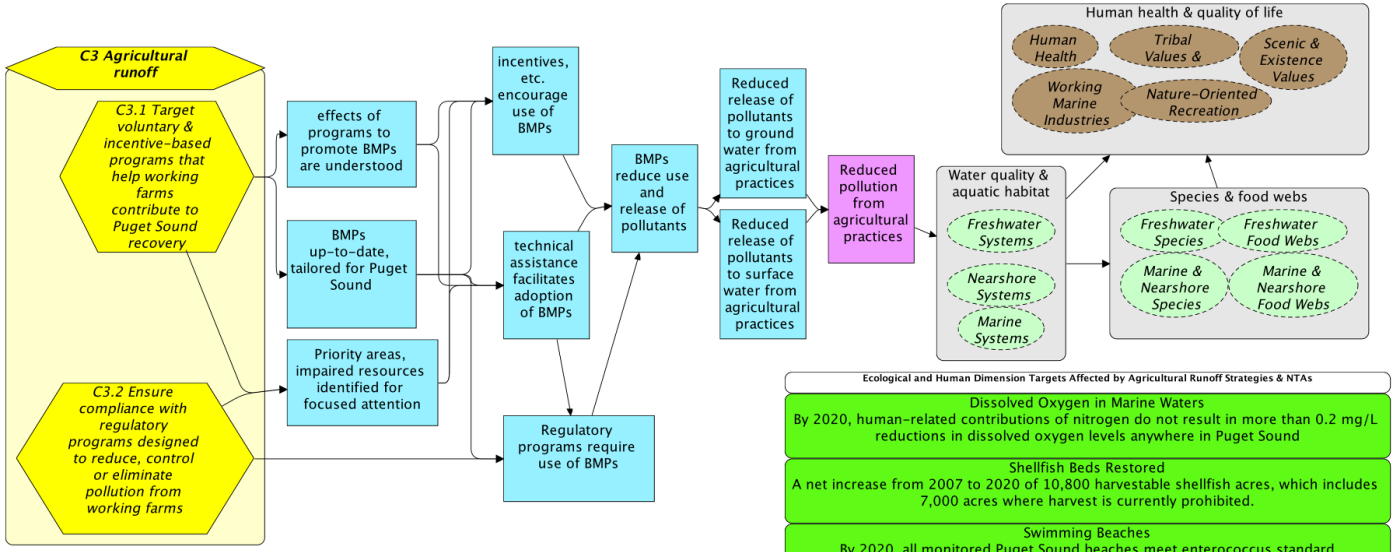
Freshwater Quality
By 2020, at least 50 percent of all monitoring stations with suitable data have Freshwater Water Quality Index scores of 80 or higher.
AND
By 2020, achieve a decrease in the number of impaired waters (303(d) list) in Puget Sound freshwaters.

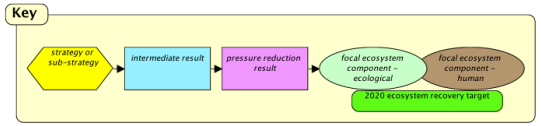
Insects in Small Streams
By 2020, 100 percent of Puget Sound lowland stream drainage areas monitored with baseline B- IBI scores of 42-46 or better retain these "excellent" scores and mean B-IBI scores of 30 Puget Sound lowland drainage areas improve from "fair" to "good."

Marine Sediment Quality
By 2020, all Puget Sound regions and bays achieve chemistry measures reflecting "minimum exposure' and Sediment Quality Triad Index (SQTI) scores reflecting "unimpacted" conditions and no measurements exceed the Sediment Quality Standards chemical criteria.

Toxics in Fish
By 2020, toxics in fish are below threshold levels for bioaccumulative toxics (protecting fish health & human health), PAHs, and endocrine-disrupting compounds

C3. Prevent, reduce, and control agricultural runoff





Version: 30 June 2012

Ecological and Human Dimension Targets Affected by Agricultural Runoff Strategies & NTAs

Dissolved Oxygen in Marine Waters
By 2020, human-related contributions of nitrogen do not result in more than 0.2 mg/L reductions in dissolved oxygen levels anywhere in Puget Sound

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A net increase from 2007 to 2020 of 10,800 harvestable shellfish acres, which includes 7,000 acres where harvest is currently prohibited.

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By 2020, 100 percent of Puget Sound lowland stream drainage areas monitored with baseline B- IBI scores of 42-46 or better retain these "excellent" scores and mean B-IBI scores of 30 Puget Sound lowland drainage areas improve from "fair" to "good."

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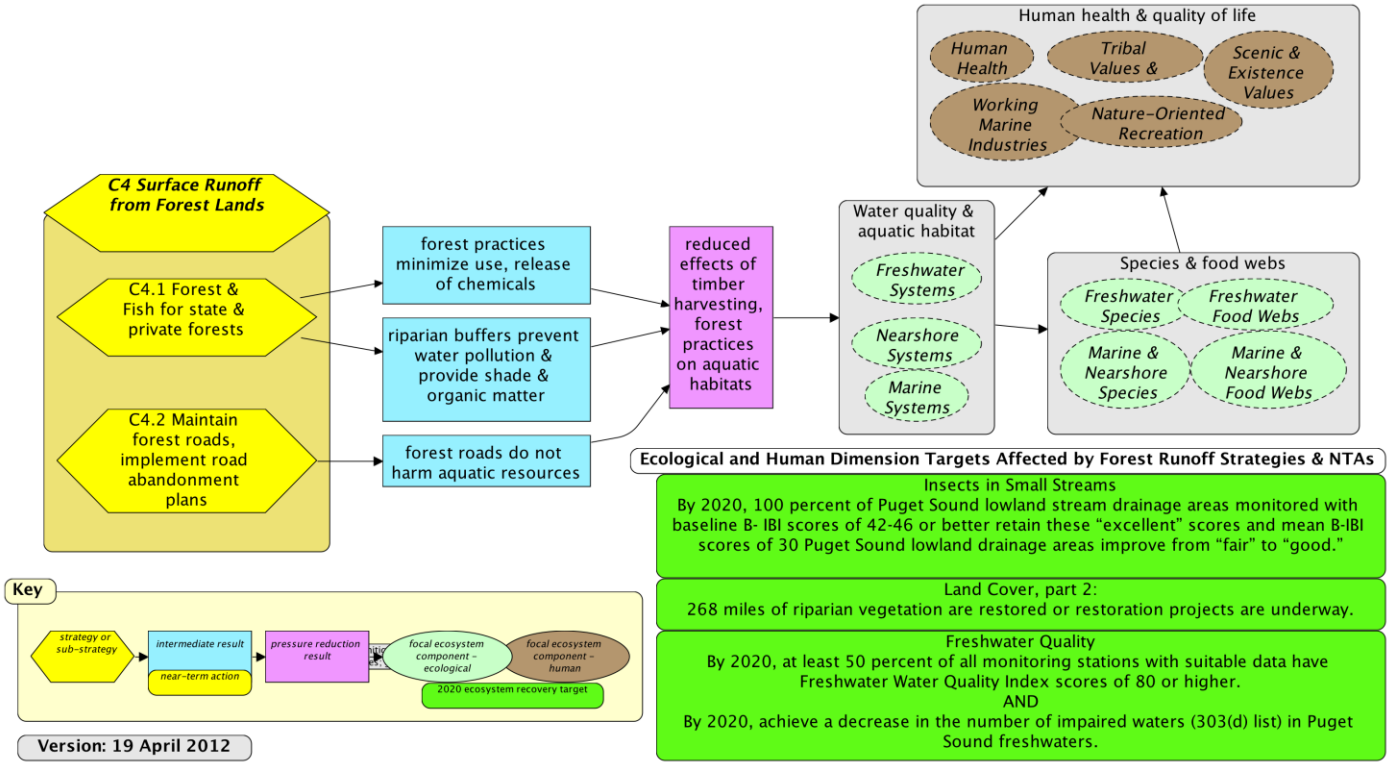
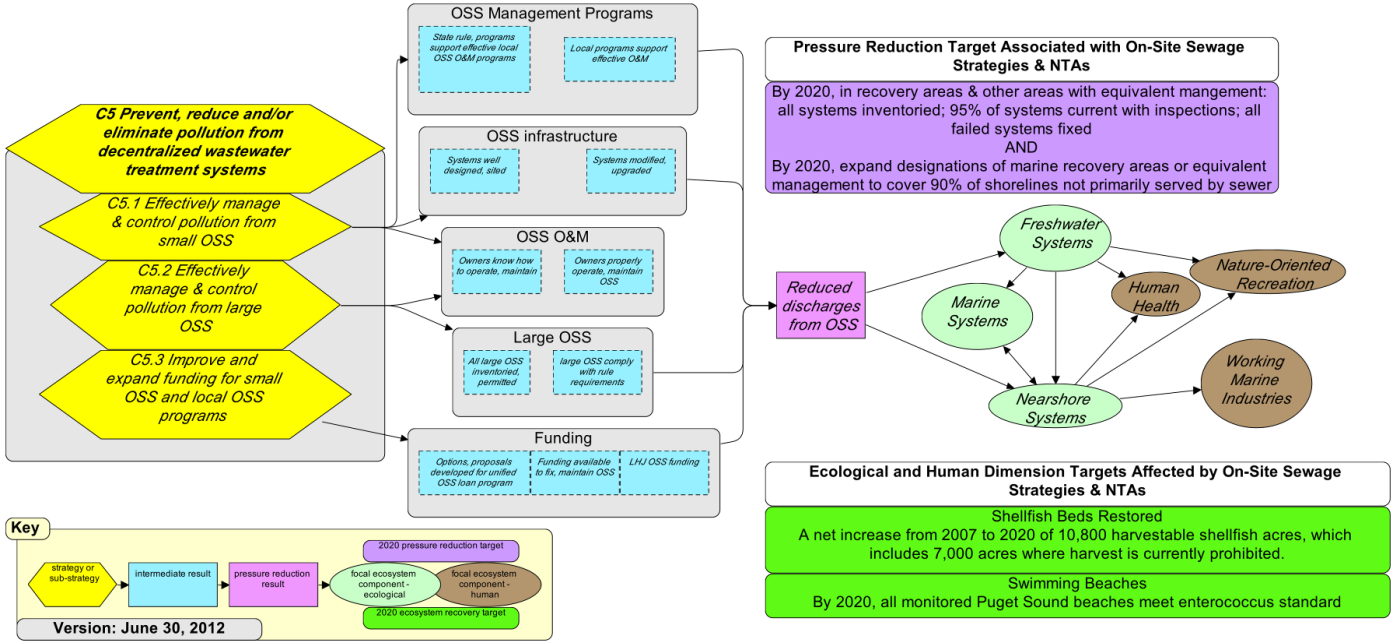
By 2020, all Puget Sound regions and bays achieve chemistry measures reflecting "minimum exposure' and Sediment Quality Triad Index (SQTI) scores reflecting "unimpacted" conditions and no measurements exceed the Sediment Quality Standards chemical criteria.

Toxics in Fish
By 2020, toxics in fish are below threshold levels for bioaccumulative toxics (protecting fish health & human health), PAHs, and endocrine-disrupting compounds

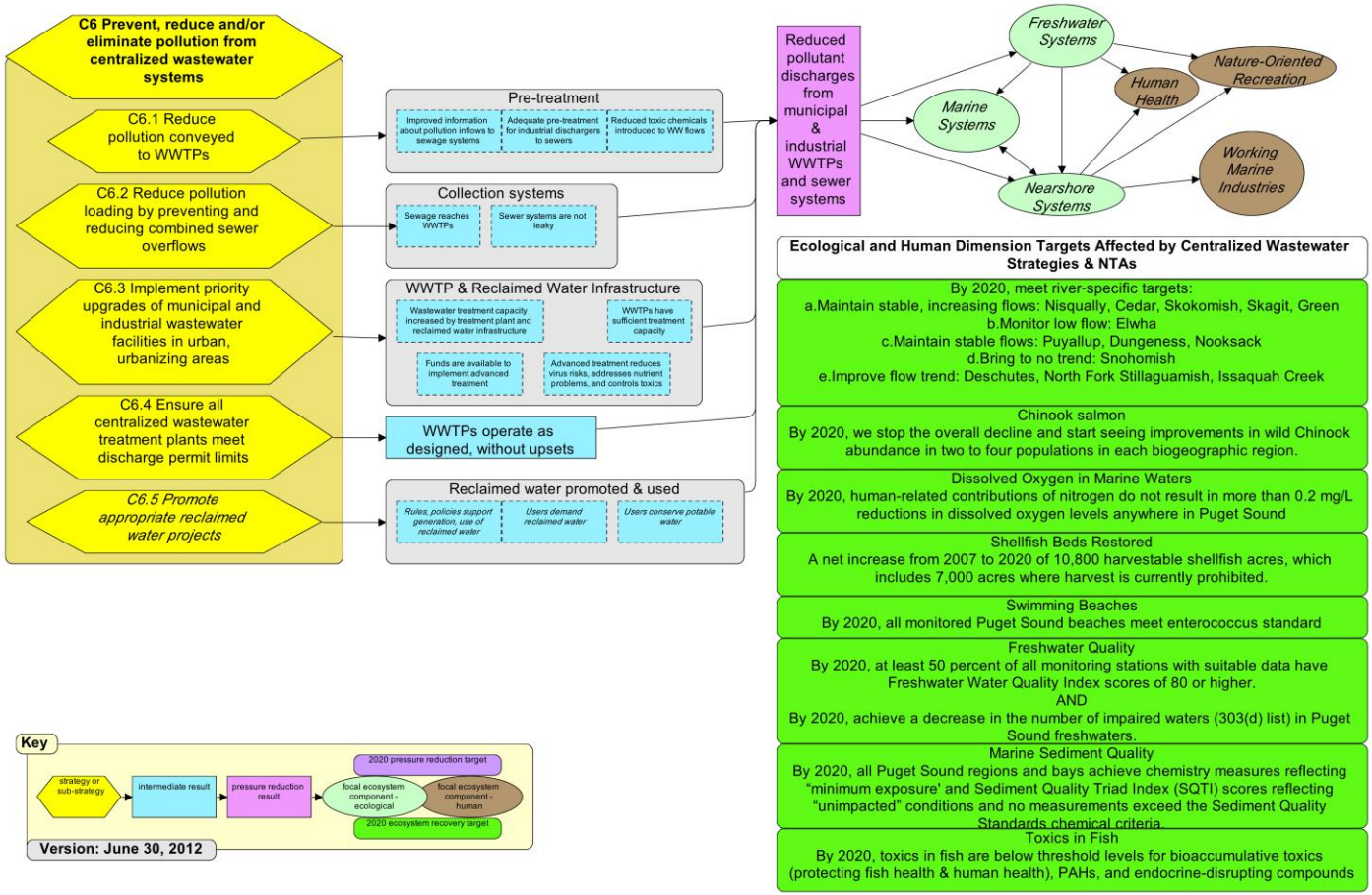
C4. Prevent, reduce, and control surface runoff from forest lands



C5. Prevent, reduce and/or eliminate pollution from decentralized wastewater treatment systems



C6. Prevent, reduce and/or eliminate pollution from centralized wastewater systems



Ecological and Human Dimension Targets Affected by Centralized Wastewater Strategies & NTAs

By 2020, meet river-specific targets:
a.Maintain stable, increasing flows: Nisqually, Cedar, Skokomish, Skagit, Green
b.Monitor low flow: Elwha
c.Maintain stable flows: Puyallup, Dungeness, Nooksack
d.Bring to no trend: Snohomish
e.Improve flow trend: Deschutes, North Fork Stillaguamish, Issaquah Creek

Chinook salmon
By 2020, we stop the overall decline and start seeing improvements in wild Chinook abundance in two to four populations in each biogeographic region.

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By 2020, human-related contributions of nitrogen do not result in more than 0.2 mg/L reductions in dissolved oxygen levels anywhere in Puget Sound

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A net increase from 2007 to 2020 of 10,800 harvestable shellfish acres, which includes 7,000 acres where harvest is currently prohibited.

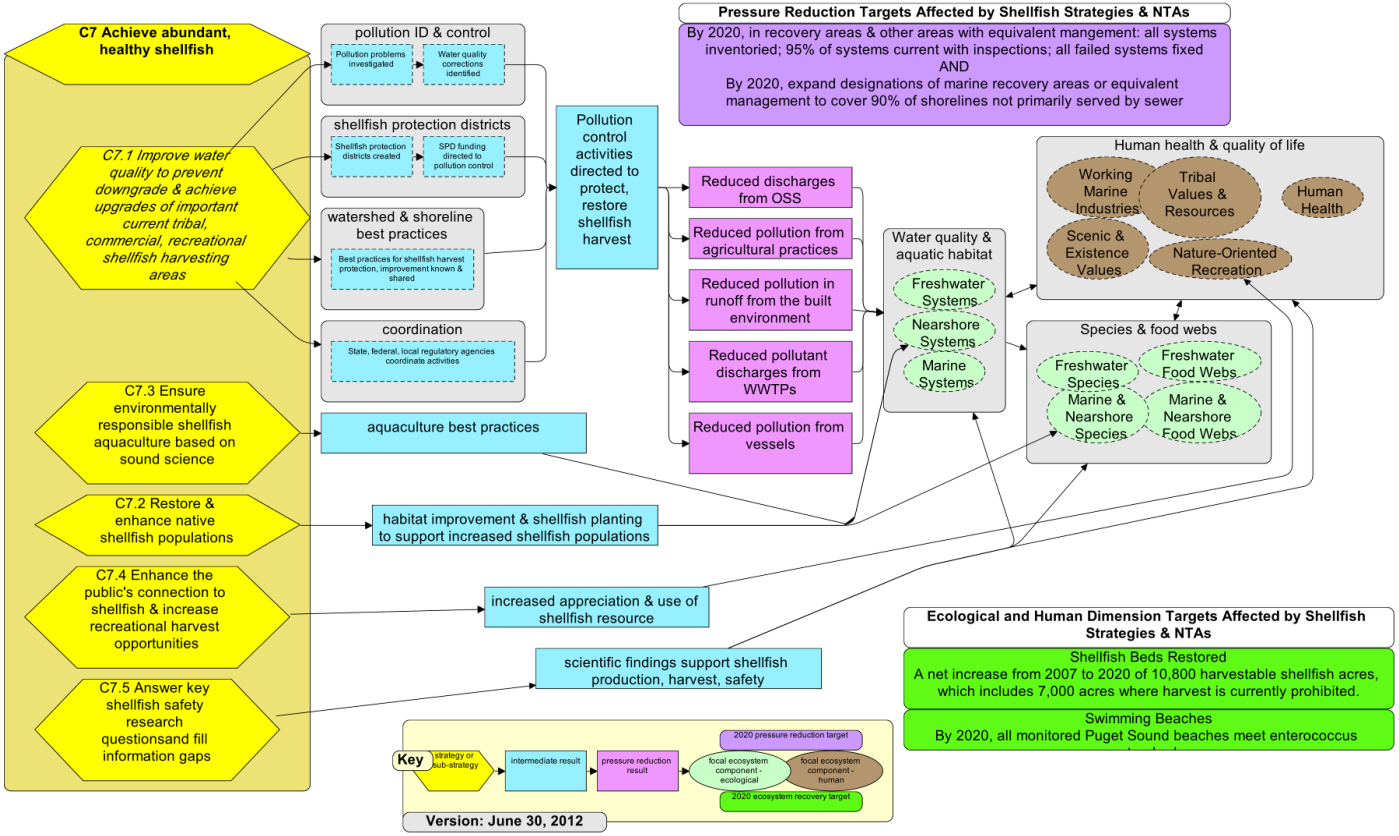
Swimming Beaches
By 2020, all monitored Puget Sound beaches meet enterococcus standard

Freshwater Quality
By 2020, at least 50 percent of all monitoring stations with suitable data have Freshwater Water Quality Index scores of 80 or higher.
AND
By 2020, achieve a decrease in the number of impaired waters (303(d) list) in Puget Sound freshwaters.

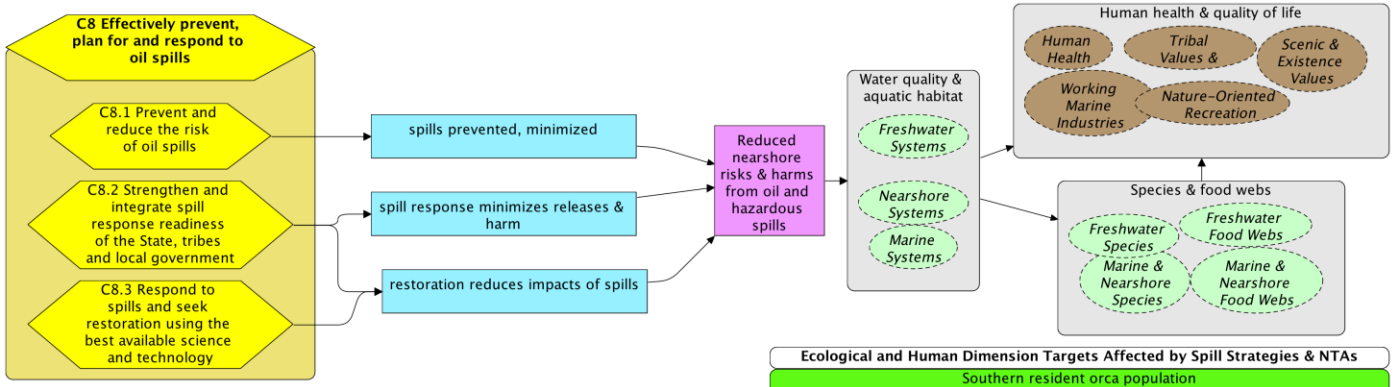
Marine Sediment Quality
By 2020, all Puget Sound regions and bays achieve chemistry measures reflecting "minimum exposure' and Sediment Quality Triad Index (SQTI) scores reflecting "unimpacted" conditions and no measurements exceed the Sediment Quality Standards chemical criteria.

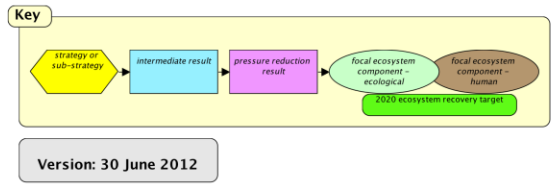
Toxics in Fish
By 2020, toxics in fish are below threshold levels for bioaccumulative toxics (protecting fish health & human health), PAHs, and endocrine-disrupting compounds

C7. Ensure abundant, healthy shellfish for ecosystem health and for commercial, subsistence, and recreational harvest consistent with ecosystem protection



C8. Effectively prevent, plan for and respond to oil spills





Ecological and Human Dimension Targets Affected by Spill Strategies & NTAs

Southern resident orca population
By 2020, achieve an end of year census of southern resident killer whales of 95 individuals, which would represent a 1 percent annual average growth rate from 2010 to 2020.

Chinook salmon
By 2020, we stop the overall decline and start seeing improvements in wild Chinook abundance in two to four populations in each biogeographic region.

Pacific Herring
By 2020, achieve increased spawning biomass for each genetic grouping to a minimum of:
5,000 tons for Cherry Point stock. 880 tons for Squaxin Pass stock. 13,500 tons for all other stocks combined.

Eelgrass
Eelgrass extent in 2020 is 120 percent of area measured in the 2000-2008 baseline period.

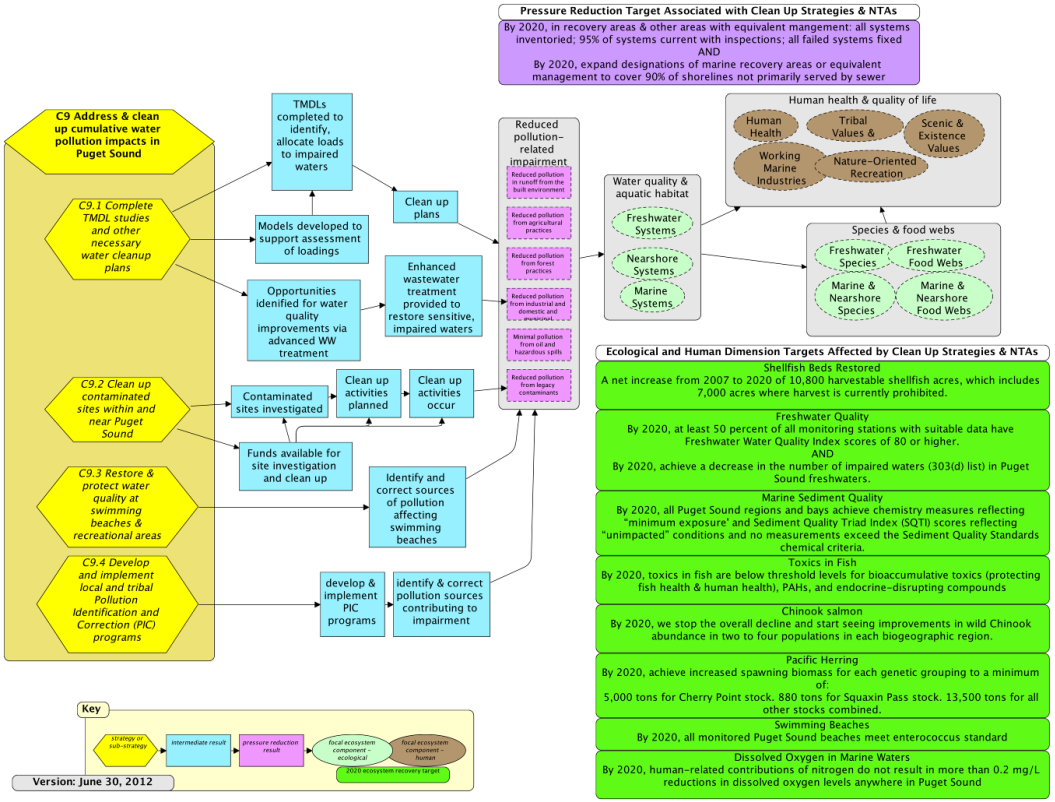
Marine Sediment Quality
By 2020, all Puget Sound regions and bays achieve chemistry measures reflecting "minimum exposure' and Sediment Quality Triad Index (SQTI) scores reflecting "unimpacted" conditions and no measurements exceed the Sediment Quality Standards chemical criteria.

Toxics in Fish
By 2020, toxics in fish are below threshold levels for bioaccumulative toxics (protecting fish health & human health), PAHs, and endocrine-disrupting compounds

Shellfish Beds Restored
A net increase from 2007 to 2020 of 10,800 harvestable shellfish acres, which includes 7,000 acres where harvest is currently prohibited.

Swimming Beaches
By 2020, all monitored Puget Sound beaches meet enterococcus standard

C9. Address and clean up cumulative water pollution impacts in Puget Sound



Puget Sound Partnership – Stewardship Program Theory of Change Outcome Map