

Can ASTM Standard Methods be Applied to Managing Cherry Point, WA and the Marine Reserve?

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ASTM E2590 - 08

How I got interested in HACCP

I wanted to see if you might be interested in bringing your risk management experience to the session. Plus, a cup of coffee, I mean, it just don't get no better.

----Greg Linder



HACCP Applied to Managing a Marine Reserve



Designation: E 2590 – 08

**Standard Guide for
Conducting Hazard Analysis-Critical Control Point (HACCP)
Evaluations¹**

Process originally developed to ensure the safety of astronaut food during the Apollo Program

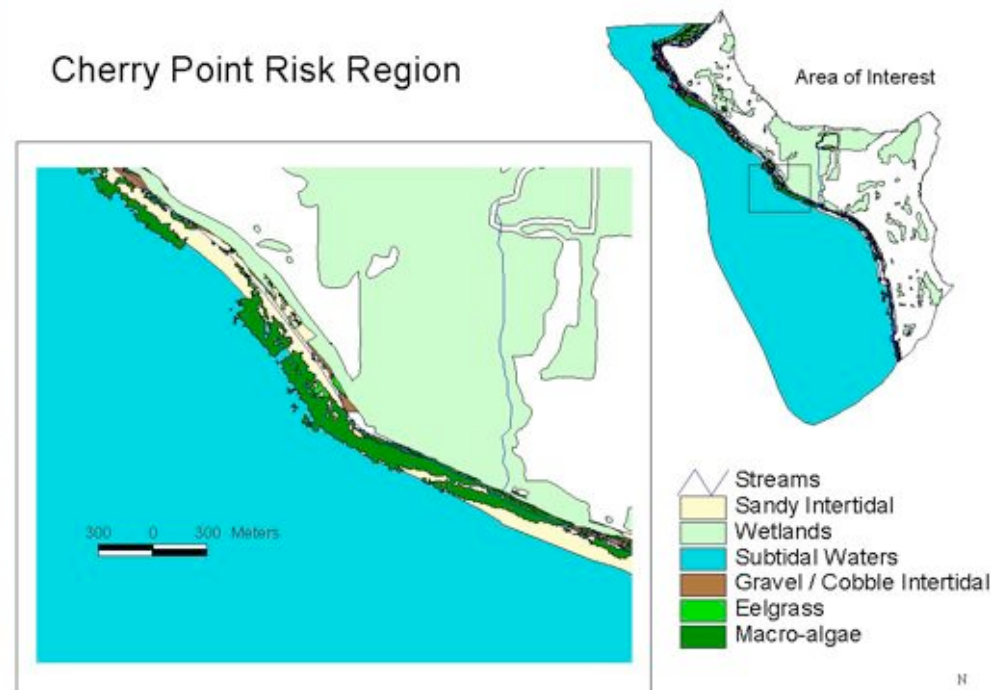


Cherry Point Management Area



Figure 2 Cherry Point showing Private Tidelands, DNR Tidelands, and DNR managed Inlandlands

Industrial areas, shorelines, variety of commercial, recreational and habitat uses.

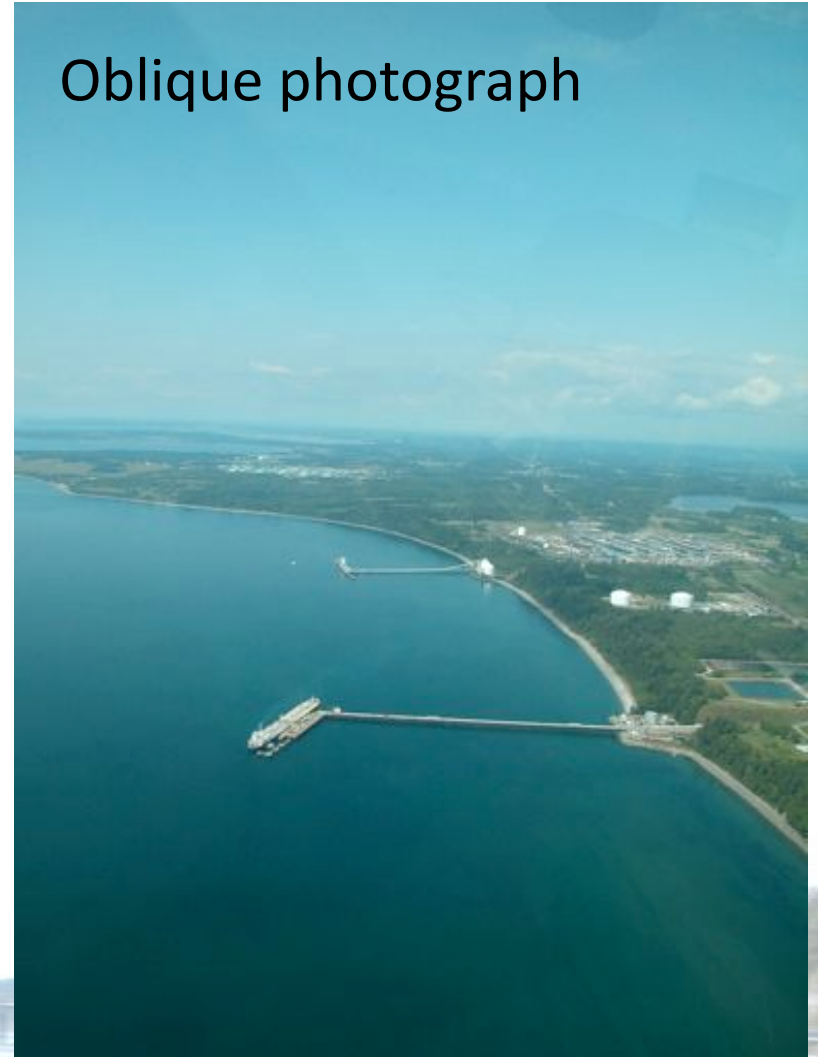


Cherry Point Management Area Environment

Beach



Oblique photograph



Cherry Point Management Area Environment

Part of the
North Puget
Sound Region



Can HACCP be applied to Cherry Point?

Let us look at the scorecard on what has already been accomplished.

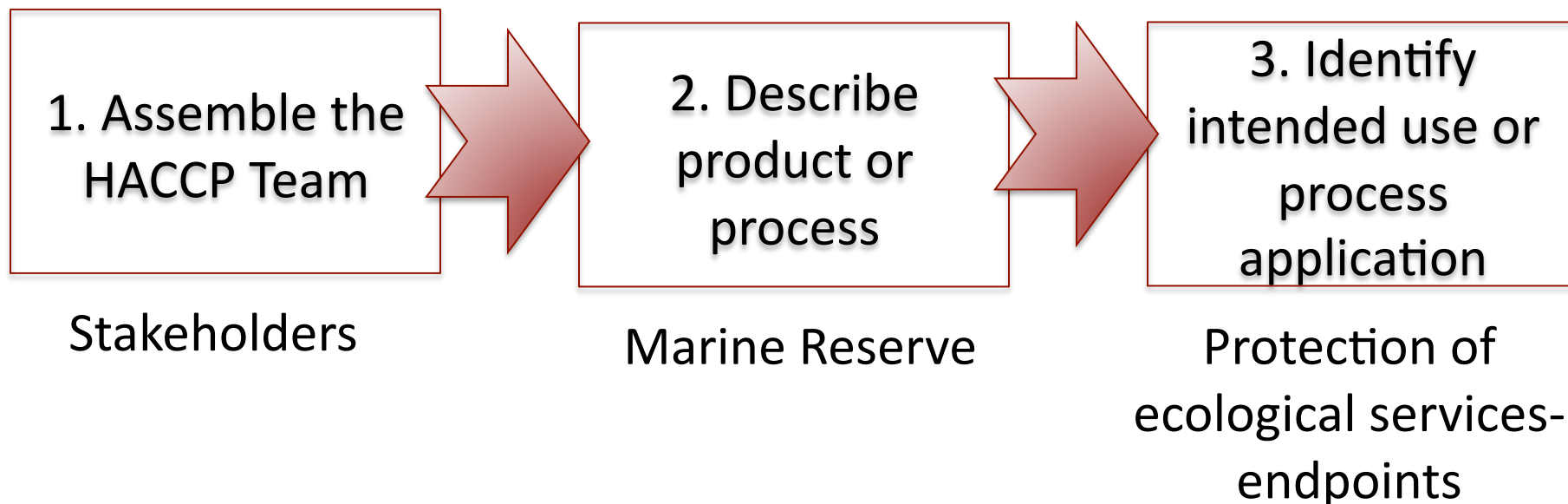
Looks at the first 5 steps of the HACCP Process.

Applicability to managing a systems with a number of pathways, management goals and managers.

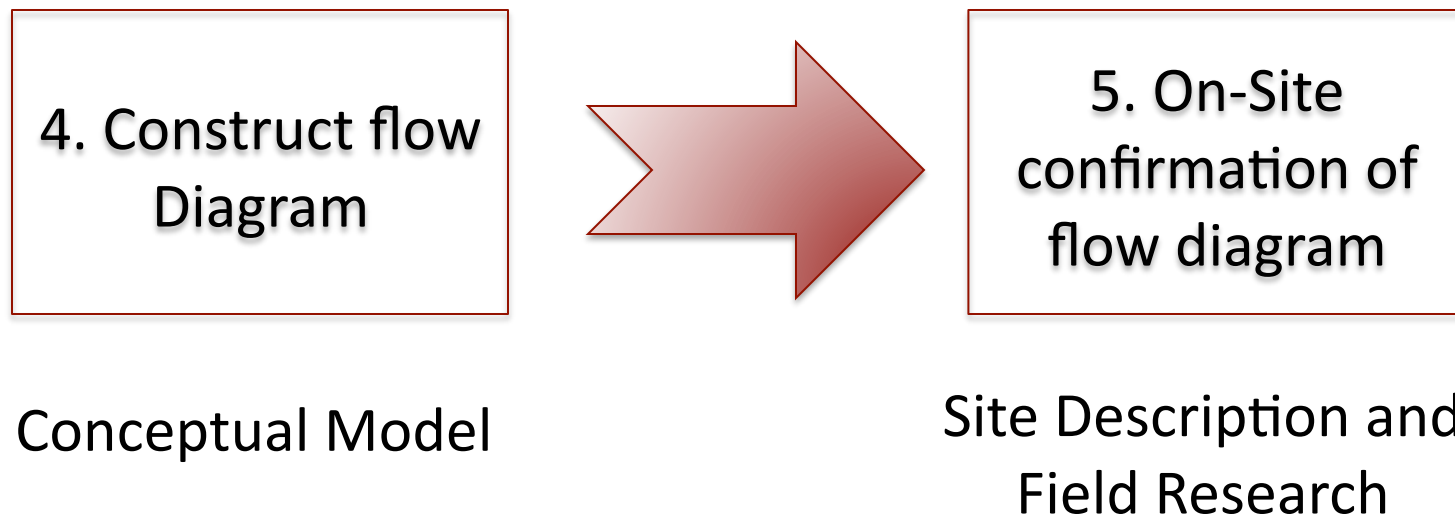
The Answer is Yes...many of the elements already exist.



HACCP first five steps and Risk Assessment Correspondences



HACCP first five steps and Risk Assessment Correspondences



Stakeholders and Managers- July 2007-October 2008

Industry

Alcoa
British Petroleum
Conoco Phillips
Entrix
Pacific International Terminals, Inc

State and Local Agencies

WA Department of Natural Resources, WA Department of Fish and Wildlife, Western Wash University Whatcom County, Whatcom Land Trust, Whatcom MRC

NGOs

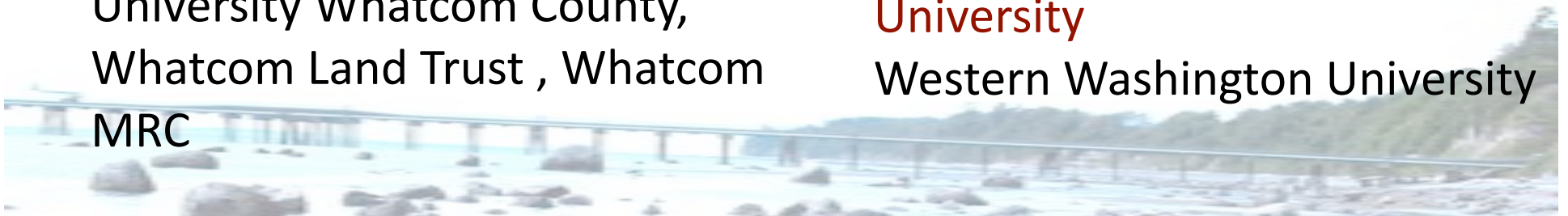
Audubon
Beachwatchers
Friends of the San Juans
People for Puget Sound
Re-sources
Wave Consulting

Native American Tribes

Lummi Tribe,
Nooksack Tribe

University

Western Washington University



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Native American Tribes

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Nooksack Tribe

State and Local Agencies

WA Department of Natural

Resources , WA Department of

*Fish and Wildlife, **WA Department***

of Ecology

Marine Reserve Designation

Originally to protect Cherry Point Pacific Herring

- Decline in the 1980s
- Still at low levels
- Symptoms now identified throughout Puget Sound
- All eggs one basket



Cherry Point Management Area Goals

The goals for the proposed Cherry Point Aquatic Reserve include:

Protect and improve the aquatic ecosystem of the Cherry Point reach while supporting the economic viability of the Cherry Point Heavy Industrial Area.

No net loss of biological aquatic resource values at Cherry Point.

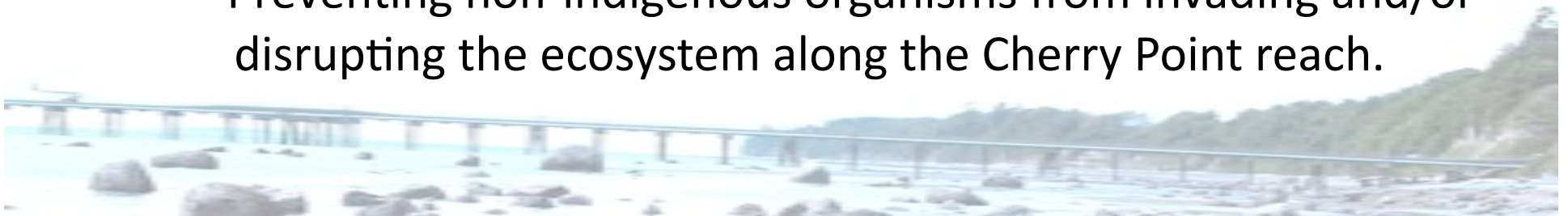


Represented Ecological resources identified for the Cherry Point Planning Area-1

Desired natural resource outcomes

Naturally occurring habitats and the species associated with them are conserved within the aquatic reserve by:

- Protecting the spawning habitat and movement corridors for spawning Cherry Point Pacific herring stocks;
- Sustaining the documented extent, species composition, and health of native submerged aquatic vegetation; and
- Preventing non-indigenous organisms from invading and/or disrupting the ecosystem along the Cherry Point reach.



Represented Ecological resources identified for the Cherry Point Planning Area-2

- High energy (storm, surf and wind exposure) nearshore environment
- Forage fish spawning habitat (including surf smelt and Pacific herring)
- Macro algae including eelgrass beds and kelp beds
- Migratory and resident bird aggregation areas (gather for feeding and/or migration)



Represented Ecological resources identified for the Cherry Point Planning Area-3

- Freshwater wetland (adjacent to reserve)
- Salmon migratory corridors
- Bald eagle feeding and nesting areas
- Great blue heron rookery and associated resources
- Dungeness crab aggregation areas
- Ground fish rearing area (juvenile ground fish are rich and diverse)
- Marine mammals
- Shellfish (commercial, subsistence, & recreational)



Cherry Point Management Area

Concerns-Potential Threats-1

- Shading from over-water structures
- Alteration of wave energy / nearshore sediment drift due to structures or intertidal filling from residential and industrial uses.
- Vessel Traffic Management and Spill Issues
- Non-indigenous plant and animal species from ballast water exchange and other vectors



Cherry Point Management Area

Concerns-Potential Threats-2

- Cumulative impacts on marine water quality
- Non-point water quality issues
- Excessive intermittent sound or light during Pacific herring spawning season
- Disturbance of intertidal habitats and species from recreational activities



Cherry Point Management Area

Concerns-Potential Threats-3

- Effects of climate change on the Cherry Point Reach
- Air quality
- Future Development



Managing non-native species introduced from ballast water management methods and other vectors-1

Protection- Review and comment on ballast water treatment/management methods to reduce the probability of introduction of invasive species from tankers and other cargo vessels. No testing of unproven treatment methods will be permitted that have the potential to negatively impact native habitat and species. Cooperators: WDFW, Ecology, WDNR, USCG, EPA, leaseholders, the Invasive Species Council, U.W. Sea Grant, and others as appropriate.

Develop strategies for dealing with ballast water from ships that call at Cherry Point terminals consistent with Chapter 77.120, RCW, WDFW ballast water management, the interim ballast water management laws, and upcoming recommendations of the Ballast Water Working Group. Cooperators: WDFW, WDNR, leaseholders.



Managing non-native species introduced from ballast water management methods and other vectors-2

Develop and implement a management plan, including monitoring and adaptive management plans, to reduce the risks of non-native species to the valued ecological resources at Cherry Point.

Strategies for controlling the introduction of non-native plant and animal species, their management and eradication should protect native plant and animal communities. Cooperators: WDFW, Ecology, WDNR, USCG, EPA, leaseholders, the Invasive Species Council, U.W. Sea Grant, and others as appropriate.



Managing non-native species introduced from ballast water management methods and other vectors-3

Monitoring, Data Collection & Research - Develop monitoring protocols to track likely vectors (sources for introduction) for non-native organisms and support methods of treatment that reduce risks and avoid impacts to the Cherry Point Reach. Where non-native species have become established, all efforts will be encouraged to investigate and scientifically study measures to safely eradicate the invaders, and/or mitigate impacts.

Cooperators: WDFW, WDNR, and others including U.W. Sea Grant, USGS, WSU Beachwatchers, Whatcom Noxious Weed Board, Whatcom MRC, NOAA.



Managing non-native species introduced from ballast water management methods and other vectors-4

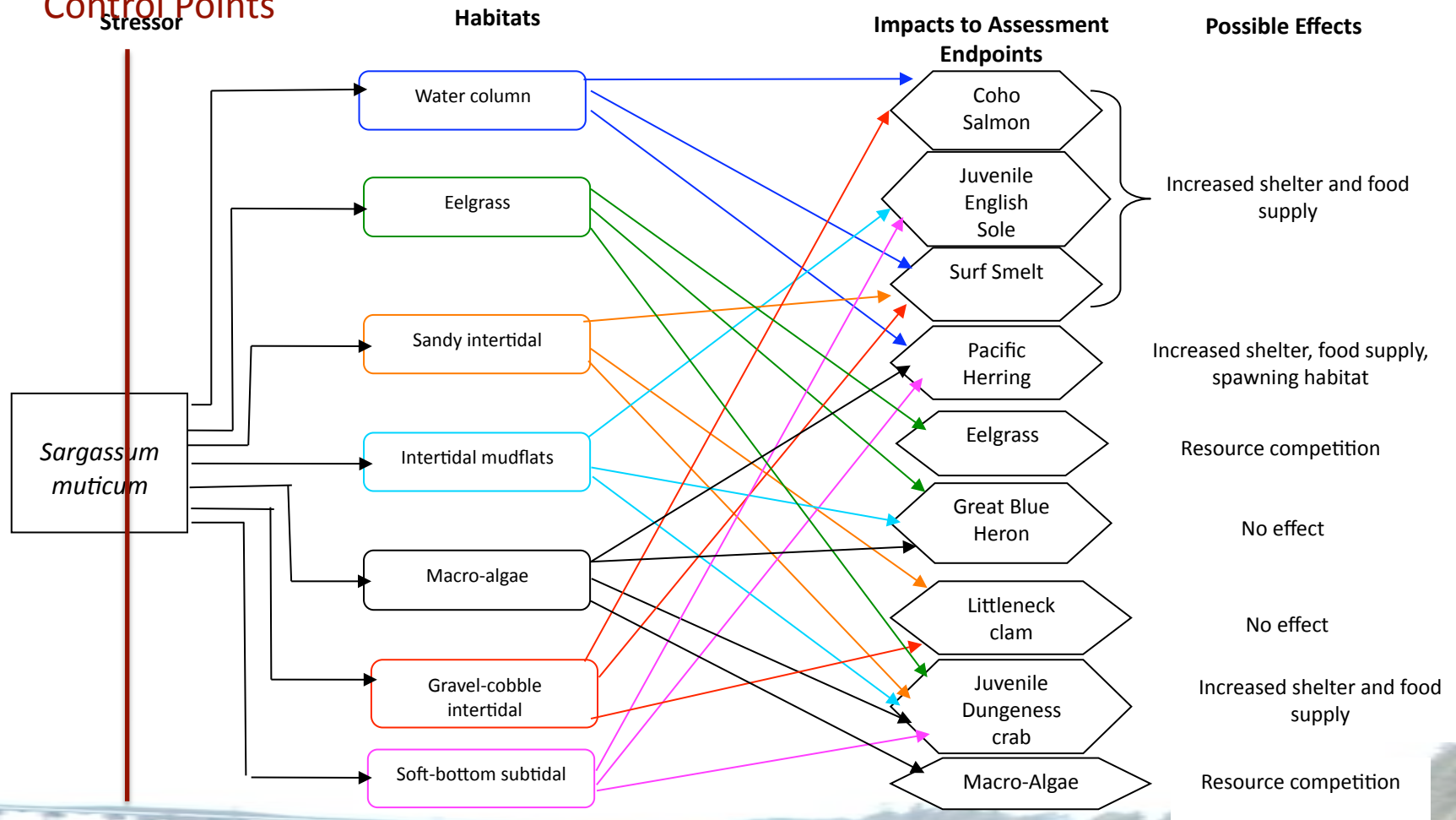
Institute a study to characterize the occurrence and dynamics of non-native species at Cherry Point and sources of non-native species that can immigrate to the region. The study would also evaluate the probability of the introduction of invasive species by vector.

Cooperators: *WDFW, WDNR, and others including U.W. Sea Grant, USGS, WSU Beachwatchers, Whatcom Noxious Weed Board, Whatcom MRC, NOAA. Education and Outreach ! Support education efforts targeting recreational boaters to reduce the introduction of non- indigenous species. Responsible entities: WDFW, State Parks, NOAA, Sea Grant, Whatcom MRC, Dept of Licensing. Others: Northwest Marine Trade Association (NMTA)*



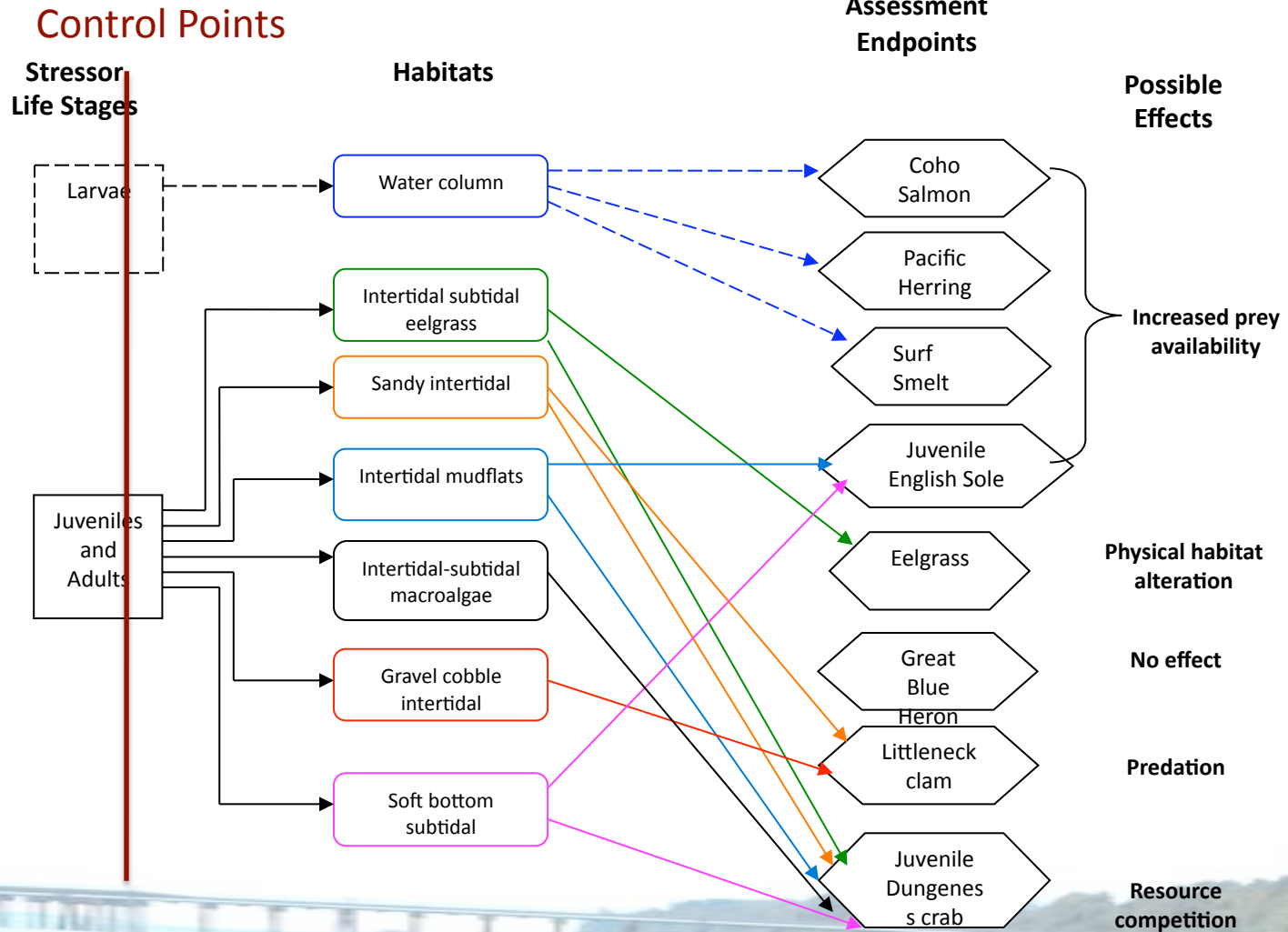
Pathways for Cherry Point-Invasive Sargassum

Control Points



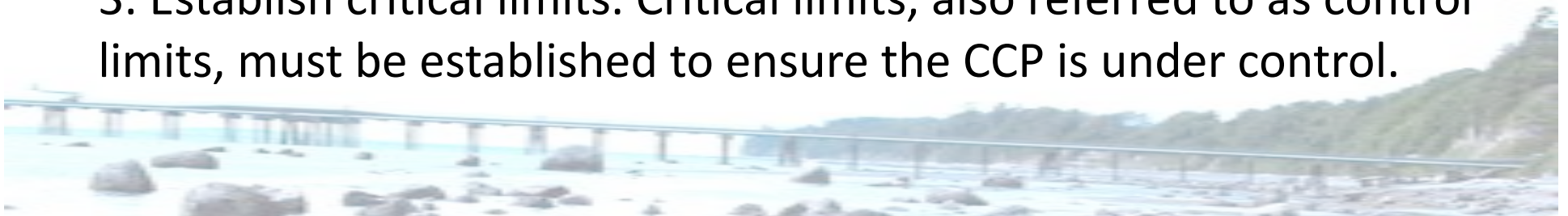
Pathways for Cherry Point-Invasive Sargassum

Effects Conceptual Model – Local Scale



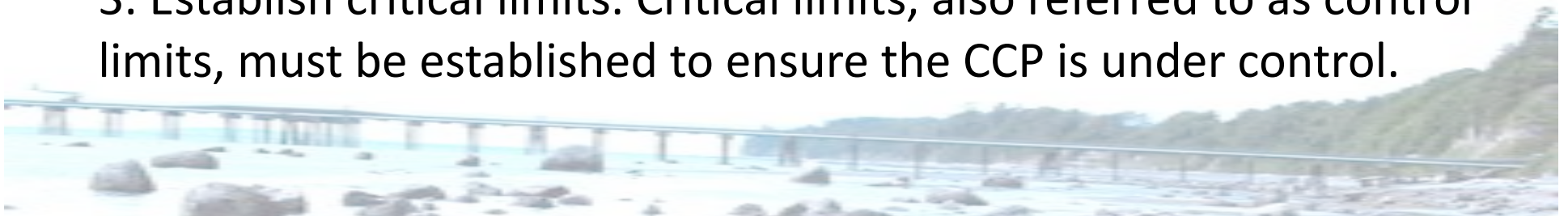
HACCP Scorecard-7 Steps

1. Conduct a hazard analysis. Identify the potential hazards associated with at all stages or steps within a system or process of concern within a system. Assess the likelihood of occurrence of the hazards and identify the measures for their control.
2. Determine the Critical Control Points (CCPs). Determine the points, procedures or operational steps that can be controlled to eliminate the hazards or minimize its (their) likelihood of occurrence.
3. Establish critical limits. Critical limits, also referred to as control limits, must be established to ensure the CCP is under control.



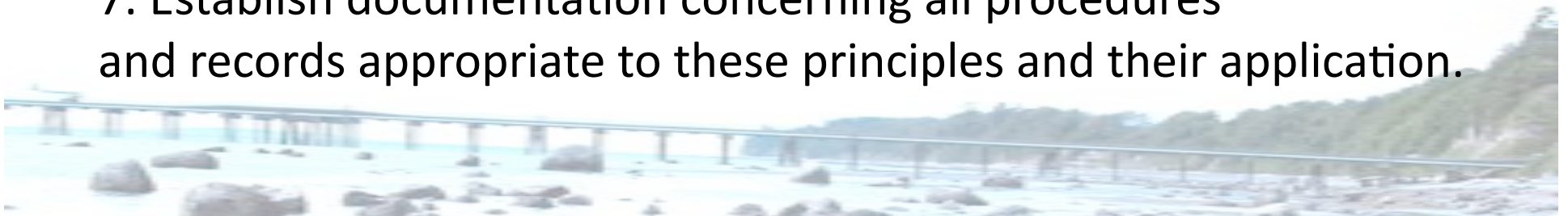
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HACCP Scorecard-7 Steps

4. Establish a system to monitor control of the CCP. Establish a system to monitor control of the CCP by scheduled testing or observations.
5. Establish the corrective action to be taken when monitoring indicates that a particular CCP is not under control.
6. Establish procedures for verification to confirm that the HACCP system is working effectively.
7. Establish documentation concerning all procedures and records appropriate to these principles and their application.



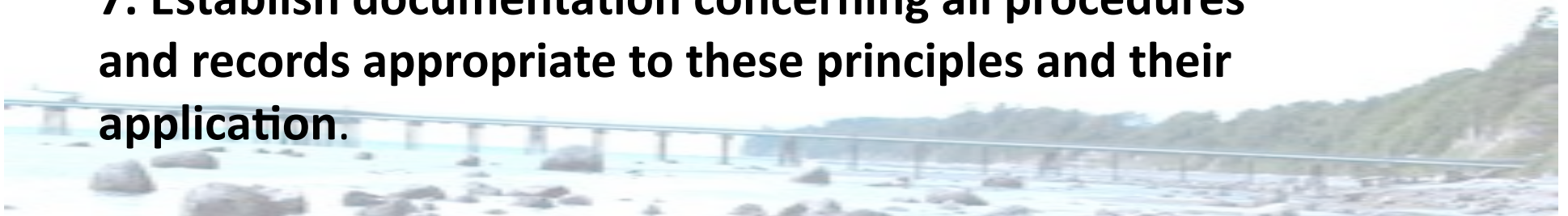
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Final Thoughts

Probably too late to retrofit but many of the elements already exist.

Turn the conceptual model for a risk assessment into a means for identifying control points