

2016 Hatchery Reform Update

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Outline

1. Key Policy Provisions
2. Current Status Meeting HSRG & Policy Goals
3. Next Steps
4. Summary

Key Policy Provisions

Fish and Wildlife Commission Hatchery and Fishery Reform Policy C-3619

“...to advance the conservation and recovery of wild salmon and steelhead by promoting and guiding the implementation of hatchery reform.”

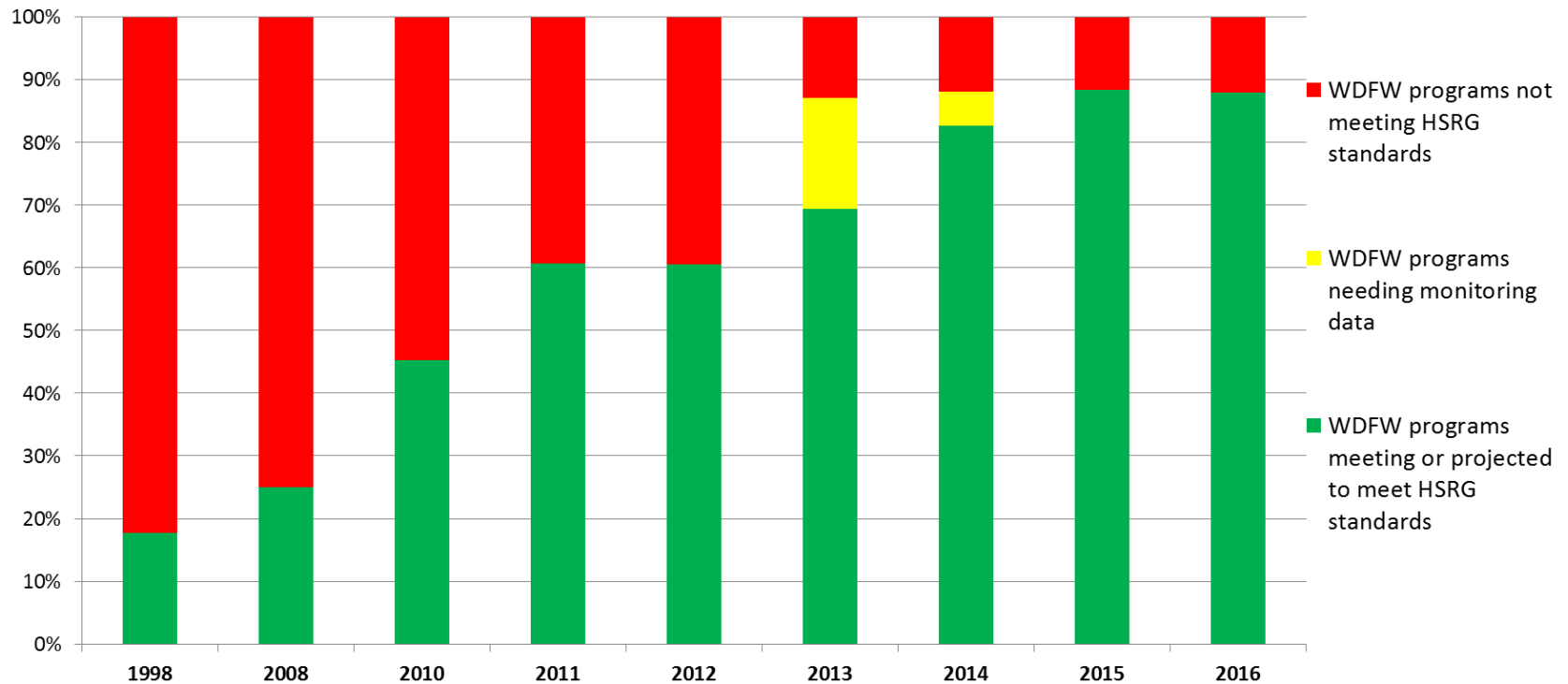
Hatchery and Fishery Reform Policy C-3619

- “...work *toward* a goal of achieving the HSRG broodstock standards for 100% of the hatchery programs by 2015.”
- “Secure necessary funding to ensure that Department-operated hatchery facilities comply with environmental regulations...”
- “Establish a network of Wild Salmonid Management Zones”

Current Status

HSRG Broodstock Standards

WDFW Statewide Hatchery Broodstock Management Implementaion Per FWC Pol C-3619



What We Have Accomplished

- Modifications to hatchery programs
 - Transition to Integrated hatchery programs
 - Install weirs to control hatchery fish on spawning grounds
 - Modify release locations
- Secured capital funds to address facility limitations in order to meet benchmarks described in the 21st Century Salmon and Steelhead Framework
- Held policy compliance strategy meetings with Regional Fish Program Managers
- Established Wild Salmonid Management Zones for steelhead in LCR and are working on identifying in PS and coast
- Finalized and submitted 108 Hatchery and Genetic Management Plans (HGMPs) statewide

Current Permit Status

- 19 HGMPs have been approved by NOAA
- 41 HGMPs have Letters of Sufficiency from NOAA
- 7 HGMPs have not been submitted – four will be submitted by USACE and three are in final stages of completion or under co-manager review.
- Consulting with USFWS on bull trout

Next Steps

Future Actions

- Develop biologically based and measurable ‘triggers’ with Regional staff to move the remaining conservation based programs toward HSRG standard compliance
- Continue to prioritize capital budget requests to address facility limitations in order to meet benchmarks described in the 21st Century Salmon and Steelhead Framework
 - Working with Habitat to develop criteria for evaluating screens and intakes (field work beginning this summer)

Future Actions

- Monitoring and Evaluation
 - Continue working with Science to develop sound M&E protocols and work to evaluate Relative Reproductive Success of hatchery fish
 - Collect samples to refine gene flow/introgression data
 - Continue to work on establishing WSMZs
 - Complete and submit remaining HGMPs

Summary

Policy Provisions

“...work *toward* a goal of achieving the HSRG broodstock standards for 100% of the hatchery programs by 2015.”

88% of programs meeting broodstock management goals

Policy Provisions

“Secure necessary funding to ensure that Department-operated hatchery facilities comply with environmental regulations...”

Secured approximately 37M in funding to upgrade facilities

Policy Provisions

“Establish a network of Wild Salmonid Management Zones”

Wild Salmonid Management Zones have been designated for steelhead in the LCR and are being identified through public process in Puget Sound

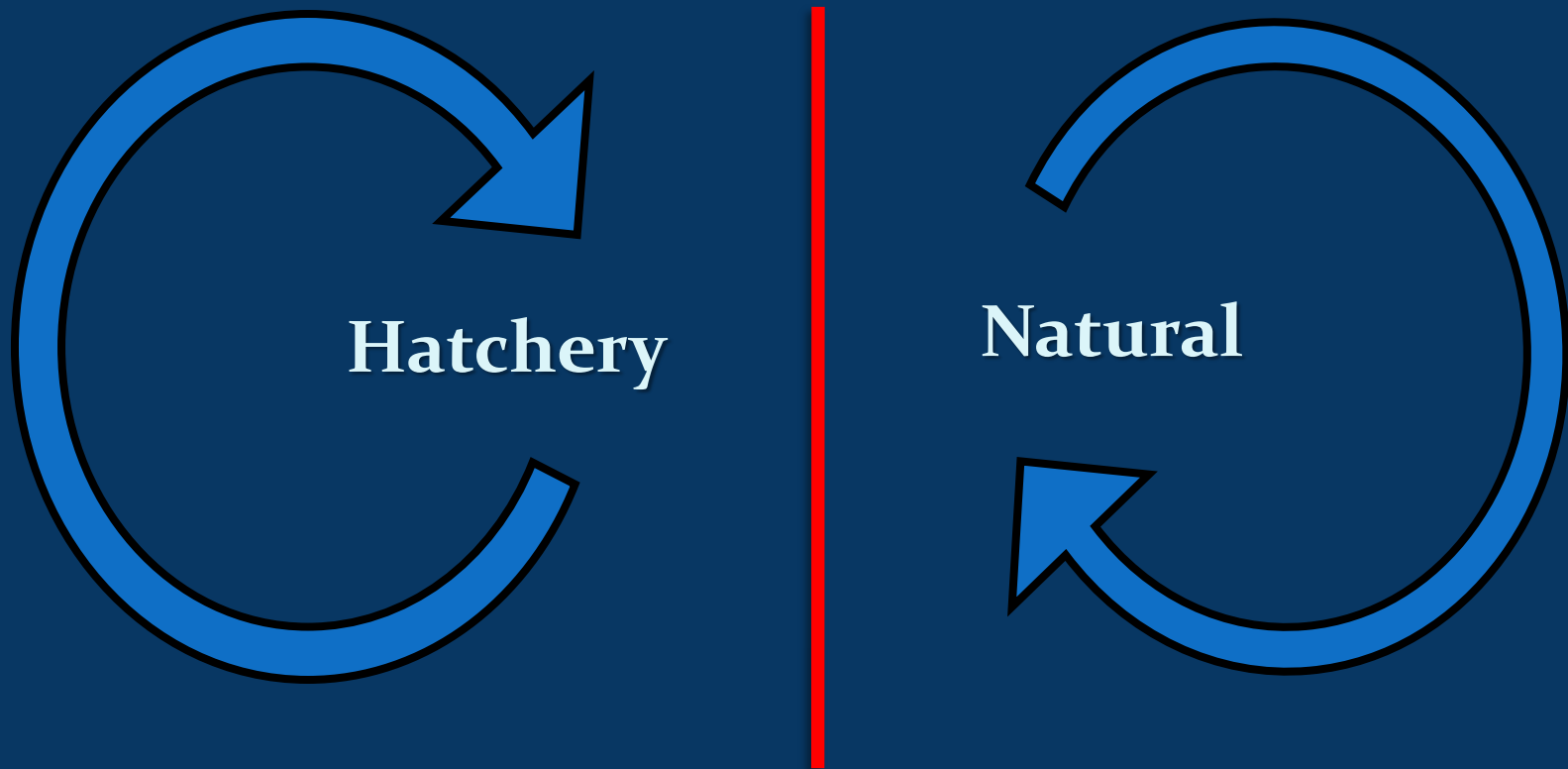
Questions?



HSRG Concepts & Goals

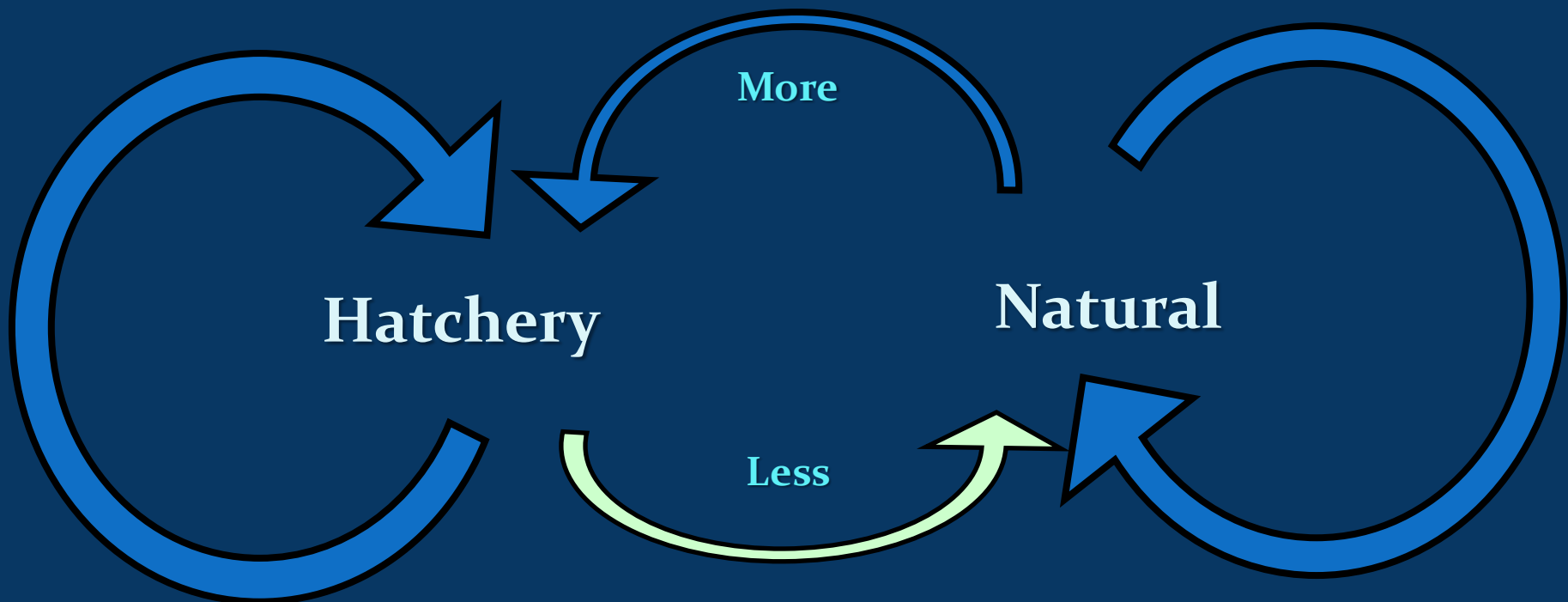
Segregated Hatchery Population

Hatchery and natural populations are genetically isolated



Integrated Hatchery Population

Hatchery and natural spawning populations are genetically connected



Terminology

Used to estimate the direction and amount of gene flow:

- **PNI** – Proportionate Natural Influence

$$PNI = pNOB / (pNOB + pHOS)$$

- **pNOB** – Proportion of Natural-Origin Broodstock used in an integrated hatchery program

- **pHOS** – measure of Hatchery-Origin fish on the spawning grounds – **three methods**

Terminology Continued

- **pHOS census** – Percent of Hatchery-Origin fish on the spawning grounds – rough estimate
- **pHOS effective** – Estimated percent of Hatchery-Origin fish on the spawning grounds that actually reproduce returning adults – better estimate
- **PEHC** – Proportion Effective Hatchery Contribution – Actual measurement of gene flow through the use of genetic techniques, best estimate

Segregated Program Goals

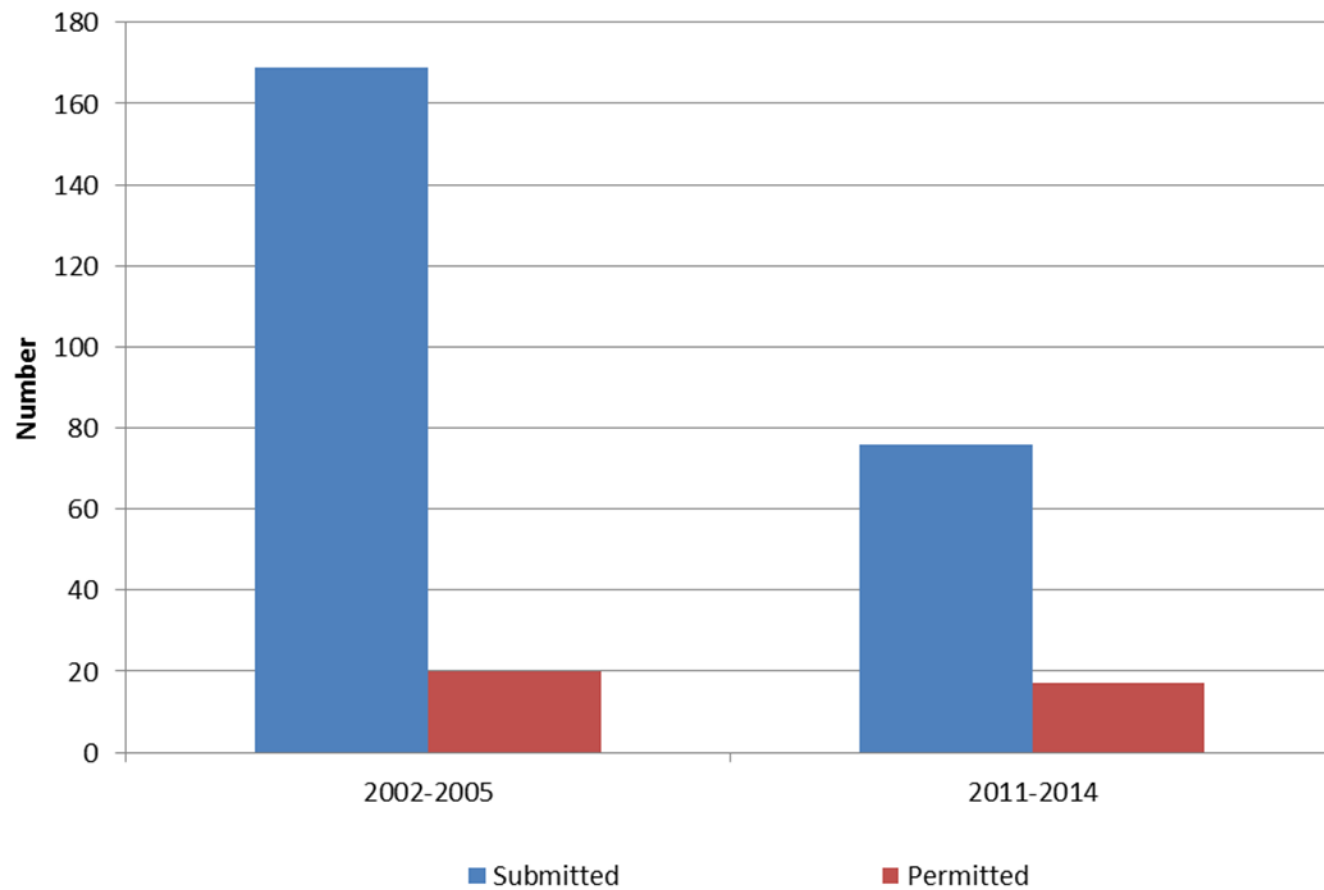
Associated Natural Populations & pHOS GOALS

Primary (highly significant for recovery)	5%
Contributing (moderately significant for recovery)	10%
Stabilizing (less significant for recovery)	Current

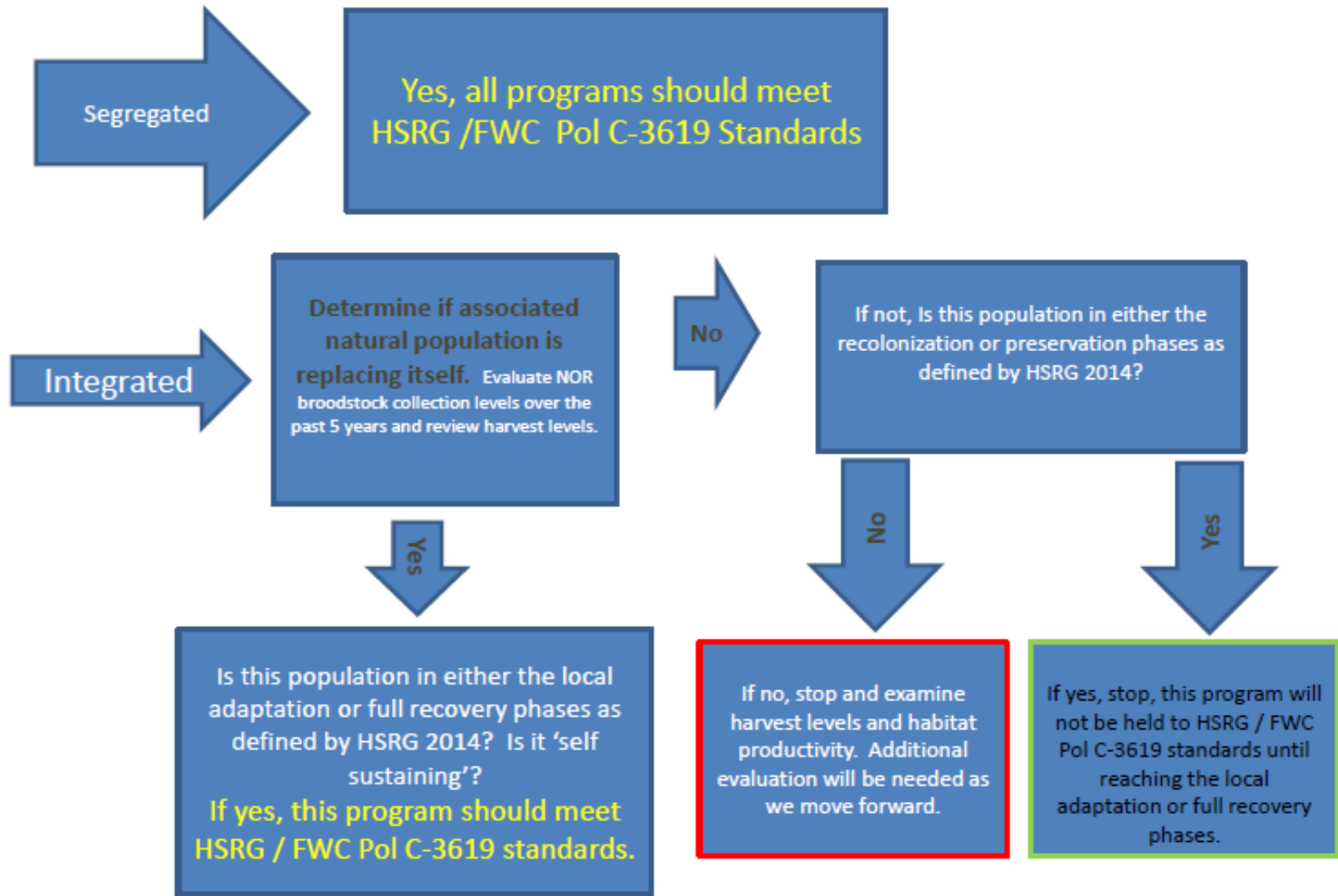
Integrated Program Goals

Associated Natural Populations	PNI	pNOB & pHOS
Primary (highly significant for recovery)	> 67%	pNOB 70% pHOS 30%
Contributing (moderately significant for recovery)	>50%	pNOB 50% pHOS 30%
Stabilizing (less significant for recovery)	Current	pNOB = minimum 10% to avoid divergence from the natural population pHOS = current levels

Number of HGMP's Submitted to NMFS 2002 to 2014



Recovery Phase Exercise Step One



Recovery Phases Per HSRG 2014

Natural Population		Hatchery Program Purpose			
Designation	Status	Seg.Harv	Int. Harv	Cons+Harv	Cons. Only
Primary	Fully Restored	pHOS<5%	PNI>0.67	PNI>0.67	
	Local Adapt.	pHOS<5%	PNI>0.67	PNI>0.67	PNI>0.67
	Re-coloniz.	pHOS<5%	Not Specified	Not Specified	Not Specified
	Preservation	pHOS<5%	Not Specified	Not Specified	Not Specified
Contrib	Fully Restored	pHOS<10%	PNI>0.50	PNI>0.50	
	Local Adapt.	pHOS<10%	PNI>0.50	PNI>0.50	PNI>0.50
	Re-coloniz.	pHOS<10%	Not Specified	Not Specified	Not Specified
	Preservation	pHOS<10%	Not Specified	Not Specified	Not Specified
Stabil.	Fully Restored	Current conditions	Current conditions	Current conditions	
	Local Adapt.	Current conditions	Current conditions	Current conditions	Current conditions
	Re-coloniz.	Current conditions	Current conditions	Current conditions	Current conditions
	Preservation	Current conditions	Current conditions	Current conditions	Current conditions