Salmon Watch Standards Correlations

August 2016

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Lesson/Section:	1A	1B	1C	1D	1E	2	3	4A	4B	4C	4D	4E	5A	5B	5C	5D	5E	6A	6B	6C	6D	6E	6F	6G	7
Title:	Introduction to Freshwater Trust & Salmon Watch	Nature Awareness and Observation	The Watershed Web of the Wild	Where in the World … Are You?	Salmon Life Cycle	Field Trip Experiences	Native American Indian Storytelling	The Journey of Wild Pacific Salmon	External Characteristics of Salmonids	Goin' Fishin' – Identifying Salmon Species	Sniffin' Salmon: Salmonid Life Cycles	Salmon Supplemental Information	Watersheds	Water Quality and Quantity	Wetlands Site Study	Physical Structure of Streams	Salmon as an Indicator of t Health of a Watershed	John Day Drawdown Role-Play	Salmon Fisheries Simulation	Human Population Growth – Flies Lab	What Are Your Energy Needs?	Native American Fishing Rights Mock Treaty	Salmon Political Science: Government	The Role of Hatcheries	Service Learning Project[1]
Next Generation Science Standards																									
Performance Expectations																									
From Molecules to Organisms: Structures and Processes (Middle School)																									
MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants, respectively.						▪																			
MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.																								▪	
HS-LS2-1. Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.																				▪					
Ecosystems: Interactions, Energy, and Dynamics (Middle School)																									
MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.						▪								▪	▪			▪	▪	▪				▪	
MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and non-living parts of an ecosystem.			▪			▪																			

[1] Note: Projects could address numerous science, English language arts, math, and social studies standards depending on the specific project and procedure selected.

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MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.								▪									▪								
Ecosystems: Interactions, Energy, and Dynamics (High School)																									
HS-LS2-1. Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.																				▪					
HS-LS2-2. Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.						▪									▪			▪							
HS-LS2-4. Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.						▪																			
HS-LS2-6. Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.						▪																			
HS-LS2-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.																		▪	▪					▪	
HS-LS2-8. Evaluate evidence for the role of group behavior on individual and species' chances to survive and reproduce.								▪																	
Earth's Systems (Middle School)																									
MS-ESS2-4. Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.													▪												
Earth and Human Activity (Middle School)																									
MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.														▪	▪										
MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.																		▪							
Earth and Human Activity (Middle School)																									
HS-ESS3-1. Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.																					▪				
HS-ESS3-3. Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.						▪													▪						

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HS-ESS3-4. Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.															▪			▪							
Disciplinary Core Ideas																									
Middle School																									
LS1.B: Growth and Development of Organisms. Animals engage in characteristic behaviors that increase the odds of reproduction.	▪				▪			▪			▪														
LS1.D: Information Processing. Each sense receptor responds to different inputs (electromagnetic, mechanical, chemical), transmitting them as signals that travel along nerve cells to the brain. The signals are then processed in the brain, resulting in immediate behaviors or memories.				▪																					
LS2.A: Independent Relationships in Ecosystems. Organisms, and populations of organisms, are dependent on their environmental interactions both with other living things and with non-living factors.						▪		▪						▪	▪	▪	▪	▪		▪				▪	
L2.A: Independent Relationships in Ecosystems. Growth of organisms and population increases are limited by access to resources.					▪			▪												▪					
LS2.B: Cycles of Matter and Energy Transfer in Ecosystems. Food webs are models that demonstrate how matter and energy are transferred between producers, consumers, and decomposers as the three groups interact within an ecosystem. Transfers of matter into and out of the physical environment occur at every level. Decomposers recycle nutrients from dead plant or animal matter back to the soil in terrestrial environments or to the water in aquatic environments. The atoms that make up the organisms in an ecosystem are cycled repeatedly between the living and non-living parts of the ecosystem.			▪			▪																			
LS2.C: Ecosystem Dynamics, Functioning, and Resilience. Ecosystems are dynamic in nature. Their characteristics can vary over time. Disruptions to any physical or biological component of an ecosystem can lead to shifts in all its populations.	▪		▪		▪	▪		▪					▪		▪			▪	▪	▪		▪		▪	
ESS2.C: The Roles of Water in Earth's Surface Processes. Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land.													▪												

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ESS3.C: Human Impacts on Earth Systems. Human activities have altered the biosphere, sometimes damaging it, although changes to environments can have different impacts for different living things. Activities and technologies can be engineered to reduce people's impacts on Earth.	▪		▪			▪								▪				▪	▪			▪		▪	
High School																									
LS1.A: Structure and Function. Multicellular organisms have a hierarchical structural organization, in which any one system is made up of numerous parts and is itself a component of the next level.										▪															
LS2.A: Interdependent Relationships in Ecosystems. Ecosystems have carrying capacities, which are limits to the numbers of organisms and populations they can support. These limits result from such factors as the availability of living and nonliving resources and from such challenges such as predation, competition and disease. Organisms would have the capacity to produce populations of great size were it not for the fact that environments and resources are finite. This fundamental tension affects the abundance (number of individuals) of species in any given ecosystem.																				▪					
LS2.C: Ecosystem Dynamics, Functioning, and Resilience. A complex set of interactions within an ecosystem can keep its numbers and types of organisms relatively constant over long periods of time under stable conditions.					▪														▪					▪	
LS2.C: Ecosystem Dynamics, Functioning, and Resilience. Anthropogenic changes (induced by human activity) in the environment—including habitat destruction, pollution, introduction of invasive species, overexploitation, and climate change—can disrupt an ecosystem and threaten the survival of some species.	▪		▪			▪		▪						▪	▪			▪	▪	▪		▪		▪	
LS4.D: Biodiversity and Humans. Humans depend on the living world for the resources and other benefits provided by biodiversity. But human activity is having adverse impacts on biodiversity through overpopulation, overexploitation, habitat destruction, pollution, introduction of invasive species, and climate change. Thus sustaining biodiversity so that ecosystem functioning and productivity are maintained is essential to supporting and enhancing life on Earth.						▪													▪			▪			

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Sustaining biodiversity also aids humanity by preserving landscapes of recreational or inspirational value.																									
ESS2.E: Biogeology. The many dynamic and delicate feedbacks between the biosphere and the Earth's systems cause a continual co-evolution of Earth's surface and the life that exists on it.													▪												
ESS3.A: Natural Resources. Resource availability has guided the development of human society.						▪																	▪		
ESS3.A: Natural Resources. All forms of energy production and other resource extraction have associated economic, social, environmental, and geopolitical costs and risks as well as benefits. New technologies and social regulations can change the balance of these factors.													▪					▪	▪		▪	▪	▪		
ESS3.C: Human Impacts on Earth Systems. The sustainability of human societies and the biodiversity that supports them requires responsible management of natural resources.																		▪	▪			▪	▪	▪	
Science and Engineering Practices																									
1. Asking questions and defining problems.													▪												
2. Developing and using models.			▪	▪	▪	▪		▪		▪	▪	▪	▪						▪						
3. Planning and carrying out investigations.		▪				▪					▪			▪	▪										
4. Analyzing and interpreting data.						▪								▪	▪			▪	▪						
5. Using mathematics and computational thinking.						▪								▪	▪										
6. Constructing explanations and designing solutions.								▪							▪										
7. Engaging in argument from evidence.						▪							▪	▪				▪			▪			▪	
8. Obtaining, evaluating, and communicating information.													▪		▪			▪			▪		▪	▪	
Common Core State Standards – ELA/Literacy																									
Reading																									
CCRA.R.1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.	▪	▪			▪		▪	▪		▪			▪	▪				▪			▪	▪		▪	

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Corresponding grade-specific standards: RI.6.1, RI.7.1, RI.8.1, RI.9-10.1, RI.11-12.1, RH.6.1, RH.7.1, RH.8.1, RH.9-10.1, RH.11-12.1.																									
CCRA.R.4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. Corresponding grade-specific standards: RI.6.4, RI.7.4, RI.8.4, RI.9-10.4, RI.11-12.4, RH.6.4, RH.7.4, RH.8.4, RH.9-10.4, RH.11-12.4.					▪			▪					▪	▪											
CCRA.R.7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words. Corresponding grade-specific standards: RI.6.7, RI.7.7, RI.8.7, RI.9-10.7, RI.11-12.7, RH.6.7, RH.7.7, RH.8.7, RH.9-10.7, RH.11-12.7.														▪											
Writing																									
CCRA.W.7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. Corresponding grade-specific standards: W.6.7, W.7.7, W.8.7, W.9-10.7, W.11-12.7.										▪	▪							▪					▪	▪	
CCRA.W.9. Draw evidence from literary or informational texts to support analysis, reflection, and research. Corresponding grade-specific standards: W.6.9, W.7.9, W.8.9, W.9-10.9, W.11-12.9.								▪																	
Speaking and Listening																									
CCRA.SL.1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively. Corresponding grade-specific standards: SL.6.1, SL.7.1, SL.8.1, SL.9-10.1, SL.11-12.1.							▪						▪	▪				▪		▪		▪	▪	▪	
CCRA.SL.2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally. Corresponding grade-specific standards: SL.6.2, SL.7.21, SL.8.2, SL.9-10.2, SL.11-12.2.									▪	▪								▪					▪		
CCRA.SL.4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. Corresponding grade-specific standards: SL.6.4, SL.7.4, SL.8.4, SL.9-10.4, SL.11-12.4.																		▪		▪		▪		▪	

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CCRA.SL.5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. Corresponding grade-specific standards: SL.6.5, SL.7.5, SL.8.5, SL.9-10.5, SL.11-12.5.																		▪			▪	▪		▪	
Common Core State Standards - Mathematics																									
MP.2. Reason abstractly and quantitatively.						▪								▪						▪					
MP.4. Model with mathematics.						▪																			
6.SP.4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots.						▪																			
7.SP.1. Understand that statistics can be used to gain information about a population by examining a sample of the population.						▪														▪					
Oregon Social Sciences Academic Content Standards																									
6.11. Distinguish among different types of maps and use them to analyze an issue in the Western Hemisphere.				▪																					
7.13. Describe the historical and current physical, cultural, and economic characteristics of eco-regions.			▪	▪														▪							
HS.14. Create and use maps, technology, imagery and other geographical representations to extrapolate and interpret geographic data.				▪		▪																			
HS.19. Evaluate how differing points of view, self-interest, and global distribution of natural resources play a role in conflict over territory.																						▪	▪	▪	
HS.57. Define, research, and explain an event, issue, problem, or phenomenon and its significance to society.				▪	▪							▪													
HS.60. Analyze an event, issue, problem, or phenomenon from varied or opposing perspectives or points of view.						▪	▪																		
HS.61. Analyze an event, issue, problem, or phenomenon, identifying characteristics, influences, causes, and both short- and long-term effects.						▪												▪	▪		▪	▪	▪		
HS.62. Propose, compare, and judge multiple responses, alternatives, or solutions to issues or problems; then reach an informed, defensible, supported conclusion.																		▪							
HS.63. Engage in informed and respectful deliberation and discussion of issues, events, and ideas.					▪		▪	▪	▪	▪	▪	▪	▪					▪	▪			▪	▪		