

## Science Curriculum Links

### **CONSERVATION IN ACTION: An Educator's Guide to Species at Risk in BC for Grades 8 - 12**

Prepared by  
Kelly Nordin & DG Blair  
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#### **Overview of Module One: An Introduction to Species at Risk**

##### **ACTIVITY 1: What Do You Know About SAR? Intro to Species at Risk**

An interactive activity that begins with a series of true/false statements to introduce the concepts associated with species at risk of potential extinction, followed by a group analysis of a case example.

##### **ACTIVITY 2: What Species are at Risk in Your Community?**

After a classroom-based introduction to the rationale and methods of field investigation of species at risk, a field trip to a local ecosystem introduces students to species at risk, their habitat and the historical geography of the area.

##### **ACTIVITY 3: Species at Risk in the News**

Working in small groups, students complete a project-based learning activity to research and produce a student magazine or other media to inform and take action on local species at risk.

##### **KEY:**

✓ = general link

✓ = direct link

\* = see Elaborations on BC Ed new curriculum websites

## Subject: Environmental Science 11

Big Ideas	Learning Standard: Content	Activity			Learning Standard: Curricular Competencies	Activity		
		1	2	3		1	2	3
<b>Diversity in Local Ecosystems:</b> Local environments contain diverse ecosystems with many roles and relationships.	abiotic and edaphic factors	✓	✓	✓	<b>Questioning and predicting</b>			
	biodiversity:				Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal, local, or global interest	✓	✓	✓
	– species and their ecological roles	✓	✓	✓	Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world	✓	✓	✓
	– relationships and interactions in ecosystems	✓	✓	✓	Formulate multiples hypotheses and predict multiple outcomes		✓	✓
					<b>Planning and conducting</b>			
<b>Processes and Changes in Local Ecosystems:</b> Interconnected systems sustain healthy ecosystems.	energy flow	✓	✓	✓	Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data (qualitative and quantitative)		✓	✓
	matter cycles	✓	✓	✓	Assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods		✓	
					Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data		✓	
<b>Processes and Changes in Local Ecosystems:</b> Ecosystem stability is an important result of sustainability.	population dynamics and landscape structure	✓	✓	✓	Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation		✓	
	change and stability in ecosystems	✓	✓	✓	<b>Processing and analyzing data and information</b>			
					Experience and interpret the local environment		✓	✓
<b>Sustainability in Local Ecosystems:</b> Human practices affect the sustainability of ecosystems.	benefits of healthy ecosystems	✓	✓	✓	Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information		✓	✓
	humans as agents of change:				Seek and analyze patterns, trends, and connections in data, including describing relationships between variables (dependent and independent) and identifying inconsistencies		✓	✓
	– First Peoples and other traditional ecological knowledge	✓	✓	✓	Construct, analyze, and interpret graphs, models, and/or diagrams		✓	✓
	– unsustainable and sustainable ecosystem practices	✓	✓	✓	Use knowledge of scientific concepts to draw conclusions that are consistent with evidence	✓	✓	✓
					Analyze cause-and-effect relationships	✓	✓	✓



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<b>Conservation and Restoration of Ecosystems:</b> Humans can play a role in conservation and restoration of ecosystems.	environmental stressors challenge ecosystem integrity, health, and sustainability	✓	✓	✓	<b>Evaluating</b>			
	ecological restoration principles and practices	✓	✓	✓	Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions		✓	✓
	First Peoples concept of interconnectedness as related to conservation and restoration		✓	✓	Describe specific ways to improve their investigation methods and the quality of the data		✓	
	engagement in ongoing and potential stewardship projects			✓	Evaluate the validity of and limitations of a model or analogy in relation to the phenomenon modelled			
					Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and secondary sources	✓	✓	✓
					Consider the changes in knowledge over time as tools and technologies have developed			
					Connect scientific explorations to careers in science			
					Exercise a healthy, informed skepticism and use scientific knowledge and findings to form their own investigations and to evaluate claims in secondary sources	✓	✓	✓
					Consider social, ethical, and environmental implications of the findings from their own and others' investigations	✓	✓	✓
					Critically analyze the validity of information in secondary sources and evaluate the approaches used to solve problems	✓	✓	✓
					Assess risks in the context of personal safety and social responsibility		✓	
					<b>Applying and innovating</b>			
					Contribute to care for self, others, community, and world through personal or collaborative approaches	✓	✓	✓
					Co-operatively design projects with local and/or global connections and applications		✓	✓
					Contribute to finding solutions to problems at a local and/or global level through inquiry		✓	✓
					Implement multiple strategies to solve problems in real-life, applied, and conceptual situations		✓	✓
					Consider the role of scientists in innovation			
					<b>Communicating</b>			
					Formulate physical or mental theoretical models to describe a phenomenon			
					Communicate scientific ideas, claims, information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations		✓	✓
					Express and reflect on a variety of experiences, perspectives, and worldviews through place		✓	✓