



**Title: Human-Ecosystem Calendar**

Portions adapted by Elizabeth Trowbridge from the *Alaska Sea Week Curriculum, Vol. VI*, portions by Katie Gavenus.

**Theme:** Generations of humans living along the coast are dependent upon healthy ecosystems.

**Objectives:**

- Students will identify their personal use of local habitats, ecosystems, and natural resources.
- Students will research and become familiar with Native uses of local plants and animals.
- Students will understand that humans are also an interdependent part of ecosystems.

**Duration:** 90-120 minutes (some can be outside of class)

**Age Range:** 4<sup>th</sup>-12<sup>th</sup>

**Materials:**

- Paper
- Pens or Pencils
- Markers, colored pencils, crayons
- Rulers
- Staplers with staples
- Whiteboard or poster board
- Dry-erase markers or colored markers
- Human Ecosystem Calendar Rubric
- Computers with internet access OR
- Local presenters about subsistence & commercial use of local plants and animals OR
- Guides to local plant and animal use

**Background:**

A wide variety of Alaska Native cultures have inhabited the shores and waters of southcoastal Alaska, including Chugach, Eyak, Sugpiak/Alutiiq, Dena'ina, and Aleut/Unangan people. For thousands of years they depended upon the rich land and water ecosystems for food and shelter. Alaska Natives continue to depend heavily on a subsistence way of life, even though they are now part of a cash economy. Other Alaskan people also rely on these coastal ecosystems for

subsistence, recreation, and commercial use. Rural lifestyles and traditional ways make subsistence activities essential to health and well-being of both individuals and cultures. Coastal waters have provided herring, salmon, halibut, cod, crab, shrimp, chitons, other invertebrates, sea birds, and seaweed for hundreds of years, providing both food and livelihood to local people. Terrestrial mammals and birds that feed off of marine life have also been very important resources for Alaska Natives for thousands of years, and more recently, other rural residents. The *Exxon Valdez* Oil Spill dramatically affected Native communities of southcoastal Alaska, as well as non-Native communities that also rely on coastal ecosystems. Not only did the spill diminish their food supply and shatter confidence in traditional foods, the clean-up work brought thousands of dollars and non-traditional foods to the villages. In many cases, this created a false boom economy that disappeared after a few years, leaving the villages with unstable food sources, livelihoods, and undermining their way of life. The following article written by Native Elder Walter Meganack, Sr. articulates the devastation that followed the oil spill in Native communities: <http://www.nwf.org/What-We-Do/Protect-Habitat/Gulf-Restoration/Oil-Spill/Effects-on-Wildlife/Compare-Exxon-Valdez-and-BP-Oil-Spills/Day-the-Water-Died-Essay.aspx>. Many people address changes to traditional and subsistence foods following an oil spill in their interviews at Children of the Spills (<http://www.childrenofthespills.org/index.php/people>). You can read or listen to excerpt from these interviews to augment the words of Walter Meganack, Sr.

Hosting an Elder in the classroom is a powerful way to broaden students' perspectives, sustain traditional knowledge, and introduce intergenerational connections. See <http://www.ankn.uaf.edu/publications/handbook/littlefield.html> for guidance on how to invite and host an Elder in your classroom.

Creating an ecosystem calendar is meant to increase students' awareness of the lifestyles of southcoastal Alaska Natives and also how students rely on their own local ecosystems.

### **Introduction:**

Hand out and read, as a class, the article by Walter Meganack, Sr. Ask students how the article makes them feel. Have they ever lost important to them that forced them to change how they live? What sort of things might they have to change if an oil spill happened now? Access interviews with Alaska Native elders and young people where they discuss impacts of the oil spill and how families and communities fought to preserve traditions and livelihoods at: <http://www.childrenofthespills.org/index.php/people>.

### **Activities & Procedures:**

Discuss what it means to depend upon the land and water for your food and shelter. Ask students how they rely on local ecosystems for food, shelter, livelihood, and

recreation. Create a list on the board of all the things students get from local ecosystems. If you would like, you can also create a list of things students get from far away ecosystems (tropical fruit, metals, petroleum products, etc.)

Introduce traditional uses of local ecosystems by welcoming an Elder into the classroom to present or by reading a guide for traditional plant uses and taking a trip outside to identify some of these important plants.

Discuss the month or season names in local cultures. These months and seasons may not line up directly with our understanding of a calendar, but they shed light on human interactions with the natural world. Use this as a talking point to discuss how seasonal changes in plant and animal resources determined human patterns. Ask students to think about how they, and others in the community, rely on seasonal patterns of natural resources. How do they interact with and depend on the natural world at different times of year? Encourage students to think not only about food resources, but also recreational uses, aesthetic and cultural values, and commercial harvesting. List these ideas next to the local month names. Discuss parallels and differences.

A good resource for this information in southcoastal Alaska comes from *ALUTIIQ NOUN DICTIONARY and Pronunciation Guide: Common Nouns in Prince William Sound and Kenai Peninsula Alutiiq (excluding Kodiak Island)* Compiled & Edited by John E. Smelcer, Ph.D.:

January: “the first moon”

Cuqllirpaaq Iraluq (Kodiak)

February: “the short moon”

Ya’alungia’aq (Nanwalek, Port Graham)

Nanicqaaq Iraluq (Kodiak)

March: “the hungry moon”

Ya’alullraaq (Nanwalek, Port Graham)

Kaignasqaq Iraluq (Kodiak)

April: “the warming moon”

Saqulegciq (Nanwalek, Port Graham)

Uqna’isurt’sqaaq Iraluq (Kodiak)

May: “red salmon moon”

Maniit Ya’allua (Nanwalek, Port Graham)

Nikllit Iraluat (Kodiak)

June: “salmon month” - Iqallugciq (Nanwalek, Port Graham)

“the plants’ moon” - Naut’staat Iraluat (Kodiak)

[July: no apparent equivalent]

August: “the berries’ moon”

Uksuam Ya’allua (Nanwalek, Port Graham)

Alaganat Iraluat (Kodiak)

September: “the silver salmon’s moon”

Alusastuam Ya’allua (Nanwalek, Port Graham)

Qakiiyat Iraluat (Kodiak)

October: “the moon of the runny nose”

Takegllum Iralua (Kodiak)

November: “the Thanksgiving moon”

Kapkaanam Ya’allua (Nanwalek, Port Graham)

Quyawim Iralua (Kodiak)

December: “the snow’s moon”

Qanim Iralua (Kodiak)

Provide each student with paper, colored pencils, rulers, etc. Explain that they are going to make a human-use calendar. Provide each student with a copy of the Human Ecosystem Calendar Rubric, or go over expectations as a class. In addition to the usual grid of days on the bottom, each calendar page should also include a local traditional name for the month (if possible) and a unique name created by the student to reflect their own and community reliance on resources of that month. Students should also create an illustration at the top of each calendar page to reflect on or both of the names. They can draw these illustrations, or use paint or collage if those materials are available. For example, April might be “First Greens,” June might be “Salmon BBQ Month,” and December might be “Christmas Tree Harvest.” In the Sugpiak/Alutiiq tradition, these months would align with April: “The Warming Moon,” June: “Salmon Month,” and December: “The Snow’s Moon.” Provide class time for students to work on their calendars, and encourage them to continue work outside of class.

### **Wrap-Up:**

Have students share their calendars with the class. Provide time for questions. Discuss how the names for some months are similar across students and cultures, and others are more disparate. Ask students to think about what they would do if they couldn’t use these resources. Brainstorm ways to make sure these traditions are sustained in the future.

### **Evaluation:**

Use the Human Ecosystem Calendar Rubric to evaluate the student calendars.

## Human Ecosystem Calendar

Teacher Name: \_\_\_\_\_

Student Name: \_\_\_\_\_

CATEGORY	4	3	2	1
Titles & Text	Titles and text were written clearly and were easy to read from a distance. Text varied in color, size and/or style for different text elements. Text goes well with the illustrations and there is a good mix of text and illustrations.	Titles and text were written clearly and were easy to read close-up. Text varied in color, size and/or style for different text elements. There is a good mixture of text and illustrations, but they do not go well together.	Titles and text were written clearly and were easy to read close-up. There was little variation in the appearance of text. Text goes with the illustrations, but there is too much and the calendar seems "text-heavy."	Titles and/or text are hard to read, even when the reader is close. Illustrations and accompanying text are not balanced and do not go together or appear to be randomly chosen.
Attractiveness & Organization	The calendar has exceptionally attractive formatting and well-organized information.	The calendar has attractive formatting and well-organized information.	The calendar has well-organized information.	The calendar's formatting and organization of material are confusing to the reader.

Attention to Theme	The student gives a reasonable explanation of how every illustration in the calendar is related to their personal or community connection with local ecosystems. For most items, the relationship is clear without explanation.	The student gives a reasonable explanation of how most illustrations in the calendar are related to their personal or community connection with local ecosystems. For many of the items, the relationship is clear without explanation.	The student gives a fairly reasonable explanation of how most illustrations in the calendar are related to their personal or community connection with local ecosystems.	The student's explanations are weak and illustrate difficulty understanding how to relate illustrations to their personal or community connection with local ecosystems.
Illustrations	All of the ideas and illustrations used in the calendar reflect an exceptional degree of student creativity in their creation and/or display. Illustrations are recognizable, detailed and colored accurately. Overall, the illustrations are original and skillful.	Most of the ideas and illustrations used in the calendar reflect student creativity in their creation and/or display. Illustrations are recognizable and colored accurately. Overall, the illustrations are original and done with some skill.	Some (4-8) of the ideas and illustrations in the calendar reflect student creativity in their creation and/or display. Illustrations are recognizable and reasonably accurate. They are copied, printed or traced rather than original.	Few (less than 4) of the illustrations and ideas used in the calendar reflect any student creativity. Illustrated objects are difficult to recognize AND/OR not accurate.
Time & Effort	Class time was used wisely. Much time and effort went into the planning and design of the calendar. The calendar highlights an excellent level of student thoughtfulness and personal reflection on connections to local ecosystems.	Class time was used wisely. Student could have put in more time and effort at home. The calendar shows student thoughtfulness and personal reflection on connections to local ecosystems.	Class time was not always used wisely, but student did do some additional work at home. The calendar shows some student thoughtfulness and personal reflection on connections to local ecosystems.	Class time was not used wisely and the student put in no additional effort. The calendar does not show any effort on the part of the student to reflect on connections to local ecosystems.

## Human-Ecosystem Calendar

Cultural, Social, Personal Perspectives, and Science: Students develop an understanding of the dynamic relationships among scientific, cultural, social, and personal perspectives.

### SF1

Students develop an understanding of the interrelationships among individuals, cultures, societies, science, and technology.

### SF2

Students develop an understanding that some individuals, cultures, and societies use other beliefs and methods in addition to scientific methods to describe and understand the world.

### SF3

Students develop an understanding of the importance of recording and validating cultural knowledge.

The student demonstrates an understanding of the dynamic relationships among scientific, cultural, social, and personal perspectives by:

[4] SF1.1-SF3.1 connecting observations of nature to a local or traditional story that explains a natural event (e.g., animal adaptation, weather, rapid changes to Earth's surface)

[5, 6] SF1.1-SF3.1 telling a local or traditional story that explains a natural event (e.g., animal adaptation, weather, rapid changes to Earth's surface) and relating it to a scientific explanation

[7] SF1.1-SF3.1 investigating the basis of local knowledge (e.g., describing and predicting weather) and sharing that information