

Name: Mikki Maddox		Unit Plan: Weeks of
		Subject/Grade Level: 6-12
Unit Title:	EU Conservation and Eurasian Crane Migration	
Unit Narrative:	Students will learn about bird conservation efforts through the case study of the Eurasian Crane (also known as the common crane). They will also explore how the countries of the EU work together to support the continued well-being of cranes and their habitat.	
Standards:	<p>C3 Framework for Social Studies State Standards</p> <ul style="list-style-type: none"> • D2. Geo.1.3-5: Construct maps and other graphic representations of both familiar and unfamiliar places. • D2. Geo.2.3-5: Use maps, satellite images, photographs, and other representations to explain relationships between the locations of places and regions and their environmental characteristics. • D2. Geo.3.3-5: Use maps of different scales to describe the locations of cultural and environmental characteristics. <p>Next Generation Science Standards</p> <ul style="list-style-type: none"> • 3-LS4-3 Biological Evolution: Unity and Diversity <ul style="list-style-type: none"> – Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. • 3-LS4-4 Biological Evolution: Unity and Diversity <ul style="list-style-type: none"> – Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change. • 4-ESS2-2 Earth's Systems <ul style="list-style-type: none"> – Analyze and interpret data from maps to describe patterns of Earth's features. 	
Objectives		
<ul style="list-style-type: none"> ● Summarize the EU Bird Directive and its goals ● Define the Natura 2000 plan ● Make a claim, citing evidence on the effectiveness of the EU Bird Directive ● Research sites used in crane and other species conservation (Natura 2000) and determine why these sites are supportive of crane species. ● Map the migration route of Eurasian Cranes, including the areas they travel between and stops they make along the way. Make connections to Natura 2000 sites, if possible. ● Describe the threats to crane migration patterns and how these threats affect their population. ● Explain the importance of crane migration and what we can do to help. 		
Big Ideas		

- Cranes are continuing to be affected by climate change
- Cranes are continuing to be affected by loss of habitat
- Laws such as the EU Bird Directive are only as effective if they are followed and as long as there are consequences for violations of the law.
- Although some species, such as cranes, maybe be having a resurgence, we must continue to be vigilant as there are some signs of overall species and biodiversity decline in EU member states.

Essential Questions

- What crane migratory patterns are present in the EU?
- What are some environmental impacts that affect crane populations?
- What can citizens do to support healthy crane populations in Europe?
- How are EU wildlife management plans similar or different from the US? My state? My locality?
- How effective does the EU Bird Directive appear to be/have been?

Learning Acquisition and Assessment

Students will know... (content/concepts)

- A basic understanding of the EU Birds Directive
- The life cycle and migration habits of the Eurasian Crane
- How EU member states work or do not work together to ensure healthy populations of cranes and other wildlife
- How loss of habitat is affecting cranes/birds
- How creation or retention of habitat is affecting crane/birds

Students will be able to... (skills, performance tasks)

- Make a claim, supported by evidence on the success of the EU Bird Directive.
- Make a claim, supported by evidence of the success or lack thereof of Eurasian Crane repopulation

Formative Assessments

- Discussions,
- Quickwrites,
- Exit Tickets,
- Map work

Summative Assessments

- Hexagonal thinking activity
- Summative essay

Learning Activities (1 week – 5 days): Lesson introduction, body, and closing

Day 1	Depending on your purpose and age level, before using these learning activities you may wish to do some activation of prior knowledge or actual lessons related to understanding US laws such as the Endangered Species Act or state and local laws and ordinances related to wildlife, more specifically birds, and potentially about local crane species. You may also wish to do a lesson on a local migratory bird species or, more specifically, a local crane species such as Sandhill or Whooping cranes, to be able to make comparisons in governmental policies and how cranes are perceived and treated in their local communities. You also may even need to do a more basic lesson on migration in general and on how and why animals migrate.
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	<p>Provide students with a copy of the EU Bird Directive. Depending on time and student ability, you can have students read the whole directive as a homework assignment or give students a few articles to read and summarize or break students into small groups and give them a few articles in each group to read and summarize for the whole class. After listening to each student/group share their summary, ask students what they noticed and thought about the directive and if they have any questions at this point that they might wish to carry into the lesson or do further research on. At this point, you could also activate any prior knowledge students might have about the US Endangered Species Act or Migratory Bird Act and make comparisons to the EU Bird Directive. If the EU Bird Directive itself is too complicated for your students to read or would take too long, you may prefer a summary of the document. Here are a couple of websites that summarize or give an overview of the document: Ireland's interpretation, EU Website overview.</p> <p>If there is time (or for homework), you may want to show the following video, which is a :50 video on the anniversary of the directive. Ask students to do a quickwrite, exit ticket, or discuss what they think this video is trying to convey and whether or not they predict that the claim the video is making is true.</p>
Day 2	<p>Today we will introduce the basics on the Eurasian Crane. Sometimes the Eurasian Crane is also known as the Common Crane. It will also probably be important for students to know its Latin name, Grus Grus, because that is often how it is referenced in some literature. You can either have students break into small groups, each taking a part of the crane's life—diet, habitat, migration, biology, etc., or you can give a lecture to students on these points. A good overview handout or download is this document from the African Eurasian Migratory Waterbird Agreement (AEWA). Although it is a bit dated, most information and the overview of the crane is still accurate. Some of the population numbers are not as accurate as they used to be and this might be something in particular you have the students write down in their notes as a data point before you/they do more research on more up-to-date population numbers.</p> <p>After the basics, have students do some mapwork identifying the three major migration flyways of the cranes. Provide students with a blank map of Europe, or you may wish to find a blank map of Europe and Africa. Ideally, you probably want Europe and at least North Africa. Or you could have students draw or trace a map in order to get what you would like based on the time you have. Have students identify countries as well as major rivers on the map and then either provide the names and identifying information to create the flyways on a map or have students research them and place them on the map. If you have time, you could break students into three groups and have each do more specific research on a particular flyway. The German crane organization, Kranichschutz Deutschland has an overview of the crane and their migration patterns, if you would like the students to work more independently.</p> <p>Once the maps and basic notes on the life cycle of the crane have been completed, have students look at the flyways and the countries they cross and have them compile a list of questions they may have about how the location of the flyways might impact how the cranes survive. For example, are there large cities on the flyways? What types of water bodies are along the flyways? What political borders are they crossing and are those nations friendly to each other? Are the cranes flying over population dense areas? What might be the impact of conflict on the areas that they fly over? Are the areas industrializing and is natural habitat shrinking? How is the climate changing in those areas? For an exit ticket or homework, you</p>

	<p>could have students write on one of these questions and predict or make a claim based on what they have learned so far.</p>
<p>Day 3</p>	<p>Today we are now going to put some of our pieces of Day 1 and 2 together by looking more specifically at the flyways and habitat. First, you may wish to set the day up by either having students research the EU's Natura 2000 initiative or by giving the students the information on Natura 2000. You may wish to use the European Environment Agency's webpage for this or choose Wikipedia or another source. Once students have a basic understanding of Natura 2000, have them go to the Biodiversity Information System for Europe. Once on the main page, click on the graphic for factsheets and then in the species search put in the Latin name for the crane, <i>Grus Grus</i>. An overview page for the Eurasian Crane (A127) should appear.</p> <p>Have students look over the map as to where the cranes are located. You could also have them add this in a different color or some type of designation on the maps they created the day before. Then have students look over the next map that shows the 23 countries that have designated land for the cranes. You may wish to ask the question (after the students have looked at the maps) looking at where the largest population of cranes are and the land the country has set aside for cranes, do they notice anything? Is there land being set aside in areas where lots of cranes tend to gather?</p> <p>Then have students take a closer look at some of these Natura 2000 sites. Depending on the size of your class and the time you have, you could have each student take one of the 23 countries, you could just have them look at the land in one country, you could put the students in small groups, etc. The link is at the bottom of the Eurasian Crane Biodiversity Information System page and it is titled Natura 2000. If you did not have students look up the basics of the Natura 2000 program or tell them about it, now is the time. This is where the students can manipulate the map and see the habitat being protected for cranes and other species. Using the search bar on the upper left (see magnifying glass), put in the Latin name <i>Grus Grus</i> or the word crane. If you click on the search (magnifying glass), you may get to choose a category and you only want species. There should be about 1300 sites to choose from, so determine if you are just going to choose from one specific country or multiple countries. Remember from the previous page, three countries have the most habitat set aside for cranes and other wildlife who use the same habitat. Have students explore a site based on the criteria you have chosen. Once they have selected a site, have them take note of the information provided—what species is the site home to? Is there a management plan? What are the threats and pressures on the site and how critical are they?</p> <p>At the end, have students do a share out of the information they gathered and take notes. For the end of the day, have students do a quickwrite to summarize their overall thoughts what they learned about crane habitat in the various countries of the EU or something else they found interesting or questions that they have developed after looking at the maps and listening to their peers.</p>
<p>Day 4</p>	<p>If you have access to a streaming service, you may want to show Season 1 Episode 3 of the BBC documentary series Earthflight. It is 60 minutes. If you do not have that amount of time or your school does not allow, you can select your own clips from that documentary and/or there are currently clips from the episode on YouTube. One clip shows the cranes flying over Venice, Italy (1:44). There is another clip of the cranes flying over the Camargue Delta in Southern France (3:54). A third clip is a little longer version of the first, but has</p>

	<p>background music and no narration (2:35). There are also several videos on Eurasian Crane calls, dances, feeding, etc. This may take your whole day or only part of it. You can assign the following for homework or, if you have time in class, read some articles that are critical or challenge the success of the EU Birds Directive:</p> <p>World Wildlife Fund (WWF) webpage—you could have them stay on the summary on the webpage or look deeper into the summary report.</p> <p>BirdLife International webpage—the EU failed to meet its 2020 target.</p> <p>The State of Implementation Report—is a report card of 18 EU member states and how they are doing with the EU Birds Directive. This could be a great quick and easy source for students when looking at overall progress and challenges that could be divided up and shared fairly easily in class.</p> <p>The European Environment Agency Infographic—is good for most grade levels and abilities, and is also quick to view and discuss.</p> <p>More contemporary news can be found doing a basic search of EU Birds Directive and sorting with the News tab.</p> <p>Take whatever sources you choose to provide to the students and/or they look up themselves and have students list the criticisms of the EU Birds Directive. You can have them try to be specific to the needs of Eurasian Cranes or more general as Eurasian Cranes have been relatively successful in repopulation efforts, while others are still struggling. Have students make notes on successes and challenges of the EU Birds Directive.</p>
Day 5	<p>Today, in order to synthesize thinking and possibly come up with ideas for a final essay that will make a claim related to the success of the Eurasian Crane and/or the EU Birds Directive, have students complete a hexagonal thinking activity. Here is a link to Betsy Potash’s original post. You can either prepare a list of terms and concepts or have students come up with their own, or do a little of both. The Potash post also shares a link to an online hexagon generator developed by Pam Hook.</p> <p>This can be your culminating activity, or you can have students use this activity to clarify their thinking and to aid in planning out their essay.</p>
Resources and Materials	
All resources are linked in the plan.	