

Final Report
Fire Ecology Learning Lab Middle School Curriculum
November 14, 2022

Find a description of the deliverables below. Please address any questions about the materials or trainings to Mollie Parsons, Cerise Consulting, mollie@ceriseconsultants.com.

Description of Deliverables

Materials: Animal profiles, lesson plans, and student materials were completed and edited over the summer. They were edited by NM Department of Game and Fish staff as well as Southwest Fire Science Consortium staff. After discussion with teachers, they requested that materials were made available in Pdf, as well as online in Canvas, Google Classroom, and online interactive lab notebook. Teachers expressed excitement about including animals in addition to the plants in the curriculum. The lessons are all available for free download at the Southwest Fire Science Consortium website, <https://www.swfireconsortium.org/education-materials/fire-ecology-learning-lab/>. As presented in the 2022 report, the following animals are highlighted in Lessons 1 and 5. These are organized by biotic communities in the curriculum.

1. Mixed conifer forests:
 - Mexican spotted owl
 - Jemez Mountains salamander, Sacramento Mountain Salamander
 - Peñasco least chipmunk- nm
2. Ponderosa forests:
 - Grace's warbler
 - Red-faced warbler
 - Silver Creek woodland snail - nm
3. Pinyon-juniper woodlands:
 - Piñon jay
 - Gray vireo
 - Western yellow bat
4. Sagebrush steppe and shrublands:
 - Sagebrush sparrow
 - Loggerhead shrike
 - Gunnison's prairie dog
5. Grasslands:
 - Sprague's pipit
 - Lesser prairie-chicken
 - Black-footed ferret
 - Pronghorn
6. Desert scrub:
 - Bendire's thrasher
 - Aplomado falcon
 - Lesser long-nosed bat

- Gila monster
- 7. Desert grasslands:
 - Burrowing owl
 - Black-tailed prairie dog
 - Desert massasauga
- 8. Interior Chaparral
 - Mexican gray wolf
 - California Kingsnake
 - Desert Bighorn sheep
- 9. Oak Woodlands
 - Jaguar
 - Lucifer hummingbird or violet crowned
 - NM ridge nosed rattlesnake
 - Roundtail chub

Workshops:

We offered two online workshops for teachers this fall to increase the number of teachers we would reach. These were offered on two Saturday mornings, September 17 and November 12 from 9am-1pm. Fliers and invitations were sent to all of the school districts in the state, either to school administrators, science coordinators, or curriculum coordinators. We had more than 50 teachers register for the workshops, but only 25 educators attended, despite several reminders. Of the educators that did attend, 10 were from Title One schools and qualified for the stipend. They were paid by EENM.

The following topics were covered in the workshop:

- Trauma Informed approach to wildland fire education
- Introductions, SWFSC, Forest Service, and you
- Fire Ecology Learning Lab Introduction
- Where do we live? Outdoor investigation
- New Mexico Biotic Communities
- Small groups discuss biotic communities
- Fuel properties and explore how fire impacts our biotic communities
- Overview of teaching resources from curriculum
- Visitors from the Forest Service
- Closing and Evaluation

Teachers reported high levels of satisfaction after the workshop. Before the workshops most teachers felt as though they were unprepared to teach about wildland fire. After the workshop almost all of the teachers reported feeling somewhat or very confident about teaching about wildland fire in their classrooms. Between the two workshops, teachers reported that about 1350 students will engage with this material in the coming year. In addition, we recorded the session and have posted this on the SW Fire Science Consortium website as well. Several teachers who were unable to attend the workshop asked for this link. The presentation was also offered at the Arizona Science Teachers Association conference in November. One of the teachers who piloted the materials in

Los Cruces presented the lessons at the conference. She is also adapting the program and will be presenting it at a national conference for science educators.

In the spring we will be training federal and state environmental agency staff to help teachers with the experiments that require burning fuels. About half of the teachers felt uncomfortable having a fire with their students. This will be cosponsored by the Forest Service and the Southwest Fire Science Consortium.

Teachers registered for the event were from around New Mexico, from Northern, Central, and Southern regions. A reported district list is below.

Teachers Registered from these New Mexico School Districts:

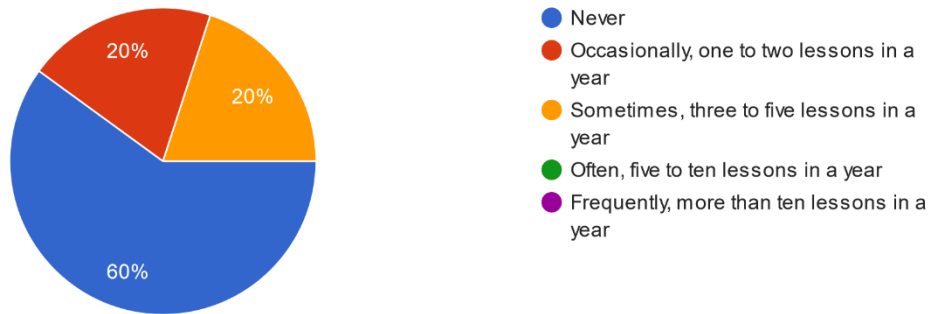
Alamogordo Public Schools
Albuquerque Public Schools
Archdiocese of Santa Fe
Central Consolidated School District
Environmental Education Nonprofits
Española Public Schools
Gallup-McKinley County Schools
home school
Las Cruces
Las Vegas
Los Alamos Public Schools
Mesa Vista
Mora Independent school district
New Mexico Charter School
Project ECHO for Education, UNM
Rio Rancho School District
Robertson
Santa Fe Public Schools
Santa Rosa Consolidated
Sequoia Choice
Taos Academy Charter

Teacher Workshop Evaluation

The teacher evaluations are below.

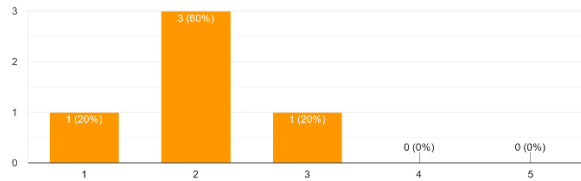
September Evaluation

How much have you taught about wildland fire in the past?
5 responses

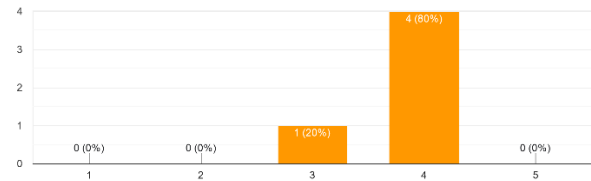


There was a large jump in the confidence of teachers to teach about wildland fire in their classrooms.

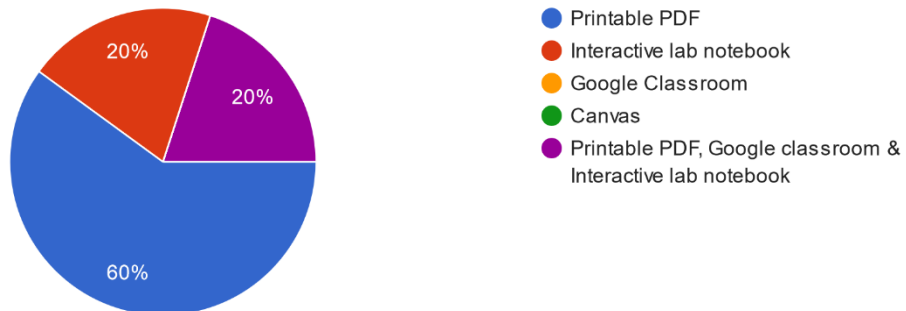
How confident did you feel addressing wildland fire in your classroom before this workshop?
5 responses



How confident do you feel addressing wildland fire in your classroom after this workshop?
5 responses

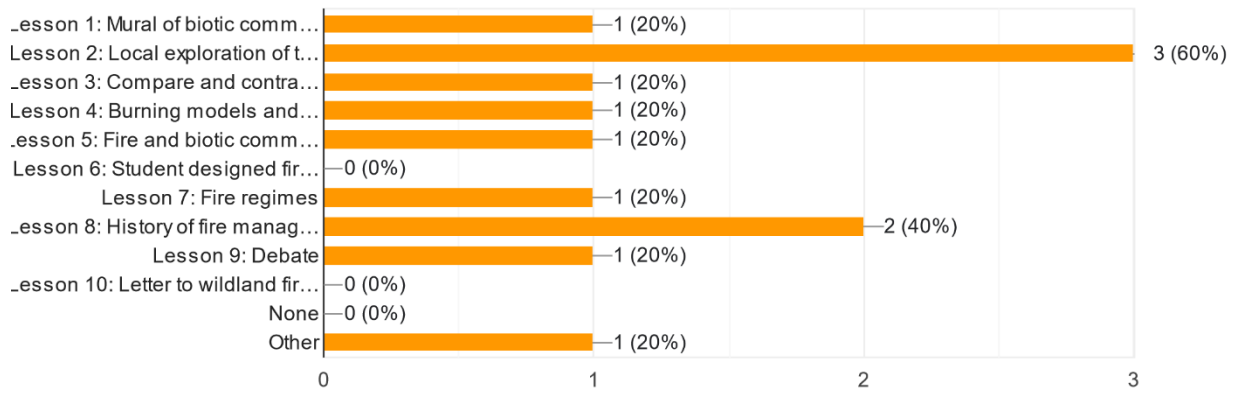


What format are you most likely to use to share this curriculum?
5 responses



Which parts of the curriculum do you plan on using?

5 responses

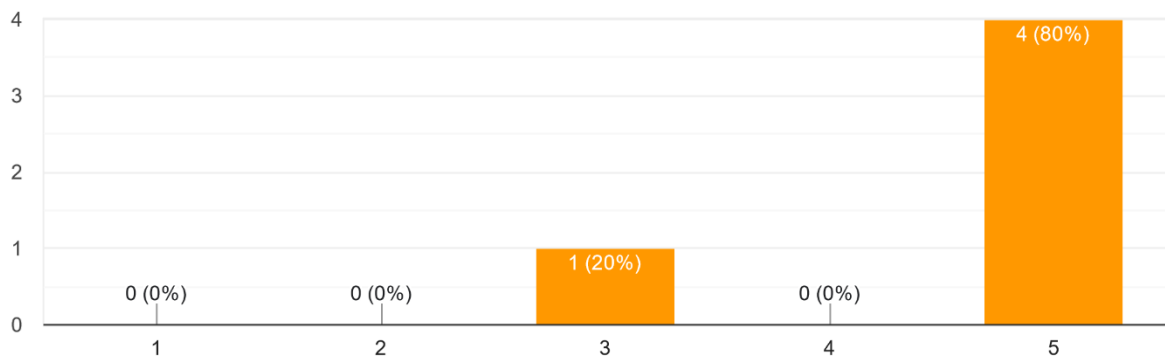


Now that you have been introduced to the curriculum, how many students do you think you will use this unit with in the coming year?

- 145
- 50
- Possibly 50
- na
- 110

How likely are you to recommend this curriculum to a peer teacher?

5 responses

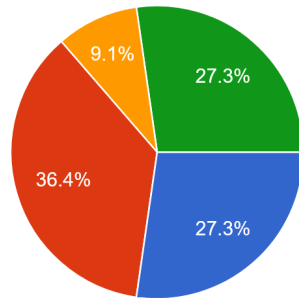


November Evaluation

How much have you taught about wildland fire in the past?

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11 responses



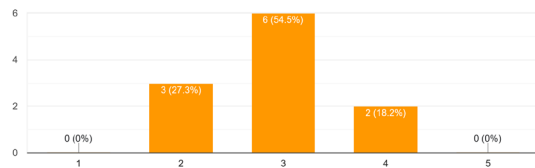
- Never
- Occasionally, one to two lessons in a year
- Sometimes, three to five lessons in a year
- Often, five to ten lessons in a year
- Frequently, more than ten lessons in a year

The workshop dramatically increase teacher confidence in teaching about wildland fire.

How confident did you feel addressing wildland fire in your classroom **before** this workshop?

Copy

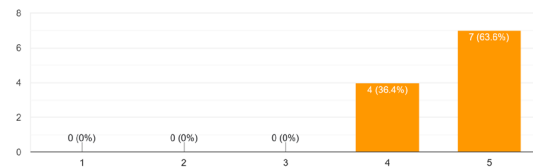
11 responses



How confident do you feel addressing wildland fire in your classroom **after** this workshop?

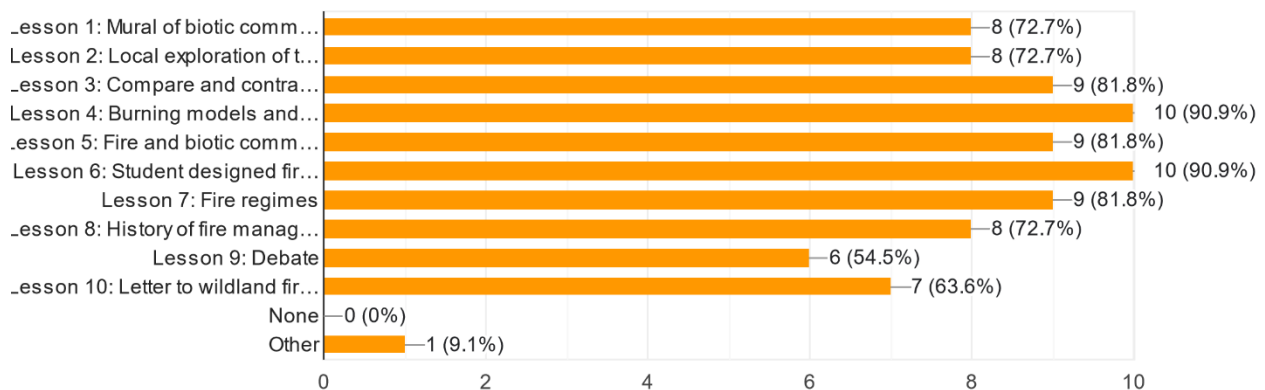
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11 responses



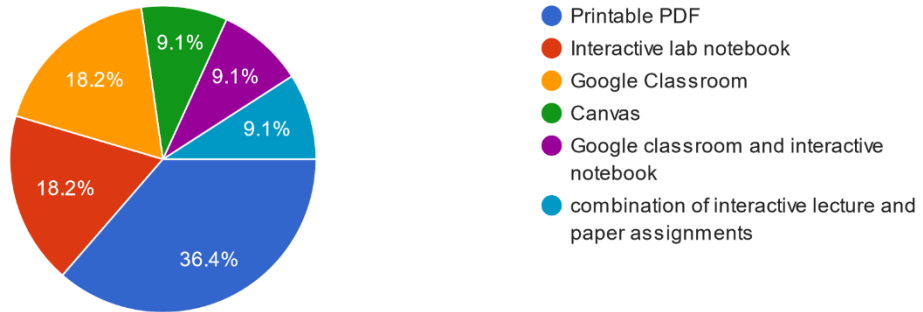
Which parts of the curriculum do you plan on using?

11 responses



What format are you most likely to use to share this curriculum?

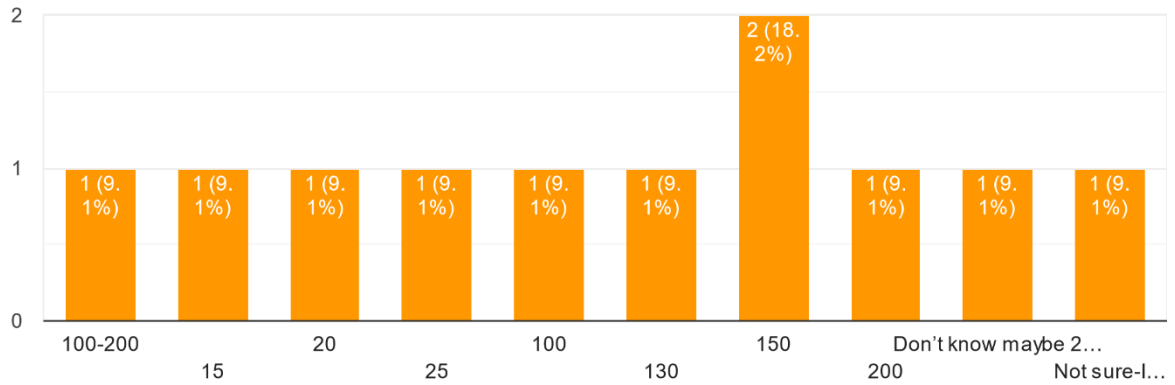
11 responses



Teachers estimate they will use curriculum with about 1000 students in the coming year.

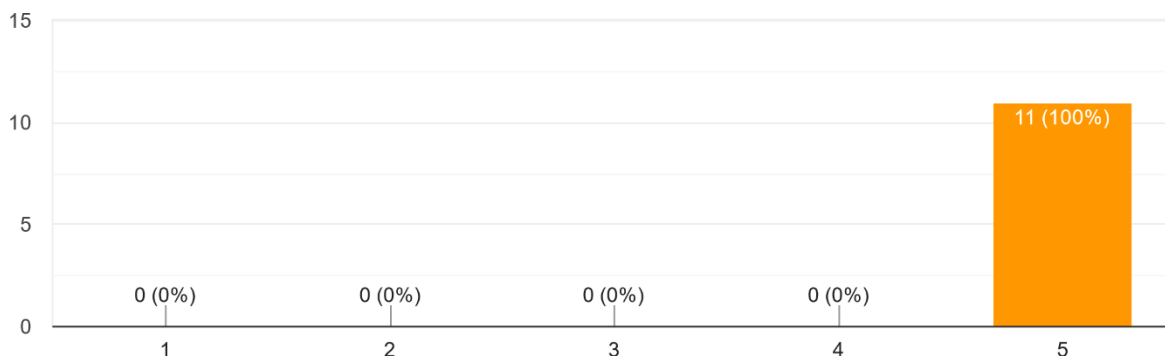
Now that you have been introduced to the curriculum, how many students do you think you will use this unit with in the coming year?

11 responses



How likely are you to recommend this curriculum to a peer teacher?

11 responses



Example of Flyer

The flyer features a circular image of a forest fire. Below the image, the title 'Fire Ecology Learning Lab Online Workshop' is centered. The text describes the curriculum as standards-aligned for middle school, covering biotic communities in New Mexico and Arizona, and the impact of wildland fire. It mentions that materials are free to download and provides a link to <https://www.swfireconsortium.org/>. It also notes that teachers in New Mexico and Arizona qualify for a \$100 stipend from various grants. The event is scheduled for 9am-1pm on November 12th, 2022. A registration link is provided: <https://forms.gle/zddp9LQq3yzdHwH67>. The footer contains logos for the Fire Ecology Learning Lab, New Mexico Game & Fish, UAS, Southwest Fire Science Consortium, and CERISE Consulting.