

ARIZONA CTE CAREER PREPARATION STANDARDS & MEASUREMENT CRITERIA

NATURAL RESOURCES SYSTEMS, 01.0100.5

STANDARD 1.0 – IDENTIFY RESOURCE MANAGEMENT COMPONENTS TO ESTABLISH RELATIONSHIPS IN NATURAL RESOURCE SYSTEMS

1.1	Identify natural resources
1.2	Identify organizations and agencies involved in resource management
1.3	Identify impacts by humans on natural resources
1.4	Describe ecosystem relationships
1.5	Create habitat management plan

STANDARD 2.0 – APPLY CARTOGRAPHIC SKILLS TO NATURAL RESOURCE ACTIVITIES

2.1	Describe different types of maps
2.2	Interpret map features and legends
2.3	Determine map scale and actual distance
2.4	Determine direction from map
2.5	Determine elevation and terrain features from topographic maps
2.6	Use directional tools with map to locate position
2.7	Use land survey and coordinate system
2.8	Use Geographic Information System to interface geospatial data
2.9	Interpret photos and images

STANDARD 3.0 – MONITOR NATURAL RESOURCE STATUS TO OBTAIN PLANNING DATA

3.1	Conduct resource inventory and population studies
3.2	Establish sample plots and points
3.3	Locate and identify resources
3.4	Collect data concerning resource availability and health
3.5	Maintain databases of resource data
3.6	Use a Geographic Information System to analyze resource data

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3.7	Prepare a technical report
3.8	Describe the relationship of harvest levels to long-term availability of resources
STANDARD 4.0 – EMPLOY ENVIRONMENTAL AND WILDLIFE KNOWLEDGE TO DEMONSTRATE NATURAL RESOURCE ENHANCEMENT TECHNIQUES	
4.1	Demonstrate stream enhancement techniques
4.2	Demonstrate forest stand improvement techniques
4.3	Demonstrate wildlife habitat enhancement techniques
4.4	Demonstrate range enhancement techniques
4.5	Demonstrate recreation area enhancement techniques
4.6	Demonstrate enhancement techniques on cropland
STANDARD 5.0 – EXAMINE WEATHER AND OTHER CRITERIA TO RECOGNIZE DANGERS RELATED TO WORK IN AN OUTDOOR ENVIRONMENT	
5.1	Recognize weather-related dangers
5.2	Recognize hazards as they relate to terrain
5.3	Recognize poisonous plants and animals
5.4	Recognize hazardous situations at the work location
5.5	Learn applicable rules or laws to demonstrate natural resource mitigation techniques
5.6	Demonstrate mitigation techniques
STANDARD 6.0 – COMMUNICATE NATURAL RESOURCE INFORMATION TO THE GENERAL PUBLIC	
6.1	Set up and staff a display booth that communicates a natural resource topic during a community event
6.2	Develop a public use area to explain natural resources
6.3	Participate as a facilitator during a public meeting concerning natural resource management
6.4	Lead a group habitat conservation project
6.5	Volunteer in a natural resource area
STANDARD 7.0 – PERSONALLY INTERPRET NATURAL RESOURCE PHENOMENA TO NATURAL RESOURCE USERS	
7.1	Lead a group hike to interpret a natural area
7.2	Conduct a workshop, activity, or program to interpret an example of natural resource conservation

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7.3	Develop an interpretive trail to describe a natural resource area
7.4	Produce printed material that interprets a natural resource area or phenomenon
7.5	Produce natural resource curriculum materials
7.6	Develop a sign to communicate a natural resource area or phenomenon
7.7	Create a multimedia/video presentation that interprets a natural resource topic, area, or phenomenon
7.8	Create a web page to present and interpret a natural resource topic, area, or phenomenon
STANDARD 8 .0 – USE SCIENCE CONCEPTS, PROCESSES, AND RESEARCH TECHNIQUES TO EXAMINE NATURAL RESOURCE TOPICS	
8.1	Develop a research/monitoring plan to inquire about a natural resource topic
8.2	Conduct a research/monitoring activity for a natural resource topic
8.3	Evaluate the results of a natural resource-related inquiry
8.4	Produce a technical report of results and findings
STANDARD 9.0 – EXAMINE BIOLOGICAL AND PHYSICAL CHARACTERISTICS TO IDENTIFY AND CLASSIFY NATURAL RESOURCES	
9.1	Identify tree species and other woody vegetation
9.2	Identify grass and forest species
9.3	Identify wildlife species
9.4	Identify fish species
9.5	Identify rocks, minerals, and soil types
STANDARD 10 .0 – EXAMINE NATURAL CYCLES AND RELATED PHENOMENA TO DESCRIBE ECOLOGIC CONCEPTS AND PRINCIPLES	
10.1	Describe the hydrologic cycle
10.2	Describe the nitrogen cycle
10.3	Describe the carbon cycle
10.4	Describe nutrient cycles
10.5	Describe succession
10.6	Describe population dynamics
10.7	Describe primary and secondary producers

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10.8	Describe predator-prey relationships
10.9	Identify potential pollution sources
10.10	Define watershed boundaries
10.11	Use stream classification system
10.12	Describe the influence of weather and climatic factors
STANDARD 11.0 – PREPARE PRESENTATIONS TO DESCRIBE HOW NATURAL RESOURCE PRODUCTS ARE PRODUCED, HARVESTED, PROCESSED, AND USED	
11.1	Describe forest harvest techniques and procedures
11.2	Describe wildlife harvest techniques and procedures
11.3	Describe fish harvest techniques and procedures
11.4	Describe how minerals and ores are extracted and processed
11.5	Describe how oil is extracted and processed
11.6	Describe hydroelectric generation techniques and procedures
11.7	Describe how public recreation use is a product
STANDARD 12.0 –EMPLOY TECHNIQUES AND EQUIPMENT NEEDED TO PREVENT WILDFIRE	
12.1	Demonstrate personal fire prevention precautions while working in natural environments
12.2	Participate in wildfire prevention community service project
STANDARD 13.0 – USE WILDFIRE SUPPRESSION TECHNIQUES TO DEMONSTRATE ABILITIES IN FIREFIGHTING AND CONTROL	
13.1	Meet industry standards for fire suppression training (e.g., National Wildfire Coordination Group Firefighter Certification Standards)
STANDARD 14 .0 – RECOGNIZE SYMPTOMS OF ANIMAL AND PLANT DISEASE AND USE APPROPRIATE TECHNIQUES TO PREVENT THEIR SPREAD	
14.1	Identify observable diseases impacting plants and animals
14.2	Describe how to report observance of disease infestations
14.3	Use appropriate techniques and equipment when working with biohazards
STANDARD 15 .0 – RECOGNIZE INSECT TYPES AND AVAILABLE CONTROLS TO PREVENT INSECT INFESTATION	
15.1	Identify and classify insects
15.2	Identify insect damage signs

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15.3	Describe how to report observance of insect infestation
STANDARD 16 .0 – USE ACCEPTABLE PESTICIDES TO TREAT INSECT INFESTATIONS	
16.1	Obtain appropriate pesticide license for applicators
16.2	Apply materials to treat for insect infestation
STANDARD 17 .0 – KNOW LAW ENFORCEMENT PROCEDURES TO MANAGE PUBLIC GATHERINGS AND TO GAIN ENTRY INTO SECURE, CLOSED, OR RESTRICTED AREAS	
17.1	Demonstrate precautions to use when interfacing with the public concerning regulations and law enforcement
17.2	Describe security issues for closed and restricted areas
17.3	Describe solutions to issues concerning public protection
17.4	Recognize potential threat situations for the public and other resource users
17.5	Identify the appropriate law enforcement authority
STANDARD 18.0 – DESCRIBE THE USE OF CROP ROTATION AND NO-TILL/MINIMUM TILLAGE	
18.1	(in development)
18.2	
STANDARD 19 .0 – DESCRIBE THE USE OF PROPER/PLANNED PASTURE ROTATION	
19.1	(in development)
19.2	