

Content Standard	Concepts	Benchmarks/Performance Indicators
<p>Standard 1 – <u>NCO 1.0</u> Natural Resources Systems and Society Evaluate how NR systems interface to fulfill society's needs.</p>	<p><i>Systems, interaction, interdependence and interrelatedness</i></p> <p><i>Basic needs of Society</i></p> <p><i>Technology</i></p>	<p><u>NCO 1.1</u> Analyze the interconnectedness between (living and non-living) biotic and abiotic systems to determine how each system interacts with other systems.</p> <ul style="list-style-type: none"> • Compare and contrast (living and non-living) biotic and abiotic systems and their components to determine the following: <ul style="list-style-type: none"> ✓ Attributes of systems ✓ Resources needed to sustain systems ✓ Connections to aspects of production • Determine controllable and uncontrollable factors that affect NR systems and their impacts and consequences. Examples are: <ul style="list-style-type: none"> ✓ Human caused events such as changing the amount of irrigation water to fields, a "controllable" factor, or ✓ The effects of Vog, an uncontrollable natural event or factor <p><u>NCO 1.2</u> Analyze biotic and abiotic features of various regions, areas and/or locations globally to determine "place-based" implications to NR systems.</p> <ul style="list-style-type: none"> • Explain how NR systems differ across geographical areas using living and non-living systems and their interactions. • Assess how "place," location and/or geography influences the diversity of various environments or ecosystems. Examples include: <ul style="list-style-type: none"> ✓ Leeward or Windward areas ✓ Atolls, volcanic or "continental" islands ✓ Tropical or temperate regions • Analyze the relationship between NR systems and social, economic, political and/or cultural activities in different geographic areas. <p><u>NCO 1.3</u> Analyze the interactions between society and NR to assess how societal needs impact the provision of goods and services by NR systems.</p> <ul style="list-style-type: none"> • Determine how goods and services provided by NR systems (living and non-living or biotic and abiotic) benefit or cost society. • Analyze different global, regional, local or place-based interactions between societal needs and NR to compare methods of response by

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		<p>NR systems to needs.</p> <ul style="list-style-type: none"> • Examine and trace the impact of major change factors to NR systems to determine their effects on providing goods and services for society. <p><u>NCO 1.4</u> Analyze global implications of new and emerging technologies to determine their impacts on NR.</p> <ul style="list-style-type: none"> • Compare alternative technologies used in NR to determine their implications and consequences to humans and the environment. <ul style="list-style-type: none"> ✓ Compare and contrast characteristics of different types of technology used in NR by their applications in research, production, or resource management. • Compare and contrast the impact of conventional, alternative and emerging technologies to determine efficiency in research, production, or resource management. <ul style="list-style-type: none"> ✓ Examine emerging technologies to determine possible impacts on research, production or resource management. • Analyze how innovation and technological processes impact NR systems.
<p>Standard 2 – <u>NCO 2.0</u> Careers in Natural Resources Evaluate personal interests, strengths and compatibility with various NR careers.</p>	<p><i>Careers in NR</i></p> <p><i>Knowledge, skills, behavior, attitudes, and abilities</i></p> <p><i>Education and training preparation for NR careers compatibility</i></p>	<p><u>NCO 2.1</u> Examine research, production, and resource management in NR abiotic and biotic systems to distinguish features and characteristics of a variety of career choices.</p> <ul style="list-style-type: none"> • Identify a variety of possible careers related to research, production, and resource management in NR systems. • Describe NR careers by their occupational requirements and related skills, knowledge, and attributes. • Analyze NR related economic and industry activities and trends to determine existing and emerging careers. <p><u>NCO 2.2</u> Evaluate personal attributes to determine the level of compatibility for NR careers.</p> <ul style="list-style-type: none"> • Align career opportunities based on personal characteristics, strengths and interests and their alignment to research, production or resource management in NR systems. • Project education and training necessary to achieve career targets.

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<p>Standard 3 – <u>NCO 3.0</u> Safety in NR Assess and evaluate NR work environments for health and safety.</p>	<p><i>Safety, health, and environment</i></p>	<p><u>NCO 3.1</u> Use regulatory guidelines to maintain an environment that meets health and safety policies according to regulatory guidelines.</p> <ul style="list-style-type: none"> • Describe the purpose of Materials Safety Data Sheets (MSDS), Hawaii Occupational Safety and Health Regulations (HIOSH), and the Occupational Safety and Health Administration (OSHA) in NR systems. • Refer to NR safety and health rules and regulations to ensure activities comply with safety and health requirements. • Perform site assessments to maintain a safe and healthy environment. • Use technology, tools, equipment and materials in accordance with health and safety guidelines. • Apply food, health and safety guidelines in the processing of NR products and disposal of wastes to eliminate or minimize impacts and consequences to health and safety of humans and the environment. <p><u>NCO 3.2</u> Apply injury prevention measures to minimize risks in NR work environments.</p> <ul style="list-style-type: none"> • Explain consequences of ignoring proper body mechanics. • Employ and practice proper body mechanics to prevent injury in NR work environments. • Dress appropriately to ensure personal safety, including removal of jewelry, personal accessories, and personal grooming.
<p>Standard 4 – <u>NCO 4.0</u> Legal and ethical considerations in NR Use various documents and resources to analyze legal and ethical considerations in NR.</p>	<p><i>Policies, regulations, and ethics</i></p>	<p><u>NCO 4.1</u> Identify legal and ethical considerations integral to NR animal, plant, or energy systems that support positive social and environmental welfare.</p> <ul style="list-style-type: none"> • Identify legal and ethical considerations from various documents that are pertinent to NR systems. • Trace examples of changes in NR law, policies or regulations and their impact on NR systems. <p><u>NRC 4.2</u> Analyze the legal and ethical responsibilities of individuals in NR systems that support positive social and environmental welfare.</p> <ul style="list-style-type: none"> • Evaluate the individual’s responsibility in complying with or implementing the expectations of laws or ethics in NR systems.

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	<i>Science Skills, Concepts, and Applications</i>	<p style="text-align: right;">variation in formulating conclusions and/or inferences.</p> <p><u>NCO 5.3</u> Use scientific principles in investigating, assessing and solving a NR problem.</p> <ul style="list-style-type: none"> • Use observations to describe problems and assess solutions. • Identify and isolate variables to investigate and/or test. • Use appropriate sampling techniques, protocols and tools to collect data. • Incorporate new information and modify or adjust investigation as new data or information arises. • Acknowledge and credit sources, prior studies or data collected when used in investigations. <p><u>NCO 5.4</u> Select and use appropriate tools, technology and equipment to investigate and/or solve NR problems.</p> <ul style="list-style-type: none"> • Distinguish tools, technology and equipment used in NR by purpose and feasibility to determine appropriateness in various situations. • Select tools, technology and equipment for use in research, production, or resource management based on the suitability of their use and efficiency.
<p>Standard 6 – NCO 6.0 Communication Use communication skills to effectively transfer and exchange NR information.</p>	<p><i>Technical reading</i></p> <p><i>Technical writing</i></p>	<p><u>NCO 6.1</u> Decode a variety of NR work-related documents to acquire pertinent technical terminology and information.</p> <ul style="list-style-type: none"> • Summarize information from technical documents, tools and equipment specifications, research articles, and policy/procedural manuals. • Read and interpret work-related technical materials, charts, tables and diagrams. <p><u>NCO 6.2</u> Write technical information and ideas in a clear and industry appropriate style to convey information.</p> <ul style="list-style-type: none"> • Compose written communications to write reports and document information using correct NR terminology, spelling, grammar, and form. • Collect data and write reports on NR topics using information from a range of sources.

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	<p><i>Oral communication</i></p>	<ul style="list-style-type: none"> • Organize and document NR information and procedures from a range of sources to communicate information or ensure replication of process and results. <p><u>NCO 6.3</u> Communicate orally to convey and/or receive NR technical information and ideas.</p> <ul style="list-style-type: none"> • Orally communicate technical information and ideas in a clear, logical and convincing way. <ul style="list-style-type: none"> ✓ Use correct work-related vernacular for NR language. ✓ Communicate NR technical terms to support and enhance audience understanding. • Exhibit behaviors that contribute to meaningful and respectful communication between people. (i.e. giving speaker full attention, organize important points speaker is conveying, ask appropriate clarifying questions, refrain from inappropriate interruptions, etc.) <ul style="list-style-type: none"> ✓ Model specific supportive non-verbal behaviors to convey the appropriate message. ✓ Employ listening skills to gather information and enhance understanding. ✓ Consider the important points that the speaker is trying to convey and make connections to current knowledge. ✓ Use appropriate supportive non-verbal communication techniques to enhance communication.