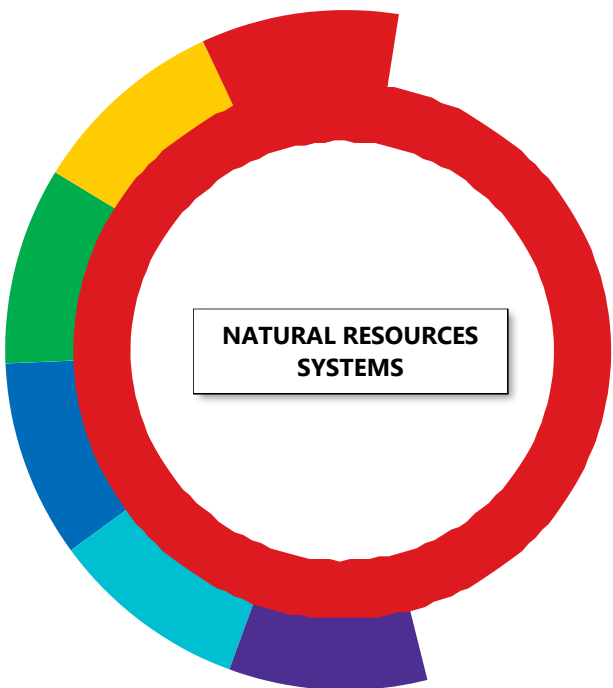




The **Agriculture, Food, and Natural Resources (AFNR) Career Cluster®** focuses on the essential elements of life—food, water, land, and air. This career cluster includes a diverse spectrum of occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist. It also includes non-traditional agricultural occupations like wind energy, solar energy, and oil and gas production.

AGRICULTURE SCIENCES



**NATURAL RESOURCES
SYSTEMS**

APPROVED COURSES

EXPLORATORY

Agroecology & Sustainable Agriculture
Natural Resources/Conservation-General
Water, Wetlands & Marine Resources
Management
Forestry-General
Sustainable Design & Technology/ Agriculture
& Natural Resources Application

PREPARATORY

Range Science & Management
Natural Resources Management & Policy
Natural Resource Economics
Land Use Planning & Management/
Development
Forest Management/ Forest Resources
Management
Urban Forestry
Forest Technology/Technician
Wildlife & Wild Lands Science & Management
Marine Biology & Biological Oceanography
Forest Resource Production & Management

ALIGNED TO INDUSTRY

OCCUPATIONS	MEDIAN WAGE	ANNUAL OPENINGS	% GROWTH
Forest & Conservation Technicians	\$49,980	170	4%
Soil & Water Conservationists	\$58,630	80	8%
Water & Wastewater Treatment Plant & System Operators	\$63,670	270	11%
Foresters & Range Managers	\$64,710	100	6%
Wildlife & Environmental Biologists/Scientists	\$78,440	420	24%

WORK BASED LEARNING AND EXTENDED LEARNING OPPORTUNITIES

Work Experience Opportunities

CTE students in many cases can pursue what is called a "work-based learning" opportunity or an internship involving a job outside of school. "Work-based learning" experiences are always paid, and students can also earn high school credit. Internships are typically paid, but students do not earn academic credit. Individual schools and CTE teachers work with local employers to arrange these opportunities for their students, so your local CTE or career office is the best source of information for what your own school offers.

Student Leadership Organizations

Career and technical student organizations are much more than clubs. They provide opportunities for hands-on learning, and for applying career, leadership and personal skills in real-world environments. Participants build their skills by developing projects, attending events, and competing regionally and nationally. The student organization for Agriculture, Food & Natural Resources is [Washington FFA](#).

People who work in the **Natural Resources Systems** pathway perform a variety of tasks from helping to develop, maintain, and manage the forest and natural environment to catching and trapping various types of marine life for human consumption, animal feed, bait and other uses. Forest and rangelands supply wood products, livestock forage, minerals and water; serve as sites for recreational activities; and provide habitats for wildlife. Conservation scientists and foresters manage, develop, use and help protect these and other natural resources.

POSTSECONDARY OPTIONS

CREDENTIALS		HIGHER EDUCATION			
HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE / LICENSE	ASSOCIATE'S DEGREE	BACHELOR S DEGREE	MASTER'S/ DOCTORAL PROFESSIONA L	SCHOOLS WITH THESE PROGRAMS
Occupational Safety & Health Administration-10 hr. and 30 hr.	Society of American Foresters Certification				
Wastewater OIT, Group 1	Wastewater Operator				
	Registered Hydrogeologist				
Additional industry-based certification information is available from the OSPI website.					

COURSE INFORMATION

COURSE NAME	CIP CODE	STATE COURSE CODE	TEACHER CERTIFICATION CODE	COURSE NAME	CIP CODE	STATE COURSE CODE	TEACHER CERTIFICATION CODE
Agroecology & Sustainable Agriculture	010308	03003, 18003, 03207, 18504, 18505, 18307	V010000 V030101	Range Science & Management	011106	18051, 18002	V010000
Natural Resources & Management Policy	030201	18504 18505 03207	V010000 V030101	Sustainable Design & Technology	030202	18001, 03003, 20101, 17002, 17102	V010000 V0303101
Natural Resource Economics	030204	18504 18505	V010000 V030101	Water, Wetlands & Marine Resources Management	030205	03005, 18504, 18505	V010000 V030101
Land Use Planning & Management/ Development	030206	18301, 18999	V010000 V030101	Forestry, General	030501	18502	V010000 V030101
Forestry Management/Forest Resources Mgmt	030506	18502	V010000 V030101 V010601	Forest Resources Production & Management	030510	18503	V010000 V030101
Forest Technology/ Technician	030511	18502	V010000 V030101	Wildlife & Wild Lands Science & Management	030601	18501	V010000 V030101
Marine Biology & Biological Oceanography	261302	18306, 03005	V010000 V010303				



Washington Office of Superintendent of
PUBLIC INSTRUCTION

For additional information on this cluster, please contact: OSPI
Career and Technical Education | cte@k12.wa.us
<https://www.k12.wa.us/cte>