

ARIZONA GREEN OCCUPATIONAL PROFILES

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Occupational Profiles: Growth Jobs Requiring Green Skills

The following profile is one of several profiles created to provide background on emerging employment opportunities for key green occupations. Occupations were defined based on Standard Occupational Classification (SOC) code used to define occupations within the Occupational Employment Statistics program of the Bureau of Labor Statistics (<http://www.bls.gov/soc/home.htm>). The profiles can be useful to a variety of user groups, including job seekers, new graduates, new-to-career adults, career counselors and others as they seek to understand growing occupations that frequently support green activities or require green skills. For each occupation, wherever data are available, these profiles describe:

I. **What is the job?**

This section provides a description of the job, background on the activities involved, what types of green activities might be performed, and a list of comparable jobs.

II. **Where are the jobs currently?**

This section shows how many people were employed in this occupation (including those green and non-green jobs), how many green positions were available recently, and what industries typically employ workers in this occupation.

III. **What could workers earn in this occupation?**

This section shows the historical average wages associated with all jobs (green and non-green) in these occupations in different parts of the state, as well as the median green wage as advertised in recent online job postings.

IV. **What is the outlook for jobs in this occupation?**

This section shows the extent to which there is projected long-term demand for workers in these occupations. Recognizing that long-term projections data about jobs requiring green skills are not available, the projections include information about all jobs in the occupation.

V. **How do workers prepare for jobs in this occupation?**

This section provides details on the training, certifications, education and work experience required for these occupations. Whenever possible, certifications tied to green-related activities are highlighted.

Occupations profiled were selected using quantitative and qualitative data obtained through research efforts under the Arizona State Labor Market Information Improvement Grant Initiative. Various data sources were used in creating the occupational profiles as outlined below.

- Occupational Information Network (O*NET) data were used as a measure of the skills, knowledge, and abilities required for the occupations. Certification, training, and education related information was also obtained from O*NET (<http://www.onetonline.org/>)
- The Arizona Green Jobs Survey was used to identify and classify the components of the job that are green and common certifications held by green workers within an occupation (<http://azstats.gov/>)
- Employment and wage estimates are from the Occupational Employment Statistics (OES) program. These are estimates of the number of people employed in certain occupations, and estimates of the wages paid to them. Self-employed persons are not included in the estimates. These estimates are for the state, and for metropolitan and nonmetropolitan areas (<http://www.bls.gov/oes/>)
- Postings and wage estimates from advertised online jobs were provided by Burning Glass, a private company. It is to be noted that these are advertised positions and wages that reflect the vacancies

within the occupations and are not necessarily realized employment or earnings (<http://www.burning-glass.com/>)

- Data on the industries employing the workers within respective occupations were obtained from Economic Modeling Specialists Inc. (EMSI) (<http://www.emsinet.com/>)
- Long term employment projections were from the Office of Employment and Population Statistics (<http://azstats.gov/>)
- Focus groups with industry leaders and stakeholders
- Input from the Arizona Project Steering Committee and Green Economy Advisory Committee

Occupations included in these profiles were selected based on anticipated positive job growth. Efforts were made to include a diversity of job types to meet the needs of a variety of job seekers, employers, and trainers. Whenever unique information is available for green occupations, disaggregated data for both green and non-green occupations are provided. Where green data are not available, information provided is an aggregate of both green and non-green (with this data gap noted in the profile). The goal is to provide job seekers, employers, and trainers with the most complete picture available of the status of the occupation and related career opportunities.

General Table Note: Cases where fields are marked N/A indicate that no data were available for the occupation.

I. What is the job?

The focus of this section is to provide a description of the job; background on the activities involved; types of green activities that might be performed within this job; and a list of comparable jobs.

Job description:

Performs laboratory and field tests to monitor the environment and investigate sources of pollution, including those that affect health. Under direction of an environmental scientist or specialist, may collect samples of gases, soil, water, and other materials for testing and take corrective actions as assigned.

Source: O*Net OnLine occupational database, <http://www.onetonline.org/>

What do these workers do?

Collect samples of gases, soils, water, industrial wastewater, and asbestos products to conduct tests on pollutant levels and identify sources of pollution.

Develop and implement programs for monitoring of environmental pollution and radiation.

Discuss test results and analyses with customers.

Maintain files such as hazardous waste databases, chemical usage data, personnel exposure information and diagrams showing equipment locations.

Record test data and prepare reports, summaries, and charts that interpret test results.

Set up equipment or stations to monitor and collect pollutants from sites, such as smoke stacks, manufacturing plants, or mechanical equipment.

Source: O*Net OnLine occupational database, <http://www.onetonline.org/>

How might this job be green?

Conduct waste water and health inspections

Assist and support environmental assistants and specialists in handling, segregating, managing, tracking and recycling of hazardous and nonhazardous wastes

Test for lead, asbestos, and mold

Test air, soil, water quality

Offer tests for soil vapor, landfill gas, ambient air, indoor air, and vapor intrusion

Source: Arizona LMI Green Jobs Survey, <http://azstats.gov/>

What are the related occupations that offer jobs for these workers?

Environmental Compliance Inspectors

Soil and Plant Scientists

Chemists

Food Science Technicians

Chemical Technicians

Forensic Science Technicians

Occupational Health and Safety Specialists

Chemical Equipment Operators and Tenders

Source: O*Net OnLine occupational database, <http://www.onetonline.org/>

II. Where are these jobs currently?

This section shows how many people were employed in this occupation (including both green and non-green jobs); how many green positions were available recently; and what industries typically employ workers in this occupation.

How many people do this job? (Data are not available for green jobs within the occupation so this total is based on data that include both green and non-green jobs. Employment numbers do not include self-employed and unpaid family members.)	
Area	Employment Total (May 2010)
Flagstaff, AZ	N/A
Lake Havasu City-Kingman, AZ	N/A
Phoenix-Mesa-Scottsdale, AZ	140
Prescott, AZ	N/A
Tucson, AZ	N/A
Yuma, AZ	N/A
Rest of Arizona	N/A

Source: OES Employment Estimates, Bureau of Labor Statistics, (May 2010), <http://www.bls.gov/oes/>

How many green jobs were advertised as available recently? (Based on online job advertisements, April 1 - June 30, 2011)		
MSA	All Job Postings	Green* Job Postings
Flagstaff, AZ	2	2
Lake Havasu City-Kingman, AZ	0	0
Phoenix-Mesa-Scottsdale, AZ	130	1
Prescott, AZ	0	0
Tucson, AZ	16	5
Yuma, AZ	2	1
Rest of Arizona	8	4

*Green jobs identified using green definitions from O*Net and refined using a combination of green skills, certifications, and keywords from the advertised job descriptions.

Source: Burning Glass, <http://www.burning-glass.com/>

Which industries employ workers in this job?
Local government
State government
Administrative Management and General Management Consulting Services
Testing Laboratories
Engineering Services
Marketing Consulting Services
General Medical and Surgical Hospitals
Copper Ore and Nickel Ore Mining
Other Management Consulting Services
Federal government, civilian, except postal service
Human Resources Consulting Services
Solid Waste Landfill
Environmental Consulting Services
Process, Physical Distribution, and Logistics Consulting Services
Other Scientific and Technical Consulting Services
Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)
Professional Employer Organizations
Hazardous Waste Treatment and Disposal
Other Social Advocacy Organizations
Temporary Help Services

Source: EMSI (Economic Modeling Specialists Inc.), <http://www.emsinet.com/>

III. What could workers earn in this occupation?

This section shows the average wages associated with this occupation in different areas of the state, as well as the median green wage as advertised in online job postings.

What are the wages paid to workers in this field? (Data are not available for green jobs within the occupation so this section is based on data that include both green and non-green jobs. Wage estimates do not include self-employed and unpaid family members .)						
MSA	10th Percentile	25th Percentile	Median	Mean	75th Percentile	90th Percentile
Flagstaff, AZ	N/A					
Lake Havasu City-Kingman, AZ	N/A					
Phoenix-Mesa-Scottsdale, AZ	\$29,850	\$36,710	\$45,210	\$45,440	\$54,830	\$62,320
Prescott, AZ	N/A					
Tucson, AZ	\$21,510	\$23,150	\$25,740	\$30,930	\$36,440	\$50,290
Yuma, AZ	N/A					
Rest of Arizona	N/A					

Source: OES Employment Estimates, Bureau of Labor Statistics, (May 2010), <http://www.bls.gov/oes/>

What is the median wage advertised for green workers in this occupation? (Statewide median wages based on advertised salaries in online job postings between March 2010 and March 2011.)	
Median Advertised Wage for All Jobs	Median Advertised Wage for Green* Jobs
\$ 39,395	\$ 45,692

*Green jobs identified using green definitions from O*Net and refined using a combination of green skills, certifications, and keywords from the advertised job descriptions.

Source: Burning Glass, <http://www.burning-glass.com/>

IV. What is the outlook for jobs in this occupation?

This section shows the long-term projected outlook for this occupation.

What is the long term outlook for jobs in this occupation? (Data are not available for green jobs within the occupation so this section is based on data that include both green and non-green jobs. Employment numbers include self-employed and unpaid family members as well as wage and salary workers.)				
2008 Employment (Estimated)	2018 Employment (Projected)	Change (2008-2018)	Estimated Replacement Needs (2008-2018)*	Estimated Total Openings (2008-2018)**
237	253	16	+ 102	= 118

*Replacement jobs are estimated by applying a ratio of total national job changes anticipated over the next decade (derived by BLS) to the estimated Arizona 2008 employment

**Openings represent the sum of growth (change) and replacement

Source: Arizona Office of Employment and Population Statistics, <http://azstats.gov/>

V. How do workers prepare for jobs in this occupation?

Training, certification, education, and required work experience information for the occupation, based primarily upon survey results provided by the national O*Net OnLine occupational database.

What are the minimum education levels that employers expect for workers in this occupation? (Required level of education reported by current workers, including green and non-green, in this occupation)										
Less than HS	HS Diploma/GED	Post-Secondary Certificate	Some College Courses	Associate's Degree	Bachelor's Degree	Post-Baccalaureate Certificate	Master's Degree	Post-Master's Certificate	Professional Degree	Doctoral Degree
0.0%	10.6%	1.8%	10.6%	12.9%	43.9%	0.0%	20.3%	0.0%	0.0%	0.0%

% represents the proportion of all workers in the occupation who have attained that education level

Source: O*Net OnLine occupational database, <http://www.onetonline.org/>

What green or other credentials might be expected? (Common certifications held by green workers in this occupation)
Association of Boards of Certification - Water Treatment Operator Certification
Certified AHERA (Asbestos Hazard Emergency Response Act) Building Inspector
Certified Industrial Hygienist
Council-certified Microbial Investigator/Consultant - American Council for Accredited Certification
OSHA - HAZWOPER Certification
OSHA - Powered Industrial Truck Operator Certification
Professional Engineer
Professional Geologist - American Institute of Professional Geologists
QI Certification

Source: Arizona LMI Green Jobs Survey, <http://azstats.gov/>

What experience levels are employers expecting? (Experience reported by current workers, including green and non-green, in this occupation)

None	<6 Months	6 Months - 1 Year	1 - 2 Years	3 - 4 Years	5 - 10 Years	> 10 Years
15.3%	0.0%	0.1%	46.8%	27.7%	10.1%	0.0%

% represents the proportion of all workers in the occupation who have attained that experience level

*Source: O*Net OnLine occupational database, <http://www.onetonline.org/>*

How much training will employers likely provide? (Training reported by current workers, including green and non-green, in this occupation)

None	<1 Month	1 - 3	3 - 6	6 Months - 1 Year	1 - 2 Years	3 - 4 Years	5 - 10 Years	> 10 Years
17.0%	22.9%	27.5%	8.1%	6.2%	16.1%	1.7%	0.6%	0.0%

% represents the proportion of all workers in the occupation who have attained that training level

*Source: O*Net OnLine occupational database, <http://www.onetonline.org/>*