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Supply and Demand for Climate-Related Jobs in Mississippi



MISSISSIPPI STATE UNIVERSITY™
NATIONAL STRATEGIC PLANNING
& ANALYSIS RESEARCH CENTER

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ABOUT MISSISSIPPI'S SLDS

Mississippi's State Longitudinal Data System (SLDS) is one of the most comprehensive systems in the country and includes administrative records from more than 25 education, workforce, and human service agencies in the state. The SLDS allows for the alignment of multiple sources of de-identified administrative data over time to evaluate educational or workforce strategies in terms of real outcomes, such as entrance into employment, wages, and skill gains.

ABOUT NSPARC

NSPARC is a university research center at Mississippi State University and is a trusted and reliable source for high-quality research and analysis. We specialize in use-inspired research, data analytics, and software architecture and development. Our research emphasizes workforce and economic development, but the diversity of expertise on our team means we cover a broad range of topics in education, economics, health, human services, and corrections.

Unique experience with administrative records and longitudinal data systems, matched with our ability to apply the latest methodological and machine learning approaches allows us to draw meaningful insights from data to address challenges faced by policymakers, employers, economic developers, and state agencies.

For more information, contact NSPARC at nsparc@nsparc.msstate.edu or 662-325-9242.

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Supply and Demand for Climate-Related Jobs in Mississippi

OVERVIEW

An analysis was requested by Mississippi State University to provide information pertaining to the current and expected demand in the state for select climate-related jobs and the pipeline of college graduates with degrees in fields related to these jobs. The following information is included:

1. The annual number employed in select climate-related jobs for the most recent five-year period available (i.e., 2019-2023), and the projected number employed in these jobs by 2028.
2. The annual number of graduates from Mississippi community colleges and public universities with degrees in fields aligning with the select climate-related jobs for the most recent five-year period available (i.e., 2019-2023).
3. Employment outcomes for graduates with climate-related degrees within one year of graduation, including the number employed in Mississippi and their median annual earnings.

METHODOLOGY

DATA

The data for this study were made available by the continued funding of Mississippi's State Longitudinal Data System (SLDS) through the state legislature. The SLDS includes administrative records from over 25 state agencies.

Data from the following SLDS data contributors were used:

Mississippi Community Colleges – Data on community college graduates are contributed to the SLDS by Mississippi's 15 community colleges and the Mississippi Community College Board (MCCB).

Mississippi Public Universities – Data on public university graduates are contributed to the SLDS by Mississippi's Institutions of Higher Learning (IHL).

Mississippi Department of Employment Security (MDES) – Employer wage records are contributed to the SLDS by the Mississippi Department of Employment Security (MDES). These records are collected from Mississippi employers that participate in the state's covered employment system.

Data to measure the annual number of workers employed in select climate-related jobs in Mississippi came from the U.S. Department of Labor and Lightcast, a for-profit data aggregator and analysis company.

IDENTIFYING CLIMATE-RELATED JOBS

Climate-related jobs were identified using the Standard Occupational Classification (SOC) System, which is the job classification standard used by the U.S. Bureau of Labor Statistics. Occupations aligning with job categories shared by the requestor and present in Mississippi were included in this study. The full list of included jobs can be found in Appendix A, Table A1.

IDENTIFYING CLIMATE-RELATED DEGREE PROGRAMS

To identify relevant community college and public university degree programs, each selected occupation was cross walked to a Classification of Instructional Programs (CIP) code, the national standard of academic degree program titles developed by the U.S. Department of Education. A degree program was included if (1) it was matched to a relevant occupation and (2) if it was offered at a Mississippi public university. The full list of included degree programs can be found in Appendix A, Tables A2 and A3.

INDICATORS

Employment. The estimated annual number employed in climate-related jobs in Mississippi from 2019-2023, and the projected number employed for 2028.

Graduates. The annual number of graduates from Mississippi public universities and community colleges with a climate-related degree from 2019-2023.

Employed Graduates. The annual number of graduates who did not re-enroll in a Mississippi public postsecondary institution, and who remained in Mississippi and were employed in the state within one year of graduation. As this indicator is lagged to account for one year post-graduation, employment information is provided for graduates from 2019-2022.

Median Annual Earnings. The median annual earnings of employed graduates within one year of graduation.

RESULTS

Tables 1-3 provide the summary results of the analysis. Detailed results for each included occupation and degree program can be found in Appendix A, Tables A1-A3.

In accordance with SLDS Rules and Regulations, numeric values less than 10 are suppressed. These suppressed values are replaced with the "<10" symbol.

TABLE 1: EMPLOYMENT AND PROJECTED EMPLOYMENT IN SELECT CLIMATE-RELATED JOBS

	Employment						Percent Change	
	2019	2020	2021	2022	2023	Projected 2028	2019-2023	2023-2028
Conservation Specialists	1,610	1,694	1,734	1,760	1,769	1,799	10%	2%
Ecologists and Environmental Researchers	862	866	868	904	913	946	6%	4%
Environmental Engineers and Environmental Scientists	964	926	869	806	823	884	-15%	7%
Hydrologist and Water Resource Engineers	114	101	56	68	67	71	-41%	6%
Emergency Management Specialists	214	222	198	221	220	221	3%	0%
Civil Engineers	2,088	2,139	2,186	2,177	2,201	2,283	5%	4%
Geospatial Analysts and Urban Planners	1,245	1,210	1,155	1,101	1,121	1,177	-10%	5%
Community Engagement Specialists	1,496	1,359	1,190	1,219	1,250	1,358	-16%	9%

Source: Lightcast, 2024

TABLE 2: GRADUATES FROM MISSISSIPPI PUBLIC UNIVERSITIES AND COMMUNITY COLLEGES WITH CLIMATE-RELATED DEGREES

	Graduates				
	2019	2020	2021	2022	2023
Conservation Specialists	88	80	84	109	89
Ecologists and Environmental Researchers	427	382	435	432	436
Environmental Engineers and Environmental Scientists	62	66	40	44	37
Hydrologist and Water Resource Engineers	22	20	29	26	22
Civil Engineers	178	166	178	142	175
Geospatial Analysts and Urban Planners	38	27	27	26	<10
Community Engagement Specialists	198	216	227	212	219

Source: Mississippi State Longitudinal Data System, 2024.

TABLE 3: GRADUATES WITH CLIMATE RELATED DEGREES EMPLOYED IN MISSISSIPPI WITHIN 1 YEAR OF GRADUATION

	Employed Graduates				Median Annual Earnings, 2022
	2019	2020	2021	2022	
Conservation Specialists	27	30	38	41	\$29,016
Ecologists and Environmental Researchers	136	113	120	118	\$32,769
Environmental Engineers and Environmental Scientists	17	14	11	<10	---
Hydrologist and Water Resource Engineers	<10	<10	<10	<10	---
Civil Engineers	68	61	71	63	\$56,300
Geospatial Analysts and Urban Planners	12	11	<10	<10	---
Community Engagement Specialists	123	109	104	105	\$32,658

Source: Mississippi State Longitudinal Data System, 2024.

APPENDIX A: DETAILED RESULTS

**TABLE A1: EMPLOYMENT AND PROJECTED EMPLOYMENT IN SELECT CLIMATE-RELATED JOBS,
BY DETAILED OCCUPATION**

SOC	Occupation Title	Employment					Projected 2028	Percent Change	
		2019	2020	2021	2022	2023		2019- 2023	2023- 2028
Conservation Specialists		1,610	1,694	1,734	1,760	1,769	1,799	10%	2%
19-4071	Forest and Conservation Technicians	189	226	224	209	208	212	10%	2%
45-4011	Forest and Conservation Workers	441	423	446	444	458	484	4%	6%
19-1031	Conservation Scientists	980	1,045	1,064	1,107	1,103	1,103	13%	0%
Ecologists and Environmental Researchers		862	866	868	904	913	946	6%	4%
19-1013	Soil and Plant Scientists	88	95	107	119	121	128	38%	6%
19-1023	Zoologists and Wildlife Biologists	215	203	170	189	189	190	-12%	1%
19-1029	Biological Scientists, All Other	296	297	337	399	404	425	37%	5%
19-1032	Foresters	263	271	254	197	199	203	-24%	2%
Environmental Engineers and Environmental Scientists		964	926	869	806	823	884	-15%	7%
17-2081	Environmental Engineers	419	423	371	391	396	412	-6%	4%
17-3025	Environmental Engineering Technologists and Technicians	121	125	99	71	72	74	-41%	3%
19-2041	Environmental Scientists and Specialists, Including Health	348	283	314	253	260	286	-25%	10%
19-4042	Environmental Science and Protection Technicians, Including Health	76	95	85	91	95	112	25%	18%
Hydrologist and Water Resource Engineers		114	101	56	68	67	71	-41%	6%
19-2043	Hydrologists	31	27	14	23	23	26	-26%	13%
19-4044	Hydrologic Technicians	83	74	42	45	44	45	-47%	2%
Emergency Management Specialist		214	222	198	221	220	221	3%	0%
11-9161	Emergency Management Directors	214	222	198	221	220	221	3%	0%
Civil Engineers		2,088	2,139	2,186	2,177	2,201	2,283	5%	4%
17-2051	Civil Engineers	2,088	2,139	2,186	2,177	2,201	2,283	5%	4%
Geospatial Analysts and Urban Planners		1,245	1,210	1,155	1,101	1,121	1,177	-10%	5%
17-1022	Surveyors	380	372	363	329	336	353	-12%	5%
17-3031	Surveying and Mapping Technicians	603	605	630	578	587	608	-3%	4%
17-1012	Landscape Architects	143	125	58	98	101	109	-29%	8%
19-3051	Urban and Regional Planners	119	108	104	96	97	107	-19%	10%
Community Engagement Specialists		1,496	1,359	1,190	1,219	1,250	1,358	-16%	9%
21-1091	Health Education Specialists	425	430	368	334	338	359	-21%	6%
21-1094	Community Health Workers	567	497	469	522	537	583	-5%	9%
21-1099	Community and Social Service Specialists, All Other	504	432	353	363	375	416	-26%	11%

Source: Lightcast, 2024

TABLE A2: GRADUATES FROM MISSISSIPPI PUBLIC UNIVERSITIES AND COMMUNITY COLLEGES WITH CLIMATE-RELATED DEGREES, BY DETAILED ACADEMIC PROGRAM

CIP	Program Title	Graduates				
		2019	2020	2021	2022	2023
Conservation Specialists		88	80	84	109	89
030101, 030601	Natural Resources/Conservation, and Wildlife, Fish and Wildlands Science and Management	88	80	84	109	89
Ecologists and Environmental Researchers		427	382	435	432	436
010000	Agriculture, General	20	34	35	39	42
010308	Agroecology and Sustainable Agriculture	48	39	50	51	60
011102	Agronomy and Crop Science	32	25	19	25	27
011103, 011105	Horticultural Science and Plant Protection and Integrated Pest Management	19	10	21	14	13
030502	Forest Sciences and Biology	52	53	64	38	57
030509, 030511	Wood Science and Wood Products/Pulp and Paper Technology and Forest Technology/Technician	34	33	18	29	20
260799	Zoology/Animal Biology, Other	13	10	16	12	10
261302	Marine Biology and Biological Oceanography	32	29	29	39	39
400601	Geology/Earth Science, General	177	149	183	185	168
Environmental Engineers and Environmental Scientists		62	66	40	44	37
030103	Environmental Studies	<10	<10	<10	<10	24
030104	Environmental Science	<10	<10	<10	<10	<10
143901	Geological/Geophysical Engineering	29	35	11	37	<10
150507	Environmental Engineering Technology/Environmental Technology	<10	<10	<10	<10	<10
419999	Science Technologies/Technicians, Other	11	13	19	<10	<10
512202	Environmental Health	<10	<10	<10	<10	<10
Hydrologist and Water Resource Engineers		22	20	29	26	22
142401, 400607	Ocean Engineering and Oceanography	22	20	29	26	22
Civil Engineers		178	166	178	142	175
140801	Civil Engineering, General	178	166	178	142	175
Geospatial Analysts and Urban Planners		38	27	27	26	<10
040301, 040601, 451201	City/Urban, Community and Regional Planning, Landscape Architecture, and Urban Studies/Affairs	38	27	27	26	<10
Community Engagement Specialists		198	216	227	212	219
440201, 511504	Community Organization and Advocacy and Community Health Services/Liaison/Counseling	28	29	33	28	12
512201, 512207, 512208	Public Health, General, Public Health Education and Promotion, and Community Health and Preventive Medicine	170	187	194	184	207

Source: Mississippi State Longitudinal Data System, 2024.

**TABLE A3: EMPLOYMENT OF GRADUATES WITH CLIMATE-RELATED DEGREES WITHIN 1 YEAR OF GRADUATION,
BY DETAILED ACADEMIC PROGRAM**

CIP	Program Title	Graduates Employed in Mississippi Within 1 Year				Median Annual Earnings
		2019	2020	2021	2022	2022
Conservation Specialists		27	30	38	41	\$29,016
030101, 030601	Natural Resources/Conservation, and Wildlife, Fish and Wildlands Science and Management	27	30	38	41	\$29,016
Ecologists and Environmental Researchers		136	113	120	118	\$32,769
010000	Agriculture, General	11	10	<10	16	\$31,400
010308	Agroecology and Sustainable Agriculture	23	19	15	21	\$45,977
011102	Agronomy and Crop Science	10	<10	10	10	\$41,989
011103, 011105	Horticultural Science and Plant Protection and Integrated Pest Management	<10	<10	<10	<10	---
030502	Forest Sciences and Biology	25	20	34	12	\$53,099
030509, 030511	Wood Science and Wood Products/Pulp and Paper Technology and Forest Technology/Technician	16	12	<10	12	\$29,948
260799	Zoology/Animal Biology, Other	<10	<10	<10	<10	---
261302	Marine Biology and Biological Oceanography	18	11	13	21	\$24,831
400601	Geology/Earth Science, General	20	25	22	19	\$32,237
Environmental Engineers and Environmental Scientists		17	14	11	<10	---
030103	Environmental Studies	<10	<10	<10	<10	---
030104	Environmental Science	<10	<10	<10	<10	---
143901	Geological/Geophysical Engineering	<10	<10	<10	<10	---
150507	Environmental Engineering Technology/Environmental Technology	<10	<10	<10	<10	---
419999	Science Technologies/Technicians, Other	<10	<10	<10	<10	---
512202	Environmental Health	<10	<10	<10	<10	---
Hydrologist and Water Resource Engineers		<10	<10	<10	<10	---
142401, 400607	Ocean Engineering and Oceanography	<10	<10	<10	<10	---
Civil Engineers		68	61	71	63	\$56,300
140801	Civil Engineering, General	68	61	71	63	\$56,300
Geospatial Analysts and Urban Planners		12	11	<10	<10	---
040301, 040601, 451201	City/Urban, Community and Regional Planning, Landscape Architecture, and Urban Studies/Affairs	12	11	<10	<10	---
Community Engagement Specialists		123	109	104	105	\$32,658
440201, 511504	Community Organization and Advocacy, and Community Health Services/Liaison/Counseling	15	11	16	13	\$15,660
512201, 512207, 512208	Public Health, General, Public Health Education and Promotion, and Community Health and Preventive Medicine	108	98	88	92	\$34,974

Source: Mississippi State Longitudinal Data System, 2024.