



**GRAND VALLEY  
STATE UNIVERSITY**

**ENVIRONMENTAL AND  
SUSTAINABILITY STUDIES**

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## **Green Jobs Projections to 2020: U.S., Michigan, and the Grand Rapids Area**

### **Executive Summary**

Nearly 200,000 jobs in green technologies or practices were reported in the Midwest region in 2011. In Michigan, nearly half of all jobs were considered part of the Green Goods and Services sector. Particular industries especially affected by an increasing interest in environmental studies include a variety of management roles, business and financial operations, and community and social services. Specific occupations that are expected to see growth statewide in 2020 include Environmental Protection Technicians, Meeting and Convention Planners, and Community Service Managers. Similar job opportunities are also anticipated to increase by 15-43% in the greater Grand Rapids area.

The tenets of sustainability – namely the concept of the Triple Bottom Line – are particularly critical to these professional roles as they take into account environmental best practices, social equity, and financial stability. GVSU students can gain the necessary knowledge and skills through an ENS degree program that will prepare them to compete for the broadening career field in sustainability-related industries.

### Sustainability-related Industries & Occupations

<b>Industries</b>	<b>Occupations</b>
Green Goods and Services	Chief Responsibility Officer
Alternative and Renewable Energy	Chief Sustainability Officer
Energy Efficiency	Senior Vice President of Sustainability
Pollution Prevention	Sustainability Director
Waste Management	Sustainability Manager
Green House Gas Reduction	Sustainability Analyst
Climate Change Mitigation	Sustainability Specialist
Natural Resources	Energy Manager
Environmental Compliance	Environmental Engineer
Environmental Education	Environmental Planner
Eco-tourism	Industrial Hygienist
Sustainable Procurement	Sustainability Coordinator
Sustainable Supply Chain Management	Safety Specialist
Urban and Neighborhood Revitalization	Safety Coordinator
Sustainability Reporting	Environmental Scientist
Sustainable Agriculture	Safety Manager
Sustainable Construction and Design	Facilities Manager
Conservation and Stewardship	Energy Analyst
	Biologist
	Safety Officer
	EHS Manager
	Sales Specialist
	Account Manager
	Economist
	Financial Analyst
	Production Manager
	Environmental Officer
	Plant Manager
	Business Analyst
	Assistant Manager
	Project Manager
	Security Manager
	Policy Analyst
	Environmental Lawyer
	Sustainability Engineer
	Healthcare Sustainability Specialist
	Environmental Sustainability Senior Analyst
	Environmental and Sustainability Manager
	Senior Technical Services Director
	Director of Partnerships and Corporate Relations
	Hydrologist

*Source: Norman Christopher, GVSU Office of Sustainability Practices*

## Green Technologies & Practices Employment

The Green Technologies & Practices (GTP) survey is a special survey of business establishments designed to collect data on establishments' use of green technologies and practices and the occupations of workers who spend more than half of their time involved in GTP. About three-quarters of business establishments in the United States reported the use of at least one GTP in 2011.

In that same year, 198,200 GTP jobs were reported in the Midwest region (Indiana, Illinois, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin). 76% of all Midwest establishments (businesses, organizations, operations, etc.) reported using at least one GTP.

### GTP Employment in the U.S. 2011

Occupation Title	Employment	Annual Mean Wage
General & Operations Manager	8,600	\$85,630
Administrative & Services Manager	4,100	\$77,610
Industrial Production Manager	800	\$135,530
Transportation, Storage & Distribution Manager	1,100	\$78,900
Medical & Health Services Manager	100	\$128,280
Natural Sciences Manager	1,400	\$85,450
All other Managers	4,100	\$103,630
Compliance Officer	3,800	\$61,560
Management Analyst	300	\$55,650
Conservation Scientist	2,400	\$48,920
Environmental Scientist & Specialist	7,200	\$61,160
Urban & Regional Planner	900	\$65,780
Environmental Science & Protection Technician	3,600	\$47,450
Life, Physical & Social Science Technician	100	\$57,560
Arts, Design, Entertainment, Sports & Media occupations	800	\$62,620
Food Preparation & Serving Related occupations	26,100	\$22,750
First-Line Supervisor of Landscaping, Lawn Service & Groundskeeping Workers	11,800	\$44,160
Landscaping & Groundskeeping Worker	22,000	\$29,980
First-Line Supervisor of Retail Sales Workers	3,500	\$33,970
First-Line Supervisor of Office & Administrative Support Workers	9,700	\$41,920
Farmworkers & Laborers – crop, nursery & greenhouse	11,600	\$21,630
First-Line Supervisor of Construction Trades & Extraction Workers	13,100	\$52,800

Construction & Building Inspector	400	\$58,600
First-Line Supervisor of Mechanics, Installers & Repairers	10,000	\$52,860
First-Line Supervisor of Production & Operating Workers	9,100	\$47,700
Power Plant Operators	1,600	\$62,020
First-Line Supervisor of Helpers, Laborers & Material Movers	1,900	\$47,360
First-Line Supervisor of Transportation & Material-Moving Machine & Vehicle Operators	7,100	\$42,860

Source: [http://www.bls.gov/gtp/gtp\\_t06.htm](http://www.bls.gov/gtp/gtp_t06.htm)

Note: On March 1, 2013, sequestration went into affect as required by the Balanced Budget and Emergency Deficit Control Act. In order to protect core programs, the BLS will eliminate all “measuring green jobs” products, making the 2011 data the most recently available figures.

## Green Goods and Services Employment

The GGS program is a survey-based program, covering 120,000 business establishments, which provides a measure of national and State employment in industries that produce goods or provide services that benefit the environment or conserve natural resources (Bureau of Labor Statistics). GGS occupations fall into one or more of the following categories: energy from renewable sources; energy efficiency; pollution reduction and removal, greenhouse gas reduction, and recycling and reuse; natural resources conservation; and environmental compliance.

### GGG Employment in Michigan 2011

Industry	Employment	% of All Jobs
Natural Resources and Mining	1,921	5.9
Utilities	1,575	8.2
Construction	12,467	10
Manufacturing	20,650	4.1
Trade	6,389	1.1
Transportation and Warehousing	3,025	3.2
Information	1,342	2.5
Professional, Scientific and Technical Services	7,723	3.3
Management of Companies and Enterprises	2,121	4
Administrative and Waste Services	9,924	3.7
Other Services, except Public Administration	1,362	1.1
<b>GGG Employment Among All Jobs</b>	<b>47.1%</b>	

Source: Green Goods and Services (GGG) private sector employment by state and industry sector with over-the-year change, annual average, Bureau of Labor Statistics, [http://www.bls.gov/web/ggqcew/ggqcew\\_supple\\_table6.pdf](http://www.bls.gov/web/ggqcew/ggqcew_supple_table6.pdf).

#### Notes:

- Industries with no data value: Financial Activities, Education and Health Services, and Leisure and Hospitality.
- Links to data on public sector employment were broken and unavailable.
- On March 1, 2013, sequestration went into affect as required by the Balanced Budget and Emergency Deficit Control Act. In order to protect core programs, the BLS will eliminate all “measuring green jobs” products, making the 2011 data the most recently available figures

## Michigan Environmental Studies Related Job Prospects

The Michigan Department of Technology, Management & Budget maintains state-specific labor market information, including employment trends, wages, industry details, and jobs in demand.

Occupations were selected based off Norman Christopher's list of sustainability-related positions and areas where Environmental Studies is known to be relevant.

Industry	Occupation	Employment 2010	Expected Employment 2020	Percent Growth
Management	Industrial Production Manager	8,540	9,280	8.6
	Purchasing Manager	2,140	2,230	4.4
	Farmer, Rancher & other Agricultural Manager	124,590	129,450	3.9
	Natural Sciences Manager	480	510	4.8
	Social & Community Service Manager	4,040	4,850	19.9
	Construction Manager	7,450	8,230	10.5
	Food Service Manager	5,470	5,180	-5.2
	Lodging Manager	840	910	8
	Medical & Health Services Manager	10,150	11,540	13.8
	Transportation, Storage & Distribution Manager	2,140	2,230	4.1
Business & Financial Operations	Purchasing Agent & Buyer of Farm Product	290	310	5.1
	Purchasing Agent, except Wholesale, Retail & Farm Product	11,160	11,560	3.6
	Compliance Officer	4,300	4,790	11.3
	Meeting & Convention Planner	1,540	2,140	39.1
	Wholesale & Retail Buyers, except Farm Product	1,770	1,860	5.5
	Management Analyst	10,680	12,490	17
Life, Physical & Social Science	Food Scientist & Technologist	330	340	3
	Conservation Scientist	340	360	8.1
	Forester	310	320	1.3
	Environmental Scientist & Specialist	1,620	1,820	12.4
	Survey Researcher	900	1,040	15.3

	Urban & Regional Planner	920	1,020	10.5
	Agricultural & Food Science Technician	300	320	5.3
	Geological & Petroleum Technician	170	200	16.6
	Environmental Science & Protection Technician	1,000	1,200	20.5
	Forest & Conservation Technician	490	510	3.3
	Life, Physical & Social Science Technician	2,470	2,760	11.7
Healthcare Support	Veterinary Assistant & Lab Animal Caretaker	2,270	2,410	6.4
Protective Service	Fish & Game Warden	100	100	6.3
	Animal Control Worker	320	350	9
Personal Care & Service	Animal Trainers	820	900	10.3
	Nonfarm Animal Caretakers	4,770	5,990	25.7
	Concierges	410	460	12
	Tour Guides & Escorts	1,010	1,160	15.4
	Travel Guides	180	220	21.2
	Recreation Worker	12,360	13,820	11.8
Farming, Fish & Forestry	First-line Supervisors/Managers: Farm/Fish/Forest Work	1,080	1,110	2.4
	Agricultural Inspectors	250	260	2.8
	Animal Breeders	170	180	4.7
	Graders & Sorters, Agricultural Products	1,680	1,720	2.1
	Agricultural Equipment Operators	1,850	1,890	1.7
	Farmworker/Laborer: Crop/Nursery/Greenhouse	16,840	17,070	1.4
	Farmworkers, Farm & Ranch Animals	2,200	2,230	1.7
	Agricultural Workers	430	450	4.1
	Forest & Conservation Workers	60	70	3.2
Production	Power Distributor & Dispatcher	610	600	-0.5
	Power Plant Operator	1,770	1,780	0.9
	Gas Plant Operator	520	510	-1.7
	Plant & System Operator	710	710	-0.7
Community &	Social & Human Service	12,570	15,060	19.8

Social Services	Assistant			
	Community & Social Service Specialist	6,490	7,510	15.7
Legal	Legal Support Workers	560	570	0.2
Food Preparation & Serving	First-Line Supervisor & Manager	24,530	26,320	7.3
Arts, Design, Entertainment, Sports & Media	Commercial & Industrial Designer	4,830	5,250	8.7

Source: *Michigan Employment Forecasts by Occupational Groups 2010-2020*, Michigan Department of Technology, Management & Budget, [www.milmi.org/?PAGEID=67&SUBID=201](http://www.milmi.org/?PAGEID=67&SUBID=201)

Notes:

- Employment totals may not add up due to rounding, confidentiality or suppression.
- Occupations with less than fifty workers were suppressed and omitted from the table.
- Position titles refer to the Standard Occupational Classification (SOC) system used by the Occupational Employment Statistics program.
- Percent change is based on annual average openings including growth and replacement.



### Grand Rapids area Environmental Studies Related Job Prospects

The same occupations were assessed for the Grand Rapids area, consisting of Allegan, Kent and Ottawa Counties.

Industry	Occupation	Employment 2010	Expected Employment 2020	Percent Growth
Management	Industrial Production Manager	1,340	1,560	16.3
	Purchasing Manager	320	345	8.1
	Farmer, Rancher & other Agricultural Manager	1,750	1,665	-4.8
	Natural Sciences Manager	55	60	10.7
	Social & Community Service Manager	440	540	22.2
	Construction Manager	1,410	1,495	6
	Food Service Manager	760	725	-4.5
	Lodging Manager	90	105	16.7
	Medical & Health Services Manager	1,085	1,260	15.9
Business & Financial Operations	Transportation, Storage & Distribution Manager	115	115	0
	Purchasing Agent & Buyer of Farm Product	55	55	3.6
	Purchasing Agent, except Wholesale, Retail & Farm Product	1,525	1,675	9.9
	Wholesale & Retail Buyer, except Farm Product	245	260	5.7
	Compliance Officer	320	375	17.8
	Meeting & Convention Planner	180	260	43.1
Life, Physical & Social Science	Management Analyst	1,180	1,405	18.9
	Food Scientist & Technologist	75	85	10.4
	Environmental Scientist & Specialist	95	110	15.6
	Survey Researcher	85	95	14.3
	Urban & Regional Planner	65	70	12.7
	Agricultural & Food Science Technician	70	80	11.1
Environmental Science & Protection Technician	80	100	22.2	

	Life, Physical & Social Science Technician	270	315	15.8
	Social Science Research Assistant	165	180	7.8
Community & Social Service	Social & Human Service Assistant	1,340	1,640	22.2
	Community & Social Service Specialist	610	725	18.5
Arts, Design, Entertainment, Sports & Media	Commercial & Industrial Designer	640	750	17.2
Personal Care & Service	Animal Trainers	225	225	0.4
	Nonfarm Animal Caretakers	620	755	22.3
	Travel Agents	360	430	18.9
	Recreation Worker	1,265	1,400	10.8
Farming, Fish & Forestry	First-line Supervisors/Managers: Farm/Fish/Forest Work	210	205	-3
	Graders & Sorters, Agricultural Products	305	315	3.7
	Agricultural Equipment Operators	360	355	-1.4
	Farmworker/Laborer: Crop/Nursery/Greenhouse	3,500	3,420	-2.3
	Farmworkers, Farm, Ranch & Aquaculture	380	370	-1.7
	Agricultural Workers	70	70	1.4
Production	Plant & System Operator	55	55	0
	Power Plant Operator	125	135	5.5
Food Preparation & Serving	First-Line Supervisor of Food Preparation	2,640	2,845	7.6

Source: Grand Rapids Area Occupational Employment Forecasts 2010-2020, Michigan Department of Technology, Management & Budget, [www.milmi.org/admin/uploadedPublications/623\\_occ\\_16.htm](http://www.milmi.org/admin/uploadedPublications/623_occ_16.htm)

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