

Redefining Environmental Careers

Presented by:

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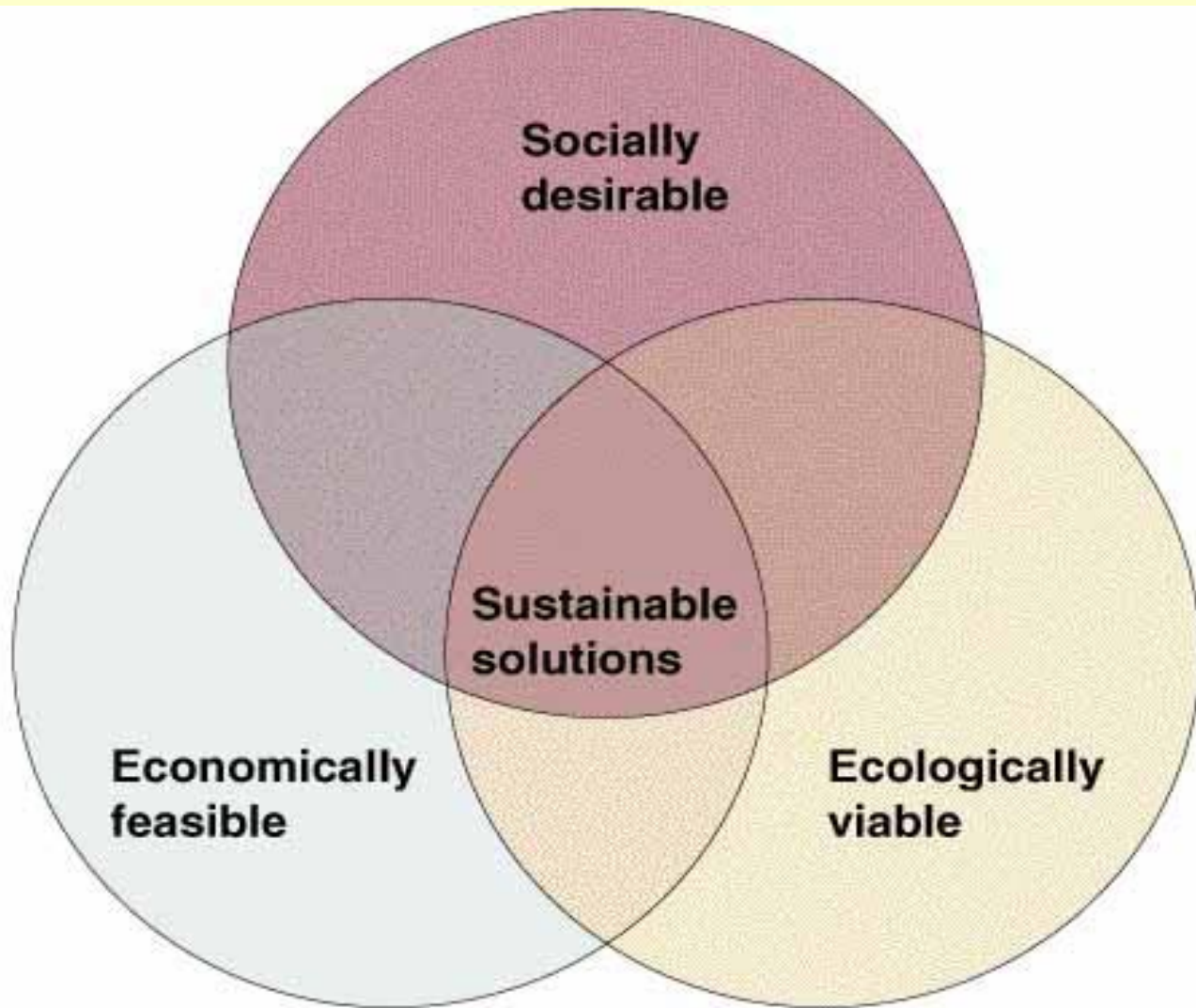
The New Complete Guide to Environmental Careers;

The Complete Guide to Environmental Careers in the 21st Century;

***The ECO Guide to Careers That Make a Difference: Environmental
Work for a Sustainable World***

Today's eco-jobs grew from, and still contain, employers and careers that responded to previous framings of our needs.

- (1850s-1890) ***Preservation*** movement – romantic inspiration of wild lands
- (1890s-1950s) ***Management*** movement – long-term thinking about natural resources
- (1950s-1970) ***Ecological*** movement – rise of scientific ecological understanding
- (1970s-1990s) ***Regulatory*** movement – pollution control and prevention environmental policies
- (1990s-now) ***Sustainable ecosystems*** movement – integrating ecosystem conservation strategies with social justice and economic security.



Your job is to work in the sustainable solutions “sweet spot”

21st Century Issues Require 21st Century Thinking

The slides that follow try to demonstrate that climate change is an issue that cannot be successfully tackled through the incremental actions of “environmental” professionals within traditional “environmental” agencies, businesses and organizations alone.

The issue at hand here is climate change, but ECO’s research indicates that *all* of our most pressing concerns - biodiversity loss, water and air quality, deforestation, food and fisheries security, global poverty and inequality, public health, environmental justice - have pushed beyond the boundaries of an exclusively “environmental” framing.

Consider the next 7 slides....

An amazing rise

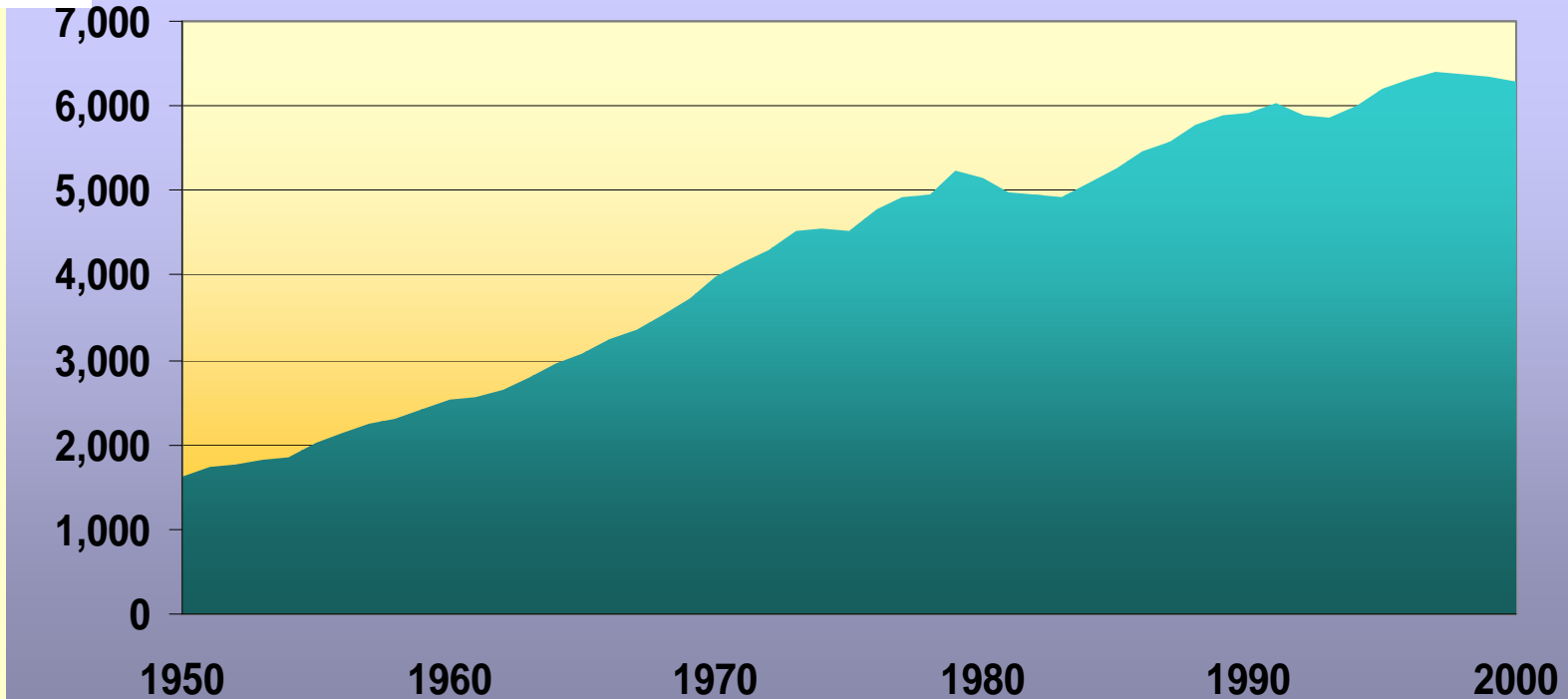
“The concentration of CO₂, which had increased by about 1 part per million every 400 years through most of our species’ expansion, began rising *100 times as fast* - by an average of 1ppm every four years - between 1800 and 1970.

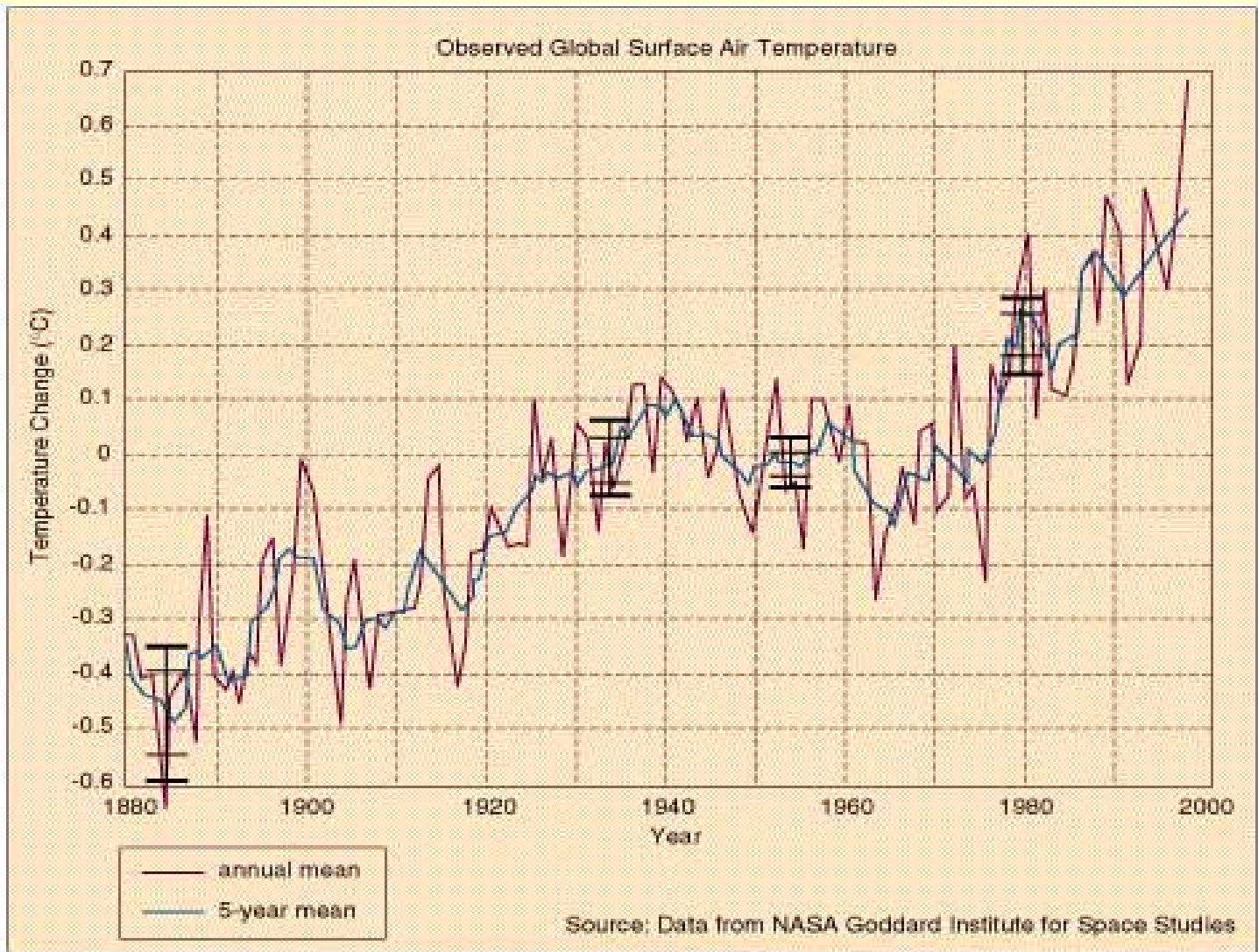
Since then, it has accelerated even more, to as much as 1 ppm *every 8 months.*”

World Carbon Emissions, 1950-2000

From Fossil Fuel Burning

Million
Tons





Carbon dioxide and global climate change

The problem:

CO₂ levels have increased 30% since pre-industrial times

CO₂ levels are now at the highest point in ~160,000 years

Possible symptoms/results:

Receding glaciers, rising sea levels, dying coral reefs, spreading infectious diseases, migrating plants and animals, record high temperatures, floods, droughts, fires, and tropical storms.

Yes, there will be some good symptoms, too.

A proposed solution

Stabilize CO₂ concentrations by reducing carbon emissions 60-80% from current levels, beginning immediately.

Intergovernmental Panel on Climate Change Report
(1995 and after)

A task force of leading climate scientists from 98 countries

U.S. Energy Mix

➤ Oil	39%	Fossil Fuel
➤ Natural Gas	24%	
➤ Coal	23%	
➤ Nuclear	8%	
➤ Hydro	3%	
➤ Other Renewable	3%	

Asking a new question

Old question: How can we assure a stable, cheap supply of oil, natural gas and coal?

Recent question: How can we reduce as much as possible the negative ecological and health consequences of fossil fuel dependence?

New question: How can we rapidly move to an ecologically sustainable future that dramatically reduces, or even eliminates, the use of fossil fuels as a major energy source?

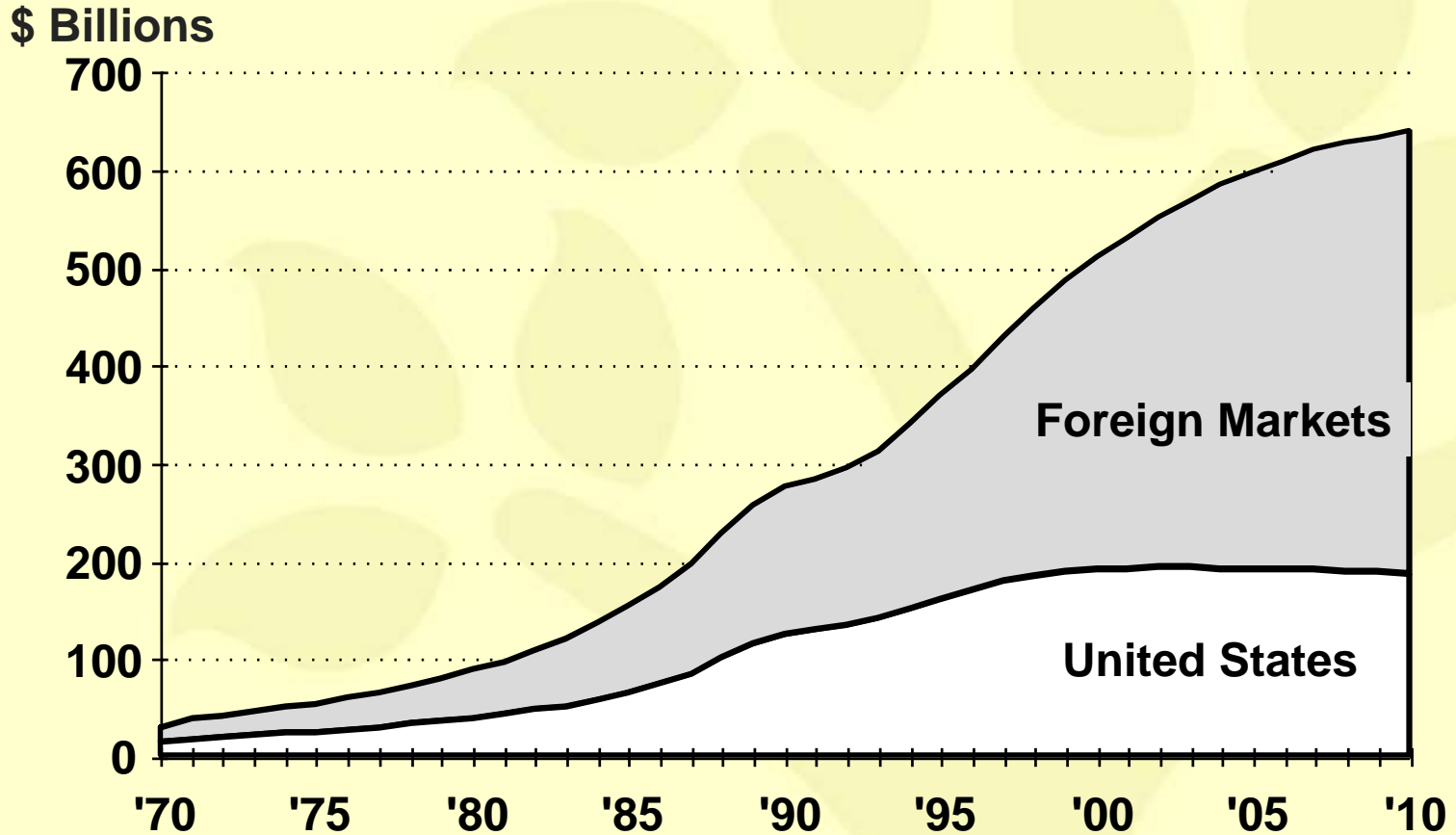
Think! What is “the new question” in your field of interest?

What else do you need to know?

The next four slides demonstrate that:

- ✓ Environmental employment is going global.
- ✓ Environmental employment is going private.
- ✓ Environmental job-seekers need a big toolbox of skills.
- ✓ Today's most intriguing jobs are different than they were a few years ago ... and than they will be a few years from now.

Growth in US vs. Global Markets



2006 Top Environmental Service Firms

1. CH2M Hill
2. Bechtel
3. Veolia Environment
4. Washington Group
5. URS Corporation
6. Parsons
7. Tetra Tech, Inc.
8. Fluor Corporation
9. Earth Tech, Inc.
10. MWH Global
11. Battelle
12. The Shaw Group
13. AECOM Technology
14. Black and Veatch
15. CDM
16. Jacobs Engineering
17. The ERM Group
18. Arcadis G&M, Inc.
19. The Walsh Group

Competencies for the 21st Century

1. Communication skills
2. Collaboration abilities – team orientation
3. “Customer” orientation
4. Creativity, innovative thinking
5. Broad environmental sciences understanding
6. Analytical ability, critical thinking, problem-solving
7. Work orientation, professionalism, positive attitude
8. Occupation-specific skills and knowledge
9. Mastery of information technology, including GIS
10. Leadership ability

Source: USEPA Workforce Assessment Project

Important and emerging eco-careers

1. *Pollution prevention specialist*
2. *Conservation biologist/ecosystems manager*
3. *Information technology/GIS*
4. *“Dual track” environmental manager*
5. *Earth sciences and engineering*
6. *Renewable energy and energy management*
7. *“Smart growth” and urban planners*
8. *Policy integration specialist*
9. *Community organizer*
10. *Fundraiser, “rainmaker”, dealmaker*

Here are your key questions

1. What are your values?
2. What have you learned about your self?
3. *What is your vision?*
4. What is your strategy?
5. Who are your stakeholders?
6. What are your long-term and short-term goals?
7. What are your objectives to achieve your goals?
8. What is your action plan?
9. What resources do you have? What do you need?
10. How will you evaluate your progress?

Traditional career planning approaches

Self-assessment: Look at what you like to do, what you're good at, what kind of people you like to work with, where your interests lie. Then, identify jobs/careers that fit.

Workforce assessment: Examine job titles, employers, and employment trends to find opportunities that sound interesting.

Educational match: Identify jobs and employers that match your formal education (e.g. What can I do with an environmental studies degree?)

Serendipity: One thing leads to another. Something sparks an interest and you go with it. A friend, family member or teacher introduces you to a career option.

*I am a **problem-solver**.*
The kinds of problems that I can solve are _____.

*I am a **technician**.*
The skills I offer are _____.

*I am an **activist**.*
My primary issues are: _____.
The result I seek is _____.

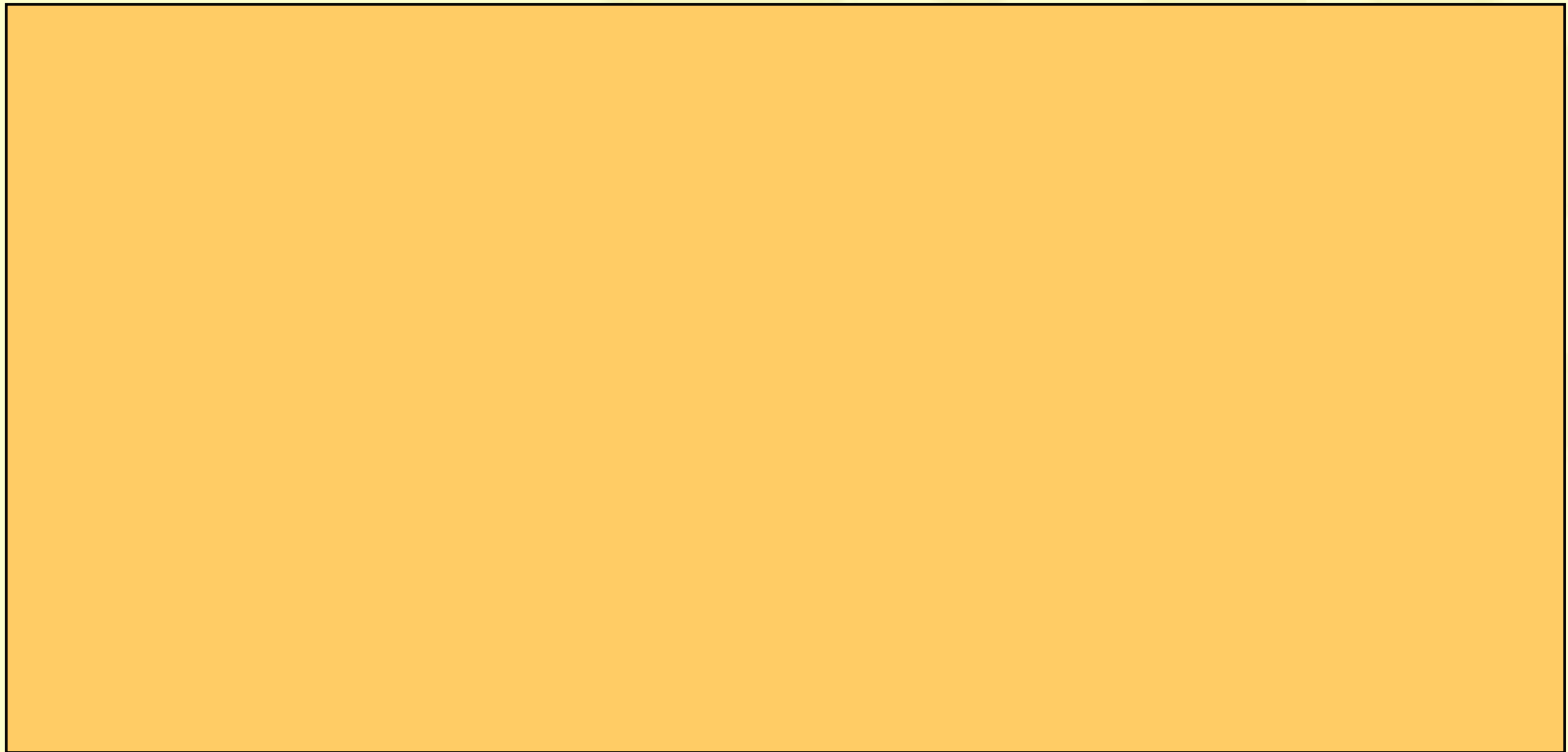
*I am a **professional**.*
My profession is _____.
My specialty is _____.

*I am a **leader**.*
My vision is _____.

The best job seekers can position themselves in five ways.

And, they have a vision. What's yours?

Write your career vision statement, in less than 100 words.



My own career vision statement

In collaboration with a diverse, international network of environmental professionals , I want to help students and working professionals create careers that allow them to make a meaningful difference on the sustainability concerns they care about.

I want to develop and use excellent writing, teaching, coaching, consulting, research, and multi-media information delivery skills. Ideally, I would like to work only nine months of the year, allowing time for friends, local politics, reflection, travel and outdoor recreation.

The final result of my work will be measured by whether or not the people I come in contact with achieve greater eco-career success than they would have had we not met and shared ideas.

Last update: February 15, 2007

Don't dream too small!

“Our deepest fear is not that we are inadequate. Our deepest fear is that we are powerful beyond measure. It is our light, not our darkness that most frightens us. We ask ourselves, “Who am I to be brilliant, gorgeous, talented and fabulous?” Actually, who are you not to be?

Your playing small does not serve the world. There is nothing enlightened about shrinking, so other people will not feel insecure around you.

We were born to manifest the glory that is within us. It is not just in some of us. It is in everyone. And, as we let our own light shine, we unconsciously give others people permission to do the same. As we are liberated from fear, our presence automatically liberates others.”

Attributed to Nelson Mandela, 1994 Inaugural Speech



Environmental Careers: 2007

Take a look at current employment trends in some of the best-known eco-professions.

Employment growth outlook is described on scale where:

Excellent = Much faster than the average of the overall economy

Good = Faster than than the average

Steady = About as fast as the average

Slow = Slower than the average

Poor = Much slower than the average

Last update: 2/15/2007

Social Scientists

Total = 20,000

Does not include teachers and college professors

Outlook = Steady

Anthropologists &

Archaeologists \$47,402

Geographers \$63,690

Historians \$48,050

Political Scientists \$91,085

Sociologists \$62,502

Entry:

B.A. \$30,000

M.A. \$44,200

Ph.D. \$48,200

Last update: 2/15/2007

Environmental Lawyers

Total = ~ 79,400

60% in private industry

Outlook = Steady

Entry Level Pay

Median = \$103,130

Middle 50% = \$69,820-\$155,108

Public Interest \$40,000

Government \$46,000

Business/Industry \$71,000

Private practice \$86,400

Median for all: \$60,000

Last update: 2/15/2007

Urban & Regional Planners

Total = 34,000

Outlook = Steady

Median = \$57,560

Low 10% = \$36,442<

Middle 50% = \$45,176-\$72,722

High 10% = >\$88,962

70% of urban and regional planners work in local government

Median salary of local government planners = \$57,938

Last update: 2/15/07

Environmental Scientists

Total currently employed = 76,000

Total does not include teachers and college professors!

Outlook: Steady

Median = \$55,000

Low 10% = \$33,210<

Middle 50% = \$42,106-72,539

High 10% = >\$101,723

Employer medians

Federal: \$79,184

Local: \$52,628

State: \$50,452

Private: \$56,000

Starting salaries average for recent BS grads: ~\$34,000

44% are at local and state government agencies

8% federal government agencies

14% architecture and engineering firms

15% management, scientific and technical consulting

4% other private employers

5% are self employed

Last update: 2/15/07

Conservation Scientists/Foresters

Total = 33,959

Total does not include teachers and college professors

Outlook: Slow

Conservation Scientists

Median = \$56,515

Low 10% = \$<33,104

Middle 50% = \$42,709-\$70,590

High 10% = >\$84,504

Foresters

\$51,938

\$32,059<

\$40,125-65,152

>\$77,590

33% work with federal government

21% state government

11% local government

35% private industry and consulting firms

Starting salaries with BS degrees average ~ \$26,000-\$32,100

With an MS average ~ \$39,300 - \$47,500

With a PhD ~ \$57,000

Last update: 2/15/2007

Hydrologists

Total = 8,723

Does not include teachers and college professors

Outlook: Excellent

Median = \$66,240

Low 10% = \$35,910<

Middle 50% = \$50,700 –\$83,900

High 10% = \$101,723

31% at federal government agencies

15% state government

18% management, scientific and technical consulting

5% self employed

Last update: 2/15/07

*Geoscientists**

Total = 30,000

Outlook: Steady

Median = \$74,015

Low 10% = \$40,600<

Middle 50% = \$53,048-\$105,944

High 10% = >\$140,8034

Starting average

w/BS = \$41,762

* See next slide for list of all geoscientist types

Last Update: 2/15/2007

Geoscience types

Geologists

Petroleum
Engineering
Mineralogist
Paleontologists
Stratigraphers
Volcanologists

Geophysicists

Geodesists
Seismologists
Geochemists
Geomagnetists
Paleomagnetists

Oceanography

Physical
Chemical
Geological
Geophysical
Biological

Science Techs

Total = 249,162

Outlook = Steady

Chemical	66,767	\$41,101
Biological	69,000	\$35,776
Environmental Protection/Health	33,383	\$38,085
Forest/Conservation	35,537	\$29,432
Agricultural/Food Science	24,768	\$32,011
Geological	11,846	\$43,347
Nuclear	7,861	\$63,731

Last update: 2/15/2007

Surveyors, Cartographers, Photogrammetrists, Surveying Technicians

Total = 141,073

Outlook = Steady

11,846

*Cartographers/
Photogrammetrists:*

Median = \$50,353

Low 10% = \$30,826<

Middle 50% = \$38,420 – 65,378

High 10% = \$81,343

69,998

*Surveying/Mapping
Technicians:*

= \$33,197

= \$20,915<

= \$25,788-\$43,818

= \$55,806

59,229

Surveyors:

= \$46,965

= \$26,925

= \$34,902-\$62,494

= \$78,283

Last update: 2/15/2007

Environmental Engineers

Total = 54,000

Outlook = Excellent

Median = \$71,800

Low 10% = \$43,868<

Low 25% = \$54,796

High 25% = \$90,386

High 10% = >\$108,050

Entry (BS) = \$50,702

Last update: 2/15/07

Biological Scientists

Total = 77,000

Outlook: Steady

Median = \$53,671

Starting salary (BS) = \$31,866

(MS) = \$38,520

Includes: Aquatic, marine, limnologists, biochemists, botanists, microbiologists, physiologists, biophysicists, ecologists, zoologists (e.g. ornithologists, mammalogists, herpetologists, ichthyologists)

Last update: February 15, 2007

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