



**NATIONAL
ENVIRONMENTAL HEALTH
SCIENCE AND PROTECTION
ACCREDITATION COUNCIL
(EHAC)**

Graduate Outcome Assessment Report

Compiled by Leslie Mitchell

This report details the analysis of the data provided by Graduates and their Supervisors of the programs seeking re-accreditation during the 2017-2018 academic year.

Background:

The EHAC Graduate Guidelines Section VII. Accreditation Process:

1. The institution must follow the process shown below to have its master's program in environmental health science and protection be considered for accreditation.
 - o The Council will consider accreditation of an environmental health science and protection program, following an annual schedule, upon
 - request by the program administrator,
 - submittal of the Program Self-study with supporting materials, and
 - receipt of application for accreditation fee.
 - o At the time of re-accreditation, programs shall survey program graduates and employers via EHAC's online outcome assessment survey tool. All graduates since the last accreditation shall be in the pool of those to be surveyed. The survey is conducted via a link that is provided by the EHAC office to the Program Director of programs seeking re-accreditation. We ask that the Program Director send the instructions for accessing the survey to graduates. The deadline for graduate and supervisor responses is **six months prior** to the annual meeting of the EHAC Council which is usually held in June. The exact deadline will be provided in the survey instructions. The survey results will be compiled by the EHAC office. Survey results will be made available to Program Directors before the EHAC annual meeting.

The outcome assessment tool consists of two surveys conducted through surveyMonkey.com, one for graduates and the other for their supervisors. It is distributed to the re-accreditation candidate Program Directors for distribution to their graduates. The graduates then provide the supervisor survey link to their supervisors.

Survey Context and Summary:

EHAC' core mission is to accredit Environmental Health (EH) Programs that provide a scientifically rigorous and practical based education, which prepares graduates to enter the EH field "work force ready" and prepared to problem solve using critical thinking skills acquired during their university education. Toward this end, EHAC is continuously identifying strengths and weaknesses related to graduates successfully entering and progressing in the EH field of their choice. Survey responses from both graduates employed in the EH field and their supervisors assist EHAC in assessing and adapting Undergraduate Requirements and Graduate Guidelines for accreditation to the ever-evolving arena of Environmental Health.

Questions for both graduates and their supervisors focus on assessing the adequacy and effectiveness of a graduate’s knowledge, skills and abilities related to their EH job, with graduates conducting a self -assessment and supervisors evaluating their current (graduate) employee.

The following report provides a graphic representation of the results of the surveys with Undergraduate program employees and their supervisors presented first, followed by Graduate program employees and their supervisors.

Table 1 presents the six EHAC accredited Graduate programs currently in the process of reaccrediting, the number of supervisor responses, former undergraduate employee responses and the graduation dates represented by former undergraduate respondents.

Table 1. 2017-2018 Outcome Assessment Respondents – Undergraduate Programs

Re-accreditation Applicants	Next Accreditation Review	Initial Accreditation Year	Graduating Classes Reflected	Number of Graduate Respondents	Number of Supervisor Respondents
East Carolina University	2018	1975	No responses	No Responses	No Responses
East Tennessee State University	2018	1969	No responses	No Responses	No Responses
Eastern Kentucky University	2018	2012	2012, 2014, 2016-17	7	1
University of Findlay	2018	2005	2009-10, 2014	3	3
University of Illinois	2018	2006	2008, 2010, 2014	5	No Responses
Mississippi Valley State University	2018	2005	2014	2	
Totals				17	4

Graduate Skills

Listed below are core competencies in environmental health programs. Respondents were asked to choose the option that most closely described their skill level. The percentages reflect 17 graduate survey respondents. All respondents are currently employed in the environmental health field except one, who was unemployed as of spring 2018.

Charts 1 and 2 reflect graduate self-assessments related to basic job skills necessary in an office environment. All graduates rate themselves proficient or higher in writing, speaking and interpersonal skills. Graduates rated leadership and speaking skill areas as needing the most improvement.

Chart 3 relates to research and data analysis skills. Graduates reported strength in critical thinking, research and analysis. Statistical analysis and data interpretation proved the most challenging for most graduates.

Environmental Health related skills are assessed in Chart 4, with moderate to high rates of proficiency reported for each EH area. The following EH areas were reportedly the most challenging for graduate employees:

- Epidemiology;
- Toxicology; and
- Risk Communication and Management.

Chart 1.

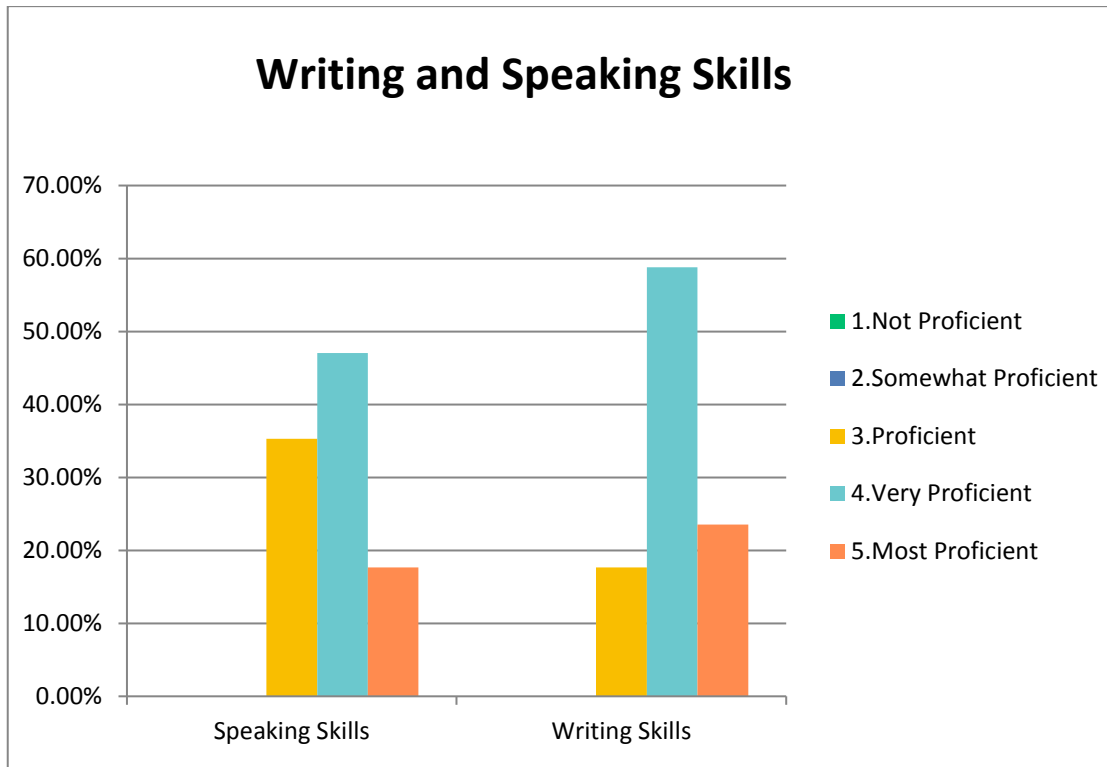


Chart 2.

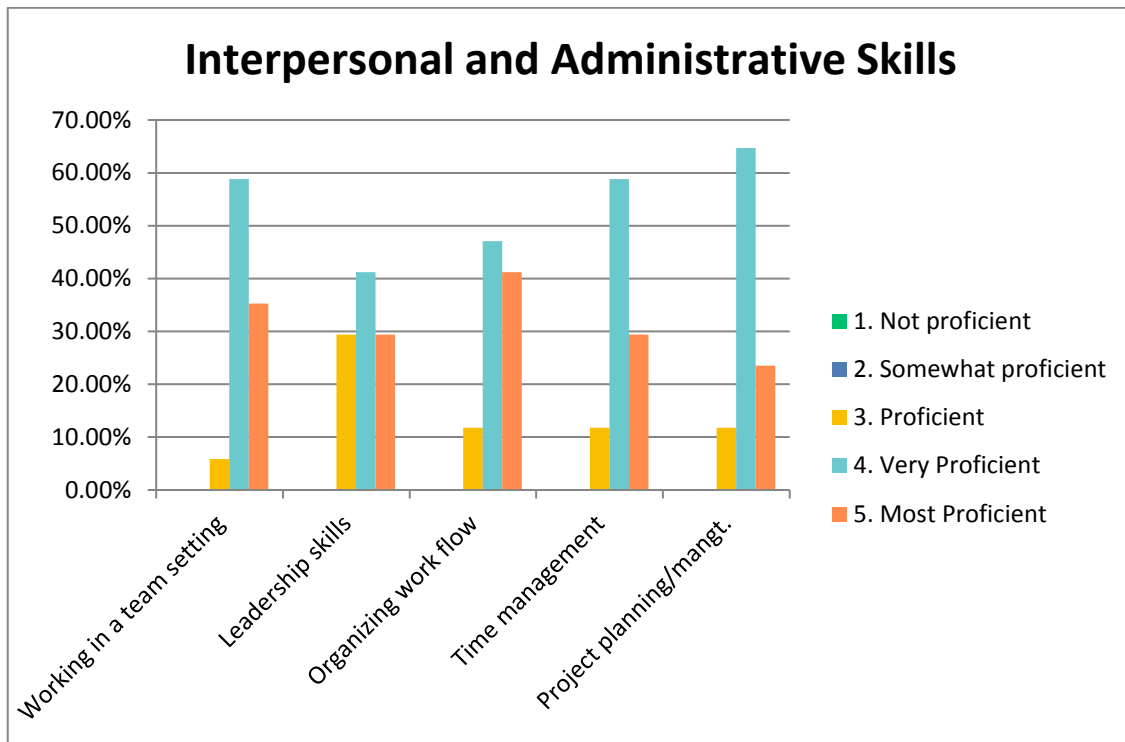


Chart 3

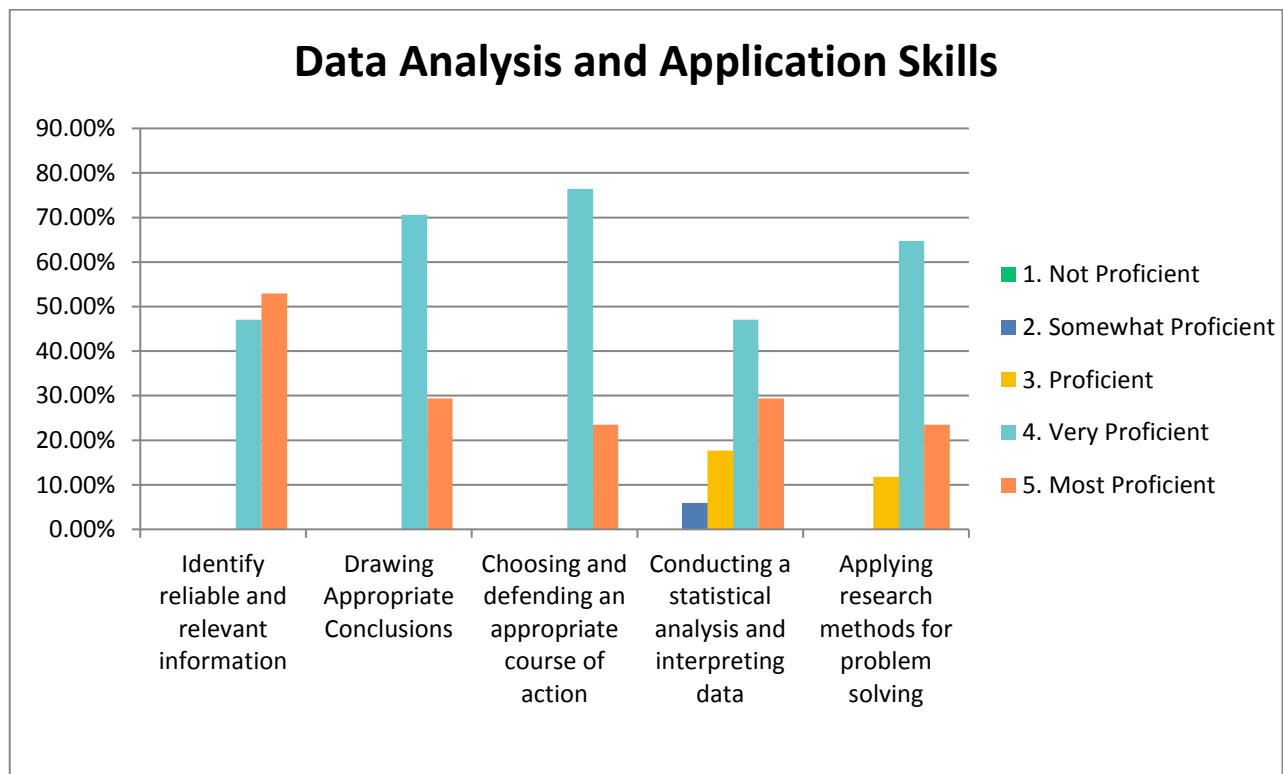
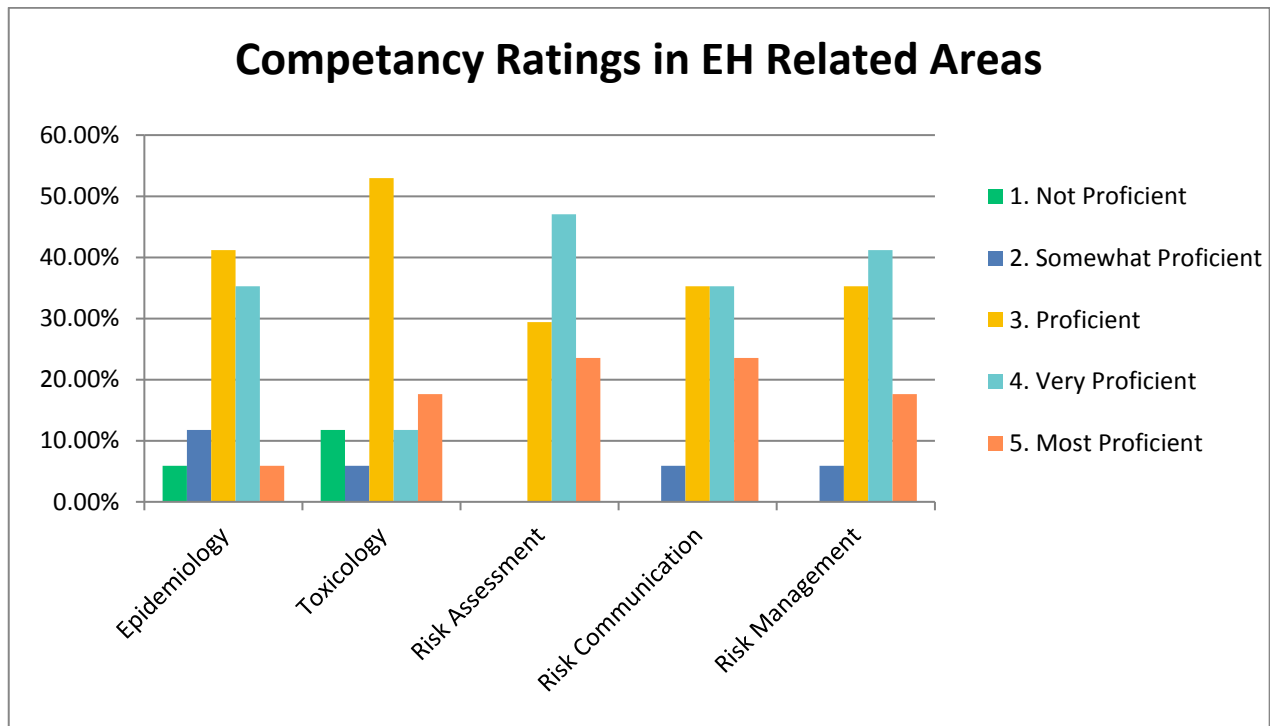


Chart 4



Course Relevance

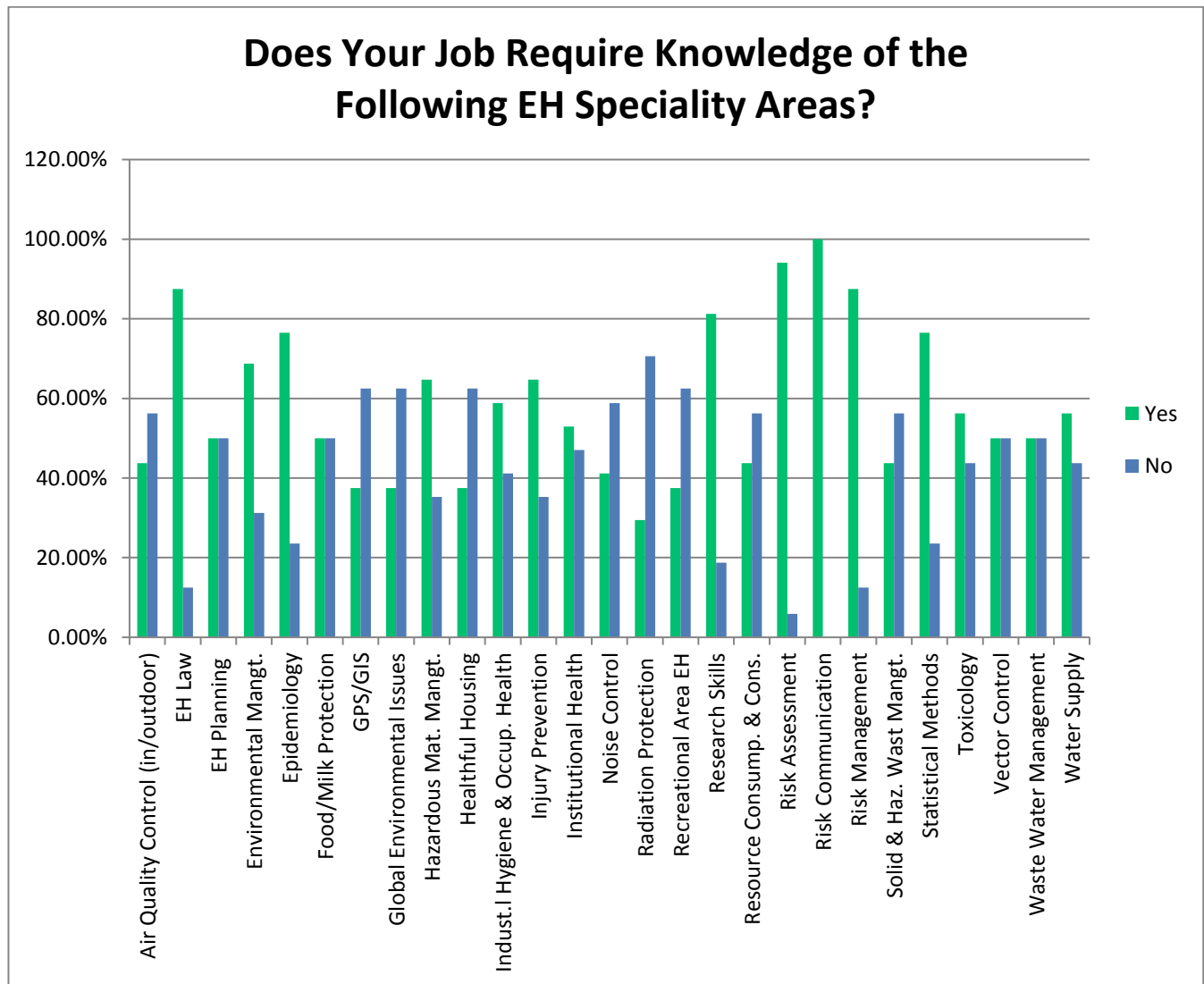
Graduate respondents were asked to answer yes or no if their job required knowledge in the following areas found in environmental health. Chart 5 presents specialty areas cited the most by former students, including:

- Risk Communication and Management (which graduates reported as challenging in the skills section);
- Resource Consumption and Conservation;
- Research Skills;
- Statistical Methods (again, another skill which graduates reported being challenging);
- Epidemiology; and
- EH Law.

Topics that graduates have less interaction with in their workplace are led by:

- Radiation Protection;
- Food/Milk Protection;
- GPS/GIS;
- Healthful Housing; and
- Recreation Area Environmental Health.

Chart 5.



Specialty Area Knowledge & Program Preparation to Perform EH Activities

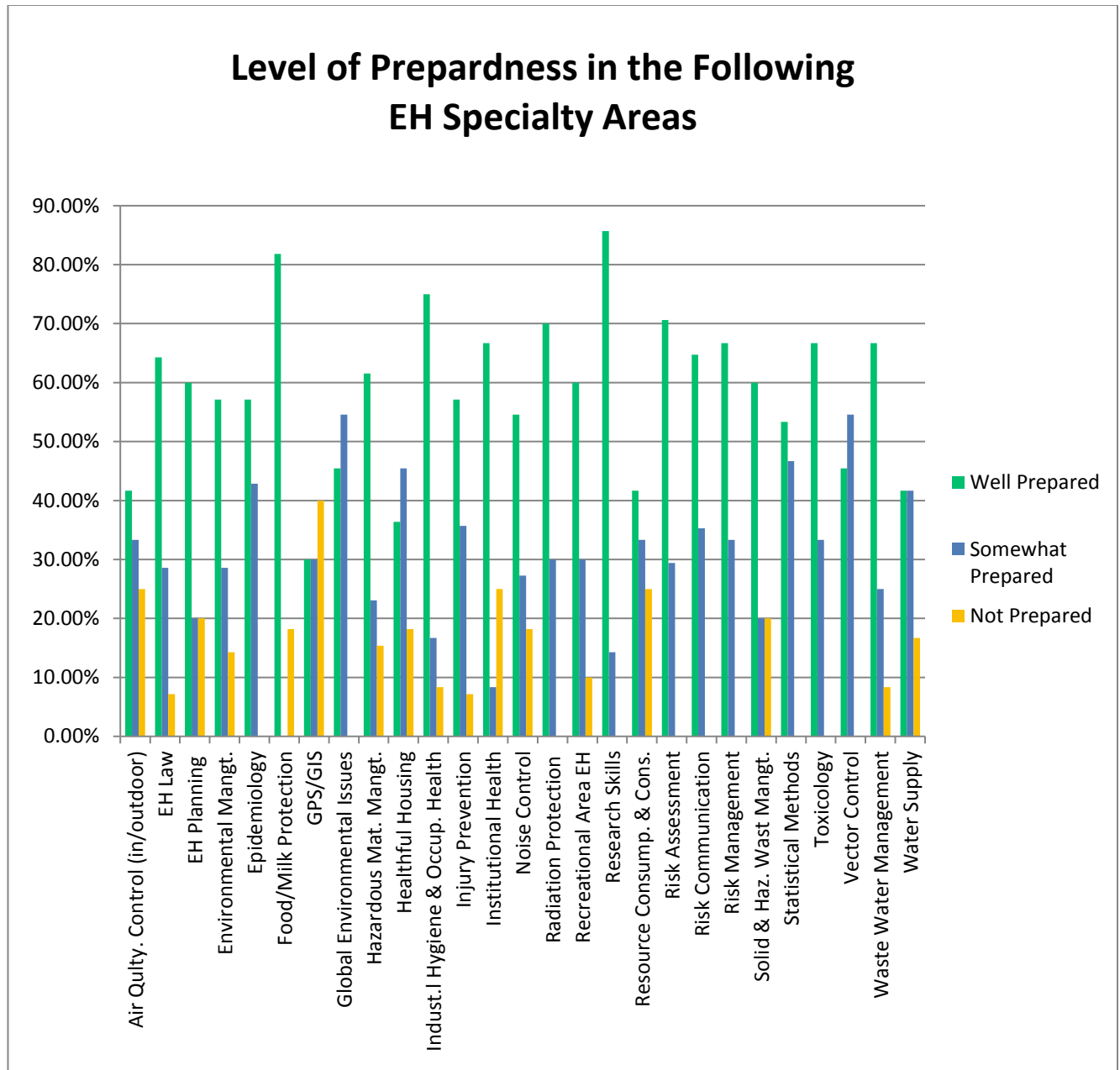
Graduate respondents were asked to answer yes or no if they were well-prepared in the following specialty areas in their Graduate program (Chart 6).

The majority of respondents reported they were well prepared for all of the provided EH specialty areas with the exception of the following topics:

- Food and Milk Protection;
- GPS/GIS;
- Global Environmental Issues;
- Health Housing
- Vector Control; and
- Water Supply.

With the exception of “Water Supply and Vector Control,” these topics for which graduates reported experiencing less preparedness also coincide with those cited as unrequired knowledge areas in Chart 5.

Chart 6.



Graduate Work Place Data:

Chart 7 presents job sectors where graduates of 2018 reaccrediting programs are working. Sixteen of the 17 respondents were employed in the Environmental Health field as of Spring 2018. The majority of graduates are working in local or Federal government positions.

Chart 8 shows the distribution of former students employed by the US government. Chart 9 shows the areas of Environmental Health in which all reporting students are practicing.

A breakdown of the salary ranges of graduates employed in the EH field is presented in Chart 10, showing a majority of respondents making over \$70,000 per year.

Chart 7.

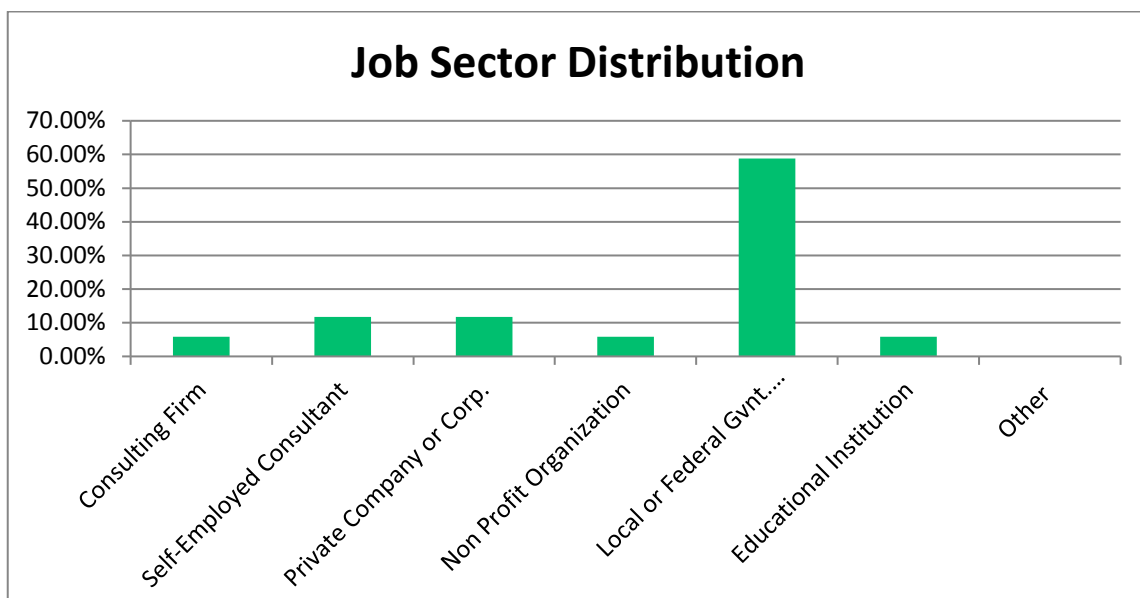
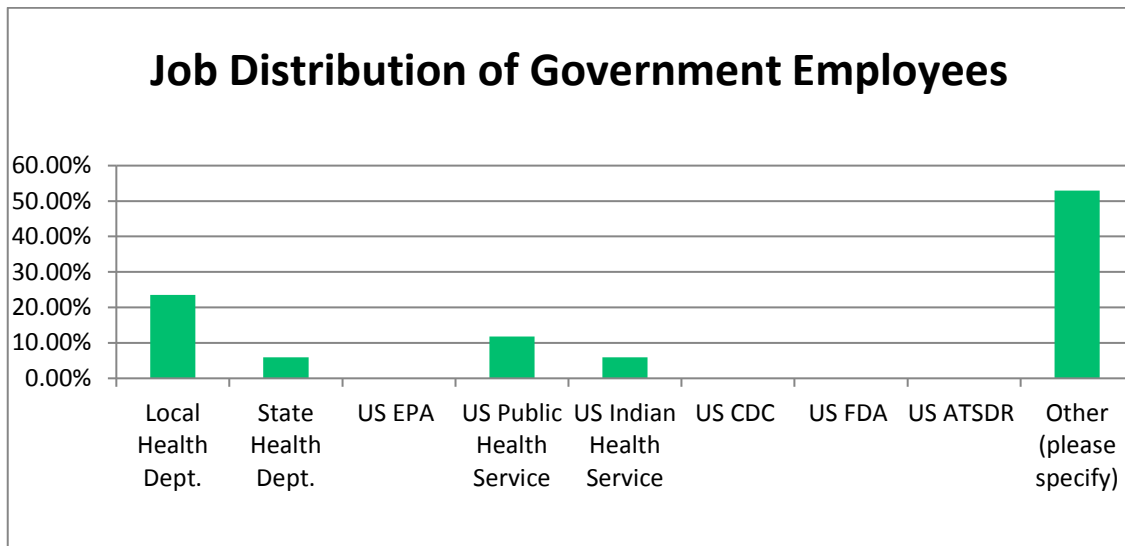
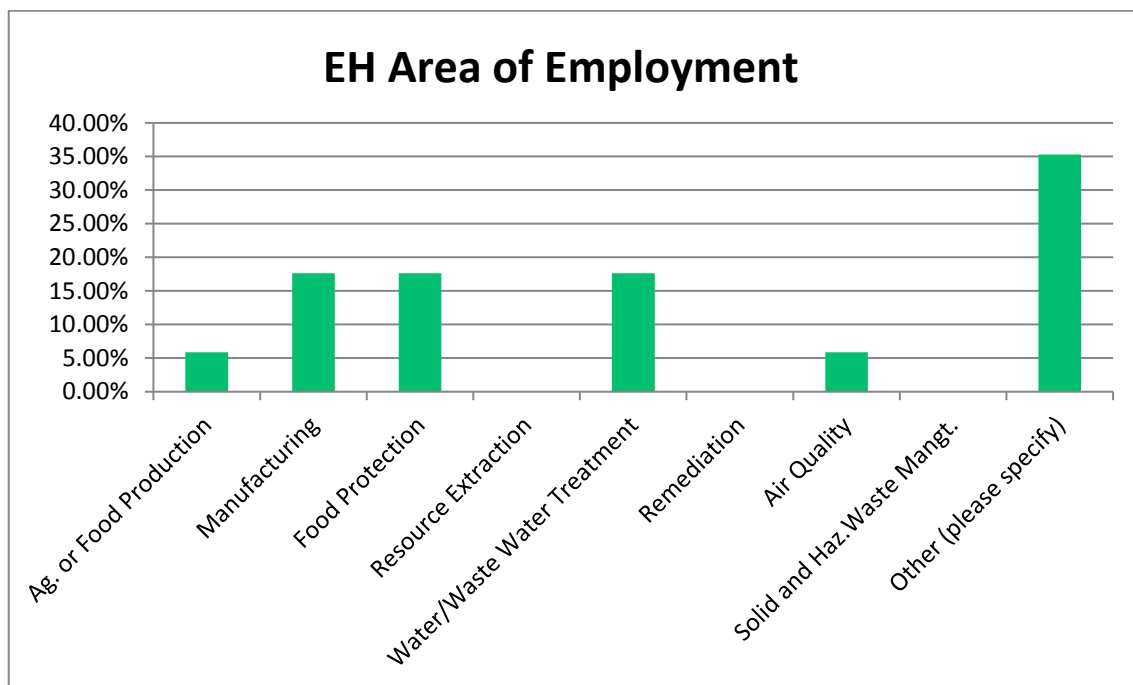


Chart 8.



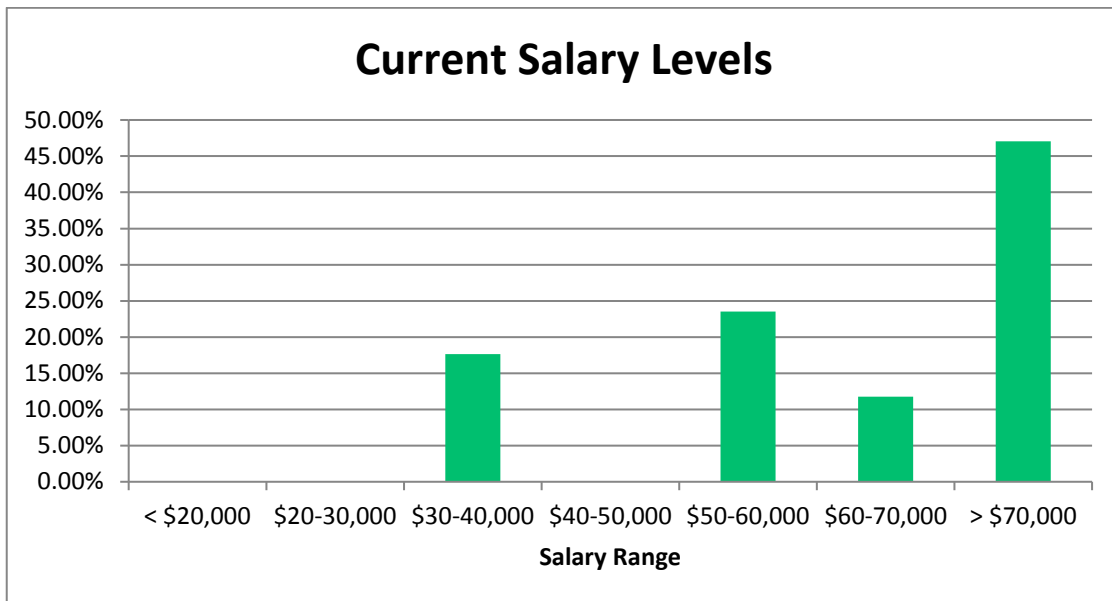
Note: "Other" in Chart 8 includes the United States Department of Defense, a university and the United State Department of Agriculture – Natural Resource Conservation Service.

Chart 9.



Note: "Other" includes: Food Protection, Entomology, Human Diseases, Sanitation, Medical Waste.

Chart 10.



Graduate Data on Continuing Education and Professional Development

Table 2. below details the types of degrees completed by graduates after earning a degree in Environmental Health:

Table 2. Post Undergraduate Education

Number of Graduates that have Completed Post-Baccalaureate Degrees	Types of Degrees Awarded
23	MPH: Epidemiology, Doctor of Health Science, Doctor of Medicine

Professional Recognition

The following were listed as specific professional awards received by 1 respondent (Table 3):

Table 3. Awards Received

CDC
NC Children's Environmental Health Branch Sub-Grantee

Credentials Achieved: The following were listed as specific certificate or credentialing exams passed by 13 respondents (Table 4):

Table 4. Certificates and Credentials Held by Graduate Employees

Grade IV Water Treatment Certification Grade IV Wastewater Treatment Certification
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REHS, HHS, CPO
Professional Engineering Exam
REHS
CIH
REHS/RS
NC RS
Food Microbiological Control, Basic Food Law for State Regulators, Basics of Inspections, Food Code, Public Health Principles, Emergency Management, Foodborne Illness Investigations.
Certified Wound Care Specialist
Registered Professional Sanitarian (RPS) and/or Environmental Specialist (RPES) , ServSafe/ServSafe instructor
REHS, Wastewater Grade 1 and 2, Sub subsurface operator.

Professional Organizations

Thirty graduate respondents indicated involvement in the professional organizations listed below in Table 5:

Table 5. Professional Organizations with which Respondents are Involved

NEHA, NCPHA, Local Emergency Planning Committee, Lead/Healthy Homes Ad Hoc Advisory Council
NEHA, NSF
NEHA, USEHA, IFEH, APHA
AIHA
NAEP
IAEM, AIHA, NEHA, PMI, SCHC, CERT
Public Health Service
American Society of Safety Engineers
American Academy of Family physicians; American Board of Wound Management

Supervisor Survey Results

Supervisors of graduates from re-accrediting programs were asked to assess the skill and preparedness of their employees. Four supervisors of former graduate students responded to the survey and their responses are presented in this report.

Supervisor Rating of Graduate Skills

Graduates received overall high marks from supervisors for their basic job skills, with speaking skills scoring markedly higher than writing skills by a majority of the supervisory respondents (Chart 11).

Supervisors cited graduate employee analytical skills as most or very proficient, with the exception of choosing and defending an appropriate course of action (Chart 12).

All administrative skills were cited as proficient or better as shown in Chart 13.

Chart 11.

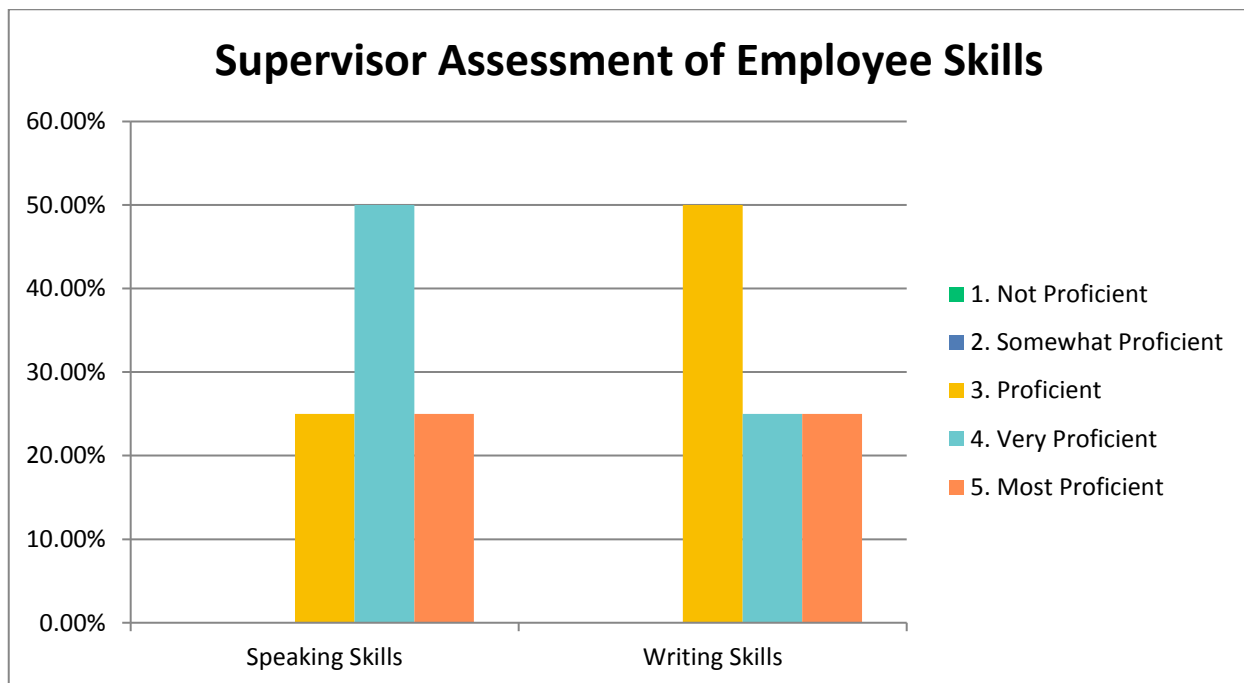


Chart 12.

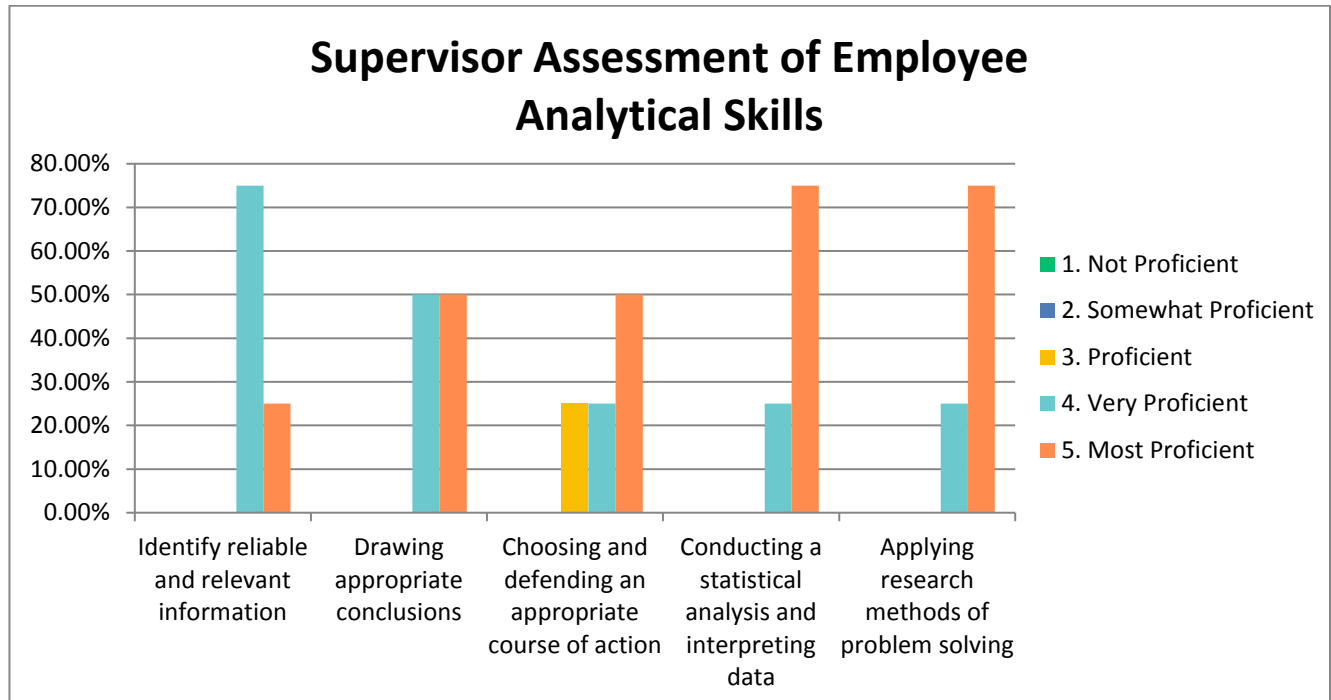
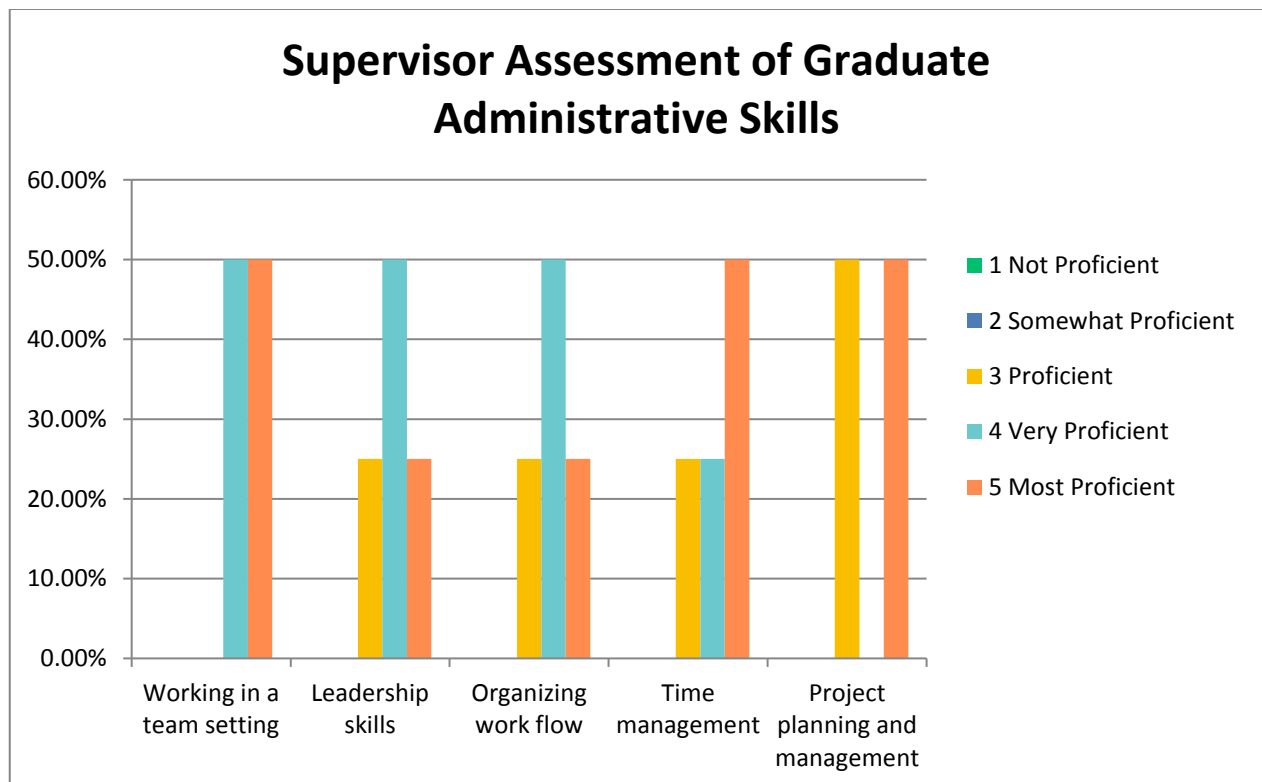


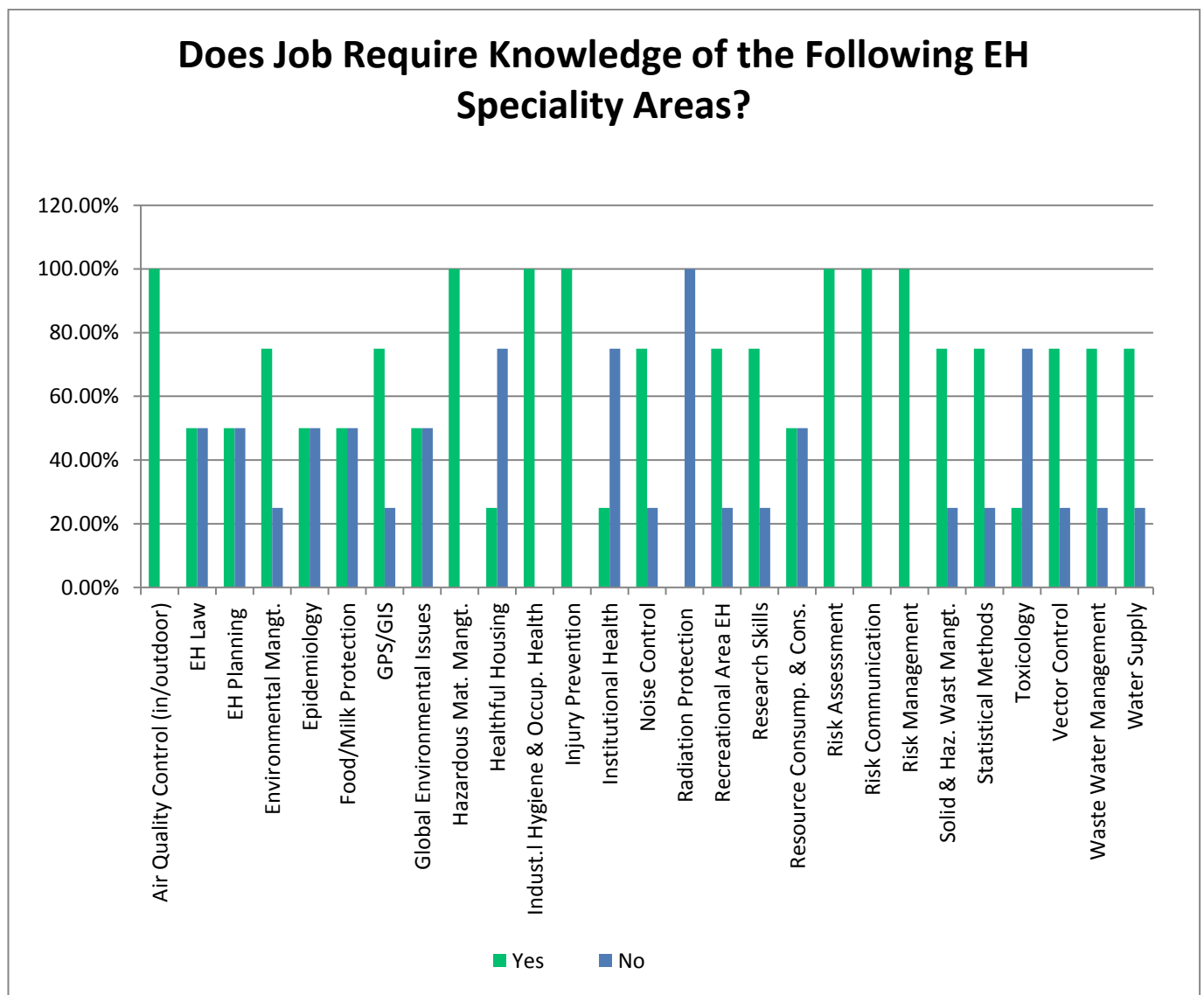
Chart 13.



Specialty Area Requirements of Jobs of All Respondents

Supervisors of graduates were asked to answer yes or no if the job required the following core competencies. Chart 14 below represents the responses of four supervisors. Supervisor responses were similar to those of their employees for this question (Chart 5), with Risk Assessment, Communication and Management leading the required knowledge areas, while other important areas of knowledge cited by supervisors included Air Quality Control, Hazardous Materials Management, Industrial Hygiene and Occupational Health and Injury Prevention. Similarly, to graduate responses, Radiation Protection was cited by supervisors as the least relevant to their employees.

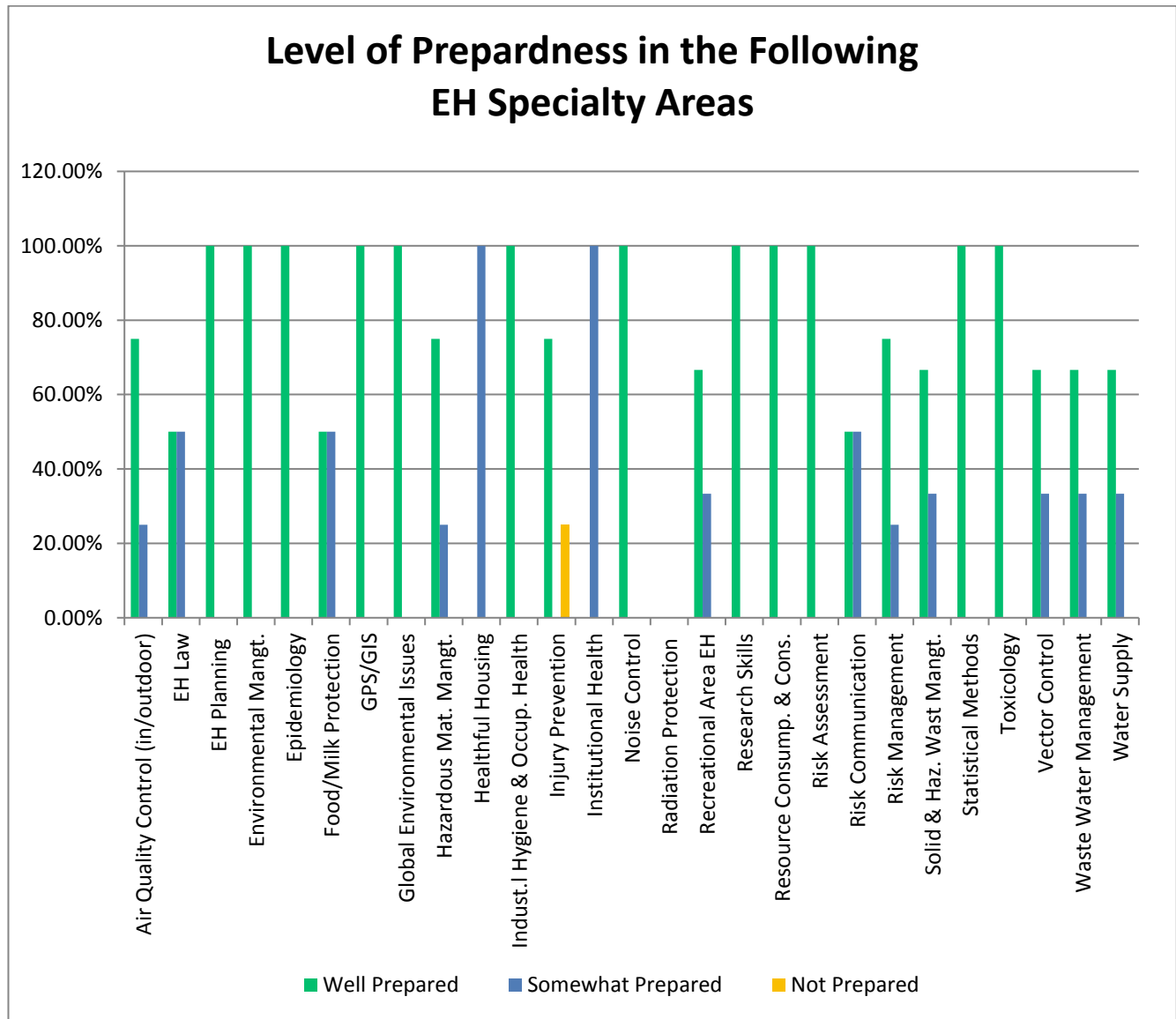
Chart 14.



Program Preparation - All Respondents

Supervisors of graduates were asked to answer yes or no if graduates were well-prepared in the following specialty areas. Supervisors were again largely in agreement with graduate respondents in their assessment of preparedness, with lack of preparation showing in the Injury Prevention area and moderate preparedness in Healthful Housing and Institutional Health (Chart 15). All other specialty areas found graduates somewhat to well prepared.

Chart 15.



Narrative and Discussion

EHAC accredits environmental health academic programs in order to create a cadre of educational institutions that produce environmental health graduates that are well prepared academically and have the fundamental and practical skills to successfully enter and thrive in the environmental health field. EHAC's primary mission is to enhance the education and training of students in environmental health science and protection by ensuring that students receive premium quality education and training from institution of higher education.

The aggregation of supervisor and graduate assessments regarding employee skill level and preparedness presented in this report reflects well on EHAC accredited programs regarding the acumen of environmental health graduates. As shown in Charts 16 and 17 (below), graduates rated their preparedness in specialty areas at an average of 60%, while supervisors rated employees at 22% well prepared. However, supervisor rated employees at 23% "somewhat prepared," as well. These averages point to a moderate level of perceived competence in environmental health graduates, as well as, leaving ample room for improvement in a number of specialty areas. Highest levels of preparedness are reported by both graduates and supervisors for the following specialty areas:

- Food/Milk Protection;
- Environmental Health Law;
- Institutional Health;
- Recreational Area Environmental Health;
- Risk Communication.
- Vector Control; and
- Water Supply

Areas where graduate and supervisor opinions differed somewhat, with graduates having a higher estimation of their abilities included the areas of:

- Injury Prevention and
- Risk Management.

Chart 18 shows a graphic representation of graduate and supervisor ratings of employee job skills. Supervisors and employees agreed on aptitude levels for speaking, writing and leadership skills. However, estimates varied greatly for other skills levels, with supervisors giving high rankings to:

- Applying Problem Solving Methods;
- Conducting Statistical Analysis and Interpreting Data;
- Choosing and Defending an Appropriate Action;
- Drawing Appropriate Conclusion;
- Project Planning and Time Management; and
- Working in a Team Setting

Graduates rated themselves high, compared to supervisor in the category of Identifying Reliable and Relevant Information.

Speaking, Writing and Leadership skills were rated lowest by both employees and supervisors.

Chart 16.

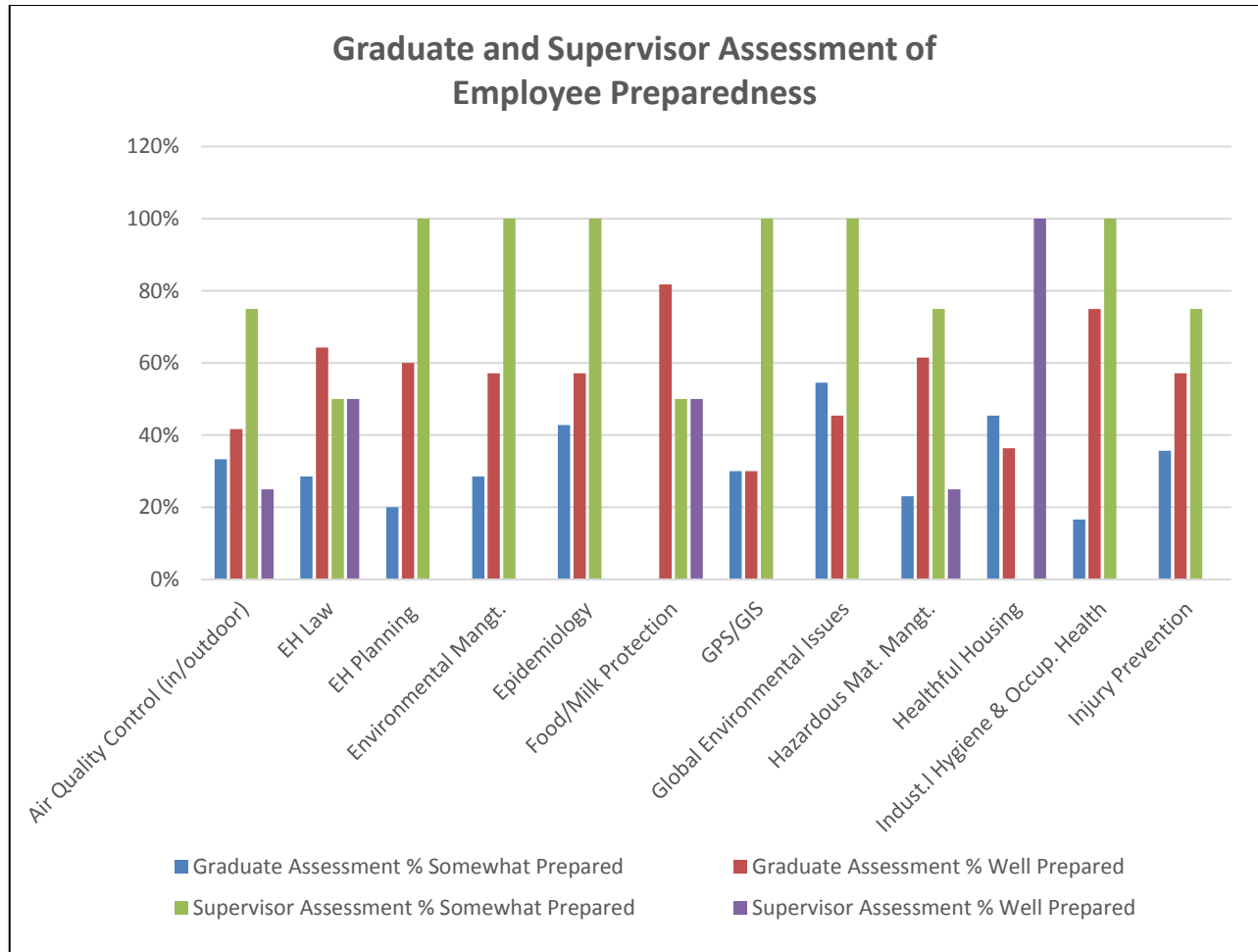


Chart 17.

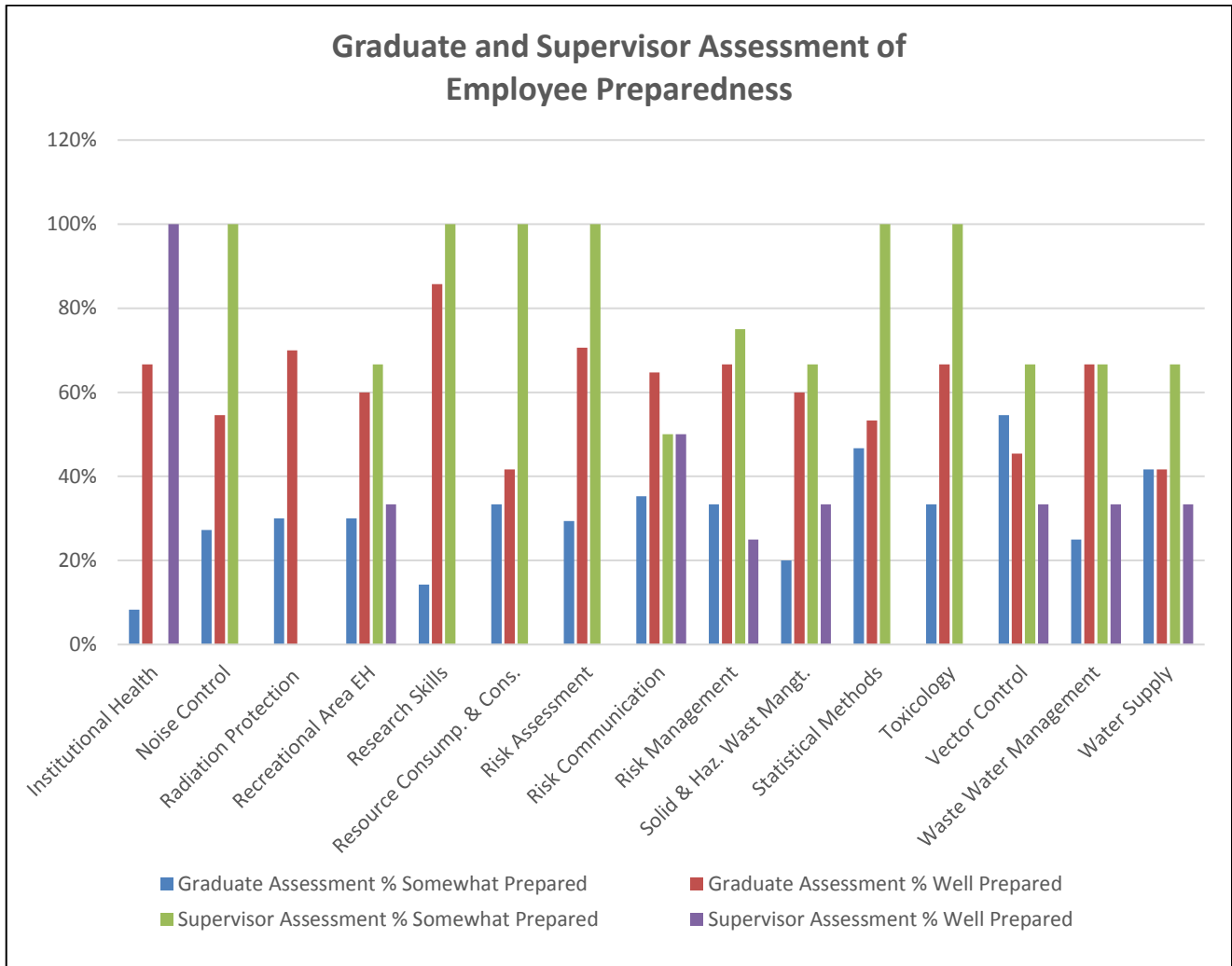


Chart 18.

