Needs and Preparedness of Fisheries Hires by State Agencies

Don Gabelhouse, Jr.
Fisheries Division Administrator
Nebraska Game and Parks Commission

Past-President
Fisheries Administration Section of AFS
Composition of Inland Fisheries Programs in 41 State Fish and Wildlife Agencies (2001)

Mean Percent of Full-time Permanent Employees

- Sport fisheries management: 35.6%
- Fish production & distribution: 31.7%
- Research: 6.8%
- Administration: 5.4%
- Secretarial & clerical: 5.2%
- Environmental services: 3.9%
- Aquatic education: 2.9%
- Boat & angler access: 2.5%
- Habitat manipulations: 2.0%
- Nongame, T & E fisheries management: 1.1%
- Computer programming & support: 0.8%
- I & E/Marketing: 0.7%
- Facilities construction/O & M: 0.6%
- Anadromous fisheries management: 0.4%
- Planning & human dimensions: 0.3%
- Biometrics: 0.3%
- Fish health: 0.3%
- Commercial fisheries management: 0.2%
- Water acquisition: 0.1%
- Reservoir construction: 0.1%
- Tribal affairs & LE: 0.1%
Information Sought

- Level of education required
- Importance of previous non-academic work experience
- Importance of knowledge in 54 competencies (courses)
- Preparedness of recent hires in applying knowledge of the 54 competencies
- Expected change in importance of the 54 competencies in 10 years
- Additional competencies
- Comments
Information Sought

- Level of education required
- Importance of previous non-academic work experience
- Importance of knowledge in 54 competencies (courses)
- Preparedness of recent hires in applying knowledge of the 54 competencies
- Expected change in importance of the 54 competencies in 10 years
- Additional competencies
- Comments
35 Responses to the Survey
35 Responses to the Survey
(includes two from West Virginia, 7 unknown states, and Puerto Rico)
Types of Biologists on Staff
Types of Biologists on Staff

- Management
- Research
- Management-Research
- Management-Research-Hatchery
- Hatchery

Respondents
Importance of Courses
Importance of Courses

- Fisheries Management
- Fisheries Field Techniques
- Technical Writing
- Oral Communication/Speech
- Ichthyology
- Basic Statistics
- Population/Community Ecology
- Population Dynamics
- Research Methods
- Experimental/Survey Design
- Basic Ecology
- Limnology

Options: Not at all, Not very, Moderately, Very, Extremely
Importance of Courses

Fisheries Management
Fisheries Field Techniques
Technical Writing
Oral Communication/Speech
Ichthyology
Basic Statistics
Population/Community Ecology
Population Dynamics
Research Methods
Experimental/Survey Design
Basic Ecology
Limnology

Not at all  Not very  Moderately  Very  Extremely
Importance of Courses

- Adaptive Management
- G.I.S.
- Mathematics/Calculus
- Multivariate Statistics
- Natural Resource Policy
- Integrated Resource Mgt.
- Conservation Biology
- Human Dimensions

Not at all  Not very  Moderately  Very  Extremely
Importance of Courses

- Adaptive Management
- G.I.S.
- Mathematics/Calculus
- Multivariate Statistics
- Natural Resource Policy
- Integrated Resource Mgt.
- Conservation Biology
- Human Dimensions

Scale:
- Not at all
- Not very
- Moderately
- Very
- Extremely
Importance of Courses

- Adaptive Management
- G.I.S.
- Mathematics/Calculus
- Multivariate Statistics
- Natural Resource Policy
- Integrated Resource Mgt.
- Conservation Biology
- Human Dimensions

Not at all  Not very  Moderately  Very  Extremely
Importance of Courses

- Organic Chemistry
- Fish Culture
- Entomology
- Landscape Ecology
- Genetics
- Vertebrate Zoology
- Water Quality (Civil Engineering)
- Aquatic Plants
- Invertebrate Zoology
- Basic Chemistry
- Water Quality (Civil Engineering)
- Vertebrate Zoology
- Genetics
- Landscape Ecology
- Entomology
- Fish Culture
- Organic Chemistry

Not at all  Not very  Moderately  Very  Extremely
Importance of Courses

- Organic Chemistry
- Fish Culture
- Entomology
- Landscape Ecology
- Genetics
- Vertebrate Zoology
- Water Quality (Civil Engineering)
- Aquatic Plants
- Basic Chemistry
- Invertebrate Zoology
- Fish Health
- Popular Writing
- Aquatic Plants
- Water Quality (Civil Engineering)
- Vertebrate Zoology
- Genetics
- Landscape Ecology
- Entomology
- Fish Culture
- Organic Chemistry

Not at all  Not very  Moderately  Very  Extremely
Importance of Courses

- Organic Chemistry
- Fish Culture
- Entomology
- Landscape Ecology
- Genetics
- Vertebrate Zoology
- Invertebrate Zoology
- Aquatic Plants
- Water Quality (Civil Engineering)
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Importance of Courses

- Biochemistry
- Animal Physiology
- Computer Programming
- Inorganic Chemistry
- Animal Behavior
- ★ Fish Nutrition
- Geology
- Political Science
- Physics
- Wildlife Management

Not at all  Not very  Moderately  Very  Extremely
Importance of Courses

- Biochemistry
- Animal Physiology
- Computer Programming
- Inorganic Chemistry
- Animal Behavior
- Fish Nutrition
- Geology
- Political Science
- Physics
- Wildlife Management

Not at all  Not very  Moderately  Very  Extremely
Importance of Courses

- Economics
- Sociology
- Botany
- Marketing
- Herpetology
- Psychology
- Website Dev. and Programming
- Mammalogy

Not at all  Not very  Moderately  Very  Extremely
Importance of Courses

- Humanities (Art, Music, Theater)
- Foreign Languages
- History
- Ornithology

Not at all  Not very  Moderately  Very  Extremely
Importance of Courses

- Humanities (Art, Music, Theater)
- Foreign Languages
- History
- Ornithology

Options:
- Not at all
- Not very
- Moderately
- Very
- Extremely
Additional Suggested Courses
Additional Suggested Courses

• Aquatic Invasive/Nuisance/Exotic Species
• Climate Change
• Government/Financial Management
• Professional Ethics
• Stream Mechanics
• Watershed Hydrology
• Equipment O & M/Technical Common Sense Skills
• Time/Administration Skills
• Negotiation Skills
• Networking/Working in Teams/Working with Stakeholders
• Meeting Management/Consensus Building
• Public Relations
• Database development and management
• Environmental Permitting and Review
• Lab Experience
• Applied Research
Here's what I think:
Importance of Courses

- Fisheries Management
- Population/Community Ecology
- Population Dynamics
- Conservation Biology
- Landscape Ecology

Not at all  Not very  Moderately  Very  Extremely
Importance of Courses

Popular Writing

Not at all  Not very  Moderately  Very  Extremely
Importance of Courses

Political Science
- Not at all
- Not very
- Moderately
- Very
- Extremely

Economics
- Not at all
- Not very
- Moderately
- Very
- Extremely
Fishery Management

The manipulation of the physical, chemical, and biotic factors in aquatic environments to achieve the most satisfactory sustained production and yield of desired species of fish in a program that is regulated by sound biological, political and economic principles and concepts.

Richard O. Anderson
Fishery Management

The manipulation of the physical, chemical, and biotic factors in aquatic environments to achieve the most satisfactory sustained production and yield of desired species of fish in a program that is regulated by sound biological, political and economic principles and concepts.

Richard O. Anderson
Importance of Courses

- Sociology
- Marketing
- Psychology

Not at all  Not very  Moderately  Very  Extremely
Importance of Courses

Humanities (Art, Music, Theater)
Last Child in the Woods
Saving Our Children from Nature-Deficit Disorder
Richard Louv
A 1995 analysis by the College Board showed that students who studied the arts for more than four years scored forty-four points higher on the math portion and fifty-nine points higher on the verbal section of the SAT.

Richard Louv
Leonardo di ser Piero da Vinci
April 15, 1452 – May 2, 1519
was an Italian polymath, scientist, mathematician, engineer, inventor, anatomist, painter, sculptor, architect, botanist, musician and writer. Leonardo has often been described as the prototype of the Renaissance man, a man whose unquenchable curiosity was equaled only by his powers of invention.
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NEBRASKA GAME PARKS