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Test Your Science Knowledge

By Dr. Charles R. Berry Jr.

Raptors are small rodents. True or False? This is a question posed to entering students by the faculty in the Department of Wildlife and Fisheries Science at South Dakota State University. The quiz gives the professors information about their students’ general knowledge of outdoors facts.

In my monthly articles on the Year of Science (www.yearofscience2009.org), I have defined science as a body of knowledge and a process of gaining that knowledge. The quiz for the entering students is about the first part of the definition – the science facts about fish and wildlife.

Public Understanding of Science

The Year of Science was justified by data that showed that the public does not know much about science, either the facts or the process. Part of the blame was placed on educators. A 2008 edition of TIME Magazine reviewed some troubling facts about science in the USA in an article titled “Are we losing our edge?” Our past unchallenged superiority in science and technology is being challenged. We’re still on top but other countries are catching up. One fear is that USA industries will move or “grow” new jobs in countries where scientists and innovations are located. Another is that the American public won’t be knowledgeable consumers of information and products, or understand the process of solving problems. However, a new poll gives the public more credit than the scientists do.

The new data says that Americans like science. Most people say that science has had a positive effect on society and that science has made life easier. Most Americans (76%) enjoy keeping up with news about science. Young people are poorly informed about current events and politics, but this is not the case with science knowledge. People younger than 30 got higher scores on the following knowledge test than did those 65 and older.

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2009 64th ANNUAL SDWF CONVENTION
AUGUST 15-16, Watertown, SD
TENTATIVE SCHEDULE

FRIDAY, AUGUST 14
6:00 PM Cash bar and meals available at the Watertown Legion on West Hwy 212.

SATURDAY, AUGUST 15
7:30 AM REGISTRATION-Drake Motel
8:00 AM - 1:00 PM SDWF ANNUAL CONV. MEETING
9:30 AM GF&P, Secretary Jeff Vonk
1:00 Lunch on your own
5:00 PM - 10:00 PM DINNER, AUCTION, CONSERVATION AWARDS
Watertown Legion on West Hwy. 212

SUNDAY, AUGUST 16
8:00 AM - 1:00 PM SDWF ANNUAL CONV. MEETING • Drake Motel
Executive Director’s Update by Chris Hesla

Mark your calendars for the dates of August 15-16 for the SDWF Annual Convention to be held in Watertown. The Dakota Sportsman, Inc. will be our hosts. See the schedule printed in this Out-Of-Doors for times and planned activities. We will be honoring eight Conservation leaders from South Dakota on Saturday night at our dinner/auction. All members are welcome and encouraged to attend.

During the Convention, we will be drawing the winners for the 2009 Pheasant Hunt and the 2009 Buffalo Shoot. Good luck and a BIG THANK YOU to all of you that purchased chances on both of these exciting hunts.

At the time of printing this issue, the GF&P Commission will be meeting and deciding the fate of the SD Preserve’s request to raise their daily limit of pheasants from 15 to 20. Last month, I was critical of the preserves that are requesting the increase. I also tended to lump all preserves into the same category. This increase is not supported by all preserves that are licensed in SD.

Thank you for sending your thoughts to the Game Commission. When we all work toward a single goal we, the sportswomen/men of this organization, are a very formidable power.

Thanks for your help and support, we can and do make a difference!

President’s Column by Rieck Eske

I wrote about this a couple months ago, but I think its important to remind the members of this great Organization. We are always trying to improve the Federation. I would like to pose a question to you, the members. The State Convention is one of the biggest events of the year.

We used to have the dinner and auction on Friday night. Saturday we held our meeting in the morning and then in the afternoon we had speakers. Saturday night was the Banquet and Award Presentations. Sunday we finished up with our meetings and elections.

The last couple of years we have had a social gathering on Friday night for those that showed up Friday. Saturday morning we held our meetings and then the Saturday afternoon is open or had tours. Saturday evening was the Banquet, Awards Presentation and Auction. Sunday we finished up with meetings and elections.

I would like your input on which setup you would like to have for our State Convention. So please call me at 605-380-9569 or 605-229-1743, email me at rieckeske@gmail.com.

Affiliate club Marshall Co Sportsmen in Britton will be hosting the 2010 Convention. Remember the 2009 State Convention is being held August 15-16 in Watertown, Drake Motor Inn and American Legion Club. Please plan on attending and show your support for this great organization.

Carry on the Tradition
Test Your Science Knowledge . . .

General Science Knowledge Quiz

The science knowledge quiz has two parts, contemporary questions and “textbook” questions. The public got better grades on the contemporary questions (first 7) than the textbook questions (last 5). The true or false contemporary questions were:

• Aspirin is recommended to prevent heart attacks
• GPS relies on satellites
• Undersea earthquakes can cause tsunamis
• Carbon dioxide is a gas linked to rising temperatures
• Water was recently discovered on Mars
• Pluto is no longer called a planet
• Stem cells can develop into many different types of cells
• Continents are/have been shifting
• Not all radioactivity is man-made
• Antibiotics do not kill viruses as well as bacteria
• Lasers do not work by focusing sound waves
• Electrons are smaller than atoms

SDSU’s Wildlife Science Quiz

If you answered that it is FALSE that raptors are small rodents, then you were correct as were most of the students in the picture of an SDSU classroom setting. How would you answer the following true-false questions? 11

• The passenger pigeon and Carolina parakeet are now extinct.
• The skeletons of sharks are made of cartilage rather than bone.
• A mule is a cross between a donkey and a horse.
• A pocket gopher is a fossorial mammal.
• The sturgeon was introduced into the United States.
• The brown trout is an introduced fish in North America.
• A sea horse is a kind of fish.
• The spring peeper is a kind of frog.
• Bounties are still used in some parts of the country to control predators.
• Salmon breed in freshwater, but spend most of their lives in salt water.
• The most common type of management regulation involves bag or creel limits.

• Zebra mussels are an exotic species introduced to North America.
• Elk, moose, and deer all have ruminant stomachs.
• Big bluestem is a native tall grass in the upper Midwest.
• A fishery is composed of habitat, biota, and human users.
• Most insects have backbones
• Veal comes from lambs.
• The biomass of primary consumers exceeds the biomass of primary producers.
• All of the following are mammals – impala, muskrat, iguana, killer whale.
• The Conservation Reserve Program exists only in the National Park System.
• Snakes have a thin covering of slime in order to move more easily.
• The manatee is an insect.
• Spiders have 10 legs.
• Timber wolves, bald eagles, and coyotes are all endangered species of animals.
• Aldo Leopold is currently the Director of the U. S. Fish and Wildlife Service.
• Ring-necked pheasants often rear two separate broods each year.

The Process of Science

The picture below shows graduate students in my river class huddled around a seine to see the captured fishes. I use to call this a “field trip,” now it’s called “experiential learning.” Whatever the hands-on learning is called, it is important to a good education in the sciences.

Here is one last true or false question for you.

• Science is a collection of facts.

The answer is in the second paragraph of this article. If you answered TRUE or FALSE, you are half right with either answer. Yes, science is a collection of facts. It’s that body of knowledge represented by the factual questions presented above.

... Continued from page 1

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SDWF Annual Commemorative Gun Giveaway

Your chance to win a Savage .17 Caliber rifle
Model # 93rl7fxp

Buy a chance to buy one of the hottest new calibers to plink with, Synthetic Stock, 3-9 X 40 scope mounted and boresighted, 5 round clip. Drawing at the 64th Annual Convention in August 09.

Void where prohibited by law. Your presence or contribution not necessary to win. SDWF reserves the right to offer a cash settlement in lieu of the changes.

SDWF, P.O. Box 7075, Pierre, SD 57501 • 605-224-7524
Out Of Doors  4  July 2009

2nd Annual Outdoor Expo

The kids and most of their parents, all had a chance to experience and learn about what is available in this great state of ours. Everyone had the chance to experience and learn about South Dakota’s Natural Resources. The Outdoor expo was moved to the 2nd weekend of June to avoid conflicts with graduations and to try to get a little warmer temperatures. It was a huge success! Lots of people visiting all of the booths, that were spread out on the grass and under the shade of the trees on the State Fairgrounds in Huron.

Activities varied from Dutch oven cooking to fast draw of a six gun. To identifying tracks in the ground left by animals to learning how to hold a fire hose and how to fight a wildfire.

Make sure to make plans to attend the 3rd Annual Outdoor Expo next June in Huron.

SDWF had a booth set-up at the Outdoor Expo and we taught over 250 young people and their parents how to tie spinners and how to make a tackle-tamer tackle box out of re-cycled materials.

The South Dakota Izaak Walton League showed the young people how to build a birdhouse and bird feeders.

GF&P Outdoor Naturalists held a hands on feeling and observation of many of the natural reptiles of South Dakota.
One of the most popular booths was the Kayak pond that was set up by Scheels All-sports.

The 2nd Annual Out-door Expo held at the State Fair grounds in Huron was a great place to spend a beautiful Spring weekend, learning about what you can and will see in the great outdoors here in South Dakota.

The outdoor fish pond held many of South Dakota’s game and rough fish for identification.

SD BASS provided a casting contest and practice area for the young people to enjoy.
South Dakota Wildlife Federation Donors

At the recent Winter Board Meeting the SDWF Board created the SDWF Wildlife Legacy Council. The Council was created to allow recognition of the people who support SDWF above and beyond their membership and raffle donations. Thank you to the following donors for their contributions to the SDWF. Please consider becoming a member of the Wildlife Legacy Council. SDWF is a 501(c)3 non-profit, all donations are tax deductible.

Contribution Level & Amount

<table>
<thead>
<tr>
<th>Level</th>
<th>Contribution Amount</th>
<th>Individuals and Organizations</th>
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<tr>
<td>Level V Eagle - $1000 and above</td>
<td>Dakota Sportsman Inc., SD, Richard Dillmon, MN</td>
<td>High Plains Wildlife, SD, Kenneth Michalson, WA, Republican National Distributing Company, WA</td>
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<tr>
<td>Level IV Buffalo $500-$999</td>
<td>Black Hills Sportsmen's Club, SD, Ken Greenwood, OK</td>
<td>Gary S. Steely, KS, Craig Stairfield, IA, marin Stammmer, CA, Dale Walls, WI, yakonk Ania Pheasants Forever, SD</td>
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<td>Level III Elk $250-$499</td>
<td>29-90 Sportsmen's Club, South Dakota Sportsmen's Club, SD, Dale Wilms, CA</td>
<td>Jeffrey G Olson, SD, Pheasants Forever Northern Great Lakes, MN, Lyle Davis, MN, Steve Scott, SD, John Koutsky, IL</td>
</tr>
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<td>Level II Deer $100-$249</td>
<td>Mike Clemens, SD, Richard Grenke, WI, Glen Cook, SD, Norman Duthe, SD, John Donavan, SD, David Marceau, PA, John Dillon, UT</td>
<td>Duane Divich, TX, John Durham, IL, Steven Eganbord, MI, Eric Pask, Ranch, CO, Ralph R. Flack, SD, Howard Falker, MI</td>
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<tr>
<td>Level I Pheasant - $50-$99</td>
<td>Black Hills Sportsmen's Club, SD, Virgil Johnson, SD, Eric Johnson, MN, Thomas Flesher III, OK, Dave Eisenbeisz, CO, 29-90 Sportsmen's Club, SD</td>
<td>Kenton Eisenbeisz, SD, Dennis Eckert, SD, John Donavan, SD, John Dennis, NV, Larry Denison, VA, Mike Cummings, SD, Stuart Cambell, SD, Dick Brown, SD, Richard Brick, CA, Robert Foxworthy, KY, John D Foster, SD, Robert Foxworthy, KY</td>
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These tax-deductible contributions will speak volumes for the future of the SDWF's Wildlife Legacy Council! Please consider your donation today.

Names in ITALICS indicate that the Legacy Member has made their 2008 contribution to the SDWF Legacy Council. Names in ARIAL indicate that the Legacy Member has made their 2009 contribution to the SDWF Legacy Council.

Science Knowledge. … Continued from page 3

But science is not simply facts; it is also a path to understanding. Science is a dynamic process for discovering how the world works. However there are many misconceptions about science. No one of the misconceptions that science can “prove” something. Journalists often write about “scientific proof,” but we teach our students to never use the word “prove” or “proof” when referring to their science. When they use those words it signals that they have a misconception about science. The concept of proof is not particularly scientific. Science is based on the principle that any idea, no matter how widely accepted today, could be overturned tomorrow if the evidence warranted it. Science accepts or rejects ideas based on the evidence; it does not prove or disprove them.

Put another way, can the fishery biologist prove that a certain regulation is correct? No. The biologist can only say that based on our current knowledge, this is the best practice that can be implemented.

Next month, I report on how the new students at SDSU are not becoming science literate, and we’ll tackle some of their misconceptions about science.

Footnotes
1 Dr. Charles Berry is an Adjunct Professor in the Department of Wildlife and Fisheries Science, South Dakota State University, and the leader of South Dakota’s Year of Science.
2 The South Dakota Wildlife Federation is a member of the Coalition for the Public Understanding of Science (www.npap.org) and has agreed to try improve public understanding of science.  
3 This is found at: http://www.time.com/time/magazine/article/0,9171,1156575,00.html.

5 http://www.npsresearch.org/conservation, all of the questions are true. The percentage correct in order from first to last question was 91, 82, 77, 65, 61, 58, 52, 76, 54, 47, 48.
6 The first 15 questions are true, the last 15 are false.
7 Part of The Year of Science is a web site that gives teachers a lot of information about how to teach the scientific process. One section of the web site lists misconceptions and confusing words.

Find it at: http://pewresearch.org/sciencequiz/, all of the questions are true. The percentage correct in order from first to last question was 91, 82, 77, 65, 61, 58, 52, 76, 54, 47, 48.
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PIERRE, S.D. - South Dakota has millions of acres of lands open to the public, and a new option to locate those areas is being offered by the Department of Game, Fish and Parks.

Rather than relying solely on maps or the South Dakota Public Walk-In Atlas, the department has added a Global Positioning System program to its Web site. Outdoor enthusiasts can use the free program to download maps of public lands onto their GPS units at no charge.

Those lands are owned by federal and state governments or leased from private landowners.

Maps and the atlas can help find them, but at times people are uncertain of the exact locations, said Jeff Vonk, GFP secretary.

“I think it is important for us to provide the best available information to sportsmen and women,” Vonk said. “We will continue to offer the paper atlas, but I believe that providing the GPS information will make it easier and more convenient for sportsmen to participate in outdoor activities.”

The Web site can be accessed at www.sdgfp.info/wildlife/gps/index.asp

The program provides downloadable files for Garmin, Lowrance and Magellan GPS units. Although it won’t work on some of the older models, most models with memory cards or internal memories should readily accept the files. The Web page has step-by-step video instructions on how to download the public lands maps onto GPS units.

“Last year we unveiled the interactive “WILMA” map on our Web site, and it is very popular with hunters,” Vonk said. “We received a lot of requests asking if that information could be loaded onto a GPS unit. I took those requests to our staff and asked if it was possible. It is that important. As far as I know, we are the only state providing this information.”

The new Web address also provides updates so people using the maps will be able to keep current with changing Walk-In and Game Production Areas.

“We ask visitors for e-mail addresses so we can notify them when there are changes to Walk-In Areas and GPAs,” said Department GIS specialist Chris Marsh. “Those people can simply download the new maps.

“From year to year or even month to month, some areas can change dramatically, and we want folks to know about those changes,” Marsh added.

“Conservation is a state of harmony between men and land. By land is meant all of the things on, over, or in the earth. Harmony with land is like harmony with a friend; you cannot cherish his right hand and chop off his left. That is to say, you cannot love game and hate predators; you cannot conserve the waters and waste the ranges; you cannot build the forest and mine the farm. The land is one organism. Its parts, like our own parts, compete with each other and co-operate with each other. The competitions are as much a part of the inner workings as the co-operations. You can regulate them - cautiously - but not abolish them.”

From A Sand County Almanac by Aldo Leopold

“Men can never escape being governed. Either they must govern themselves or they must submit to being governed by others.”

Theodore Roosevelt, Jamestown, VA, April 26, 1907
N.D. grad student studying wind farms and ducks

GRAND FORKS (AP) - Tanner Gue knows as well as anyone just how wet it’s been this summer in some of North Dakota’s prime waterfowl country. That’s good for ducks, of course, even if it sometimes complicates life for people trying to study them. Gue, 25, a University of North Dakota graduate student, is heading up the fieldwork portion of a two-year research project aiming to learn more about the impact of wind farms on the survival of nesting ducks. Gue’s research is taking place on a couple of wind farm sites near Kulm, in the southeastern part of the state near the South Dakota border. The project is a cooperative venture between several partners, including the U.S. Fish and Wildlife Service, Ducks Unlimited, the North Dakota Game and Fish Department, UND and the Prairie Pothole Joint Venture. As part of the project, Gue and five student technicians trapped nearly 200 female ducks - mainly hen mallards, but also several blue-winged teal - this spring and fitted them with VHF transmitters to monitor their movements. About half the hens were nesting on wind farm sites, with the other half on “control” sites away from wind towers. The research eventually will shed light on differences, if any, between the sites. The tiny radios weigh 9 grams, about the same as a nickel, and feature a prong that’s inserted under the skin and sutured between the shoulders of the duck. The transmitters cost about $200 each and are designed to drop off after about 90 days. “We get survival, we get nest location, we get home range size and we track them every day,” Gue said. The transmitters also emit a mortality signal if the birds don’t move for eight hours. There’s been some mortality, Gue says, but that’s not uncommon for nesting ducks. None of the deaths resulted from collisions with the wind towers, he said. That’s good news, but it’s still too early in the research to draw any conclusions, Gue said. “Right now, I’ve got my hands full just trying to get data in the computer,” he said. “I definitely need the fall and winter and the next field season” to learn more. Gue’s fieldwork is a continuation of research Ducks Unlimited and the U.S. Fish and Wildlife Service launched last summer in cooperation with NextEra Energy Resources, a Florida-based company that operates some of the North Dakota wind farm sites. Scott Stephens, director of conservation planning for Ducks Unlimited’s Great Plains Regional Office in Bismarck, says the research is important because the Missouri Coteau region that’s attractive for wind farms also has some of North America’s best remaining waterfowl breeding habitat. The coteau region cuts a swath across central North Dakota from the southeast to the northwestern part of the state. “When these towers started going up, we knew we needed to learn if there were any negative impacts,” Stephens said. “We didn’t know because these are the first towers that went in where we have this high of a wetland density and waterfowl habitat. It was really our first chance to look at them and see how they interact.” He said NextEra was quick to become involved in the project.

Last year, Stephens said, the research involved a basic pair-count survey to look at breeding duck numbers on and off the wind farm sites. The pair counts, he said, found similar duck numbers in both locations. That led to the next phase of the research, which is Gue’s project on wind farms and waterfowl survival. Stephens says a key question was whether waterfowl would be so intent on breeding they’d be more susceptible to the wind towers. While limited, the results to date bode well both for ducks and wind power. “We would have been concerned if there had been complete evacuation of an area with wind towers when they went up with good wetland habitat and good grassland,” Stephens said. “That clearly seems to be not the case. “We’re happy we didn’t see any big negative impacts.” Gue, who’s been in the field since mid-April, said he had to make contact and get permission from more than 50 landowners before he could do anything because most of the wind farms are on private land. “Without permission from most of them, I couldn’t do anything,” he said. This year’s wet conditions made trapping ducks a challenge, Gue said, but he still managed to come close to the goal of 200 birds. More recently, he said, the fieldwork has involved monitoring the transmitter signals both on the ground and occasionally from the air. Stephens, of Ducks Unlimited, said the research also is important for landowners with grassland easements from the Fish and Wildlife Service. Currently, he said, the service decides on a case-by-case basis whether to allow landowners with easements to have wind towers on their property. The demand for easements is high, he said, as is landowner interest in wind towers. Stephens said hundreds, if not thousands, of wind towers could be going up across the coteau during the next few years. “For organizations like DU, we don’t have any regulatory authority so we went into this wanting to get the information,” Stephens said. “If we ran into problems or negative impacts, we would have looked to get together with the wind industry to minimize those negative impacts or look for ways to mitigate the impact of the towers. “We recognize that everybody uses power and needs energy, and everyone likes to turn on their lights at night,” Stephens said. “So finding ways that provide that energy that are sustainable and don’t have any impacts on natural resources and wildlife is what we needed to do.”