Integrating Use of Traditional Ecological Knowledge into the U.S. Fish and Wildlife Service

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What is TEK?

A Working Definition

- The evolving knowledge acquired by indigenous and local peoples over hundreds or thousands of years through direct contact with the environment.
- This knowledge is specific to a location and includes the relationships between plants, animals, natural phenomena, landscapes, and timing of events that are used for lifeways, . . .

Working Def, cont.

- Accumulating body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (human and non-human) with one another and with the environment.
- It encompasses the world view of indigenous people which includes ecology, spirituality, human and animal relationships, and more.

Differentiations

McIntosh 2005

- TEK is shared and agreed upon direct experience that is passed from one generation to the next and integrated at the cultural level.
- Local knowledge is shared, recent experiences; the hypotheses need to be tested and positive correlation made prior to becoming part of TEK.
- User knowledge is direct experience of an individual that when experienced by others can become local knowledge.

Comparing TEK and Western Science

(from Barnhardt and Kawagley 2005)

TEK	Western Science
– Oral tradition	– Written tradition
– Holistic approach	– Reductionist
– Learned from observation and experience	– Taught and learned mostly analytically
– Environment as part of social and spiritual relationships	– Hierarchical and compartmentalized organization
– Based on cumulative, collective experience	– Based on laws and theories

Comparing TEK and Western Science

(from Barnhardt and Kawagley 2005)

TEK

- Mainly qualitative
- Data generated by resource users
- Long time within one location
- Integrated and applied to daily living and traditional subsistence practices

Western Science

- Mainly quantitative
- Data collected by specialists or experts
- Short time-series over a large area
- Hypothesis falsification and model building

Common Ground

(from Barnhardt and Kawagley 2005)

- Knowledge is always subject to modification or improvements
- Empirical observations in natural settings
- Pattern recognition
- Verification through repetition
- Inference and prediction

Result

One is not better than the other;
each is a separate body of knowledge
that overlap.

Western science and TEK can be
complementary.

Is it Used by the Service & other Feds?

- Contributions of Indigenous Knowledge to Fisheries Management
- 2010 Fisheries Resource Monitoring Plan
- Federal Subsistence Management Program
- Polar Bear Listing Decision
- Mexican Gray Wolf
- Desert Bald Eagle
- Glen Canyon Adaptive Management Program

Why Would the Service Use it?

- Enhances knowledge base for decision-making about species and habitats
- Provides longitudinal knowledge for climate change projects
- Builds relationships with Tribes over natural resource topics of common interest

Lawsuit from District Court of AZ, Center for Biological Diversity v. Salazar

- San Carlos Apache Tribe, a federally recognized Indian tribe, and Salt River Pima-Maricopa Indian Community, a federally recognized Indian tribe, Plaintiff-Intervenors
- Page 8 of the Order states: In addition to raising ESA and APA claims, the Tribes argue that FWS failed to incorporate traditional ecological knowledge into its findings and violated its obligation to consult meaningfully with the Tribes on a government-to-government basis.

Efforts within the Service

- Cross-programmatic team established in 2009, including biology, anthropology
- Coordination with and direction from DOI and Service Science Integrity Officers
- Inclusion of Diversity Program (national and regional)
- Development of Outreach Plan for online class rollout, Strategic Plan under guidance of Integrity Officers for integration and expansion of TEK within the Service, and an Action Plan for implementation of the Strategic Plan

Products

- Fact Sheet: http://www.fws.gov/nativeamerican/graphics/TEK_Fact_Sheet.pdf
- Website: http://www.fws.gov/nativeamerican/TEK.html
- "Traditional Ecological Knowledge: An Introduction" presentation on February 28, 2011
- Traditional Ecological Knowledge online class developed with NCTC: http://distancelearning.fws.gov/tek/index.html
- Numerous Presentations at conferences of professional organizations, e.g., NAFWS, The Wildlife Society, Ecological Society of America, MRRIC, EPA ROC

USFWS, Traditional Ecological Knowledge - Windows Internet Explorer

http://www.fws.gov/nativeamerican/TEK.html

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USFWS, Traditional Ecological Knowledge

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Native American Liaison

Office of External Affairs

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The term Traditional Ecological Knowledge, or TEK, is used to describe the knowledge held by indigenous cultures about their immediate environment and the cultural practices that build on that knowledge. Traditional ecological knowledge includes an intimate and detailed knowledge of plants, animals, and natural phenomena, the development and use of appropriate technologies for hunting, fishing, trapping, agriculture, and forestry, and a holistic knowledge, or "world view" which parallels the scientific discipline of ecology (Berkes 1993).

The utilization of resources and how people adapt to their ever changing environment

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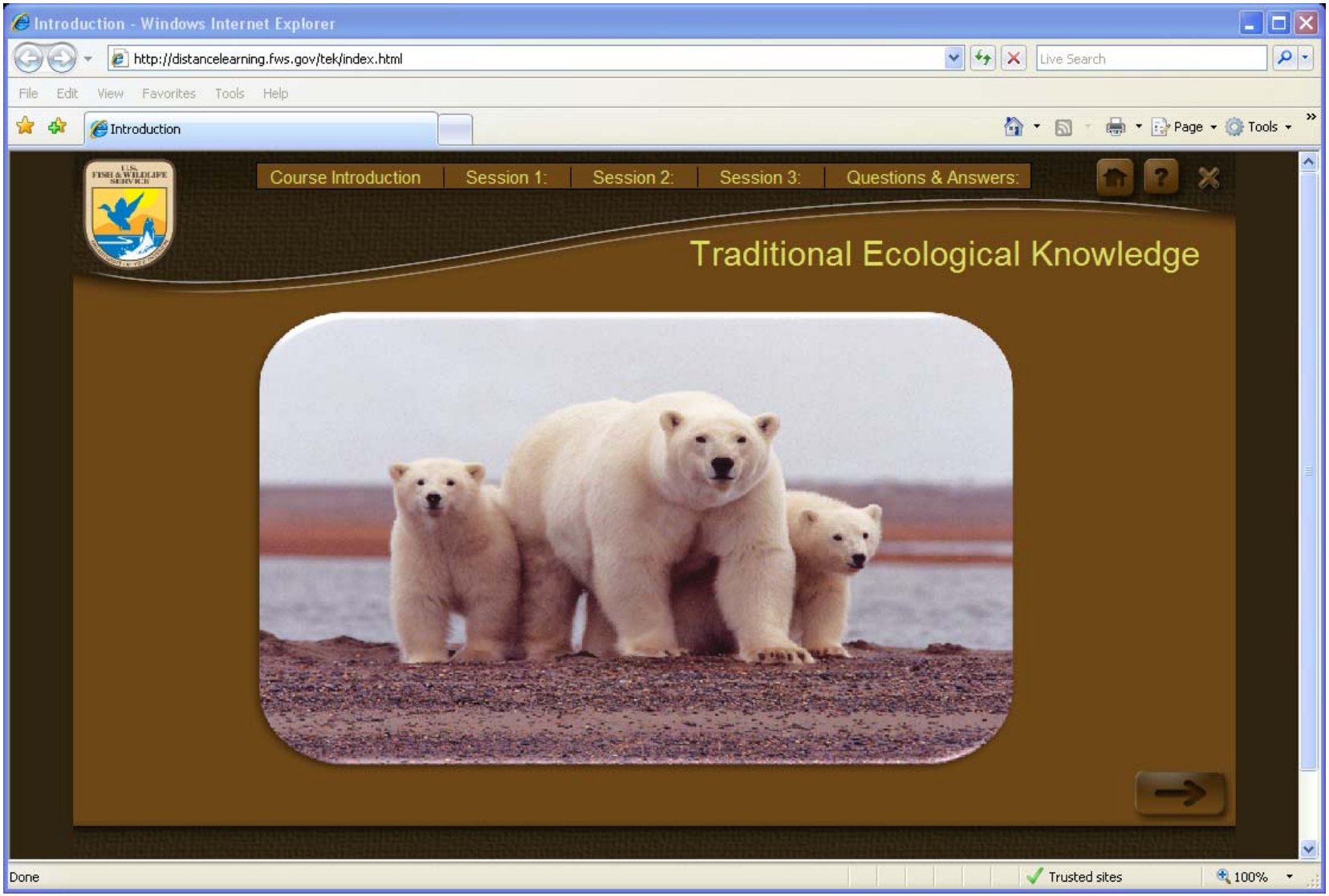
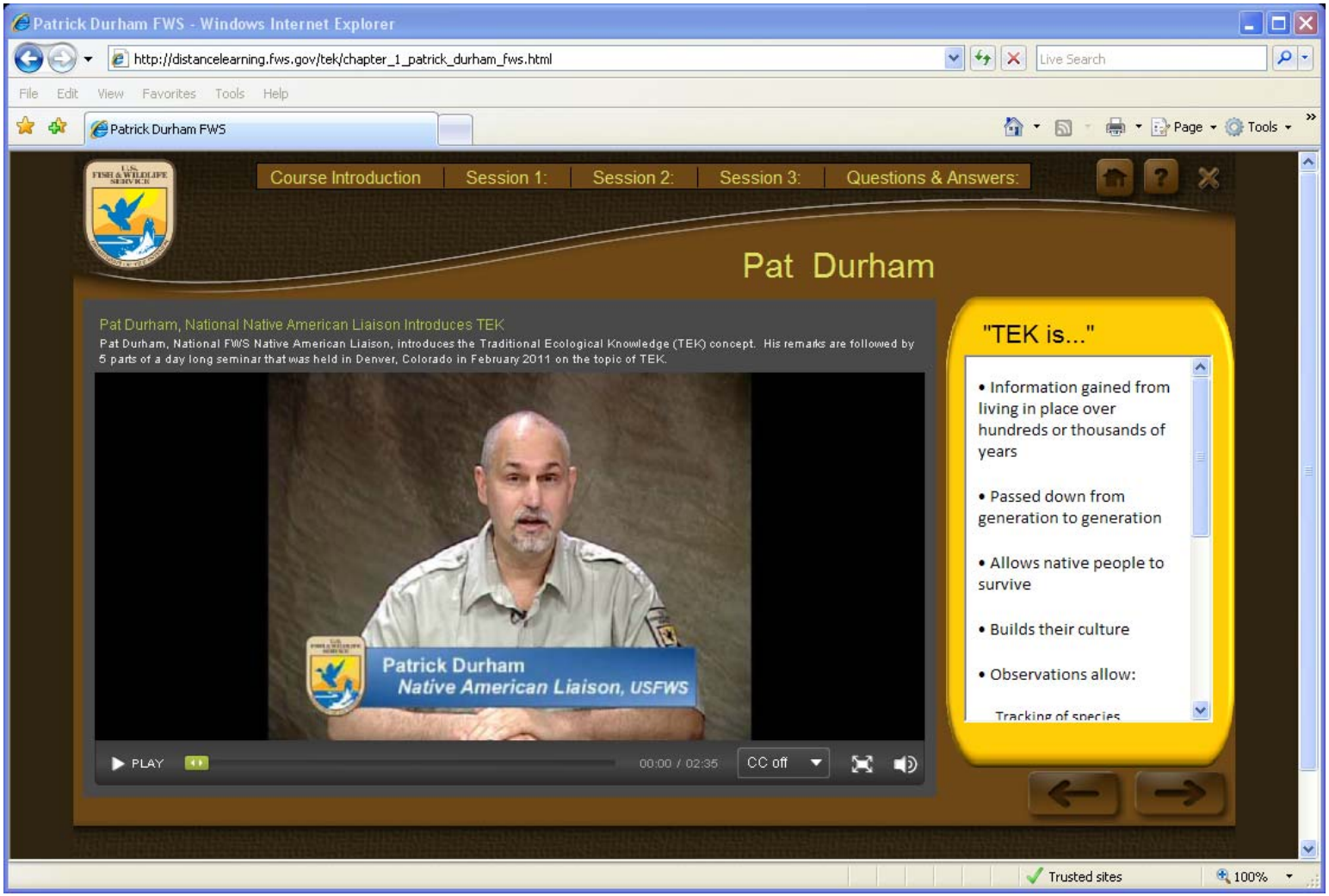
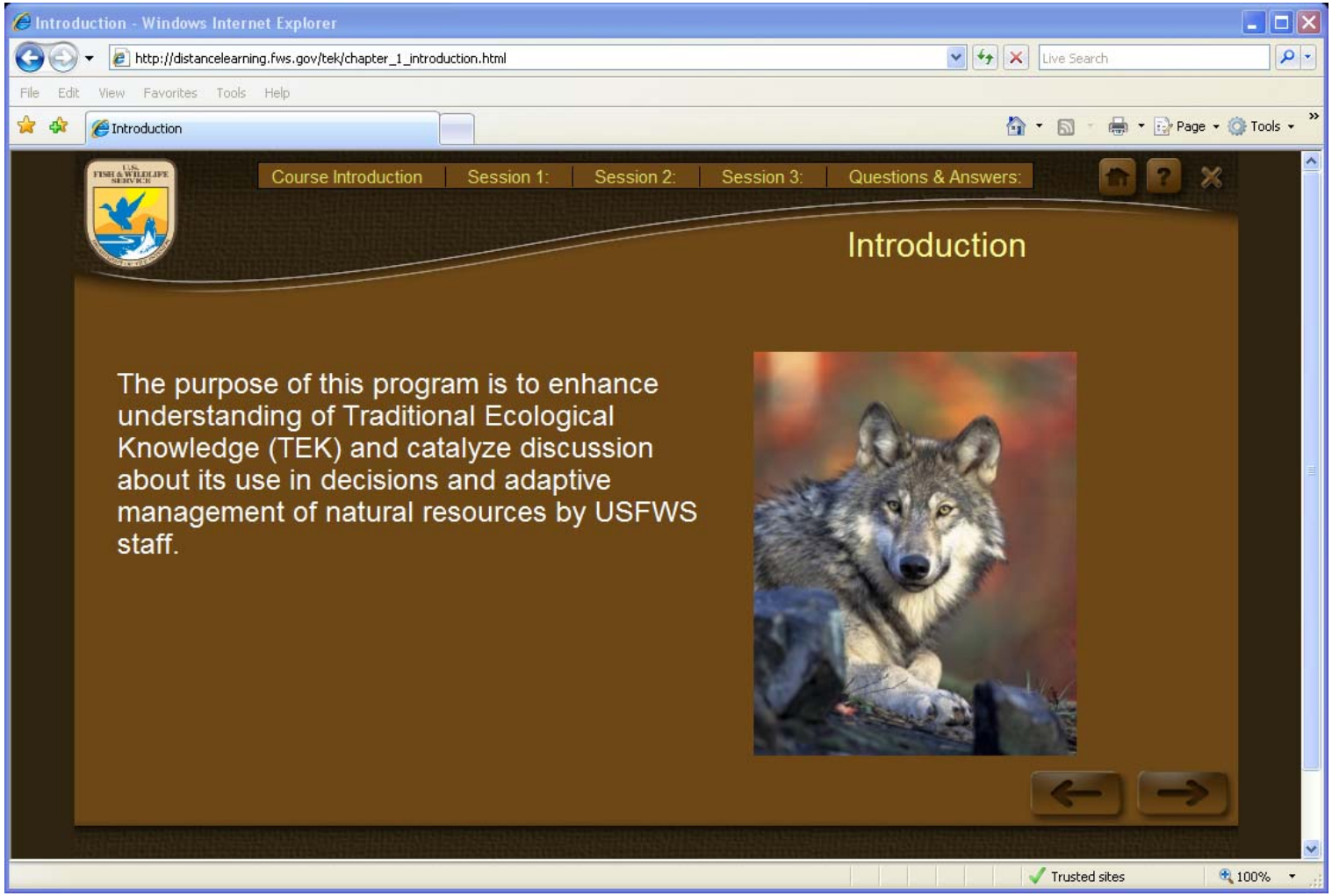
TEK Online Class



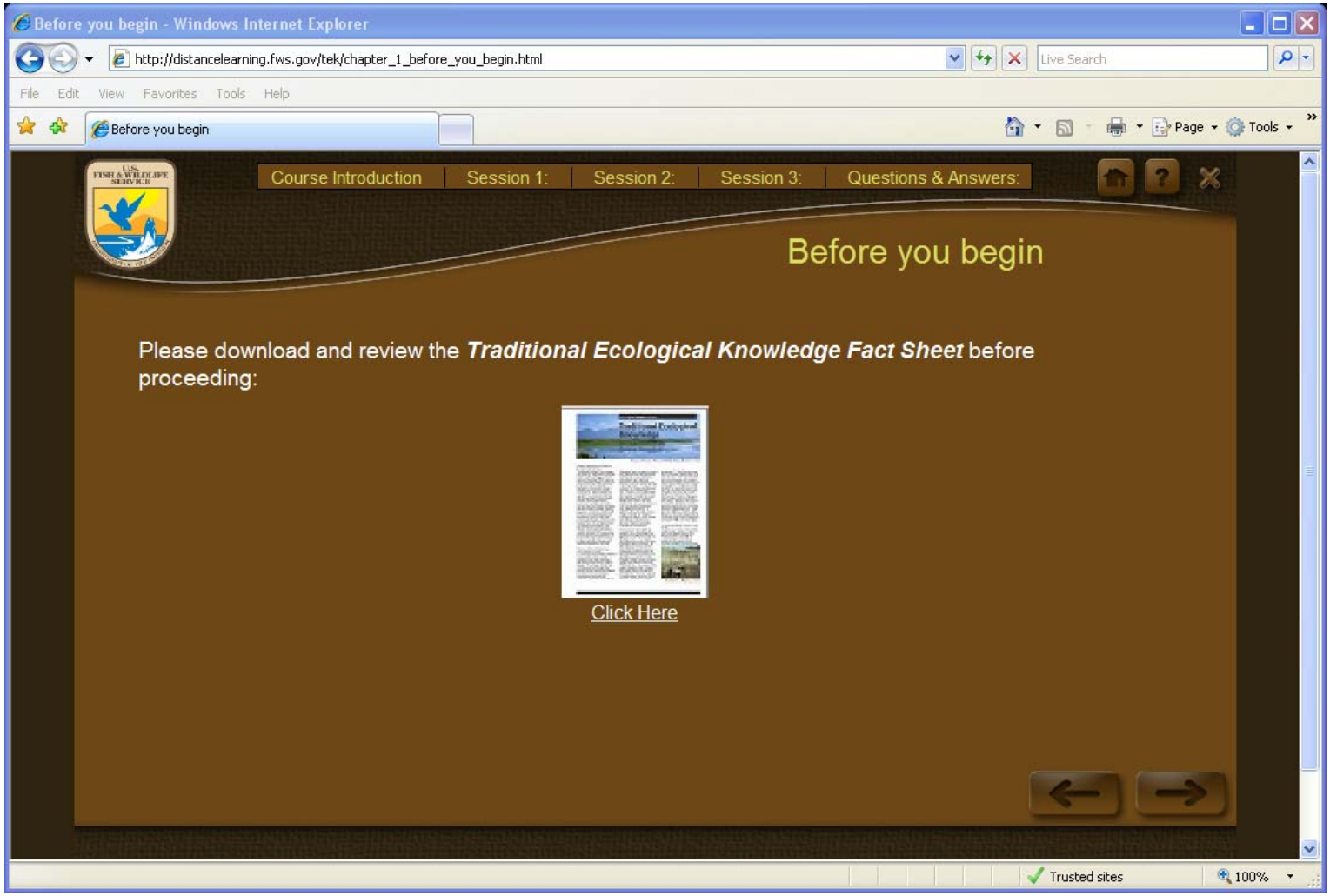
National Welcome



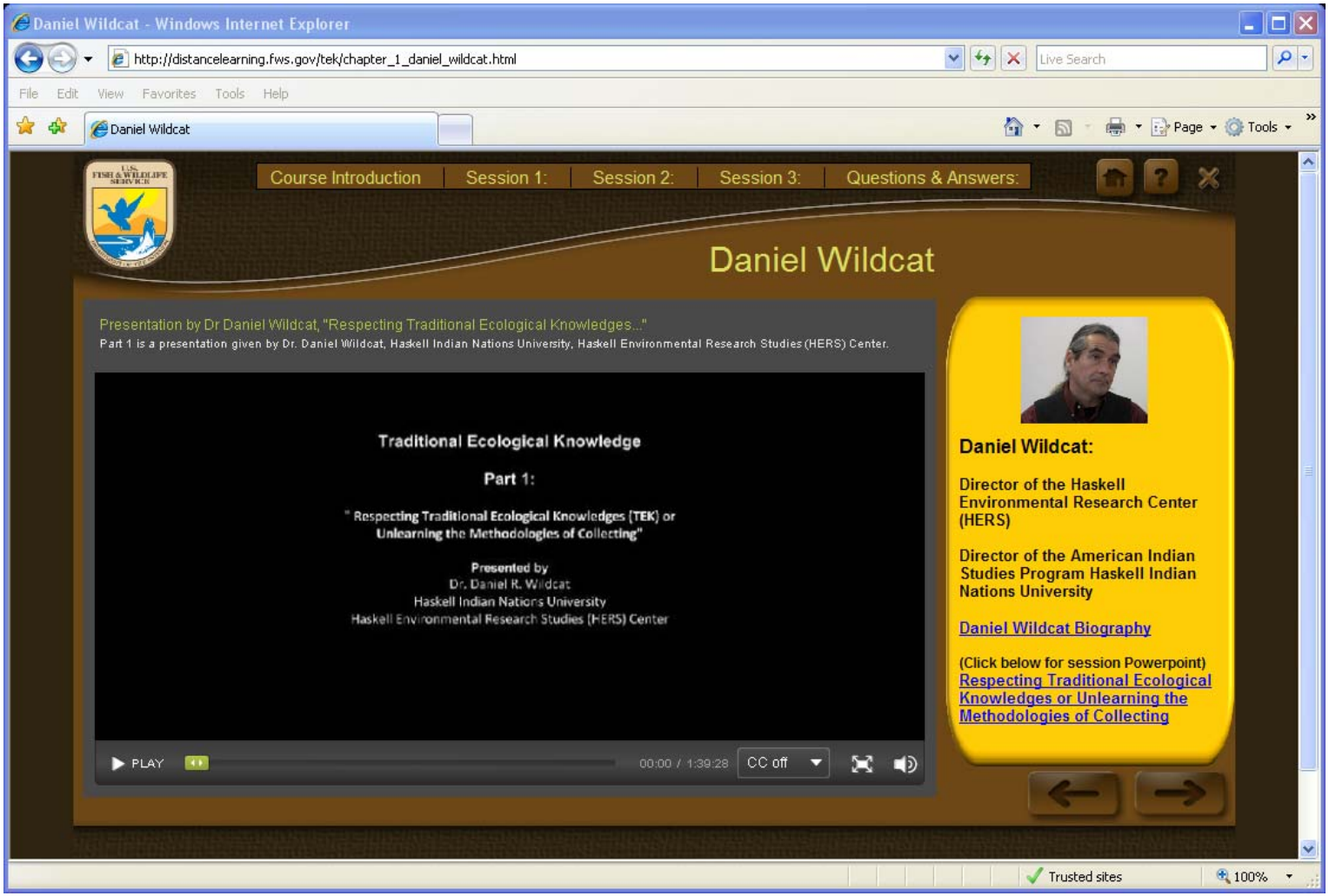
Introduction/Basic Facts



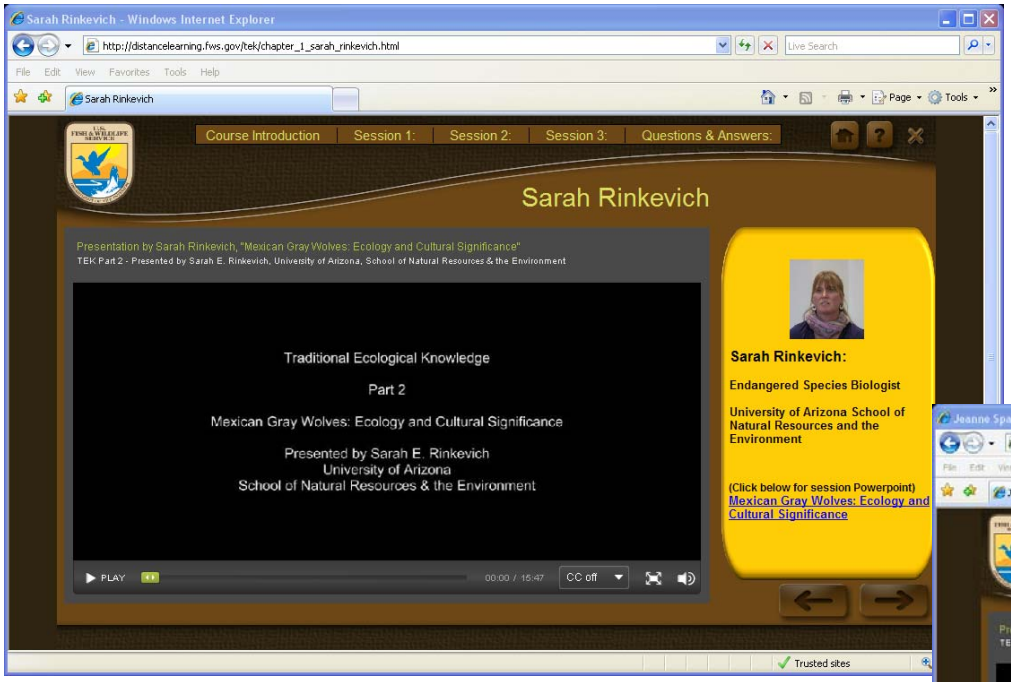
Required Reading

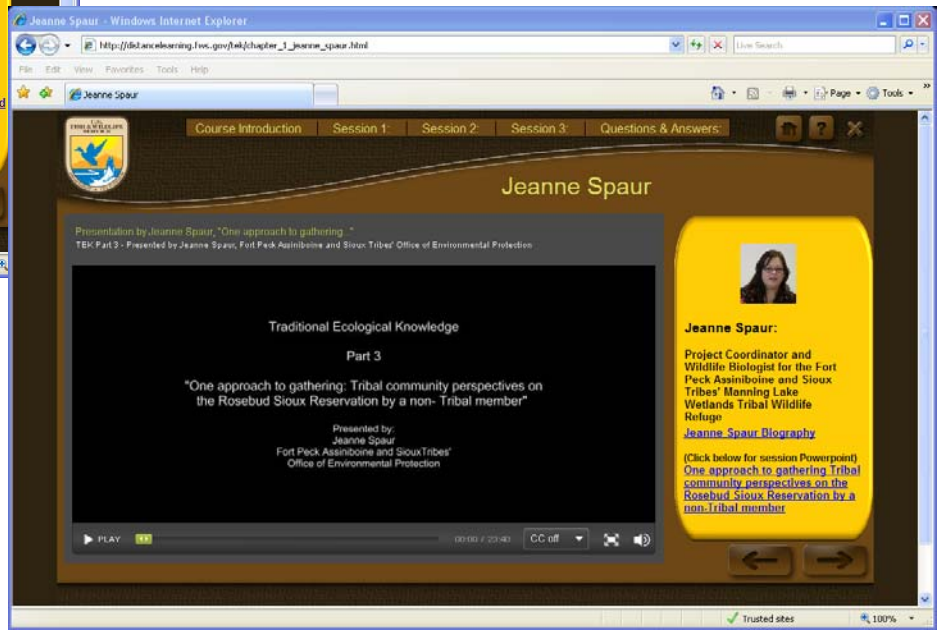


Nationally Known Featured Speaker and Author

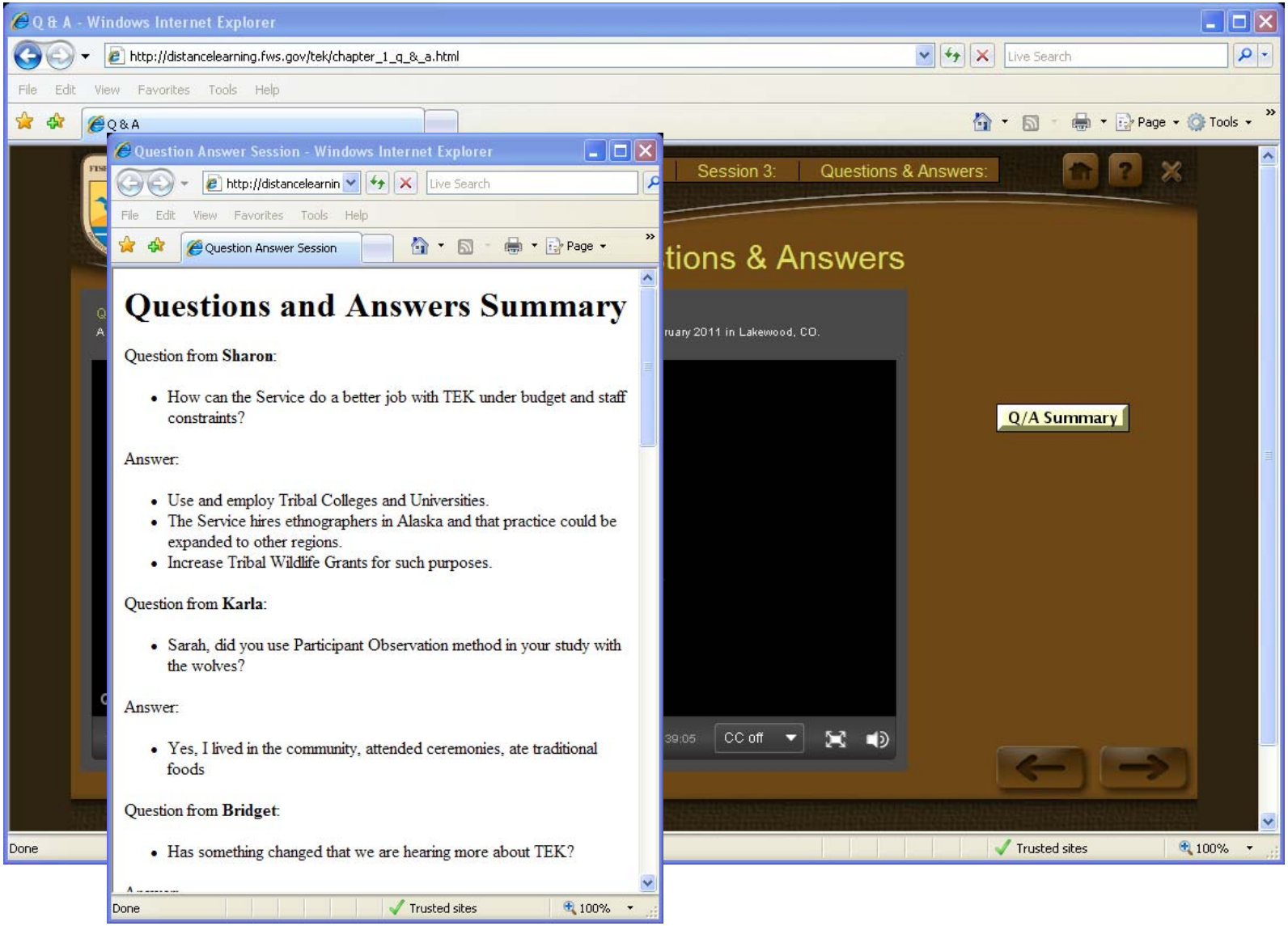


Case Studies

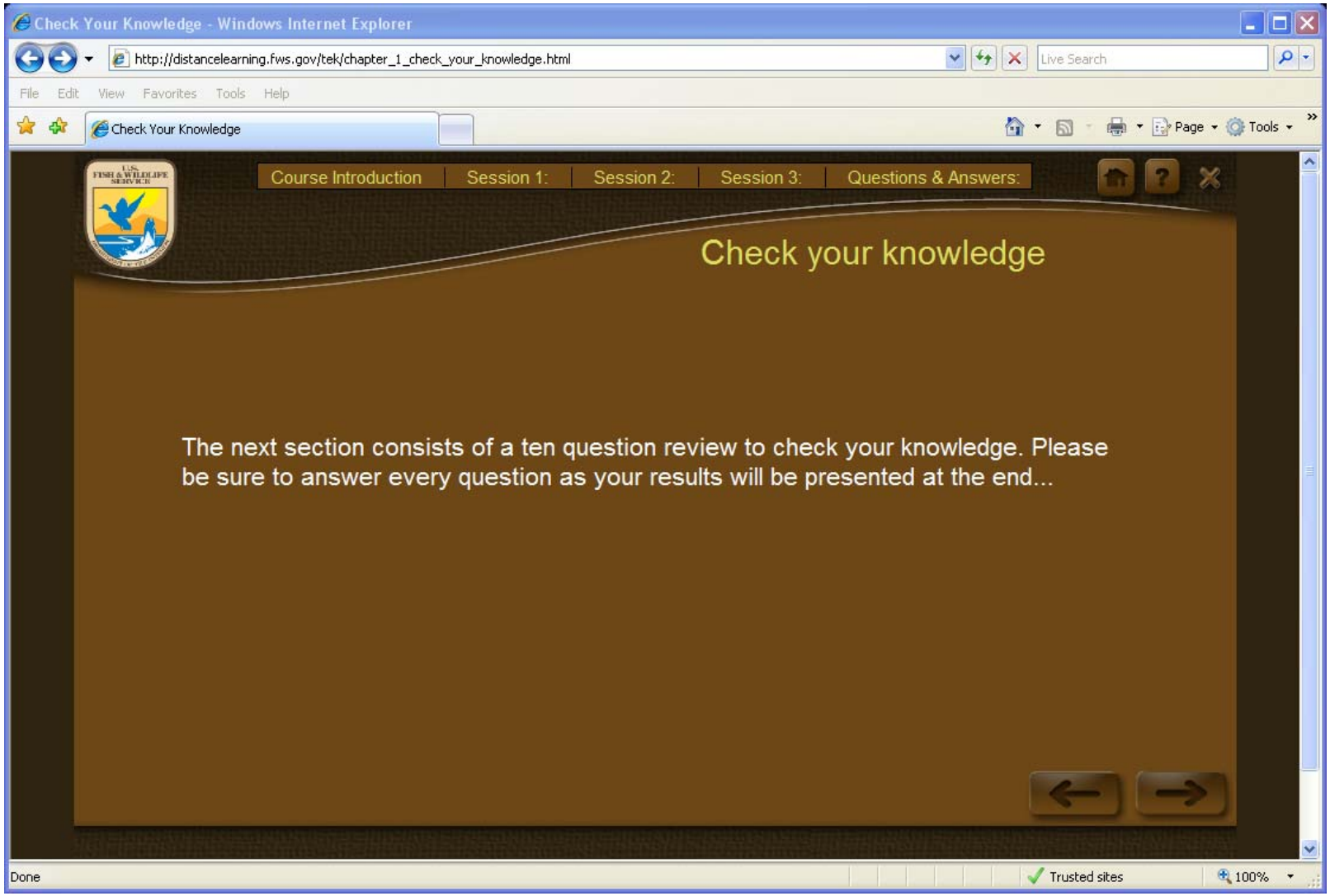




Questions & Answers



Assessment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Session 2:
Session 3:
Questions & Answers:
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The next section consists of a ten question review to check your knowledge. Please be sure to answer every question as your results will be presented at the end...
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Draft Strategic Plan

Professionals should have:

- familiarity and experience with the Tribe
- experience using ethnographical protocols and methodologies
- foundation of trust with the community(ies)
- understanding that TEK is not tied to the researcher's timetable
- time to have TEK experiences in the indigenous community(ies)

Four Strategies

1) Internal TEK outreach
2) Detail to R7 and associated publications
3) Partnership development
4) Development of an implementation plan

Internal TEK outreach

- TEK Website and Fact Sheet (completed)
- “TEK: An Introduction” online class (completed)
- Feature the video as a webinar on the Science Integrity schedule (early 2012)
- Engage the DOI and Service’s Science Integrity Officers (ongoing), Service’s Science Advisor and the Directorate Team in conversation (2012)

TEK Team Co-Leads Detail

(dependent on funding)

- Confirm methodologies with the Region 7 Service cultural anthropologists for Service issues (Summer 2012)

- Publish results of TEK project on a Service issue in peer-reviewed journals (2013)

- Bring Service TEK expertise to the lower 48 states, Pacific Islands and Puerto Rico as well as expand use in Alaska (on-going)

Partnerships with Tribal Organizations

- Develop and expand partnerships with American Indian Higher Education Consortium, Native American Fish and Wildlife Society, National Congress of American Indians, Tribal Science Council and others for government-wide use of TEK processes (ongoing)

Partnerships with Tribal Organizations, continued

- Write a paper that discusses the accepted processes for verifying qualitative data in accordance with Information Quality Act of 2000 and Science Integrity Policy, regarding information verification and replication. (ongoing)

TEK implementation plan

- With Tribal Partners, write a TEK Guidebook for Service employees
- Develop an in-person TEK class at NCTC (after completion of Guidebook)
- Implement an MOU with Tribal Colleges and other universities for TEK work
- Develop a list of vetted contractors for TEK work

Guidebook--Considerations

- Ethnography is the process by which the researcher interprets indigenous people's lifeways
- Is NOT government-to-government consultation
- Allows for a mutually beneficial relationship

Guidebook--Methods

- Literature Review
- Semi-directed Interview
- Focus Groups
- Participant Observation
- Linguistics

Guidebook--Cautions

- Not for the novice researcher
- Stay within side boards of MOU
- Unintended consequences
- Long-term impacts

Questions?