

**"Fish and Wildlife Information  
Meets the Internet"**

***Proceedings of the 2000  
Organization of Fish and Wildlife  
Information Managers Meeting***

***Silver Creek, Colorado***

***August 5 - 7, 2000***



**Sponsored by:**

**The Organization of Fish and  
Wildlife Information Managers  
The Colorado Division of Wildlife  
Virginia Department of Game & Inland Fisheries  
Conservation Management Institute, Virginia Tech  
Pacific States Marine Fisheries Commission**

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# WELCOME TO THE ORGANIZATION OF FISH AND WILDLIFE INFORMATION MANAGERS

## OFWIM 2000 Annual Meeting and Workshops August 5 -7, 2000 Silver Creek, Colorado

**FISH & WILDLIFE INFORMATION MEETS THE INTERNET !**

### Agenda

#### Saturday, August 5

#### Sessions I – IV

12:45 – 1:00 PM	<b>Opening / Introductory Remarks</b>
1:00 – 1:45 PM	<b>Considerations for Effective Human Interaction</b> Becky Wajda, Virginia Department of Game & Inland Fisheries
2:00 – 2:45 PM	<b>Standards Make the World Wide Web Go 'Round</b> Don Schrupp, Colorado Division of Wildlife
2:45 – 3:00 PM	-- Afternoon Break --
3:00 – 3:45 PM	<b>Deploying for the Web in Win-NT/ISS Environments</b> Nancy Brauer, Conservation Management Institute, VA Tech
4:00 – 4:45 PM	<b>Deploying for the Web in UNIX/Apache Environments</b> Don Schrupp, Colorado Division of Wildlife
4:45 – 5:00 PM	<b>Logistics / Announcements</b>
6:00 PM	<b>Evening Dinner</b> (on your own)

#### Sunday, August 6 – Morning

#### Business Meeting and OFWIM 2001 Planning Session

8:00 – 9:30 AM	<b>OFWIM Annual Business Meeting and Elections</b>
9:30 AM – 11:30 AM	<b>Planning Workshop for OFWIM 2001 Meeting</b>
10:00 – 10:15 AM	-- Morning Break --
10:15 AM - Noon	<b>OFWIM Executive Committee Meeting</b>
Noon – 1:00 PM	<b>Lunch</b> (own your own)

## Sunday, August 6 - PM

## Sessions V-VIII

1:00 – 1:45 PM	<b>Web Database Considerations</b>
2:00 – 2:45 PM	<b>Web Database Support Tools: Enhancing Interactivity</b>
2:45 – 3:00 PM	-- Afternoon Break --
3:00 – 3:45 PM	<b>The Big Picture – Tricks of the Trade Using Graphics</b> Don Schrupp, Colorado Division of Wildlife
4:00 – 4:45 PM	<b>Maintaining Contact with Your “Customers”</b> Kathy Quindlen and Karen Reay, Virginia Department of Game and Inland Fisheries
6:00 – 9:00 PM	<b>Social &amp; Hackers’ Ball</b>

## Monday, August 7 - AM

## Sessions IX-XII

8:00 – 8:45 AM	<b>Prime Time Web Development: Non-Hollywood Scripts</b> Don Schrupp, Colorado Division of Wildlife
9:00 – 9:45 AM	<b>“Browsers on Steroids”</b> Don Schrupp, Colorado Division of Wildlife
9:45 – 10:00 AM	-- Morning Break --
10:00 – 10:45 AM	<b>“Sooner or Waiter” -- Serving Up Data</b> Jefferson Waldon, Conservation Management Institute, VA Tech
11:00 – 11:45 AM	<b>Location, Location, Location – Map Enabled Applications</b> Don Schrupp, Colorado Division of Wildlife and Blair Jones, Conservation Management Institute, VA Tech
11 :45 AM – Noon	<b>Workshop Wrap-Up</b>



**OFWIM 2000  
Presentation Abstracts**

**Saturday Afternoon  
August 5, 2000**



**Organization of Fish and Wildlife Information Managers  
2000 Annual Meeting -- Silver Creek, Colorado  
"Taking Wildlife Information to the Internet"  
Workshop I - Sessions 1-4 August 5, 2000**

Moderator - Becky Wajda

In keeping with the overall theme of the conference, each of the 4 presentations during the Workshop I targeted an important aspect of effective deployment of wildlife information to the Internet. Topics included considerations for effective human interaction, standards, and deployment of applications in WIN-NT/IIS and UNIX environments. In Session 1, Becky Wajda (Virginia Department of Game and Inland Fisheries) provided attendees with an overview of web usability, an area of site management that seems to be often overlooked. Several sets of guidelines developed by Jakob Nielsen were presented and discussed, along with a general "usability" review of 9 wildlife information web sites. Don Schrupp (Colorado Division of Wildlife) reviewed some of the standards of HTML and other development tools, advanced layout components (e.g., frames, forms, menus), and audiovisual elements in Session 2. Information sources for these standards were presented, along with a discussion about metadata needs and tools. Nancy Brauer and Sheryl Soborowski (Conservation Management Institute, Virginia Tech) presented an excellent overview of web deployment in a WIN-NT/IIS environment in Session 3. They provided an assessment of hardware and software needs, performance expectations, and associated benefits and concerns, and reviewed the configuration of 4 wildlife information sites. In the final presentation of this workshop, Don Schrupp provided a similar overview of web deployment in a UNIX environment. He reviewed and discussed hardware and software options, including the benefits and disadvantages associated with each, and reviewed 4 existing wildlife information sites.

## **Considerations for Effective Human Interaction**

Workshop 1, Session 1

Rebecca K. Wajda, Virginia Department of Game & Inland Fisheries

One of the most neglected factors in the development of many fish and wildlife information web sites appears to be the end user. Based on submitted surveys and anecdotal review, fish and wildlife agencies tend to define a broad, often disparate, set of constituencies as their primary users, which include groups from agency staff to other partners and researchers to the "general public." In reality, most agencies have developed their wildlife information web sites to serve the needs of one or several related groups, while hoping that others will find their way through the site. The development of a powerful, useful site must include not only technological considerations, but also the end user, for without their interaction, the site remains unused. Web site designers and managers should begin the development process with a clear definition and purpose of the site, and a stated definition of the intended audiences. "User profiles" may facilitate the identification of shared needs, concerns, or capabilities of different user groups. Developers should also consider user familiarity and access to various technologies, and familiarity with the subject. Jakob Nielsen's "10 Steps to Better Usability" and "Top 10 Mistakes" in web site development (reviewed within the presentation) provide clear, concise guidance for optimal inclusion of user needs throughout the process. A general "usability" review of 9 wildlife information web sites is also presented.

Primary document standards for the World-Wide-Web have evolved from the Hyper-text Mark-up Language (HTML) [a spin-off itself of SGML, the Standard Generalized Mark-up Language], through extended-HTML (XHTML) and Dynamic-HTML (DHTML), to current efforts known as the Extensible Markup Language (XML). They all strive to allow individuals who wish to publish information to the Web to issue instructions that combine text, images and white space to present sophisticated and aesthetically pleasing Web pages. All the markup languages provide "tags" to be combined with "content" to deliver information via "browser" programs. The tags help to provide structure in delivery of information to deal with titles, headings, and paragraphs of text, while also allowing for the embedding of graphics. The current web graphics standards are considered .GIF format files, and .JPG format files. PNG has been suggested as a future "open source" standard. Web publishing standards, and tools to facilitate their use are posted by the World Wide Web Consortium, via their web-site, at: <http://www.w3c.org> . To the extent that web developers adhere to these standards, content should be viewable from any computer platform having a browser (HTML content viewer) capable of "parsing" the HTML formatted pages. The current standards are being pushed by public desire for more multi-media rich information. Some vendor/programmer specific "extensions" to web-publishing have been offered to deliver sound, video and map content via standard web-servers. Current document standards are somewhat driven the the HTTP (Hyper Text Transfer Protocol) standard that governs how computer programs can deliver server-based "content" to client-based browsers. XML is currently being developed to work within the standard to allow web-delivery of Document-Type-Definitions (DTDs) allowing metadata to accompany web documents that can allow greater data sharing between server documents and client-based computer applications. Examples were reviewed from the OFWIM-2K Surveys submitted by participating fish and wildlife agencies, providing inspection of both HTML tags and information content (text and graphics). Survey related web sites can be visited by the "link": <http://fwie.fw.vt.edu/ofwim/docs/ofwim2k.html> .

**Deploying for the Web in Win-NT/ISS Environments** Workshop I - Session 3  
Nancy Brauer and Sheryl Soborowski, Conservation Management Institute, VA Tech

NOTE: Abstract Not Available

**Deploying for the Web in UNIX/Apache Environments** Workshop I - Session 4  
Donald L. Schrupp, Colorado Division of Wildlife

A number of the Internet applications profiled in surveys for the OFWIM-2K meeting were implemented in the UNIX environment, as opposed to those deployed on WinNT platforms. Whereas many WinNT applications are deployed using Microsoft's Internet Information Server (IIS), applications deployed on UNIX platforms used varied web-server programs. These ranged from commercial web-server programs such as Netscape's "Enterprise" Server, and Oracle's Application Server to the open source web-server program, Apache. Just as IIS provides WinNT users with extended programming capabilities, the UNIX platform servers extend standard web-server capabilities to provide robustness and ease of collaborative content development (Netscape Enterprise Server), integration with back-end database servers (Oracle Application Server), and enhanced scripting support (Apache and mod\_perl). Examples of both commercial and open source, UNIX-based web applications profiled in the OFWIM-2K Internet Applications survey were visited and reviewed with the workshop attendees.

They included:

**Colorado Division of Wildlife application:**

Habitat Affinities Module (Intranet based):

<http://habitatweb.state.co.us/habmod/HABITAT/form>

**Pacific State Marine Fisheries Commission applications:**

PTAGIS - Pit Tag Information System:

<http://www.ptagis.org>

Regional Mark Processing Center (RMPC):

<http://www.rmis.org>

RecFin:

<http://www.recfin.org>

**Wisconsin Department of Natural Resources application:**

[http://www.dnr.state.wi.us/org/water/division/swis/master\\_index/pk\\_swis\\_org\\_metadata\(1\)\\_home\\_page.html](http://www.dnr.state.wi.us/org/water/division/swis/master_index/pk_swis_org_metadata(1)_home_page.html)

These applications were targeted to UNIX servers to take advantage of the robustness of the UNIX operating systems in combination with their associated web-server capabilities.



**OFWIM 2000  
Presentation Abstracts**

**Sunday Morning  
August 6, 2000**



## **Web Database Considerations**

Workshop II - Session 1

**NOTE:** No Abstract Available

## **Web Database Support Tools: Enhancing Interactivity**

Workshop II - Session 2

**NOTE:** No Abstract Available

## **The "Big Picture" - Tricks of the Trade - Using Graphics**

Workshop II - Session 3

Donald L. Schrupp, Colorado Division of Wildlife

Based on the OFWIM-2K Internet Applications surveys received, twenty-four websites were visited to assess their use of graphics and to provide an opportunity for workshop participants to discuss their experiences in developing graphic content for their web applications. Graphics Interchange Format (.GIF) and Joint Photographic Experts Graphic (.JPG) format are the two principal image formats supported by the HTTP (Hyper-text Transfer Protocol). Of the 24 sites we visited, nine used .GIF format images, 4 used .JPG format images, 10 used a combination of .GIF and .JPG files, and one site used no graphics. The "Home Page" for each of these has been captured to an Adobe Reader display format (PDF), available via the link: [http://fwie.fw.vt.edu/ofwim/docs/o2k\\_gfxs.pdf](http://fwie.fw.vt.edu/ofwim/docs/o2k_gfxs.pdf) The actual sites can be visited via: <http://fwie.fw.vt.edu/ofwim/docs/ofwim2k.html>. In addition to .GIF and .JPG formats, a new open source image format, the Portable Network Graphics (.PNG) format is being recommended as a future standard, for consideration by the World Wide Web Consortium ([www.w3c.org](http://www.w3c.org)). To go beyond the simplistic graphics formats supported by the current web standards, other graphic formats are being supported by "plug-in" utilities that are "spawned" by select modern browsers (Netscape Navigator and Microsoft Internet Explorer). Plug-in may provide access to .PDF format graphics (see example above), Java-applet based graphics, animated-GIFs, and even "movie" files (.MPEG). The workshop also allowed participants an opportunity to discuss graphics programs that were found to be helpful in developing the images for web-sites. These ranged from open source, to shareware, to commercial graphics programs; examples of each would be the GIMP, xv, and Adobe PhotoShop. A follow-up survey may be useful to more fully develop a list of beneficial software used for development of web-graphics.

**Making and Maintaining Contact with your Customers**      Workshop II – Session 4  
Kathy Quindlen and Karen Reay, Virginia Department of Game and Inland Fisheries

Many of us are familiar and comfortable with database management and development, however, we need to consider the use of the data and the "customer contact" or marketing aspects of our program. Why should we keep in contact with customers or those that use our data services? Reasons include documenting effectiveness of agency programs and products or services, forming partnerships, and marketing the agency and its programs. Why is marketing of products and services important? Competition for funding within agencies and for outside grants has increased. In addition, it is important to find out how the agency and the services provided are perceived by the public. Effective marketing increases name recognition of the database and broadens the constituent base.

Before beginning a marketing survey, a significant component is to know what you are measuring and what types of information you are gathering. Some general concepts to measure include overall satisfaction, non-technical or human influenced factors (courtesy), technical or data information measures (data accuracy) and user information (number, identity, frequency of use, purpose of visit). Remember, only gather information on aspects of your program that you have the power to change or information that will be meaningful.

So how do we go about marketing the agency and its programs? One of the chief aspects in marketing is to know your audience through various means of survey or data gathering. It is also vital to develop a marketing plan, then create a memorable and meaningful name for your system or program.

How and what methods should be used to keep contacts? Since the web page is sometimes the first contact with the agency, it is essential to have a contact name included on your web page. Many agencies use question or feedback forms, survey forms, email to webmaster or database manager, direct contact, and public relations material to make or keep contacts and determine their user's needs and perceptions.

In summary, make maintaining contact a priority, identify your audience, know what you want to measure, use the tools available through the web, keep that personal touch, and remember that marketing is not a dirty word!

**OFWIM 2000  
Presentation Abstracts**

**Monday Morning  
August 7, 2000**



**Organization of Fish and Wildlife Information Managers  
2000 Annual Meeting -- Silver Creek, Colorado  
"Taking Wildlife Information to the Internet"  
Workshop III - Sessions 1-4**

**Silver, Creek Colorado August 6th , 2000**

Moderator: Don Schrupp

Workshop III, on Monday morning provided four sessions addressing 1) the use of scripting languages to enhance web pages, 2) use of java-enabled applications to extend browser capabilities, 3) the use of intranet/internet servers to serve up data, and 4) the deployment of map enabled applications on the internet. Kirk Keller, of the Missouri Department of Conservation provided a wonderful tour of the benefits of script languages to enhance and organize web sites, touching on SSI, JSP, ASP, PHP, perl, CGI, SVG and HTML in Session 1. Sessions 2 and 4 both focused how GIS coverages are presented over the internet via java-enabled mapserver capabilities. Both commercial (ESRI – ArcView-IMS) and open source (University of Minnesota - MapServer) mapserver technologies were reviewed. Current fish and wildlife agency uses of the technology were demonstrated through live connections to example sites profiled in the OFWIM-2K surveys. Thanks to Blair Jones for assisting with Session 4. Jeff Waldon presented Session 3, covering the use of intranet/internet web servers to provide extended information processing services. The value of list-servers to provide "passive" networking amongst wildlife professionals was outlined. Benefits of FTP-servers to provide passive connectivity to legacy datastores was noted. White papers on map-server technologies were provided for distribution by ESRI-Boulder; we thank them for contributing to our collective knowledge base.

**Prime Time Web Development: Non-Hollywood Scripts**

Workshop III – Session 1

Don Schrupp, Colorado Division of Wildlife and  
Kirk Keller, of the Missouri Department of Conservation

Don Schrupp, of the Colorado Division of Wildlife presented a summary of the various scripting languages being used to enhance internet applications, making them more interactive than the original static web pages. Kirk Keller, of the Missouri Department of Conservation provided a wonderful tour of the benefits of script languages to enhance and organize web sites, touching on SSI, JSP, ASP, PHP, perl, CGI, SVG and HTML in Session 1.

**Browsers on Steroids - Java-enabled Applications**

Workshop III - Session 2

Donald L. Schrupp, Colorado Division of Wildlife

This session was originally intended to "showcase" fish and wildlife agency Internet applications that make use of Java applets to provide for more dynamic content delivery. Two types of java-enhanced applications were described via the OFWIM-2K survey; those facilitating the delivery of map content (such as the Colorado Division of Wildlife's Natural Diversity Information Source (NDIS) application) and the delivery of database information via Java-SQL capabilities (such as the Conservation Management Institute managed Multi-State Aquatic Resources Information System (MARIS)). These applications can be visited at:

NDIS: <http://ndis.nrel.colostate.edu>

MARIS: <http://www.gis.uiuc.edu/maris>

Review of map content delivery applications (using the Environmental Systems Research Institutes' ArcView - Internet Map Server applet ) were post-poned for coverage under Workshop III - Session 4. Workshop participants also recommended visiting the following web sites for Internet application that extend browser capabilities via various scripting approaches:

<http://www.schoolofwebdesign.com>

<http://www.getscript.com> (perl 5)

<http://www.irt.org> (Java scripting)

<http://worldwidemart.com/scripts> (perl)

**“Sooner or Waiter” -- Serving Up Data**

Workshop III – Session 3

Jefferson Waldon, Conservation Management Institute, VA Tech

**NOTE:** Abstract Not Available

**Location, Location, Location - Map Enabled Applications** Workshop III - Session 4  
Blair Jones, Conservation Management Institute, VA Tech and  
Don Schrupp, Colorado Division of Wildlife

Six of the OFWIM-2K Internet Application surveys submitted identified the capability of their applications to deliver map based content via the Internet.

These applications were:

Colorado - Natural Diversity Information Source (NDIS):

<http://ndis.nrel.colostate.edu>

Kentucky Fish and Wildlife Information System (KFWIS):

<http://www.kfwis.state.ky.us>

Minnesota DNR - DeerFinder/GameFinder:

<http://www.dnr.state.mn.us/gamefind>

Texas A&M - County Level Easily Accessible Resource (CLEAR):

<http://clear.tamu.edu>

Virginia - DGIF Fish & Wildlife Information Service (FWIS):

[http://216.12.35.162/scripts/oicgi.exe/inet\\_xlate?](http://216.12.35.162/scripts/oicgi.exe/inet_xlate?)

The applications of Colorado, Kentucky, and Texas were developed using commercial web-mapping capabilities developed by the Environment Systems Research Institute (ESRI: <http://www.esri.com> ). The Minnesota DNR application utilized mapserver software developed by the University of Minnesota with input worldwide via the Internet (<http://mapserver.gis.umn.edu> ). Virginia's mapping capabilities were developed in-house. Given its unique approach, the following background is provided for it:

The Virginia Fish and Wildlife Information Service (FWIS) is a world wide web database application that responds with lists of known and likely species occurrence for any location in Virginia. Locations may be declared by interactive point and click on U.S. Geological Survey maps displayed by a web browser. Maps provided by Microsoft's TerraServr are integrated into this service. Topographic maps are available for all of Virginia and panchromatic aerial photographs are available, as of August 2000, for over two-thirds of the state. For registered users, observation site locations can be presented as shaded areas on these same maps. The application is built with programs using Advanced Revelation and Open Insight database from Revelation Technologies. Map shading is accomplished by altering the color of static maps using a mask image created dynamically by the database program. The mask color is subtracted from the static map using an image manipulation program called Image Magic and linked to the browser document as a file type of "GIF".

Colorado's Natural Diversity Information Source (NDIS) uses ESRI's ArcView Internet Mapserver (AV-IMS), along with a generous amount of Java programming and HTML code to deliver integrated sets of wildlife distribution/habitat maps, plant/animal & natural community maps, tabular listings of species status', habitat affinities and photographs of each for use in natural resource decision-making and public education.

## OFWIM 2000 Registered Participants

August 5 – 7, 2000  
Silver Creek, Colorado

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**OFWIM 2000  
Pre-conference Survey Response**

**August - 2000**



# **Organization of Fish and Wildlife Information Managers**

## **"Fish and Wildlife Information Meets the Internet"**

### **Submitted Surveys**

**Annual Meeting  
Silver Creek, Colorado  
August 5-7, 2000**

## **INTERNET APPLICATIONS**

<b><u>AGENCY</u></b>	<b><u>APPLICATION NAME</u></b>	<b><u>PAGE</u></b>
Arkansas Game and Fish Commission	Arkansas Sportsmen Data System Internet Sales	4
Arkansas Game and Fish Commission	Hunter Ed Search	5
Colorado Division of Wildlife	Natural Diversity Information Source	6
Conservation Management Institute (Virginia Tech)	Multi-State Aquatic Resources Information System (MARIS)	7
Conservation Management Institute (Virginia Tech)	Wild Animal and Plant Information Transfer Infrastructure (WAPITI)	9
Environmental Protection Agency (Chesapeake Bay Program)	Chesapeake Bay Program	11
Institute of Ecology (Lithuania) / Ornis Consult (Denmark)	BALTSAS	12
Maryland Department of Natural Resources	Maryland Duck Blind License Issuing System	14
Maryland Department of Natural Resources	Public Hearing/Input	15
Minnesota Department of Natural Resources	DeerFinder	16
Minnesota Department of Natural Resources	GameFinder	17
Missouri Department of Conservation	News Database	19
National Marine Fisheries Service Office of Intergovernmental and Recreational Fisheries, Atlantic States Marine Fisheries Commission	Cooperative Tagging Web Site and Registry	20
New Mexico Department of Game and Fish	Biota Information System of New Mexico (BISON)	21
North Dakota Game and Fish Department	Internet Licensing System	23
North Dakota Game and Fish Department	Public Inquiry System	25

Pacific States Marine Fisheries Commission	PTAGIS - Pit Tag Information System	26
Pacific States Marine Fisheries Commission	RecFIN	27
Pacific States Marine Fisheries Commission	Regional Mark Processing Center (RMPC)	28
Pacific States Marine Fisheries Commission	StreamNet, the NW Aquatic Information Network	29
Texas Agricultural Extension Service	CLEAR (County Level Easily Accessible Resource)	30
Utah Division of Wildlife Resources / Utah Automated Geographic Reference Center	Statewide Wildlife Species Use Areas	31
Virginia Department of Game and Inland Fisheries	Virginia Fish and Wildlife Information Service (VAFWIS)	32
Wisconsin Department of Natural Resources	Aquatic Metadata Search	34

## ARKANSAS SPORTSMEN DATA SYSTEM INTERNET SALES

**Description:** Allows the public to purchase a hunting and fishing license on the Internet.

**Agency:** Arkansas Game and Fish Commission

**Primary Users:** Public

**Marketing Strategies:**

**Method of System Evaluation  
And Soliciting Feedback:**

**Special Features/Graphics:** User can go hunting or fishing immediately. Payment by credit card. User must have a Driver's License number or a SSN to purchase the license.

**Operating Environment:** WINNT 4.0/Windows 9X

**Web-server:**

**Support Scripting:**

**Server Software:** IIS 4.0/Exchange 5.5

**Server Hardware:** PIII 500 MHz 32 Gb

**URL:** <http://www.agfc.com>

**Development Team:**

**Contact Name:** Brandon Tolleson  
**Address:** 2 Natural Resources Drive, Little Rock, AR 72205  
**Phone:** (501) 223-6451  
**E-mail:** [bmtolleson@agfc.state.ar.us](mailto:bmtolleson@agfc.state.ar.us)

**Future Enhancements:**

**Other Comments:**

## HUNTER ED SEARCH

**Description:** The application would allow the public to search a database to find out if he/she was certified in Hunter Safety or Boating Safety. They would be able to print something out, if they were certified, to take with them to hunt/fish.

**Agency:** Arkansas Game and Fish Commission

**Primary Users:** Public

**Marketing Strategies:**

**Method of System Evaluation And Soliciting Feedback:**

**Special Features/Graphics:** Printing of a "temporary" card for proof of certification.

**Operating Environment:** Windows NT 4.0/Windows 9X

**Web-server:** Windows NT 4.0

**Support Scripting:** Yes

**Server Software:** IIS 4.0/Exchange 5.5

**Server Hardware:** PIII 500 MHz 32 Gb

**URL:** doesn't exist yet

**Development Team:**

**Contact Name:** Brandon Tolleson  
**Address:** 2 Natural Resources Drive, Little Rock, AR 72205  
**Phone:** (501) 223-6451  
**E-mail:** bmtolleson@agfc.state.ar.us

**Future Enhancements:**

**Other Comments:**

## NATURAL DIVERSITY INFORMATION SOURCE (NDIS)

<b>Description:</b>	Wildlife habitat information for land use planning applications; browser-based interactive mapping and geographically focused information retrieval.
<b>Agency:</b>	Colorado Division of Wildlife
<b>Primary Users:</b>	Colorado DNR staff, other federal and state government agency staff, and the general public
<b>Marketing Strategies:</b>	Web page address is included on publications, posters, and in the Wildlife magazine.
<b>Method of System Evaluation And Soliciting Feedback:</b>	"Contact Us" button links directly to e-mail address of webmaster.
<b>Special Features/Graphics:</b>	Interactive mapping with ESRI Internet Map Server
<b>Operating Environment:</b>	Windows NT-4.0 based server (proprietary)
<b>Web-server:</b>	MS-IIS (proprietary)
<b>Support Scripting:</b>	Java, Avenue Scripting, HTML
<b>Server Software:</b>	ESRI Internet Map Server and Microsoft IIS
<b>Server Hardware:</b>	Dell PowerEdge - Quad Processor
<b>URL:</b>	<a href="http://ndis.nrel.colostate.edu">http://ndis.nrel.colostate.edu</a>
<b>Development Team:</b>	Colorado Division of Wildlife and Natural Resource Ecology Laboratory at CSU; data sets provided by Colorado Division of Wildlife and Colorado Natural Heritage Program
<b>Contact Name:</b>	Don Schrupp
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<b>Phone:</b>	(303) 291-7277
<b>E-mail:</b>	<a href="mailto:hqwris@lamar.colostate.edu">hqwris@lamar.colostate.edu</a>
<b>Future Enhancements:</b>	Links to Colorado Gap Analysis Home Page and Colorado Riparian Classification Project Home Page.
<b>Other Comments:</b>	Has links for document retrieval of land use and conservation planning documents.

## **MULTI-STATE AQUATIC RESOURCES INFORMATION SYSTEM (MARIS)**

<b>Description:</b>	MARIS provides a single point of access to fisheries databases of 6 state fish and game (natural resources) agencies. The emphasis when developing MARIS was to provide quantitative information on aquatic species status and trends. Data resides on individual state servers, with queries processed through the central MARIS server currently residing at the University of Illinois. At present, several states have interactive connections with the MARIS server with other state databases residing locally on the MARIS server until technical or administrative issues can be worked out with those states. Data is georeferenced using several common systems (FIPS, HUC, Lat/Long, etc.) to enable it to be compiled with external data systems, particularly land use/land cover. Currently, MARIS provides information for lake systems although a format for stream data will be developed in the future.
<b>Agency:</b>	6 state agencies (MI, IL, WI, MN, OH, IA) and 4 federal agencies (USFS, USGS, NRCS, USFWS); administered through CMI at Virginia Tech.
<b>Primary Users:</b>	State and federal agencies
<b>Marketing Strategies:</b>	1:1 presentations with state/federal agencies; presentations at professional society meetings.
<b>Method of System Evaluation And Soliciting Feedback:</b>	Steering committee of state/federal representatives evaluated utility and application potential. Staff at UIUC/NCSA continually evaluates new software applications.
<b>Special Features/Graphics:</b>	Interactive connections with state servers provide many benefits. Data are automatically updated when states update their internal data sets. States maintain control of their data to a large degree. The MARIS system does not necessitate states to change their current data collection, reporting, hardware or software. Conversions between data sets are accomplished through common look-up tables.
<b>Operating Environment:</b>	Several - depending on state agencies' systems, but primarily MS Access and Paradox
<b>Web-server:</b>	
<b>Support Scripting:</b>	Java, SQL
<b>Server Software:</b>	Microsoft-IIS/4.0



**Server Hardware:**

**URL:** <http://www.gis.uius.edu/maris/>

**Development Team:** Doug Johnston; Mark Ruesink; Doug Beard; Doug Austen; Steve Sobaski; Chris Larson; Mike Costello; Henry Drewes; Dave Mach; Leo Schlunz; Curt Flather; Steve Brady; Mike Mac; Connie Young-Dubovsky; Jeff Waldon; Andrew Loftus

**Contact Name:** Andrew Loftus  
**Address:** 3116 Munz Drive, Suite A, Annapolis, MD 21403  
**Phone:** (410) 295-5997  
**E-mail:** Aloftus501@aol.com

**Future Enhancements:** Expanded geographic coverage (more states); inclusion of streams data formats; map-based queries; improved metadata following FGDC guidelines (on-going); thorough evaluation

**Other Comments:**

## **WILD ANIMAL AND PLANT INFORMATION TRANSFER INFRASTRUCTURE (WAPITI)**

<b>Description:</b>	<p>WAPITI is a federated network of data servers in Maryland, Pennsylvania, Virginia, and West Virginia. WAPITI's objective is to build a system that meets the needs of the states individually that can also feed data interactively to a regional data gateway. The WAPITI project is funded by the Environmental Protection Agency and the National Biological Information Infrastructure (NBII, an initiative of the U.S. Geological Survey's Biological Resources Division). WAPITI was developed and is maintained by the Fish and Wildlife Information Exchange, a division of the Conservation Management Institute of Virginia Tech.</p> <p>WAPITI currently serves taxonomy, distribution, status, and habitat distribution data of vertebrates from the wildlife databases of Maryland, Pennsylvania, Virginia, and West Virginia. Several webpages have been created to search for species by common or scientific names, taxonomic class, or ITIS taxon serial numbers (TSNs). A list of matching species' common and scientific names and links to the individual state data is returned. Users click on the appropriate link to view individual species data. Each species record contains links to references from the state servers so users can make educated decisions about appropriate use of the data. Crosswalks between each state's nomenclature and WAPITI standards standardize the data.</p>
<b>Agency:</b>	Conservation Management Institute (Virginia Tech)
<b>Primary Users:</b>	Individuals and organizations interested in wildlife data, such as federal agencies, scientists, students and the general public.
<b>Marketing Strategies:</b>	
<b>Method of System Evaluation And Soliciting Feedback:</b>	
<b>Special Features/Graphics:</b>	A Jasmine Object Database coordinates the multi-state data. Jasmine WebLink templates, CGI scripts, and Active Server Pages dynamically display the requested species data. An ArcView Internet Map Server application serves species distribution maps on the fly.
<b>Operating Environment:</b>	Windows NT-4.0 based server
<b>Web-server:</b>	

**Support Scripting:** JavaScript, Active Server Pages (VBscript), WebLink templates, Avenue, HTML

**Server Software:** Microsoft IIS

**Server Hardware:** 500 MHz PII

**URL:** <http://151.199.74.229/wapiti/>

**Development Team:** Nancy Brauer and David Simsik

**Contact Name:** Nancy Brauer  
**Address:** CMI, Virginia Tech, 203 W. Roanoke St., Blacksburg, VA 24061-0534  
**Phone:** (540) 231-7348  
**E-mail:** nbrauer@vt.edu

**Future Enhancements:**

**Other Comments:**

## CHESAPEAKE BAY PROGRAM

<b>Description:</b>	All types of information on the Chesapeake Bay and watershed, including Bay history, animal and plant overviews, status and trend information, browser-based interactive mapping, habitats, water quality, and more.
<b>Agency:</b>	Environmental Protection Agency (multi-governmental partnership of EPA, Virginia, Pennsylvania, District of Columbia, Maryland)
<b>Primary Users:</b>	CBP Staff, CBP Partners, Bay watershed citizens, and community watershed organizations
<b>Marketing Strategies:</b>	Web page address is located on publications, posters and is registered with all major search engines.
<b>Method of System Evaluation And Soliciting Feedback:</b>	"Comments" button on web site. Consensus among subcommittees.
<b>Special Features/Graphics:</b>	Interactive mapping with ESRI Map Server, dynamic pages using Cold Fusion, Visual Basic.
<b>Operating Environment:</b>	Windows NT-4.0 based server
<b>Web-server:</b>	MS-IIS
<b>Support Scripting:</b>	Cold Fusion, Javascript, HTML, Visual Basic
<b>Server Software:</b>	Microsoft-IIS/4.0
<b>Server Hardware:</b>	Dell PowerEdge 6300 - Quad Processor
<b>URL:</b>	<a href="http://www.chesapeakebay.net">http://www.chesapeakebay.net</a>
<b>Development Team:</b>	Chesapeake Information Management System Team / Communications Team at the Chesapeake Bay Program
<b>Contact Name:</b>	Mike Land
<b>Address:</b>	410 Severn Avenue, Suite 109, Annapolis, MD 21403
<b>Phone:</b>	(410) 267-9832
<b>E-mail:</b>	land.mike@epa.gov
<b>Future Enhancements:</b>	Further inclusion of temporal information, particularly status and trend information using Watershed Profiles. Also, a Bay education hub for students and teachers.
<b>Other Comments:</b>	

## **KENTUCKY FISH AND WILDLIFE INFORMATION SYSTEM (KFWIS)**

<b>Description:</b>	For the wildlife biologists to be able to query for wildlife distribution in Kentucky. The distribution can be in 7.5-minute quad level or county level. The system also allows the biologists to submit species observation. When the record is entered, the wildlife distribution database is updated in real time.
<b>Agency:</b>	Kentucky Department of Fish and Wildlife Resources
<b>Primary Users:</b>	Professional wildlife biologists
<b>Marketing Strategies:</b>	Stress on personal level. This includes visiting each office, training in GPS and ArcView, e-mail, phone calls, and yearly division meeting. The contact is focused on understanding their work priorities, user-friendliness, their lack of access to high internet speed, and living up to the accuracy of the database.
<b>Method of System Evaluation And Soliciting Feedback:</b>	Manipulate a file in Windows NT to calculate the number of hits for each web page. This will help us know the importance of each web application. The frequency of species observation on-line entry is also part of the job performance evaluation for each biologist. This will help in adding records to the species distribution database.
<b>Special Features/Graphics:</b>	Active Server Pages and Map Objects IMS, and SQL Server for web application. For GIS: ArcInfo 7.2, ArcView 3.1, GPS system (Garmin, Trimble), and Adobe Illustrator
<b>Operating Environment:</b>	Windows NT-4.0
<b>Web-server:</b>	Internet Information Server
<b>Support Scripting:</b>	Active Server Pages (with HTML and VBScript), IDC (Internet Database Connector)
<b>Server Software:</b>	Miscrosoft-IIS/4.0
<b>Server Hardware:</b>	Digital Alpha Server 1000 (file server); Digital Alpha Station 6000 (web server and database server)
<b>URL:</b>	<a href="http://www.kfwis.state.ky.us">http://www.kfwis.state.ky.us</a>
<b>Development Team:</b>	Keith Wethington (supervisor); Daniel Vichitbandha (database/web master/GIS); and David Fredrick and Mike Soto (GIS specialists)
<b>Contact Name:</b>	Keith Wethington or Daniel Vichitbandha

**Address:**

Department of Fish and Wildlife Resources, #1 Game  
Farm Road, Frankfort, KY 40601

**Phone:**

(502) 7109 x476 (Daniel) or x405 (Keith)

**E-mail:**

daniel.vichitbandha@mail.state.ky.us or  
keith.wethington@mail.state.ky.us

**Future Enhancements:**

Upgrade SQL Server 6.5 to 7.0; ArcInfo 8.1; possible  
integration of XML. Looking into other internet mapping  
applications besides Map Objects IMS.

**Other Comments:**

## BALTSAS

<b>Description:</b>	The BALTSAS is an international database of seabird numbers and distribution in the Baltic Sea, also promoting recent scientific results of Baltic Seabird studies, featuring a comprehensive atlas of seabird distribution, describing procedures of data sampling and processing, etc.
<b>Agency:</b>	Institute of Ecology (Lithuania)/Ornis Consult (Denmark)
<b>Primary Users:</b>	Members of the BALTSAS Group: projects, research, education, etc.
<b>Marketing Strategies:</b>	Non-profit (reference, education, etc.) use of Web site materials. For further co-operation, data access, map production or any other expertise please contact the web site Manager. The request will be discussed with the BALTSAS Group.
<b>Method of System Evaluation And Soliciting Feedback:</b>	
<b>Special Features/Graphics:</b>	Maps presented as graphics. No on-line mapping facilities so far.
<b>Operating Environment:</b>	Maps produced in MapInfo Professional 5.0 (Windows NT-4.0)
<b>Web-server:</b>	External Internet Provider
<b>Support Scripting:</b>	
<b>Server Software:</b>	
<b>Server Hardware:</b>	
<b>URL:</b>	<a href="http://www.5ci.lt/users/seabird">http://www.5ci.lt/users/seabird</a>
<b>Development Team:</b>	Institute of Ecology/Lithuanian ICZM Information Center (Lithuania)
<b>Contact Name:</b>	Dr. Gedas Vaitkus
<b>Address:</b>	Institute of Ecology, Akademijos 2, 2600 Vilnius, Lithuania
<b>Phone:</b>	+370-2-729251; +370-99-99940
<b>E-mail:</b>	seabird@post.5ci.lt
<b>Future Enhancements:</b>	The web site is still under development.
<b>Other Comments:</b>	

## MARYLAND DUCK BLIND LICENSE SYSTEM (MD BLIS)

<b>Description:</b>	We are in the process of developing a streamlined database, to license duck blinds in Maryland, which will be under the control of the Maryland Department of Natural Resources (MD DNR). Currently, a prospective licensee must go to the county in which the duck blind will be licensed to submit registration forms. Enforcement of laws and prevention of errors is difficult because records are kept in each individual county. The MD BLIS database will have built-in checks that prevent the same site from being licensed more than once, and to prevent one person from licensing more than two duck blinds per day. The database will be coupled with geographic data such as parcel and hydrologic boundaries in a Geographic Information System. This will allow a licensee to put a duck blind no closer than 250 yards from an existing duck blind. Eventually, this system can be served over the Internet so licensees can "point and click" on a parcel to register without having to drive to the county where the duck blind is located.
<b>Agency:</b>	Maryland Department of Natural Resources
<b>Primary Users:</b>	Maryland's duck hunters and shoreline owners.
<b>Marketing Strategies:</b>	
<b>Method of System Evaluation And Soliciting Feedback:</b>	
<b>Special Features/Graphics:</b>	
<b>Operating Environment:</b>	Windows NT-4.0
<b>Web-server:</b>	MS-IIS
<b>Support Scripting:</b>	Active Server Pages (VBScript), Avenue
<b>Server Software:</b>	Microsoft IIS
<b>Server Hardware:</b>	still in development phase
<b>URL:</b>	still in development phase
<b>Development Team:</b>	Conservation Management Institute, Virginia Tech
<b>Contact Name:</b>	Sheryl Soborowski
<b>Address:</b>	203 W. Roanoke St., Blacksburg, VA 24061-0534
<b>Phone:</b>	(540) 231-7348
<b>E-mail:</b>	ssoboro@vt.edu
<b>Future Enhancements:</b>	
<b>Other Comments:</b>	



## **PUBLIC HEARING/INPUT**

<b>Description:</b>	The Maryland DNR Heritage and Wildlife Division has conducted two online "hearings" for our proposed regulations. We post the proposals and then allow site visitors to e-mail their comments. During the comment period and during the regulation process, we post the e-mail comments with first name and geographic area (not e-mail or full name to protect privacy). Very successful and the online comments ran consistent with the real-time public hearings comments.
<b>Agency:</b>	Maryland Department of Natural Resources
<b>Primary Users:</b>	Sportsmen, hunters, fishermen, boaters, naturalists, natural resources customers
<b>Marketing Strategies:</b>	Press releases list the URL of the public hearing so people can go directly to that. The hearing is also featured on the home page of the department.
<b>Method of System Evaluation And Soliciting Feedback:</b>	Online customer feedback form
<b>Special Features/Graphics:</b>	
<b>Operating Environment:</b>	
<b>Web-server:</b>	
<b>Support Scripting:</b>	
<b>Server Software:</b>	Microsoft-IIS/4.0
<b>Server Hardware:</b>	
<b>URL:</b>	<a href="http://www.dnr.state.md.us">http://www.dnr.state.md.us</a>
<b>Development Team:</b>	Internet Services Unit of Information Technology Services and Wildlife Content Manager
<b>Contact Name:</b>	Gene Deems, Manager Internet Services
<b>Address:</b>	MD Department of Natural Resources, 580 Taylor Avenue, D4, Annapolis, MD 21401
<b>Phone:</b>	(410) 260-8014
<b>E-mail:</b>	<a href="mailto:gdeems@dnr.state.md.us">gdeems@dnr.state.md.us</a>
<b>Future Enhancements:</b>	eCRM, interactive data, blind site registration online
<b>Other Comments:</b>	

## DEERFINDER

<b>Description:</b>	<p>DeerFinder is an interactive map of annual deer harvest. The user can toggle between maps of harvest density based on bucks, antlerless and total deer harvest density.</p> <p>When the user clicks on an individual permit area, a new map opens, zoomed in to that permit area, showing lakes, rivers, roads, etc. They will also find detailed info on number of deer taken by firearm, archery and muzzle loader and under various permits for intensive harvest areas.</p> <p>Additionally, the user will find a graph of the annual harvest for that permit (last 6 years) and information on success rates for antlerless permit applicants.</p> <p>Lastly, the individual permit area map is clickable, which takes the user to the DNR Recreation Compass, which highlights public lands in Minnesota. The Compass is an application in itself, which allows users to find information on Wildlife Management Areas, Scientific and Natural Areas, State Parks, lakes, rivers, trails, National Forests and National Parks.</p>
<b>Agency:</b>	Minnesota Department of Natural Resources
<b>Primary Users:</b>	Deer hunters
<b>Marketing Strategies:</b>	No organized strategy other than making it available. A link is prominently added to the DNR home page in August.
<b>Method of System Evaluation And Soliciting Feedback:</b>	"Contact us" e-mail options
<b>Special Features/Graphics:</b>	Interactive map as described above.
<b>Operating Environment:</b>	UNIX
<b>Web-server:</b>	Apache
<b>Support Scripting:</b>	Perl, HTML
<b>Server Software:</b>	UMN Mapserver (University of Minnesota)
<b>Server Hardware:</b>	Sun
<b>URL:</b>	<a href="http://www.dnr.state.mn.us/gamefind/">http://www.dnr.state.mn.us/gamefind/</a>
<b>Development Team:</b>	Steve Benson, Stephen Lime

**Contact Name:** Steve Benson  
**Address:** 1201 E. Hwy. 2, Grand Rapids, MN 55744  
**Phone:** (218) 327-4149  
**E-mail:** [steve.benson@dnr.state.mn.us](mailto:steve.benson@dnr.state.mn.us)

**Future Enhancements:** Adding interactive maps for more species: moose, turkey, and bear.

**Other Comments:** Annual updates have been painfully slow due to severe staff shortages. The site is usually updated for the previous fall season in July.

## GAMEFINDER

<b>Description:</b>	GameFinder is a web site that allows users to download maps of various game harvests, and maps of interest to hunters. Included are density of bear baits, pheasant hunting prospects, annual grouse survey chart and deer hunter survey maps indicating success rates, hunter density and amount of time hunting to take a deer.
<b>Agency:</b>	Minnesota Department of Natural Resources
<b>Primary Users:</b>	Hunters
<b>Marketing Strategies:</b>	None
<b>Method of System Evaluation And Soliciting Feedback:</b>	"Contact us" by e-mail link
<b>Special Features/Graphics:</b>	Downloadable maps; PDF format
<b>Operating Environment:</b>	Unix
<b>Web-server:</b>	Apache
<b>Support Scripting:</b>	HTML
<b>Server Software:</b>	
<b>Server Hardware:</b>	Sun
<b>URL:</b>	<a href="http://www.dnr.state.mn.us/gamefind/">http://www.dnr.state.mn.us/gamefind/</a>
<b>Development Team:</b>	Steve Benson, Stephen Lime
<b>Contact Name:</b>	Steve Benson
<b>Address:</b>	1201 E. Hwy. 2, Grand Rapids, MN 55744
<b>Phone:</b>	(218) 327-4149
<b>E-mail:</b>	<a href="mailto:steve.benson@dnr.state.mn.us">steve.benson@dnr.state.mn.us</a>
<b>Future Enhancements:</b>	This site is in its infancy. Intend to get all annual harvest maps on line and kept up to date. We want to include thumbnails of each map.
<b>Other Comments:</b>	Staff shortages keep this site from expanding rapidly. The data is available, we just need a dedicated body to keep it up to date.

## NEWS DATABASE

<b>Description:</b>	This system enables qualified MDC employees to enter new articles. These articles can then be parsed out according to date and topic of interest for insertion to web pages. In addition to insertion to MDC web pages, an RDF file is automatically created which enables other web sites like Netscape's Netcenter or Userland to pull this news into their sites as a news portal. News is automatically archived into a searchable database.
<b>Agency:</b>	Missouri Department of Conservation (MDC)
<b>Primary Users:</b>	Public and news organizations
<b>Marketing Strategies:</b>	News is presented as press release to news agencies and is also parsed by topics of interest for people who focus on various sections of the MDC web site.
<b>Method of System Evaluation And Soliciting Feedback:</b>	System is evaluated by analysis of traffic patterns to the news sections and by logging of traffic through news systems.
<b>Special Features/Graphics:</b>	Automatic archiving of news. Creation of XML-based news portal enabling syndication of our content.
<b>Operating Environment:</b>	UNIX
<b>Web-server:</b>	Apache
<b>Support Scripting:</b>	Perl
<b>Server Software:</b>	Microsoft-IIS/4.0
<b>Server Hardware:</b>	SUN
<b>URL:</b>	<a href="http://www.conservation.state.mo.us/news/out/">http://www.conservation.state.mo.us/news/out/</a>
<b>Development Team:</b>	Kirk Keller
<b>Contact Name:</b>	Kirk Keller
<b>Address:</b>	Missouri Department of Conservation, 2901 W. Truman Blvd., Jefferson City, MO 65102
<b>Phone:</b>	(573) 751-4115 x3244
<b>E-mail:</b>	kellek@mail.conservation.state.mo.us
<b>Future Enhancements:</b>	System will be expanded to enable creation of additional news portals and additional sources of news entry.
<b>Other Comments:</b>	This is one of 6 systems we have deployed which enable individuals with no HTML experience to enter content into the MDC web site and which publishes the information in more than one format (e.g., to the web and to e-mail or syndication).

## COOPERATIVE TAGGING WEB SITE AND REGISTRY

<b>Description:</b>	<p>Fish tagging programs are a vital part of a fishery manager's tools for assessing fish populations. Conducted properly, tagging can yield a wealth of information including fish movements, migration patterns, and statistics such as birth rates, mortality rates, and harvest levels. This information can be vital to appropriate management leading to healthier fish stocks.</p> <p>However, improperly conducted tagging programs can lead to tremendous confusion, increased mortality of fish, and erode the support for other programs. Some states prohibit or highly regulate the tagging of fish because of such concerns. Therefore, it is imperative that volunteer angler-taggers carefully consider the costs and benefits of tagging before deciding to tag fish.</p> <p>This site is intended to provide a resource for fishery managers, anglers, scientists, and others interested in tagging. Features on this site allow you to:</p> <ul style="list-style-type: none"><li>- "Register" your tags. By registering your tags, you assist others that recapture your tagged fish to learn the appropriate place to return them. Also, you help fishery managers and other organizations to learn about your programs so that your program can coordinate with others to improve fisheries management.</li><li>- Find out about tags you recover.</li><li>- Learn about the best way to become involved in tagging.</li><li>- Find the right agency or existing tag program to contact.</li></ul>
<b>Agency:</b>	National Marine Fisheries Service Office of Intergovernmental and Recreational Fisheries, Atlantic States Marine Fisheries Commission
<b>Primary Users:</b>	Fishery managers, anglers, scientists and others interested in tagging.
<b>Marketing Strategies:</b>	Web page address is included on publications, posters and newsletters
<b>Method of System Evaluation And Soliciting Feedback:</b>	E-mail links directly to web site developers
<b>Special Features/Graphics:</b>	On-line fish tag registration, multiple field search of tagging database
<b>Operating Environment:</b>	Windows NT-4.0

**Web-server:** MS-IIS

**Support Scripting:** Active Server Pages (VBscript), JavaScript, SQL

**Server Software:** Microsoft IIS

**Server Hardware:** PII 500 MHz PC

**URL:** <http://fwie.fw.vt.edu/tagging/>

**Development Team:** Nancy Brauer and Andrew Loftus (Conservation Management Institute, Virginia Tech)

**Contact Name:** Nancy Brauer  
**Address:** 203 W. Roanoke St., Blacksburg, VA 24061-0534  
**Phone:** (540) 231-7348  
**E-mail:** nbrauer@vt.edu

**Future Enhancements:** On-line maps of tag program areas

**Other Comments:**

## BIOTA INFORMATION SYSTEM OF NEW MEXICO (BISON)

<b>Description:</b>	Basic wildlife information for all vertebrates and some invertebrates in NM and AZ. Currently over 6,000 accounts. Information regarding taxonomy, status, distribution, habitat, life history, environmental associations, food habits, management, and references.
<b>Agency:</b>	New Mexico Department of Game and Fish
<b>Primary Users:</b>	All federal and state agencies, consulting firms, universities, and the general public with a need for wildlife information.
<b>Marketing Strategies:</b>	Word of mouth, e-mail messages, and announcements in newsletters
<b>Method of System Evaluation And Soliciting Feedback:</b>	e-mail messages and comments to administrator
<b>Special Features/Graphics:</b>	Limited search available on-line. Limited to about 10 fields. Full species accounts available on-line. No graphics on-line.
<b>Operating Environment:</b>	Windows NT
<b>Web-server:</b>	CMI (Virginia Tech) and NM Natural Heritage Program
<b>Support Scripting:</b>	ColdFusion
<b>Server Software:</b>	IIS
<b>Server Hardware:</b>	P II 500 MHz PC
<b>URL:</b>	<a href="http://www.fw.vt.edu/fishex/states/nm.htm">http://www.fw.vt.edu/fishex/states/nm.htm</a> and <a href="http://nlnhp.unm.edu/bisonm/BISONM.CFM">http://nlnhp.unm.edu/bisonm/BISONM.CFM</a>
<b>Development Team:</b>	Conservation Management Institute (Virginia Tech) and New Mexico Natural Heritage Program
<b>Contact Name:</b>	Jon Klingel
<b>Address:</b>	NM Dept. of Game and Fish, Conservation Services Division, P.O. Box 25112, Santa Fe, NM 87504
<b>Phone:</b>	(505) 827-9912
<b>E-mail:</b>	<a href="mailto:jklingel@state.nm.us">jklingel@state.nm.us</a>
<b>Future Enhancements:</b>	Dynamic with search capability for all fields (approximately 250). GIS distribution coverage for all species interactive on Web with other standard coverages such as land ownership, elevation, hydrology, etc., and graphics images of species.



**Other Comments:**

Very poorly supported by the Department. Information is not highly valued by the Dept. and the Dept. has no GIS capability. On-line users have been about 20,000 per year. Numerous stand-alone copies running under DOS used by several agencies. Additional financial support from US BLM, USFS, US Army Corps of Engineers, US Bureau of Reclamation, and NM State Land Office.

## INTERNET LICENSING SYSTEM

<b>Description:</b>	A web-based system for buying hunting and fishing licenses online with a credit card. Licenses are issued immediately at time of purchase.
<b>Agency:</b>	North Dakota Game and Fish Department
<b>Primary Users:</b>	Resident and non-resident hunters and anglers
<b>Marketing Strategies:</b>	Make license purchases easier and more convenient for the public.
<b>Method of System Evaluation And Soliciting Feedback:</b>	Feedback provided through a department e-mail address.
<b>Special Features/Graphics:</b>	Cybercash system handles credit card transactions
<b>Operating Environment:</b>	Any computer with a compatible web browser
<b>Web-server:</b>	
<b>Support Scripting:</b>	
<b>Server Software:</b>	Silverstream
<b>Server Hardware:</b>	
<b>URL:</b>	<a href="http://adg.itdss1.state.nd.us/gnf/SilverStream/pgFirst.html">http://adg.itdss1.state.nd.us/gnf/SilverStream/pgFirst.html</a>
<b>Development Team:</b>	North Dakota Information Technology Department - eBusiness Development Team
<b>Contact Name:</b>	Randy Meissner
<b>Address:</b>	100 North Bismarck Expressway, Bismarck, ND 58501-5095
<b>Phone:</b>	(701) 328-6336
<b>E-mail:</b>	rmeissne@state.nd.us
<b>Future Enhancements:</b>	Additional licenses will be made available for purchase. Subscriptions to our "ND Outdoors" magazine and other department publications will also be made available.
<b>Other Comments:</b>	

## **PUBLIC INQUIRY SYSTEM**

**Description:** Program to inform hunters of their success in any of the license lotteries. Also provides for hunter education number and boat registration lookup.

**Agency:** North Dakota Game and Fish Department

**Primary Users:** Resident and non-resident hunters and anglers

**Marketing Strategies:** To provide more timely access to the results of our lotteries. To provide a service for people needing their hunter education number or boat registration to fill out an application or boat renewal.

**Method of System Evaluation  
And Soliciting Feedback:**

**Special Features/Graphics:**

**Operating Environment:**

**Web-server:**

**Support Scripting:**

**Server Software:**

**Server Hardware:**

**URL:** <http://www.state.nd.us/gnf/pubsysinq.html>

**Development Team:** North Dakota Information Technology Department - eBusiness Development Team

**Contact Name:** Randy Meissner  
**Address:** 100 North Bismarck Expressway, Bismarck, ND 58501-5095  
**Phone:** (701) 328-6336  
**E-mail:** rmeissne@state.nd.us

**Future Enhancements:** Additional licenses will be made available for purchase. Subscriptions to our "ND Outdoors" magazine and other department publications will also be made available.

**Other Comments:**

## PTAGIS - PIT TAG INFORMATION SYSTEM

<b>Description:</b>	Multi-function, multi-dimension (TelNet, FTP, HTTP) application; correlated data available via TelNet portal, "raw" data available via FTP or HTTP servers. Documentation and extensive support available via HTTP objects.
<b>Agency:</b>	Pacific States Marine Fisheries Commission-Pit Tag Operations Center
<b>Primary Users:</b>	Resource management agencies, researchers, academics, and private sector consultants
<b>Marketing Strategies:</b>	Commission logo on all printed correspondence and publications, PTOC logo on all HTTP-served documents.
<b>Method of System Evaluation And Soliciting Feedback:</b>	Individual interaction, regional user forums, e-mail links on HTTP-served documents
<b>Special Features/Graphics:</b>	Dynamic database summaries, per user input or constraints, delivered to screen or ASCII files.
<b>Operating Environment:</b>	UNIX - Sun Solaris
<b>Web-server:</b>	Netscape Enterprise Server
<b>Support Scripting:</b>	Perl, CGI, and DBI; Javascript
<b>Server Software:</b>	Netscape ES, Ingres, Perl
<b>Server Hardware:</b>	Sun SPARC 20; Sun ES 3000
<b>URL:</b>	<a href="http://www.ptagis.org">http://www.ptagis.org</a>
<b>Development Team:</b>	Carter Stein, Todd Kaehler, John Tenney, Liza Baumann, Dave Marvin
<b>Contact Name:</b>	Dave Marvin
<b>Address:</b>	45 SE 82 <sup>nd</sup> Drive, Suite 100, Gladstone, OR 97027-2522
<b>Phone:</b>	(503) 650-5400
<b>E-mail:</b>	<a href="mailto:dave_marvin@psmfc.org">dave_marvin@psmfc.org</a>
<b>Future Enhancements:</b>	Web served database via ColdFusion and/or DBI-Perl
<b>Other Comments:</b>	None

## REGIONAL MARK PROCESSING CENTER (RMPC)

<b>Description:</b>	Pacific NW salmonid tagging and marking, release, catch and recovery information in a centralized archival database. Three primary components are: (1) coded-wire tag, (2) International Archive of Thermally Marked Images, (3) catch/effort
<b>Agency:</b>	Pacific States Marine Fisheries Commission
<b>Primary Users:</b>	Fishery biologists, managers, researchers
<b>Marketing Strategies:</b>	Known within agencies. Also registered with some search engines.
<b>Method of System Evaluation And Soliciting Feedback:</b>	On-line comments and help; yearly meetings with biologists and data managers
<b>Special Features/Graphics:</b>	Mod-Perl/CGI based query systems for easy retrieval of data; data process tracking system; user forums
<b>Operating Environment:</b>	Sun Solaris/Ingres
<b>Web-server:</b>	Apache - Mod-Perl
<b>Support Scripting:</b>	Perl CGI / Java Script / Perl DBI
<b>Server Software:</b>	Solaris 2.6
<b>Server Hardware:</b>	Sun SPARC 20
<b>URL:</b>	<a href="http://www.rmis.org">http://www.rmis.org</a>
<b>Development Team:</b>	Steve Roti (contractor), Jim Longwill
<b>Contact Name:</b>	Ken Johnson
<b>Address:</b>	45 SE 82 <sup>nd</sup> Drive, Suite 100, Gladstone, OR 97027-2522
<b>Phone:</b>	(503) 650-5400
<b>E-mail:</b>	<a href="mailto:ken_johnson@psmfc.org">ken_johnson@psmfc.org</a>
<b>Future Enhancements:</b>	Add system(s) for map-based query, new coding systems, web based data upload and validation system, new generation of reports.
<b>Other Comments:</b>	None

## RECFIN

<b>Description:</b>	Marine recreational fisheries surveys in marine waters of California, Oregon and Washington. Coordination, database and analysis
<b>Agency:</b>	Pacific States Marine Fisheries Commission
<b>Primary Users:</b>	Managers and fishery scientists
<b>Marketing Strategies:</b>	Brochures, videos, business cards, and occasional presentations/trade show display. On-line survey tool.
<b>Method of System Evaluation And Soliciting Feedback:</b>	Comment form at bottom of every query result, referenced by unique query number and log entry.
<b>Special Features/Graphics:</b>	Four way tabulation of statistics, simple line graphics and on-line survey management. Forecasting, hypothesis testing, four way line graphics.
<b>Operating Environment:</b>	UNIX - Sun
<b>Web-server:</b>	UNIX - Sun - Netscape Commerce
<b>Support Scripting: Server Software:</b>	Perl, Javascript SAS v.8
<b>Server Hardware:</b>	Sun Ultra 5, SPARC 20, SPARC 5
<b>URL:</b>	<a href="http://www.recfin.org">http://www.recfin.org</a>
<b>Development Team:</b>	Wade VanBuskirk, Russell Porter
<b>Contact Name:</b>	Wade H. BanBuskirk
<b>Address:</b>	45 SE 82 <sup>nd</sup> Drive, Suite 100, Gladstone, OR 97027-2522
<b>Phone:</b>	(503) 650-5400
<b>E-mail:</b>	wade@recfin.org
<b>Future Enhancements:</b>	Economic analysis, annual trend plotting, length regulation hypothesis testing, GIS environment
<b>Other Comments:</b>	Core survey is the NMRS MRFSS

## **STREAMNET: THE NW AQUATIC INFORMATION SYSTEM**

<b>Description:</b>	Four-state cooperative project to acquire and make universally available in standardized and geo-referenced formats specific types of fisheries data from the Columbia River Basin.
<b>Agency:</b>	Pacific States Marine Fisheries Commission
<b>Primary Users:</b>	State, tribal, and federal management agencies; planners; researchers; watershed councils; general public
<b>Marketing Strategies:</b>	Brochure, presentations, links to system, participation in regional management/planning forums
<b>Method of System Evaluation And Soliciting Feedback:</b>	Feedback button on each page of web site; implementing on-line survey of users.
<b>Special Features/Graphics:</b>	On-line queried database; customized data development; dynamic graphs, maps, and charts/figures.
<b>Operating Environment:</b>	NT; SQL Server; Map Objects
<b>Web-server:</b>	Netscape Enterprise Server
<b>Support Scripting:</b>	Delphi; CGI; HTML
<b>Server Software:</b>	NT 4.0
<b>Server Hardware:</b>	3 Gateway/ALR Servers
<b>URL:</b>	<a href="http://www.streamnet.org">http://www.streamnet.org</a>
<b>Development Team:</b>	Bill Kinney, Doug Reece (contractor), Karen McGill, Mike Banach, David Graves, Bruce Schmidt, StreamNet Steering Committee
<b>Contact Name:</b>	Bruce Schmidt
<b>Address:</b>	45 SE 82 <sup>nd</sup> Drive, Suite 100, Gladstone, OR 97027-2522
<b>Phone:</b>	(503) 650-5400
<b>E-mail:</b>	<a href="mailto:bruce_schmidt@psmfc.org">bruce_schmidt@psmfc.org</a>
<b>Future Enhancements:</b>	Improved instructions for use of web site, "modularization" of the query system to increase flexibility, enhanced mapping capability, exploring use of scripting languages and use of Arc Internet MapServer.
<b>Other Comments:</b>	None

## STATEWIDE WILDLIFE SPECIES USE AREAS

<b>Description:</b>	Utah Division of Wildlife Resources, Utah Natural Heritage Locality data; Utah Division of Wildlife Resources, Aquatic section locality data; Utah Division of Wildlife Resources, bird habitat coverages (14); Utah Division of Wildlife Resources, mammal habitat coverages (19); Utah Division of Wildlife Resources, abiotic coverages (5)
<b>Agency:</b>	Utah Division of Wildlife Resources / Utah Automated Geographic Reference Center
<b>Primary Users:</b>	Students, consultants
<b>Marketing Strategies:</b>	None
<b>Method of System Evaluation And Soliciting Feedback:</b>	No formal system
<b>Special Features/Graphics:</b>	None
<b>Operating Environment:</b>	Sun Solaris 2.6
<b>Web-server:</b>	Netscape Enterprise 3.6
<b>Support Scripting:</b>	some Java scripts
<b>Server Software:</b>	Microsoft-IIS/4.0
<b>Server Hardware:</b>	Sun box
<b>URL:</b>	<a href="http://agrc.its.state.ut.us">http://agrc.its.state.ut.us</a>
<b>Development Team:</b>	Matt Peters, AGRC; Mike Canning, UDWR; Dave Mann, UDWR
<b>Contact Name:</b>	Dave Mann
<b>Address:</b>	Utah Division of Wildlife Resources, 1594 West North Temple, Suite 2110, P.O. Box 146301, Salt Lake City, UT 84114-6301
<b>Phone:</b>	(801) 538-4859
<b>E-mail:</b>	<a href="mailto:nrdwr.dmann@state.ut.us">nrdwr.dmann@state.ut.us</a>
<b>Future Enhancements:</b>	Moving towards interactive and GIS tools of Arc IMS 3.0
<b>Other Comments:</b>	Provide as ESRI Shapefiles with metadata



## VIRGINIA FISH AND WILDLIFE INFORMATION SERVICE (VAFWIS)

<b>Description:</b>	This is an interactive database system that allows users to dynamically query any location in Virginia to generate a list of wildlife resources known or likely to occur within a user-defined radius of a point, or within a quad, county, or hydrologic unit. Users can also conduct cross-database queries for all data regarding any species found in the state. Species-specific data that are available to all users include life histories, habitat associations, statewide distribution maps, and a host of other information. Registered subscribers can view maps of species locations on their selection of base map, ranging from 1:100,000-scale to 1:24,000-scale DRG's and satellite imagery. Subscribers also have access to the database records confirming species occurrence. There are different access levels (public, subscriber, agency user, and systems operators) that provide security for sensitive information.
<b>Agency:</b>	Virginia Department of Game and Inland Fisheries
<b>Primary Users:</b>	VDGIF staff; federal, state, regional, and local government agencies; private consulting firms and private industry; general public; educators and students.
<b>Marketing Strategies:</b>	Paragraph about VAFWIS included in all responses to consultants and others asking for wildlife information. Articles have been published in <i>Virginia Wildlife</i> magazine and other publications. A brochure has been developed and is distributed and made available at agency exhibits and events.
<b>Method of System Evaluation And Soliciting Feedback:</b>	Evaluation forms are sent to registered subscribers on an annual basis. Coordinator's e-mail and phone number are posted on the web site.
<b>Special Features/Graphics:</b>	Dynamically-generated reports and maps; cross-database querying; availability of a variety of base maps including 1:24,000-scale digital raster graph, satellite, and land cover images.
<b>Operating Environment:</b>	Windows NT 4.0
<b>Web-server:</b>	MS-IIS
<b>Support Scripting:</b>	HML, Perl
<b>Server Software:</b>	OpenInsight (Revelation Technologies, Inc.)
<b>Server Hardware:</b>	Dual Pentium II 40 PC (generic)

**URL:** [http://151.199.74.222/scripts/oicgi.exe/inet\\_xlate?](http://151.199.74.222/scripts/oicgi.exe/inet_xlate?)

**Development Team:** A. Blair Jones, Kathy Quindlen, Rebecca Wajda

**Contact Name:** Kathy Quindlen  
**Address:** VDGIF, 4010 W. Broad St., Richmond, VA 23230  
**Phone:** (804) 367-9717  
**E-mail:** [kquindlen@dgif.state.va.us](mailto:kquindlen@dgif.state.va.us)

**Future Enhancements:** Images of species will be added. We are investigating electronic submission of reports generated by VAFWIS to the Environmental Services biologist for comment on potential impacts of projects to the species identified. Additional databases to be added include butterflies, hawk migration, and museum records.

**Other Comments:** During 2000-2001, the Department will be developing a re-engineering plan to convert its current suite of applications from OpenInsight to another software package. The actual conversion is expected to take several years, and should begin in 2001-2002, contingent upon funding support.

## AQUATIC METADATA SEARCH

- Description:** Allows one to search a database of information on over 100 databases that deal with aquatic resources in Wisconsin. Thus, it contains metadata on these databases. It doesn't contain the data itself.
- Agency:** Wisconsin Department of Natural Resources
- Primary Users:** Aquatic Resource Personnel in DNR and other state and federal agencies who deal with Wisconsin Aquatic Resources.
- Marketing Strategies:** Web page address listed in several locations on DNR's Internet and Intranet.

### Method of System Evaluation

**And Soliciting Feedback:** "For more information, contact" hot links directly to e-mail address of Webmaster. Allows one to fill out and submit a questionnaire on their database or update an existing record via e-mail.

- Special Features/Graphics:** Interactive query of live Oracle database. It contains detailed metadata about each Internet page.
- Operating Environment:** Digital UNIX
- Web-server:** Oracle Application Service
- Support Scripting:** N/A
- Server Software:** PL/SQL
- Server Hardware:** Alpha Server

### URL:

[http://www.dnr.state.wi.us/org/water/division/swis/master\\_index/pk\\_swis\\_org\\_metadata\(1\)\\_home\\_page.html](http://www.dnr.state.wi.us/org/water/division/swis/master_index/pk_swis_org_metadata(1)_home_page.html)

**Development Team:** Wisconsin DNR Bureaus of Integrated Science Services and of Enterprise Information Technology and Applications

**Contact Name:** Don Fago  
**Address:** WDNR Research Center, 1350 Femrite Dr., Monona, WI 53716  
**Phone:** (608) 221-6366  
**E-mail:** fagod@dnr.state.wi.us

**Future Enhancements:** Have information on more databases. It will possibly link to some of the databases themselves.

**Other Comments:**

## **INTRANET APPLICATIONS**

<b><u>AGENCY</u></b>	<b><u>APPLICATION NAME</u></b>	<b><u>PAGE</u></b>
Arkansas Game and Fish Commission	Citation	36
Arkansas Game and Fish Commission	Federal Aid	37
Bureau of Land Management	Fish, Wildlife, Botany Information Site	38
Colorado Division of Wildlife	Wildlife Habitat Affinities - Information Retrieval System	39
National Marine Fisheries Service	Permits Database	40
New Jersey Division of Fish, Game and Wildlife	New Jersey Hunter/Angler Revenue Conservation System (HARC)	41
Pacific States Marine Fisheries Commission	PSMFC Intranet	42

## CITATION

**Description:** This application would allow wildlife officers to key in issued tickets/violations.

**Agency:** Arkansas Game and Fish Commission

**Users:** Enforcement Division

**Method of System Evaluation  
And Soliciting Feedback:**

**Special Features/Graphics:** User can query what they have entered and generate reports. User can only query what they have entered. Has special supervisor privileges incorporated to allow viewing of his/her whole district.

**Operating Environment:** WINNT 4.0 / Windows 9X

**Web-server:** IIS 4.0 on WINNT 4.0

**Support Scripting:** Yes

**Server Software:** IIS 4.0 / Exchange Server

**Server Hardware:** PIII 500 MHz 32 Gb, 512 MB RAM

**URL:**

**Development Team:** In-house

**Contact Name:** Brandon Tolleson  
**Address:** 2 Natural Resources Drive, Little Rock, AR 72205  
**Phone:** (501) 223-6451  
**E-mail:** bmtolleson@agfc.state.ar.us

**Future Enhancements:**

**Other Comments:** Page is only in Beta form currently.

## FEDERAL AID

**Description:** This application would allow employees to enter hours worked for specific projects on a daily basis. This information would then be reviewed at a central point at the central office. Once reviewed, the information would be inserted into the master file.

**Agency:** Arkansas Game and Fish Commission

**Users:** Agency-wide

**Method of System Evaluation  
And Soliciting Feedback:**

**Special Features/Graphics:** Reviewed at the supervisory level as well as the central office.

**Operating Environment:** WINNT 4.0 / Windows 9X / IE 4.0

**Web-server:** IIS 4.0

**Support Scripting:**

**Server Software:** IIS 4.0 / Exchange

**Server Hardware:** PIII 500 MHz 32 Gb, 512 MB RAM

**URL:**

**Development Team:** In-house

**Contact Name:** Brandon Tolleson  
**Address:** 2 Natural Resources Drive, Little Rock, AR 72205  
**Phone:** (501) 223-6451  
**E-mail:** bmtolleson@agfc.state.ar.us

**Future Enhancements:**

**Other Comments:** Still in development

## FISH, WILDLIFE, BOTANY INFORMATION SITE

**Description:** Provides field offices with research, library, and efforts in other offices on any aspect of fish, wildlife, and botany management efforts.

**Agency:** Bureau of Land Management

**Users:** All BLM personnel

**Method of System Evaluation  
And Soliciting Feedback:** E-mail and telephone

**Special Features/Graphics:** Photo library

**Operating Environment:** Sun server (can access through any operating system using MS IE or Netscape)

**Web-server:** BLM server

**Support Scripting:**

**Server Software:**

**Server Hardware:**

**URL:**

**Development Team:** Jerry Farringer

**Contact Name:** Jerry Farringer  
**Address:** Denver Federal Center Building 50, P.O. Box 25047,  
Denver, CO 80225  
**Phone:** (303) 236-0142  
**E-mail:** Jerry\_Farringer@blm.gov

**Future Enhancements:** Provide database with all current and past projects along with project evaluation in meeting planning objectives. Hope to make available to general public.

**Other Comments:**



## **WILDLIFE HABITAT AFFINITIES - INFORMATION RETRIEVAL SYSTEM**

<b>Description:</b>	Searchable online information of habitat affinities for Colorado wildlife species; Web-forms interface - auto-generated from scan of Postgres SQL database
<b>Agency:</b>	Colorado Division of Wildlife
<b>Users:</b>	Headquarters staffs currently have access
<b>Method of System Evaluation And Soliciting Feedback:</b>	Application provides direct e-mail link to application manager
<b>Special Features/Graphics:</b>	Use of public domain SQL database server and Perl-DBI interface to access/query dBase exported tables
<b>Operating Environment:</b>	RedHat Linux 6.0 (open source)
<b>Web-server:</b>	Apache
<b>Support Scripting:</b>	PostgreSQL; Web-database Interface (open source)
<b>Server Software:</b>	PostgreSQL - SQL Client/Server Database (open source)
<b>Server Hardware:</b>	Gateway 2000 - 233 MHz
<b>URL:</b>	<a href="http://habitatweb.state.co.us">http://habitatweb.state.co.us</a> (Intra-net access only)
<b>Development Team:</b>	Colorado Division of Wildlife - Habitat Section
<b>Contact Name:</b>	Don Schrupp
<b>Address:</b>	6060 N. Broadway, Denver, CO 80216
<b>Phone:</b>	(303) 291-7277
<b>E-mail:</b>	<a href="mailto:hqwris@lamar.colostate.edu">hqwris@lamar.colostate.edu</a>
<b>Future Enhancements:</b>	Links to county occurrence and abundance information to allow searches on combinations of location and habitat
<b>Other Comments:</b>	All open source components

## PERMITS DATABASE

**Description:** Tracks permits issued under Section 10 of the Endangered Species Act, including: processing steps, authorization, reporting, contact people, Federal Register Notices.

**Agency:** National Marine Fisheries Service

**Users:** National Marine Fisheries Service staff working on permits

**Method of System Evaluation  
And Soliciting Feedback:** Direct contact with Developer

**Special Features/Graphics:**

**Operating Environment:** Access 97

**Web-server:** CITRIX

**Support Scripting:**

**Server Software:**

**Server Hardware:**

**URL:**

**Development Team:**

**Contact Name:** Karen Salvini  
**Address:** 1315 East-West Highway, Silver Spring, MD 20910  
**Phone:** (301) 713-1401 x130  
**E-mail:** Karen.Salvini@noaa.gov

**Future Enhancements:** Merge Document Generation, GIS

**Other Comments:**

## **NEW JERSEY HUNTER/ANGLER REVENUE CONSERVATION SYSTEM (HARC)**

**Description:** Modernization efforts at the New Jersey Division of Fish, Game, and Wildlife have prompted a decision to upgrade their Hunter/Angler Revenue Conservation System (HARC). This critical system is used to track and account for hunter/angler license distributions in New Jersey. We converted HARC to an Access 97 (Microsoft™)-based system that incorporates current HARC features and provides new capabilities, which increase flexibility and efficiency of the operation.

**Agency:** New Jersey Division of Fish, Game and Wildlife

**Users:** Licensing Section

**Method of System Evaluation  
And Soliciting Feedback:** This is an internal system.

**Special Features/Graphics:**

**Operating Environment:** MS Access 97

**Web-server:**

**Support Scripting:** VBA

**Server Software:** Microsoft-IIS/4.0

**Server Hardware:**

**URL:**

**Development Team:** Conservation Management Institute (Virginia Tech)

**Contact Name:** Sheryl Soborowski  
**Address:** 203 W. Roanoke St., Blacksburg, VA 24061  
**Phone:** (540) 231-7348  
**E-mail:** ssoboro@vt.edu

**Future Enhancements:**

**Other Comments:** With appropriate modifications, this application could be made available on the Internet.

## PSFMC INTRANET

<b>Description:</b>	Information on PSMFC policies, procedures, forms, etc., for staff
<b>Agency:</b>	Pacific States Marine Fisheries Commission
<b>Users:</b>	PSMFC staff
<b>Method of System Evaluation And Soliciting Feedback:</b>	e-mail, personal communication
<b>Special Features/Graphics:</b>	G.U.I., on-line technical forum, searchable address book, on-line "help desk."
<b>Operating Environment:</b>	Sun Solaris 2.6
<b>Web-server:</b>	Netscape Enterprise Server
<b>Support Scripting:</b>	CGI (Perl), Perl DBI, Javascript
<b>Server Software:</b>	MySQL
<b>Server Hardware:</b>	Sun SPARC 5
<b>URL:</b>	Internal use only
<b>Development Team:</b>	Karen McGill, Todd Kaehler, Willy Kelly
<b>Contact Name:</b>	Karen McGill
<b>Address:</b>	45 SE 82 <sup>nd</sup> Drive, Suite 100, Gladstone, OR 97027-2522
<b>Phone:</b>	(503) 650-5400
<b>E-mail:</b>	karen_mcgill@psmfc.org
<b>Future Enhancements:</b>	On-line staff calendar, accessible personnel information
<b>Other Comments:</b>	<b>None</b>

**OFWIM 2000  
Business Meeting Minutes**

**August 6, 2000**



## **OFWIM Business Meeting**

August 6, 2000  
Silver Creek, CO

### **Presidents Message**

I would like to thank you for the opportunity to serve as The Organization of Fish and Wildlife Information Managers President this year. I cannot take credit for progress this past year as the position really is a team effort. The Executive Committee has provided the necessary thread to keep OFWIM aloft this year as well as assisted me with ideas and suggestions for strengthening this group.

OFWIM's goals this year included several new projects. One of those included a new electronic newsletter format, with hard copies mailed upon request. We successfully reached this goal with the help of our new Newsletter Editor, Karen Reay. The newsletter is very professional and informative and now reaches a much larger audience with the use of the internet. Thank you Karen!

Another objective this past year was to establish new Regional Directors to represent the Organization in each of the six regions. This representative will contribute with membership outreach, assist with OFWIM sponsored training efforts and help out with various other co-sponsored initiatives. Don Schrupp successfully led this effort with five of the six Regions currently represented. I would like to introduce and thank the Regional Directors now which include: Northwest/West Coast: Stan Allan in OR; Mideast/Great Lakes: Don Fago in WI; New England/Mid Atlantic: Ann Rasberry in MD; Southwest: Don Schrupp in CO; and the Southeast: Susan Marden in TN. We are still in need of a Midwest contact, which covers the states of KS, NE, ND, SD, OK, and TX.

The 4<sup>th</sup> Microcomputer Applications in Fish and Wildlife Conference in 1999 was quite a success and I look forward to assisting the planning committee in preparing another successful meeting. Approximately 30 states were represented at the last Conference, so I suggest that for the 2001 Summit, we focus on getting a representative from each of the states.

Thank you and good luck to Don Schrupp in leading OFWIM into 2001!

**Lila Borge Wills**

## **Organization of Fish and Wildlife Information Managers Annual Business Meeting August 6, 2000 Meeting Minutes**

- I. Call to Order The meeting was called to order at 8:10 a.m., at The Inn at Silver Creek in Silver Creek, Colorado. The president was not in the chair. The president - elect took the chair. The secretary was present.
- II. Determination of Quorum It was determined that there was a quorum of Organization members.
- III. President's Message Due to a scheduling conflict, the President was not present at the meeting. President-elect Mr. Don Schrupp read the President's message (Attachment A) submitted by Ms. Lila B. Wills.
- IV. President-Elect's Message President-Elect
- V. Treasurer's Report The treasurer's report (Attachment B) was submitted by Ms. Becky Wajda for Mr. Jeff Trollinger, who was not present. For the fiscal year August 1, 1999 through July 31, 2000, OFWIM's revenues and expenditures were primarily related to the 4<sup>th</sup> Microcomputer Applications in Fish and Wildlife Conference held in October 1999 in Stateline, Nevada. An additional \$600 to \$700 will be received for overhead paid to OFWIM for continuing education programs. This will be added to future treasurer's reports. The treasurer's report was approved as presented.
- VI. The Secretary's Report The minutes of the Organization's annual meeting held in October, 1999, in Stateline, Nevada, were approved as written. The secretary's report was given by Ms. Kathy Quindlen. Ms. Quindlen stated that we received 13 individual memberships and 2 agency memberships prior to the business meeting. There were 25 total registrants for this annual meeting. These minutes will be published in the OFWIM newsletter and posted on the OFWIM web site.
- VII. Committee Reports A. Outreach: Ms. Becky Wajda announced that OFWIM has been recognized by the National Association of Fish and Wildlife Agencies (NAFWA) as an affiliated member. B. Technical Trends: Nothing to report. C. Membership: Ms. Becky Wajda noted that a slate of nominees for the executive committee and regional contact positions has been prepared by contacting individuals to determine their willingness to run for office or accept a position. D. Communications: Ms. Kathy Quindlen stated that the OFWIM Newsletter was published twice this year in a very attractive format, and sent to a much larger recipient list than in the past. This was due to the use of email and list-serv, in addition to regular mail, to distribute the newsletter. E. Newsletter: Ms. Karen Reay noted that submissions are needed for the next issue of the newsletter. The next issue will include these meeting minutes. F. Annual Meeting: Mr. Don Schrupp thanked the planning committee for their work on this meeting. He also thanked Ms. Becky Wajda for her work to develop, post, and compile the responses to the Online Survey Form used to develop the workshop materials. Ms. Becky Wajda asked those in attendance if they felt that the survey form was a useful tool to identify what others are doing. There was agreement among the group that this was a useful tool. G. Data Standards: Mr. Don Schrupp noted that while each committee, including data standards, has a vice-chair (a member of the executive committee), he would encourage other members to volunteer to chair a committee. Mr. Jeff Waldon announced that he and Ms. Anne Frondorf are

members of the Federal Geographic Data Committee (FGDC) taxonomy database standards committee. Mr. Waldon offered to forward comments to the committee from OFWIM. Mr. Don Fago asked if any states other than Wisconsin were developing statewide standards for procedures for data collection and reporting.

Mr. Don Schrupp stated that Colorado is doing this. Mr. David McKenna noted that Canada is working on this, and that he will be attending a data standards conference in Toronto that addresses country-wide data standards issues. Ms. Becky Wajda stated that Virginia is developing data standards as database applications are developed. Mr. Stan Allen noted that the StreamNet system deals with data dissemination efforts. The group recommended that the Data Standards Committee do some research on and summarize the data standards work being conducted by the state fish and wildlife agencies. G. Continuing Education: Mr. Jeff Waldon discussed three cooperators: U.S. Fish and Wildlife Service, National Conservation Training Center (NCTC); the American Fisheries Society (AFS); and the National Spatial Data Infrastructure (NSDI). NCTC helped fund the meeting last year in Stateline, Nevada. They also helped to fund the air videography course held last February in Lafayette, LA; the "New Technologies for Fish and Wildlife Managers" course (renamed from what it was formerly called) held last week in Shepherdstown, WV; and the "Introduction to GIS" course currently being developed and which will be offered initially in Virginia. NCTC has entered into a cooperative agreement with OFWIM and OFWIM has contracted with CMI to conduct courses and charges a percentage overhead. OFWIM members can also be paid a stipend plus travel to teach courses for OFWIM.

Mr. Schrupp mentioned that the Continuing Education Committee should forward information regarding classes to the regional contacts. Mr. Waldon noted that NCTC currently is not able to initiate any new cooperative agreements due to an audit of USFWS, but that Mr. Glenn Gravatt of NCTC has communicated that NCTC is looking to organizations like OFWIM to conduct training classes that NCTC does not have the staff or the facilities to do themselves. Mr. Waldon stated that "New Technologies in Fish and Wildlife" is not currently being offered anywhere, but that he will work with the AFS to promote this class. The NSDI has given OFWIM a grant again recently to conduct metadata training. CMI will conduct the training and OFWIM will earn overhead.

VIII. Old Business A. 1999 Annual Meeting Summary (Attachment C): In this document, Ms. Wills summarized the comments received from attendees to the 4<sup>th</sup> Microcomputer Applications in Fish and Wildlife Conference in Stateline, Nevada. There was a 10-year lapse between the 3<sup>rd</sup> and 4<sup>th</sup> conferences of this type. Ms. Wajda noted that there were approximately 100 attendees and a half-day course on metadata, given by NBII, was included. B. Regional Contacts: Mr. Schrupp noted that having the names of the regional contacts posted on the OFWIM web site will help OFWIM to make new contacts and increase membership. Ms. Karen Reay suggested that the New England region contains many states and perhaps should be subdivided or split among additional regions. Ms. Wajda responded that our regions are the same as those delineated by IAFWA so that we could better coordinate with the national organizations. Ms. Kathy Quindlen suggested that OFWIM add a new region to include Canada, and possibly other



countries, to better reflect the membership. Mr. Schrupp recommended that the membership committee look into expanding our regions to include Canada and Central America. C. Other items: Ms. Wajda handed out the OFWIM bylaws for those new to the organization.

IX. Election of New Officers Ms. Becky Wajda asked for nominations for the 4 positions up for election: Treasurer, Secretary, President-Elect, and Member-At-Large. Mr. Jeff Trollinger was nominated for Treasurer (this would be his second consecutive term in this position), Ms. Karen Reay was nominated for Secretary, Mr. Stan Allen was nominated for President-Elect, and Ms. Wajda was nominated for Member-at-Large. No other nominations were received. Mr. Jeff Waldon moved to elect all 4 candidates by acclamation. Mr. Don Fago seconded the motion. The motion was carried. X. New Business A. New Officers: Mr. Don Schrupp assumed the position of president" as outlined in the Organization bylaws. Mr. Trollinger was installed as Treasurer, Ms. Reay was installed as Secretary, Mr. Allen was installed as President-Elect, and Ms. Wajda was installed as Member-At-Large.

B. Other Offices: Ms. Kathy Quindlen was installed as newsletter editor. Mr. Jeff Waldon suggested that OFWIM consider developing two new positions: Lst-Serv Editor and Web Page Manager. The Ex-Com agreed to consider this. C. OFWIM Award: Mr. Jeff Waldon offered to head up an awards committee. The first award would be for Fish and Wildlife web sites. Committee could come up with the rules for achieving the award. It is difficult to get recognition for all the hard work on fish and wildlife applications and web sites, and this is one way to provide recognition. The award would include a framed certificate to a winner once each year. Mr. Kirk Keller suggested that OFWIM review the Association of Conservation Information (ACI) award category for web sites. Mr. Kirk Keller suggested that the committee include someone from the web industry to lend more credibility to the award. Mr. Waldon made a motion that OFWIM establish an award for Fish and Wildlife web sites and establish an ad hoc committee to set up the award. Mr. Don Fago seconded the motion. The motion was carried. D. OFWIM.org domain name: Ms. Wajda suggested that OFWIM purchase a domain name such as OFWIM.org to replace the very long URL to get to the OFWIM web site.

It would cost approximately \$30/year. Mr. Kirk Keller noted that if the domain name is registered through a company like Network Solutions for a specific IP address it would cost \$35.00/year. Ms. Wajda made a motion that OFWIM purchase a domain name such as OFWIM.org or something comparable. Mr. Don Fago seconded the motion. The motion was carried. E. OFWIM Committees: Mr. Don Schrupp led a discussion of their function and asked if anyone present was interested in chairing or participating in any of the committees. Mr. Don Fago volunteered to chair the Data Standards Committee. Mr. Jeff Waldon will chair the Continuing Education Committee. The regional contacts will constitute the Outreach Committee and the vice-chair is the President. Mr. Kirk Keller offered to participate in the Technical Trends Committee. The past president is the vice-chair of this committee. F. Financial Audits: Mr. Jeff Waldon suggested that the Treasurer may need someone to conduct an annual audit of the treasury. It was suggested that the past president could serve this function. Mr. Kirk Keller recommended paying a CPA to do this, and noted that the fee could be as low as \$100. This would provide extra protection. Mr. Schrupp suggested that the past president look into hiring a CPA and report to the Ex-Com, which would make the decision

about whether or not to hire one. G. Other Items: Mr. Kirk Keller noted that one of the reasons he attended this meeting was the focus on the web applications. Is there a plan to continue pursuing web-related topics in future meetings? Mr. Don Schrupp suggested that we could encourage more web-design topics and solicit input from experts by offering stipends to web experts to attend future meetings. H. 2001 Annual Meeting: Mr. Don Schrupp announced that the planning meeting for the 2001 and 2002 meetings would take place following the business meeting. He gave an overview of the three proposed options for the 2001 meeting: an aquatic summit, a general microcomputer applications meeting like last year's meeting at Stateline, Nevada, and a GIS-related meeting. encourage more web-design topics and solicit input from experts by offering stipends to web experts to attend future meetings. H. 2001 Annual Meeting: Mr. Don Schrupp announced that the planning meeting for the 2001 and 2002 meetings would take place following the business meeting. He gave an overview of the three proposed options for the 2001 meeting: an aquatic summit, a general microcomputer applications meeting like last year's meeting at Stateline, Nevada, and a GIS-related meeting. X. Adjourn Mr. Stan Allen made a motion to adjourn the meeting. Mr. Don Fago seconded the motion. The motion was adopted. Mr. Schrupp adjourned the meeting at 12:30 p.m.

Kathleen J. Quindlen Secretary

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Donald L. Schrupp President

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