



U.S. Fish & Wildlife Service

# Graphic Standards





# Graphic Standards

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# General Standards

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*The graphic program for U.S. Fish & Wildlife Service publications relies on simplicity and directness, which demands that every detail be addressed. Meaningful design and beautiful, orderly typography requires discipline. The guidelines that follow may seem minor, but they are in fact a major part of that discipline.*

Univers 67  
ABCDEFGHIJKLM  
abcdefghijklmno  
1234567890

Century Expanded  
ABCDEFGHIJKLM  
abcdefghijklmno  
1234567890

Century Expanded  
ABCDEFGHIJKLM  
abcdefghijklmno  
1234567890

# Typefaces

Two families of fonts are used:

Univers Condensed  
Century Expanded

For each font, there are specific sizes and uses, as noted with the specific application. No other sizes, styles, or fonts should be introduced.

## *Univers Bold 67*

Titles, USFWS identification, text on back cover, headings within text, and captions when surprinted or reversed out of images.

*Note:* Be particularly careful of the tracking and kerning on this font at this size. Letters should be tightly spaced without touching each other, as in the examples throughout this document.

## *Century Expanded* Text

*Century Expanded Italic*  
Secondary title on cover, introduction, captions and subheads within text

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**Univers 67**  
**ABCDEFGHIJKLMNOPQRSTUVWXYZ**  
**abcdefghijklmnopqrstuvwxyz**  
**1234567890**

---

**Century Expanded**  
**ABCDEFGHIJKLMNOPQRSTUVWXYZ**  
**abcdefghijklmnopqrstuvwxyz**  
**1234567890**

---

*Century Expanded Italic*  
*ABCDEFGHIJKLMNOPQRSTUVWXYZ*  
*abcdefghijklmnopqrstuvwxyz*  
*1234567890*

**The Univers 67 font is from Adobe. In some Windows programs, you must select Univers 47 with bold style to access the Univers 67 font. Be careful not to use the plain style Univers 47 or Univers 57 in publications.**

The Century Expanded family is from Bitstream. This family includes bold and bold italic styles that are generally not used in USFWS publications.

# Image and Typographic Standards

The graphic program for U.S. Fish & Wildlife Service publications relies on simplicity and directness, which demands that every detail be addressed. Meaningful design and beautiful, orderly typography requires discipline. The guidelines below may seem minor, but they are in fact a major part of that discipline.

## *Form and Content*

The design of a brochure must integrate form and content. Form—determined by the grid, the typographic standards, etc.—provides the structure for conveying the content. It is the designer's job to use that structure intelligently and sensitively. As the designer follows the form, he or she must also think about the content. What is the brochure's message? Without thought, the brochure is just page after page of words and images; however attractively presented, they leave the reader with no overall coherent concept.

The designer has many means to give life to the concept: choice and juxtaposition of images; color of type, background and images; scale of type and images; and the pacing of these elements from page to page throughout the brochure.

The designer should not think of the brochure as a two dimensional object. It has a third and powerful dimension—time. The turning of the pages, the progression of images and text before the viewer's eyes, is cinematic, like viewing a film. The pacing of the material is, therefore, vitally important to the design of the brochure and how well its form conveys its content. It provides the opportunity to orchestrate change and convey a message in subtle yet meaningful ways.

From the introduction through to the conclusion, as the pages turn, the designer's job is to use the elements of type, image, color and scale to build a coherent sequence which conveys a clear message.

There are two basic sizes for documents: 4 x 8.5 inches and 8.5 x 11 inches.

## *Typographic Standards*

Words at the ends of lines should not be hyphenated. Hyphens at ends of lines should be eliminated.

Paragraphs should always be shown by a line space, never by indenting.

Text should always be flush left, ragged right, without indentations or justification.

Text and headlines should be upper and lower case. All caps should be used only for abbreviated bureau names and other acronyms. Use bold type sparingly.

Large scale titles and introductory text should be broken by thought, phrasing and aesthetics.

Do not use drop or initial caps to start paragraphs.

Bullets, asterisks and other symbols should be at designer's discretion. A line space or varying type weights and italics should be used for emphasis and clarity. If bullets cannot be avoided, use the following format. A small, solid box two points smaller than the text size should be used as the bullet character:

- Sample for bullets. This character is from the Zapf Dingbats font. It is two points smaller than the text size.

Telephone numbers should be typed without parentheses or dashes, in the following format:  
603/225 3341

Time of day should be typed in lowercase without periods, in the following format: 10:00 am

The word *and* should always be spelled out. An ampersand should not be used within text, although its use may be appropriate within some headings. An ampersand is always used for the *U.S. Fish & Wildlife Service* name.

Numbers should be typed without preface. #1 or No. 1 should not be used.

When abbreviated, state names should be typed without periods, in the following format: NH, NY, etc.

A single, rather than double space, should be used between sentences. Text should be edited to eliminate all widows at the ends of paragraphs. When quotations are used as headings in the larger type sizes, the beginning punctuation should hang to the left of the margin, so that the first letter of the quotation begins at the text box margin. This will maintain the flush left appearance.

Smart quotes, not inch and foot marks, should be used within text:  
“ ”

# Photo Captions and Credits

Photo captions are Century Expanded Italic, 10 point size on 11 point leading. Photo credits are Century Expanded, 7 point size on 8 point leading. If the caption or credit reverses out of a photo use the font Univers 67.

Photo captions should end with a period. Labels do not have a period.

If captions are placed in the same column as headings, be careful to place the caption so the reader does not confuse it with a heading.

Photo credits should be placed vertically on the right or left side of the photo. They should be placed away from the main text so they do not interfere with readability. If the credit is too long to run vertically it may be placed horizontally.

Use only the photographer's name for the credit. Do not include the phrase "Photo by." A copyright symbol or "USFWS" credit is added as necessary. Service photos are credited simply as "USFWS."

## Credit Samples:

© William Vinje  
 ©1999 William Vinje  
 William Vinje/USFWS  
 USFWS

*Captions:*  
 Century  
 Expanded Italic  
 10/11

*Photo credits:*  
 Century  
 Expanded  
 7/8



William Vinje/USFWS

*Canvasback Duck*

*Op4 between  
 the photo and  
 caption*

*Op2 between  
 the photo and  
 credit*



Marian Pohlman

## **Wildlife Observation and Photography**

Four trails and four State highways which transect the refuge afford the visitor an ideal opportunity to observe and photograph a variety of wildlife and plants. Please remember that the taking of any plant or animal without a permit is prohibited. Many species may be observed relatively undisturbed in their natural habitat.



Shirley Gonzaga

*Above: Canoeing  
 at Prime Hook  
 Right: Swamp  
 Mallow*

# Paper Standards

## *Brochures*

Matte coated, white,  
sub. 70 or 80

## *Reports*

Text is offset, white, sub. 50;  
opacified offset, white, sub. 50; or  
matte coated, white, sub. 50. Cover is  
matte coated, white, sub. 80 or sub  
100; or vellum, white, sub. 50 or 65

## *Fact Sheets*

Matte coated, white, sub. 70; offset  
book, white, sub. 50; or opacified  
offset book, white, sub. 50.

Do not use colored paper for  
publications except as a slip sheet or  
for chapter breaks in administrative  
documents.

# USFWS Identification

## Identification Bar

The U.S. Fish & Wildlife Service is identified within a bar on the cover. The bar bleeds along the top edge of the page, beginning at the left edge of the second grid column and ending at the right edge of the third grid column.

United States is abbreviated as *U.S.* with no space between the period and the S. An ampersand is used instead of spelling out the word *and*.

*Bar height: 2p (on mechanical artwork, bar height should be 2p9 to allow a 9 point bleed off the page)*

*Color: black or spot colors as listed below. Bar color must be dark enough to maintain contrast with white type. A minimum of 80 percent contrast is necessary to meet the Americans with Disabilities Act requirements.*

*Pantone 1535      Pantone 187  
Pantone 201      Pantone 294  
Pantone 3155      Pantone 341  
Pantone 462      Pantone 478  
Pantone 555      Pantone 647  
Pantone 697*

*Note: Pantone colors printed in four color process do not always match the Pantone spot color swatches. The colors above were chosen to match closely in spot or process inks.*

<b>U.S. Fish &amp; Wildlife Service</b>		<i>0p10</i>	<i>2p total</i>
<b>U.S. Fish &amp; Wildlife Service</b>		<i>0p4</i>	
<i>0p4</i>		<i>4x8.5: 21p length bar</i>	
		<i>8.5x11 Grid A: 31p length bar</i>	
		<i>8.5x11 Grid B: 27p8 length bar</i>	
<b>U.S. Fish &amp; Wildlife Service</b>		<i>0p9 bleed area</i>	
<b>U.S. Fish &amp; Wildlife Service</b>		<i>2p bar height</i>	



*Font: Univers 67*

*Type size: 14 point*

*Type color: white*

## Identification Seals

The seals of the U.S. Department of the Interior and the U.S. Fish & Wildlife Service provide additional identification on the back cover. They always appear side by side as shown at right, in full color, black, or white.

		<i>4p height</i>
<i>4p wide</i>	<i>0p4 space between logos</i>	



# Statements

## **U.S. Fish and Wildlife Service Mission Statement:**

*“The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people.”*

This statement is to be used on all national program publications including brochures and reports.

It should be placed on the inside cover or first text page. It should also be used for site publications followed by the mission statement of the National Wildlife Refuge System.

## **Refuge Mission Statement:**

*“The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”*

*National Wildlife Refuge System  
Improvement Act of 1997*

This statement is to be placed on the inside cover or first text page of all general information refuge publications.

## **Accessibility Statement:**

*“Equal opportunity to participate in and benefit from programs and activities of the U.S. Fish and Wildlife Service is available to all individuals regardless of physical or mental disability. For more information please contact the U.S. Department of the Interior; Office of Equal Opportunity, 1849 C Street, NW, Washington, D.C. 20240.”*

This statement is to be used in site brochures, reports, books, and recruitment material (including vacancy announcements). It should be placed on the last text page or on the inside back cover.

## **Diversity Statement:**

*“The U.S. Fish and Wildlife Service strives for a work force that reflects the cultural, ethnic, and gender diversity of the Nation, including people with disabilities.”*

This statement is to be used along with the accessibility statement on recruitment publications.

# ADA Requirements

All site brochures are to have  
State Relay numbers.

All inks/colors used for text must  
have a minimum of 80 percent  
contrast with the page.

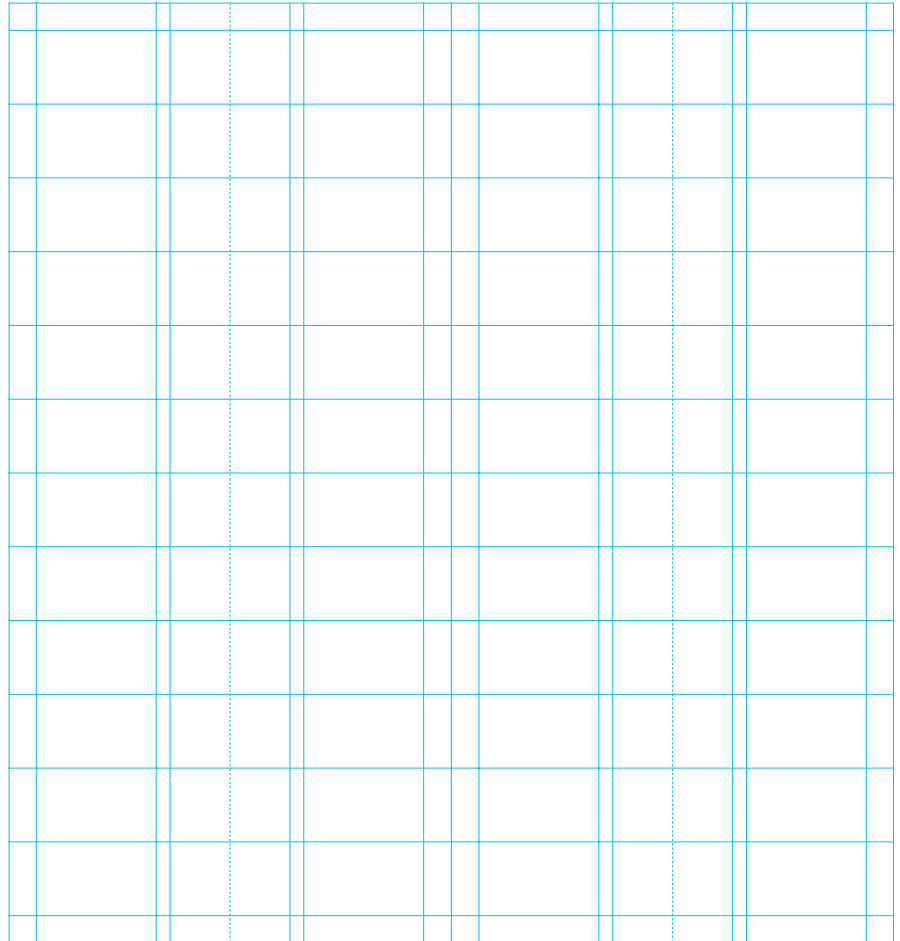
# 4x8.5 Format Publications



# Grid

The area between the top and bottom margins of the page is divided into twelve equal modules, each 4 picas in height. This grid provides a flexible structure for designing pages with two, three, four, six, or twelve horizontal divisions, depending on the information to be conveyed.

The width of the page is divided into three equal columns. An optional center division, shown as a vertical dashed line on the grid, may be used if required by the illustrative material.



*Format:*  
*4 x 8.5 inches*  
*(24p x 51p)*

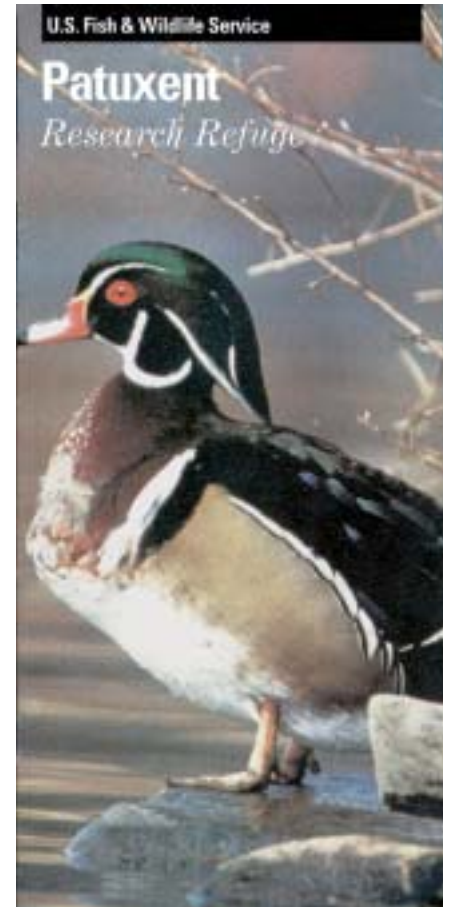
*Top/bottom/left/  
right margins:*  
*1p6*

*Columns:*  
*3*

*Gutter width:*  
*p9*

# Sample Covers

The image for the cover must be chosen very carefully. Conceptually it should be up close and personal, giving the viewer the feeling of being out there in the wild, face to face with wildlife particular to that area. If a wildlife image is not appropriate, an image of habitat may be used.



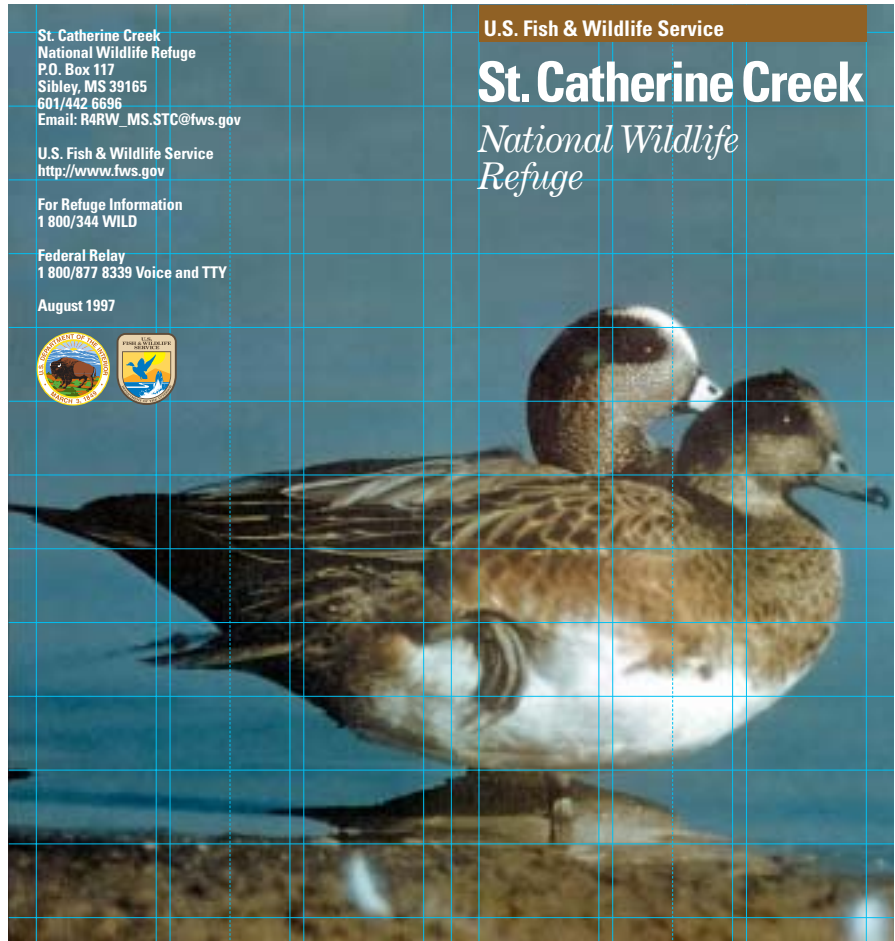
*Format:*  
*4 x 8.5 inches*  
*(24p x 51p)*

# Cover/ Information Brochure

The full color (four color process) image bleeds across both the front and back cover, cropped to relate to and provide a suitable backdrop for the identification bar, type and seals. Type may be white or black depending on the image. Photography on the cover is preferable, but illustration may be used if absolutely necessary.

The identification bar begins at the top edge of the page and is three columns wide. The title type begins 1 pica below the bar. Line lengths of the title and subtitle are kept within the first two columns whenever possible.

Text on the back cover follows the grid, 1p6 from the top and left edges, and occupies the first two columns only. The third column is left empty. The seals are located one line space below the text. Seals should be the full color versions.



*Format:*  
4 x 8.5 inches  
(24p x 51p)

*Title:*  
Univers 67  
36/36

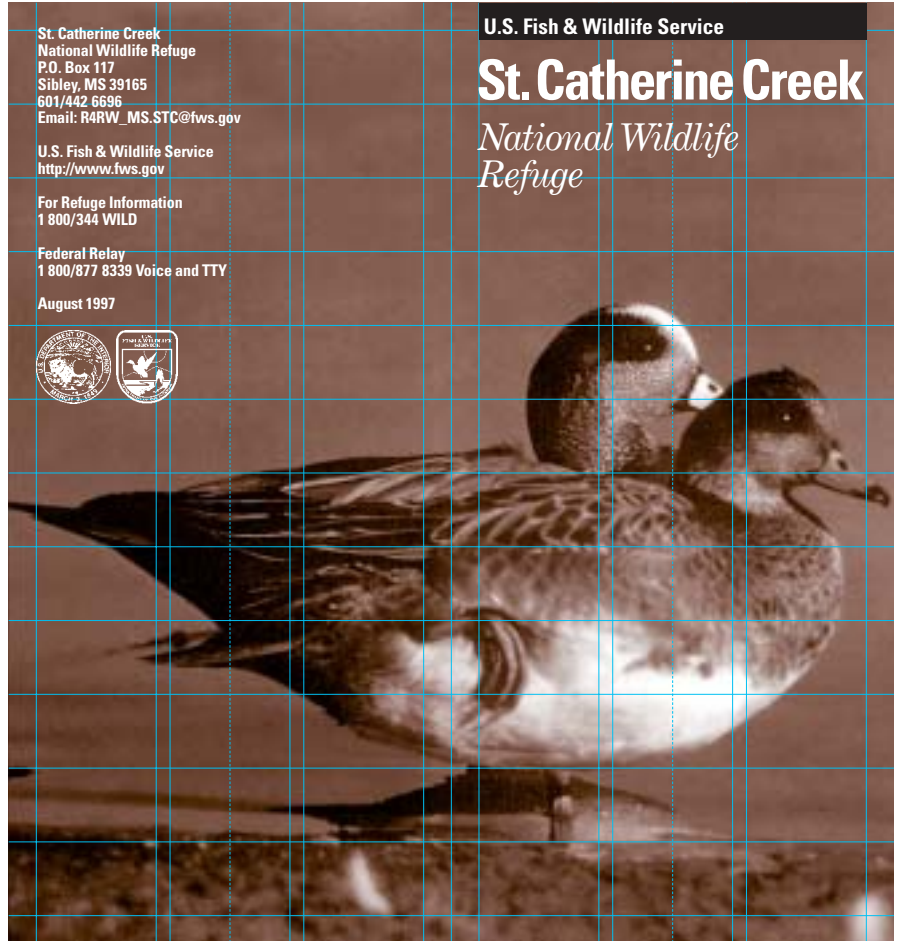
*Subtitle:*  
Century  
Expanded Italic  
24/24 with  
p9 space above

*Back cover:*  
Univers 67  
10.5/11

# Cover/ Black and One or More Spot Colors

Secondary brochures for field stations that are part of a larger complex. Layout follows the specifications described for the four color cover.

The title and subtitle on the front cover and the text on the back cover may be white, black or a spot color, depending on the image. Seals should be the one color versions to match the back cover text.



*Format:*  
4 x 8.5 inches  
(24p x 51p)

*Title:*  
Univers 67  
36/36

*Subtitle:*  
Century  
Expanded Italic  
24/24 with  
p9 space above

*Back cover:*  
Univers 67  
10.5/11

# Cover/ Activity Brochure

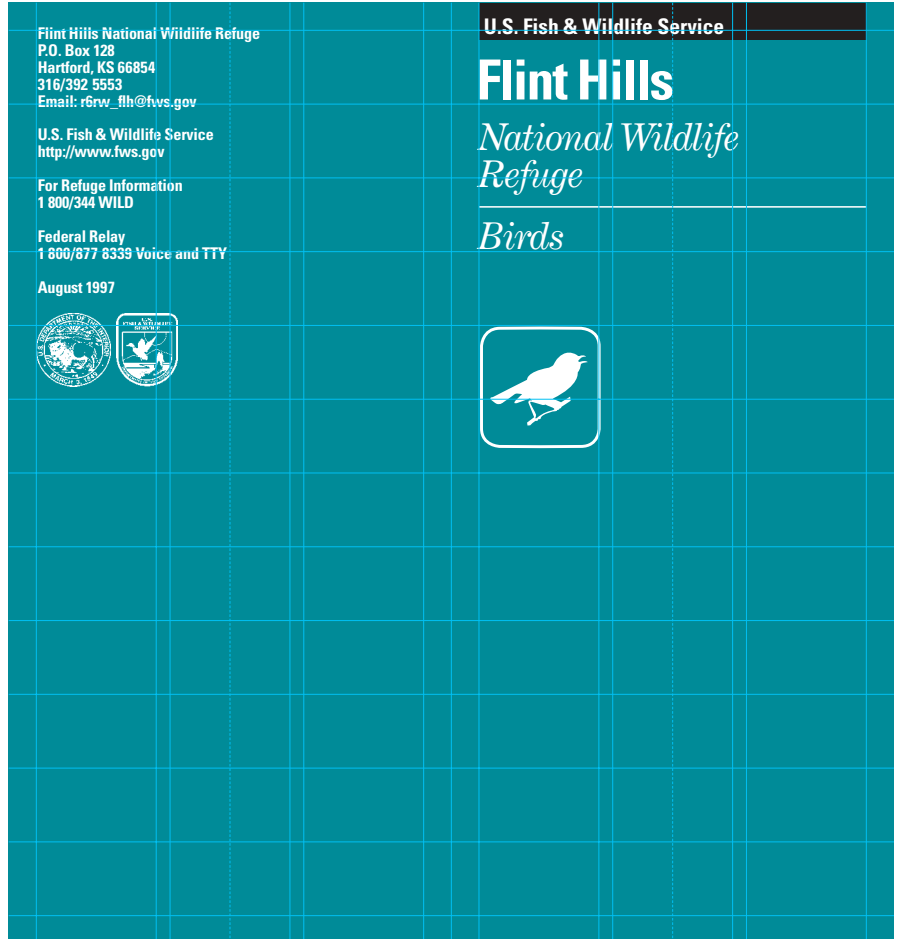
Typographic layout follows the specifications described for the four color cover.

Activity brochures are printed in two colors, black and an appropriate second color. It is acceptable to use two spot colors, but the text color must have a minimum 80 percent contrast with the page. The second color may be used for the text heads and subheads as long as it meets the 80 percent contrast requirement.

There is a one point rule dividing the subtitle and secondary subtitle. The rule falls one pica below the baseline of the subtitle. The secondary subtitle is 0p10 below the rule and is formatted as 24/24 Century Expanded Italic.

Universal symbols and symbols from Sign Pix fonts are used where available, with additional symbols to be developed as needed.

One-column-wide symbols (6p6 in width) begin 17p6 from the top of the cover (on the fifth module from the top). If the title text runs long, the symbols align 4 picas below the last baseline. The symbols align flush left with the identification bar and type above. The distance between symbols when they are stacked matches the p9 gutter space between column. Symbols and their .5 point borders are white.



*Format:*  
4 x 8.5 inches  
(24p x 51p)

*Title:*  
Univers 67  
36/36

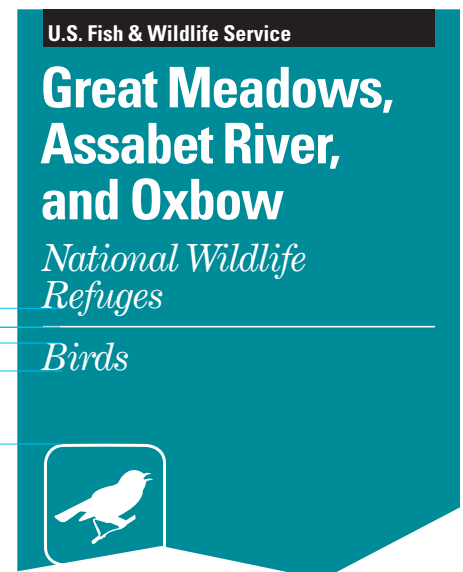
*Subtitle:*  
Century  
Expanded Italic  
24/24 with  
p9 space above

*Back cover:*  
Univers 67  
10.5/11

1 pica

0p10

4 picas



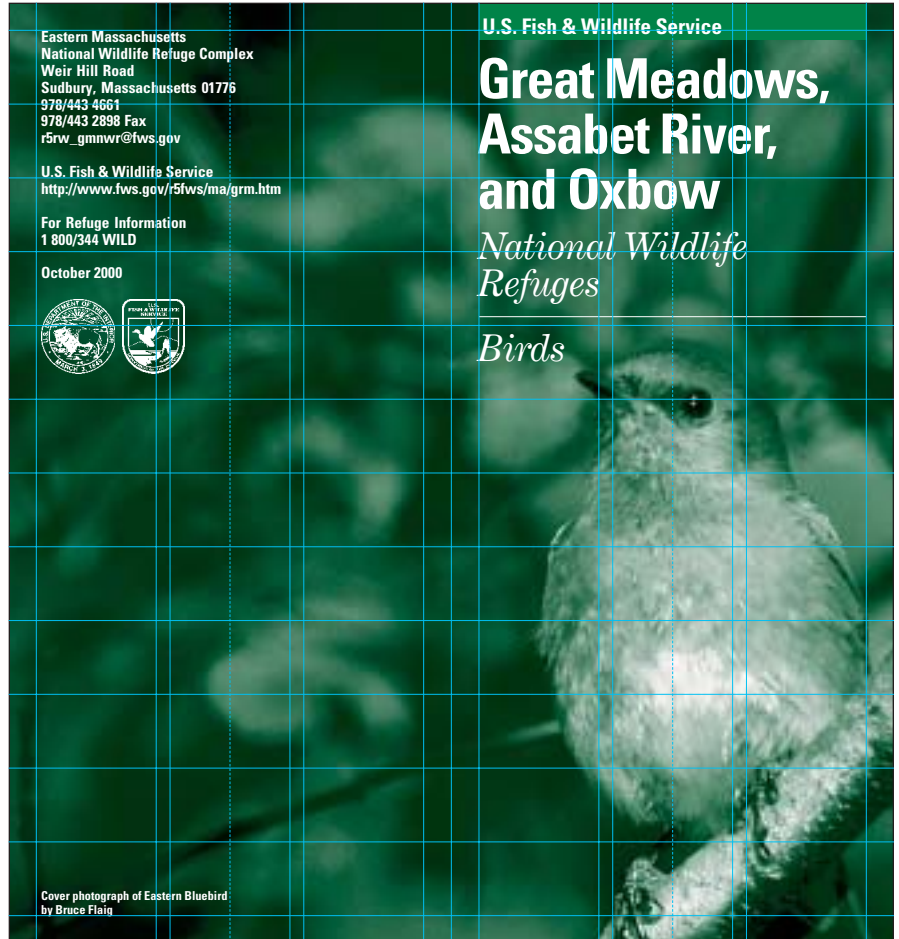


# Cover/ Activity Brochure with Photo

Typographic layout follows the specifications described for the four color cover.

Activity brochures are printed in two colors, black and an appropriate second color. The photo prints as a duotone.

Be careful to choose photos that do not interfere with the cover type. A photo can also be used on the front cover only, with a solid color for the back cover.



*Format:*  
4 x 8.5 inches  
(24p x 51p)

*Title:*  
Univers 67  
36/36

*Subtitle:*  
Century  
Expanded Italic  
24/24 with  
p9 space above

*Back cover:*  
Univers 67  
10.5/11

*Photo caption:*  
Univers 67  
8/9



# Introduction Page

A brief opening text introduces the refuge or topic to the public. Italic type imparts an inviting, conversational flavor. To enhance the feeling of wide open spaces, the text appears in white on a full bleed background color appropriate to the character of the refuge. The text may occupy the right or left page or both, as appropriate.

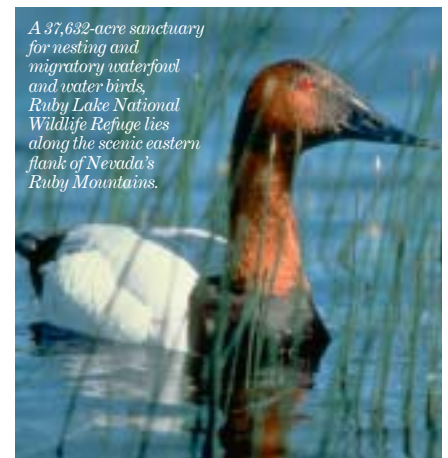
An appropriate use of “famous” quotes for brochures would be on the second page of refuge site brochures or the second to last page as filler.

Other options include a full photo image or the introduction appearing only on one page.

*A 37,632-acre sanctuary for nesting and migratory waterfowl and water birds, Ruby Lake National Wildlife Refuge lies along the scenic eastern flank of Nevada's Ruby Mountains. Marshes, open ponds and islands are bordered by wet meadows and grass and sagebrush covered uplands.*

*Format:  
4 x 8.5 inches  
(24p x 51p)*

*Century  
Expanded Italic  
24/26*



# Introduction Page

*The Blue Goose: Symbol of the National Wildlife Refuge System*  
General site information brochures and other full color publications will include the goose symbol on the inside cover or on the first text page along side the Introduction.

The goose symbol will always “fly” to the left and will be 6.5 picas wide to fit in one column for 4 x 8.5 inch format publications.

In four color process printing, the color for the goose symbol matches the process color build for Pantone 281:

Cyan: 100%      Magenta: 72%  
Yellow: 0%      Black: 38%


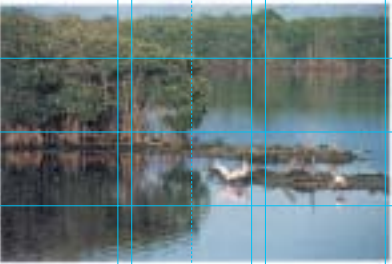
When printing with spot inks, the goose symbol prints Pantone 288. In single and two color publications not using Pantone 288, the goose symbol prints in black ink.

The following mandatory text accompanies the goose symbol when it prints in color:

*This blue goose, designed by J.N. “Ding” Darling, has become the symbol of the National Wildlife Refuge System.*

If the goose symbol prints in black:

*This goose, designed by J.N. “Ding” Darling, has become the symbol of the National Wildlife Refuge System.*

<p><i>The J.N. “Ding” Darling National Wildlife Refuge is located on the subtropical barrier island of Sanibel in the Gulf of Mexico. The refuge boasts one of the largest undeveloped mangrove ecosystems in the United States. It is world famous for its abundant bird population, spectacular wading birds in particular. It is one of over 500 refuges in the National Wildlife Refuge System, and is managed by the U.S. Fish and Wildlife Service, an agency of the Department of the Interior.</i></p>	 <p><i>This blue goose, designed by J.N. “Ding” Darling, has become the symbol of the National Wildlife Refuge System.</i></p>	<p><b>In times gone by...</b> What began as a sandbar is now Sanibel, a subtropical barrier island located off the Southwest coast of Florida. Sand, silt, and shells give rise to a growing land mass. Further nourished as seeds from mangrove trees floated into the shallow bay waters and took root. As the island evolved, dry ridges and fresh water sloughs developed in the interior. The fresh water river that runs through Sanibel makes it unique among barrier islands. Sanibel is 12 miles long, fringed with mangrove trees, shadow bays, and white sandy beaches.</p>  <p>The island was first inhabited by the Calusa Indians. For over 2,000 years these Native Americans made the lush island, with its ready source of food from the sea, their home. During the mid-1800s, European explorers and settlers arrived and soon displaced the Calusa tribe.</p> <p>The island was mainly used by farmers until a fierce hurricane in 1926 ruined the land and destroyed the agriculture industry. Tourism is now the economic foundation for residents of the island. The 3-mile long causeway makes Sanibel easily accessible to the mainland.</p> <p><small>Cover photo credits provided © Charles Robinson</small></p>
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**Format:**  
4 x 8.5 inches  
(24p x 51p)

**Introduction:**  
Century  
Expanded Italic  
24/26

**Headings:**  
Univers 67  
10.5/11

**Text:**  
Century  
Expanded  
10/11

**Captions:**  
Century  
Expanded Italic  
10/11

**Photo credits:**  
Century  
Expanded  
7/8

<p><b>Introduction</b> Sanibel National Wildlife Refuge is located on the southwest coast of Florida. The refuge is one of the largest undeveloped mangrove ecosystems in the United States. It is world famous for its abundant bird population, spectacular wading birds in particular. It is one of over 500 refuges in the National Wildlife Refuge System, and is managed by the U.S. Fish and Wildlife Service, an agency of the Department of the Interior.</p> <p><b>History</b> The island was first inhabited by the Calusa Indians. For over 2,000 years these Native Americans made the lush island, with its ready source of food from the sea, their home. During the mid-1800s, European explorers and settlers arrived and soon displaced the Calusa tribe.</p> <p><b>Geography</b> The island was mainly used by farmers until a fierce hurricane in 1926 ruined the land and destroyed the agriculture industry. Tourism is now the economic foundation for residents of the island. The 3-mile long causeway makes Sanibel easily accessible to the mainland.</p> 	<p><b>Management</b> The refuge is managed by the U.S. Fish and Wildlife Service, an agency of the Department of the Interior. The refuge is one of the largest undeveloped mangrove ecosystems in the United States. It is world famous for its abundant bird population, spectacular wading birds in particular. It is one of over 500 refuges in the National Wildlife Refuge System, and is managed by the U.S. Fish and Wildlife Service, an agency of the Department of the Interior.</p> 
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# Image on Left Page

With a full bleed image on the left page, the caption appears in the first column of the right page. Text appears in the second and third columns. The white space between the image and the text provides a needed breathing space next to the large scale image.

Small images may be added sparingly, as needed. Silhouetted shapes provide visual interest and a good foil to the large rectangular image on the left page. In general, images align flush left with the type.



*Format:*  
4 x 8.5 inches  
(24p x 51p)

*Headings:*  
Univers 67  
10.5/11

*Text:*  
Century  
Expanded  
10/11

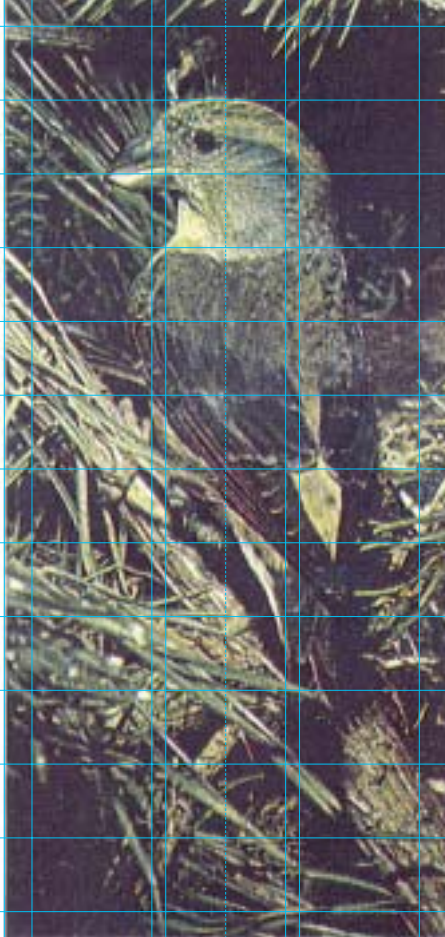
*Captions:*  
Century  
Expanded Italic  
10/11

*Photo credits:*  
Century  
Expanded  
7/8

# Image on Right Page

On the left page, text appears in the first and second columns, with the caption in the third column. The caption's location is at the designer's discretion, but should not interfere with headings or the readability of the text. Captions are set flush left or right, and may be overprinted or reversed out of photos.

The white space between the image and the text provides a needed breathing space next to the large scale image on the right page.

<p><b>Boys</b> Over 200 species of birds regularly use the refuge. Many of these are the most common and important to the primary objectives of the refuge.</p>		<p>Favoring california forests, the marsh has created conditions that enable it to crack open pine cones for seeds.</p>	
<p>Nesting marshwrens and redwinged blackbirds are particularly important. Most of this nesting occurs on the south side.</p>			
<p>Some of the finest nesting habitat in Western America for these species. In good years, the refuge has produced 3,500 cowbirds and 2,500 redwings.</p>			
<p>The soon-endangered trumpeter swan, originally a transplant from the Red Rock Lake National Wildlife Refuge in Montana, is also found on the refuge. Several pairs nest each year.</p>			
<p>In all, fifteen species of waterfowl nest on the refuge as well as a variety of other water-dependent birds such as grebes, mallard ducks, great blue herons, black-necked stilts, blue-winged teal, white-faced ibis and snowy egrets.</p>			
<p>Bald eagles, golden eagles and several other raptors, including the endangered peregrine falcon, are present at various times of the year.</p>			
<p>Numerous songbirds make use of the riparian habitat along Cave Creek and several first records of occurrence for Nevada have been made in this area.</p>			

*Format:*  
4 x 8.5 inches  
(24p x 51p)

*Captions:*  
Century  
Expanded Italic  
10/11



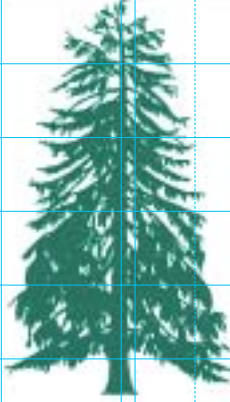

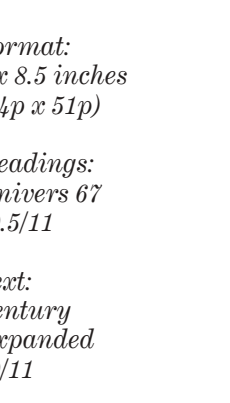

*Headings:*  
Univers 67  
10.5/11

*Photo credits:*  
Century  
Expanded  
7/8

*Text:*  
Century  
Expanded  
10/11

# Images with Text

Information is presented clearly, using the horizontal divisions of the grid to provide logical divisions for illustrations and text. Illustrations show items in scale to one another, giving the reader an immediate sense of reality from even the simplest silhouettes or illustrations. Horizontal rules organize text and provide order, clarity and emphasis. Rules are a consistent .5 points throughout the entire publication.

		<p><b>Norway Spruce</b></p>	<p>Spruces, with stiff, sharp needles and pendant cones, range much further into the Arctic than do pines or firs. Though they grow in large dimensions along northern shores, where grouse, squirrels and numerous other animals associate with them, they also cover vast areas as slow growing constituents of cold-edge forests, where their roots may often be embedded in frozen soil.</p>
		<p><b>Sugar Maple</b> (Also on previous page)</p>	<p>Although the deciduous leaves of the maple are delicate and fragile, fossil remains suggest that maples have been widespread for millions of years. Some 200 maple species grow in Asia, Europe, and North America. Flowering attractively in the spring before the leaves appear and turning color in autumn to create one of the year's most spectacular displays.</p>
		<p><b>Japanese Larch</b></p>	<p>Larches, like a few other genera of the pine family, are deciduous, and their needles turn brilliant yellow in autumn before falling. Some larches in North America, Europe and Asia grow to immense size.</p>

*Format:*  
4 x 8.5 inches  
(24p x 51p)

*Headings:*  
Univers 67  
10.5/11



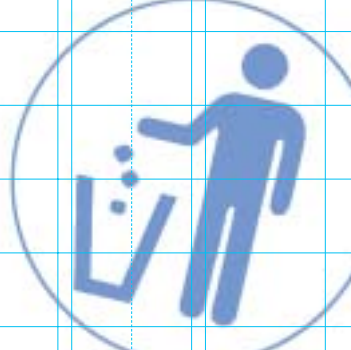
*Text:*  
Century  
Expanded  
10/11

*Captions:*  
Century  
Expanded Italic  
10/11

# Images with Text

Smaller illustrations and images used to enliven lengthy text should be kept to a minimum. The text and the information it conveys must be the focus. The grid provides an underlying structure for the text, which prevents the page from becoming too chaotic.

Square, rectangular and circular images are one, two or three columns wide. While most elements align with the grid, a few violate the grid, particularly larger scale elements which float behind the text, providing depth and variety.

Camping	<b>Accommodations</b> Camping is not permitted on the refuge. However, camp sites are available at the Forest Service campground, 12 miles south of refuge headquarters. Primitive camping is allowed on all public land 200 feet west of County Road 262, unless otherwise posted.		Accidents	<b>Regulations</b> All accidents and injuries occurring on the refuge must be reported immediately to refuge headquarters.	
Lodging	Accommodations are available in Eiko, Wills and Elly.		Derbies and ATVs	Licensed dirt bikes and ATVs may be operated on refuge roads. The operator must possess a valid driver's license and proof of insurance.	
Restrooms	Restrooms are located at Main Boat Landing, Marcus Boat Landing, on Brown Dike and at refuge headquarters. Those at Main Boat Landing and refuge headquarters are easily accessible to mobility-impaired visitors.		Grooves	Fishing and hunting licenses and state and federal Duck Stamps are required. However, they are not available at refuge headquarters or Shanty Town. The nearest vendors are in Eiko (83 to 93 miles), Wills (90 miles) and Elly (94 miles).	
Roads	Visitors must travel 25 to 35 miles of gravel road to reach the refuge. Harrison Pass, a steep, rough and winding road, is not maintained during the winter. Visitors should check with refuge headquarters about road conditions, especially from November to May.		Pets	Pets are allowed if on a leash or under close control.	
Telephone and Supplies	Phone, gas and limited supplies are available seasonally at Shanty Town.		Prohibited Activities	Camping, overnight parking, littering, fires, fireworks and the collecting of objects of antiquity, including Native American artifacts, are prohibited.	
Location			Weapons	Unloaded weapons that are dismantled, cased or otherwise out of immediate reach may be transported by vehicle on refuge roads. Use of weapons is permitted only in designated hunting areas during authorized refuge hunts.	
					

*Format:*  
4 x 8.5 inches  
(24p x 51p)

*Headings:*  
Univers 67  
10.5/11

*Subheadings:*  
Century  
Expanded Italic  
10/11

*Text:*  
Century  
Expanded  
10/11

# Sign Pix with Text

The Sign Pix font family can be used to highlight and reinforce refuge regulations. Two sizes of the symbols are used depending on the context.

## Symbols Only

In the example at right, the symbols are used exclusively in the left column. The Sign Pix font is used at 46 point size on 46 point leading (one-half inch square with one-eighth inch space between symbols) and prints black.

A diagonal red bar across a symbol is used to indicate the activity is not permitted. The red bar is 3 points wide and prints 100% Pantone 1795 (M94% + Y100%).

## Symbols with Headings

If the symbols appear in the column with headings, they should be used at 24 point size on 24 point leading below the headings. If a red bar is used across the symbol, it should be 1.5 points wide.

	<b>Regulations</b> Questions regarding specific regulations for individual refuges should be directed to the Coastal office. Here, in brief, are some general regulations:	
	Defacement, damage, or removal of any government structure, sign, or marker is prohibited.	
	Feeding, capturing or hunting wildlife is strictly prohibited unless otherwise authorized.	
	All of the refuge's historical, archaeological, and natural resources are protected. Artifact hunting is not allowed. Do not pick flowers or remove vegetation.	
	Shell collectors are asked to take no live shells and to limit their collection to a handful or so.	
	Dogs, cats and other pets are not permitted.	
	<b>For further information</b> Call the Savannah Coastal Refuges office during business hours (Monday through Friday, 8:00 am to 4:30 pm; closed on federal holidays: 912/652 4415.	
	Visit the Savannah Coastal Refuges office located in the Parkway Business Center on Chatham Parkway. To reach the office, take Exit 33-a (Chatham Parkway) off I-16 East to Savannah, Georgia; drive one mile south on Chatham Parkway to the Parkway Business Center. The refuge headquarters occupy Suite 10.	
	<i>Write to:</i> Savannah Coastal Refuges Parkway Business Center, Suite 10, 1000 Business Center Drive Savannah, Georgia 31405	
	Equal opportunity to participate in and benefit from programs and activities of the U.S. Fish & Wildlife Service is available to all individuals regardless of physical or mental disability. For more information please contact the U.S. Department of the Interior, Office for Equal Opportunity, 1849 C Street, NW, Washington, D.C. 20240	

*Format:*  
4 x 8.5 inches  
(24p x 51p)

*Symbols:*  
Sign Pix  
46/46  
or

*Headings:*  
Univers 67  
10.5/11

24/24

*Subheadings:*  
Century  
Expanded Italic  
10/11

*Text:*  
Century  
Expanded  
10/11



# Bird List

This is the layout style for bird lists in brochures. The list follows the A.O.U. standard.

The list is the full width of all three text columns (21p). Tabs are set at 1p9 (left), 15p (right with leader dots), 15p9 (center), 17p3 (center), 18p9 (center), and 20p3 (center).

The columns use alternating shading. The first shaded column starts at 15p from the left column guide and is 1p6 wide.

Column heads indicate the seasons as follows:

Sp Spring, March-May  
 S Summer, June-August  
 F Fall, September-November  
 W Winter, December-February

Column abbreviations are as follows:

a abundant (a common species which is very numerous)  
 c common (certain to be seen in suitable habitat)  
 u uncommon (present but not certain to be seen)  
 o occasional (seen only a few times during a season)  
 r rare (seen at intervals of 2 to 5 years)

An asterisk is used to indicate a bird that nests on or near the refuge.

COMMON NAME	SP	S	F	W	COMMON NAME	SP	S	F	W
<b>Waterfowl</b>					<b>Shorebirds</b>				
— Fulvous Whistling-Duck		r	r		— King Rail	c	c	c	c
— Greater White-fronted Goose	o			o	— Virginia Rail	u			c
— Snow Goose	c		c	a	— Sora	u			u
— Ross' Goose				r	*Purple Gallinule	u	c	u	r
— Canada Goose				o	*Common Moorhen	c	c	c	c
— Wood Duck		r	u	u	— American Coot	c			c
— Green-winged Teal	c		c	a	<b>Shorebirds</b>				
— American Black Duck				r	— Black-bellied Plover	c			c
*Mottled Duck	c	c	c	a	— Lesser Golden-Plover	r			r
— Mallard	c	c	c	a	— Wilson's Plover		o		
— Northern Pintail	c		c	a	— Semipalmated Plover	u			u
*Blue-winged Teal	c	o	a	a	*Killdeer	c	c	c	c
— Cinnamon Teal	o			o	*Black-necked Stilt	c	c	c	r
— Northern Shoveler	c	o	c	a	— American Avocet				o
— Gadwall	c		c	a	— Greater Yellowlegs	a			a
— American Wigeon	c		c	a	— Lesser Yellowlegs	a			a
— Canvasback	o			o	— Solitary Sandpiper	u			u
— Redhead	u			u	— Willet	c	c		c
— Ring-necked Duck	o			o	— Spotted Sandpiper	c			c
— Lesser Scaup	c		c	e	— Upland Sandpiper	r			r
— Common Goldeneye				o	— Whimbrel	u			r
— Bufflehead				u	— Long-billed Curlew	u			u
— Hooded Merganser				o	— Marbled Godwit	o			o
— Common Merganser	r			r	— Ruddy Turnstone	u			u
— Red-breasted Merganser				u	— Red Knot	r			r
— Ruddy Duck	u			o	— Sanderling	c			u
<b>Vultures, Hawks and Allies</b>					— Semipalmated Sandpiper	a			a
— Black Vulture	c	c	c	e	— Western Sandpiper	u			u
*Turkey Vulture	c	c	c	c	— Least Sandpiper	c			c
— Osprey	o			o	— White-rumped Sandpiper	c			c
— Bald Eagle				r	— Pectoral Sandpiper	u			u
— Northern Harrier	c		c	c	— Dunlin	c			c
— Sharp-shinned Hawk	u			u	— Stilt Sandpiper	u			o
— Cooper's Hawk	o			o	— Short-billed Dowitcher	u			u
— Red-shouldered Hawk	u			u	— Long-billed Dowitcher	c			c
— Broad-winged Hawk	o			o	— Common Snipe	c			a
— Red-tailed Hawk	u			u	— American Woodcock	r			r
— American Kestrel	u			u	— Laughing Gull	c			c
— Merlin	u			u	— Franklin's Gull	r			r
— Peregrine Falcon				o	— Bonaparte's Gull				r
<b>Gallinaceous Birds (Quail, Turkey and Allies)</b>					— Ring-billed Gull	u			u
— Northern Bobwhite	r	r	r	r	— Herring Gull	u			u
<b>Rails, Gallinules, Coots and Cranes</b>					— Gull-billed Tern	u	u	u	u
— Yellow Rail	u			u	— Caspian Tern	u	u	u	u
— Black Rail				r	— Royal Tern	u	u	u	u
*Clapper Rail	c	c	c	e	— Common Tern	u	u	u	u
					— Forster's Tern	c	c	c	c
					— Least Tern	o	u	o	u
					— Black Tern	a	u	a	u
					— Black Skimmer	c	c	c	c

First shaded column is 15p from left column guide.

1p6 wide columns

Format:  
 4 x 8.5 inches  
 (24p x 51p)

Text:  
 Century  
 Expanded  
 10/11

Headings:  
 Univers 67  
 10.5/11

Subheadings:  
 Century  
 Expanded Italic  
 10/11

# Map Standards

Maps should be placed in the center spread whenever possible. Foldouts can be used if the center spread is not large enough to convey essential information.

In most cases, relief will not be shown on the maps due to the time and cost required for the preparation of such maps. However, shaded relief maps should be used if the topography of the refuge is complex and it would be difficult for visitors to navigate without reference to topographic features.

## Map Backgrounds

Maps for primary (full color) leaflets will have a color background and bleed four sides. Background colors should be chosen to symbolize the predominant habitat type. The following background colors may be used:

Wetlands: Light green  
(50% Pantone 358)

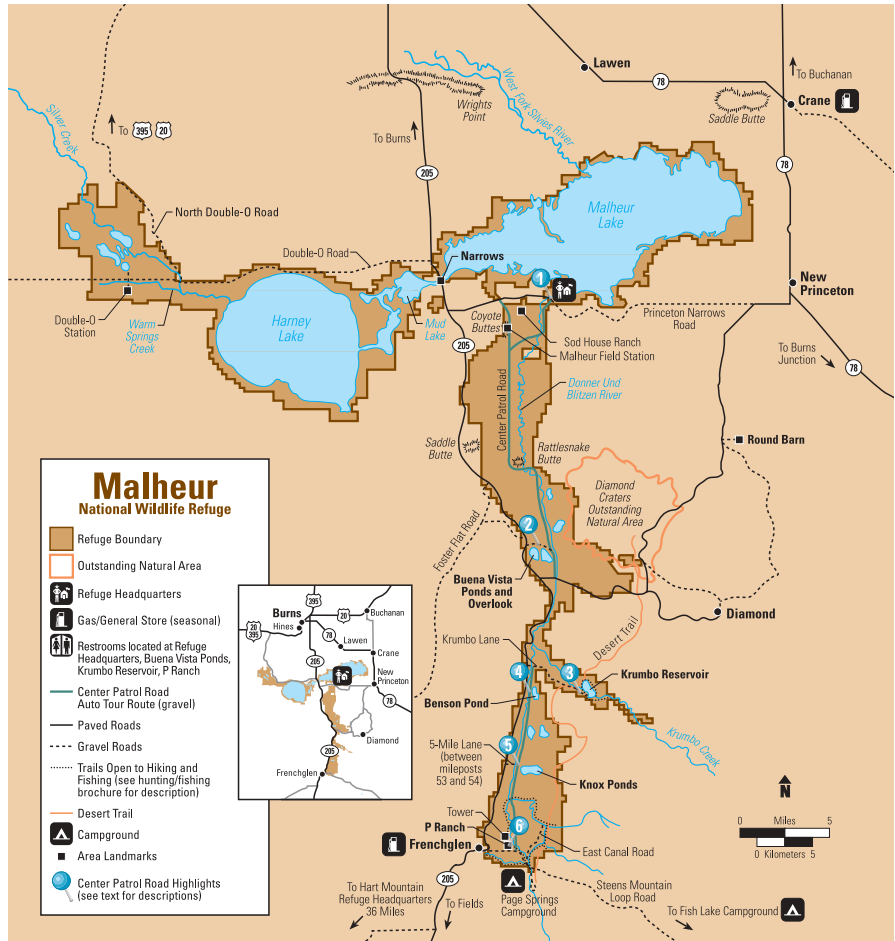
Deserts: Tan (70% Pantone 726)

Grasslands: Gold (70% Pantone 141)

Additional background colors may be chosen for habitat types that do not fit these categories, and to:

- delineate various habitat types within a refuge (forested areas, meadows, grain fields, etc.),
- indicate areas that are seasonally or permanently closed to public use, or
- indicate hunt areas or other specialized public use areas.

For these purposes, use of patterned fills should be avoided; flat colors are preferred. If patterned fills are necessary to convey essential information, they should be unobtrusive.



# Map Standards

## Refuge Boundary

The refuge boundary line will be a 2 pt. line, 80% to 100% screen, dashed 10-1-2-1 (dash alternating with single dot) over a 4 pt. solid line, 20% to 30% screen. (Exact screen values will depend on the color used; use heavier screens on lighter colors.)

Suggested boundary colors include:

80% Pantone 357 over 25% Pantone 357 if background color is 50% Pantone 358 (light green)

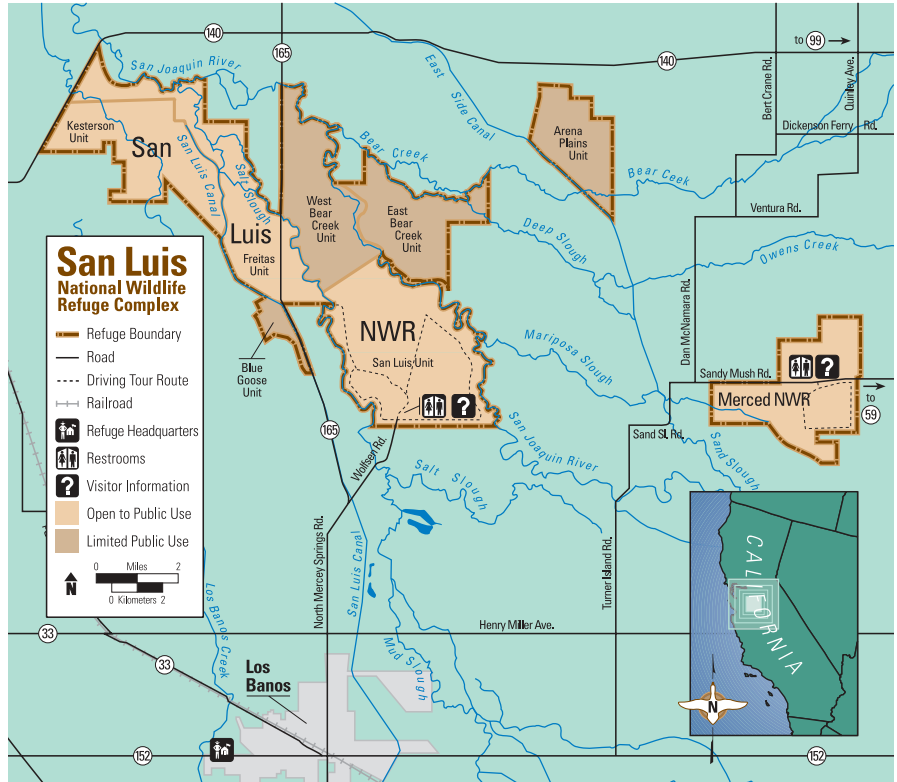
100% Pantone 146 over 30% Pantone 146 if background color is 50% Pantone 141 (gold)

80% Pantone 725 over 20% Pantone 725 if background color is 60% Pantone 726 (tan)

In some cases, the scale of the map may preclude the use of this standard (see Malheur NWR map). In this case, a non-dashed line may be used.

The Refuge boundary may be omitted in the case of small “locator” maps intended only to direct visitors to the refuge.

Private inholdings within the approved refuge boundary should be shown in the background color of the map, while a contrasting color should be used to show actual refuge lands within the approved boundary.



## Sample boundary lines

80% Pantone 357 over 25% Pantone 357

100% Pantone 146 over 30% Pantone 146

80% Pantone 725 over 20% Pantone 725

80% Pantone 1585 over 20% Pantone 1585

80% Pantone 266 over 20% Pantone 266

80% Pantone 3145 over 20% Pantone 3145

# Map Key and Symbols

The map key is in a white box with a 1 pt. black outline.

Although it does not need to be located in the map key, include a north arrow and scale of distance in both English and metric.

## Roads and Trails

Roads and trails should be shown in black unless additional colors are needed to call attention to particular areas or convey complex information. Roads should be in line types and weights as specified below. If color needs to be used for the sake of clarity, red would be a second choice.

Freeways and interstates are 4 pt. black line with a 2 pt. white line superimposed.

Other paved roads are 2 pt., solid black lines.

Unpaved roads are 1 pt. solid black lines.

Jeep roads are 1 pt. dashed line, and labeled "4WD Only."

Trails are 1 pt. dashed line, use .5 pt. dash if jeep roads are also shown on the map.

Auto tour routes/scenic routes are shown by a dotted line (which may be in color; red or dark green preferred) alongside one of the standard road symbols.

*Permanent Rivers and Streams*  
1 pt. line in 100% Cyan.

*Intermittent Rivers and Streams*  
1 pt. line, dash alternating with 2 dots (5-1-1-1-1), in 100% Cyan.

*Permanent Water (lakes, ponds, etc.)*  
30% Cyan with a .5 pt. 100% Cyan outline.

*Intermittent/Seasonal Water*  
As above, but with dashed outline (5-2).

*Dry Lakes*  
Randomly spaced dots in Pantone 725, surrounded by .5 pt. dashed outline (5-2).

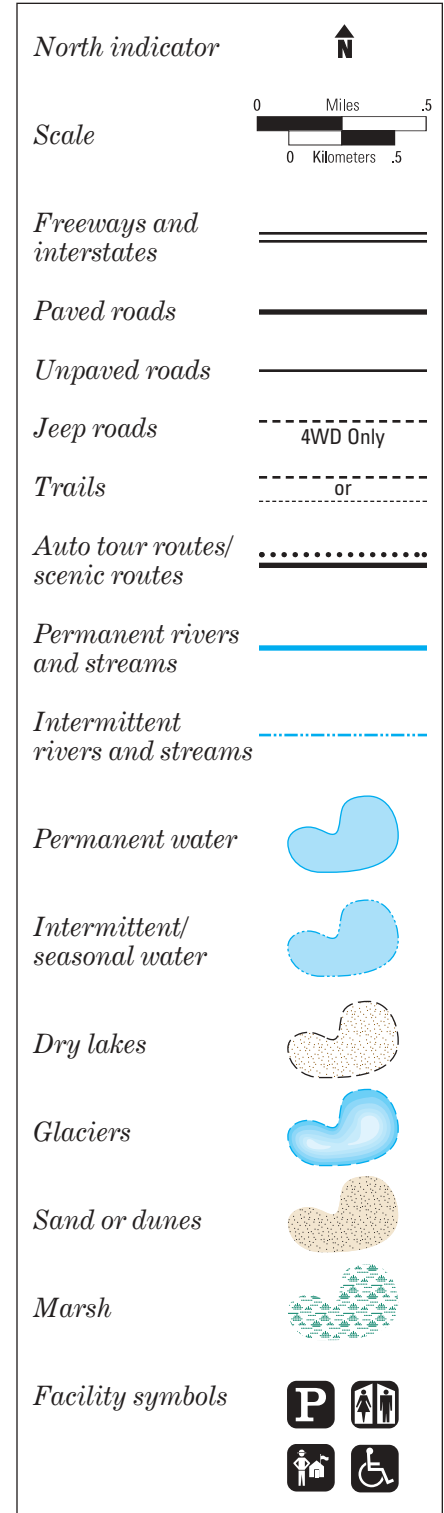
*Glaciers*  
100% Cyan .5 pt. dashed outline (5-2), with graduated fill (50% to 5% Cyan).

*Sand or Dunes*  
Randomly spaced black dots over white or screens of Pantone 726 (60% to 80% at designer's discretion).

*Habitat Colors and Textures*  
Wherever possible, color, rather than textures, should be used to delineate features such as marshes, dunes, sandbars, dry lakes, reefs, and so on. Use natural colors as much as possible (green for marsh, tan for dunes, and so on). Textures may be used for the sake of clarity if necessary. Textures for marsh, scrub, and dunes (sand) have been provided as Postscript fills. For other textures, follow USGS conventions.

*Facility Symbols*  
Universal symbols should be used to identify facilities such as parking areas, restrooms, refuge/hatchery offices, wildlife observation overlooks, boat ramps, and the like. All symbols should be white within a black box (or the darkest color used for printing), unless necessary to differentiate subsets (for example, parking areas that are open seasonally versus parking areas open year-round).

*Identifying Public Use Areas*  
Use of symbols to identify permitted uses (as opposed to facilities) should be minimized to avoid visual clutter. Whenever possible, major use areas should be identified by the use of colored fills that are explained in the map key (legend).



# Map Text Standards

## Refuge and Other Site Maps

These type standards are for 8 x 8.5 inch maps (a two-page spread in the saddle-stitched booklet format). Larger type and line sizes may be needed for larger formats, but keep sizes relative. Letter spacing on the Univers face “as is” is loose, and will need to be tightened up with range kerning values between -2 and -4% em. Kerning between individual letter pairs will usually be needed for larger type sizes (i.e., refuge and map titles).

### *Map Title (Refuge or Hatchery Name)*

Univers 67, caps and lower case, type size at discretion of designer.

For primary leaflets, having the refuge name at the top of the map key is preferred. However, the refuge name can be shown in other ways: in large type (30 pt. Univers 67) superimposed on the background color, or in a callout box that is white with a drop shadow (this is most appropriate if large areas outside the refuge boundary are also shown.)

### *Map Legend*

Univers 67, caps and lower case, 8-10 pt. depending on the overall size and design of the map.

### *Roads and Other Public Use Features (Trails, Overlooks, Blinds, Offices, Visitors Centers)*

Univers 67, 9/9, caps and lower case.

### *Water Features (Ponds, Creeks, Rivers, Bays, Sloughs, etc.)*

Univers 67 italic, 9/9, caps and lower case. (Large rivers may be set in larger type, as in sample.)

### *Major Water Features (Oceans, Large Bays and Straits, etc.)*

Univers 67 italic, caps. Type size at discretion of designer.

Names of rivers, streams, lakes and other water features should be shown in the same blue that is used for outlines of these features (100% Cyan); this will help distinguish them from roads.

## Location Maps (in Addition to Above)

### *National Wildlife Refuge, Fish Hatchery, or Other FWS Facility*

Univers 67, caps and lower case, 10 pt. or larger (at designer’s discretion), may be in callout box with drop shadow.

### *States*

Univers 67, caps, 10 pt. (place on borders if adjoining states are also shown).

### *Cities*

Univers 67, caps and lower case, 9 pt. (use larger type size for major cities; small towns in Univers 57 if desired).

### *National Forests and Grasslands, Monuments, Parks, Recreation Areas, Military Bases, Indian Reservations, etc.*

Univers 67 italics, caps, 7-8 pt.

### *State and County Parks, Recreation Areas, etc.*

Univers 67, caps and lower case, 7-8 pt.

### *Mountain Ranges and Other Major Geological Features (Plateaus, Canyons, Basins, Sinks, Deltas, Peninsulas, Capes, and Islands)*

Univers 67 italics, caps, 7-10 pt. at designer’s discretion.

### *Peaks, Buttes, Mesas, etc.*

Univers 67, caps and lower case, 7 pt.

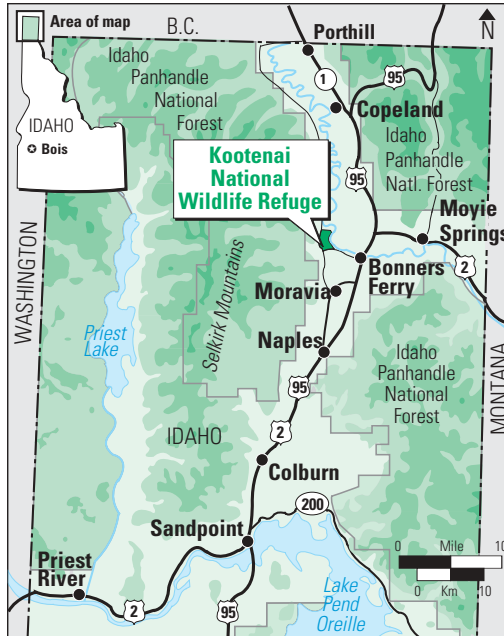
# Locator Maps

Conventions for colors should follow those for either full color maps or maps for secondary leaflets, depending on what type of publication the map will appear in.

Typically, location maps will be approximately 4 x 4 inches or smaller. They may be used as an inset on a larger map, or on a separate page with directions to the refuge or field station.

## Other Conventions

- The Refuge may be indicated by a callout box with drop shadow.
- A State map may be superimposed on the locator map in white with .5 pt. outline and drop shadow.
- Highway and other lines that cross dots representing towns should have breaks. Standard highway symbols should be used.
- Depending on exact size, typefaces may be smaller than those used for refuge maps, but labels of towns and geographic features should not be smaller than 7 pt. Labels on the State map and scale of miles may be smaller than 7 pt. if necessary.



Example 1



Example 2

# Secondary Map

Maps may have a white background, and may be one or two colors. Rarely, a four color map may be necessary to convey information in the clearest possible fashion, as in the tear sheet example at right.

## Size

Format may be 8 x 8.5 inches to accommodate saddle-stitched leaflets, a foldout at 8.5 x 12 inches (which is typical for a hunt leaflet), or occasionally as an 8.5 x 11 inch tear sheet. Since many secondary leaflets will be used in hunt programs, it is expected that the larger format may be needed to provide sufficient map detail. For larger format maps, typefaces can be enlarged to sizes greater than described in the Type Standards for Maps, but keep sizes relative.

## Indicating Habitats and Public Use Areas

A second color or screens may be used to indicate habitat areas or public use areas. Hatch marks or other textures should be used to delineate public use areas only when color is not adequate to convey information. Consider printing secondary leaflets with complex maps in two colors rather than one, to avoid excessive use of textures.

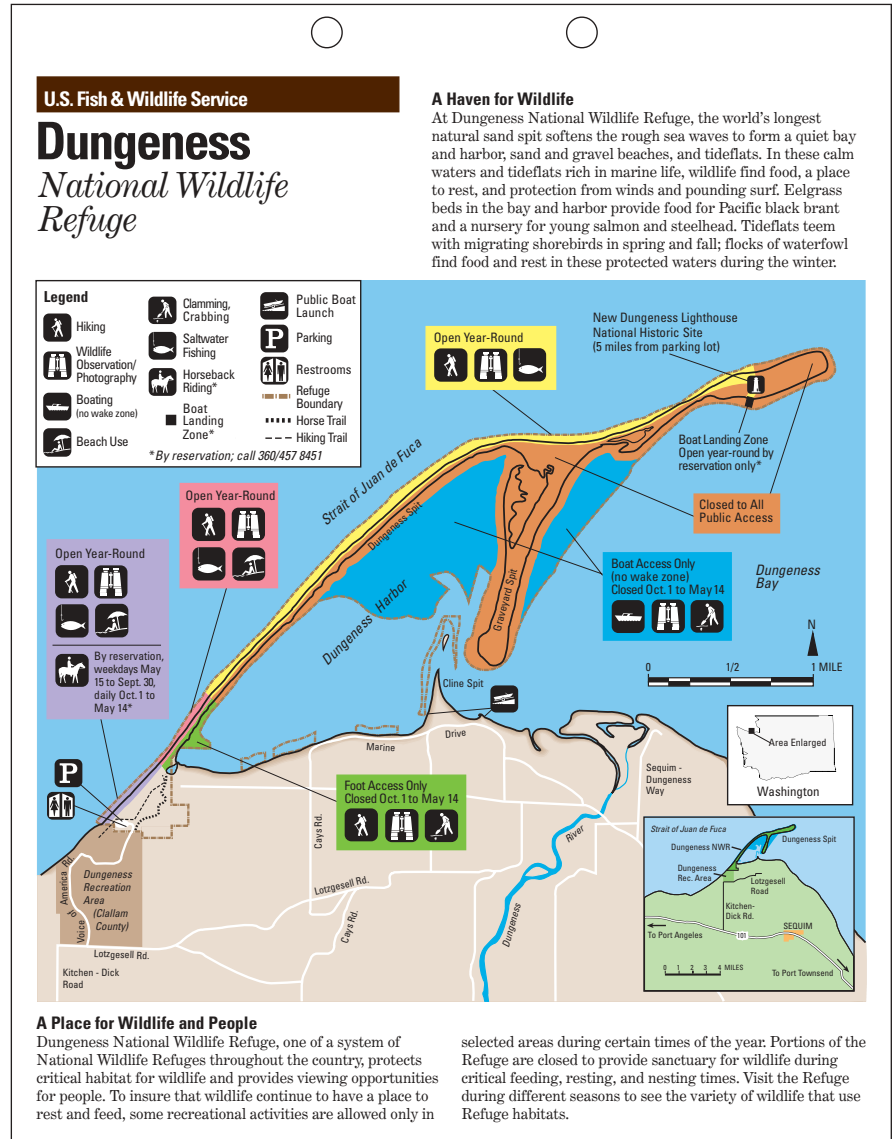
Textures used for habitat areas or vegetation types should be used only where use of a second color is not adequate to convey essential information. See additional information under Map Key and Symbols.

## Refuge Boundary

2 pt. line, dash alternating with 1 dot, 60% black over a 4 pt. solid line, 20% black.

## Rivers

1 pt. 40% black line. Use dash alternating with two dots for intermittent streams



U.S. Fish & Wildlife Service

## Dungeness National Wildlife Refuge

### A Haven for Wildlife

At Dungeness National Wildlife Refuge, the world's longest natural sand spit softens the rough sea waves to form a quiet bay and harbor, sand and gravel beaches, and tideflats. In these calm waters and tideflats rich in marine life, wildlife find food, a place to rest, and protection from winds and pounding surf. Eelgrass beds in the bay and harbor provide food for Pacific black brant and a nursery for young salmon and steelhead. Tideflats teem with migrating shorebirds in spring and fall; flocks of waterfowl find food and rest in these protected waters during the winter.

**Legend**

- Hiking
- Wildlife Observation/Photography
- Boating (no wake zone)
- Beach Use
- Clamming, Crabbing
- Saltwater Fishing
- Horseback Riding\*
- Public Boat Launch
- Parking
- Restrooms
- Refuge Boundary
- Horse Trail
- Boat Landing Zone\*
- Hiking Trail

\*By reservation, call 360/457 8451

### A Place for Wildlife and People

Dungeness National Wildlife Refuge, one of a system of National Wildlife Refuges throughout the country, protects critical habitat for wildlife and provides viewing opportunities for people. To insure that wildlife continue to have a place to rest and feed, some recreational activities are allowed only in

selected areas during certain times of the year. Portions of the Refuge are closed to provide sanctuary for wildlife during critical feeding, resting, and nesting times. Visit the Refuge during different seasons to see the variety of wildlife that use Refuge habitats.

## Lakes and Ponds

.5 pt. 60% black outline with 35% black fill. Use dash outline for intermittent ponds.

## Glaciers

.5 pt. 60% black outline with graduated fill, 25% black to white.

Otherwise, conventions follow those for primary leaflet maps.

Note: If black is not used, use screens of the darkest color.

# Text

Major headings are located at the top of the page, with no line space between heading and text. When the next major heading appears, a new page is begun. Subheadings are located in the left column.

Throughout the publication, type hangs from the 1p6 top margin. Column lengths vary according to the length of the text within each section. Text follows the grid, utilizing column one for subheads and the width of columns two and three for the major heading and text.

	<b>Boating</b>					<b>Fishing</b>
	State regulations, including those related to flotation devices, lights and fire extinguishers, must be followed.					Fishing for largemouth black bass and trout attracts thousands of visitors each year. The trout are raised at the Collection Fish Hatchery, located on the refuge and operated by the Nevada Department of Wildlife.
January 1-June 31	Float tubes are permitted in Unit 21 and a small portion of Unit 10. No boats are permitted to be operated on the refuge.			Artificial Lures		Those portions of the Collection Hatchery and associated springs which are open to fishing may be fished only with artificial lures. Possession or use of live or dead bait fish is prohibited anywhere on the refuge.
June 01-July 31	South of Brown Dike (South Stamp) only, motorless boats, float tubes and boats propelled with battery-powered electric motors are permitted. Float tubes are also permitted in Unit 21 and a small portion of Unit 10.			Closed Waters		Fishing is prohibited from the west bank of the Collection Ditch between Brownsman Cabin and Pauser-Springshole in the hatchery raising and brooding ponds, Cave Creek west of County Road 787 and from the dike between Units 14 and 20 during bass nesting season or periods.
August 1-December 31	In the South Stamp, motorless boats, float tubes and boats propelled by motors with a total of 30 hp or less are permitted. Float tubes are also permitted in Unit 21 and a small portion of Unit 20. Water skis and jet skis are not permitted at any time.			Ice Fishing		Refuge waters are open to ice fishing; however, access to the refuge may be difficult during the winter.
<b>Boat Launching</b>	Boats or trailers can be launched only at Main and Narrows Boat Landings. Canoes or rowing boats can be launched only at the Main Boat Landing, Narrows Boat Landing, Gravel Pit Pond and Brown Dike. When parking at these landings, please park so that your vehicle does not obstruct traffic or the launching area.			Licenses Nets; Licenses are not sold in Ruby Valley.		A Nevada State fishing license or permit is required of all persons twelve years of age and older. A Nevada Trout Stamp is also required to take or possess trout.
<b>Boat Storage</b>	Boats may be stored at Main Boat Landing, Narrows Boat Landing, Gravel Pit Pond and Brown Dike from April 1 through December 31. The marsh usually freezes over by November 30. Because boats can be trapped in deep snow or ice and travel to the refuge can be hazardous during winter, it is recommended that boats be removed from the refuge at the earliest time. Boats must be removed by January 1.			Limits: Size		From January 1 through June 14, the daily and possession limits are five fish. From June 15 through December 31, after bass nesting season concludes, the daily and possession limits are ten fish.
				Limits: Trout		The daily and possession limits are three fish. Rainbow, brook and brown trout provide most of the harvest.
				Season		The refuge is open year-round to fishing except in those areas posted as closed. Dike fishing only is permitted on the area north of Brown Dike, except in Unit 21 and a small portion of Unit 10, where wading and personal flotation devices are permitted.

*Format:*  
4 x 8.5 inches  
(24p x 51p)

*Headings:*  
Univers 67  
10.5/11

*Subheadings:*  
Century  
Expanded Italic  
10/11

*Text:*  
Century  
Expanded  
10/11



# Text

Major headings may also be located in the left column, with subheads in the main column.

<p><b>Why does the Fish and Wildlife Service stock non-native fish?</b></p>	<p>The habitat that exists in Lake Sakakawea was not found in the old Missouri River system. Consequently, the fish that are native to the river have not adapted to these conditions. Fish species more suited to the lake were introduced from the Hatchery to fill the niche. Chinook salmon, trout, and smallmouth bass provide anglers with unique fishing opportunities. Without the reservoirs, these species wouldn't exist in the Missouri River.</p>		<p>trails are similar to the classic "Welcomes" mats at year front door. After the eggs are deposited, the mats are removed and the eggs are hatched in fry tanks.</p>
		<p><b>How do salmon spawn?</b></p>	<p>Salmon spawning occurs in October in Lake Sakakawea. The salmon follow their instinct to migrate upstream to spawn. Biologists use this instinctive drive to capture adult fish for collecting eggs. Water is pumped from the lake through culverts creating an artificial stream. This "stream" lures adult salmon from the lake to collecting pens. Eggs from these fish are stripped, fertilized, and taken to the Hatchery to be incubated and hatched.</p>
<p><b>When do pike and walleye spawn?</b></p>	<p>In early spring as the ice begins to melt, northern pike and walleye are trapped from the cold. Their eggs are stripped, fertilized, and taken to the Hatchery to be incubated in special hatching jars. The eggs hatch within a couple weeks and are stocked in rearing ponds. Biologists add nutrients to the ponds to encourage the growth of microscopic plankton. Plankton and aquatic insects are food for the newly hatched fish, called fry. After a month, the fish are nearly 2 inches long and are ready to be stocked into area lakes.</p>		<p>Trout and salmon spend their days at the Hatchery in raceways where they are supplied with a constant flow of cold, well-oxygenated water and fed a diet made specifically for their growth. When they are from 5 to 10 inches long, they are ready to be stocked. The Hatchery staff produce nearly 1 million trout and salmon annually for stocking into North Dakota waters.</p>
	<p>The number of northern pike and walleye stocked each year is dependent on the success of natural production. If natural production is high, stocking rates from the Hatchery are lowered and vice versa. Hatchery staff have produced up to 3 million northern pike and nearly 38 million walleye in a single year.</p>		<p>Other fish species that are produced here at Garrison Dam NPH include sturgeon, sauger, saugeye, muskellunge, tiger musky, crappie, largemouth bass, paddlefish, and bluegill.</p>
<p><b>What other species are spawned here?</b></p>	<p>In early June, adult smallmouth bass are preparing to spawn. In the wild, male bass have the responsibility of building a nest and incubating the eggs. At the Hatchery, the biologists take over the duties. Bass are held in tanks containing nests which are used as nests for laying their eggs. The</p>	<p><b>What about endangered species?</b></p>	<p>The U.S. Fish and Wildlife Service and this Hatchery are committed to the recovery of endangered species. Changes to the Missouri River through dam construction, channelization, pollution, and introduction of non-native fishes have caused a decline in numbers of some native fish species. The pallid sturgeon, a North Dakota native, is an endangered species. Pallid sturgeon are an ancient fish species</p>

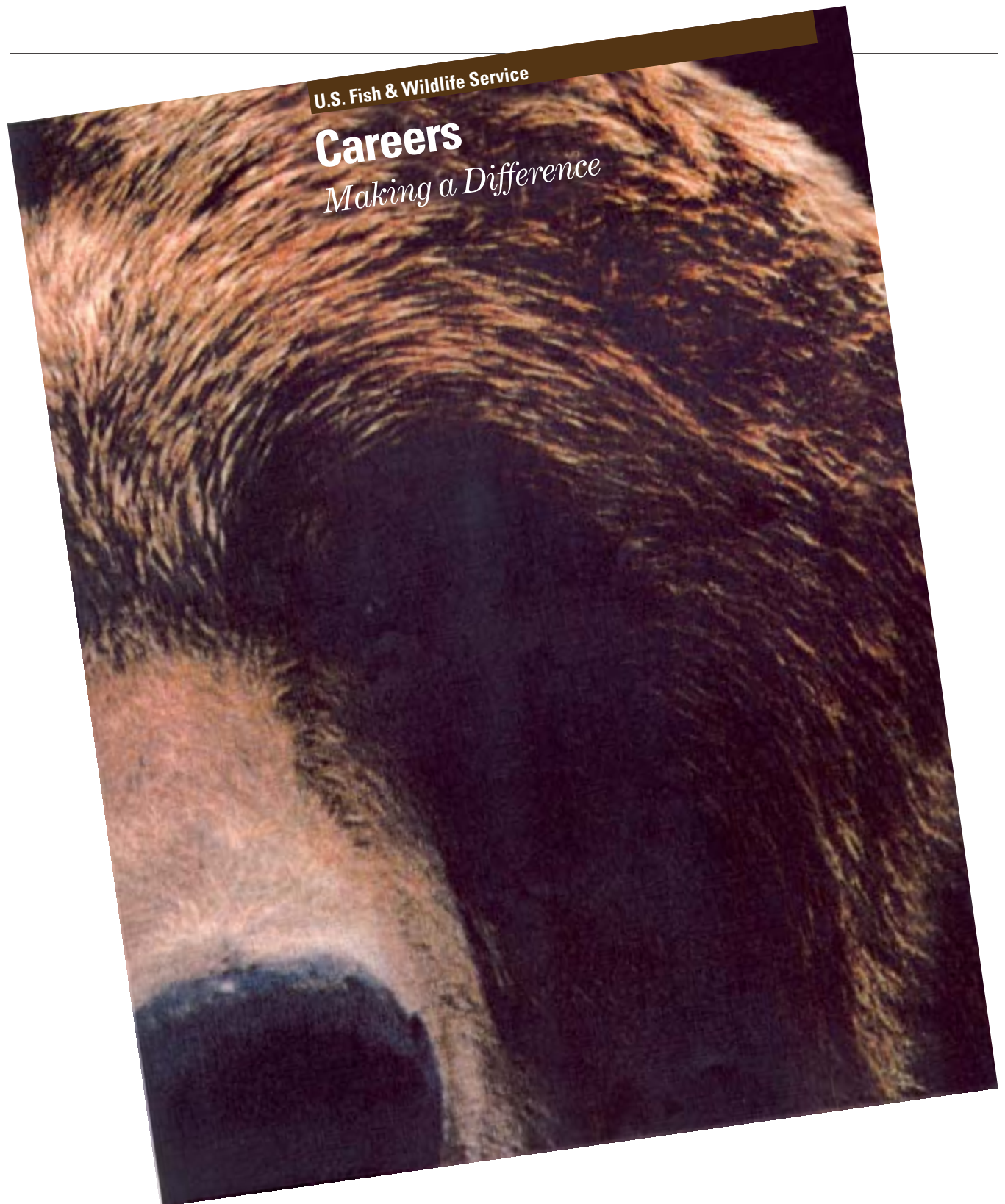
*Format:  
4 x 8.5 inches  
(24p x 51p)*

*Headings:  
Univers 67  
10.5/11*

*Subheadings:  
Century  
Expanded Italic  
10/11*

*Text:  
Century  
Expanded  
10/11*

# 8.5x11 Format Publications

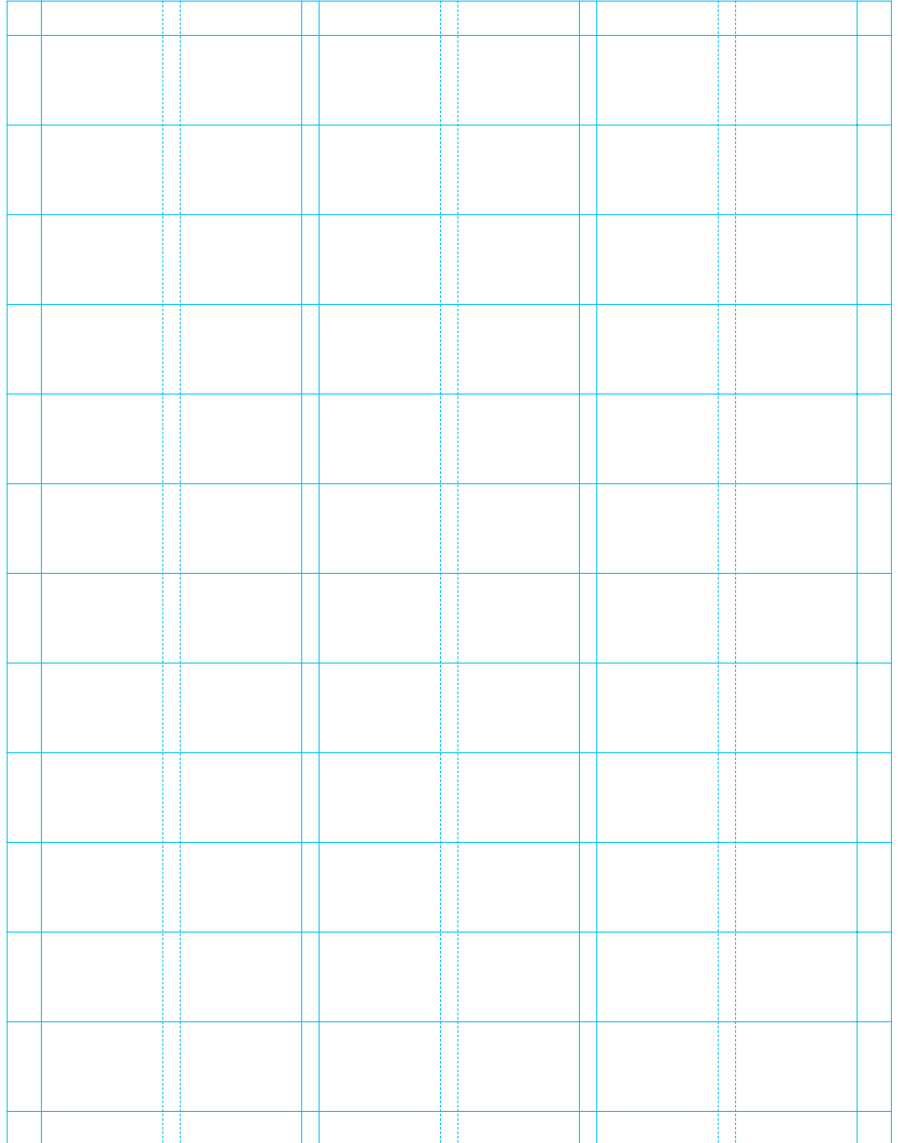


# Grid A

Grid for:  
Individual sheets  
Saddle stitched documents

The area between the top and bottom margins of the page is divided into twelve equal modules, each 5p2 in height. This grid provides a flexible structure for designing pages with two, three, four, six or twelve horizontal divisions, depending on the information to be conveyed.

The width of the page is divided into six equal columns. Text always falls into the three main columns. The smaller columns allow for placement of captions or images on the page.



*Format:*  
8.5 x 11 inches  
(51p x 66p)

*Top/bottom/left/  
right margins:*  
2p

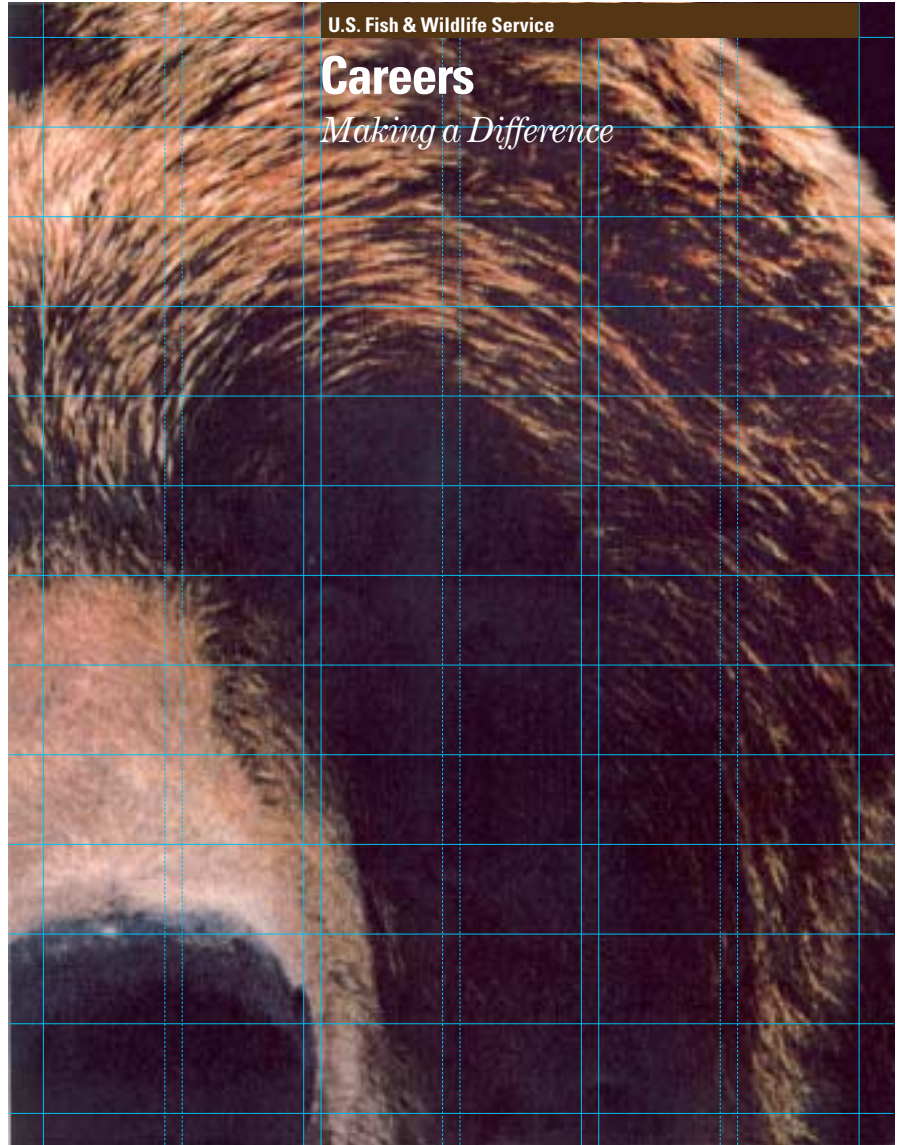
*Columns:*  
6 overall  
3 for text

*Gutter width:*  
1p

# Grid A/ Cover

The image for the cover must be chosen very carefully to bleed across both the front and back cover, cropped to relate to and provide a suitable backdrop for the identification bar and type on the front cover and the type and seals on the back cover.

The USFWS identification bar, publication title and subtitle fall within the second and third columns of the grid, with the identification bar bleeding at the top as shown. The title begins 1 pica below the bar. Type sizes and line spacing follow those on the 4 x 8.5 format publication cover, as shown on the page “Cover/Information Brochure.”



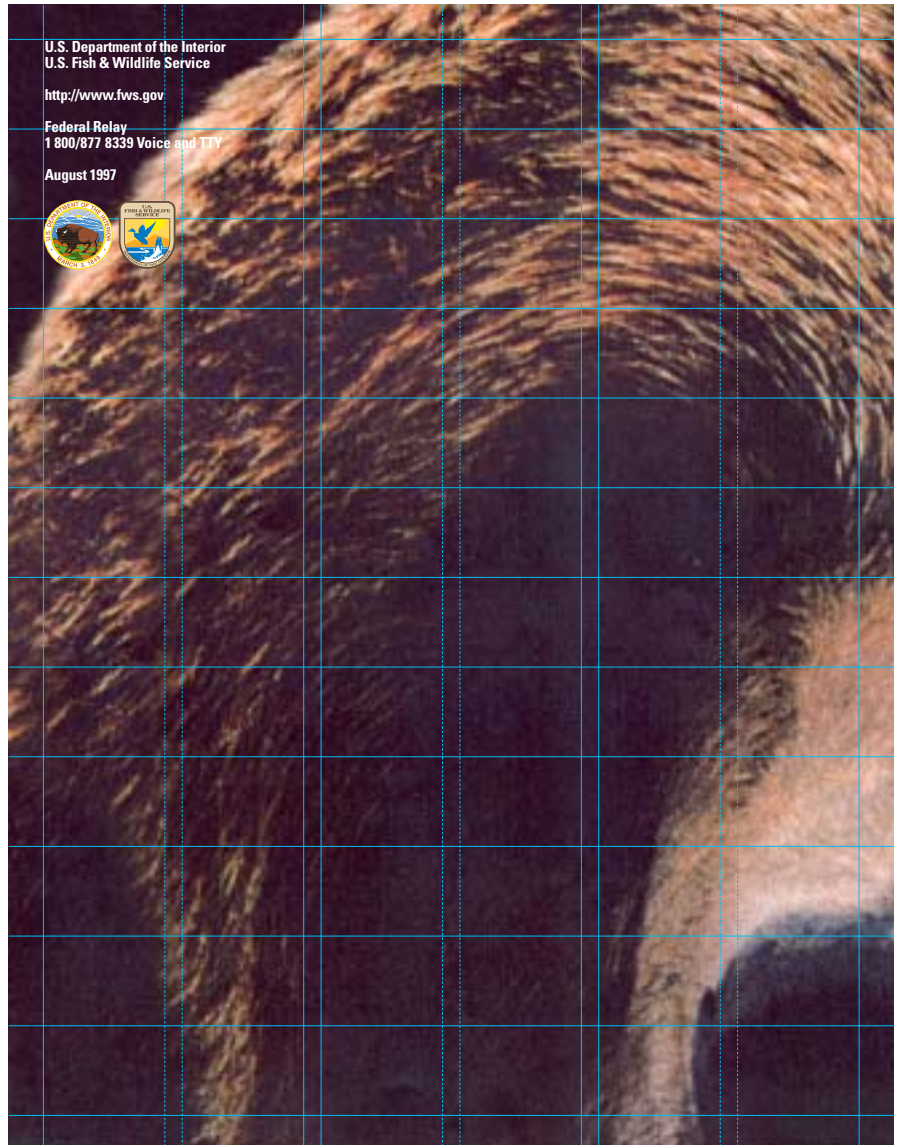
*Format:*  
*8.5 x 11 inches*  
*(51p x 66p)*

*Title:*  
*Univers 67*  
*36/36*

*Subtitle:*  
*Century*  
*Expanded Italic*  
*24/24 with p9*  
*space above*

# Grid A/ Back Cover

The front cover image should wrap around to the back cover. Text on the back cover follows the grid, 2p from the top and left edges, and occupies the first column only. The seals are located one line space below the text. Seals should be the full color versions.



*Format:*  
8.5 x 11 inches  
(51p x 66p)

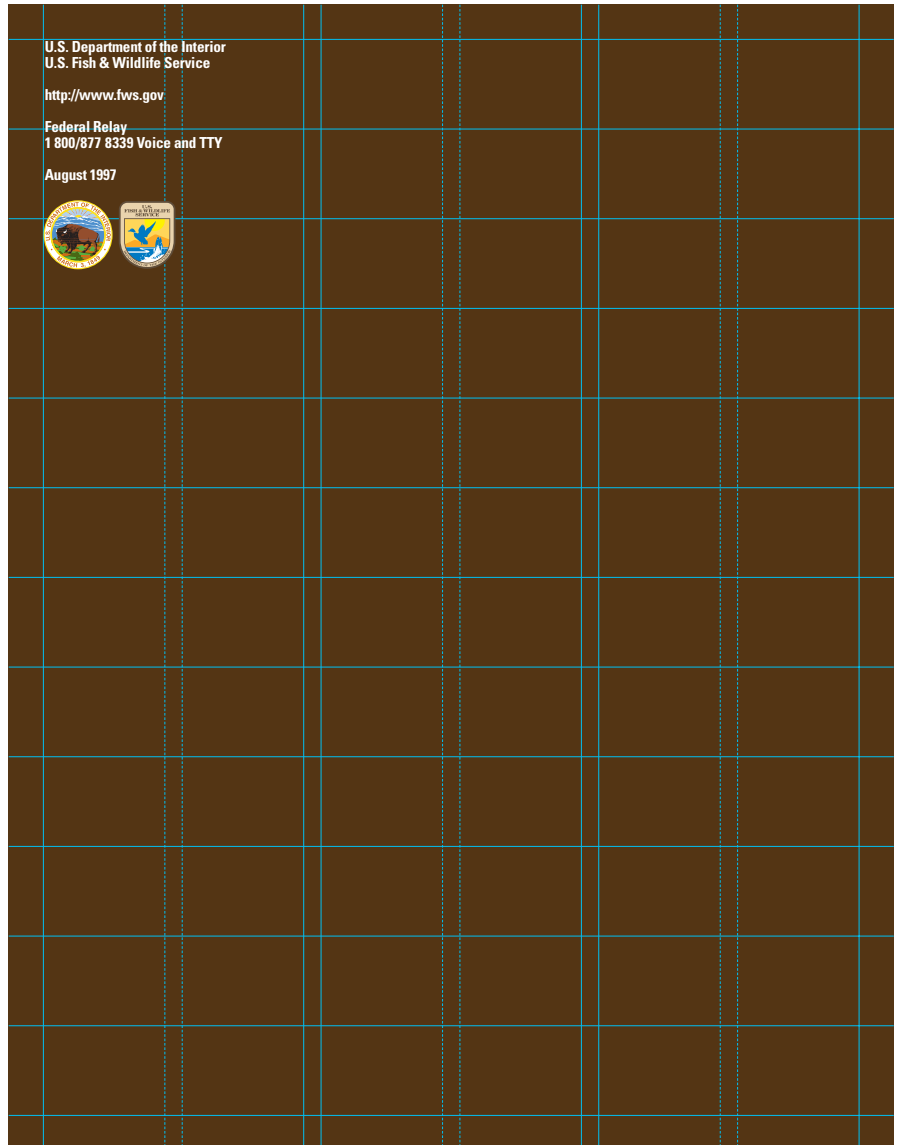
*Back cover:*  
Univers 67  
10.5/11

# Grid A/ Back Cover, No Image

If the front cover image does not wrap around, use a solid color background on the back cover.

Text on the back cover follows the grid, 2p from the top and left edges, and occupies the first column only. The seals are located one line space below the text.

The text on the back cover may be white, black or a spot color. Seals should be the full color versions for full color publications, or one color versions to match the back cover text for spot color publications.



*Format:*  
8.5 x 11 inches  
(51p x 66p)

*Back cover:*  
Univers 67  
10.5/11

# Grid B

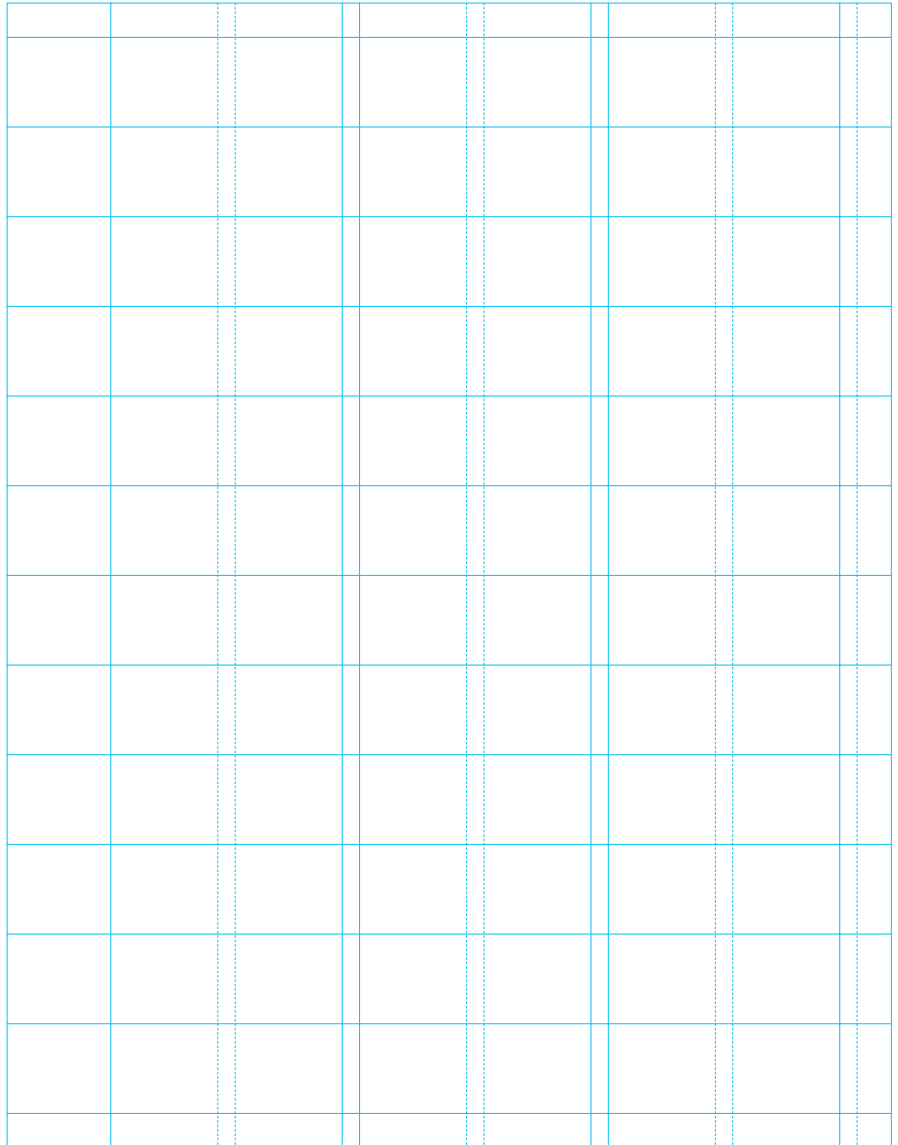
Grid for:

Perfect bound documents  
Wire or plastic bound documents  
Pages punched for insertion into ring binders

The area between the top and bottom margins of the page is divided into twelve equal modules, each 5p2 in height. This grid provides a flexible structure for designing pages with two, three, four, six or twelve horizontal divisions, depending on the information to be conveyed.

The width of the page is divided into six equal columns. Text always falls into the three main columns. The smaller columns allow for placement of captions or images on the page.

An optional 2p wide index bar, beginning at the vertical dashed line on the grid, may bleed along the outside edge of the page, if needed. The size and position of type within the index bar matches the USFWS identification bar as shown on the page "USFWS Identification."



*Format:*  
8.5 x 11 inches  
(51p x 66p)

*Columns:*  
6 overall  
3 for text

*Top/bottom margins:*  
2p

*Gutter width:*  
1p

*Inside margin:*  
6p

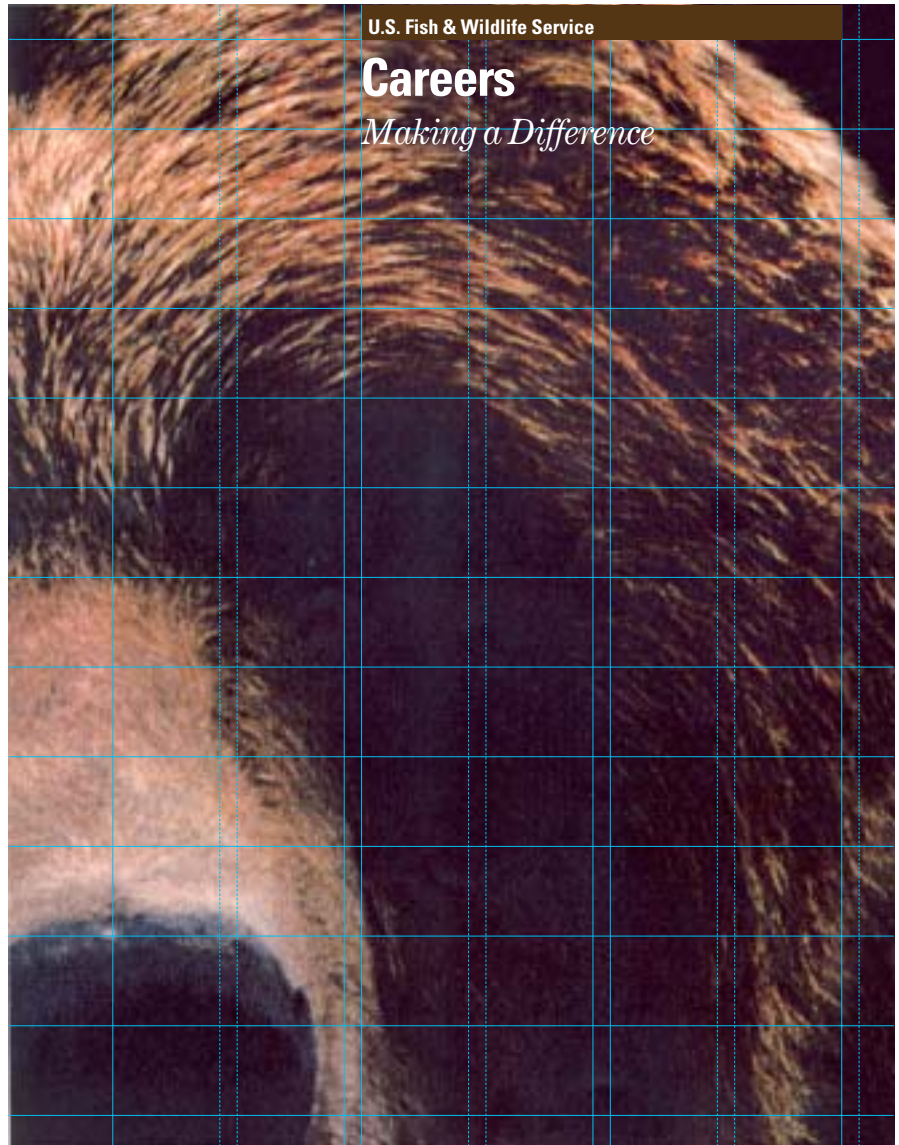
*Outside margin:*  
3p

# Grid B/ Cover

The image for the cover must be chosen very carefully to bleed across both the front and back cover, cropped to relate to and provide a suitable backdrop for the identification bar and type on the front cover and the type and seals on the back cover.

The USFWS identification bar, publication title and subtitle fall within the second and third columns of the grid, with the identification bar bleeding at the top as shown. The title begins 1 pica below the bar. Type sizes and line spacing follow those on the 4 x 8.5 format publication cover, as shown on the page “Cover/Information Brochure.”

Back cover layout is similar to the page “Grid A/Back Cover” except the outside margin is 3 picas.



*Format:*  
8.5 x 11 inches  
(51p x 66p)

*Title:*  
Univers 67  
36/36

*Subtitle:*  
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24/24 with p9  
space above

*Back cover*  
*(not shown):*  
Univers 67  
10.5/11

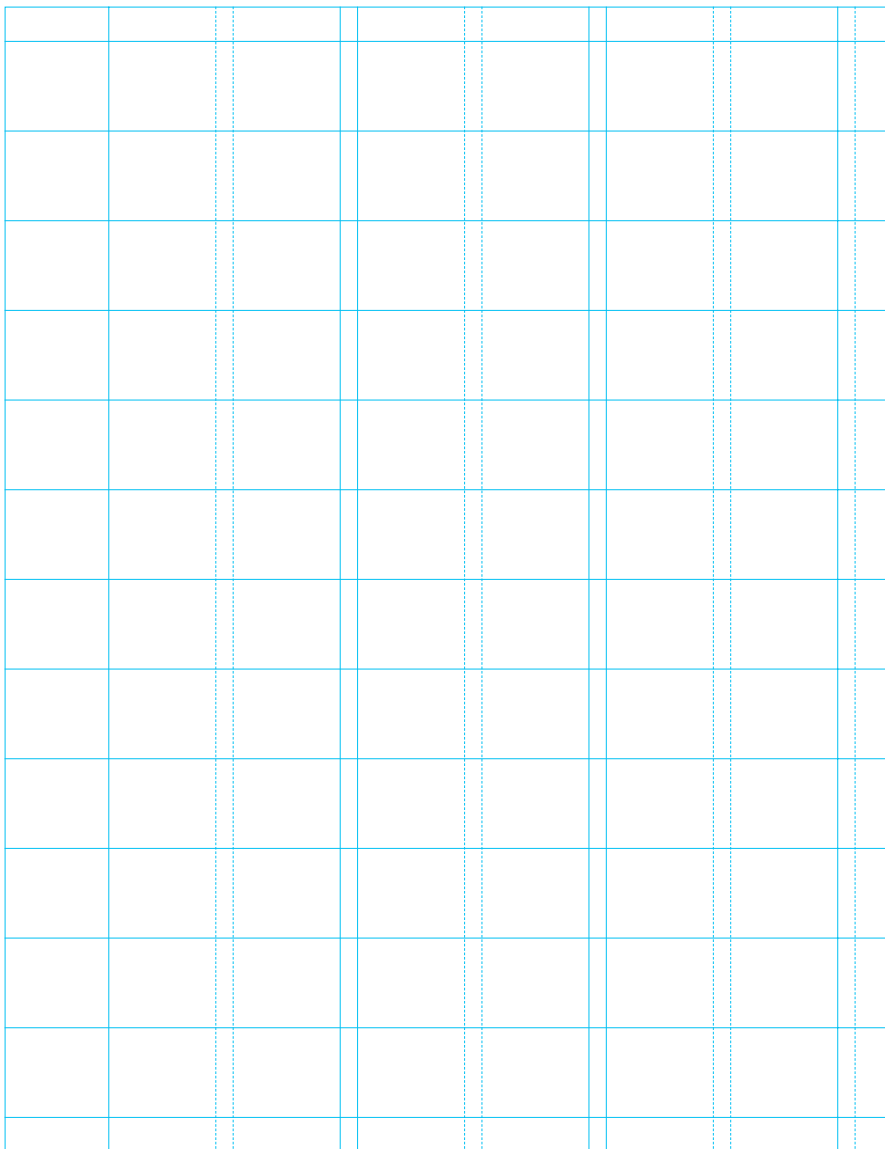


# Grid C

Grid C is a variation of Grid B. The grid is useful for simple photocopied reports where the identification bar cannot run off the edge of the page.

The area between the top and bottom margins of the page is divided into twelve equal modules, each 5p2 in height. This grid provides a flexible structure for designing pages with two, three, four, six or twelve horizontal divisions, depending on the information to be conveyed.

The width of the page is divided into six equal columns. Text always falls into the three main columns. The smaller columns allow for placement of captions or images on the page.



*Format:*  
8.5 x 11 inches  
(51p x 66p)

*Columns:*  
6 overall  
3 for text

*Top/bottom  
margins:*  
2p

*Gutter width:*  
1p

*Inside margin:*  
6p

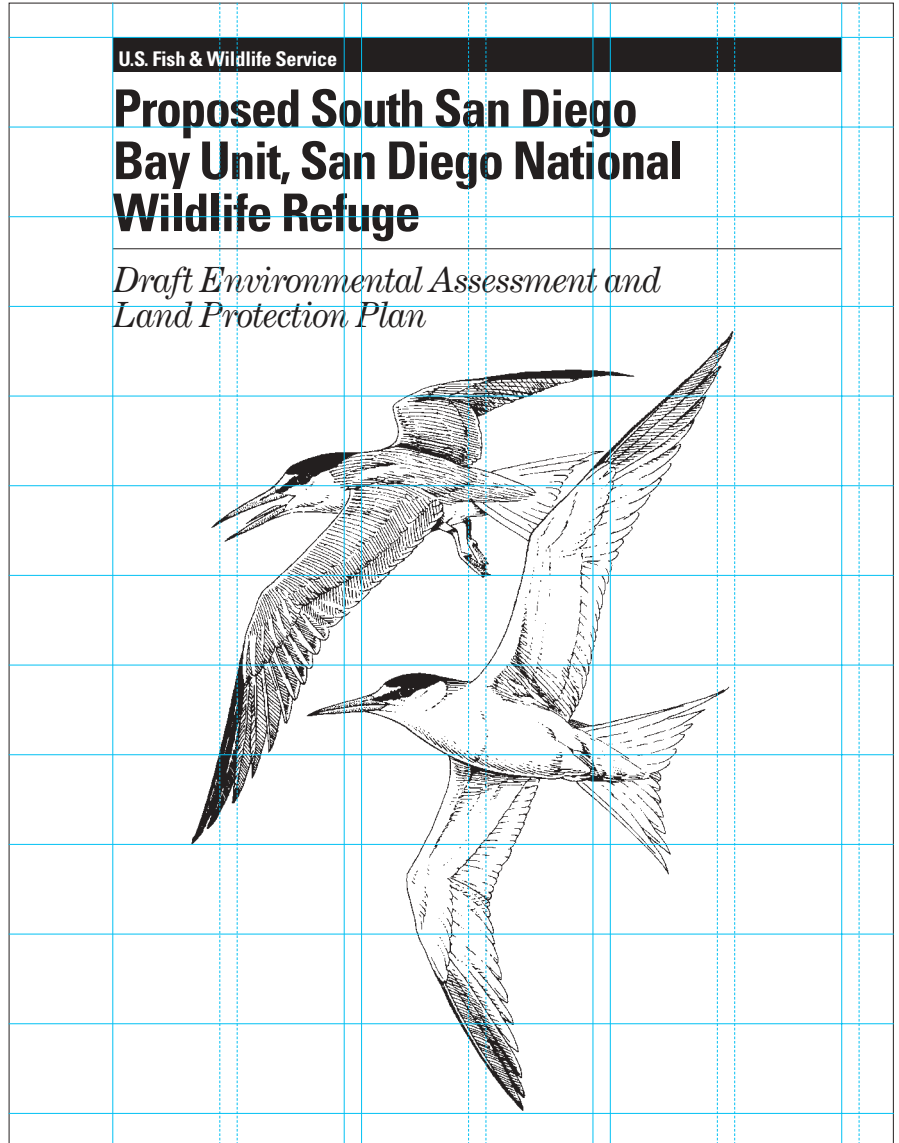
*Outside margin:*  
3p

# Grid C/ Cover

The USFWS identification bar, publication title and subtitle fall across all three columns within the grid, with the identification bar 2 picas from the top edge as shown.

The title begins 1 pica below the bar. A .5 point rule runs 1 pica from the baseline of the last line of the title. The subtitle starts 1 pica below the rule.

Back cover layout is similar to the page “Grid A/Back Cover” except the outside margin is 3 picas.



*Format:*  
8.5 x 11 inches  
(51p x 66p)

*Title:*  
Univers 67  
36/36

*Rule:*  
.5 point width

*Subtitle:*  
Century  
Expanded Italic  
24/24

*Back cover  
(not shown):*  
Univers 67  
10.5/11

# Introduction Page

A brief opening text introduces the topic to the public. Italic type imparts an inviting, conversational flavor. To enhance the feeling of wide open spaces, the text appears in white on a full bleed background color appropriate to the character of the topic. To avoid unreadable line length, the text should only cross four columns. The text may occupy the right or left page, as appropriate.

For report type documents, quotes may be used as pullouts, side bars or chapter breaks, as well as inside covers.

This example shows the quotation scaled up to fill the page height, with line breaks at meaningful pauses.

**Format:**  
8.5 x 11 inches  
(51p x 66p)


**Quotation:**  
Century  
Expanded Italic  
24/26  
or larger for  
impact

**Title:**  
Univers 67  
24/24

**Text:**  
Century  
Expanded  
10/11  
Two columns  
wide

**Captions:**  
Century  
Expanded Italic  
10/11  
One column  
wide

**Photo credits:**  
Century  
Expanded  
7/8

<p><i>“It was a spring without voices. On the mornings that had once throbbed with the dawn chorus of robins, catbirds, doves, jays, wrens, and scores of other bird voices there was now no sound; only silence lay over the fields and woods and marsh.”</i></p>	<p>Many believe Rachel Carson's <i>Silent Spring</i>, the source of the quotations throughout this publication, inspired the modern environmental movement. Her book led to the establishment of the Environmental Protection Agency and passage of pollution-prevention laws such as the Clean Air Act, Clean Water Act, and "Superfund" toxic waste cleanup law.</p>	<p><b>Pollution Spurs Modern Environmental Movement</b></p>	<p>Out of all the challenges to conserve natural resources and sustain a healthy environment, efforts to control pollution have virtually defined the modern environmental movement.</p> <p>The U.S. Fish and Wildlife Service's Environmental Contaminants Program is the only federal effort specifically dedicated to identifying and preventing harmful contaminant effects on fish and wildlife. The Environmental Contaminants Program also plays a key role in restoring natural resources degraded by contamination.</p> <p>The study of contaminant impacts to fish and wildlife is as old as the Service itself, dating back to the early 1900s when the agency conducted water quality research as part of its fisheries conservation program.</p> <p>In 1902, Rachel Carson, a former Service employee, captured national attention with her landmark book <i>Silent Spring</i>, which outlined the widespread harmful effects of pesticides on the environment. Carson's alarming message that the impacts of these substances on wildlife serve as indicators of what may ultimately jeopardize our own health struck a chord with the American public.</p> 
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# Images with Text

With a full bleed image on the right page, the caption appears in the last column of the left page. Text appears in the first two columns. The white space between the image and the text provides a needed breathing space next to the large scale image.

Small images may be added sparingly, as needed. Silhouetted shapes provide visual interest and a good foil to the large rectangular image on the right page.


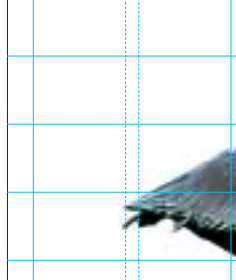
*Format:*  
8.5 x 11 inches  
(51p x 66p)

*Title:*  
Univers 67  
24/24

*Text:*  
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Two columns  
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*Captions:*  
Century  
Expanded Italic  
10/11  
One column  
wide

*Photo credits:*  
Century  
Expanded  
7/8

<p><b>Making Pest Control Safe for Wildlife</b></p>		
<p>Especially since the 1940s and 50s, agricultural pesticides have been used to meet the increasing demand for food from an ever-growing human population. The use of agricultural pesticides sky-rocketed before the harmful impacts of many of these substances were realized.</p>		<p><i>Right: More than one-third of the land in the United States is used for agriculture, and more than two-billion pounds of pesticides are used on these lands each year.</i></p>
<p>Agricultural pesticides, including insecticides and herbicides, can be harmful to wildlife. Perhaps the best known example is DDT which nearly caused the extinction of the bald eagle, brown pelican, peregrine falcon, and other birds because of its eggshell-thinning effect.</p>		<p><i>Below: The use of DDT in the United States was banned in 1972 and many species imperiled from its egg-shell thinning effect, including the brown pelican, have since made strong recoveries.</i></p>
<p>Today, the Environmental Protection Agency evaluates pesticides before they are put on the market and registers them for certain uses. The Fish and Wildlife Service supports the EPA by providing biological analyses of the ecological effects of pesticides as part of this registration process.</p>		
<p>Farmers can decrease some of the hazards of using pesticides without sacrificing production or profit. There are several government programs to assist farmers in using pesticides in a manner safe to wildlife, many of which involve the Service as well as the Department of Agriculture.</p>		
		

# Images with Text

White space along the entire edge of the full page image gives it breathing room. Other images should not butt up against a full page image and two-sided bleeds should be avoided.

Two smaller photos are overlapped and placed at a random angle, although their two-column-wide size follows the grid.

*Format:*  
8.5 x 11 inches  
(51p x 66p)



*Title:*  
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*Captions:*  
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Expanded Italic  
10/11

*One column  
wide*

*Photo credits:*  
Century  
Expanded  
7/8

<p><b>Oil and Water Don't Mix</b></p>		
<p>In 1989, the worst oil spill in U.S. history occurred when the Exxon Valdez oil tanker ran aground in Alaska's Prince William Sound, releasing 11 million gallons of crude oil.</p> <p>This disaster demonstrated that an emergency response program was needed to handle such incidents.</p> <p>This led to passage of the Oil Pollution Act in 1990 that, like Superfund, set up a "polluter pays" mechanism covering the cost of cleanup. The U.S. Coast Guard is primarily responsible for oil spill cleanup, with the Fish and Wildlife Service providing an important support role.</p> <p>The Oil Pollution Act also includes the Natural Resource Damage Assessment and Restoration program. Like with Superfund, the Service not only helps with oil spill cleanup, but also carries out efforts to restore resources lost or degraded by a spill.</p> <p>When a major spill occurs, Service contaminant specialists are on scene to help protect sensitive areas, conduct the cleanup, and rehabilitate affected wildlife.</p>	<p><i>Right: A tanker released 30,000 gallons of jet fuel and more than 300,000 gallons of oil near Tampa Bay in Florida in 1994. The spill, covering 300 square miles of water, devastated sea turtles, waterbirds, mangroves, fisheries, and oyster beds.</i></p> <p><i>Left: Alaska's Smith Island was hit hard by the 1989 Exxon Valdez oil spill. Restoration efforts for both areas have yielded successful recovery, as shown in these before and after views.</i></p> 	

# Images with Text

Here is an instance where a lot of images are better than just a few, because the quantity reinforces the idea of an active and involved organization. The falcon image aligns with the left edge of the text column above.

*Format:*  
8.5 x 11 inches  
(51p x 66p)

*Title:*  
Univers 67  
24/24

*Text:*  
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Two columns  
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*Captions:*  
Century  
Expanded Italic  
10/11  
One column  
wide

*Photo credits:*  
Century  
Expanded  
7/8

		<p><i>Upper left:</i> Contaminant specialists also identify sources of pollution in streams, wetlands, and other important habitats in order to prevent harm to fisheries and migratory birds which depend on these areas for their survival.</p>	<p><b>Contaminants Specialists: Advocates for Wildlife</b></p> <p>The Fish and Wildlife Service's major responsibilities include the conservation of migratory birds and fisheries, management of more than 500 national wildlife refuges, and recovery of endangered species. The Service's efforts to conserve and protect fish and wildlife are bolstered by the Environmental Contaminants Program.</p> <p>Today, the Service's Environmental Contaminants Program includes contaminant specialists stationed at field offices around the country. They are involved in a broad range of activities, often working in partnership with other agencies and organizations which have come to rely on their unique expertise.</p> <p>The following are just some of the important things the Service's contaminant specialists do:</p>	
		<p><i>Upper right:</i> Contaminant specialists investigate fish and wildlife die-offs to learn how to prevent future harm to the environment.</p>		<p>Identify sources of pollution in important fish and wildlife habitats</p> <p>Investigate contaminant effects on fish and wildlife and their habitat</p> <p>Investigate fish and wildlife die-offs</p> <p>Restore habitats and resources degraded by contamination</p> <p>Provide advice on minimizing the use of pesticides</p>
		<p><i>Middle left:</i> Caption needed for this image.</p>		<p>Assist with cleanup, wildlife rehabilitation, and habitat restoration at hazardous waste and oil spill sites</p> <p>Develop planned responses for potential oil spills or hazardous substance releases</p> <p>Secure compensation for resources lost or degraded by hazardous waste release or spills</p> <p>Review proposals for federally funded, permitted, or licensed projects with pollution ramifications to minimize the harmful effects on fish and wildlife</p> <p>In all these ways and many more, Service contaminant specialists recommend ways to avoid, minimize, or compensate for harmful contaminant impacts on fish and wildlife.</p>
		<p><i>Middle right:</i> Contaminant specialists recover injured wildlife at oil spill sites and try to rehabilitate them. This biologist recovered King Eiders oiled by a spill off Alaska's Pribilof Islands in February 1996.</p>		
		<p><i>Lower left:</i> Caption needed for this image.</p>		
		<p><i>Lower right:</i> Caption needed for this image.</p>		
		<p><i>Right:</i> Contaminant specialists use their expertise to help develop recovery plans for endangered species imperiled due to pollution, such as the American peregrine falcon.</p>		

# Tables

Tables have a .5 rule above the table title. Use a 15% or 20% shaded bar on alternating rows, and align the table columns with the page grid if possible.

**Table 1. Village Polar Bear Harvest, Alaska 1994/1995**

<i>Village</i>	<i>Male</i>	<i>Female</i>	<i>Unknown</i>	<i>Total</i>
Kaktovik*	1	0	0	1
Nuiqsut*	0	1	1	2
Barrow*	4	3	0	7
Atqasuk*	0	0	0	0
Wainwright*	3	2	1	6
Point Lay	1	0	0	1
Point Hope	15	2	1	18
Kivalina	1	1	0	2
Shishmaref	7	4	0	11
Wales	2	0	0	2
Nome	1	0	0	1
Diomede	7	3	0	10
Savoonga	8	2	0	10
Gambell	1	8	0	9
<b>Total</b>	<b>51</b>	<b>26</b>	<b>3</b>	<b>80</b>
Percent	(63.7)	(32.5)	(3.8)	(100)

\*Denotes villages party to the IGC/NSB Management Agreement for the southern Beaufort Sea polar bear stock. Harvest season extends from July 1, 1994, to June 30, 1995.

*Title:*  
*Univers 67*  
*10.5/11*

*Text:*  
*Century*  
*Expanded*  
*9/10*  
*or smaller as*  
*required*

# Charts

Charts have a .5 rule above the title like tables. Keep charts simple and easy to read.

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## 1991 and 1996 Wildlife Watching Estimates

### Participants

1991: 76.1 million



1996: 62.9 million



### Expenditures

1991: \$21.2 billion



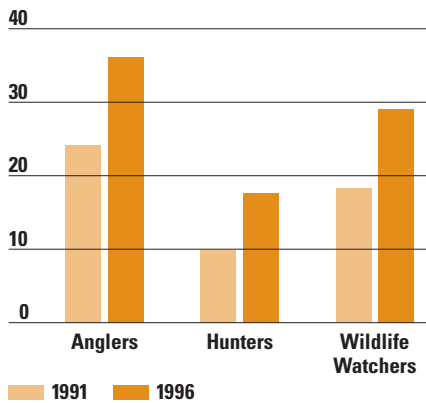
1996: \$27.0 billion\*



\*Excludes land leasing and ownership, and other items not included in the 1991 Survey.

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## 1991 and 1996 Comparison of Expenditures



Note: 1991 Expenditures adjusted for inflation

Title:  
Univers 67  
10.5/11

Text:  
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Expanded  
9/10  
or smaller as  
required



# Report

A 2 pica black bar indicates a new section. The text starts in the third grid row on this section page only. For a secondary section title use Century Expanded Italic as shown here.

Format:  
8.5 x 11 inches  
(51p x 66p)

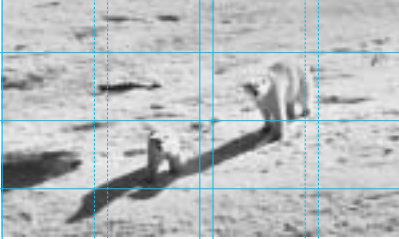
Secondary  
Title:  
Century  
Expanded Italic  
24/24

Text Headings:  
Univers 67  
10.5/11

Text:  
Century  
Expanded  
10/11  
Two columns  
wide

Captions:  
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Expanded Italic  
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One column  
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Photo credits:  
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Status Reports																																																																																																																																																																																																																																																																																																																																																																		
<p><b>Incidental (Small) Take During Oil and Gas Exploration</b> The Act authorizes the Secretary of the Interior to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals in a specified activity within a specified geographical region if it is found that the total of such taking will have a negligible impact on the species or stock and will not have an unmitigable adverse impact on the availability of such species or stock for subsistence uses. General implementing regulations in 50 CFR 18.27 provide for development of specific regulations to govern incidental take activities and for issuance of Letters of Authorization (LOA) to applicants proposing to conduct activities under the specific regulations. Regulations can be for not more than five consecutive years. LOAs prescribe specific stipulations for each applicant and must be renewed annually.</p>		<p>determine the levels of organochlorines in fat tissue and heavy metals in the liver, kidney, and muscle tissue of polar bears throughout Alaska was completed and work continues to set up the sampling program and secure additional funding needed to complete the project.</p> <p><b>Genetics</b> To verify the sex of harvested bears, 177 muscle and tissue samples were analyzed using genetic techniques by LGL Research Associates, Inc. The samples were analyzed according to techniques described by Amstrup et al., 1993, "Sex identification of polar bears from blood and tissue samples." Sex could not be determined for 30 samples due to tissue degradation and subsequent desiccation which prevented DNA amplification, and field sex was unknown for 8 samples. The resulting sample of 139 bears for which DNA and field sex data were available were comprised of 40 (28.8 percent) from the Beaufort Sea and 99 (71.2 percent) from the Chukchi Sea stocks. The sex was correctly identified for approximately 86 percent (n=139) of the harvest. A slight bias in reporting males was detected. The sex was reversed for 19 bears: 12 were reported as males when, in actuality, they were females; and seven initially reported as females were actually males. Seven of each sex "cancel" each other in terms of the overall sex composition of the harvest. Therefore, five more females were killed than were reported. The net underestimate of females was 13% which equates to a 3.6 percent error rate. A number of factors appear to contribute to incorrect sex-identity of harvested polar bears. Incorrect sex was reported or recorded by hunters and the taggers (local assistants and Service personnel). A publication on the details of this study is in preparation.</p> <p>Findings of this study reveal a need for improvement in reporting the sex of harvested animals. Polar bears, because of their low reproductive potential, relatively small populations, and low densities are particularly susceptible to over-harvest. Research on the population dynamics of the Southern Beaufort Sea population has determined that reproductively active females are the most important sex/age class. Sustainable yield estimates for the annual harvest of adult females may only be 1.6 percent of the population. Therefore, accurate sex identification of harvested adult bears is critically important.</p> <p>Modification of the harvest data collection procedures is warranted and may include the continued genetics verification of sex of all harvested animals or development of a requirement that aluminum accompany all harvested males.</p>	<p><b>Table 1. Village Polar Bear Harvest, Alaska 1994/1995</b></p> <table border="1"> <thead> <tr> <th>Village</th> <th>Male</th> <th>Female</th> <th>Unknown</th> <th>Total</th> </tr> </thead> <tbody> <tr><td>Kaktovik*</td><td>1</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>Nuiqsut*</td><td>0</td><td>1</td><td>1</td><td>2</td></tr> <tr><td>Barrow*</td><td>4</td><td>3</td><td>0</td><td>7</td></tr> <tr><td>Atkasuk*</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Wainwright*</td><td>3</td><td>2</td><td>1</td><td>6</td></tr> <tr><td>Point Lay</td><td>1</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>Point Hope</td><td>15</td><td>2</td><td>1</td><td>18</td></tr> <tr><td>Kivalina</td><td>1</td><td>1</td><td>0</td><td>2</td></tr> <tr><td>Shishmaref</td><td>7</td><td>4</td><td>0</td><td>11</td></tr> <tr><td>Wales</td><td>2</td><td>0</td><td>0</td><td>2</td></tr> <tr><td>Nome</td><td>1</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>Diomedes</td><td>7</td><td>3</td><td>0</td><td>10</td></tr> <tr><td>Savoonga</td><td>8</td><td>2</td><td>0</td><td>10</td></tr> <tr><td>Gambell</td><td>1</td><td>8</td><td>0</td><td>9</td></tr> <tr><td>Total</td><td>51</td><td>25</td><td>3</td><td>80</td></tr> <tr><td>Percent</td><td>(63.7)</td><td>(32.5)</td><td>(3.8)</td><td>(100)</td></tr> </tbody> </table> <p>*Denotes villages party to the IGC/NSB Management Agreement for the southern Beaufort Sea polar bear stock. 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Monthly Polar Bear Harvest, Alaska 1994/1995</b></p> <table border="1"> <thead> <tr> <th rowspan="2">Village</th> <th colspan="12">Month</th> <th rowspan="2">Total</th> </tr> <tr> <th>Jul</th> <th>Aug</th> <th>Sep</th> <th>Oct</th> <th>Nov</th> <th>Dec</th> <th>Jan</th> <th>Feb</th> <th>Mar</th> <th>Apr</th> <th>May</th> <th>Jun</th> </tr> </thead> <tbody> <tr><td>Kaktovik*</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td></tr> <tr><td>Nuiqsut*</td><td>-</td><td>-</td><td>-</td><td>2</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>2</td></tr> <tr><td>Barrow*</td><td>-</td><td>1</td><td>1</td><td>2</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td><td>1</td><td>-</td><td>7</td></tr> <tr><td>Atkasuk*</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>0</td></tr> <tr><td>Wainwright*</td><td>-</td><td>-</td><td>3</td><td>-</td><td>2</td><td>-</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>6</td></tr> <tr><td>Point Lay</td><td>-</td><td>-</td><td>-</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td></tr> <tr><td>Point Hope</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td><td>3</td><td>6</td><td>3</td><td>2</td><td>3</td><td>-</td><td>-</td><td>18</td></tr> <tr><td>Kivalina</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>2</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>2</td></tr> <tr><td>Shishmaref</td><td>-</td><td>-</td><td>-</td><td>3</td><td>1</td><td>4</td><td>2</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>11</td></tr> <tr><td>Wales</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td><td>-</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>2</td></tr> <tr><td>Nome</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td></tr> <tr><td>Diomedes</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>4</td><td>-</td><td>1</td><td>2</td><td>3</td><td>-</td><td>-</td><td>-</td><td>10</td></tr> <tr><td>Savoonga</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>5</td><td>1</td><td>4</td><td>-</td><td>-</td><td>-</td><td>-</td><td>10</td></tr> <tr><td>Gambell</td><td>-</td><td>-</td><td>-</td><td>1</td><td>-</td><td>1</td><td>4</td><td>2</td><td>-</td><td>-</td><td>1</td><td>-</td><td>-</td><td>9</td></tr> <tr><td>Total</td><td>1</td><td>1</td><td>1</td><td>6</td><td>7</td><td>9</td><td>16</td><td>16</td><td>10</td><td>7</td><td>6</td><td>-</td><td>-</td><td>80</td></tr> <tr><td>Percent</td><td>1.3</td><td>1.3</td><td>1.3</td><td>7.5</td><td>8.8</td><td>11.3</td><td>20.0</td><td>20.0</td><td>12.5</td><td>8.8</td><td>7.5</td><td>0</td><td>0</td><td>100</td></tr> </tbody> </table> <p>*Denotes villages party to the IGC/NSB Management Agreement for the southern Beaufort Sea polar bear stock. Harvest season extends from July 1, 1994, to June 30, 1995.</p> <p><b>Contaminants Study</b> Although elevated heavy metal and organochlorine concentrations have been documented in Canadian polar bear populations, relatively little information is available for populations in Alaska. Lentfer (1976) documented heavy metal and organochlorine concentrations in polar bears, prior to major oil and gas development activities on the North Slope. Little recent information on heavy metal and organochlorine contamination of polar bears in Alaska has been collected. Data are needed to assess the environmental impact of recent, and planned, industrial activities.</p> <p>Polar bears are ideally suited for monitoring the level and distribution of heavy metal and organochlorine levels in</p>	Village	Male	Female	Unknown	Total	Kaktovik*	1	0	0	1	Nuiqsut*	0	1	1	2	Barrow*	4	3	0	7	Atkasuk*	0	0	0	0	Wainwright*	3	2	1	6	Point Lay	1	0	0	1	Point Hope	15	2	1	18	Kivalina	1	1	0	2	Shishmaref	7	4	0	11	Wales	2	0	0	2	Nome	1	0	0	1	Diomedes	7	3	0	10	Savoonga	8	2	0	10	Gambell	1	8	0	9	Total	51	25	3	80	Percent	(63.7)	(32.5)	(3.8)	(100)	Village	Month												Total	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Kaktovik*	-	-	-	-	-	-	-	-	-	-	-	-	-	1	Nuiqsut*	-	-	-	2	-	-	-	-	-	-	-	-	-	2	Barrow*	-	1	1	2	1	-	-	-	-	-	1	1	-	7	Atkasuk*	-	-	-	-	-	-	-	-	-	-	-	-	-	0	Wainwright*	-	-	3	-	2	-	1	-	-	-	-	-	-	6	Point Lay	-	-	-	1	-	-	-	-	-	-	-	-	-	1	Point Hope	-	-	-	-	-	1	3	6	3	2	3	-	-	18	Kivalina	-	-	-	-	-	-	-	2	-	-	-	-	-	2	Shishmaref	-	-	-	3	1	4	2	1	-	-	-	-	-	11	Wales	-	-	-	-	-	-	1	-	1	-	-	-	-	2	Nome	1	-	-	-	-	-	-	-	-	-	-	-	-	1	Diomedes	-	-	-	-	-	4	-	1	2	3	-	-	-	10	Savoonga	-	-	-	-	-	-	5	1	4	-	-	-	-	10	Gambell	-	-	-	1	-	1	4	2	-	-	1	-	-	9	Total	1	1	1	6	7	9	16	16	10	7	6	-	-	80	Percent	1.3	1.3	1.3	7.5	8.8	11.3	20.0	20.0	12.5	8.8	7.5	0	0	100
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<p>On June 14, 1991, the Service issued final regulations (at 56 FR 27463) that would allow for five years the incidental, but not intentional, take of small numbers of walrus and polar bears during open-water exploration for oil and gas in the Chukchi Sea adjacent to the coast of Alaska. LOAs were issued to Shell Western Exploration and Production Inc., and Chevron. No "incidental takes" of marine mammals were recorded in response to the two exploration activities. No LOAs have been issued since 1991 under these regulations.</p> <p>The Service issued regulations on November 16, 1993, 58 FR 69402, effective for 18 months from December 16, 1993, through June 16, 1995, for the incidental, unintentional, take of small numbers of polar bears and walrus during oil and gas industry operations (exploration, development, and production) year-round in the Beaufort Sea and adjacent coast of Alaska. On June 14, 1995, 60 FR 31285, the Service extended the regulations for an additional 90 days through August 15, 1995. On August 17, 1995, 60 FR 42805, the Service modified and extended for an additional 60 months (through December 15, 1998, for the full five-year term</p>	<p>A female polar bear with cub in Alaska. U.S. Fish &amp; Wildlife Service photo.</p> <p>approximately 33 percent below the long-term average. The greatest change from the previous year occurred in Point Hope where the harvest increased by approximately 50 percent, and in Gambell and Savoonga where the harvest decreased by approximately 50 percent. The sex ratio of polar bears of known-sex was 64 percent males and 32 percent females. Sex was unrecorded for 4 percent of the harvest which occurred in all months except June. Approximately 90 percent of the bears were killed between January and March (Table 2). The harvest from the Alaska region of the southern Beaufort Sea stock was 16 bears and represented 20 percent of the total statewide harvest.</p> <p><b>Harvest Characteristics</b> Specimens to evaluate genetic proof of sex and contaminants continue to be collected as part of the harvest monitoring program. Additionally, the sex and age composition of the harvest is being compared to the population, sex, and age structure for the southern Beaufort Sea. This analysis also examined the effects of the North Slope Borough/Inuvialuit Game Council Agreement of 1988, which established harvest guidelines and voluntary quotas; and encouraged hunters not to take females with cubs, or denning females. A contaminant proposal to</p>	<p>16</p>	<p>17</p>																																																																																																																																																																																																																																																																																																																																																															

# Report

This is an alternative report format. Text falls in columns 3-6 on the left pages and columns 1-4 on the right pages. The outer columns are used for section titles, pull out quotes charts and images.

*Format:*  
8.5 x 11 inches  
(51p x 66p)

*Captions:*  
Century  
Expanded Italic  
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*Title:*  
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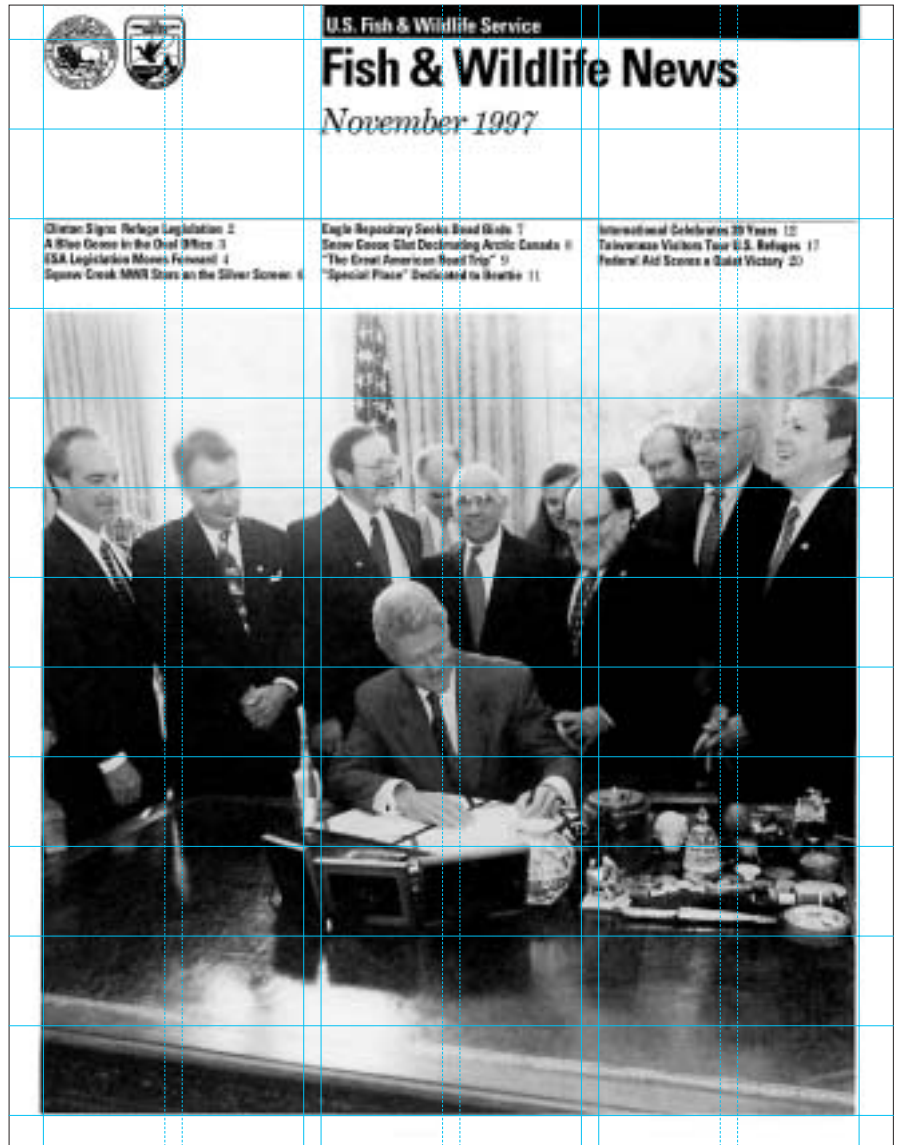
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<p><b>Preliminary Report</b></p>	<p>In 1996, 77 million Americans, about 40% of the U.S. population 16 years of age and older, enjoyed some recreational activity relating to fish and wildlife. Expenditures by this group were \$104 billion, which is about 1.4% of the nation's Gross Domestic Product (GDP).</p>	<p>and leasing and ownership. On average, each sportsman spent \$1,828 in 1996.</p> <p><b>Fishing</b> Fishing continues to be a favorite pastime in the United States. In 1996, 18% of the U.S. population 16 years old and older, 35 million anglers, spent an average of 17.7 days fishing. Freshwater fishing was the most popular type of fishing with over 29 million anglers devoting nearly 914 million angler-days to freshwater sources. Of that total, 2.0 million anglers fished the Great Lakes. Saltwater fishing attracted 9.4 million anglers.</p>	<p>shares of the total, with about 85% of the anglers fishing in freshwater and 25% of the anglers fishing in saltwater in both 1991 and 1996. While the number of anglers did not change, their fishing days and expenditures increased significantly. Anglers participated 22% more days in 1996 than in 1991, and spent 38% more money. Anglers spent an average of \$775 in 1991 (in inflation-adjusted 1996 dollars) and an average of \$1,080 in 1996. Expenditures for special equipment, i.e., "big ticket" items such as boats and four wheel drive vehicles, experienced a 124% increase.</p>	<p>in 1996 compared to 1991, increasing 41%. A subcategory of equipment expenditures, special or "big ticket" items such as pickups and trail bikes, tripled from 1991 to 1996. To put these expenditure comparisons in context it should be noted 1991 was a year of an economic recession, increasing gas prices, and the Gulf War, while 1996 experienced a strong peacetime economy with low inflation and low unemployment.</p>
<p>There were over 39 million people 16 years old and older who fished and hunted in 1996. They spent over \$72 billion on expenditures, such as food and lodging, transportation, fishing and hunting equipment, special clothing, taxidermy, licenses, boating, cabins, land use fees, and equipment rental. Of that amount, sportsmen spent \$5.5 billion on transportation, \$8.5 billion on food and lodging, and \$44.2 billion on equipment. The remainder, \$7.6 billion, included licenses and fees, magazines, membership dues and contributions, and</p>	<p>Comparing results from the 1991 and the 1996 FHWAR Surveys reveals the same number of anglers 16 years old and older in the U.S. for both years. Freshwater and saltwater fishing maintained their</p>	<p>Comparing results from the 1991 and the 1996 FHWAR Surveys reveals the same number of anglers 16 years old and older in the U.S. for both years. Freshwater and saltwater fishing maintained their</p>	<p><b>Hunting</b> In 1996 hunting was enjoyed by almost 14 million people 16 years old and older. They spent an average of 18 days hunting. Most hunters, 11.3 million (81%), focused their attention on big game, such as deer and elk, spending 154 million days in the field. Seven million (50%) pursued small game including squirrels, rabbits, quail, and pheasant on 75 million days. Three million hunters (22%) spent 26 million days hunting for migratory birds, such as doves, waterfowl, and woodcock. And 1.5 million hunters (11%) spent 25 million days hunting other animals including raccoons and woodchucks.</p>	<p><b>1991 and 1996 Fishing Estimates</b></p> <p><b>Anglers</b> 1991: 35.6 million 1996: 35.2 million</p> <p><b>Days</b> 1991: 511 million 1996: 621 million</p> <p><b>Expenditures</b> 1991: \$27.6 billion 1996: \$38.1 billion</p>
<p>Over 35 million anglers spent \$38.0 billion in 1996. Each angler spent an average of \$1,080.</p>	<p>Equipment: 51% Other Expenditures: 7% Licenses and Fees: 1% Other Trip Costs: 17% Food: 11% Lodging: 5% Transportation: 10%</p>		<p>A comparison of results from the 1991 and the 1996 FHWAR Surveys finds no change in the number of hunters 16 years old and older in the U.S. While the number of hunters remained the same, their activity and expenditures increased substantially. Hunters spent 8% more days in the field in 1996 than they did in 1991, and spent 47% more for hunting expenditures. Hunters spent an average of \$1,007 in 1991 (in inflation-adjusted 1996 dollars) and an average of \$1,492 in 1996. The increase in spending is seen especially in the equipment category of hunting expenditures. Equipment expenditures nearly doubled</p>	<p><b>Hunting</b> Total Hunters: 11.0 million hunters Big Game: 11.3 million hunters Small Game: 6.9 million hunters Migratory Birds: 3.0 million hunters Other Animals: 1.5 million hunters</p>
<p><b>Fishing</b> Total Anglers: 35.2 million anglers</p>	<p>Freshwater, except Great Lakes: 28.9 million anglers</p>	<p>Great Lakes: 2.0 million anglers</p>	<p>Saltwater: 9.4 million anglers</p>	<p></p>
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# Newsletter Option

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A 2p wide bar runs across the top of the interior pages. The size and position of the page numbers within the bar matches the USFWS identification bar as shown on the page “USFWS Identification.” Story titles fall 1 pica below the bar. Stories start in the third row of the grid, 12p4 from the top of the page.




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# Newsletter Option/Inside

11				15
<p><b>Breaking the Language Barrier Brings Federal Aid to Japan</b></p>		<p><b>Region 5 Lets Schoolchildren Adopt-a-Salmon Family</b></p>		<p><b>North Dakota Firefighters Save Eagles</b></p>
<p>It all started with a simple fish hook.</p>				
<p>In 1983, Bob Koyama and Lee Kawamura visited fishing tackle manufacturers and visited the Federal Office of Sport Fish Restoration programs at the U.S. Fish and Wildlife Service. Koyama and Kawamura, who are now in their 60s, are Japanese fishermen who have spent most of their lives in Japan. They were looking for a way to help the U.S. Fish and Wildlife Service. They were looking for a way to help the U.S. Fish and Wildlife Service. They were looking for a way to help the U.S. Fish and Wildlife Service.</p>		<p>Students in 40 New England schools are getting a hands-on lesson in conservation. Through Region 5's "Adopt-a-Salmon Family" program, students are learning about the life cycle of salmon and the importance of protecting their habitat.</p>	<p>North Dakota firefighters have been instrumental in saving several bald eagles from extinction. The firefighters were alerted to the presence of the eagles and quickly responded to the situation.</p>	<p>The fire department's quick response saved the eagles from harm. The firefighters were alerted to the presence of the eagles and quickly responded to the situation.</p>
<p>They were looking for a way to help the U.S. Fish and Wildlife Service. They were looking for a way to help the U.S. Fish and Wildlife Service. They were looking for a way to help the U.S. Fish and Wildlife Service.</p>	<p><b>An international effort:</b> The U.S. Fish and Wildlife Service is working with the Japanese government to help them develop their fishing industry. This is a joint effort between the two countries.</p>	<p>The program is designed to help students learn about the life cycle of salmon and the importance of protecting their habitat. It is a hands-on learning experience.</p>	<p>The firefighters were alerted to the presence of the eagles and quickly responded to the situation. They were looking for a way to help the U.S. Fish and Wildlife Service.</p>	<p>The fire department's quick response saved the eagles from harm. The firefighters were alerted to the presence of the eagles and quickly responded to the situation.</p>
<p>Over the next year, Koyama and Kawamura visited fishing tackle manufacturers and visited the Federal Office of Sport Fish Restoration programs at the U.S. Fish and Wildlife Service.</p>	<p>Koyama and Kawamura visited fishing tackle manufacturers and visited the Federal Office of Sport Fish Restoration programs at the U.S. Fish and Wildlife Service.</p>	<p>The program is designed to help students learn about the life cycle of salmon and the importance of protecting their habitat. It is a hands-on learning experience.</p>	<p>The firefighters were alerted to the presence of the eagles and quickly responded to the situation. They were looking for a way to help the U.S. Fish and Wildlife Service.</p>	<p>The fire department's quick response saved the eagles from harm. The firefighters were alerted to the presence of the eagles and quickly responded to the situation.</p>
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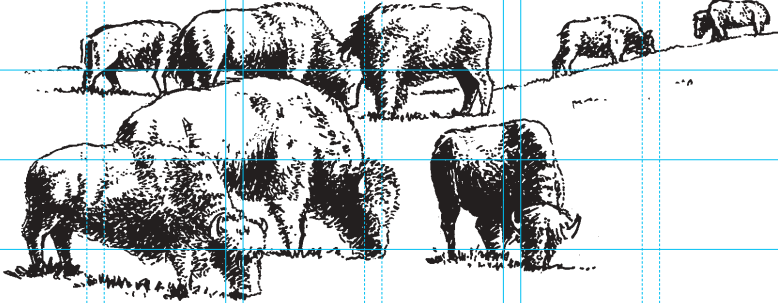
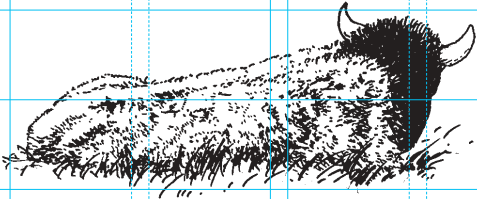
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# Fact Sheet Grid A/ Front

This format is ideal for photocopying and faxing since there are no page bleeds. The USFWS identification bar aligns 2p from the top of the page. The title falls 6 points below the bar. Both Department of Interior and U.S. Fish & Wildlife logos are placed in the upper left corner, at the size and position as indicated on the page "USFWS Identification." Stories start in the fourth row of the grid, 17p6 from the top of the page.

		<p><b>U.S. Fish &amp; Wildlife Service</b></p> <p><b>American Buffalo</b></p> <p><i>Bison bison</i></p>	
<p>It is believed that buffalo, or bison, crossed over a land bridge that once connected the Asian and North American continents. Through the centuries buffalo slowly moved southward, eventually reaching as far south as Mexico and as far east as the Atlantic Coast, extending south to Florida. But the largest herds were found on the plains and prairies from the Rocky Mountains east to the Mississippi River, and from Great Slave Lake in Canada to Texas.</p>	<p>30 to 75 million. "The moving multitude... darkened the whole plains," wrote Lewis and Clark, who encountered a herd at South Dakota's White River in 1806.</p> <p>Although the buffalo's size and color, which ranges from light to dark brown, vary in different areas of the country, experts generally agree that all American buffalo belong to the same species. The differences in appearance probably result from the variety of environments in which they live.</p>	<p>ollow, curved horns. The male buffalo, called <i>bulls</i>, are immense, often weighing a ton or more and standing 5 to 6 feet high at the shoulders. The huge head and great hump covered with dark brown woolly hair contrast sharply with the relatively small hips. The females, or <i>cows</i>, are not as massive. Despite their great size and bulkiness, buffalo have amazing mobility, speed, and agility, and are able to sprint at speeds of up to 30 mph.</p>	<p>Because the great herds were nearly gone before any organized attempts were made to survey populations, we may never know just how many buffalo once roamed North America, although estimates range from</p>
		<p>In the spring, buffalo begin to shed their heavy winter coats, and soon their hair hangs in tatters. To hasten shedding and possibly to relieve their itching skin, buffalo rub against large stones and trees. By late</p>	
<p>Although estimates indicate there were between 30 to 75 million buffalo in North America at one time, the great herds were reduced to less than 300 animals by 1900. Today, buffalo populations are strong once again, with an estimated 200,000 roaming the plains, many at National Parks and National Wildlife Refuges.</p>			

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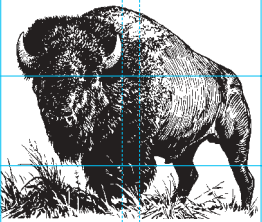
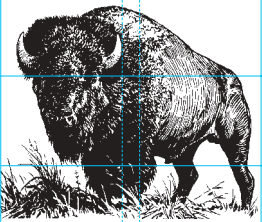
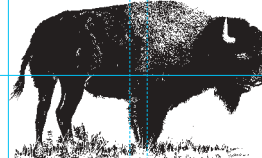
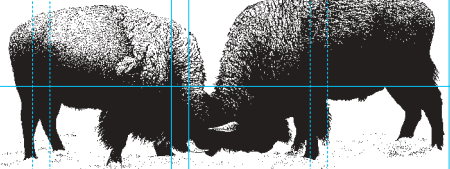
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# Fact Sheet Grid A/ Back

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<p>spring, the only remaining long hairs are on the head, forelegs, and hump. To escape the torment of attacking insects, buffalo wallow in dust or sand.</p>	<p>Organized groups of hunters killed buffalo for hides and meat, often killing up to 250 buffalo a day.</p>	
<p>With the arrival of the breeding season in mid-to late summer, the herds become restless. The bulls, aloof most of the year, now drift among the cows and calves. Noticeably quiet at other times, the bulls bellow hoarsely and become quarrelsome. Many fights occur over females, and the combatants, with lowered heads, paw the earth defiantly.</p>	<p>Unfortunately, many people at the time also wanted to eradicate buffalo as a way to take away the livelihood and well-being of Native Americans. Native American tribes depended on the buffalo's meat and hides, and many still today believe the animal has special spiritual and healing powers, making it an important part of their culture.</p>	
<p>Cows give birth usually every year to one tawny to buff-colored calf. Most of the calves are born between the middle of April and end of May, but some arrive as late as October. At birth, the calves have only a faint suggestion of the hump they will develop later. Buffalo begin grazing (primarily on grasses) while still very young, although some may continue to nurse until they are nearly a year old. Buffalo may live to be about 20 years of age.</p>	<p>The construction of the railroads across the plains further hastened the depletion of buffalo populations. Hunting from train windows was advertised widely and passengers shot them as the buffalo raced beside the trains. By 1883 both the northern and the southern herds had been destroyed. Less than 300 wild animals remained in the U.S. and Canada by the turn of the century out of the millions that once lived there.</p>	<p>Range in the Flathead Valley of Montana, the Wichita Mountains National Wildlife Refuge in southwest Oklahoma, the Fort Niobrara National Wildlife Refuge in northern Nebraska, the Sullys Hill National Wildlife Refuge in northwestern North Dakota, and Walnut Creek National Wildlife Refuge in Central Iowa.</p>
<p>By 1800, the small buffalo herds east of the Mississippi River were gone. Buffalo may have been killed to protect livestock and farmlands in that region. With westward expansion of the American frontier, systematic reduction of the plains herds began around 1850, when buffalo hunting became the chief industry of the plains.</p>	<p>Conservation of the buffalo came slowly. In May 1894, Congress enacted a law making buffalo hunting in Yellowstone National Park illegal. Eight years later, money was appropriated to purchase 21 buffalo from private herds to build up the Yellowstone herd. With adequate protection, this herd has steadily increased until it numbers almost 3,000 animals today. Hundreds of buffalo also inhabit the National Bison</p>	<p>Many other private herds have boosted the buffalo's overall population over the years as well. While the present herds, numbering about 200,000 buffalo in all, are not as large as the great herds that once ranged the North American continent, they are large enough to ensure the continued well-being of the American buffalo for generations to come.</p>
<p>Male buffalo often weigh a ton or more and stand 5 to 6 feet high at the shoulders. The huge head and great hump covered with dark brown woolly hair contrast sharply with the relatively small hips. Despite their great size and bulkiness, buffalo have amazing mobility, speed, and agility.</p>	<p>Usually solitary, male buffalo join female herds during the mating season, often quarreling with other males over mates. While these males are only sparring, in a serious battle the bulls' behavior would be more aggressive.</p>	
		
<p>U.S. Fish &amp; Wildlife Service 1 800/344 WILD <a href="http://www.fws.gov">http://www.fws.gov</a> November 1997</p>		

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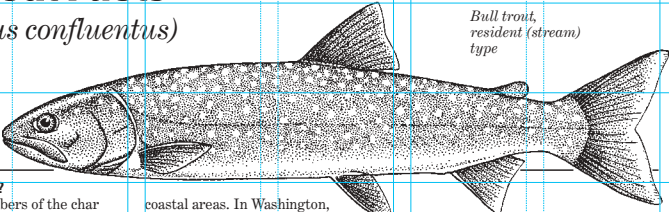
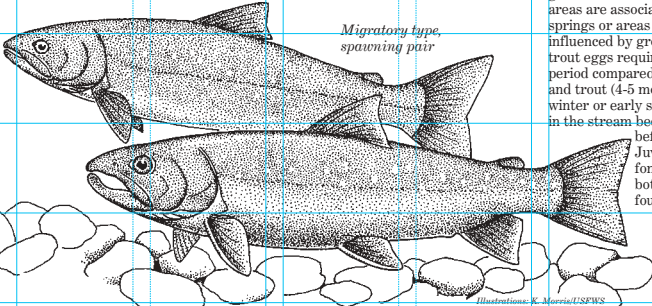
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# Fact Sheet Grid B/ Front

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<b>U.S. Fish and Wildlife Service</b>		
<b>Bull Trout Facts</b> <i>(Salvelinus confluentus)</i>		
		<i>Bull trout, resident (stream) type</i>
<p><b>What is a bull trout?</b> Bull trout are members of the char subgroup of the salmon family, which also includes the Dolly Varden, lake trout, and Arctic char. They can grow to more than 20 pounds (9 kg) in lake environments. Bull trout that live in streams rarely exceed 4 pounds (2 kg).</p> <p>Bull trout and Dolly Varden look very similar, and were once considered the same species. Both have small, pale yellow to crimson spots on a darker background, which ranges from olive green to brown above, fading to white on the belly. Spawning adults develop varying amounts of red on the belly. Both species also exhibit differences in size, body characteristics, coloration, and life history behavior across their range.</p> <p>Taxonomic work, published in 1978 and accepted by the American Fisheries Society in 1980, identified bull trout as distinct from the Dolly Varden. Compared to Dolly Varden, bull trout are larger on average, with a relatively longer and broader head. Bull trout are mainly an inland species, while Dolly Varden are more common in</p>	<p>coastal areas. In Washington, both species are present in the Puget Sound area.</p> <p><b>How are char different from other salmonids?</b> Char (genus <i>Salvelinus</i>) are distinguished from trout and salmon by the absence of teeth in the roof of the mouth, presence of light colored spots on a dark background (trout and salmon have dark spots on a lighter background), absence of spots on the dorsal fin, small scales, and differences in the structure of their skeleton. Char are distributed farther north than any other group of freshwater fish except Alaskan blackfish, and are well adapted for life in very cold water.</p> <p><b>What was the historic range of bull trout?</b> Historically bull trout occurred throughout the Columbia River Basin, east to western Montana, south to the Jarbidge River in northern Nevada, the Klamath Basin in Oregon, the McCloud River in California and north to Alberta, British Columbia, and possibly southeastern Alaska. Today</p>	<p>bull trout are found primarily in upper tributary streams and several lake and reservoir systems; they have been eliminated from the main stems of most large rivers. The main populations remaining in the lower 48 states are in Montana, Idaho, Oregon and Washington with a small population in northern Nevada. Bull trout are now extinct in northern California.</p> <p><b>What do bull trout eat?</b> Small bull trout eat terrestrial and aquatic insects but shift to preying on other fish as they grow larger. Large bull trout are primarily fish predators. Bull trout evolved with whitefish, sculpins and other trout and use all of them as food sources.</p> <p><b>What is the life cycle of a bull trout?</b> Bull trout reach sexual maturity at between four and seven years of age and are known to live as long as 12 years. They spawn in the fall after temperatures drop below 48° F (8°C), in streams with cold, unpolluted water, clean gravel and cobble substrate, and gentle stream slopes. Many spawning areas are associated with cold water springs or areas where stream flow is influenced by groundwater. Bull trout eggs require a long incubation period compared to other salmon and trout (4-5 months), hatching in late winter or early spring. Fry remain in the stream bed for up to three weeks before emerging. Juvenile fish retain their fondness for the stream bottom and are often found at or near it.</p>
		<i>Migratory type, spawning pair</i>

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# Fact Sheet Grid B/ Back

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<p><i>(continued from front)</i></p>																									
<p><b>Do bull trout migrate?</b> Some bull trout may live near areas where they were hatched. Others migrate from streams to lakes, reservoirs (or, in the case of coastal populations, salt water) a few weeks after emerging from the gravel. Migratory bull trout attain a greater size than resident stream fish. However, lakes and reservoirs are not good spawning habitat, so migratory bull trout may swim considerable distances to spawn when habitat conditions allow. For instance, bull trout in Montana's Flathead Lake have been known to migrate up to 155 miles (250 km) to spawn. Migration is important to maintaining healthy bull trout populations.</p>	<p><b>Map Key</b></p> <table border="0"> <tr> <td></td> <td>States and Provinces</td> <td></td> <td>Bull Trout Population Segments</td> </tr> <tr> <td></td> <td>Rivers and Lakes</td> <td><b>1</b></td> <td>Klamath River</td> </tr> <tr> <td></td> <td></td> <td><b>2</b></td> <td>Columbia River</td> </tr> <tr> <td></td> <td></td> <td><b>3</b></td> <td>Coastal/Puget Sound</td> </tr> <tr> <td></td> <td></td> <td><b>4</b></td> <td>Jarbridge River</td> </tr> <tr> <td></td> <td></td> <td><b>5</b></td> <td>St. Mary/Belly River</td> </tr> </table>		States and Provinces		Bull Trout Population Segments		Rivers and Lakes	<b>1</b>	Klamath River			<b>2</b>	Columbia River			<b>3</b>	Coastal/Puget Sound			<b>4</b>	Jarbridge River			<b>5</b>	St. Mary/Belly River
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		<b>5</b>	St. Mary/Belly River																						
<p><b>Why are they in trouble?</b> Bull trout are vulnerable to many of the same threats that have reduced salmon populations in the Snake River Basin. Due to their life history requirements, bull trout are more sensitive to increased water temperatures, poor water quality, and low flow conditions than many other salmonids. Past and continuing land management activities have degraded stream habitat, especially along larger river systems and stream areas located in valley bottoms, to the point where bull trout can no longer survive or reproduce successfully. In many watersheds, remaining bull trout are small, resident fish isolated in headwater streams.</p>	<p>water quality and temperature are all important. Several state agencies have enacted regulations reducing or prohibiting bull trout harvest. Several states have also drafted or have adopted conservation plans to help bull trout populations recover.</p>																								
<p>Brook trout, introduced throughout much of the range of bull trout, easily hybridize with them, producing sterile offspring. Brook trout also reproduce earlier and at a higher rate than bull trout, so bull trout populations are often supplanted by these non-natives. Hybridization with brown trout and lake trout is a problem in some areas. Dams and other in-stream structures also affect bull trout by blocking migration routes, altering water temperatures and killing fish as they pass through and over dams, or are trapped in irrigation and other diversion structures.</p>	<p><b>What more can be done to help bull trout?</b> Besides the measures outlined above, a strong commitment by private citizens, industry, state, Federal, and tribal groups to change, reduce or eliminate activities that degrade streams and rivers will be necessary to truly recover many species of native fish. Much bull trout habitat in mainstream rivers and streams is privately owned, making conservation activities on private lands a key element to restoring aquatic habitat and recovering native fish populations. In some areas, reducing the potential for hybridization of bull trout with non-native fish species would enhance bull trout survival and recovery.</p>																								
<p><b>What is being done to protect bull trout?</b> Many of the actions intended to protect other declining salmonids may also help bull trout. Stream and habitat protection and restoration, reduction of siltation from roads and other erosion sites, and modification of land management practices to improve</p>	<p><b>For more information, contact:</b> Public Affairs Office U.S. Fish and Wildlife Service 911 NE 11th Avenue Portland, Oregon 97232-4191 503/231-6121</p>   <p>May 1998</p>																								

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# Fax Cover Sheet

The USFWS identification bar aligns 2p from the top of the page. The title falls 1 pica below the bar. Both Department of Interior and U.S. Fish & Wildlife logos are placed in the lower left corner, at the size indicated on the page “USFWS Identification.”

A .5 point rule separates the address and text area from the header information.

<b>U.S. Fish &amp; Wildlife Service</b>									
<div style="font-size: 24px; font-weight: bold; margin-bottom: 10px;">Fax</div> <div style="font-size: 18px; font-style: italic;">Southwest Region</div> <div style="font-size: 18px; font-style: italic;">External Affairs Office</div> <hr style="border: 0.5px solid black; margin-top: 10px;"/> <div style="font-size: 10px; margin-top: 5px;">300 Westgate Center Drive, Hadley, MA 01035-9589 413/253 8322 Fax: 413/253 8456 www.fws.gov/~r5fws/</div> <div style="margin-top: 10px;"> <b>To:</b>   <b>Fax number:</b>   <b>From:</b>   <b>Date:</b>   <b>Pages to follow:</b>   <b>Subject:</b> </div>									
 									

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# News Release

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Text runs in one column across all three grid columns.

<b>U.S. Fish &amp; Wildlife Service</b>		
<b>News Release</b>		
<i>Northeast Region</i> <i>External Affairs Office</i>		
300 Westgate Center Drive, Hadley, MA 01035-9589 413/253 8322 Fax: 413/253 8456 <a href="http://www.fws.gov/~r5fws/">www.fws.gov/~r5fws/</a>		
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News releases available electronically at <a href="http://www.fws.gov/~r5fws/news/newsrel/summary.html">www.fws.gov/~r5fws/news/newsrel/summary.html</a>		

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# Grid D

Grid D is for use only as text pages for Scientific, Biological, or Technical Resource publications. The two column grid provides a wider column width for equations.

Use either a Grid A, B or C cover with this text grid.

The area between the top and bottom margins of the page is divided into six equal modules, each 10p in height.

The width of the page is divided into two equal columns.

*Format:* 8.5 x 11 inches  
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*Top and bottom margins:* 3p  
*Left and right margins:* 6p

*Columns:* 2  
*Gutter width:* 1p

# Grid D/ Text Page

A 2 pica black bar positioned at the top margin indicates a new section. The section title falls 1 pica below the bar.

Text aligns to the top of the second row of the grid, 13 picas from the top of the page.

The page number falls within the 3 pica bottom margin, 63p6 from the top of the page.

	<b>I. Introduction</b>		
	<p>This Guide is intended to provide guidance to field biologists wishing to analyze data collected on terrestrial bird populations, as part of an avian population monitoring program. A second objective is to provide information that will help biologists design such programs. The audience is similar to that for the <i>Handbook of Field Methods</i> (Ralph et al. 1993), the <i>Monitoring Bird Populations by Point Counts</i> (Ralph et al. 1995), and in many ways this <i>Statistical Guide to Data Analysis of Avian Monitoring Programs</i> can be a useful complement to the field methods handbook. At the same time, we feel this Statistical Guide can be of use to field biologists studying other organisms besides terrestrial birds. In our view, all field biologists will benefit from taking the equivalent of 2 or 3 semester courses in statistics and we assume that readers of this guide have completed at least this basic level in statistics.</p>	<p>general statistical packages, but that review is somewhat out of date. One versatile statistical and graphical package, available for DOS, Windows, and UNIX platforms, is Stata (StataCorp. 1999) (obtained from Stata Corporation, 702 University Drive East, College Station, TX 77840). Specialized computer software programs have been created to assist with analysis of capture/recapture data (used for analyses of survivorship, also population size); these are reviewed and summarized in this and additional specialized computer programs are mentioned in the respective sections of this Guide.</p>	
	<p>This document is not intended to fill deficiencies in basic knowledge of statistics, nor is it a substitute for a good statistical text. Rather, this Guide is intended as a supplement to these texts. Our aim is to provide practical advice in the design and analysis of field ecological data and to provide timely information about current statistical computer programs. Two good statistical texts are provided by Neter et al. (1990) and Kleinbaum et al. (1988). Both of these texts are "intermediate" in level; that is, they assume the reader has had a basic, introductory course in statistics. Other texts by Snedecor &amp; Cochran (1989), Sokal &amp; Rohlf (1995) and Zar (1996) all provide a good, general statistical background. Intermediate level guides for practicing ecologists are provided by Crawley (1993), Bart and Notz (1996) and Bart et al. (1998). Noteworthy specialized statistical ecological texts include Ludwig &amp; Reynolds (1988), Skalski &amp; Robson (1992), and Draper &amp; Smith (1981). The last two mentioned have many biological examples. Also see the informative review by Lancia et al. (1996).</p>	<p><b>Recommended Monitoring Methods</b> A wide range of methods have been used to conduct avian monitoring, each tailored to meet a different set of objectives in the face of different constraints. This Guide does not address all methods that are available, especially those that are more widely used for research or inventory. Below is a short review of monitoring methods available, based on Butcher (1992) and Ralph et al. (1993). The reader is referred to these references (and others cited below) for additional information. Table 1 describes the variables measured and subjectively assesses the relative strengths and weaknesses of each method. "Strength" and "weakness" is assessed relative to the quality of the data gathered to meet the objective and we have not attempted to factor in cost per datum. Table 2 provides a list of monitoring objectives, monitoring methods and the typical time required by the various methods to achieve those objectives (from Geupel &amp; Warkentin 1995). Descriptions of monitoring methods, their applications and comparisons, and their limitations can be found in Ralph and Scott (1981), Verner (1985), Butcher (1992), Ralph et al. (1993), Buckland et al. (1993) and Geupel &amp; Warkentin (1995).</p>	
	<p><b>Computer Programs</b> Computer programs for summarizing and analyzing data with general statistical packages are available, for many different levels, prices and target audiences. Ellison (1992) reviewed a number of</p>	<p><b>Methods</b> <i>Area search</i>—A method in which observers are allowed to roam for a fixed time in a specified area, usually 20 minutes per 3 hectare area (Loyn 1986, Slater 1994). This technique has a wide appeal to volunteers but standardization of data collection is difficult.</p>	
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# Grid D/ Text Page

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<b>List of Tables and Figures</b>		<b>Preface</b>	
<b>Tables</b>		This Statistical Guide is intended to aid field biologists wishing to analyze data gathered in standardized monitoring programs for landbirds. It grew out of the needs expressed by the Western Working Group of <i>Partners in Flight</i> , and we thank the members of that group for providing the incentive to develop this document. It is not intended to replace good statistical texts, but to supplement them. We encourage readers, and especially users, of this Guide to forward their comments, corrections, and other advice to the senior author for incorporation into future versions of this Guide.	<b>Acknowledgments</b>
1. Monitoring methods used in landbird population monitoring and their characteristics. ....	2	This work has been a contract between Point Reyes Bird Observatory and the U.S. Fish & Wildlife Service. This is PRBO Contribution 679.	We thank John R. Sauer, J. Scott Dieni, Ken Gerow, Daniel R. Pettit, and Jon Bart for multiple reviews of earlier drafts; John Cornely, Barry Noon, Kathie Purcell, C.J. Ralph, Len Thomas, and Jerry Verner also provided helpful discussion and comments on an earlier draft of this document. The authors, not the above named reviewers, should be held responsible for any errors or outlandish opinions expressed here. We thank Jim Nichols for providing a helpful preprint. We thank the USFWS Nongame Coordinators: Tara Zimmerman, Bill Howe, Steve Lewis, Diane Pence, Richard Coon, Kent Wohl, together with Dan Pettit and John Trapp, for support and encouragement. Special thanks to all the field biologists who took the time to assist us in doing this document and are out there doing the work, facing the challenges, and balancing the issues: Adrianna Araya, Grant Ballard, Sharon Browder, Mike Bryant, Claire Cahles, Lynn Clark, Paula Gause, Ron Garcia, Todd Grant, Bill Haglan, Jeanne Hammond, Laura Hubers, Craig Hultberg, Beth Madden, Steve Martin, Bob Murphy, Lark Osborne, Fritz Prellwitz, Pam Rizzor, Vickie Roy, Kelli Stone, Julian Wood, Kodiak and McDougall Jones and many more.
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# Grid D/ Tables

Tables fall across both columns of the grid. The leading used for the table head and text is 12 points to accommodate the longer line length.

With this grid format, tables do not have a rule above the table heading. Instead, a .5 point rule is placed 9 points below the last line of the table. Do not use alternating shaded rows within the table.

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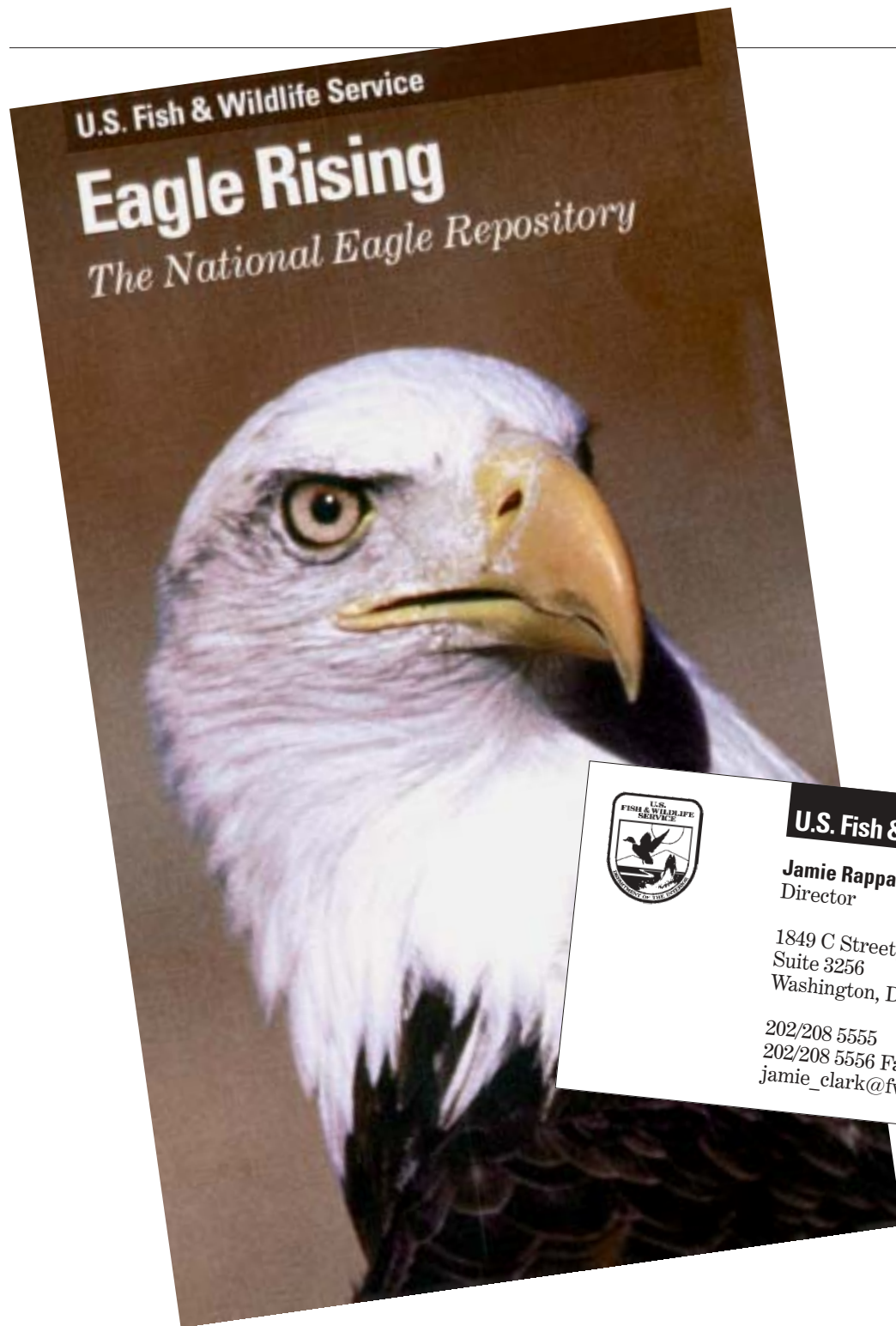
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Table 1. Monitoring methods used in landbird population monitoring and their characteristics.		Table 2. Potential objectives of a monitoring program and typical number of years needed for a method to achieve results.					
Methods are grouped under "survey" and "demographic." Positive or high level is denoted by "+", negative or low level denoted by "-", and partial level denoted by "+/-". Modified from Table 1 in Butcher (1992). "Color banding" is assumed to include nest-searching. "Rare" species refers to species that are locally (not just globally) rare.		Actual number of years depends on study design and will vary depending on sample size (e.g., number of census stations, detection or capture rates, number of nests found). We assume that the priorities of the monitoring program reflect local or site-specific needs (adapted from Geupel & Warkentin 1995).					
Variables Measured	Survey		Demographic				
	Fixed distance	Spot map	Area Search	Variable distance	Mist net	Nest Search	Color banding
Index to abundance	+	+	+	+	+/-	+/-	+
Density	-	+	-	+	-	-	+
Survivorship (adult)	-	-	-	-	+	-	++
Productivity	-	-	-	-	+	+	+
Recruitment	-	-	-	-	+	-	+
Habitat Relations	+	+	+	+	+/-	+	+/-
Nest Site Characteristics	-	-	-	-	-	+	+
Predation/Parasitism	-	-	-	-	-	+	+
Individuals Identified	-	-	-	-	+	-	+
Breeding Status Known	-	+	-	-	+/-	+	+
<b>General Characteristics</b>							
Habitat specificity	+	+	+	+	+/-	+	+
Rare species measured	+	+/-	+	+/-	-	+/-	+/-
Canopy species measured	+	+	+	+	-	+/-	-
Area sampled known	+	+	+	+	+/-	+	+
Large area sampled	+	-	+	+	+/-	-	-
Use in non-breeding season	+	+/-	+	+	+	-	+
<b>Methods for Assessing Abundance</b>							
Point counts—Fixed radius point counts are the basic method recommended for most monitoring studies, and are most widely used (Hutto et al. 1986, Ralph et al. 1993, Ralph et al. 1995). These can provide a cost-effective method of estimating the relative abundance of birds.							
Line transects—Fixed-width transects can provide coverage of a greater area than point counts, but with fewer independent data points or replicates.							
Variable distance methods—Estimating distance at which birds are detected can be incorporated into both point count and line transect surveys. Standardization of distance estimation may be difficult, as abilities to accurately estimate distances may vary greatly between observers.							
Spot-mapping—Can provide good density information and information on many aspects of avian life history. It is expensive per data point and may be better applied to research projects or to high priority areas or species.							
<b>Demographic Methods</b>							
In general, demographic monitoring methods can be used to identify proximal causes of population declines and provide insight into causes of habitat associations. They can identify population problems prior to the detection of declines based on abundance surveys. Ultimately, these methods can be used to identify "source" or "sink" populations. However, these methods require much effort per station.							
Constant effort mist-netting—Provides information on productivity and survivorship of populations, but is limited by area covered (which is generally unknown) and lack of habitat specificity. However, many species can be monitored at the same time, without expending extra effort.							
Nest monitoring—Provides site-specific and habitat-specific information on productivity and reproductive status. Available personnel usually limit the number of plots that can be studied, and studying additional species normally requires increased effort.							
Color-banding—When combined with nest monitoring, using unique color-band combinations to follow the fates of individuals will provide the most complete and unbiased measures of demographic parameters. However, it is the most intensive method of all. It is not a method recommended for general monitoring, but like spot-mapping, best suited for research projects or for high priority areas and species.							
<b>Statistical Terminology and Principles</b>							
The following is a selective review of some statistical terms relevant to a biologist conducting a monitoring study. Our intention here is to re-acquaint the reader with terms and principles that may have rested dormant for many years.							
<b>Accuracy</b> —An estimator is accurate if it produces estimates that are, on average, close to the true value, i.e., without bias or with a minimum of bias.							
<b>Precision</b> —The difference between the average estimate (more precisely, the expected value of the estimate) and the true value. Bias is not the same as "error", rather it is one kind of error; systematic error. If an estimate is as likely to be an overestimate as it is to be an underestimate, the estimator in question is unbiased, even though there will always be error associated with an estimate. To minimize bias would, by definition, maximize accuracy.							
<b>Precision</b> —Precision refers to the variability of the estimate: the smaller the variability (and thus the smaller the standard error) of the estimate, the greater the precision. As mentioned above, precision is independent of accuracy. An estimate can be very precise, but wildly inaccurate (i.e., strongly biased).							
<b>Type I and Type II errors</b> —Rejecting the null hypothesis when it is correct is committing a Type I error. The probability of committing a Type I error is symbolized $\alpha$ (alpha) and is the significance level of a test of statistical inference. Accepting the null hypothesis when it is incorrect is committing a Type II error; the probability of making such an error is symbolized $\beta$ (beta).							
<b>Power</b> —The probability of detecting a biological effect, if there is one. More precisely, power is the probability of rejecting the null hypothesis when the null hypothesis is incorrect. Normally, the null hypothesis is an hypothesis of no effect (i.e., no difference). Power is equal to 1- $\beta$ . Power cannot be calculated unless one specifies the alternative hypothesis: one must specify the magnitude of the effect or difference. A given test will have greater power the greater the magnitude of the effect, and conversely, the smaller the true difference between groups, the less the power to detect that difference for a given sample size. Power is discussed in greater depth in Chapter II of this Guide.							
2 Statistical Guide to Data Analysis of Avian Monitoring Programs							
Introduction 3							

# Other Applications



# Business Card

The business card uses a slightly modified identification bar. The type in the bar is 12 point size and aligns 12 points from the top edge of the card. The name begins 10 points below the bar.



Site names may also be incorporated with the identification bar.



*Format:*  
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(12p x 21p)

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margins:*  
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p6



# Business Card with Additional Logo

This business card style does not print to the edge of the card, so a modified identification bar is used. The type in the bar is 11 point size and aligns 6 points from the top edge of the bar. The bar is 13p3 wide and 1p6 tall.

The name begins 8 points below the bar. If a refuge name is used, it begins 4 points below the bar.

The USFWS logo is 4p tall and centered in the left column. The additional logo is centered below, and sized to complement the USFWS logo.

Approved logos/icons for business cards include CITES, Refuge Officer, Special Agent, Wildlife Inspector, Sport Fish & Wildlife Restoration, and NAWMP.

*In some Windows programs, you must select Univers 47 with bold style to access the Univers 67 font.*

**Format:**  
2 x 3.5 inches  
(12p x 21p)

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**Columns:**  
Left: 5p6  
Gutter: p9  
Right: 13p3

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 	<b>U.S. Fish &amp; Wildlife Service</b>
	<b>First N. Lastname</b> Title or Position Refuge Name Street Address 1 Street Address 2 City, ST 00000 202/208 0000 202/208 0000 Fax emailaddress@fws.gov

 	<b>U.S. Fish &amp; Wildlife Service</b>
	<b>Refuge Name</b> <i>National Wildlife Refuge</i> First N. Lastname Title or Position Street Address 1 Street Address 2 City, ST 00000 202/208 0000 emailaddress@fws.gov

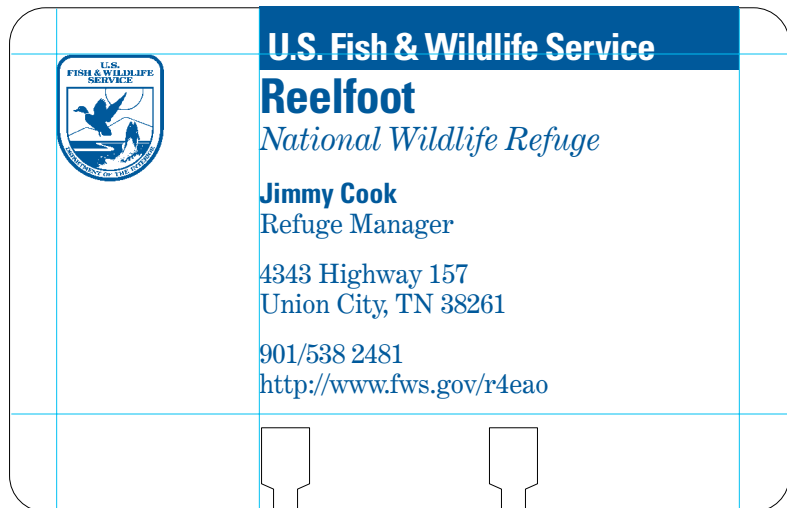
 	<b>U.S. Fish &amp; Wildlife Service</b>
	<b>First N. Lastname</b> Title or Position Department or Office Department of the Interior 1849 C Street NW, Room 0000 Washington, DC 20240 202/208 0000 202/208 0000 Fax emailaddress@fws.gov

# Rolodex Card

The rolodex card uses a standard identification bar, 15p wide. The name begins 10 points below the bar.



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*Top/left/right margins:*  
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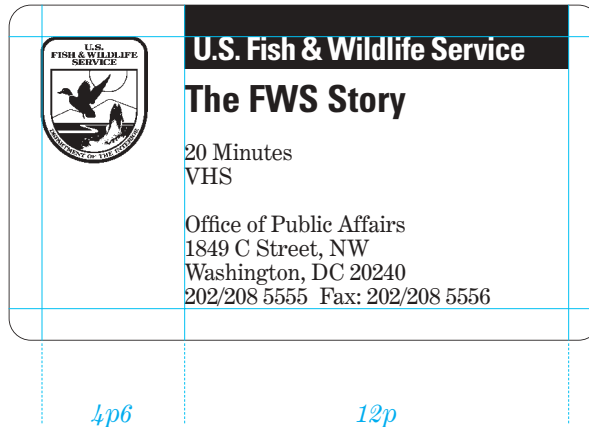
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# Videotape Label

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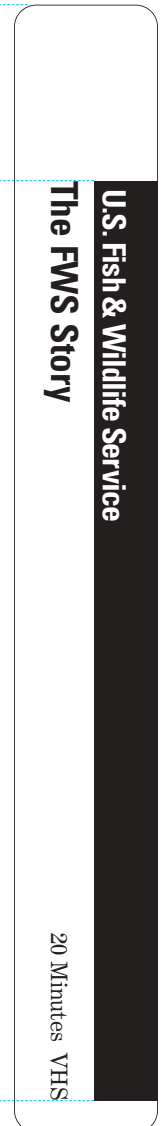
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# Videotape Case

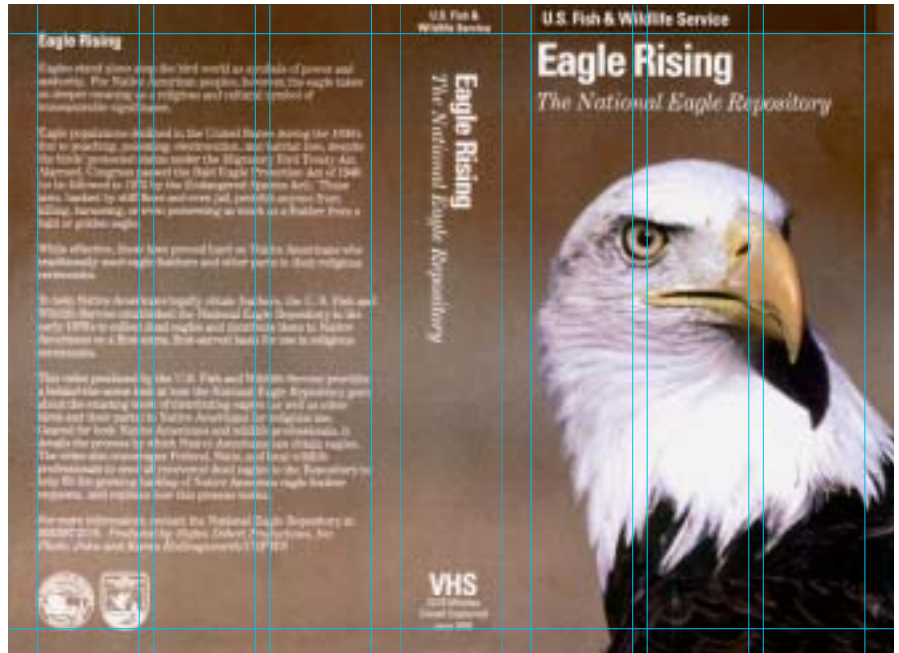
For promotional products, the package sells the content. Select an overall image or images to best depict the video theme.

Whether the background is one photo or a collage, the entire image should hold as one, wrap box, and bleed off edges. If only one photo is available and cropping won't allow for wrapping, use the photo on the front cover, and a solid color or ghosted portion of the front photo for the spine and back cover. The solid color should match the identification bar on the front. All should provide a suitable backdrop for the identification bar, type and seals. Type may be white, black or a spot color depending on the image.

On front, the identification bar begins at the top edge of the page and is three columns wide. The title type begins 6 points below the bar.

On back, text follows the grid, 2p from the top and left edges, and occupies two or three columns. The seals are one color, same as text, and are located 2p from the bottom of the cover with address, phone number, and web address one line space above. If partner's logos are necessary, they should be one color and sit one line space below text.

On spine, "U.S. Fish & Wildlife Service" is centered at top and aligns to bottom of bar on front cover. Title is sized a bit smaller than front and starts 6 points below USFWS. "VHS" with time, Closed Captioned, and date is stacked, centered, and sits on bottom margin.



**Front and Back Cover:**  
27p x 45p

**Top/bottom/left/right margins:**  
2p

**Columns:**  
3, 7p wide

**Gutter width:**  
1p

**Title:**  
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**Subtitle:**  
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p9 space above

**Text Head:**  
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**Text:**  
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10/11

**Credits:**  
Century  
Expanded Italic  
10/11

**Address block:**  
Univers 67  
10/11

**Spine:**  
7p x 45p

**USFWS:**  
Univers 67  
9/10 centered

**Title:**  
Univers 67  
24/24

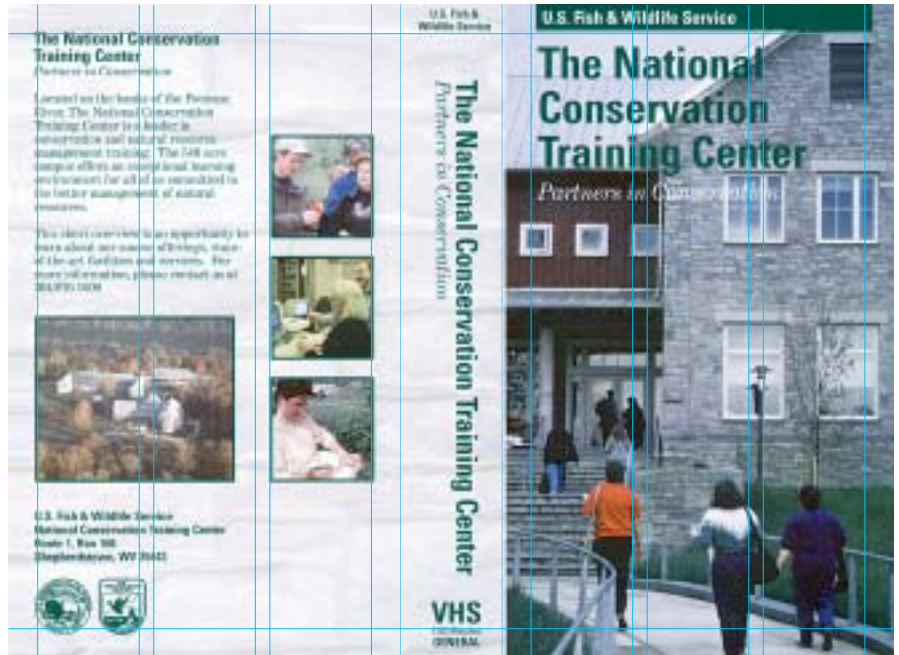
**Subtitle:**  
Century  
Expanded Italic  
16/16 with  
p3 space above

**VHS:**  
Univers 67  
24/24 centered

**Time/Closed Captioned/Date:**  
Univers 67  
8/9 centered

# Videotape Case

An example of a front cover photo with a ghosted portion of that image on the spine and back cover.



*Front and  
Back Cover:*  
27p x 45p

*Text Head:*  
Univers 67  
14/14

*Spine:*  
7p x 45p

*Top/bottom/left/  
right margins:*  
2p

*Text:*  
Century  
Expanded  
10/11

*USFWS:*  
Univers 67  
9/10 centered

*Columns:*  
3, 7p wide

*Credits:*  
Century  
Expanded Italic  
10/11

*Title:*  
Univers 67  
24/24

*Gutter width:*  
1p

*Address block:*  
Univers 67  
10/11

*Subtitle:*  
Century  
Expanded Italic  
16/16 with  
p3 space above

*Title:*  
Univers 67  
36/36

*Subtitle:*  
Century  
Expanded Italic  
18/18 with  
p9 space above

*VHS:*  
Univers 67  
24/24 centered

*Time/Closed  
Captioned/Date:*  
Univers 67  
8/9 centered

# CD-ROM

The identification bar is 16p6 in length and placed as shown. The title type begins 6 points below the bar.

The seals are 3p in height with 4 points space between them and they align with the left edge of the identification bar. The contact information aligns with the top of the seals and is spaced 1p6 from the right edge of the seals.

Other disc information is placed as shown. Care should be taken not to include too much text on the disc and crowd the important information. Any additional text should be on the back of the cover insert or in the booklet.



*Title:*  
*Univiers 67*  
*18/18*

*Contact*  
*Information:*  
*Univiers 67*  
*9.5/10*

*Text:*  
*Century*  
*Expanded*  
*9/10*

# CD-ROM Case Inserts

Cover type may be white, black, or Pantone 462 brown, depending on the image. The identification bar begins at the top edge of the page and is three columns wide. The title type begins 6 points below the bar.

The back cover is the cover image wrapped around from the front or a solid color. Text on the back cover follows the grid, 1p6 from the top and left edges, and occupies the first two columns only. The third column is for the address and seals.



Front Cover

*Front Cover:*  
4.75 x 4.75 inches  
(28p6 x 28p6)

*Title:*  
Univers 67  
36/36

*Back Cover  
and Spine:*  
5.67 x 4.75 inches  
(34p x 28p6)

*Subtitle:*  
Century  
Expanded Italic  
24/24 with  
p9 space above

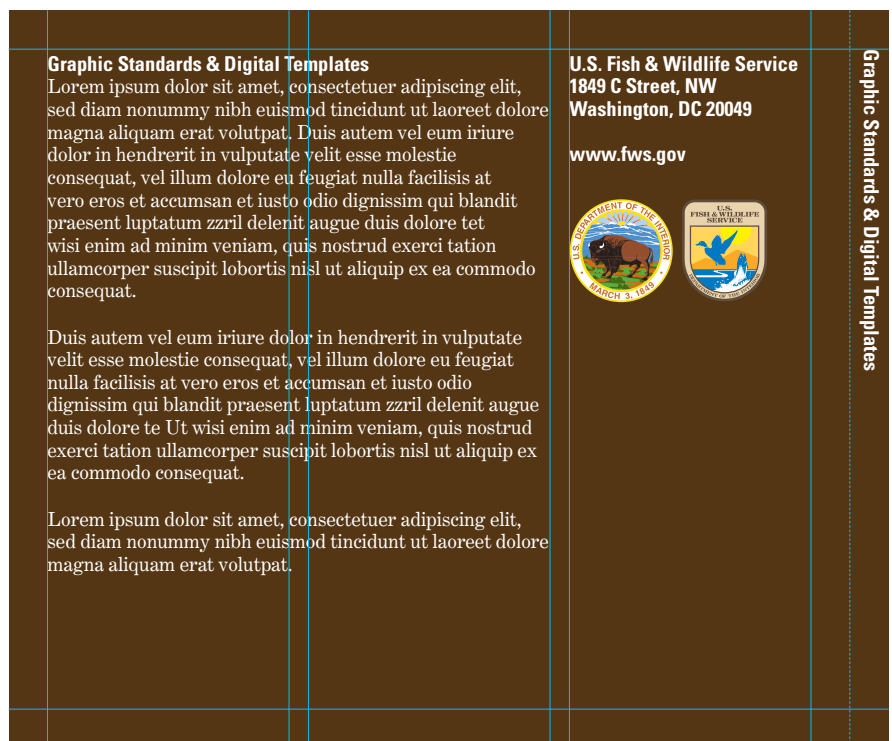
*Top/bottom/left/  
right margins:*  
1p6

*Text Head and  
Address:*  
Univers 67  
9.5/10

*Columns:*  
3

*Text:*  
Century  
Expanded  
9/10

*Gutter width:*  
0p9



Back Cover and Spine

# CD-ROM Booklet

The layout of the CD-ROM booklet closely follows the design guidelines for the 4 x 8.5 inch brochure. The design treatment is very similar. This grid can also be used to layout the back of a single-sheet cover insert.

For the booklet cover design, follow the front cover design as shown on the page “CD-ROM Case Inserts.”

*Format:*  
4.75 x 4.75 inches  
(28p6 x 28p6)

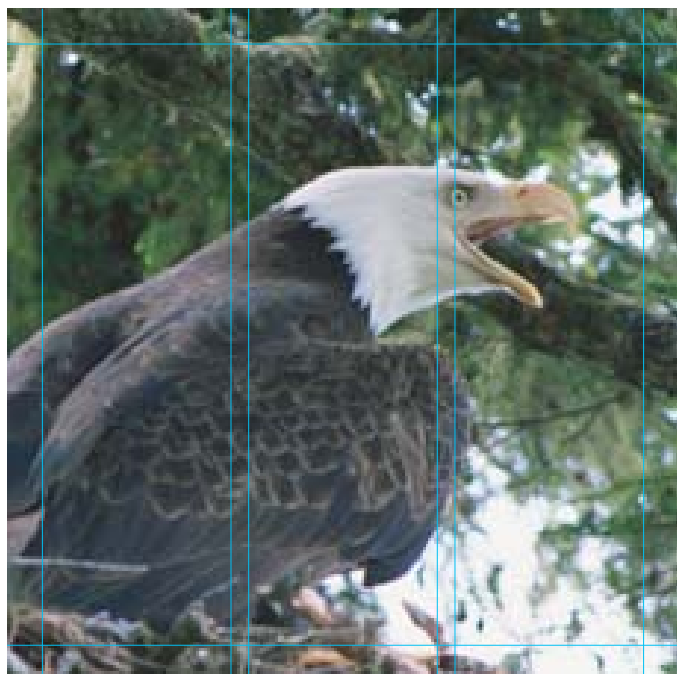
*Text Head:*  
Univers 67  
10.5/11

*Top/bottom/left/  
right margins:*  
1p6

*Text:*  
Century  
Expanded  
10/11

*Columns:*  
3

*Gutter width:*  
0p9

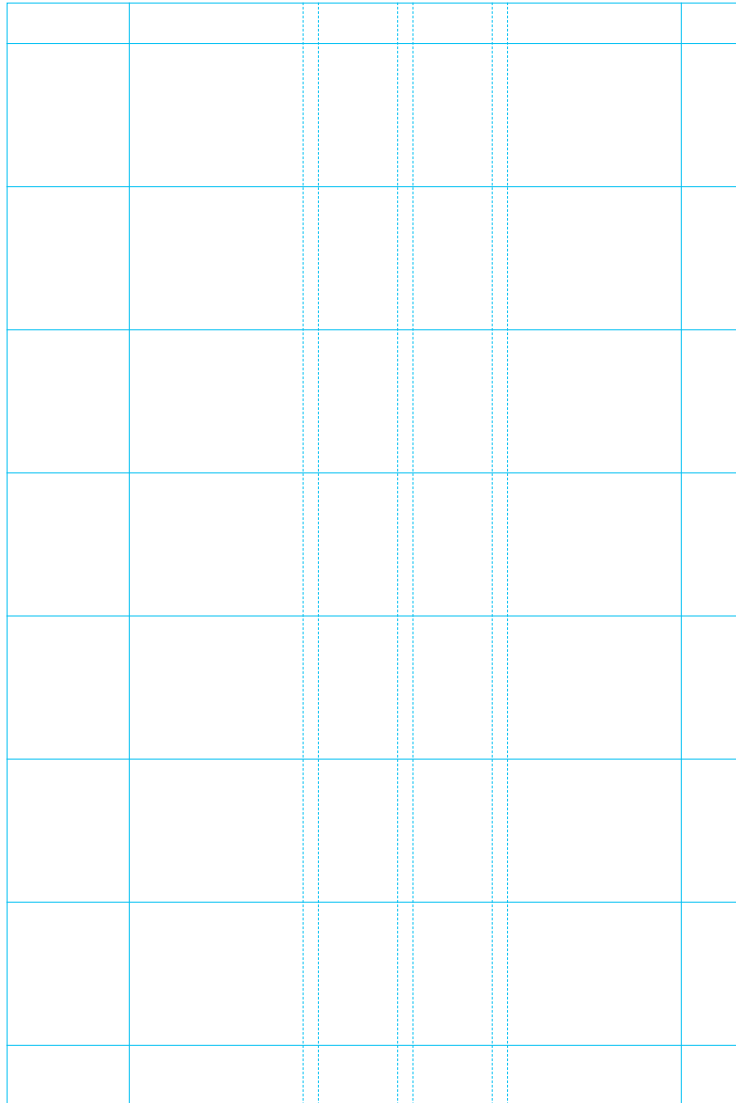
	<p><i>What's Included</i></p> <p><i>Using the Disc</i></p> <p><i>Template Formats</i></p>	<p><b>Graphic Standards &amp; Digital Templates</b> Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto zzzril delenit augue duis dolore tet wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.</p> <p>Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit delenit augue duis dolore te. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.</p> <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Duis autem vel eum facilisis at vero eros et accumsan et iusto odio dignissim qui blandit.</p>
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# 6x9 Booklet/ Grid

The area between the top and bottom margins of the page is divided into seven equal modules, each 7 picas in height.

The width of the page is divided into three equal columns. Text flows in a one column format across all three grid columns. An optional center gutter divides the page in two equal columns. The column divisions allow for placement of images and other items on the page.



*Format:*  
6 x 9 inches  
(36p x 54p)

*Top margin:*  
2p

*Bottom margin:*  
3p

*Inside margin:*  
6p

*Outside margin:*  
3p

*Columns:*  
3 overall  
1 for text

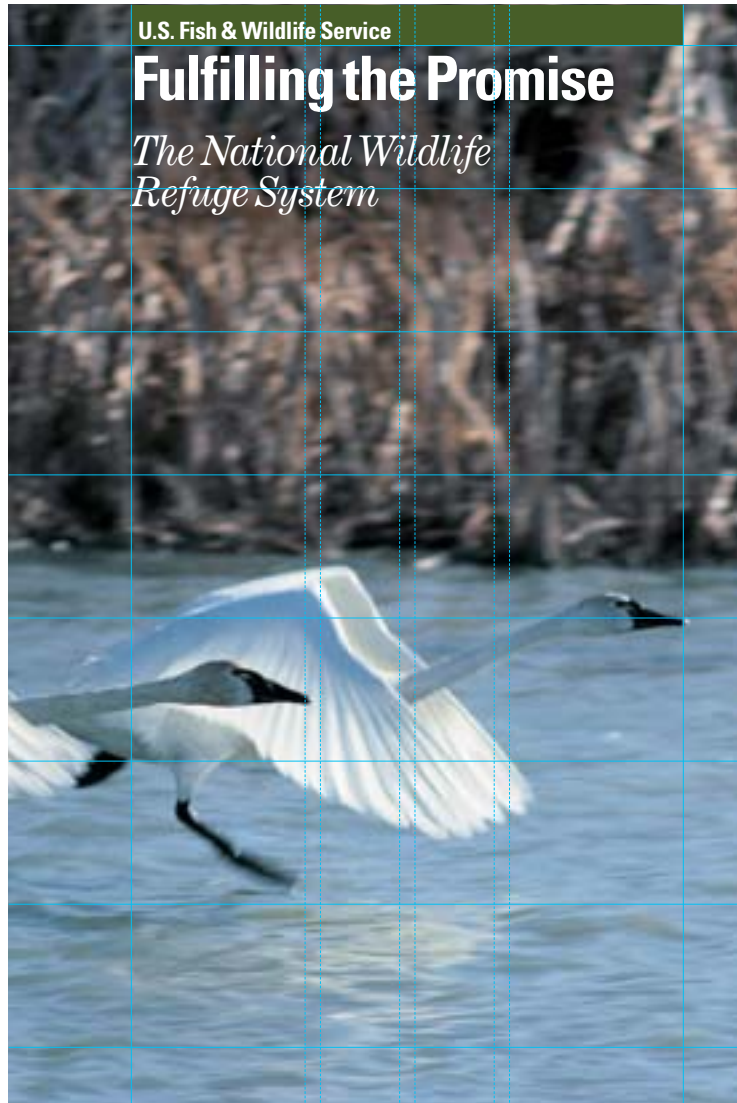
*Gutter width:*  
p9

# 6x9 Booklet/ Cover

The image bleeds across both the front and back cover, cropped to relate to and provide a suitable backdrop for the identification bar, type and seals. Type may be white or black depending on the image.

The identification bar begins at the top edge of the page and is three columns wide. The title type begins 1 pica below the bar.

Text on the back cover follows the grid, 2p from the top and 3p from the left, and occupies the first two columns only. The third column is left empty. The seals are located one line space below the text. The back cover specifications are similar to the 4 x 8.5 inch grid back cover as shown on the page “Cover/Information Brochure.”



*Format:*  
*6 x 9 inches*  
*(36p x 54p)*

*Back cover:*  
*Univers 67*  
*10.5/11*

*Title:*  
*Univers 67*  
*36/36*

*Subtitle:*  
*Century*  
*Expanded Italic*  
*24/24 with*  
*p9 space above*

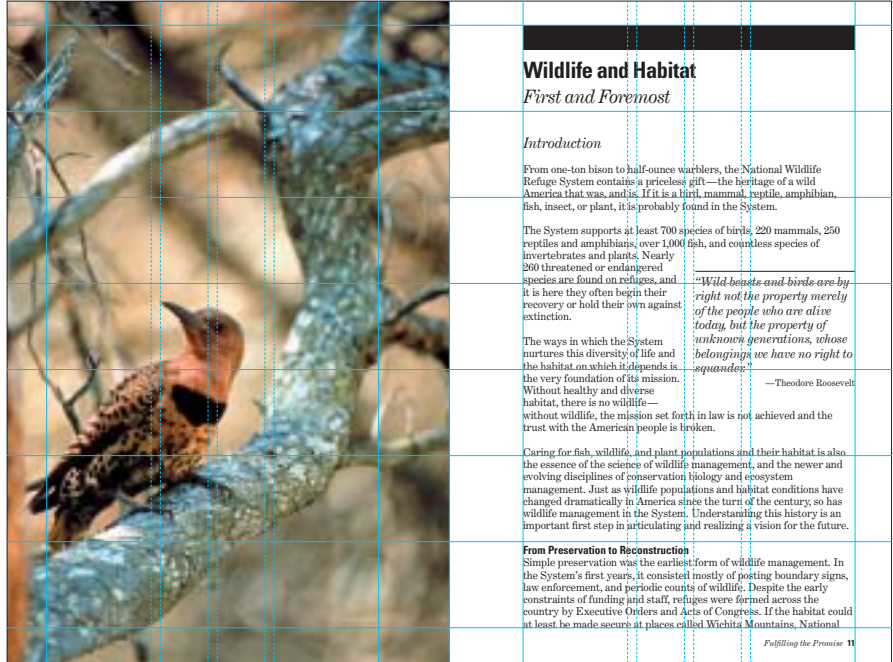
# 6x9 Booklet/ Text

A 2 pica black bar positioned at the top margin indicates a new section. The section title falls 1 pica below the bar.

Text starts in the second row of the grid.

The page number falls within the 3 pica bottom margin.

Pull quotes have a .5 point rule above the quote.



**Format:**  
6 x 9 inches  
(36p x 54p)

**Section title:**  
Univers 67  
22/24

**Section subtitle:**  
Century  
Expanded Italic  
18/18 with  
p6 space above  
and 1p after

**Headings:**  
Century  
Expanded Italic  
14/14 with  
1p6 space above  
and p10 after

**Text headings:**  
Univers 67  
11/12

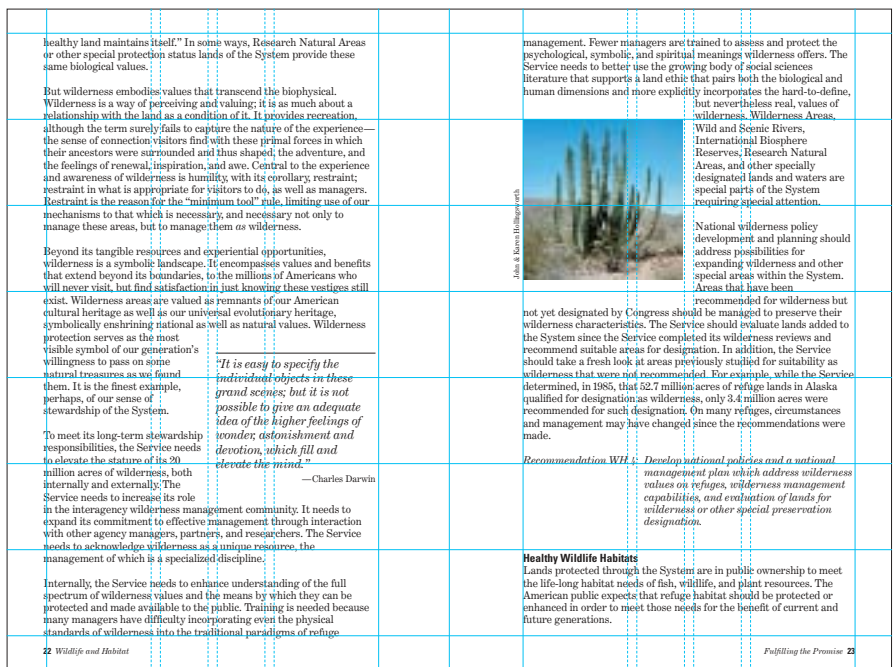
**Text:**  
Century  
Expanded  
10.5/12

**Page numbers:**  
Univers 67  
8.5/10

**Footers:**  
Century  
Expanded Italic  
8/10

**Pull quotes:**  
Century  
Expanded Italic  
12/14

**Pull quote attributions:**  
Century  
Expanded  
9/10 with p4  
space above



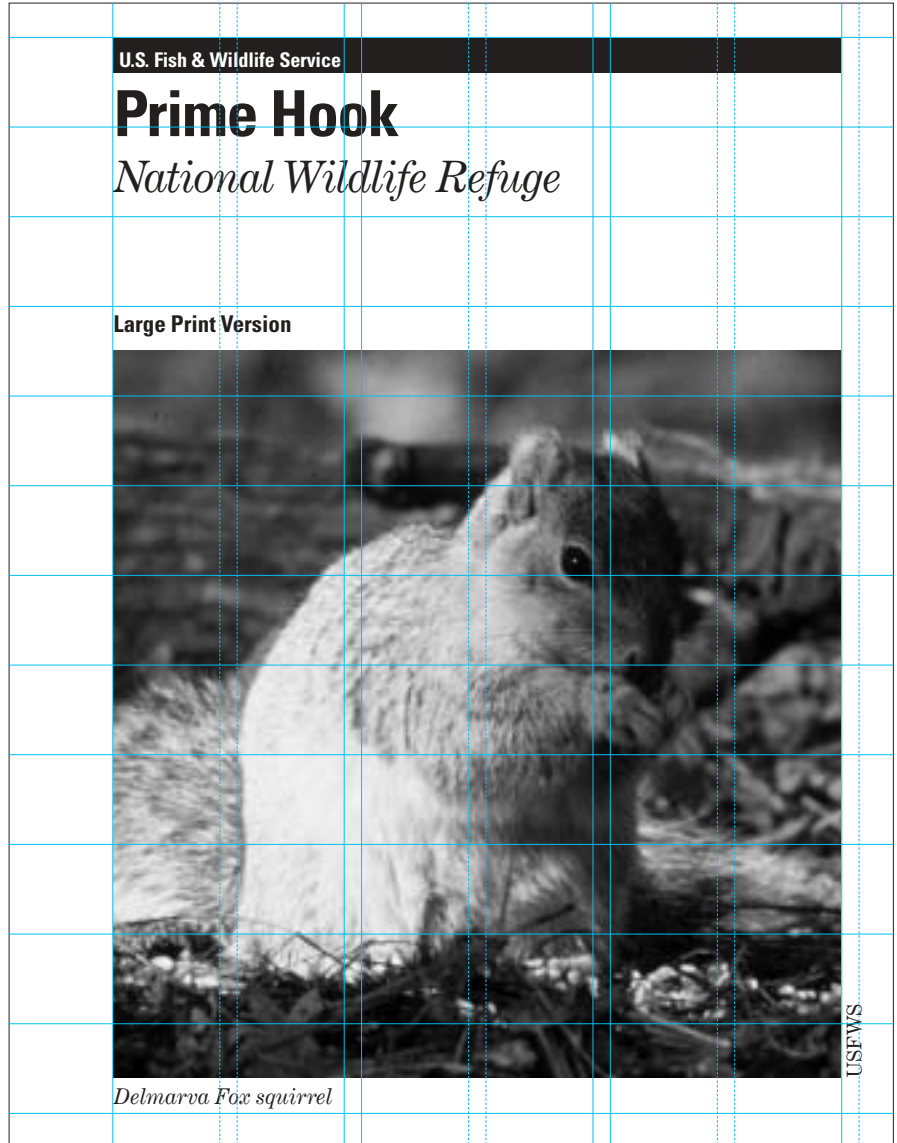
# Large Print Publications

The main focus of large print publications is readability. Readability of printed material may be defined in terms of those characteristics that determine speed, accuracy and ease with which it may be read. Care must be taken to avoid a layout that impairs the readability of the document.

The large print format uses Grid C. The width of the page is divided into six equal columns.

The USFWS identification bar, publication title and subtitle fall across all three columns within the grid, with the identification bar 2 picas from the top edge as shown. The title begins 1 pica below the bar.

The text “Large Print Version” falls in the fourth row of the grid.



*Format:*  
8.5 x 11 inches  
(51p x 66p)

*Title:*  
Univers 67  
44/44

*Subtitle:*  
Century  
Expanded Italic  
28/28 with p9  
space above

*Large print  
identifier:*  
Univers 67  
15.5/18

*Captions:*  
Century  
Expanded Italic  
15/18

*Photo credits:*  
Century  
Expanded  
14/16

# Large Print Publications

Text falls across the two right main columns and Subheadings fall in the left main column.

Photos are treated as secondary to the text. Do not run text around photos. This decreases the column width and impairs readability.

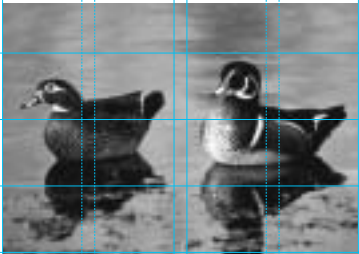
*Headings:*  
*Univers 67*  
*15.5/18*

*Text:*  
*Century*  
*Expanded*  
*15/18*  
*Two columns*  
*wide*

*Captions:*  
*Century*  
*Expanded Italic*  
*15/18*

*Photo credits:*  
*Century*  
*Expanded*  
*14/16*

<b>Welcome</b>	<p>The Prime Hook National Wildlife Refuge was established in 1963 primarily to preserve coastal wetlands as wintering and breeding habitat for migratory waterfowl. It is located on the west shore of Delaware Bay, approximately 22 miles southeast of Dover, the State capital, and 64 miles southeast of Wilmington, Delaware.</p> <p>The refuge consists of over 9,700 acres, approximately 7,400 acres of which are fresh marsh, tidal marsh, and open water. Other habitats include approximately 1,000 acres of timber and brush and 1,300 acres of grasslands and croplands.</p>
<b>Management</b>	<p>Water levels on more than 4,200 acres of marsh are raised or lowered at different times of the year through a system of low dikes and water control structures. This management stimulates the growth of emergent aquatic plant species for wildlife use. Management of the water level is important for restoring and maintaining suitable resting and feeding habitat for migratory wintering waterfowl and shorebirds. The refuge provides nesting habitat for wood ducks, black ducks, and other species. Overall refuge management is directed toward providing a variety of habitat types for maximum wildlife diversity.</p> <p>Upland fields are managed under an agreement with local farmers who plant supplemental food for waterfowl and other wildlife.</p> <p>Prime Hook manages the forested lands as habitat for the Delmarva Peninsula Fox Squirrel which was reintroduced to the refuge in 1986. The management of this endangered species includes monitoring the squirrel boxes, and capturing, tagging and releasing the squirrels to get an index of their population.</p>
	2

<b>Wildlife Calendar</b>	<p>The varied marsh habitat of the Prime Hook National Wildlife Refuge provides homes for numerous species of birds, mammals, fish, reptiles, amphibians and invertebrates.</p> <p>Spectacular concentrations of migrating waterfowl can be observed during certain periods in the spring and fall. Shorebirds can be observed in the spring eating invertebrates in the wetland areas, and horseshoe crab eggs along the Delaware Bay beaches.</p> <p>Migrations through the refuge provide an excellent opportunity for nature study. Fall concentrations of Canada geese, snow geese, black ducks, mallards, pintails, teal, and wood ducks are of particular interest. Many waterfowl winter on the refuge. A variety of wading birds, shorebirds, terns, and songbirds provide additional interesting observations. May is the best time for viewing shorebirds and warblers. Several species of waterfowl and other waterbirds commonly nest in the marshes.</p>
	
	<p><i>Wood ducks</i></p>
	3

# Large Print Publications

Text on the back cover follows the grid and occupies the first two columns. The seals are located one line space below the text.

Seals should be black and white versions, and are slightly enlarged from the normal size. The Department seal is 5 picas square. The Service seal is sized to 5 picas tall, and spaced 6 points from the Department seal.


*Headings:*  
*Univers 67*  
 15.5/18


*Captions:*  
*Century*  
*Expanded Italic*  
 15/18

*Back cover:*  
*Univers 67*  
 15.5/18

*Text:*  
*Century*  
*Expanded*  
 15/18  
*Two columns*  
*wide*

*Photo credits:*  
*Century*  
*Expanded*  
 14/16

<b>Fishing</b>	Tidal waterways and Turtle and Fleetwood Ponds are open to sportfishing in accordance with State and Federal regulations. Largemouth bass, pickerel, white perch and crappies are most sought after and abundant. Favorite fishing sites are Prime Hook Creek, Turtle Pond, and Fleetwood Pond. Boats using Turtle and Fleetwood Ponds may only be propelled manually or with electric motors. Also, Petersfield Ditch and Slaughter Canal are popular sites for crabbing and fishing where no boat is required.
<b>Canoeing and Boating</b>	Canoe enthusiasts have over 15 miles of streams and ditches to enjoy. Favorite routes are along Prime Hook Creek and Petersfield Ditch. Boating is permitted in tidal waters and Turtle and Fleetwood Ponds in accordance with State and Federal regulations. Several boat launching ramps are available to provide convenient access. These are delineated on maps available at headquarters.
	
	<p><i>Canoeing at Prime Hook</i></p> <p style="text-align: right; font-size: small;">Marian Pohlman</p>

<p><b>Prime Hook National Wildlife Refuge</b>          RD 3, Box 195          Milton, DE 19968          302/684-8419          302/684-8504 Fax          Email: r5rw_phnvr@fws.gov</p>
<p>Hearing impaired visitors may call the Delaware Relay Service at 800/232-5460 TDD 800/232-5470 voice.</p>
<p>U.S. Department of the Interior          U.S. Fish &amp; Wildlife Service          1 800/344 WILD  <a href="http://www.fws.gov">http://www.fws.gov</a></p>
<p>January 2000</p>


# Folder or Binder Cover

The grid for this 9 x 12 inch cover is a variation on Grid A for 8.5 x 11 inch publications. The area between the top and bottom margins of the page is divided into twelve equal modules. This format can be adjusted as necessary to fit as a binder cover slip sheet.

The Identification Bar is 33 picas wide across the last two text columns. The type follows the Grid A specifications.

If a single image is not possible, the use of four images in this square grid pattern is recommended. Each image is the width of one main column. Here, the images are 16 picas wide and 16 picas tall. There is a 1 pica gutter between images.



*Format:*  
9 x 12 inches  
(54p x 72p)

*Title:*  
Univers 67  
36/36

*Top/bottom/left/  
right margins:*  
2p

*Subtitle:*  
Century  
Expanded Italic  
24/24 with p9  
space above

*Columns:*  
6 overall  
3 for text

*Gutter width:*  
1p