## NWRS Map Template Specifications

## Overview

The Division of Realty has historically been the manager of cadastral information related to refuge land inventory and new land acquisition. The types of information include maps, surveys, title documents, legislative approvals, public land orders, and many other sources of information necessary for purchase, transfer, and management of Federal lands. A key component of their responsibility has been the requirement to maintain up-to-date land status maps for all facilities that contain lands under the jurisdiction of the Fish \& Wildlife Service. Such facilities include all refuge system lands, national fish hatchery lands, coordination areas, and administrative sites. The Division of Realty has maintained status maps in a standardized fashion since the 1940's that have undergone very little change in their specifications in the last 60 years.

The popularity and increased distribution and use of desktop GIS applications such as ArcGIS, have drastically increased the cartographic potential of status maps as well as many other map products produced for the refuge system. The ability to utilize new types of symbology such as transparent color fills and automated text labeling have made maps easier to produce and increased their aesthetic quality.

In 2002, each Region sent a representative to a meeting in Denver, Colorado to help develop new cartographic standards that embraced new GIS technological capabilities and streamlined the production of required map products (for a list of the required products refer to Service Manual 343 FW 3). Over the next 3 years the team developed and modified draft templates and produced final versions in 2006.

This document contains specifications and diagrams for the layout of all ANSI standard sized maps referencing the new cartographic standards. We intend for employees to use this information in conjunction with pre-made electronic templates that are available for download at:
http://www.fws.gov/filedownloads/ftp\_gis/R1/NWRS/Map\_Templates/
The new national cartographic standards are somewhat generic so they will be functional for the different technical needs and methods available to the Regional and California/Nevada Operations (CNO) offices. Precise layout specifications can vary between Regions/CNO. The electronic templates, diagrams, and specification tables in this document were produced by the Branch of Refuge Information, Division of Realty \& Refuge Information, Region 1. For more information please contact:

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## Purpose

The wide distribution of ArcGIS licenses in Region 1 has increased the number of users, many of whom have not had sufficient training in GIS methods or cartographic design. Most GIS users would like to make more effective and standardized maps but are unable to devote the time and resources to accomplish this task. The ease of using pre-made templates was a consideration from the beginning, but only one of many. These templates are the end result of a long successful process that we hope will yield many benefits for the NWRS for years to come. Below is a list of intentions and accomplishments that help illustrate the multipurpose benefits that came out of this process:

## Initial Mandate:

- Change the FWS cartographic standards so they take advantage of new technology and mapping capabilities
- Streamline the realty cartographic process, and make mapping less burdensome for the program


## National Objectives:

- Create a standard that can be implemented in all Regions/CNO
- Specifications must work in both CAD and GIS systems
- Integrate national graphic standards as much as possible; maps have the same look and feel as other FWS documents
- Utilize colored symbology, and move away from black and white line maps
- Consider standards developed by other DOI bureaus (NPS/BLM)
- Incorporate flexibility in some elements considering the different characteristics of each Region/CNO (large refuges vs. small refuges)
- Re-write the mapping chapter of the Service Manual (343 FW 3).


## Regional Objectives:

- Develop electronic templates for ArcGIS that employees can use for mapping at stations and the Regional/CNO office.
- Develop specifications and supporting documentation for all standard map sizes
- Re-make all required map products using the templates/new national standards
- Integrate the new standards and templates with the SIM handbook


## Usage

We designed the templates to be used for many purposes but their logic is somewhat "station centric" as the title block is specific to a place name. Most mapping projects that relate to a refuge can be represented in the template by changing the map subject/title to reflect the project purpose.

The diagram on Figure 1 of this document describes the core map elements that are referred to in the associated style sheets. The diagram on Figure 2 contains coded dimensions and properties that are listed in the style sheets by map size and orientation. The values coded with a 'D' represent dimensions that have exact measurements for placing the different elements on the map. The values coded with a 'S' are size properties that are usually associated with text/font specifications. The values coded with a ' $V$ ' are variable map elements that might appear on a map and do not necessarily have exact specifications. The style sheets and diagrams contain enough information to re-create all the templates from scratch; however, we do not recommend this. The intention is for users to use the electronic templates and the style sheets to place and/or edit elements they have deleted or modified in some way.

The new cartographic standards are required for all official map products listed in 343 FW 3 of the Service Manual. These are products that are the responsibility of the land acquisition and planning programs located in the Regional/CNO offices. We are making these templates and the associated guidance available to other NWRS and FWS users as a courtesy to help streamline their mapping projects, but are not currently required as part of the standard. We will revise the standard in the future and add new map definitions or change elements, as necessary. We will also develop and distribute new templates, as necessary.

NWRS Map Template Core Element Diagram (Figure 1).
Element names/descriptions appear in the associated map size style sheets


NWRS Standard Map Layout Diagram (Figure 2).
Refer to style sheets for measurements according to map size and orientation


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