

Animal Disease Spread Model (ADSM)

Text Support Document for Training

The slide-based training was designed to optimize visual interest. This format does not always create a slide bank that is printer friendly. In some sections, there are many images and little text. This text support document is intended to be a printer-friendly version of the slides that can be used as a reference. This document is not intended to take the place of the main training slides.

Training 10 ADSM Administration

Slide	Image	Text
1	Laying Hens	Animal Disease Spread Model ADSM Administration
2	ADSM Application Sample Scenario with Outputs	Table of Contents ADSM Administration ADSM Workspace Administrative Panel Importing from NAADSM What's Next?
3	No Image	Document Conventions The following conventions are used throughout the training modules: <u>TRAINING MODULES</u> other than the one you are current in will use all capital letters, bold face, italics and underline. <i>Rhetorical questions</i> and <i>extra notes</i> will be in orange italics. Conventions applying to the ADSM application are: Navigation tabs on right and Admin panels on left are designated with an underline. Examples are <u>Project Panel</u> or <u>Population tab</u> . Items with an action on click, such as [Apply] Button or [Save As] icon are enclosed in square brackets. <i>Parameter fields</i> (inputs) are in blue italics and <i>Variables</i> (outputs) are in green italics. <u>Navigation Tabs</u> > <i>Parameter field</i> indicates to go to the given navigation tab to find the given field. Hyperlinks appear in bright green type with underline http://navadmc.github.io/ADSM/
4	Gear Section Break	ADSM Administration
5	Gears	There are several administrative actions that can modify the ADSM Application. Some of this functionality is visible in the application. Other features are behind the scenes in supporting ADSM processes. These actions can be useful as you become more familiar with ADSM.
6	ADSM command window	A command window will be opened in a separate tab when ADSM is open.

		The command window gives a real-time update of the system status. Don't close the window while ADSM is running, as it will close the scenario. Minimize the command window if needed.
7	ADSM Disease Spread Form showing red slider bar	<p>Apply Changes</p> <p>To manage the possibility of closing without saving, ADSM requires an [Apply] at the end of every Navigation tab when changes have been made. Apply is on the bottom of every form.</p> <p>On some screens, the slider becomes red to indicate that a save is needed, especially when the [Apply] button requires a scroll down to see.</p> <p>A message also appears in the top right of the application as a reminder to save.</p>
8	ADSM Scenario description Form with overlay	<p>The ADSM overlay gives a quick glance at the administrative sections to help get you started. The overlay, shown here in blue, will be on the first time you open ADSM. Use the stacked files in the upper right to toggle off this feature.</p> <p>The overlay can only be turned on while in the Scenario Description tab.</p>
9	ADSM Navigation tabs	<p>The parameterization of a scenario happens in the navigation tabs. A scenario breaks down into 3 main components for input into the simulation:</p> <ul style="list-style-type: none"> Population Disease Parameters Control Parameters <p>The user inputs parameters into the Disease and Control components to simulate disease spread and control within the Population.</p> <p>Specific trainings cover each portion of the navigation tabs in greater detail. In this training, we will focus on administrative settings.</p>
10	ADSM Navigation tabs	<p>Depending on the type of question that you are trying to answer, you can modify these main components and do comparisons:</p> <p>For example, changing the Population and keeping all the other parameters would let you evaluate if the disease and control strategy behaves differently in other geographical areas that might have varying animal densities.</p> <p>Another method could be keeping the Population and Disease parameters the same and changing Control parameters to see the effect of a different control strategy on an outbreak.</p> <p>Working through the parameters that feed into a model provides a useful exercise in understanding all the complexities to consider when preparing an emergency outbreak response plan.</p>
11	Watusi cows and calf	Error checking and validation are used throughout the application.
12	Gear Section Break	ADSM Workspace
13	File explorer showing ADSM Workspace	The ADSM Workspace is the file location that will contain both the scenarios and the results. The user can select this file location. A portable drive (USB flash drive) can be used for the ADSM Workspace file location.

		The ADSM Workspace is different than the location of the programming code that runs the application. This file location is selected by the user.
14	Piglets	The ADSM Workspace has these folders: Individual Scenarios Example Database Queries Example R code Exports Settings
15	File explorer showing a specific scenario	Each Scenario folder will contain: The actual database file for the scenario, as a .db file Supplemental Output Files Imports
16	Cows with sunset	The Example folders have code snippets that can be used to manipulate ADSM outputs. Each folder has a READ_ME.txt file with additional details. Don't save your code into the Example files, as they are updated when the application updates.
17	Calf	The Exports folder will contain items that have been exported from an ADSM scenario. These items, either Population files or Function files, allow you to easily transfer portions of one scenario to another scenario using Import functionality.
18	ADSM Production Type Panel	Population files can be exported from the Population panel in either .xml format or .csv format. Population files can be imported as part of a new scenario, or by using the Replace Population functionality on the Population Navigation tab.
19	ADSM Function Panel	Function files can be exported from the Functions panel. These files are exported as a .csv format, which a user can edit and are in the Exports folder at the root of the ADSM Workspace. Function files can be imported from the Functions panel. First, it will be necessary to copy the desired set of functions from the main Exports folder and move them into the destination scenario's Import folder. This allows you to customize the functions that you wish to transfer into the destination scenario. If you choose to open and edit either type of export, pay close attention to leave them in the same format as they started in. For example, do not delete a line and leave a blank space. Also, don't save the file into an Excel format.
20	Stacks of notebooks	At some point, you may want to archive some of your past work. Each scenario can be zipped and moved to another location in your file structure. Once the folder is removed from the ADSM Workspace, it will no longer be visible in the application. If needed, you can unzip the file and move it back into the folder structure. Once it has been returned to the ADSM Workspace, you may need to restart the ADSM application so it recognizes the file.
21	Gear Section Break	Administrative Panel
22	ADSM Administrative panel	The Administrative Panel contains: Project Panel Settings Panel

		Production Type Panel Functions Panel Documentation Panel SQL Panel
23	ADSM Project panel	The Project Panel: Opens a different scenario Duplicates (Save As) a current scenario Creates a new, empty scenario Imports a NAADSM 3.2.XX scenario Deletes a scenario Allows user to discard all changes Shows ADSM Workspace location Allows change of ADSM Workspace location <i>The scenario files stored in the ADSM Workspace show up on the list in the Project Panel.</i>
24	ADSM Settings panel	The Settings Panel: Shows current application version Toggles on/off help text Allows access to Advanced Panel <i>The Advanced Panel allows setting of the random seed, which is not recommended unless there is a need to reduce stochasticity of model. Instructions to change the random seed are in the wiki.</i> https://github.com/NAVADMC/ADSM/wiki/Changing-the-Random-Seed
25	ADSM Production Type panel	The Production Type Panel: Provides overview of parameterization using Status Lights Creates a new production type Creates a new production group Exports the population file (.xml or .csv)
26	Cattle, swine and small ruminants	Production type groups are a new concept in ADSM and are used as a vaccination trigger. This group allows the user to trigger vaccination to start when disease spreads into more than one industry.
27	ADSM Functions panel	The Functions Panel: Lists relational functions Lists probability density functions Allows addition and deletion of functions Allows Export of functions by type Allows Import of functions by type
28	ADSM Functions panel, individual function	Individual Functions: Show a visualization of the input Allows export of visualized image Holds the function parameters Allows duplication (Edit, Variant) Allows update (Edit, Overwrite) Shows where function is assigned in scenario Allows deletion of function if not assigned to a parameter (Edit, Overwrite, Delete)

		<i>It is important that you don't delete a function that the simulation is using, therefore the application will not allow it to happen (Edit, Overwrite, Delete Disabled).</i>
29	ADSM Documentation panel	The Documentation Panel: Provides links to help documentation Provides links to ADSM wiki
30		The SQL Panel: Opens SQL Editor Here's an example query to try on the SQL window. Cut and paste the text into the SQL window then click Save & Run. <i>Recall that example queries are packaged in the ADSM Workspace, Example Database Queries folder</i> ----- -- Sample Query: Production Type with descriptive name -- Date: 3/19/2015 -- Notes: where clause 1=1 allows for easy editing of clauses -- -- allows for line to be commented (omitted) ----- SELECT u.User_notes, pt.name, -- description name, not an identifier u.initial_state, u.initial_size, u.Latitude, u.Longitude FROM ScenarioCreator_unit u JOIN ScenarioCreator_productiontype pt ON u.production_type_id = pt.id -- Example of WHERE clause WHERE 1=1 AND u.initial_state = 'L' ORDER BY 2,1
31	Gear Section Break	Importing from NAADSM
32	Map of North America	NAADSM Focus NAADSM and therefore ADSM were originally designed for North America, to simulate the highly contagious diseases that are of most interest to users based in Canada, the United States, and Mexico. If you have scenarios created in NAADSM, you may be able to import your past work. You can import scenarios that were created in version 3.2.XX of NAADSM into ADSM. You cannot import scenarios that were created in NAADSM version 4 into ADSM. ADSM does not contain some of the functionality that was implemented in 4.X.XX. The ADSM Development Team does not manage NAADSM. If you are new to modeling, starting in ADSM may be an easier option to learn. ADSM features newer technology and an updated user interface.
33	NAADSM Export Scenario Form	NAADSM Import Importing from NAADSM into ADSM requires two files that can be exported from NAADSM. Open the NAADSM scenario From the File menu, choose Export Scenario The Export Scenario window will open Check both the - Export scenario parameters file - Export list of units

		At the bottom of the page, browse to find the location to export the files. Hit [Export]. <i>Name the files for clarity, such as My_pop.xml and My_para.xml</i>
34	ADSM Legacy Import Form	Use the Project Panel to import the NAADSM Legacy Scenario. A prompt will ask for a new file name Select the parameter file using [Choose File] Select the population using [Choose File] Use [Apply] to start import process <i>The import is unable to estimate how long the process may take. The ADSM Development Team tests with a 400,000-unit population take about 20 minutes.</i>
35	Calves	<i>What if I want a new population instead of the old project population?</i> For the import process, ADSM needs to match up with the previous production types. If you need to change population: <ul style="list-style-type: none"> • Import following the previous instructions • Use the [Replace population] • Production Types are not required to match on a replace action
36		What's Next?
37	Flock of Sheep	Join the flock! Learn more about ADSM or try an example ADSM is currently available at https://github.com/NAVADMC/ADSM/releases/latest Try the sample scenario https://github.com/NAVADMC/ADSM/wiki/A-Quick-Start-Guide:-Running-the-sample-scenario Read the wiki pages link https://github.com/NAVADMC/ADSM/wiki
38	Goat on with green foliage	Training materials are posted at http://navadmc.github.io/ADSM/ Training includes: <ul style="list-style-type: none"> Overview Populations and Production Types Getting Started Disease Parameters Control Parameters Output Settings and Run Results Detailed Evaluation of Results - Verification and Validation Vaccination Strategy Administration
39	Cows grazing with blue sky and green grass	The outcome of an ADSM simulation (as with any computer simulation model) depends heavily on the quality of the scenario input parameters; the assumptions of the modeler who created the scenario; and the capabilities and limitations of the model framework itself. The utility of disease models like those created with ADSM critically depends on input and interpretation of experts familiar with the behavior of disease within populations, and with the limitations, assumptions, and output of the model. While ADSM is available as a service to animal health communities, the ADSM team does not necessarily endorse results obtained with the ADSM application or

		any conclusions drawn from such results. Note that the parameters provided in the Sample Scenario are simple examples to clarify concepts in the application. These parameters do not represent any real population or disease event.
40	Cattle image	This work was funded in whole through Cooperative Agreement AP18VSCEAH00C005 with the University of Tennessee Department of Animal Science by the Animal and Plant Health Inspection Service, an agency of the United States Department of Agriculture. University of Tennessee Animal Science logo Photo credits Canva.com Mariposa Ranch Watusi Joy Way Farm Pinecroft Farms, Woodstock CT, Mariah Chapman Dr. Melissa Ackerman
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