

ADA 1/20/2012



**WHEN DISASTER STRIKES**

**Ag Damage Assessment Forms can help you quickly, easily, and accurately:**

ASSESS damage to all agricultural inventory  
ESTIMATE economic loss

**AgDamage**  
Assessment Form

When disasters cause damage to:



It is important to be able to quickly and accurately assess the scale of the damage, and determine the economic loss caused by the disaster. Whether natural, accidental, or intentional, the **Agricultural Damage Assessment Form** can provide a quick and easy method to make an accurate assessment of damage, and an accurate estimate of the economic loss to agriculture.

Reduce guesswork—more accurate  
Examples show the process  
User Guide explains each section  
On-line webinar training  
PowerPoint™ training with instructor notes

One simple form for every type of disaster, for all agriculture, and every state and region.  
Visit <http://extension.psu.edu/agdamage>



**Welcome**  
**Introductions**  
**Q & A**

**AgDamage**  
Assessment Form

PROJECT SUPPORTED BY:  
 Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.  
 United States Department of Food and Agriculture  
 This material is based upon work supported by the United States Department of Agriculture (USDA) under Award No. 2010-11210-21715.  
 Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of USDA - NIFA.  
 We encourage you to contact your local county agent and other public and private organizations. NIFA invites the public to enhance a global network of educational resources, activities, and higher education in the land and agricultural sciences.

Welcome to the webinar training for using the Ag damage assessment resources. This project is supported by USDA special needs funding. What we hope to accomplish during this training is to introduce you to the resources for the Ag Damage Assessment project. In addition to this webinar training, which is being recorded and will be archived, there is an Ag Damage Assessment Form, a Users Guide and Instructions, a PowerPoint presentation with instructor notes, and a promotional flyer. From the beginning of the project, the goal was to keep it simple and easy to use, and yet accurate. All the resources of the project are available on line. The web address is located at the bottom of the promotional flyer and several other slides in this presentation. The material will also be cataloged in the Extension Disaster Education Network.

We will be addressing questions that you may have. We ask that you use the chat box to type your questions at any time during the presentation, and we will spend some time discussing them at the conclusion of the webinar.

I'd like to introduce the project authors and presenters for today's training:

Tom Ball is with the Center for Governmental Training and Technology, and part of the Mississippi State University Extension system. We would like to thank Tom, and Bekah Sparks from Mississippi State for hosting and producing today's webinar training.

Tommy Bass is a Livestock Environmental Specialist with Montana State University State Extension

Dr. Stephen Brown is a District Agriculture Agent with the Cooperative Extension Service, University of Alaska, Fairbanks

Dr. Michael Bush is an Extension Entomologist, and County Director for Washington State University

Scott Cotton is an Extension Educator and unit leader for the University of Nebraska, Lincoln, and Vice Chair of the Nebraska Grazing Lands Coalition.

Rebecca Csutoras is Program Chief for Pennsylvania State Farm Service Agency

Mike Hunter is a Field Crops Educator, and Ag and Natural Resources program leader for Cornell Cooperative Extension in Jefferson County New York.

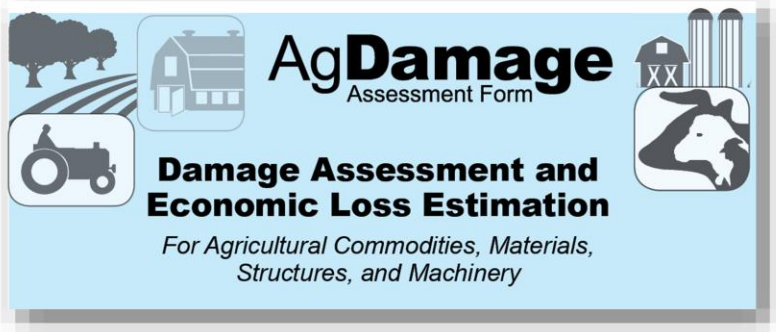
Dr. Marilyn Simunich is veterinarian and director of the Animal Health Laboratory, Division of Animal Industries, for the Idaho State Department of Agriculture.

I'm Dave Filson, State Program leader for Animal Sciences, Rural Health and Safety and Emergency Preparedness Coordinator for Penn State Extension.

If you want to download a copy of the Ag Damage Assessment Form and follow it during this training, you can access a copy from the pod on your screen for this webinar.

Steve is going to begin the training by explaining how to use the resource.

ADA 1/20/2012




**AgDamage**  
Assessment Form

**Damage Assessment and  
Economic Loss Estimation**

*For Agricultural Commodities, Materials,  
Structures, and Machinery*

## How To Use The Resource

<http://extension.psu.edu/agdamage>

AgDamage  
Assessment Form 


To determine the economic loss from a disastrous event, local emergency teams inspect and review the extent of damage to agricultural commodities, materials, structures, and machinery. Information gathered by these assessment teams can be shared through the USDA Farm Service Agency (FSA), Cooperative Extension, the local Emergency Management Agency, or other interested entities.

This Ag Damage Assessment Form provides a structured format and instructions for assessors, working individually or in teams, to accurately collect the important information, assess the damage, and determine an accurate economic loss estimate.

Regardless of the intended use of disaster loss information, the completion of this "Assessment Form" can provide rapid and accurate information for those interested in agricultural damage assessment and economic loss. Those doing the assessment should be knowledgeable about production agriculture and be able to obtain accurate local market reports to help determine the economic loss. This Assessment Form is not intended to replace the Farm Service Agency forms or the FSA County Emergency Board process for determining and reporting loss.

**A recording of this training presentation to help understand how to complete this Ag Damage Assessment Form will be archived at**

<http://extension.psu.edu/agdamage>



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<http://extension.psu.edu/agdamage>

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 **PENN STATE**  
 Cooperative Extension  
 College of Agricultural Sciences

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 In partnership with land-grant universities, and other public and private organizations, NIFA provides the focus to advance a global system of extramural research, extension, and higher education in the food and agricultural sciences.

Slide 3

The team that developed this Ag Damage Assessment Form is composed of Extension Educators and Specialists from various land-grant Universities, a State Veterinarian, and a State Farm Service Agency representative. The project received an independent review from various Extension and agricultural industry representatives. The Damage Assessment Form and instructions were pilot tested with Extension educators and Emergency Management personnel from Mississippi.

This project was supported by USDA/NIFA.

We hope this resource is of value to those with responsibility of determining agriculture damage and loss following a disaster.

We welcome any comments on the material and invite you to complete the brief evaluation located at the end of this webinar PowerPoint presentation.



**AgDamage**  
Assessment Form

**Damage Assessment and Economic Loss Estimation**  
*For Agricultural Commodities, Materials, Structures, and Machinery*

When agricultural commodities or agricultural facilities sustain damage as the result of a disastrous event, local review teams are expected to inspect and review the extent of damage and determine the economic loss as a result of the disaster. Information gathered by local teams can be shared through the USDA Farm Service Agency, Cooperative Extension, local Emergency Management Agency, or other interested entities. Most agriculture disasters are weather related, such as flooding, drought, wildfire, hail, freezing, and wind. Plant and animal diseases can cause significant damage and economic loss. Agricultural producers/growers can also incur economic losses as the result of accidental or intentional human actions such as misapplied pesticides, contaminated feed or water, or the intentional introduction of a bio-agent.

The *Ag Damage Assessment Form* provides a standardized method for individuals who are interested in determining the extent of damages to agricultural commodities and structures.

Local, third-party, independent damage assessment may be done by representatives of Farm Service Agency, APHIS, Cooperative Extension, the local Emergency Management Agency; other local, state, federal agencies; or by insurance company representatives. Regardless of the intended use of agricultural disaster loss information, the approach

used by this *Ag Damage Assessment Form* can provide rapid and accurate information to the assessment process of determining agricultural damages and economic losses.

The *Ag Damage Assessment Form* provides spaces to record details needed to determine the exact location and the scale of agricultural damage and loss. The *Assessment Form* includes sections for agricultural losses, including: animal and crop/plant commodities, structures, stored materials, and machinery and equipment. If losses occur for agricultural items not listed, "other" spaces are provided to add/describe additional losses.

The *Ag Damage Assessment* process may require additional resources to determine current local values and economic losses for disaster damages. Assessors may access local or regional crop and livestock market reports, ag suppliers and dealers, building contractors, state departments of agriculture, and the local FSA or Extension office to determine accurate evaluations and current values. In all situations, documentation including pictures and receipts, and listing of the source used to determine values, is critical to ensure credibility. Assessors are tasked with exercising their best judgment to determine the extent of damage, and to document loss and value based on experience and credible sources.

Slide 4

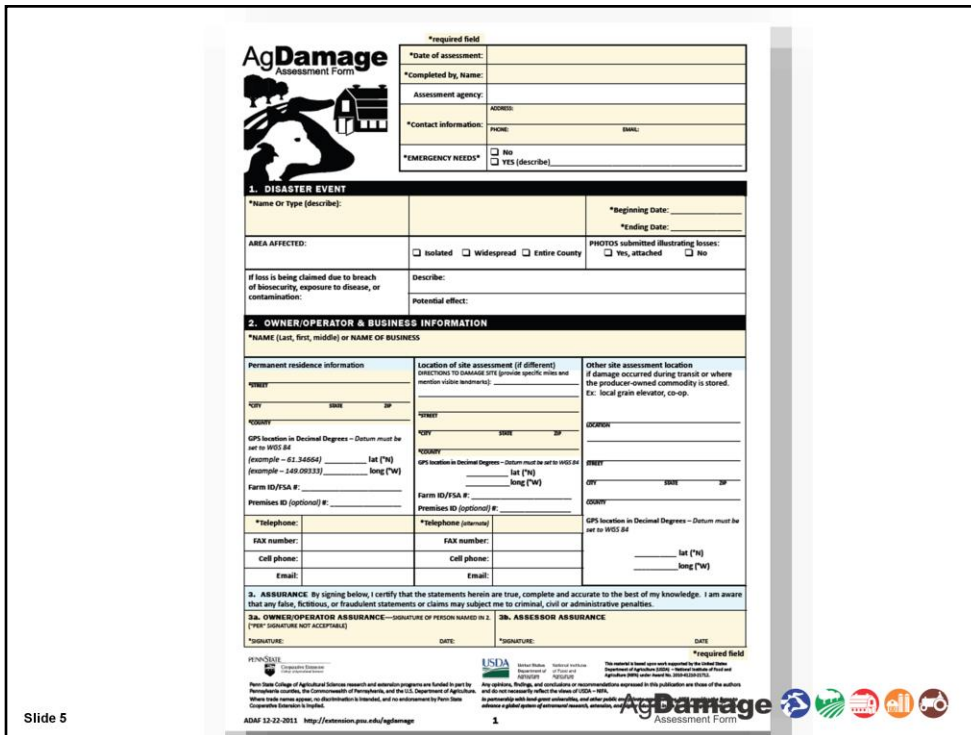
**AgDamage**  
Assessment Form

This is the cover page that provides a brief description of the assessment tool, how to use it, and who may find value in using it.

This is not meant to replace the FSA process. But there are areas identified in this form that are not covered by FSA, and others may value having an independent third-party assessment and value determination made for producers who have suffered loss, such as the local Emergency Management Agency, or insurance companies.

This resource can help establish an accurate assessment, and a third-party value determination.

The information gathered and described on the Form can be very helpful.



The image shows a detailed 'AgDamage Assessment Form'. It is divided into several sections:
 

- Header:** Includes the 'AgDamage Assessment Form' logo with an illustration of a cow and a barn, and a 'Required field' section for Date of assessment, Completed by Name, Assessment agency, Contact information (Address, Phone, Email), and Emergency needs (Yes/No).
- Section 1: DISASTER EVENT:** Contains fields for Name or Type (describe), Beginning Date, Ending Date, Area affected (Isolated, Widespread, Entire County), Photos submitted (Yes/No), and a description of the event along with its potential effect.
- Section 2: OWNER/OPERATOR & BUSINESS INFORMATION:** This is the largest section, split into three columns:
  - Permanent residence information:** Fields for Street, City, State, ZIP, County, and GPS location (lat/long).
  - Location of site assessment (if different):** Fields for Street, City, State, ZIP, County, and GPS location (lat/long).
  - Other site assessment location:** Fields for Street, City, State, ZIP, County, and GPS location (lat/long).
- Assurance:** Section 3a (Owner/Operator Assurance) and 3b (Assessor Assurance) with signature and date lines.
- Footer:** Includes logos for the University of Mississippi, USDA, and AgDamage, along with a URL and slide number '5'.

Ag producers who have sustained damage from the disasters typically have resources made available through the local Farm Service Agency. USDA teams led by the FSA will complete Flash Damage reports with a description of the damage.

A team working on a national project funded by USDA/ National Institute of Food and Agriculture has developed this Ag Damage Assessment Form with instructions that can be used to gather and document damage to agriculture buildings, structures, animals, crops, equipment and machinery, and stored materials. We're going to illustrate some of the information that can be gathered using this assessment form. We pilot tested this form with producers and Extension educators in Mississippi, and they suggested the resource was of significant value even in draft form.

This Form does not replace the FSA forms and process for documenting damage. It should be considered to be a compliment to the established FSA process to document damage. This project form identifies some commodities that are not included or covered through FSA. Emergency Management officials and producers may benefit from using this resource.

The first section is to identify the specific incident, such as a flood, the name and contact information for the owner, the location of where the damage occurred. In some situations the damaged may occur at a location different than where the owner or producer lives. That information can be included.

The last box in Section 1 would be utilized if animals (or products) had to be destroyed because of exposure to regulated diseases, toxins, or elements that would compromise animal health, production regulations and/or the safety of their products – usually food for human consumption.

Before conducting damage assessment activities: pre-establish a travel plan, organize appropriate safety equipment, coordinate team members, check all communication equipment, and share all plans with a coordinating entity, including your time table.

When at all possible assessors should either be trained in this process or have some expertise in the field of agriculture and disaster response so this process can be as expedient as possible.

It is crucial that assessors understand, recognize and take measures to avoid all risks when in the field. This would include the use of appropriate Personal Protective Equipment (PPE) and following animal handling guidelines. If the assessor is not well versed in these risks they should have someone with expertise lead the party.

All assessors should communicate regularly with Incident Commanders or authorities and the agriculture producers/landowners..




# ANIMAL LOSSES


ANIMAL LOSSES

4. ANIMAL LOSSES—OWNER									
KIND	TYPE	WEIGHT RANGE	NO. DIED	NO. INJURED	NO. MISSING	NO. DISEASED <input type="checkbox"/> or clinical for symptoms	\$ LOSS		
<b>Apes/Primate</b>									
<b>Beef</b>									
New-adult	Bull	Bull							
		Bred Cows							
		Cull Cows							
	New-adult	Heifer	Heifer—Less than 400 lb						
			Heifer—400 to 799 lb						
			Heifer—800 lb or more						
			Steer—Less than 400 lb						
			Steer—400 to 799 lb						
			Steer—800 lb or more						
			<b>Honey Bee</b>						
<b>Swine</b>									
Piglet/Porklet	Piglet	Piglet							
		Cow							
		Less than 400 lb							
New-adult	Piglet	400 to 799 pounds							
		800 pounds or more							
<b>Poultry</b>									
Chicken	Poultry	Broilers/Pullets							
		Broilers/Pullets (Regular Size)							
		Chick							
		Laying							
		Laying/Reservoir							
		Pullets/Convincer Hens (Small Size)							
		Reservoir							
		Egg							
		Dairy	Dairy	Bull					
				Dry Cow					
Close-up Cow									
Bred Milking Cows									
Open Milking Cows									
New-adult	Cull Cow			Bull—Less than 400 lb					
				Bull—400 to 799 lb					
				Bull—800 lb or more					
				Heifer—Bred					
				Heifer—Springer					
		Heifer—Less than 400 lb							
		Heifer—400 to 799 lb							
Heifer—800 lb or more									
<b>Milk</b>									
<b>Other</b>									
Duckling									
Duck									

ADAM 12-12-2011 <http://extension.psu.edu/agdamage>
DUPLICATE AS NEEDED  
2




Slide 6

The second section provides a list of the majority of production animals by various class, age, or specific characteristic. This is more detailed than the FSA forms because we have broken many of the classes into more accurate lists, such as dairy calves, springers, dry cows, different aged heifers and such. If there is a unique production animal that is not included on the list, there is a place to list “other”.

The Form asks for the number of dead animals, number of injured animals, number missing, number that may be showing disease symptoms, including a listing of specific disease symptoms, and a place to list the estimated dollar loss for each subset of animals.

The sources for determining the value can be the local FSA office, local market reports, recent sales or other documentable reports of recent sales of similar animals in the area.



# ANIMAL LOSSES

ANIMAL LOSSES

**4. ANIMAL LOSSES—OWNER (continued)**

KIND	TYPE	WEIGHT RANGE	NO. DIED	NO. INURED	NO. MISSING	NO. DISEASED	
						<input type="checkbox"/> if checked for symptoms	% LOSSES
<b>Eq</b>							
Horses							
	Production Horses						
	Work Horses						
	Performance Horses						
	Pleasure Horses						
<b>Goats</b>							
	Beats						
	Goats						
	Bucks						
	Nannies						
	Slaughter Goats/Kids						
<b>Sheep</b>							
	Ewes						
	Lambs						
	Wethers						
<b>Swine</b>							
	Pigs	50 lbs and under					
	Feeder Pigs	30 to 40 lbs					
	Market (non-breeding)	40 to 300 lbs					
	Pigs						
	Breeding Swine (include gilts for breeding)						
<b>Turkeys</b>							
	Female						
	Male/Toms/Keeters						
<b>Other Animals (Identify)</b>							
Sub Total							

Please describe method of carcass disposal (buried, incinerated, composted, etc...):

If yes, please describe signs or symptoms of infectious disease

Neurological (if affected: \_\_\_\_\_)

Respiratory (if affected: \_\_\_\_\_)

Gastrointestinal (if affected: \_\_\_\_\_)

Other (describe): \_\_\_\_\_


\*Source of current values:

DUPLICATE AS NEEDED

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ADAF 12-22-2011 <http://extension.psu.edu/agdamage>

3



Horses are divided into 4 categories:

Production animals – which are those used for breeding and which includes young stock still at facilities where production occurs.


Work horses – such as draft horses and other breeds that are utilized for farm or ranch work or as a buggy horse in some parts of the country.

Performance horses – which are those that are utilized in a variety of equine sports for monetary gain such as racing, cutting, reining, dressage, eventing, jumping, or driving.

And lastly - Pleasure horses – those that are utilized for general riding and sport without direct monetary gain as a result of the sport.

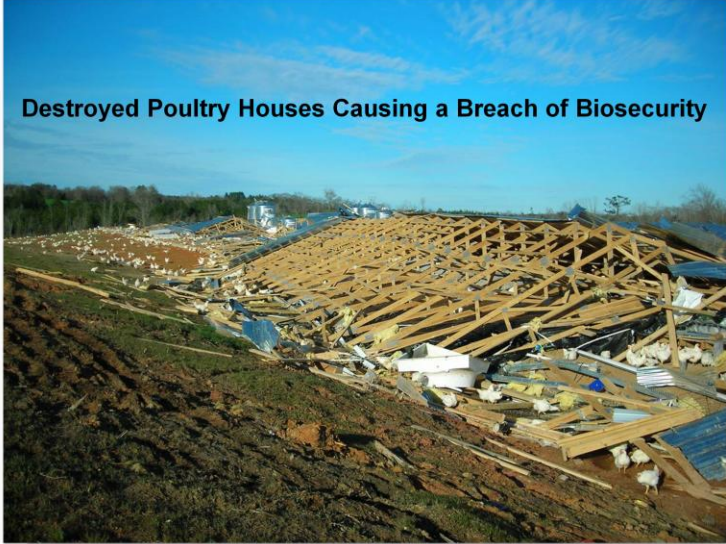
If the use of the horse is not obvious or available at the time of the assessment, place them in the Pleasure category.

Now, a comment about contract growers, which are producers who raise livestock for large companies...and these are usually swine and poultry...the producer typically does not own the animals he is raising, and therefore cannot claim full value if those animals are lost. The contract will dictate the value of contract-grown animals, and the loss is shared between the contractor and the producer.




## ANIMAL LOSSES

**Destroyed Poultry Houses Causing a Breach of Biosecurity**



Slide 8

AgDamage  
Assessment Form



These destroyed poultry houses and loose chickens as a result of tornado illustrates loss due to a 'breach of biosecurity'. The company must destroy these birds because they are now exposed to Avian Influenza and other avian diseases that are important to the industry. When they are raised in an enclosed house, regulated or 'reportable diseases' can be kept out and monitored. Exposure to outside elements is considered a breach of biosecurity.

There is a box in Section 1 of the Assessment Form to denote a loss due to special conditions such as this.



## ANIMAL LOSSES

### Questions to ask when assessing injured, dead and lost livestock:

- Has the livestock ownership been verified by brand, ear tag, tattoo or other documentation?
- Is there a risk of the impact extending to surrounding areas?
- Was the mechanism of impact the same for all losses?
- Was the timing of the impact the same for all losses?
- Is there a priority for relocation or disposal of the losses?
- REMEMBER to follow safety guidelines for handling and assessing livestock!

Slide 9



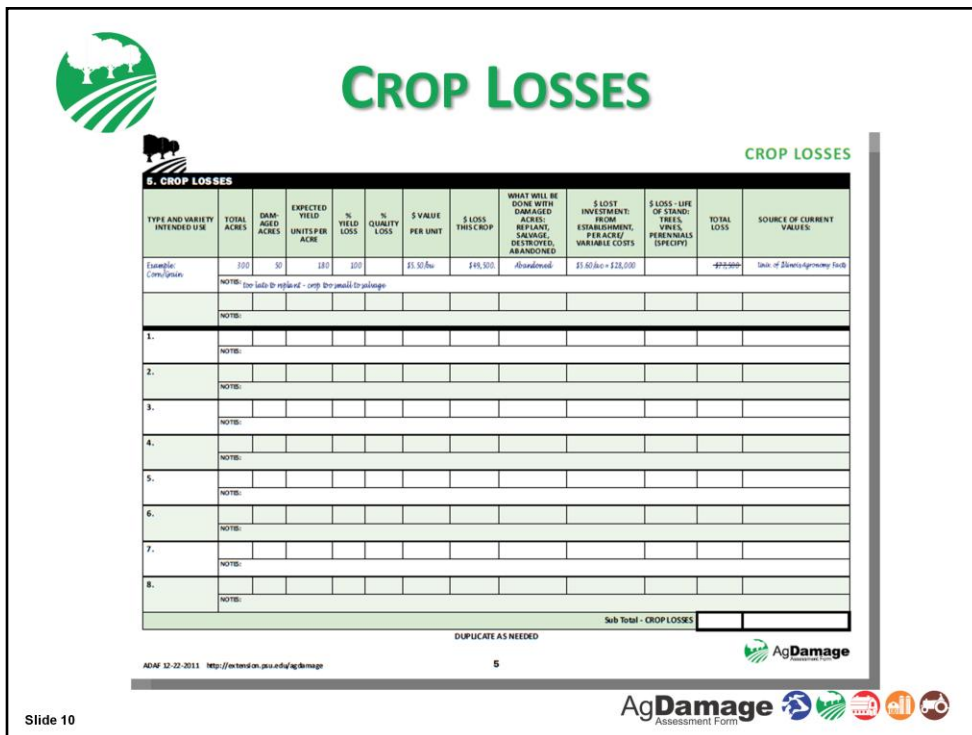
In conducting damage assessments with animals and livestock – a few specific factors must be addressed.

**Ownership** – Each state has specific guidelines for proof of ownership with animals. Some are species specific. Many states have delegated authorities who verify animal ownership. In many western states livestock are “branded” with hot iron, freeze or paint brands. In these states either Brand Inspectors or other designated officials must document ownership of each set of animals. Whether ownership documentation is done by Bill of Sale, tattoos, ear tags, health papers or brands – assessors may have to have some type of ownership documentation before a “claim” can be verified for insurance, government ,and disaster assistance purposes. \*Ask what verification will be needed BEFORE you head to the field\*.

**Extending Impact** – In a few cases there is a potential that if specific impacts are not “contained” they may spread to the public, water sources, food sources ,or other adjacent un-impacted areas. If the route mechanism of impact or other specific factors such as transmissible disease vectors, contamination, or terrorism tools are identified – authorities must be notified to initiate containment efforts.

**Mechanism and Timing of Impact** – Since many disasters include a variety of impacts or a series of impacts, it’s often necessary to estimate the approximate timeframe and mechanism of an impact. For instance, during hurricanes the wave surge can cause losses, followed by days of rainfall and subsequent flooding which can also cause losses. It may be important to identify which impacts caused which loss for claim settlements. A classic secondary set of losses often occurs when livestock in disaster impacted zones cannot be provided with suitable feed and water over the following 14 days after the incident.

**Lost Animal Priorities** – Animals may seek shelter from the elements of disasters by moving to natural locations that they think will provide protection. Some of these locations may be insufficient to protect them, which leaves large groups of injured or dead animals at one location. Examples of locations of this tragic accumulation of animals are along waterways, under bridges, on roof-tops and under balconies of homes, and even inside of buildings. Dead animals may be washed up onto highways or airport runways. In many cases, their aggregation causes public health or safety concerns. In 1997 over 3,000 of 35,700 head of cattle lost in a Colorado blizzard moved down into stream bottoms to avoid the wind. As the storm covered these cattle with snow they died. Their bodies lay within the municipal water source for four small towns. In cases where field assessors realize that injured or lost animals may be a threat to public health or safety – they must promptly notify the Incident Commander or the state and local public health or transportation authorities.



**CROP LOSSES**

**CROP LOSSES**

**5. CROP LOSSES**

TYPE AND VARIETY INTENDED USE	TOTAL ACRES	DAMAGED ACRES	EXPECTED YIELD UNITS PER ACRE	% YIELD LOSS	% QUALITY LOSS	\$ VALUE PER UNIT	\$ LOSS THIS CROP	WHAT WILL BE DONE WITH DAMAGED ACRES: REFUSE, SALVAGE, DESTROYED, ABANDONED	\$ LOST INVESTMENT FROM ESTABLISHMENT, PER ACRE/ VARIABLE COSTS	\$ LOSS - LIFE OF STANDS, TREES, PERENNIALS (SPECIFY)	TOTAL LOSS	SOURCE OF CURRENT VALUES
Example: Corn/soybean	100	50	180	100	\$1.50/bu.	\$45,000	Abandoned	\$1.60/ac = \$28,000		\$73,000	Unit: of 2000/acre/row feet	
NOTE:	See table to replace - crop destroyed to salvage											
NOTE:												
1.												
NOTE:												
2.												
NOTE:												
3.												
NOTE:												
4.												
NOTE:												
5.												
NOTE:												
6.												
NOTE:												
7.												
NOTE:												
8.												
NOTE:												
Sub Total - CROP LOSSES												

DUPLICATE AS NEEDED

5


AgDamage Assessment Form

ADA 12-22-2011 <http://extension.oregon.gov/ada/agdamage>

Section 5 of this Ag Damage Assessment Form is designed to facilitate the documentation all crop losses associated with any disastrous event.

Key components of this form are:





- Columns for multiple crops produced by a grower or agricultural enterprise, when necessary please duplicate this form to list all crops negatively impacted by this disaster,
- Columns to identify the intended market/use of the crop,
- Rows to help quantify the magnitude of the crop loss relative to entire crop planted,
- Rows to help qualify the type of damage or of loss sustained by the crop,
- Rows to list remedial actions taken by the grower to salvage what he/she can,
- Rows to assist in assessing the monetary loss sustained by the producer,
- Space to list any explanatory notes to help adjust, refine, or accurately capture the full value of loss sustained by the grower or enterprise,
- An opportunity to list your source of crop loss values should any discrepancies arise.




# CROP LOSSES

## CROP EXAMPLES

Annual Crops	Perennial Crops
<ul style="list-style-type: none"> <li>Horticultural crops</li> <li>Agronomic crops</li> <li>Legume crops</li> <li>Field seed crops</li> <li>Vegetable crops</li> <li>Vegetable seed crops</li> <li>Novelty annuals</li> </ul>	<ul style="list-style-type: none"> <li>Hay crops &amp; Pasture</li> <li>Landscape &amp; Nursery</li> <li>Small fruit crops</li> <li>Tree fruit crops</li> <li>Nut crops</li> <li>Forestry</li> <li>Novelty perennials</li> </ul>

Slide 11


Which crops should be considered within the scope of this damage assessment? If you can grow it and market it, it is a crop, it has value and it should be considered an agricultural commodity.

The list of 'crops' can extend from fruit, vegetable, seed crops to horticultural, landscape, forestry to novelty or niche market crops like hops, spices, pharmaceuticals, mushrooms, or even . . . kelp.

One key distinction that you will want to capture in the assessment is whether this is an annual crop or a perennial crop. For a perennial crop, you will want to document any yield losses that may extend beyond the cropping season impacted by disaster.

*\* All photos by M. Bush*



## CROP LOSSES

### CROP INTENDED USE

- Forage crop
  - Silage
  - Hay
  - Pasture
- Grain
- Seed production
- Fiber
- Timber
- Christmas Trees
- Nursery Stock
- Fruits and Vegetables
  - Fresh market
  - Terminal wholesale markets
  - Processing




Slide 12




In order to make best use of the Ag Damage Assessment Form it is important to record as much detailed information about the crop as possible. This will assist in a more accurate estimation of the value of the crop lost.

A forage crop may have a different value if it is grown for silage, hay, pasture, or grain. Likewise, radish grown for seed may be more valuable than radish grown for consumption. Certain evergreen tree varieties may be more valuable when grown as Christmas trees than for timber. Be sure to identify any niche markets that can garner a higher value. If available, rely on the past history of the crop use to provide creditability to the intended use of the crop.

Obviously, the type of crop being produced is a key element in placing a value on crop loss, but sometimes the variety of crop better determines the intended use and market value, so you may want to note crop variety. For example, the apple variety, Honeycrisp, tends to receive a better price per bin than the Red Delicious apple. Often fruit and vegetables intended for fresh-market consumption often commands a higher market value than produce grown for processing. Alternatively, a grape variety certified as 'organic' may have higher value than a conventionally produced grape variety. Some crops can have multiple uses and markets and may require more than one line to fully and accurately document the loss.




\* Squash photo by M. Bush




## CROP LOSSES

### DOCUMENTATION

- Total Acres
- Damaged Acres
- Average Yields
- Yield and/or Quality Loss

Slide13



In order to make best use of the Ag Damage Assessment Form, it is important to record as much detailed information on the extent of the damage as possible. This will assist in a better understanding of the situation and more accurate estimation of the value of the crop loss.

The Form provides an area to list the total acres, damaged acres, what the normal expected yield would be, the percent loss in yield, and the percent loss in quality. Examples for loss in quality might be delayed harvest and over-maturity due to flooded fields, cosmetic damage that diverts the crop to alternative markets.

Hopefully, the damage to a crop is localized and does not destroy the entire planting. In which case, it is imperative that both total acres and damaged acres be documented to avoid inflation of damage estimates during a disaster situation.

Crop yields can vary from field to field based on soil type, geography, crop management practices and even weather during the growing season. When available, a documented history of yields under local field conditions and management can facilitate crop loss assessment. Expected yields can be based on documented yields achieved for the operation in previous cropping seasons or based on soil productivity estimates of the given field. Otherwise, average yields for the crop can be estimated from information compiled by the USDA FSA, the USDA NASS, or local commodity groups.

\* *Herbicide damaged cherry orchard by M. Bush*

\* *Hail damaged pear by M. Bush*



## CROP LOSSES

### WHAT CAN BE DONE WITH DAMAGED CROP ACRES?

- Replant
  - If not too late in season
- Salvage
  - Harvest crop for different market
    - i.e., corn for silage instead of grain
    - Apples redirected to juice rather than fresh market
- Abandoned
  - Crop is not salvageable and will not generate income this season
- Destroyed







Slide 14



Anytime there is any damage to a crop the big question is: “What can be done with the damaged acres?”.

Producers should consider any and all options that may help minimize the loss or salvage value from the damaged commodity. If damage to an annual crop occurs early in the season or soon after establishment, replanting the crop may be the best option.

In some situations, a damaged crop may be salvaged for the intended use or alternative use. For example, consider a field of corn damaged by an early autumn frost that kills the corn when it is in the dough stage. Depending on the location and demand, this corn could be chopped and harvested for silage purposes rather than for grain. Another example is this apple crop that was damaged by hail. These apples were sent to the processor for juice rather than the packinghouse for fresh market.

The extent of crop loss can be severe leaving the producers with absolutely no remaining crop or no viable management options during the growing season, but to abandon the crop after a disaster. The producer may discontinue all care for the crop for the rest of that season.

Conceivably, a disaster may completely destroy a crop or cause the producer to plow under or otherwise destroy the remaining plant material. Be sure to document this and confirm the situation with your local FSA or insurance representative.

- *Hail damaged apple and orchard bonfire pictures by M. Bush*
- *Plum Pox infected peaches – Penn State Cooperative Extension*



## CROP LOSSES

### YIELD AND QUALITY LOSSES

#### % Yield Loss

- Estimated or calculated based on actual harvest
- Difficult to estimate
- Must know normal or expected yield
- Compare expected yield to actual yield to determine loss

#### % Quality Loss


- Not as easy to assign a value to in the field
- Quality losses associated with crops typically done post harvest
  - grain test weight,
  - forage nutritive value of hay
  - Vegetable/fruit size
  - Quality & appearance

Slide 15



Percent Yield Loss is a self-explanatory term. However, estimating yield losses can be quite difficult. Before a yield loss is established a normal yield needs to be assigned. Yield losses can be estimated or calculated based on actual harvest.




Percent Quality Loss is not as easy to assign a value to in the field. Oftentimes the quality losses associated with crops may not be determined until the crop is tested or weighed after harvest (i.e. test weight, forage nutritive value)




# CROP LOSSES

## DOLLAR LOSSES FROM CROP DAMAGE

- \$ value per unit i.e. bushel, ton, cwt.
  - Current market value of the crop
- \$ loss this crop
  - How much was lost this year due to damage?
- \$ lost investment from crop establishment
  - What was the establishment cost for the crop?
- \$ loss- Life of Stand
  - Perennial crop (i.e., fruit, forage)
  - Trees
  - Vines
  - Bush



Slide 16

Assessors are tasked with providing their best judgment, based on experience and credible sources, for the degree of loss, and a determination of the value.


In theory, it may be easier to estimate loss associated with an annual crop like corn, soybeans or okra. One should find the most recent dollar value or market value of the crop per unit i.e. bushel, ton, bin to help estimate the crop loss. Sources for determining the market value include local elevators, recent market reports, and trade reports such as the Chicago Board of Trade. The local USDA Farm Service Agency office also has access to current market values established for most commodities. After determining the total reduction in yield as a result of the disaster, one can calculate a dollar loss value for this year's crop.

Be sure to consider any lost investment associated with crop establishment. Certainly the cost of establishment for any lost crop should be documented and considered additional loss. Investments in seed, transplants, fertilizer, pesticide, irrigation, and other costs may be considered as a loss, particularly for annual crops. For perennial crops (like apples, walnuts, asparagus, alfalfa, etc) destroyed prior to coming into production, investment in establishment (fumigation, irrigation, trellising, plant material, etc) during the year of establishment and maintenance prior to realizing a harvestable crop may be considered a loss during a disaster.

It is more difficult to estimate actual loss for perennial crops, but in reality, the income stream from a perennial crop can be either significantly reduced or lost completely in the future years.

Total destruction of a perennial crop may constitute a loss of yield for the current year, and, the potential loss for the remainder of the expected life of the crop which may be for multiple years. In such a case, the crop loss for the current year should be documented, and reference should be made to the remaining life expectancy of the crop.

*\* All photos by M. Bush*




# STRUCTURES AND FACILITIES


## STRUCTURES AND FACILITIES LOSSES

6. STRUCTURES AND FACILITIES LOSSES														
NAME	SIZE/CAPACITY/FUNCTION	AGE	WOOD	STEEL/METAL	BLOCK/BRICK	CONCRETE	EARTH/STONE	FABRIC	OTHER	AFFECTED	MINOR	MAJOR	DESTROYED	BRIEF DAMAGE NARRATIVE ESTIMATE \$ (INDICATE REPAIR OR REPLACEMENT)
Example: Hay Barn	20 x 30 ft, storage	8 yrs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	80% of metal roof damaged or missing, 20% of braces damaged, 20% and 20% rot.
NOTES: Silo barn, metal roof														
ESTIMATE SOURCE: Owner														
												ESTIMATE \$: 44,000 repair		
Example: Cattle Past	1000 ft long	2 yrs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15 trees on site, 20% of ground from soil level, water polluted for 10 days
NOTES: Concrete slab, new dirt angle														
ESTIMATE SOURCE: Dealer														
												ESTIMATE \$: 44,000 replacement		
1.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NOTES: ESTIMATE SOURCE:
												ESTIMATE \$:		
2.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NOTES: ESTIMATE SOURCE:
												ESTIMATE \$:		
3.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NOTES: ESTIMATE SOURCE:
												ESTIMATE \$:		
4.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NOTES: ESTIMATE SOURCE:
												ESTIMATE \$:		
5.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NOTES: ESTIMATE SOURCE:
												ESTIMATE \$:		
<b>Damage Categories</b> Affected (repairable, safe, functional/marginally functional) Minor (repairable, possibly unsafe, marginally functional) Major (repairable, unsafe, not functional) Destroyed (non-repairable, unsafe, not functional)													Total (\$) this page:	
													Total (\$) Sect. 6 pages:	

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Slide 17



There is a section to list damage to farm structures and facilities such as buildings, sheds, bridges, silos, irrigation equipment, and so on.

It asks for the size and approximate age of the structure. The different building materials are listed, such as wood, steel, concrete, and others, and the person doing the assessment can simply check the appropriate area.

It asks for the degree of damage and a list of 4 predefined categories are listed; affected, minor, major, and destroyed.

And finally, an estimation of the dollar loss caused by the disaster. The loss needs to be designated as the value to fix or repair the structure, or the cost to replace it. Again local values must be used, and documented.

The source for any of the dollar estimates needs to be documented with a source. For buildings, that may be a local building contractor, farm building service, or similar source.



## STRUCTURES AND FACILITIES

### THE PURPOSE OF THIS TOOL IS TO:

- define structures and infrastructure impacted
- document damage
- provide for eventual value/cost assessment

Slide 18



The purpose of this Damage Assessment Form is to better define agricultural structures and infrastructure damaged during a disaster.

This Form should allow most users to quickly describe a structure and document damage eventually leading to a reasonable estimate of value lost or cost of repair.

Versions of the structures form/tool are available with or without a completed example. Copy additional forms as necessary.



## STRUCTURES AND FACILITIES

### THIS TOOL IS DESIGNED TO BE FLEXIBLE

- combination of check boxes, descriptive boxes and open comment boxes

### CONSIDER:

- buildings, bins and storages of multiple materials
- roads, ditches, canals, windbreaks
- fences, utilities, irrigation systems, trellises
- ponds, lagoons and earthen impoundments (structural integrity should be determined by an engineer, catastrophic failure may occur after initial damaging event)

Slide 19



This tool is designed to be flexible and can be used to describe a wide range of agricultural structures and infrastructure.

Through a combination of check boxes, descriptive boxes, and open comment boxes any sort of structure could be described and damage noted.

Consider: built structures and buildings of a variety of materials, earthen structures, planted structures (such as windbreaks), prefab buildings, bins and conveyance systems, utility systems, and irrigation systems.



## STRUCTURES AND FACILITIES

### DAMAGE CATEGORIES

- **Destroyed** (non-repairable, unsafe, not functional)
- **Major** (repairable, unsafe, not functional)
- **Minor** (repairable, possibly unsafe, marginally functional)
- **Affected** (repairable, safe, functional/marginally functional)

Slide 20




Informal descriptions of the above categories are as follows:

**Destroyed** (non-repairable, unsafe, not functional) – speaks for itself. Situation will essentially require the clearing of debris and rebuilding.

**Major** (repairable, unsafe, not functional) – This situation will require major repair; structure is currently dangerous and completely unusable.


**Minor** (repairable, possibly unsafe, marginally functional) – This will require minor permanent repairs. A section or portion of structure is closed, not-usable, or unsafe; other portions may still be usable, but not optimally.

**Affected** (repairable, safe, functional/marginally functional) – Structure is usable as is or with temporary “patch.” Simple/basic permanent repairs will be needed in time; still safe for humans, animals and stored property or commodities.




# STRUCTURES AND FACILITIES

**Between Minor and Major**



Slide 21



### **Between Minor and Major:**

Significant structural damage, but trusses are not major load bearing members (plastic sheeting roof, overall light roof and structure; in the south – so no snow load).

May be functional to protect plants from rain and light winds, but possibly unsafe to work in.

An assessor on the ground would make a judgment call.



# STRUCTURES AND FACILITIES

Poultry House Destroyed by Tornado in Southeastern State



Slide 22



...



# STRUCTURES AND FACILITIES

Horse Complex



Slide 23



...



## STRUCTURES AND FACILITIES

### **REPAIR AND REPLACEMENT COSTS ARE HIGHLY VARIABLE ACROSS THE COUNTIES, STATES AND NATION**

- regional availability of materials
- regional availability of skills and services
- distance to/from dealers, vendors and suppliers
- regional differences in use
- regional differences in construction methods and longevity (useful life of structure)

Slide 24



Value of agricultural structures and infrastructure is highly variable across the country and even within states and regions.

This slide lists several reasons to support this statement.

Use caution when applying the value of a structure, or cost to repair, from another area or state.



## STRUCTURES AND FACILITIES

### NO BROAD SOURCES OF DATA OR VALUE TABLES FOR AG STRUCTURES

#### RECOMMEND:

- Known purchase/install price
- Local Knowledge/Opinion
- Contractors Estimate
- Owner Claim
- Census of Ag
- Private Sector Insurers
- NRCS Expense
- Tax Records
- Historic Filings/Claims

Slide 25




No broad-based source of data exists for estimating the value of agricultural structures or infrastructure, nor the cost of damage. Additionally, regional differences in materials availability, construction technique, engineering standards or tradition, further complicate collecting reliable value/cost reference data.

This slide lists several possible sources of data, although private insurers often rely on local knowledge and consensus of the property owner and insurance agent when estimating value/cost.

For pre-fab structures and parts of buildings, bins, irrigation systems etc., current dealer costs can be used. For ditches, canals, roads, or other simple earthen structures, the hourly rate of a skilled operator may be considered.

Local contractor estimates for built structures may be the most accurate. Losses of metal sheathing or roofs are the most common agricultural structure damage from storms. In this example, estimate the cost of labor and locally available materials to complete the form.



# STORED MATERIALS


**STORED MATERIALS LOSSES**

7. STORED MATERIALS					
STORED MATERIALS	AMOUNT (UNITS)	% DRY MATTER	VALUE*** PER UNIT	HOW STORED - BULK, BAG, BUNKER, SILO, BAG	TOTAL LOSS
<b>Stored Grain</b>					
<b>Seeds</b>					
Corn					
Dry					
HM Ear Corn					
HM Shelled Corn					
Oats					
Wheat					
Barley					
Rye					
Other (describe)					
<b>Manufactured Feed (describe)</b>					
<b>Forage</b>					
Dry Hay					
Haylage					
Corn Silage					
Whole Plant Grain Silage					
Molasses					
Other (describe)					
<b>Feed Commodities/Ingredients</b>					
Vitamins/Minerals					
Proteins					
Salt					
Other (describe)					
Other (describe)					
<b>Stored Fats (describe)</b>					
<b>Stored Vegetables (describe)</b>					
					Sub Total

DUPLICATE AS NEEDED

Slide 26


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Floods and other disaster damages are not limited to live animals and growing crops. Stored material can sustain damage even after harvest.

Stored grain or forage that is inundated with flood water can be significantly damaged. Stored bedding material or other animal health supplies may be eligible for indemnity in some programs.


This section provides an area to list the various stored material that may be damaged, such as stored grain and forage, feed ingredients like soybean meal or other feed commodities stored on site, feed additives, salt, minerals, vitamins, and even manufactured feed like 16% dairy feed stored on site can suffer damage and loss from a disaster. The section provides a place to list each material, the amount damage, a place to provide the percent dry matter for stored feeds like high moisture corn, haylage, or corn silage.



## STORED MATERIALS



Slide 27

AgDamage Assessment Form 

There is an area for listing the value per unit, like ton of corn silage, ton of feed, bushels of grain, and so on. From this information, a value per unit is determined, and the total loss can be calculated.

There is a section to describe how the material is stored -- bin, barn, building, silo, and so on.



 **MACHINERY AND EQUIPMENT**



Slide 29

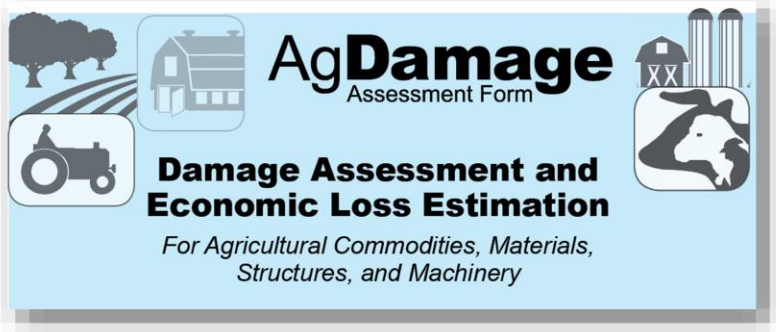
AgDamage  
Assessment Form



**LAST BUT NOT LEAST – Remember it is very easy to move from being an Assessor to becoming part of the impacted subjects. That helps no one!**

**Please be careful and exercise caution when doing damage assessments.**

ADA 1/20/2012



**AgDamage**  
Assessment Form


**Damage Assessment and  
Economic Loss Estimation**

*For Agricultural Commodities, Materials,  
Structures, and Machinery*

## How To Use The Resource

<http://extension.psu.edu/agdamage>


Slide 30

AgDamage Assessment Form 

Having an accurate and detailed damage assessment, including estimated economic losses, is vital to ensuring that appropriate disaster resources are made available to those impacted.

Information contained in completed Ag Damage Assessment Forms can be utilized by many local, state, and federal agencies and personnel when determining what resources and responses are appropriate.

ADA 1/20/2012



**AgDamage**  
Assessment Form

**\*required field**

\*Date of assessment: \_\_\_\_\_

\*Completed by, Name: \_\_\_\_\_

Assessment agency: \_\_\_\_\_

\*Contact information: ADDRESS: \_\_\_\_\_  
PHONE: \_\_\_\_\_ EMAIL: \_\_\_\_\_

\*EMERGENCY NEEDS:  No  
 YES (describe) \_\_\_\_\_

---

**1. DISASTER EVENT**

\*Name Or Type (describe): \_\_\_\_\_

\*Beginning Date: \_\_\_\_\_  
\*Ending Date: \_\_\_\_\_

AREA AFFECTED:  Isolated  Widespread  Entire County

PHOTOS submitted (illustrating losses):  Yes, attached  No

If loss is being claimed due to breach of biosecurity, exposure to disease, or contamination: Describe: \_\_\_\_\_  
Potential effect: \_\_\_\_\_

---

**2. OWNER/OPERATOR & BUSINESS INFORMATION**


\*NAME (Last, first, middle) or NAME OF BUSINESS \_\_\_\_\_

<p><b>Permanent residence information</b></p> <p>STREET: _____</p> <p>CITY: _____ STATE: _____ ZIP: _____</p> <p>GPS location in Decimal Degrees - Datum must be set to NAD83 84 (example - 61.34854) _____ lat (°N) _____ long (°W)</p> <p>Farm ID/VSA #: _____</p> <p>Premises ID (optional) #: _____</p> <p>*Telephone: _____ FAX number: _____ Cell phone: _____ Email: _____</p>	<p><b>Location of site assessment (if different)</b> DIRECTIONS TO LOCATED GPS (provide specific miles and mention cubic landmarks): _____</p> <p>STREET: _____</p> <p>CITY: _____ STATE: _____ ZIP: _____</p> <p>GPS location in Decimal Degrees - Datum must be set to NAD83 84 (example - 61.34854) _____ lat (°N) _____ long (°W)</p> <p>Farm ID/VSA #: _____</p> <p>Premises ID (optional) #: _____</p> <p>*Telephone (optional): _____ FAX number: _____ Cell phone: _____ Email: _____</p>	<p><b>Other site assessment location</b> if damage occurred during transit or where the producer-owned commodity is stored. Ex: local grain elevator, co-op.</p> <p>CORNER: _____</p> <p>STREET: _____</p> <p>CITY: _____ STATE: _____ ZIP: _____</p> <p>GPS location in Decimal Degrees - Datum must be set to NAD83 84 _____ lat (°N) _____ long (°W)</p>
---	---	---

**3. ASSURANCE** By signing below, I certify that the statements herein are true, complete and accurate to the best of my knowledge. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil or administrative penalties.

<b>3a. OWNER/OPERATOR ASSURANCE</b> —SIGNATURE OF PERSON NAMED IN 2. [THIS SIGNATURE NOT ACCEPTABLE]	<b>3b. ASSESSOR ASSURANCE</b>
SIGNATURE: _____ DATE: _____	SIGNATURE: _____ DATE: _____

Slide 31



The use of this Ag Damage Assessment Form will not replace the current USDA process used to determine or report damages, however, the information collected on the form will assist Farm Service Agency personnel and county Emergency Board members in accurately reported losses through the USDA process.

Thank you for your participation in today's training and for your interest and dedication to accurately and safely assessing agricultural damages.

ADA 1/20/2012

**AgDamage**  
Assessment Form



## EVALUATION SURVEY

Slide 32

**We would appreciate any and all comments on the Ag Damage Assessment Form and the training materials.**

ADA 1/20/2012



**WHEN DISASTER STRIKES**

**Ag Damage Assessment Forms can help you quickly, easily, and accurately:**

- ASSESS damage to all agricultural inventory
- ESTIMATE economic loss

**AgDamage Assessment Form**

When disasters cause damage to:

- ANIMALS
- CROPS
- STRUCTURES & FACILITIES
- STORED MATERIALS
- EQUIPMENT & MACHINERY

It is important to be able to quickly and accurately assess the scale of the damage, and determine the economic loss caused by the disaster. Whether natural, accidental, or intentional, the **Agricultural Damage Assessment Form** can provide a quick and easy method to make an accurate assessment of damage, and an accurate estimate of the economic loss to agriculture.

- Reduce guesswork—more accurate
- Examples show the process
- User Guide explains each section
- On-line webinar training
- PowerPoint™ training with instructor notes

**One simple form for every type of disaster, for all agriculture, and every state and region.**

Visit <http://extension.psu.edu/agdamage>



**“Please be careful when doing ag damage assessment”**

**THANK YOU !**



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You can contact us with any additional questions.

Our final message for you . . . “Please be careful when doing ag damage assessment”

THANK YOU !