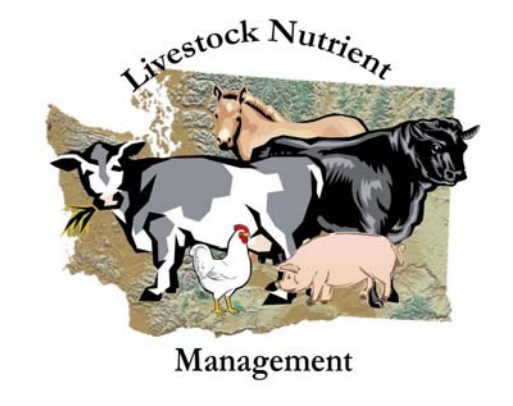

Water Quality Risk Assessment Tool for Animal Operations

The risk assessment tool contained in this document has been developed to assist livestock producers in Washington State to make a self-assessment as to the relative risk of their operation of having an impact on surface and ground water quality.

The tool is designed to be used in two steps:

Step 1: Determine if your operation is an animal feeding operation (AFO). [Due to the uncertainty (April 2005) of what factors will result in a designation of a facility as a Concentrated Animal Feeding Operation (CAFO), step 1 does not attempt to categorize a facility as a CAFO].

Step 2: Determine the relative risk of having an impact on surface and ground water quality.

Photos that are used in this assessment tool are for example purposes

Step 1. Is my livestock or poultry operation an Animal Feeding Operation (AFO)?

Does my livestock or poultry operation house or feed animals in a confined area for more than 45 days in any 12-month period?

No

Yes

Does the animal confinement area sustain crops, vegetation (see pictures below), forage growth, or post-harvest residues in the normal growing season over any portion of the lot or facility?

Yes

Not an AFO

Operation is an AFO, go to Risk Assessment Tool to Evaluate potential for significant discharge.
Step 2. Start with Question A.

It is recommended that you go to the Risk Assessment Tool to evaluate the potential for non-point water quality impacts.
Step 2. Start with Question I.

Risk Assessment Tool

Proximity of Confinement Area to Water, Confinement Condition Factors, or Factors Related to Non-AFO Operations	Higher Risk H	Lower Risk L	Suggested Best Management Practices if Risk is High
1. Are animals confined for a portion of the day?	Yes	No	None
2. Is the confinement area located in a floodplain?	Within floodplain	Above floodplain	Move animal confinement area out of flood plain
3. What is the distance from the confinement area to any water well(s)?	Less than 100 feet away	More than 100 feet away	Consider relocating lot and conduct water quality test on well water
4. How close is the confinement area to Surface Water?	Less than 100 feet away	More than 100 feet away	Consider relocating lot or routing surface water through culvert
5. Does the confinement area slope towards surface water and encourage overland movement of water?	Yes	No	Consider installing berm, filter strip, or grassed waterway
6. Are there established pathways for movement of surface water runoff from confinement area? (ditch or subsurface drain)	Yes	No	Consider installing berm, filter strip, or grassed waterway
7. Is run-on surface water diverted away from confinement area?	No	Yes	Consider installing berm, filter strip, or grassed waterway
8. Do you control runoff from special areas such as calf hutches, heifer lots, dry cow lots, to surface and ground water?	No	Yes	Adopt practices to filter surface water
9. Where are the animals fed in relation to surface water? (when grass is not available for grazing)	Less than 100 feet away	More than 100 feet away	Rotational feeding, seasonal confinement, and nutrient management
10. Do animals have access to surface waters?	Yes	No	Provide managed access to surface water
11. Do all animals at your facility obtain drinking water from a water bowl, water tank or automatic waterer?	No	Yes	Provide off-stream water

Proximity of Confinement Area to Water, Confinement Condition Factors, or Factors Related to Non-AFO Operations	Higher Risk H	Lower Risk L	Suggested Best Management Practices if Risk is High
12. Are hardened water gaps used for access points to water?	No	Yes	Provide off-stream water or managed access
13. Is there a connection (drain) between a pond and surface waters?	Yes	No	Consider installing berm, filter strip, or grassed waterway
14. How close is the seasonal high water table (depth of water from soil surface to water)?	Less than 50 feet deep	More than 50 feet deep	Consider relocating lot, rotational feeding and grazing, or adopt use of animal confinement area
15. Does manure and sediment move offsite during rainfall events?	Yes	No	Consider installing berm, filter strip, run-off ponds, or grassed waterway

Factors Adopted to Reduce Risk	Higher Risk	Lower Risk	Suggested Best Management Practices if Risk is High
16. Is manure managed or removed regularly from AFO?	No	Yes	Seasonal confinement and routine manure collection.
17. Do you stack/store manure under cover?	No	Yes	Routine manure collection and storage.
18. Do you spread manure on fields based on nutrients in manure?	No	Yes	Use of manure at agronomic rates.
19. Do you divert clean water away from buildings and manure storage areas?	No	Yes	Divert rain water via gutters, downspouts, outlets, catch basin, and diversions.
20. Are pastures in productive condition?	No	Yes	Adopt practices to maintain high forage yield.
21. Does pasture management allow plant recovery before plant dormancy?	No	Yes	Adopt practices to maintain high forage yield.
22. Is there a vegetated buffer/filter strip between facilities and surface waters?	No	Yes	Adopt practices to filter surface water
23. Do you have a mortality management plan?	No	Yes	Develop approved mortality practices.
24. Do you soil test?	No	Yes	Soil test regularly.
25. Do you have a nutrient management plan?	No	Yes	Develop a nutrient management plan with conservation district or nutrient management specialist.

Other Management Factors	Higher Risk	Lower Risk	Suggested Best Management Practices if Risk is High
26. Are the naturally timbered areas on your property protected from trampling, or tree bark damage, due to livestock?	No	Yes	Limit access of animals to timbered areas
27. Is the primary protection from wind or snowstorms by windbreaks or naturally timbered areas at least 100 feet from surface water and wells?	No	Yes	Maintain effective windbreaks
28. Are the grazing areas down slope of the confinement area managed to prevent trampling and overgrazing by livestock?	No	Yes	Adopt practices to maintain high forage yield.
29. Does your wash/waste water (water used to groom livestock, wash stock trailers, clean out stalls, etc) filter through managed vegetation prior to leaving the property or reaching surface water and wells?	No	Yes	Adopt practices to filter surface water

If after completing the Water Quality Risk Assessment Tool, you determine that any of your answers fall into the high risk category, it is recommended that you seek further assistance from your local conservation district staff or technical service provider. Please remember that this evaluation is an attempt at providing guidance for a complex set of site-specific conditions.

Washington State Livestock Technical, Financial and Educational Assistance

Natural Resources Conservation Service	Website: www.wa.nrcs.usda.gov
Washington State Conservation Districts	Website: www.conserver.org

Office Addresses and Phone Numbers

OFFICES	ADDRESS	NRCS Phone	CD Phone
Adams	402 E. Main, Ritzville 99169-1338		509/659-1553
Adams	506 Weber Avenue, Suite B Ritzville 99169	509/659-1761	
Asotin County	720 - 6th St., Suite B, Clarkston 99403-2012	509/758-8012	509/758-8012
Benton	618 8th Street Prosser 99350	509/ 786-1923	
Central Klickitat	1107 S. Columbus Ave., Goldendale 98620-9296	509/773-5822	509/773-5823
Chelan County	301 Yakima St. Room 307, Wenatchee 98801-2996	509)/664-0210	509/664-0265
Clallam	111 E. 3rd, Room 2A, Port Angeles 98362-3018	360/ 452-8994	360/452-1912
Clark	11104 NE 149th St, Bldg. C, Suite 400, Brush Prairie 98606-9518	360/883-1987	360/885-2284
Columbia	U.S. Post Office Building, 202 S. Second St., Dayton 99328-1327	509/382-2421	509/382-4773
Cowlitz	2125 - 8th Ave., Longview 98632	360/425-1880	360/425-1880
Eastern Klickitat	1107 S. Columbus Ave., Goldendale 98620-9296	509/773-5822	509/773-5823
Ferry	84 E. Delaware Ave., PO Box 1045, Republic 99166-1045	509/775-3473	509/775-3473
Foster Creek	103 N. Baker St., PO Box 428, Waterville 98858-0428	509/ 745-8561	509/745-8362
Franklin	1620 Road 44 N., Pasco 99301-2667	509/545-8546	509/545-8546
Grays Harbor	330 Pioneer Ave. W., Montesano 98563-4499	360/249-5900	360/249-5980
Jefferson County	205 W. Patison St., Port Hadlock 98339-9751		360/385-4105
Jefferson County	111 East 3rd Street, Room 2B Port Angeles 98362	360/452-8994	
King	935 Powell Ave. SW, Renton 98055-2908	206/764-3325	206/764-3410
Kitsap	817 Sidney Ave, Port Orchard 98366-2460	360/337-4433	360/337-7171
Kittitas County	607 E. Mountain View Ave., Ellensburg 98926-3863	509/925-8585	509/925-8585
Lewis County	1554 Bishop Rd., Chehalis 98532	360/748-0083	360/748-0083
Lincoln County	1310 Morgan St., PO Box 46, Davenport 99122-0046	509/725-4501	509/725-4181
Mason	SE 1051 Hwy 3, Ste. G, Shelton 98584		360/427-9436
Mason	817 Sidney Ave, Port Orchard 98366-2460	360/337-4433	
Moses Lake	1775 SE Hwy. 17, Moses Lake 98837-9326		509/765-5333
Moses Lake	2145 Basin St. SW, Suite B, Ephrata 98823-9617	509/754-2463	
North Yakima	1606 Perry Street, Suite F, Yakima 98902-5769	509/454-5746	509/454-5736
Okanogan	1251 S. 2nd Ave. Room 101, Okanogan 98840	509/422-2750	509/422-0855
Othello	449 E. Cedar Blvd., Othello 99344-0323	509/488-2802	509/488-2802
Pacific	1216 Robert Bush Dr., PO Box 968, South Bend 98586-0968		360/875-9424
Pacific	1216 Robert Bush Dr., PO Box 336, South Bend 98586-0968	360/875-6300	
Palouse	325 NW State Street, Pullman 99163		509/332-4101
Palouse	805 S. Vista Point Dr. Suite 2, Colfax 99111-9565	509/397-4301	
Palouse-Rock Lake	N. 3 Front St., PO Box 438, St. John 99171-0438	509/648-3680	509/648-3680
Pend Oreille	100 N. Washington Ave., PO Box 280, Newport 99156-0280	509/447-4217	509/447-5370

Pierce	Puyallup Executive Park, 1011 E. Main, Suite 106, Puyallup 98372	253/845-9272	253/845-9770
Pine Creek	805 S. Vista Point Dr., Suite 2, Colfax 99111-9565		509/397-4636
Pine Creek	805 S. Vista Point Dr. Suite 2, Colfax 99111-9565	509/397-4301	
Pomeroy	USDA Bldg, 804 Main St., PO Box 468, Pomeroy 99347-0468	509/843-1997	509/843-1998
San Juan County	350 Court Street #10, Friday Harbor 98250-7910		360/378-6621
San Juan County	2021 E. College Way, Suite 214, Mt. Vernon 98273-2373	360/428-7684	
Skagit	2021 E. College Way, Suite 203, Mt. Vernon 98273-2373		360/428-4313
Skagit	2021 E. College Way, Suite 214, Mt. Vernon 98273-2373	360/428-7684	
Snohomish	528 - 91st Ave. NE, Suite C, Everett 98205-1535	425/334-2828	425/335-5634
South Douglas	103 N. Baker, PO Box 246, Waterville 98858-0246		509/745-9160
South Douglas	103 N. Baker, PO Box 428, Waterville 98858-0428	509/745-8561	
South Yakima	1116 A Yakima Valley Hwy Sunnyside 98944-1555	509/837-7911	509/837-7911
Spokane County	210 North Havana, Spokane 99202-4724		509/535-7274
Spokane County	1908 N. Dale Lane Spokane, 99212-2445	509/924-7350	
Stevens County	232 Williams Lake Rd., Colville 99114-9638	509/685-0858	509/685-0937
Thurston	2400 Bristol Court SW, Ste 100, Olympia 98502		360/754-3588
Thurston	1835 Black Lake Blvd. SW, Suite E Olympia 98512	360/704-7740	
Underwood	170 NW Lincoln St., PO Box 96, White Salmon 98672-0096		509/493-1936
Underwood	11104 NE 149th Street, Bldg C, Suite 400 Brush Prairie 98606	360/ 883-1987	
Upper Grant	2145 Basin St. SW, Suite C, Ephrata 98823-9617		509/754-0195
Upper Grant	2145 Basin St. SW, Suite B, Ephrata 98823-9617	509/754-2463	
Wahkiakum	PO Box 67, Cathlarmet 98612-0067		360/795-8240
Wahkiakum	2125 - 8th Ave., Longview 98632	360/425-1880	
Walla Walla County	1501 Business One Circle, Suite 101, Walla Walla 99362-9526	509/522-6347	509/522-6340
Warden	PO Box 177, Warden 98857-0177		509/349-7539
Warden	449 E. Cedar Blvd., Othello 99344-0323	509/488-2802	
Whatcom	6975 Hannegan Rd., Lynden 98264-9620	360/354-5658	360/354-2035
Whidbey Island	PO Box 490, Coupeville 98239-0490		360/678-4708
Whidbey Island	2021 E. College Way, Suite 214, Mt. Vernon 98273-2373	360/428-7684	
Whitman	805 S. Vista Point Dr. Suite 2, Colfax 99111-9565	509/397-4301	509/397-4636

WSU EXTENSION - LIVESTOCK ASSISTANCE

0FFICE/COUNTIES	NAME	ADDRESS	PHONE
Asotin	Mark Heitstuman	PO Box 9, Courthouse, Rm B107, Asotin 99402	509-243-2009
Benton/Franklin	Jean Smith	5600 E West Canal Drive, Kennewick 99336	509-735-3551
Clark/Cowlitz	Gary Fredricks	11104 NE 149th St., Bldg. C-100, Brush Prairie 98606	360-397-6060
Grays Harbor	Gary Fredricks		360-397-6060
Klickitat/Lewis	Gary Fredricks		360-397-6060
Pacific/Thurston	Gary Fredricks		360-397-6060
Wahkiakum	Gary Fredricks		360-397-6060

WSU EXTENSION - LIVESTOCK ASSISTANCE

0FFICE/COUNTIES	NAME	ADDRESS	PHONE
Columbia		202 S. 2nd St., Dayton 99328	509-382-4741
Grant/Adams	Sara Maki-Smith	PO Box 37, Courthouse, 35 C St. NW, Ephrata 98823	509-754-2011 Ext 413
Kittitas	Tip Hudson	507 Nanum St., Room 2, Ellensburg 98926	509-962-7507
Klickitat	Susan Kerr	228 W. Main MS-CH-12, Goldendale 98620	509-773-5817
Lincoln	Tom Platt	PO Box 399, 303 6th St., Davenport 99122	509-725-4171
Eastern Adams	Tom Platt		509-725-4171
Spokane	Tom Platt		509-725-4171
Okanogan/Chelan	Jay Jenkins	PO Box 391, 149 3rd N. Room 101, Okanogan 98840	509-422-7245
Douglas	Jay Jenkins		509-422-7245
Skagit/Island Snohomish	Ned Zaugg	600 128th St. SE, Everett, WA 98208	425-357-6018
Snohomish	Mike Hackett	600 128th St. SE, Everett, WA 98208	425-357-6017
Yakima	Frank Hendrix	128 N. 2nd St. Room 233, Yakima 98901	509-574-1600
Whitman		310 N. Main Room 209, Colfax 99111	509-397-6290
Statewide	Joe Harrison	7612 E. Pioneer Way, Puyallup 98371	253-445-4638
Statewide	Don Nelson	PO Box 646310, Clark Hall 119, Pullman 99164	509-335-2922
Statewide	Art Linton	24106 N. Bunn Rd., Prosser 99350	509-786-2226

Risk Assessment Tool Photo Gallery

(the photos portrayed are only meant to be representative examples and not to encompass all possible field situations)

Question 1. Are animals confined for a portion of the day?

Yes

No

No

<u>Question 2.</u> Is the confinement area located in a floodplain?

Yes

No

<u>Question 4.</u> How close is your Confinement Area to Surface Water?

Very close

<u>Question 5.</u> Does the confinement area slope towards surface water and encourage overland movement of water?

<u>Question 6.</u> Are there established pathways for movement of surface water runoff from confinement area? (ditch)

<u>Question 7.</u> Is run-on surface water diverted away from confinement area?

A bermed feedlot contains polluted runoff.

<u>Question 9</u>. Is there a connection (drain) between a pond and surface waters?

Pond drains to surface water

<u>Question 10.</u> Do animals have access to surface waters?

Yes

Controlled Access

Offsite waterer

<u>Question 11.</u> Does all livestock at your facility obtain drinking water from a water bowl, water tank or automatic waterer?

Nose pump

Water Trough

<u>Question 12.</u> Are hardened water gaps used for access points to water?

<u>Question 15.</u> Does manure and sediment move offsite during rainfall events?

<u>Question 17.</u> Do you stack/store manure under cover?

No

Yes

Covered compost and manure storage minimizes runoff.

<u>Question 20.</u> Are pastures in productive condition?

Yes

No

<u>Question 22.</u> Is there a vegetated buffer/filter strip between facilities and surface waters?

No

No

Yes

This risk assessment tool developed by the Animal Feeding Operation curriculum subcommittee of the Livestock Nutrient Management Program in Washington State. Committee members include: Joe Harrison and Tip Hudson of Washington State University; Kirk Robinson and Ginny Prest of Washington State Department of Agriculture; Chad Atkins and Lauren Stalmaster of Washington State Department of Ecology; Bobbi Lindemulder, Chuck Timblin, Jim White, Mark Crowley, Lyle Stoltman, Duane Bartels, Erin Ewald, and Bob Anderson, Conservation District Staff; and Marty Chaney of Natural Resources Conservation Services.

Support for the development of this tool was provided by the Washington State Department of Ecology and the Washington State Conservation Commission.

Program assistance was provided by Dr Rick Koelsch
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Questions about this tool can be sent to
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Tip Hudson at tipton.hudson@co.kittitas.wa.us or 509-962-7507.

Suggested Best Management Practices to Protect Water Quality

Proximity of Confinement Area to Water, Confinement Condition Factors, or Factors Related to Non-AFO Operations	Suggested Best Management Practices if Risk is High	NRCS Code
1. Are animals confined for a portion of the day?	None Suggested	None Suggested
2. Is the confinement area located in a floodplain?	Move animal confinement area out of flood plain	561
3. What is the distance from the confinement area to any water well(s)?	Consider relocating lot and conduct water quality test on well water	EFOTG Section 3 and local ordinances
4. How close is the confinement area to Surface Water?	Consider relocating lot or routing surface water through culvert	(buried culvert 620) EFOTG Section 3 and local ordinances
5. Does the confinement area slope towards surface water and encourage overland movement of water?	Consider installing berm, filter strip, or grassed waterway	362, 393, 412 EFOTG Section 3 and local ordinances
6. Are there established pathways for movement of surface water runoff from confinement area? (ditch or subsurface drain)	Consider installing berm, filter strip, or grassed waterway	362, 393, 412 EFOTG Section 3 and local ordinances
7. Is run-on surface water diverted away from confinement area?	Consider installing berm, filter strip, or grassed waterway	362, 393, 412 EFOTG Section 3 and local ordinances
8. Do you control runoff from special areas such as calf hutches, heifer lots, dry cow lots, to surface and ground water?	Adopt practices to filter surface water	313, 362, 386, 390, 391, 393, 634, 635
9. Where are the animals fed in relation to surface water? (when grass is not available for grazing)	Rotational feeding, seasonal confinement, and nutrient management	561, 528, 590
10. Do animals have access to surface waters?	Provide managed access to surface water	472, 380, 614
11. Do all animals at your facility obtain drinking water from a water bowl, water tank or automatic waterer?	Provide off-stream water	614, 516
12. Are hardened water gaps used for access points to water?	Provide off-stream water or managed access	614, 575, 380
13. Is there a connection (drain) between a pond and surface waters?	Consider installing berm, filter strip, or grassed waterway	362, 393, 412
14. How close is the seasonal high water table (depth of water from soil surface to water)?	Consider relocating lot, rotational feeding and grazing, or adopt use of animal confinement area	528, 561, 590, EFOTG Section 3 and local ordinances
15. Does manure and sediment move offsite during rainfall events?	Consider installing berm, filter strip, run-off ponds, or grassed waterway	362, 393, 412, 638, EFOTG Section 3 and local ordinances

Suggested Best Management Practices to Protect Water Quality

Factors Adopted to Reduce Risk	Indicate H or L or NA (NA = not applicable)	NRCS Code
16. Is manure managed or removed regularly from AFO?	Seasonal confinement and routine manure collection.	561, 590, 634
17. Do you stack/store manure under cover?	Routine manure collection and storage.	313
18. Do you spread manure on fields based on nutrients in manure?	Use of manure at agronomic rates.	590, 633
19. Do you divert clean water away from buildings and manure storage areas?	Divert rain water via gutters, downspouts, outlets, catch basin, and diversions.	362, 558, 638
20. Are pastures in productive condition?	Adopt practices to maintain high forage yield.	314, 511, 512, 528, 548, 590
21. Does pasture management allow plant recovery before plant dormancy?	Adopt practices to maintain high forage yield.	314, 472, 511, 512, 528, 548, 561, 590
22. Is there a vegetated buffer/filter strip between facilities and surface waters?	Adopt practices to filter surface water	386, 390, 391, 393
23. Do you have a mortality management plan?	Develop approved mortality practices.	316, 317
24. Do you soil test?	Soil test regularly.	590, 633
25. Do you have a nutrient management plan?	Develop a nutrient management plan with conservation district or nutrient management specialist.	328, 511, 528, 590, 633

Suggested Best Management Practices to Protect Water Quality

Other Management Factors	Indicate H or L or NA (NA = not applicable)	NRCS Code
26. Are the naturally timbered areas on your property protected from trampling, or tree bark damage, due to livestock?	Limit access of animals to timbered areas	472, 528, 561
27. Is the primary protection from wind or snowstorms by windbreaks or naturally timbered areas at least 100 feet from surface water and wells?	Maintain effective windbreaks	380, 650, EFOTG Section 3
28. Are the grazing areas down slope of the confinement area managed to prevent trampling and overgrazing by livestock?	Adopt practices to maintain high forage yield.	472, 528
29. Does your wash/waste water (water used to groom livestock, wash stock trailers, clean out stalls, etc) filter through managed vegetation prior to leaving the property or reaching surface water and wells?	Adopt practices to filter surface water	313, 362, 386, 390, 391, 393, 634, 635