



Livestock and Poultry Environmental Stewardship (LPES) Curriculum



## Fact Sheet #20: What is Required in a Nutrient Management Plan?

By Ron Sheffield, University of Idaho, and Julie Paschold, University of Nebraska

(Revised 4/2005)

### Disclaimer

This document has been reviewed by EPA and provides a general description of the federal concentrated animal feeding operations regulations (40 CFR Parts 9, 122, 123, 412). For more detailed information, refer to the regulations or contact EPA. Also, your state may have additional, more stringent requirements than EPA's. Contact your permitting authority for complete information on the regulations that apply to you.

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### Introduction

As a part of the U.S. Environmental Protection Agency's (EPA) Concentrated Animal Feeding Operation (CAFO) Final Rule, CAFO owners may be required to apply for a National Pollutant Discharge Elimination System (NPDES) permit. Part of the process includes developing and implementing a Nutrient Management Plan (NMP). At a minimum, a NMP must include Best Management Practices (BMPs).

### CNMP vs. NMP

The comprehensive nutrient management plan (CNMP) is a USDA-defined plan that minimizes nutrient excretion, ensures proper storage of manure and manure-contaminated water, specifies the application of manure nutrients at agronomic rates, and requires the maintaining of appropriate records. The NMP required for an NPDES permit is designed to be a subset of activities in a CNMP that relate to compliance with the effluent discharge limitations and other requirements of the NPDES permit.

### Phosphorus-Based NMP

CAFOs must evaluate the potential for both nitrogen (N) and phosphorus (P) loss on every field receiving manure, litter, or process wastewaters. Manure applications may be limited or eliminated on fields that have a high potential for P loss.

### Time Line for Compliance

Owners of livestock and poultry operations with an NPDES permit must implement the NMP as specified by the state regulating agency but no later than December 31, 2006. Owners of CAFOs that are new sources as well as CAFO owners seeking a permit after that date must have an NMP developed and implemented on the date of permit coverage. Producers should check their permit for the required implementation date.

**Producer Checklist: NMP**

Producers can use the checklist below to identify mandatory issues that an NMP must address. Unchecked items represent issues that may need additional attention. In preparing an NMP, it is critical that the following planning, management, and documentation procedures are in place for all CAFOs.

**Facility Design and Management**

- \_\_\_ Develop and implement an NMP.
- \_\_\_ Ensure that the production area is designed, maintained, and operated to contain all of the manure, litter, and process wastewater including storm water plus runoff from the 25-year (or 100-year for new swine, poultry, or veal operations), 24-hour rainfall event.
- \_\_\_ Dispose of animal mortalities to prevent discharge of pollutants to surface water and cannot be managed in the liquid manure or process wastewater collection systems (unless specifically designed to treat mortalities).
- \_\_\_ Divert clean water from the production area.
- \_\_\_ Prevent direct contact of confined animals with waters of the state.
- \_\_\_ Ensure that chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or storm water storage/treatment system.

**Land Application**

- \_\_\_ Identify appropriate site-specific conservation practices to be implemented, including buffers to control runoff.
- \_\_\_ Maintain a setback area at least 100 feet from any down-gradient surface waters, open tile intake structures, sinkholes, agricultural well heads, or other conduits to surface waters where manure, litter, and other process wastewaters are not applied. (As a compliance alternative, a 35-foot vegetated buffer where manure, litter, or other process wastewaters are not applied. A CAFO can also demonstrate that a setback or buffer is not necessary or can be reduced).
- \_\_\_ Identify protocols for appropriate testing of manure, litter, process wastewater, and soil.
  - \_\_\_ Collect and analyze manure, litter, and other process wastewaters annually for nutrient content, including N and P.
  - \_\_\_ At least once every five years, collect and analyze representative soil samples for P content from all fields where manure, litter, and other process wastewaters are applied.
- \_\_\_ Establish protocols to land apply manure, litter, or process wastewater in accordance with site-

specific nutrient management practices that ensure appropriate agricultural use of nutrients.

- \_\_\_ Land apply manure, litter, and other process wastewaters in accordance with an NMP that establishes rates for each field based on the technical standards for nutrient management established by the director of the state regulating agency.

**Record Keeping**

- \_\_\_ Identify specific records that will be maintained to document the implementation and management of the NMP.
  - \_\_\_ Maintain all records on-site for five years. These records must be made available to the permitting authority upon request.
  - \_\_\_ Submit an annual report to the state.

**Producer Checklist: Record-Keeping Requirements**

Producers can use the checklist below to identify mandatory records that must be kept on-site for five years. Unchecked items represent issues that may need additional attention.

- \_\_\_ Expected crop yields
- \_\_\_ The date manure, litter, or process wastewater is applied to each field.
- \_\_\_ The weather conditions at the time of application and 24 hours before and after application.
- \_\_\_ Test methods used to sample and analyze manure, litter, or process wastewater and soil.
- \_\_\_ Results from manure and soil sampling
- \_\_\_ Explanation of the basis for determining manure application rates
- \_\_\_ The calculations showing the total N and P to be applied to each field, including sources other than manure.
- \_\_\_ Total amount of N and P actually applied to each field, including calculations.
- \_\_\_ The method used to apply the manure.
- \_\_\_ Dates that manure application equipment was inspected.
- \_\_\_ Maintain for five years
- \_\_\_ Site-specific NMP is on-site.
- \_\_\_ When manure or process wastewater is transferred to other persons, they are provided with current nutrient analysis and the recipient information is documented in records.

**Producer Checklist: Annual Report**

All CAFO owners are required to submit an annual report. The report summarizes the amount of manure generated, applied, and exported from the operation. Producers can use the checklist below to identify mandatory issues that must be addressed in an annual report. Unchecked items represent issues that may need additional attention.

- \_\_\_\_\_ Number and type of animals
- \_\_\_\_\_ Total amount of manure produced
- \_\_\_\_\_ Amount of manure transferred off-site
- \_\_\_\_\_ Total acres available for land application
- \_\_\_\_\_ Total acres used for land application
- \_\_\_\_\_ Summary of discharges from production area and land application area (not including agricultural storm water discharge)
- \_\_\_\_\_ Whether a certified NMP planner was used

**Definition of Abbreviations**

**AFO**—Animal Feeding Operation. A lot or facility where animals are stabled or confined and maintained for a total of 45 days or more in any 12-month period, and crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

**CAFO**—Concentrated Animal Feeding Operation. A CAFO is an AFO that is defined (by size) as a large CAFO or as a medium CAFO or that is designated as a CAFO in accordance with 40 CFR (Code of Federal Regulations) paragraph 122.23.

**CNMP**—Comprehensive Nutrient Management Plan. A plan defined by USDA for minimizing nutrient excretion, ensuring proper storage of manure and manure-contaminated water, applying manure nutrients at agronomic rates, and maintaining appropriate records.

**ELG**—Effluent Limitation Guidelines

**NMP**—Nutrient Management Plan. Required for CAFOs, includes Best Management Practices (BMPs)

**NPDES**—National Pollutant Discharge Elimination System. Created by the Clean Water Act to authorize and regulate the discharges of pollutants to waters of the United States.

**Authors**

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**Reviewer**

The authors wish to thank Jeff Lorimor, Iowa State University, for his review of this fact sheet.

**Primary Contact Information about Livestock Nutrient Management in Washington State**

**Washington State Department of Agriculture**

Program Manager:  
Nora Mena  
360-902-2894

Administrative Assistant:  
Laurie Crose  
360-902-1982

Inspectors:  
Lead Inspector and Southwestern Washington  
Kirk Robinson  
360-902-1928

Eastern Washington:  
Ginny Prest  
509-225-2608

Northwestern Washington  
Jeff Canaan  
360-941-3026

Washington State Department of Agriculture  
Web site: [www.agr.wa.gov](http://www.agr.wa.gov)

**Permitting Authority**  
**Washington State Department of Ecology**  
CAFO Permit Coordinator  
Kevin P. Hancock  
(360) 407-6283  
[khan461@ecy.wa.gov](mailto:khan461@ecy.wa.gov)

CAFO General Permit Homepage  
<http://www.ecy.wa.gov/programs/wq/permits/cafo/>

**Washington State University**

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Joe Harrison  
WSU – Puyallup Research and Extension Center  
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Ellensburg, WA  
509-962-7507  
[HUDSONT@WSU.EDU](mailto:HUDSONT@WSU.EDU)

<http://www.puyallup.wsu.edu/dairy/>

**Federal Environmental Regulations Related Resources**

<http://www.epa.gov/npdes/caforule/>–To obtain copy of regulations

<http://www.epa.gov/npdes/afo/statecontacts/>–To obtain state environmental agency contact

**Educational Resources**

<http://www.lpes.org/>–To view the Livestock and Poultry Environmental Stewardship (LPES) curriculum resources

**Fact sheet modified by:** Joe Harrison and Tip Hudson,  
WSU

Washington State Department of Agriculture  
Washington State Department of Ecology

## Washington State Livestock Technical, Financial and Educational Assistance

<b>Natural Resources Conservation Service</b>	<b>Website: <a href="http://www.wa.nrcs.usda.gov">www.wa.nrcs.usda.gov</a></b>
<b>Washington State Conservation Districts</b>	<b>Website: <a href="http://www.conserver.org">www.conserver.org</a></b>
<b>Office Addresses and Phone Numbers</b>	

OFFICES	ADDRESS	NRCS Phone	CD Phone
<b>Adams</b>	402 E. Main, Ritzville 99169-1338		509/659-1553
<b>Adams</b>	506 Weber Avenue, Suite B Ritzville, WA 99169	509/659-1761	
<b>Asotin County</b>	720 - 6th St., Suite B, Clarkston 99403-2012	509/758-8012	509/758-8012
<b>Benton</b>	24106 N. Bunn Rd., Prosser 99350		509/786-9230
<b>Benton</b>	618 8 <sup>th</sup> Street Prosser, WA 99350	509/786-1923	
<b>Central Klickitat</b>	1107 S. Columbus Ave., Goldendale 98620-9296	509/773-5822	509/773-5823
<b>Chelan County</b>	301 Yakima St. Room 307, Wenatchee 98801-2996	509/664-0210	509/664-0265
<b>Clallam</b>	111 E. 3rd, Room 2A, Port Angeles 98362-3018	360/452-8994	360/452-1912
<b>Clark</b>	11104 NE 149th St, Bldg. C, Suite 400, Brush Prairie 98606-9518	360/883-1987	360/885-2284
<b>Columbia</b>	U.S. Post Office Building, 202 S. Second St., Dayton 99328-1327	509/382-2421	509/382-4773
<b>Cowlitz</b>	2125 - 8th Ave., Longview 98632	360/425-1880	360/425-1880
<b>Eastern Klickitat</b>	1107 S. Columbus Ave., Goldendale 98620-9296	509/773-5822	509/773-5823
<b>Ferry</b>	84 E. Delaware Ave., PO Box 1045, Republic 99166-1045	509/775-3473	509/775-3473
<b>Foster Creek</b>	103 N. Baker St., PO Box 428, Waterville 98858-0428	509/745-8561	509/745-8362
<b>Franklin</b>	1620 Road 44 N., Pasco 99301-2667	509/545-8546	509/545-8546
<b>Grays Harbor</b>	330 Pioneer Ave. W., Montesano 98563-4499	360/249-5900	360/249-5980
<b>Jefferson County</b>	205 W. Patison St., Port Hadlock 98339-9751		360/385-4105
<b>Jefferson County</b>	111 East 3 <sup>rd</sup> Street, Room 2B Port Angeles, WA 98362	360/452-8994	
<b>King</b>	935 Powell Ave. SW, Renton 98055-2908	206/764-3325	206/764-3410
<b>Kitsap</b>	817 Sidney Ave, Port Orchard 98366-2460	360/337-4433	360/337-7171
<b>Kittitas County</b>	607 E. Mountain View Ave., Ellensburg 98926-3863	509/925-8585	509/925-8585
<b>Lewis County</b>	1554 Bishop Rd., Chehalis 98532	360/748-0083	360/748-0083
<b>Lincoln County</b>	1310 Morgan St., PO Box 46, Davenport 99122-0046	509/725-4501	509/725-4181
<b>Mason</b>	SE 1051 Hwy 3, Ste. G, Shelton 98584		360/427-9436
<b>Mason</b>	817 Sidney Ave, Port Orchard 98366-2460	360/337-4433	
<b>Moses Lake</b>	1775 SE Hwy. 17, Moses Lake 98837-9326		509/765-5333
<b>Moses Lake</b>	2145 Basin St. SW, Suite B, Ephrata 98823-9617	509/754-2463	
<b>North Yakima</b>	1606 Perry Street, Suite F, Yakima 98902-5769	509/454-5746	509/454-5736
<b>Okanogan</b>	1251 S. 2nd Ave. Room 101, Okanogan 98840	509/422-2750	509/422-0855
<b>Othello</b>	449 E. Cedar Blvd., Othello 99344-0323	509/488-2802	509/488-2802
<b>Pacific</b>	1216 Robert Bush Dr., PO Box 968, South Bend 98586-0968		360/875-9424
<b>Pacific</b>	1216 Robert Bush Dr., PO Box 336, South Bend 98586-0968	360/875-6300	
<b>Palouse</b>	325 NW State Street, Pullman 99163		509/332-4101
<b>Palouse</b>	805 S. Vista Point Dr. Suite 2, Colfax 99111-9565	509/397-4301	
<b>Palouse-Rock Lake</b>	N. 3 Front St., PO Box 438, St. John 99171-0438	509/648-3680	509/648-3680
<b>Pend Oreille</b>	100 N. Washington Ave., PO Box 280, Newport 99156-0280	509/447-4217	509/447-5370
<b>Pierce</b>	Puyallup Executive Park, 1011 E. Main, Suite 106, Puyallup 98372	253/845-9272	253/845-9770

OFFICES	ADDRESS	NRCS Phone	CD Phone
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, WA 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, WA 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, WA 98512	360/704-7740	
Underwood	170 NW Lincoln St., PO Box 96, White Salmon 98672-0096		509/493-1936
Underwood	11104 NE 149 <sup>th</sup> Street, Bldg C, Suite 400 Brush Prairie, WA 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, Cathlamet 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

OFFICE/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
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

## WSU EXTENSION - LIVESTOCK ASSISTANCE

OFFICE/COUNTIES	NAME	ADDRESS	PHONE
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

### ***Environmental Regulations Related Resources***

<http://www.epa.gov/npdes/caforule/>—To obtain copy of regulations

<http://www.epa.gov/npdes/afo/statecontacts/>—To obtain state environmental agency contact

### ***State-specific resources***

### ***Educational Resources***

<http://www.lpes/>—To view the Livestock and Poultry Environmental Stewardship (LPES) curriculum resources



<http://www.reeusda.gov/1700/statepartners/usa.htm/>—To obtain state Cooperative Extension contacts

### ***State-specific resources***

The local contact for your land-grant university Cooperative Extension program is listed in the phone book under “Cooperative Extension” or “(County Name) County Cooperative Extension.”

### ***USDA Farm Bill Resources***

To obtain more information about the Farm Bill 2002, see the USDA-NRCS website at <http://www.nrcs.usda.gov/programs/farbill/2002/>. You can also contact your local USDA Service Center, listed in the phone book under "U.S. Department of Agriculture," or your local conservation district.

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