



National Wildlife Health Center  
Wildlife Health Bulletin 2012-04

## Update on Schmallenberg Virus in Europe

**To: Natural Resource/Conservation Managers**  
**From: Dr. Margaret Wild, Acting Center Director, USGS National Wildlife Health Center**  
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This Bulletin provides information on Schmallenberg virus, an emerging disease affecting domestic ruminants in Europe. While the risk of Schmallenberg virus being introduced to North America appears low, the intent of this Bulletin is to promote awareness that may improve early detection of this and other emerging diseases, should they occur in wildlife. Schmallenberg virus was first identified in cattle in November 2011 following disease outbreaks in Germany and the Netherlands, and is named for the German town where it was first observed. Clinical signs included fever, decreased milk production, and in some cases diarrhea and birth of malformed calves. Abortions and congenital malformations in sheep and goats have also been observed. The geographic area of affected ruminants has spread to Belgium, France, Italy, Luxembourg, Spain, the UK, and Denmark, and involves over 3,000 farms.

Initially, these disease outbreaks were suspected to be due to bluetongue virus, but analysis of clinical samples identified the causative agent as a new virus in the genus *Orthobunyavirus*. The closest genetic matches to the new virus are those viruses within the Simbu group isolated from midges and mosquitoes, as well as birds and mammals, in Africa, Asia, Australia, and North and South America. The Simbu group of viruses had not been known to occur in Europe previously, but has caused disease in other geographic areas, including Central and South America.

Because other *Orthobunyaviruses* are known to be transmitted by midges and mosquitoes, transmission of Schmallenberg virus is most likely vector-borne. Schmallenberg virus has been detected in two European midge species (*Culicoides* spp.). *Orthobunyaviruses* can also spread directly from mother to fetus.

Regulations regarding importation of ruminants or their products provide excellent protection from accidental importation of the foreign animal diseases, such as Schmallenberg virus; however, introduction of the virus or an infected midge or mosquito by means of international trade and travel or illegal animal movement is a possibility. Similarly, if Schmallenberg virus can be transmitted by infected migrating birds, it may be possible for a migrant to introduce the virus to North America. If the virus was introduced to North America, a number of midge species (*Culicoides* spp.) could potentially acquire the infection and transmit it to avian or mammalian hosts.

The impact of Schmallenberg virus to native North American wild ruminants (mountain goats, bighorn sheep, bison, muskoxen, moose, deer, elk, and pronghorn antelope), should it be introduced, is unknown. No human disease related to Schmallenberg virus has been reported; however, appropriate safe work practices should always be considered when working with wildlife species.

Although Schmallenberg virus is not currently known to be present in North America, it is important for the wildlife health community to be aware of and vigilant for emerging animal diseases. Please contact your agency's wildlife health program or the NWHC to report or request assistance for wildlife mortality events or health issues. Visit NWHC at [http://www.nwhc.usgs.gov/mortality\\_events/reporting.jsp](http://www.nwhc.usgs.gov/mortality_events/reporting.jsp) or contact Dr. Anne Ballmann, 608-270-2445, [aballmann@usgs.gov](mailto:aballmann@usgs.gov); Dr. LeAnn White, 608-270-2491, [clwhite@usgs.gov](mailto:clwhite@usgs.gov); Barb Bodenstein, 608-270-2447, [bbodenstein@usgs.gov](mailto:bbodenstein@usgs.gov); Dr. Thierry Work, 808-792-9520, [thierry\\_work@usgs.gov](mailto:thierry_work@usgs.gov) (Hawaii and Pacific Islands); or Jennifer Bradsby, 608-270-2443, [jbradsby@usgs.gov](mailto:jbradsby@usgs.gov) (single mortality events nationwide).

Sources and references for more information about Schmallenberg virus in domestic animals:  
USDA, [http://www.aphis.usda.gov/animal\\_health/animal\\_diseases/schmallenberg/index.shtml](http://www.aphis.usda.gov/animal_health/animal_diseases/schmallenberg/index.shtml)

OIE, [http://www.oie.int/fileadmin/Home/eng/Our\\_scientific\\_expertise/docs/pdf/A\\_Schmallenberg\\_virus.pdf](http://www.oie.int/fileadmin/Home/eng/Our_scientific_expertise/docs/pdf/A_Schmallenberg_virus.pdf)

Hoffmann, B., Scheuch, M., Höper, D., Jungblut, R., Holsteg, M., Schirrmeier, H., Eschbaumer, M., Goller, K.V., Wernike, K., Fischer, M., Breithaupt, A., Mettenleiter, T.C., Beer, Martin, 2012, Novel orthobunyavirus in cattle, Europe, 2011: Emerging Infectious Diseases, v. 18, no. 3

Gibbons, N., 2012, [Emerging Diseases Schmallenberg virus: a novel viral disease in northern Europe](#): Veterinary Record, v. 170 no. 2, p. 58.

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