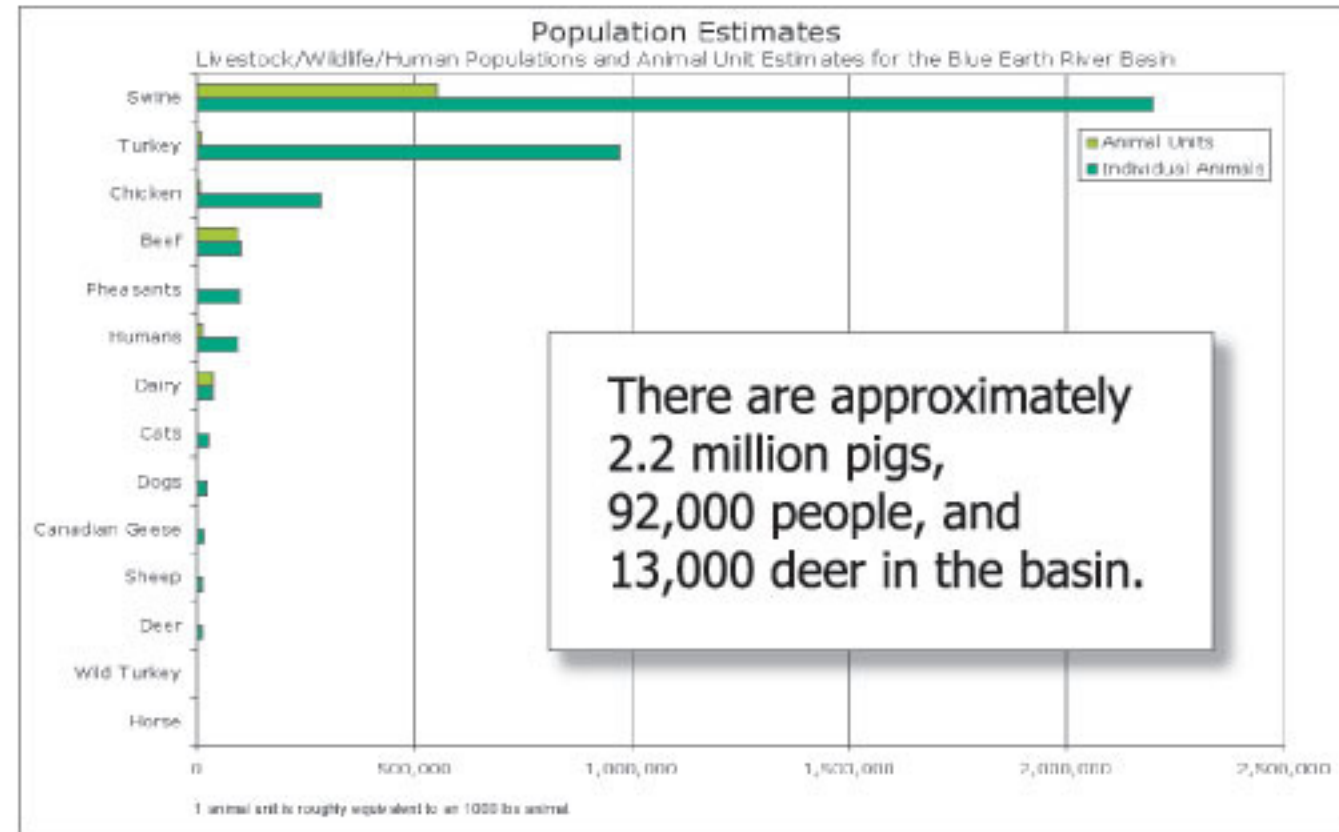


Fecal Coliform Produced

Livestock, humans, wildlife & pets

Population Estimates



Population Estimates

Part of the TMDL process entails estimating the amount of fecal coliform produced in the basin. The first step is to estimate population figures. The graph above shows population estimates for humans, livestock, wildlife, pets, etc. There are roughly 2.2 million pigs (swine), 92,000 people, and 13,000 deer.

Fecal Coliform Estimates per Individual

Estimates are made for how much fecal coliform each animal type produces. Multiplying the population figures by the amount of fecal coliform produced daily per animal results in an estimate of the total amount of fecal coliform produced in the basin (see chart below).



Estimated Animal Populations (x) Fecal Coliform Produced

Animal Type	Animal Units*	Individuals**	FC Organisms Produced Per Ind or AU (x 1,000,000)	Total FC Available (x 1,000,000)	Data Source for FC Produced per Day
Swine	554,339		80,000	44,300,000,000	ASAE, 1998
Beef	92,456		130,000	12,000,000,000	ASAE, 1998
Dairy	39,282		72,000	2,830,000,000	ASAE, 1998
Sheep	1,397		200,000	279,000,000	ASAE, 1998
Chicken	7,903		34,000	269,000,000	ASAE, 1998
Turkey	9,834		6,200	61,000,000	ASAE, 1998
Horse	800		420	336,000	ASAE, 1998
Humans		92,202	2,000	184,000,000	Metcalf and Eddy, 1991
Cats		25,043	5,000	125,000,000	Horsley and Wiltzen, 1996
Dogs		22,007	5,000	110,000,000	Horsley and Wiltzen, 1996
Deer		12,744	500	6,370,000	Metcalf and Eddy, 1991
Wild Turkey		3,859	95	367,000	Turkey value used
Pheasants		100,000	0.02	1,500	Geese value used
Canadian Geese		15,771	0.02	200	Alderisio and DeLuca, 1999

* Livestock Population figures obtained from Minnesota and Iowa State Feedlot Inventories

** Human Population figures obtained from U.S. Census Bureau

** Wildlife Population figures obtained from Department of Natural Resources - Wildlife Division

Fecal coliform produced by each animal type is calculated by multiplying the population figure by daily fecal coliform produced per individual or animal unit.

Amount of Bacteria Produced vs Delivered to Waterways

- ➔ Bacteria in waterways is not proportional to the amount of bacteria produced.
- ➔ The vast majority of fecal coliform bacteria produced never reaches a waterway.

Information on this poster represents the fecal coliform bacteria produced by animals in the watershed. These figures DO NOT represent what is actually delivered to streams.

Part of the TMDL process is to estimate the amount of bacteria that may reach streams from each source. This is in the process of being developed for the final part of the TMDL process.