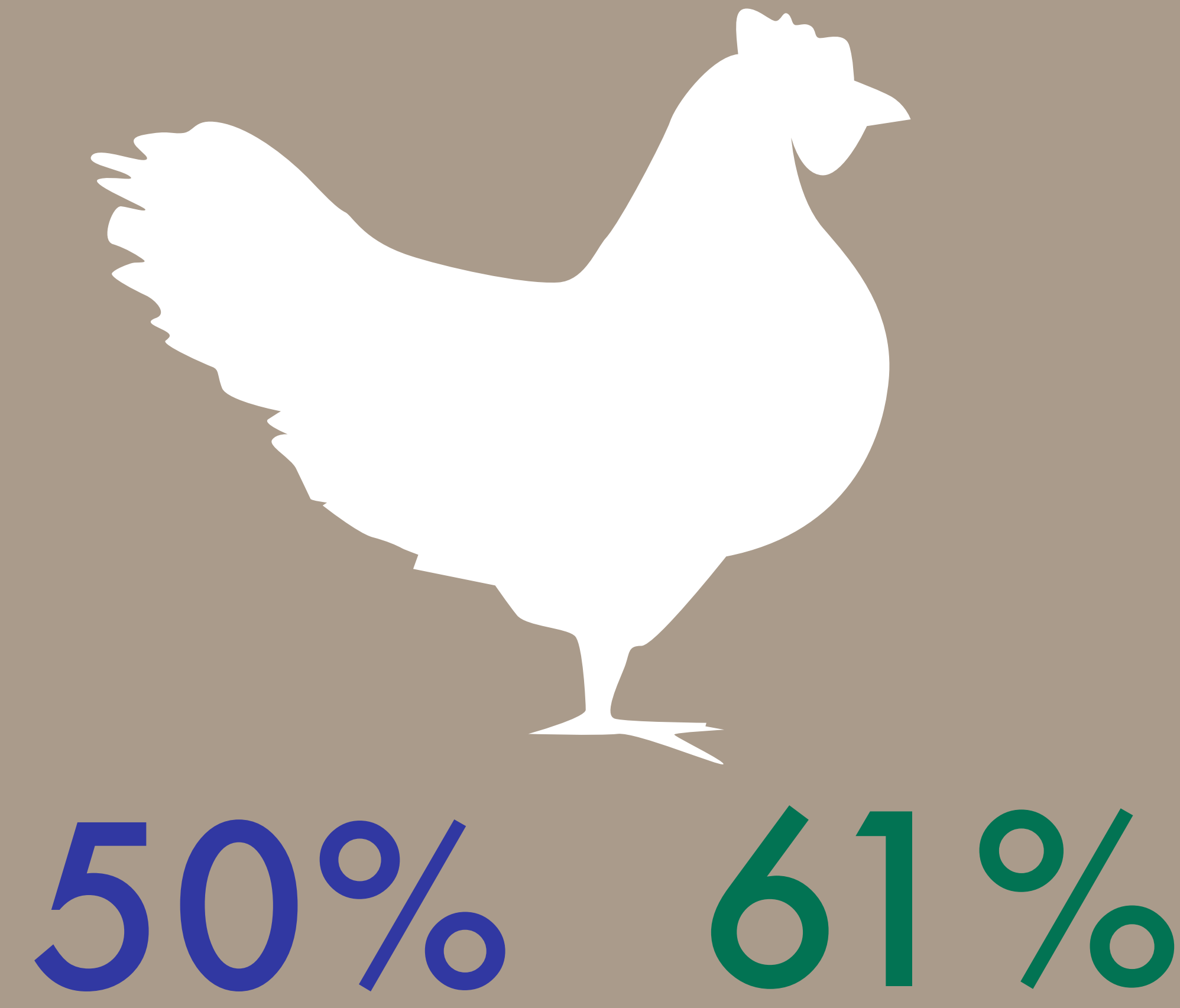
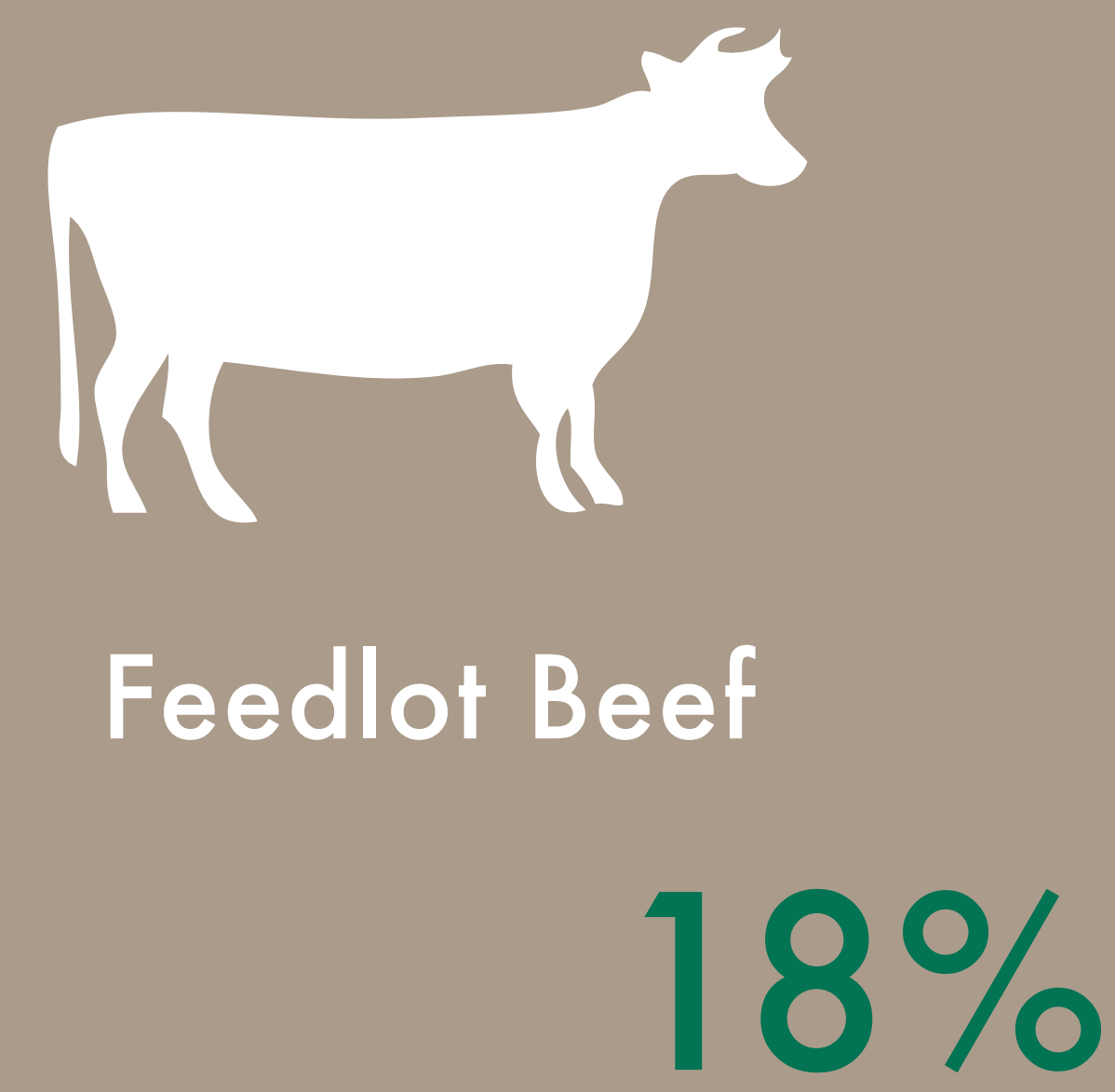
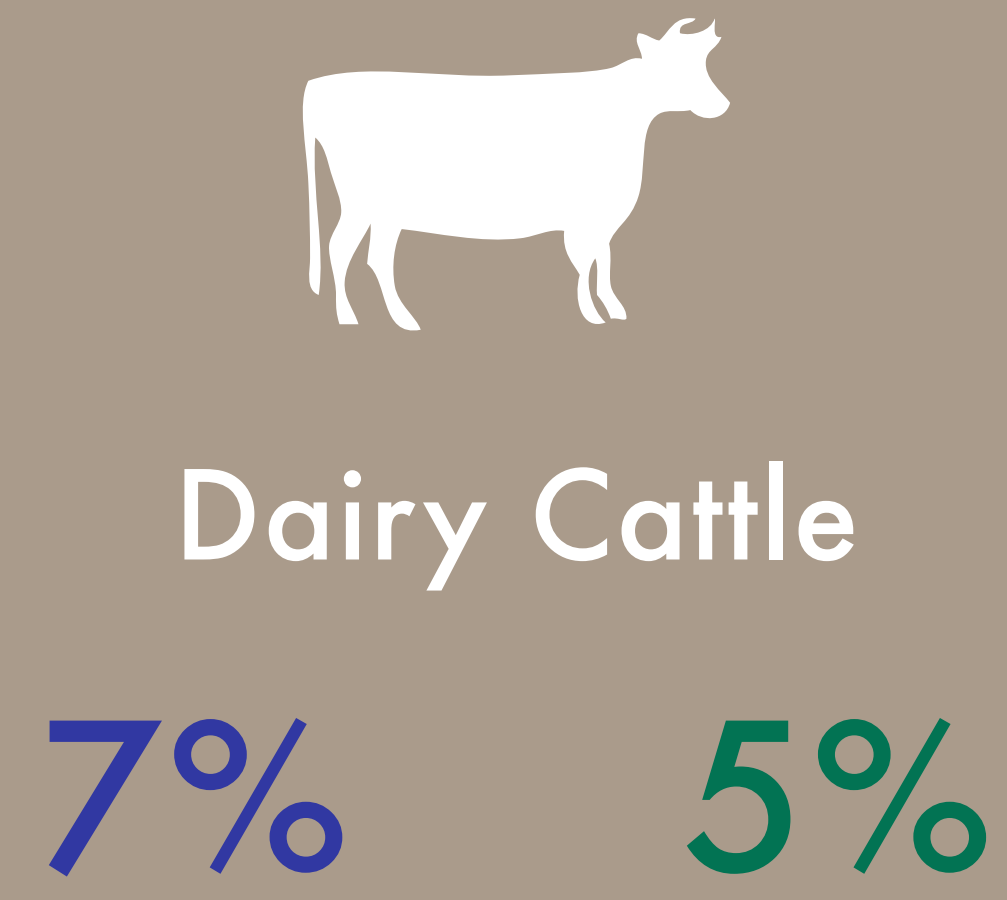


MANURE FROM LARGE LIVESTOCK OPERATIONS EFFECT ON WATER QUALITY



– LARGE LIVESTOCK OPERATIONS –

CAFO: Concentrated Animal Feeding Operation, confining more than 1,000 animal units



Nitrogen **N** Phosphorus **P**

Directly discharged into surface water,
manure containing **nitrogen** and **phosphorus** causes water pollution

UNITED STATES FARM BILL SUBSIDIES

10% largest farms receive **74%** farm subsidies

62% farms receive 0% farm subsidies

Increased animal concentrations =
manure containing high levels of
nitrogen and **phosphorus**

EFFECT ON WATER QUALITY

Livestock and poultry farms generate
> 350 million tons of manure

1 ton fresh manure contains

10 to **20** pounds of nitrogen

5 to **10** pounds of phosphorus

Excess **nitrogen** and **phosphorus** leaches into water causing excess algae growth
Die-off of algae reduces dissolved oxygen,
causing **anoxia**, which suffocates fish and aquatic life

50% reduction + **50%** reduction = **63%** reduction

– LIVESTOCK MANURE MANAGEMENT OPTIONS –



CONVENTIONAL
LAND APPLICATION

Nitrogen 124,000
metric tons deposited annually

Phosphorus 29,000
metric tons deposited annually

North Carolina Coastal Plain

COMPOSTING

Nitrogen removal 7% - 38%

Phosphorus removal 14% - 39%

COST: \$7,663 to \$13,653 for 120-dairy cow
REVENUE: Compost can be sold for a profit
\$5.99 for 50 pounds

ANAEROBIC DIGESTION

Nitrogen removal 50%

Phosphorus removal 80%

COST: \$566,006 + \$617 per cow
REVENUE: Converts manure into methane gas for electricity
2,100 cows: 2,414,753 kWh/year consumed
2,245,584 kWh/year produced