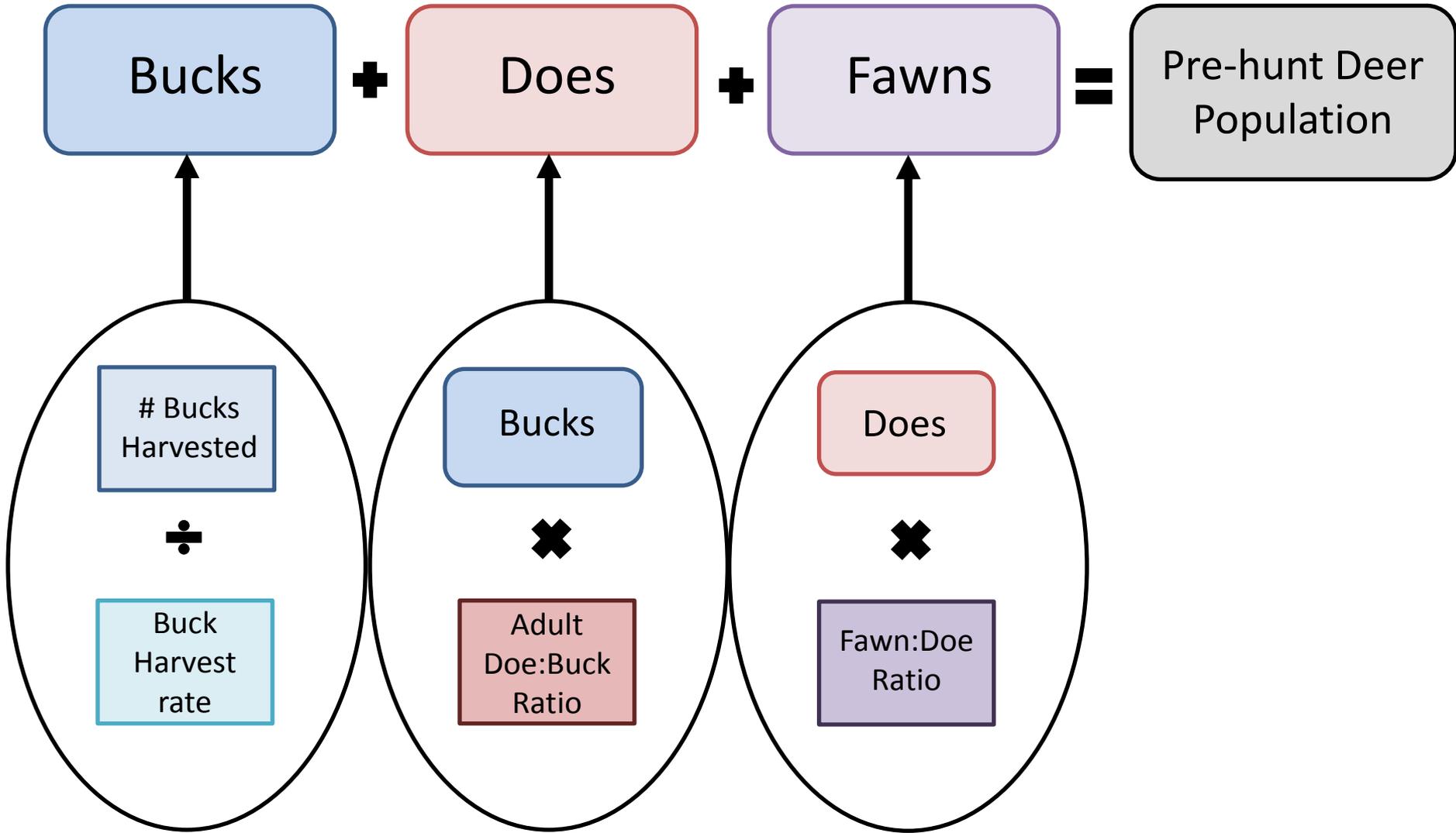


Simple Explanation of SAK

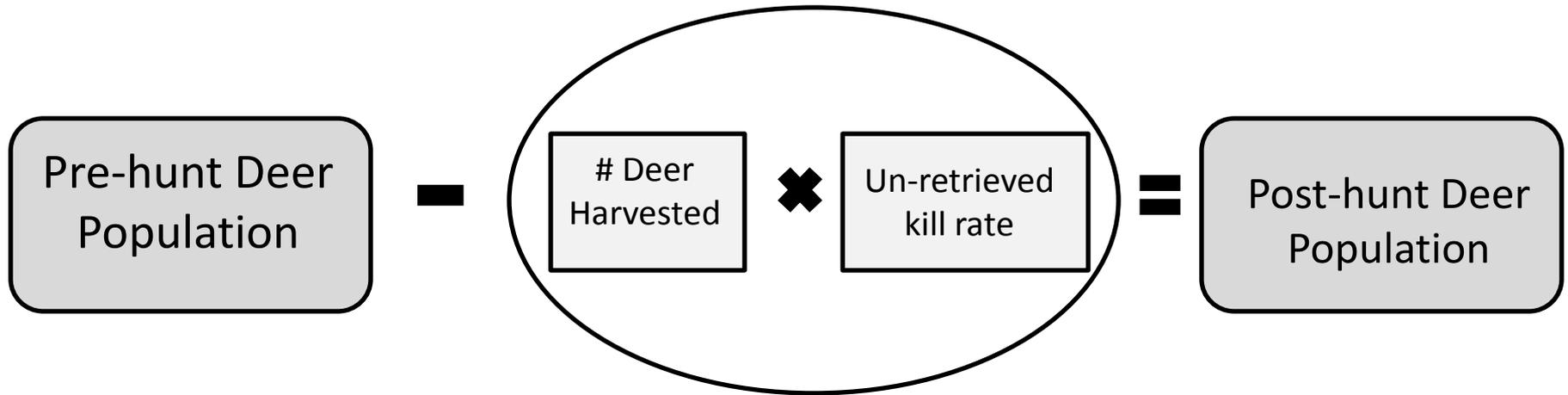
- The Sex-Age-Kill (SAK) method uses harvest data to estimate deer population size
- Starts with buck harvest, expands to a population estimate by using a number of supporting assumptions and additional data and estimates
- A much more detailed (but still relatively non-technical) explanation of the SAK can be found in ‘SAK explanation_detailed.pdf’

5 Basic Components of the SAK (and how we get them)

- # Bucks harvested
 - Mandatory harvest registration
- Buck harvest rate (proportion of bucks harvested)
 - Estimated directly by radio-collaring bucks, or
 - Estimated indirectly using buck age structure (yearling buck %) and assumed buck recovery rate
- Doe:Buck ratio (Adult Sex ratio)
 - Estimated from ratio of yearling bucks % to yearling does %
- Fawn:Doe ratio
 - Summer observations of does and fawns by WIDNR staff and the public
- Total deer harvest
 - Mandatory harvest registration



To get the post-hunt population size...



Bucks

2,452

+

Does

4,365

+

Fawns

5,238

=

Pre-hunt Deer
Population

12,055

1,888

÷

0.77

2,452

×

1.78

4365

×

1.2

Pre-hunt Deer
Population

12,055

-

4,563

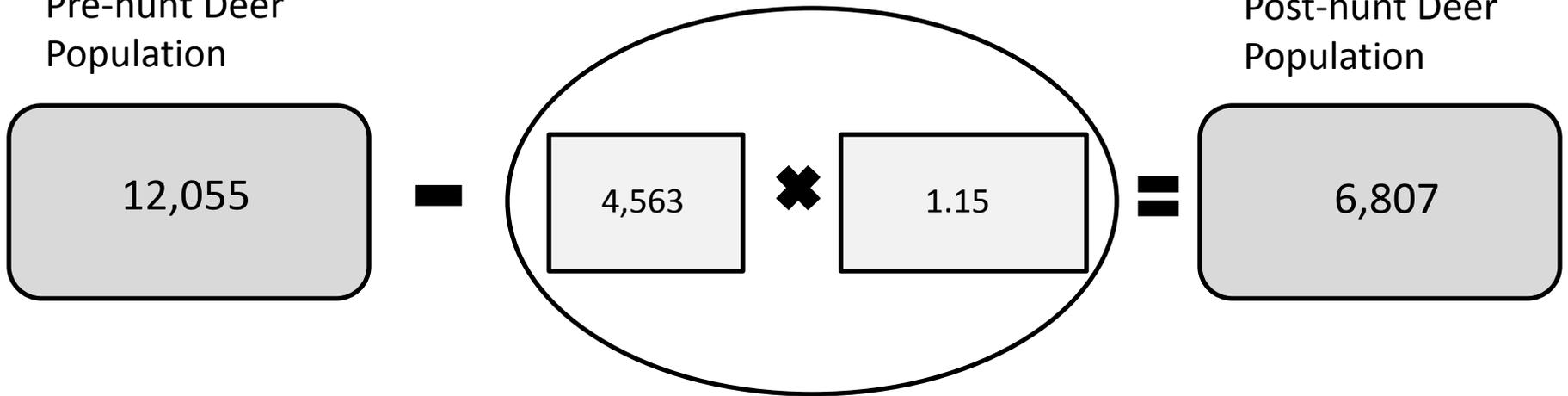
×

1.15

=

Post-hunt Deer
Population

6,807



In other words...

- The number of adult bucks harvested is of course some proportion of the adult buck population. If we can estimate this proportion (buck harvest rate), we can estimate the number of bucks
- If we can estimate the number of adult does per buck, we can estimate the number of does by multiplying the doe:buck ratio by the estimated # of bucks
- If we estimate the number of fawns per doe, we can estimate the number of fawns by multiplying the fawn:doe ratio by the estimated number of does

Bucks + Does + Fawns = Pre-hunt Deer Population

- Subtracting known harvest and estimated wounding loss from the pre-hunt population gives the post-hunt deer population size

**Pre-hunt Deer Population – (Total deer harvest * Wounding loss)
= Post-hunt Deer Population**