SUPPLEMENTAL FILES

Table S1. Example of original pedigree data with sample number, unique larval ID, and unique parent ID. Data is based on full-maximum likelihood estimates from Program COLONY. Larvae 1 and Larvae 2 are examples of half-siblings with a single shared parent ID. Larvae 1 and Larvae 3 are examples of full-siblings with two shared parent IDs.

Original Sample Pedigree			
Sample Number	Larval ID	Parent 1 ID	Parent 2 ID
1	Larvae 1	1	5
2	Larvae 2	1	9
3	Larvae 3	1	5
4	Larvae 4	2	6
5	Larvae 5	2	10
6	Larvae 6	2	12
7	Larvae 7	2	12
8	Larvae 8	3	7
9	Larvae 9	3	11
10	Larvae 10	4	8

Table S2. Example of a single pedigree after resampling with replacement. Larvae 1 and Larvae 4 were resampled multiple times. A total of 1000 bootstrapped pedigrees were generated for each collection method in 2015 and 2016 and each collection method at each of 3 artificial spawning reefs in 2015 and 2016.

Bootstrapped Sample Pedigree			
Sample Number	Larval ID	Parent 1 ID	Parent 2 ID
1	Larvae 1	1	5
1	Larvae 1	1	5
1	Larvae 1	1	5
2	Larvae 2	1	9
3	Larvae 3	1	5
4	Larvae 4	2	6
4	Larvae 4	2	6
6	Larvae 6	2	12
9	Larvae 9	3	11
10	Larvae 10	4	8

Table S3. Example of a single bootstrapped pedigree with unique parents cumulatively summed. Unrelated larvae accumulate 2 parents, half-sibling larvae accumulate 1 parent, and full-sibling larvae accumulate no unique parents. The maximum rate of detection of unique parents per larvae genotyped is 2:1.

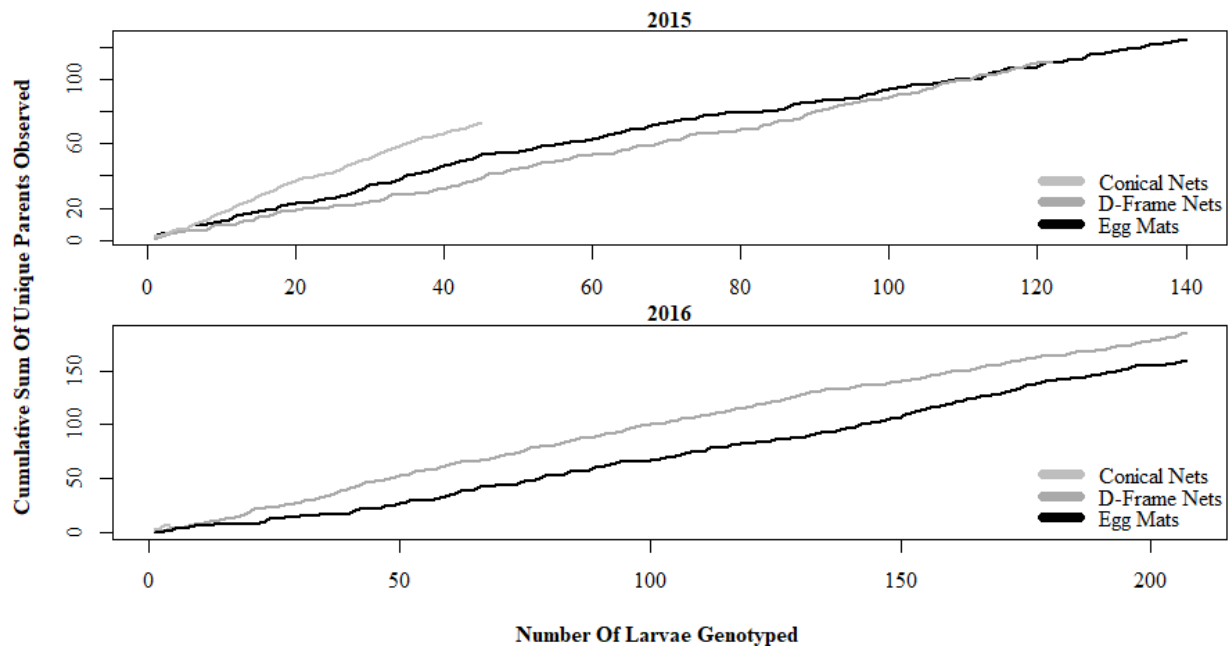| Bootstrapped Sample Pedigree With Unique Parents Summed				
Sample Number	Larval ID	Parent 1 ID	Parent 2 ID	Sum of Unique Parents
1	Larvae 1	1	5	2
2	Larvae 1	1	5	2
3	Larvae 1	1	5	2
4	Larvae 2	1	9	3
5	Larvae 3	1	5	3
6	Larvae 4	2	6	5
7	Larvae 4	2	6	5
8	Larvae 6	2	12	6
9	Larvae 9	3	11	8
10	Larvae 10	4	8	10

Figure S1. Plot of the cumulative sum of unique parents observed per larvae genotyped for each collection method in 2015 and 2016 using larvae collected at all reef sites. Slope of the line indicated the rate of detection of unique parents.
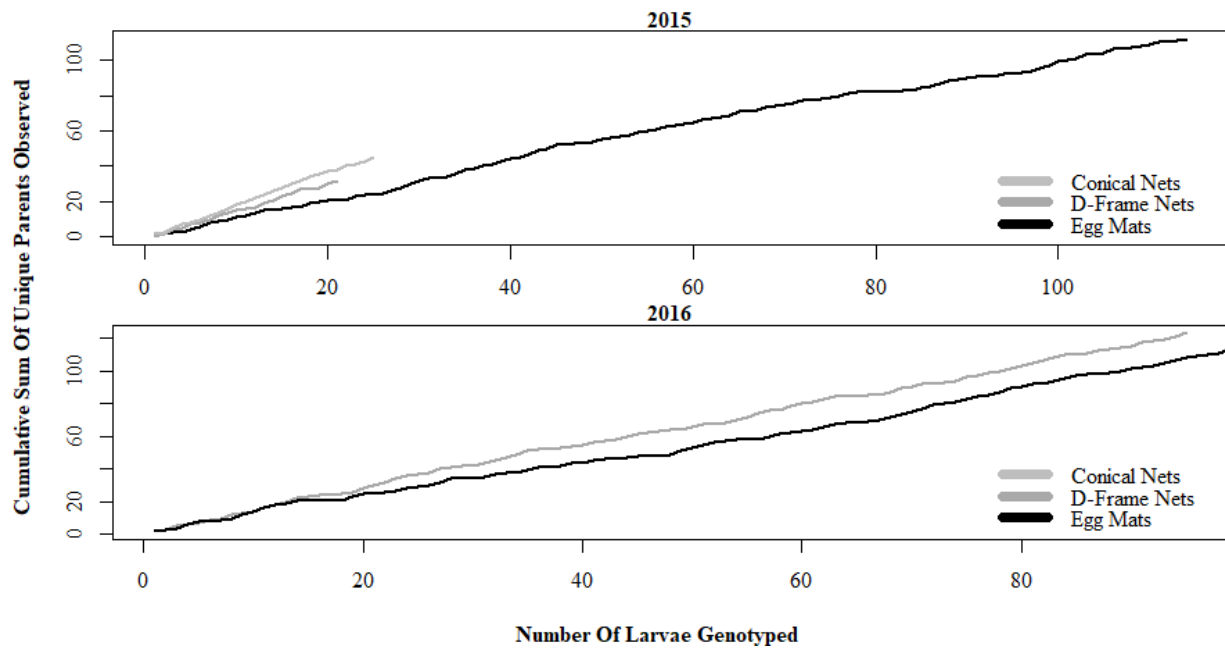
Figure S2. Plot of the rate of cumulative sum of unique parents observed per larvae genotyped for larvae collected at Harts Light Reef in 2015 and 2016.
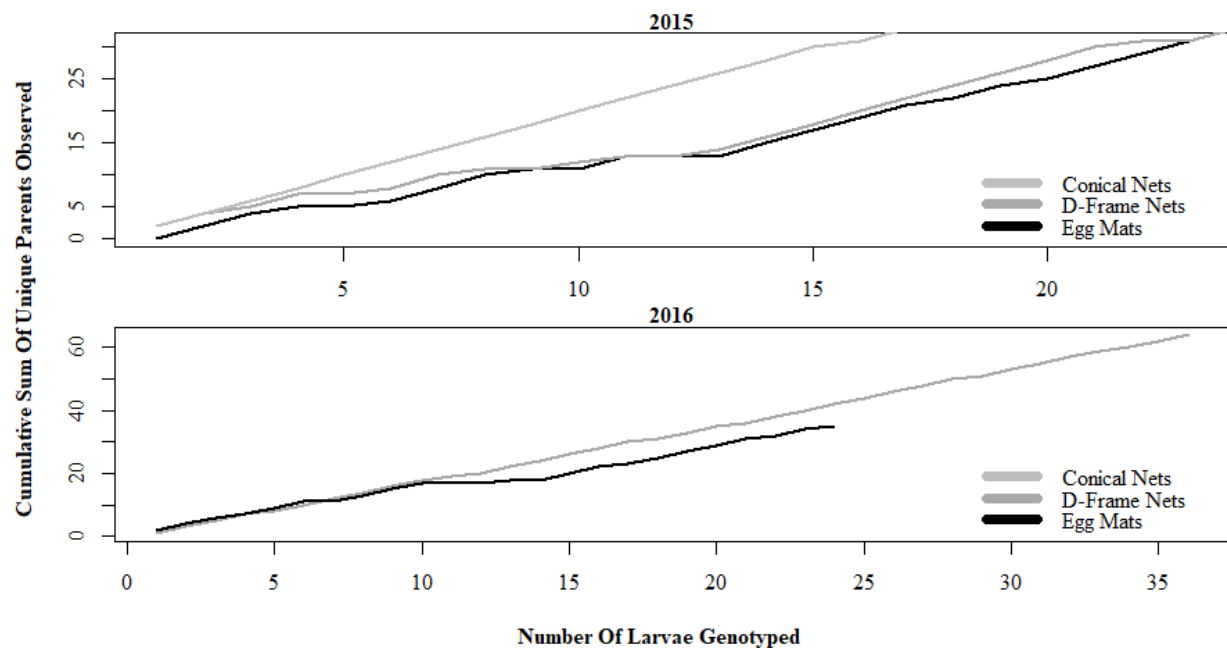
Figure S3. Plot of the rate of cumulative sum of unique parents observed per larvae genotyped for larvae collected at Pointe Aux Chenes Reef in 2015 and 2016.
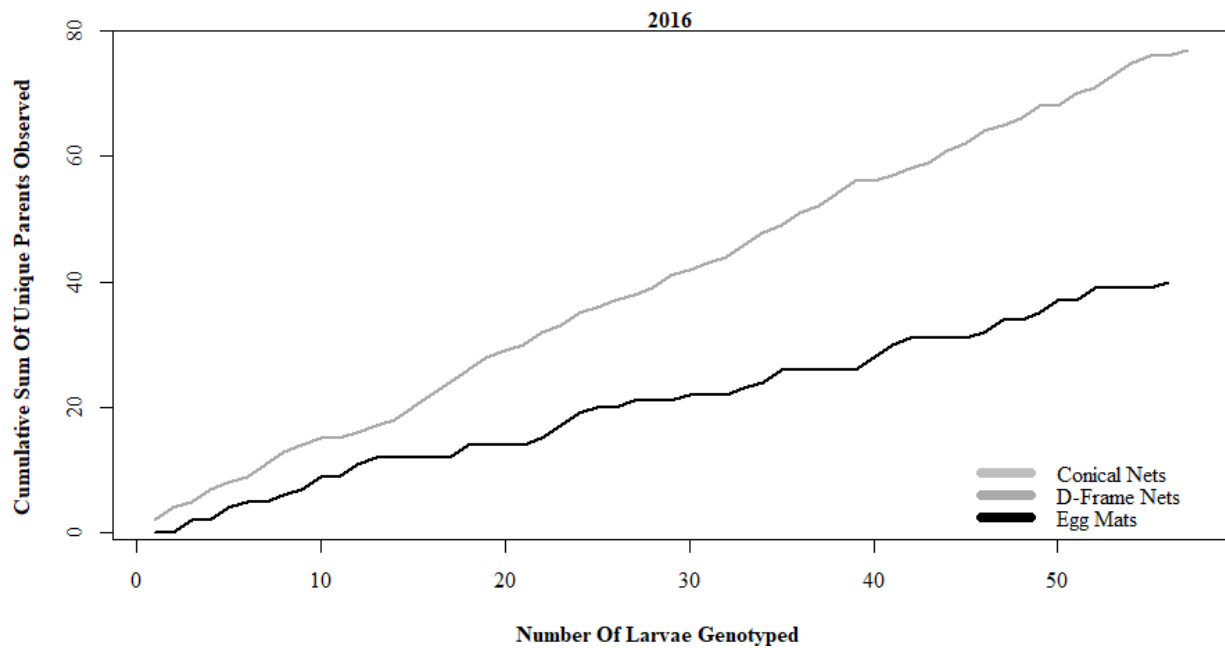
Figure S4. Plot of the rate of cumulative sum of unique parents observed per larvae genotyped for larvae collected at Grassy Island Reef in 2016. Samples were only collected at Grassy Island Reef in 2016. Due to small sample sizes, vertically stratified conical nets in 2016 were eliminated from analysis at Grassy Island Reef.

Table S4. Sample 10 x 10 breeding matrix composed of successful mate pairs.

	Dad_1	Dad_2	Dad_3	Dad_4	Dad_5	Dad_6	Dad_7	Dad_8	Dad_9	Dad_10
Mom_1	0	0	0	0	0	0	0	0	0	0
Mom_2	0	0	0	0	0	0	0	0	0	0
Mom_3	0	0	0	0	0	0	0	0	0	0
Mom_4	0	0	0	0	0	0	0	0	0	0
Mom_5	0	0	0	0	0	0	0	0	0	0
Mom_6	0	0	0	0	0	0	0	0	0	0
Mom_7	0	0	0	0	0	0	0	0	0	0
Mom_8	0	0	0	0	0	0	0	0	0	0
Mom_9	0	0	0	0	0	0	0	0	0	0
Mom_10	0	0	0	0	0	0	0	0	0	0

Table S5. Table shows an example of a populated breeding matrix. Yellow boxes indicate a successful breeding pair with the number of larvae produced by the pair in the corresponding matrix grid.

	Dad_1	Dad_2	Dad_3	Dad_4	Dad_5	Dad_6	Dad_7	Dad_8	Dad_9	Dad_10
Mom_1	3560	3334	5890	0	0	0	0	0	0	0
Mom_2	2367	2460	0	0	2500	3479	4523	0	0	0
Mom_3	0	3512	0	0	0	0	0	0	0	0
Mom_4	0	2367	2344	5654	2989	0	0	0	3698	0
Mom_5	0	2455	5342	0	0	0	0	0	0	0
Mom_6	0	5998	0	0	3241	2123	4656	0	0	0
Mom_7	0	0	0	0	0	0	0	0	2231	2345
Mom_8	0	3523	2422	2341	0	0	0	0	0	0
Mom_9	0	3423	0	0	0	0	0	0	0	2345
Mom_10	0	0	0	0	0	0	4234	2375	0	0

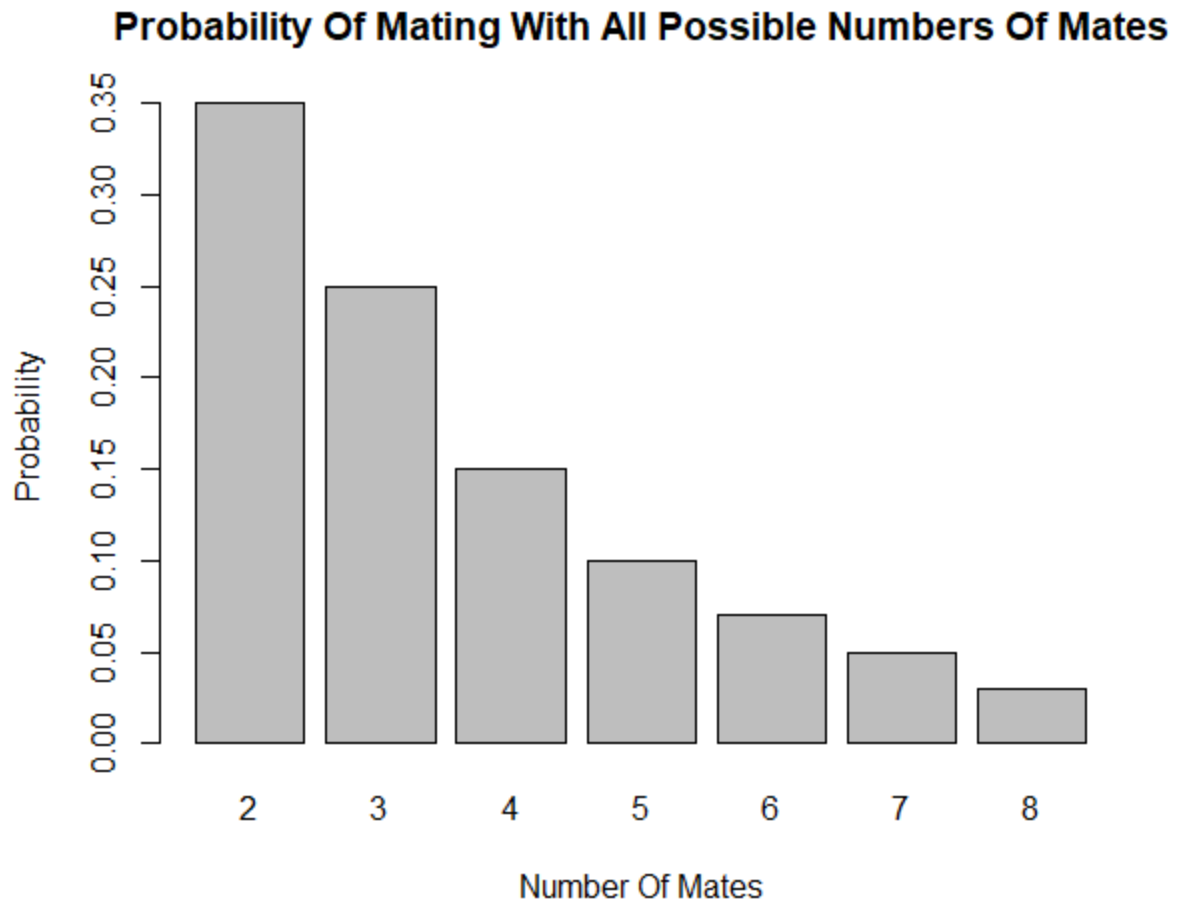## Probability Of Mating With All Possible Numbers Of Mates

Figure S5. Distribution of probabilities for 1000 simulations of the number of successful mates for lake sturgeon. Probabilities decrease as the number of mates increases assuming the likelihood of encountering or successfully mating with increasing numbers of individuals decreases non-linearly.
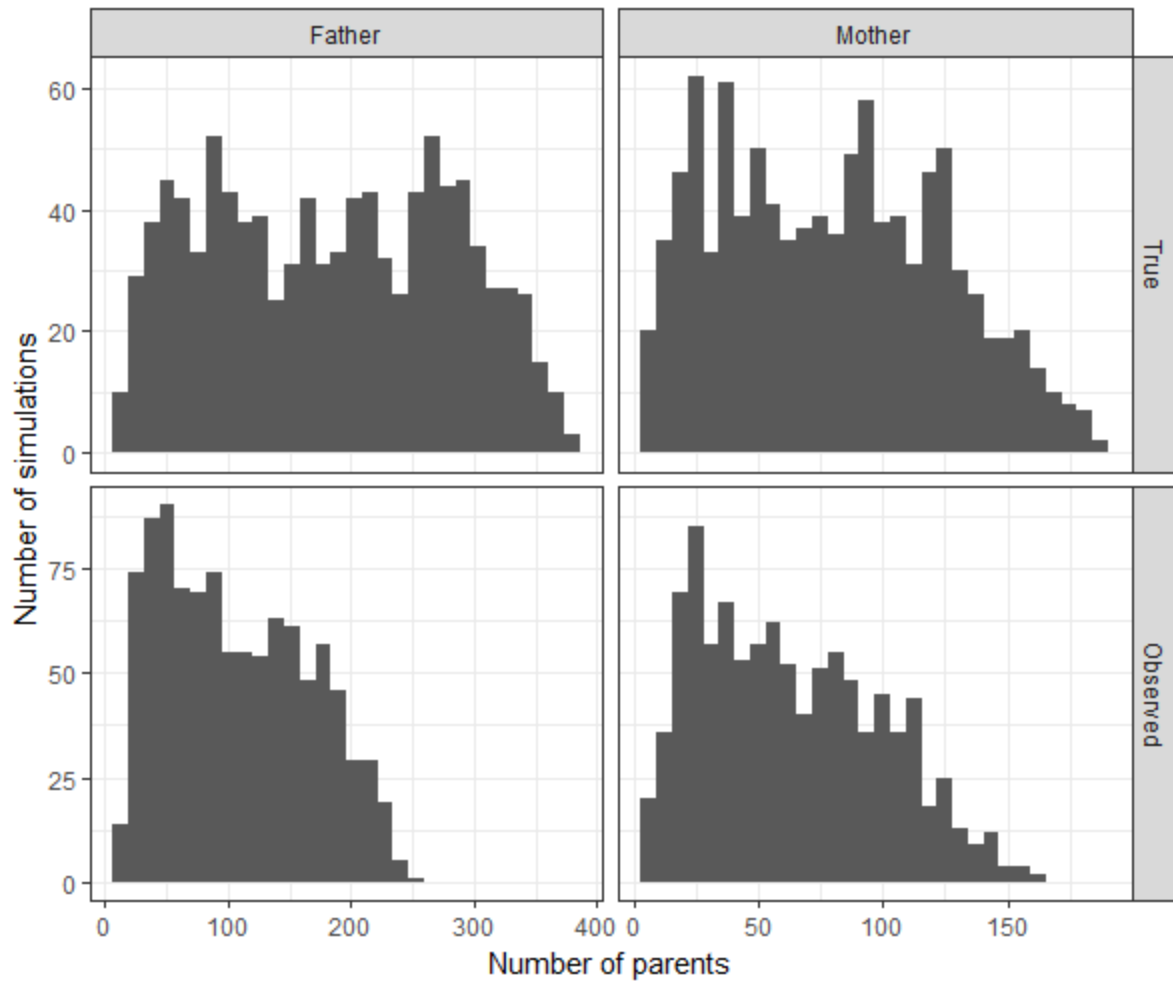
Figure S6. Frequency distributions for the number of simulated males and females in simulated full populations (True) and simulated sample pedigrees (Observed) for each of 1000 simulations. Simulated sample pedigrees do not sample the total number of parents in simulated full populations most of the time.
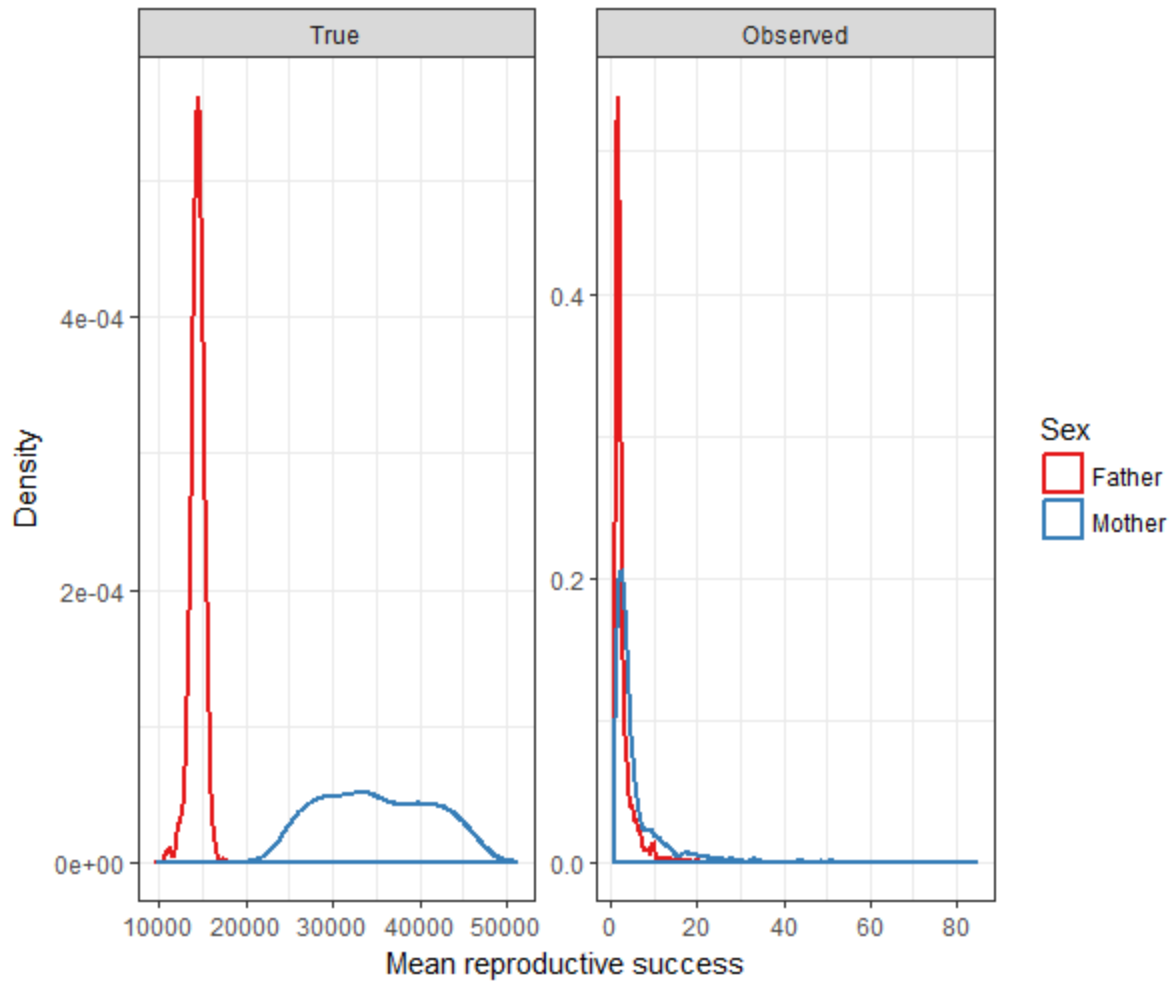
Figure S7. True and observed distributions of mean reproductive success from 1000 simulations. Mean and variance in reproductive success approach a Poisson distribution with a lambda of four. Mean observed reproductive success from simulations was 4.32 offspring.
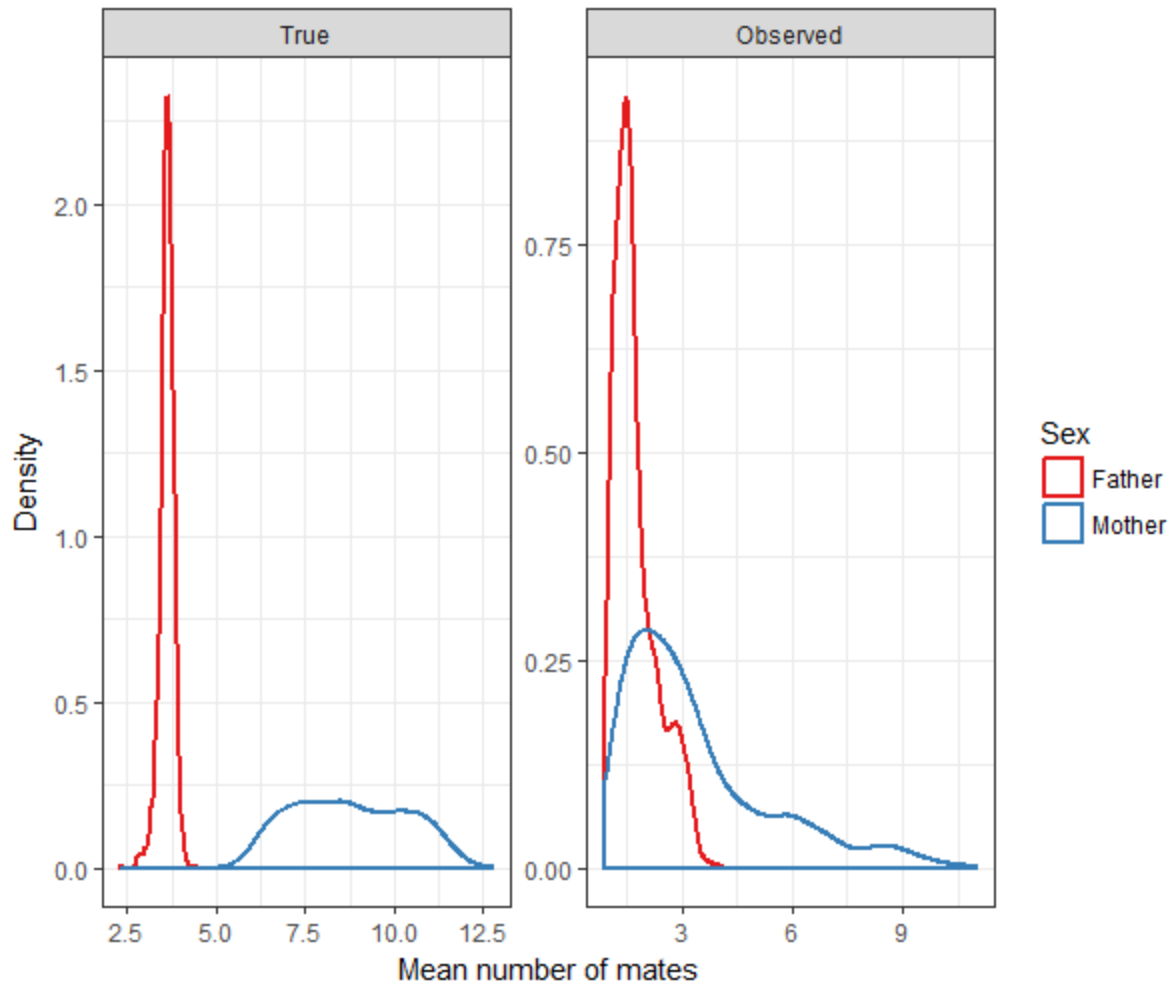
Figure S8. Distribution of the true and observed mean number of mates for male and female lake sturgeon resulting from 1000 simulations. The skew in distributions between sexes are representative of females mating with multiple males. Males also mate with multiple females but to a lesser degree.