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# Senior Thesis: The Migratory and Reproductive Patterns of the North American Waterfowl as Shaped by Rising Global Temperatures

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# SENIOR THESIS: THE MIGRATORY AND REPRODUCTIVE PATTERNS OF THE NORTH AMERICAN WATERFOWL AS SHAPED BY RISING GLOBAL TEMPERATURES

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BEN GAMBLE

For years, the specifics of the migratory patterns of the North American waterfowl have perplexed ornithologists and casual bird-watchers alike. How the subtle variations in weather—more prominent with ever-intensifying global warming—affect these patterns is a mystery not yet fully solved. Traditional patterns of birds seeking warmer climates in the winter months may be altered permanently by these meteorological fluctuations. It is also fully possible that we may see—or have already seen—these patterns emerge in some humans, who are not immune to abrupt and truly disconcerting behavioral changes as a result of environmental factors. Really disconcerting.

To begin with, we'll look at the physiological adaptations of the waterfowl regarding mating, which often coincides with the migration patterns. By having the mating process occur during a time when millions of waterfowl from all over the North American continent are gathered, it allows for a significant variation of genetic material.<sup>1</sup> Consider the ability of many small pockets of sub-species to intermingle and cross previously insurmountable physical and genetic hurdles.<sup>2</sup> This variation can be catalyzed by inebriation in the female duck or apparently just boredom.<sup>3</sup> Many ducks were previously thought to have mated for life, a statement that we all now know to be a sentimental lie believed by only the most foolish of ducks. These ducks, upon seeing

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<sup>1</sup> But Jessica already knows all about that.

<sup>2</sup> Which is really alarming, because the female ducks may insist that the long-distance thing can totally work when they travel abroad.

<sup>3</sup> I didn't know you could get bored with the person that loves you the most in the entire world

their mates leave them for others with more impressive plumage, more intricate mating rituals, or a more impressive nest, will often enter a worrying cycle of self-doubt and may present difficulties coping with their new realities.<sup>4</sup>

The genetic variation present in these migratory movements is unprecedented. There is literally no way of measuring how much genetic material is transferred between the multiplicities of sub-species in the North American continent.<sup>5</sup> These exchanges could happen even when one duck tells her mate that she's at her grandmother's funeral,<sup>6</sup> or that she's going home for the weekend, or the entire time she's flown abroad. That's how cruel some of these ducks are.<sup>7</sup> In hindsight, ornithologists generally agree that female ducks will often employ an academically based excuse, such as a research trip, to justify their migration.<sup>8</sup>

The male ducks will then begin a prolonged odyssey to recover their mate. This takes many forms, as the duck has many acute senses and an ability to traverse long distances, hindered only by natural predators<sup>9</sup> and legal constraints on the ducks ability to contact his former mate.<sup>10</sup> Ducks, due to their excellent aerial vantage point, have great observational skills, which are further augmented by their keen eyesight. This is normally used to help them find sustenance on their long southward journey but can in some cases be better applied to looking at the females<sup>11</sup> Instagram page, cross-referencing it with her Twitter, and attempting to determine a rough chronology of betrayal.<sup>12,13</sup>

Some ornethologists<sup>14</sup> have attributed this behavior to

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4 fly south straight to hell Jessica

5 at this point who even knows how many ducks got involved

6 I hope she outlives you Jessica.

7 Little does the female duck know that the bottle of Jack Daniels she left in the male's apartment is now his

8 we all know what you were studying on that semester abroad now Jessica

9 at times, the ducks father may be a member of the NRA, so the male duck must proceed with caution

10 go running straight to your uncle the judge real mature of you Jessica

11 wait should there be an apostrophe on this one? Theres an apostrophe on Jack Daniel's...

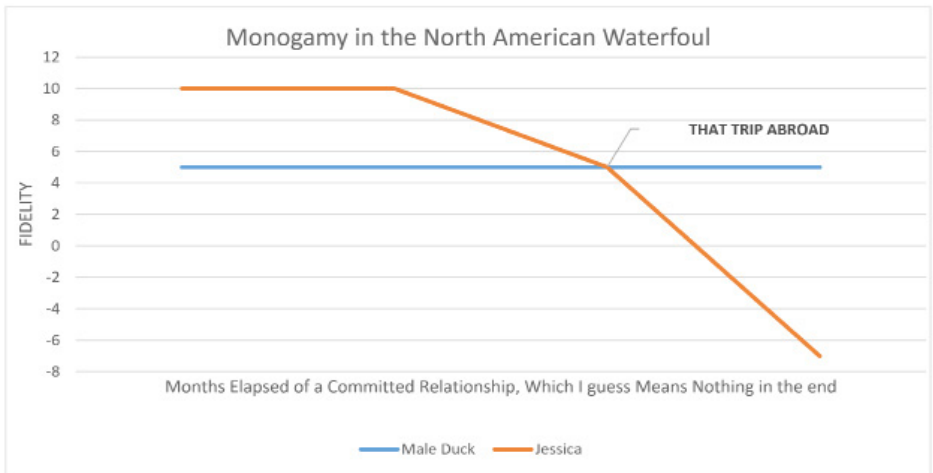
12 you friended him last May?

13 I had to make a twitter to do this you know

14 this is too many syllables for me right now

psychological issues stemming from the females lack of familiarity with the father duck growing up, but my far more likely assertion is that God is cruel. Which probably explains the global warming or whatever too.

These ideas are supported by empirical evidence, gathered from various sources close to the female duck who say she's doing really great, which cant be true, because a duck doesnt<sup>15</sup> spend three years in a nest and then start doing really great as soon as she leaves<sup>16</sup>. Evidenced here is the irregular behavior of the waterfowl:



Clearly, the change in lifestyle for the female duck is totally jarring and reports that she has acclimated fine to her new climate and biome are completely and totally unfounded.<sup>17</sup> Beyond that, the ducks older sister is, like, incomparably hotter anyways.<sup>18 19 20</sup> If the female duck wants to run off to Oakland with the new male duck that's just whatever.<sup>21</sup>

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<sup>15</sup> dont use contractions in a formal essay whatever take off the points

<sup>16</sup> Was this bottle full when you left it here

<sup>17</sup> Jessica how come youre smiling so much in these pictures

<sup>18</sup> she was totally hitting on me at Thanksgiving so I hope you like seeing me around Jessica

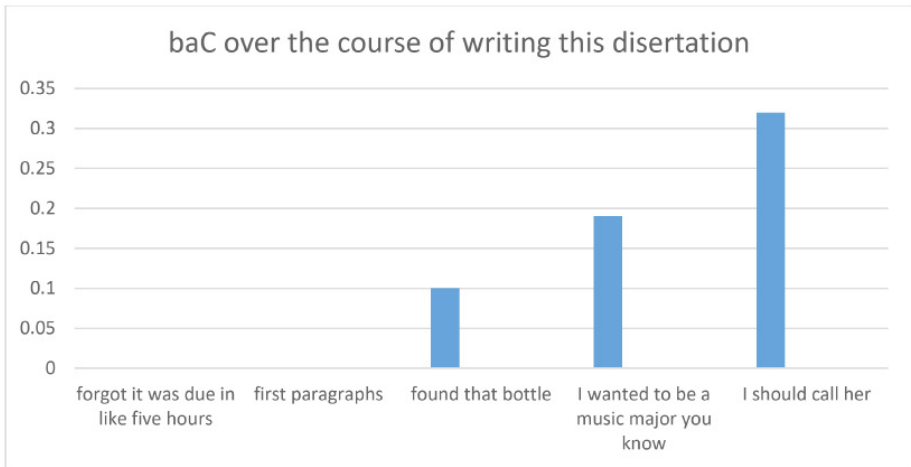
<sup>19</sup> maybe this was incomparably? incomparably....incomparably...huh...

<sup>20</sup> and ill be at your grandma's actual funeral too.

<sup>21</sup> hey im going to make a tinder all this duck stuff got me thinking

It doesnt even matter.<sup>22</sup> The male ducks primary means of recourse are practically nonexistent. He is placed into an especially disadvantageous position when news of the female ducks ordeal does not reach him until the night before his dissertation is due<sup>23</sup>.

Doomed by their own natures to return northwards with the flock that flew south, they will be forced to share an awkward and emotionally abrasive journey back over many thousands of miles once the winter months end.<sup>24 25 26</sup> This brings back a diverse and more well-equipped population to deal with genetic bottlenecks or similar population crises that could cripple the ducks ability to maintain biodiversity, or even basic moral decency.<sup>27</sup> if one were to describe the behavioral archetype of this particular duck, it would be one that abandons her flock for the mallard who plays bass in his stupid band that she met last year on that trip abroad.<sup>28</sup>



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22 do you think he's hotter than me be honest

23 i dont even like ducks

24 im looking up your sister on facebook

25 wait tinder wants to connect to my facebook will Jessica see that i dont want her to think ive moved on

26 i mean like i totally have but she still shouldnt think that just in case she wants to come back itd be whatever

27 you couldnt have waited one more day, Jessica? this is like 40% of my grade

28 he has frosted tips

The mating behaviors of the North American waterfowl are further complicated by the presence of third parties that disrupt the reproductive cycle.<sup>29</sup> While some interruptions of this process are the to-be-expected obstacles of any species expansion and population maintenance, there have been irregular aberrances in recent years.<sup>30 31</sup> Not that this really bothers the female ducks, who generally don't have to worry about hunters. Increasing samples of ducks captured by parks and wildlife services have reported that female ducks have totally changed, behaviorally speaking, making it difficult for the male to approach her.<sup>32</sup> Like, really difficult<sup>33</sup>. yeah its hard for ducks to get laid this is what four years of overloading courses at this school taught me. anyways these poachers will often swoop in and disrupt the mating ritual, resulting in the female duck being ensnared. Current Department of Natural Resources (DRN) regulations mean that this sort of thing is just totally accepted by the community, because that's just 'what happens' and "you need to move on" in an official press release by the secretary of agriculture or ducks or something.

in conclusion the behavior of female ducks now is totally not cool and if they go to warmer climates there's a pretty good chance they'll leave the flock and start getting tattoos. that's what ducks do. to reassert my central thesis<sup>34</sup>, ducks are pretty lame, they start getting handsy with ducks from other flocks when it gets warm outside and monogamy is a lie ducks made up to sell diamonds<sup>35</sup>. also second thesis BOOM<sup>36</sup> coming out of nowhere you can finish a dissertation two hours<sup>37</sup> before its due with a little hard work and a lot of alcohol. quack quack bitches watch out for global warming and watch out for jessica that's what all my field research says im out

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<sup>29</sup> you know, I'm thinking about it, and im like ninety percent sure this was actually supposed to be about swans

<sup>30</sup> i could've sworn there was a button you could press to replace all the words with another word i could fix this duck/swan thing

<sup>31</sup> @JustJessie19 subtweeting this entire paper at you

<sup>32</sup> no way this bottle was full when you left it because its pretty empty rn

<sup>33</sup> really difficult

<sup>34</sup> kinda forgot my thesis had to scroll back up to find it, it was forty five minutes and a indeterminate amount of jack daniels ago

<sup>35</sup> you know how many ducks died mining those diamonds

<sup>36</sup> not gonna lie im super hungry for some duck right now. i bet i could eat like a whole duck

<sup>37</sup> like thirty minutes of that was making the graphs pretty too