|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario | Milkweed | Nectar | Logging | Temperature Anomaly | Iteration | Growth Rate | Population Size (2036) |
| Do Nothing | 2 | 2 | 5 | 0 | 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| 8 |  |  |
| 9 |  |  |
| 10 |  |  |
| Manage! | 3 | 3 | 2 | 0 | 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| Climate | 2 | 2 | 5 | 2 | 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| Manage!  under  Climate  Change |  |  |  | 2 | 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |

**Questions:**

1. Doing nothing, how many times does the final population size go to 0? Go above 150?
2. With management, how many times does the population go to 0? Go above 150?
3. Does climate change negatively or positively impact the monarch? (HINT: Compare population growth rates among scenarios – is it higher or lower than the ‘Do Nothing’ scenario?)
4. How would you adjust management under climate change?
5. Bonus question, does milkweed or nectar have a larger effect on the population growth rate? (HINT: Try manipulating one variable at a time, and compare the size of the increase or decrease to the population growth rate)