

NOTES ABOUT THE SALAMANDER MIGRATION

I think a few comments about the salamander migration are in order.

How well have we been predicting the migration and what have we seen?

The East Brunswick Environmental Commission has closed Beekman Road 4 times since a week ago Thursday and on at least 3 of those nights, salamanders have been seen migrating. I think this is a very good track record for an educated guess about the complex suite of parameters that stimulate the migration to occur. At least during the time many of us were on the road, the first night featured heavy movement, the second was somewhat lighter and the third was even lighter. I did not visit the road during Saturday's closing, so I don't know what happened (please email Rich with any observations, either of salamanders or not). It is very important to remember that the salamanders are likely moving throughout the night as conditions permit, and that we are only observing a portion of those that make it across the road, and likely only a small portion. In addition, there is definitely some portion of the population that never has to cross the road, overwintering in the woods between the road and the vernal pools.

How do we decide when to close the road (i.e. The great balancing act)?

As most of our subscribers to the email notification list know, the migration of spotted salamanders to the vernal pools is based on many factors including the amount and timing of rainfall, the date, the temperature of the air, the temperature of the ground, the availability of open water on the vernal pools, the depth the salamanders are migrating, soil moisture and likely a whole range of other factors that we are not even aware of.

In deciding what to do, we have a balancing act we employ, recognizing that the road closings are an inconvenience to some drivers, and not wanting to disappoint anyone who might come out wanting to see the salamanders. We rely very heavily upon the forecast from NOAA and the Weather Channel along with the forecast discussions by the on-duty NOAA meteorologists in making a decision whether or not to close the road. Sometimes, we make the right call, other times not, but we always attempt to err on the side of the salamanders and frogs. In addition, we have to decide before 4 PM in order to give the Police Department enough time to put the barriers out.

It is also important to know that many scientific studies have documented that the males typically migrate first and arrive at the vernal pools before the females, sometimes weeks earlier. The females apparently need a higher average air temperature to stimulate their movement than the males (approx. 53F vs. 50F) In addition, the migration can be truncated to only a day or two or spread out over period of weeks, all based on the various triggering factors. And in any given year, only a portion of the females generally breed. So even when we see a migration, we are never certain how much of the population it entails or whether it is the end point, or if more salamanders will move on subsequent rainfall events.

What are the numbers we see telling us?

With these considerations in mind, we should not really read much into the numbers of salamanders we see on the road in any given year or on any given night. The variables are just too complex. To determine population trends, we would have to implement a well-designed multi-year survey using techniques such as drift fences and pitfall traps and maybe egg mass counts.

Are our efforts working?

WITHOUT A DOUBT, WHILE IT MAY BE DIFFICULT TO MEASURE, THE ROAD CLOSURES ARE HAVING A POSITIVE EFFECT ON THE BEEKMAN ROAD SALAMANDER AND FROG POPULATIONS BY SIGNIFICANTLY REDUCING AUTOMOBILE MORTALITY. WHEN I FIRST DISCOVERED THE MIGRATION 5 YEARS AGO, THERE WAS UNMITIGATED AND VERY HEAVY LOSSES OF AMPHIBIANS BY CARS CRUSHING THEM. IN THE PAST 4 YEARS SINCE WE HAVE BEGUN CLOSING THE ROAD, I HAVE NOT SEEN A SINGLE ROAD KILLED SALAMANDER. THIS IS A TESTAMENT TO THE EFFORTS OF EVERYONE INVOLVED, FROM ANYONE THAT COMES OUT TO ASSIST THEM TO SAFELY CROSS THE ROAD, THE POLICE DEPARTMENT AND DEPARTMENT OF PUBLIC WORKS, THE MAYOR, AND THE SOUTH BRUNSWICK POLICE DEPARTMENT AND MAYOR.

I think we can all be certain that our efforts are working very effectively to restore and conserve the Beekman Road spotted salamanders for future generations and to ensuring that they will continue to be a part of our fauna as they safely migrate to the same vernal pools that they likely have gone to for centuries.

What is going on? I came out but didn't see any salamanders!

A word to anyone that has come out on one of the raw, rainy cold nights but has not had the chance to see a spotted salamander yet. Be patient, while they may not cross every night we close the road, or they may cross in a different spot than you are walking, I guarantee that continued visits, maybe not this year, but sooner or later, will yield the opportunity to see these incredible amphibians make their way across the road toward the vernal pools. And even if there aren't any spotted salamanders to see, there are almost always spring peepers hopping across the road and their wonderful spring choruses from the ponded areas from the nearby woods. These are the sounds of spring, and we only have a short window to enjoy them and who knows, the next few steps along the road might reveal an incredible 6 inch long black salamander with yellow spots safely heading to the vernal pools...Enjoy!

Dave