

DMF Recommended Guidelines for Volunteer Visual Counting Groups

DMF staff conducted an extensive review of visual count datafiles during the winter of 2021/2022. Common quality assurance issues were found that negatively impacts data quality and comparability among years. These guidelines have not changed from Nelson (2006). However, we are getting time series long enough now to see the impact of inconsistent methods. We would like to have a cooperative workshop to go over protocols and results. There is not enough time to plan this for the 2022 spring. In the meantime, please emphasize the guidelines below and don't hesitate to contact John Sheppard with questions.

1. Counting should be conducted every day at a designated location throughout the entire spring spawning migration:
 - i.e.) Cape Cod region: April 1 – June 15
2. Counting should be conducted every day during the specified observation period of 7 am – 7 pm. Numerous deviations were found to this period. Interests to count outside of this period should be discussed with DMF staff.
3. Nelson (2006) recommends counting be conducted using 2-way stratified random sampling in which each daily observation period is divided into 3 sub-periods:
 - i.e.) 12-hr. daily observation period: 7am – 7pm
 - Period 1: 7am – 11am
 - Period 2: 11am – 3pm
 - Period 3: 3pm – 7pm
4. Nelson (2006) recommends a minimum of 3 10-minute counts be conducted randomly within each sub-period (2-way, 3 periods).
5. If the above sampling intensity cannot be met, it is recommended that volunteers conduct a minimum of 2 10-minute counts for each sub-period. Any sampling frequency below this minimum, reduces data quality from a run count estimate to annual run index with caveats.

Scenario 1 (3 periods, 2 counts/period)

- Period 1: 7am – 11am
- Period 2: 11am – 3pm
- Period 3: 3pm – 7pm

Scenario 2 (2 periods, 2 counts/period)

- Period 1: 7am – 1pm
- Period 2: 1pm – 7pm

6. Keep counting duration consistent:
 - i.e.) 10-minute counts

7. Counts within each sub-period should be conducted as randomly as possible; avoid consecutive counts, and avoid concentrating counts within a specific time of day (try to distribute counts evenly throughout the day):
 - i.e.) AVOID CONSECUTIVE COUNTS: 8:00 – 8:10; 8:10 – 8:20
 - i.e.) AVOID AGGREGATE COUNTS (Mornings ONLY)
 - i.e.) AVOID ATTRACTION TO “CHERRY PICK” OR COUNT ONLY WHEN FISH ARE PRESENT
8. Do not miss day(s) counting.
9. Each counter must record the DATE, TIME START, TIME END and # HERRING on the data sheet for every count.
10. If available, counters can record WATER TEMPERATURE, AIR TEMPERATURE, WEATHER CODE on the data sheet for every count.
11. Volunteers can record any other observations in the COMMENTS section of the data sheet.