

Day 3

Discussion about John Sauer's new analysis comparing past 10 years trend to past 40 years trend. Paul is doing some additional analyses while the conversation ensues.

Introduce the first exercise on projecting population trend. Jean gives the instructions. She reviewed the population trend exercise from yesterday, and explained that our methods for this exercise were the same.

We are asking panelist to evaluate the future trend based on what they know about the future. She cautioned panelists not to get too speculative, but they should use their knowledge of trends in urbanization, forest management, climate change, etc. She told panelists to consider the effects of absolute effects and insidious effects, if they are reasonably certain to happen. We cannot use speculative positive or negative environmental factors. She used the example of not considering an avian disease if it was not already a know threat. Panelists were encouraged to note the rationale when we make the scores make a first vote. We will talk about the reasons for the scores and revote. Jean explained the score sheet and categories in detail.

MIM – most panelists continue to agree with the CI, but many think that it might go to the higher CI. No one substantially thinks that a decline will not occur.

Most of the deforestation on the breeding grounds has occurred; therefore, the pattern of decline will likely continue.

WT – increase in trend might be because of the potential for socially driven effects, such as crashes because of small population size because the species hit a critical threshold.

PH – what happens to the population and what happens to the BBS if the population gets too small for the BBS to detect it? We might be getting to the place that the BBS. Jean clarified that we aren't assessing the BBS.

Group Discussion – about how to consider speculative positive or negative effects (e.g., new catastrophic disease, or unsecured mitigation for projects known to occur)

JJ - If nothing changes we are probably going to continue on the same trajectory. We didn't discuss anything yesterday that would suggests that the decline will abate.

BB – a positive—the maturing forest within the heart of the breeding range.

DB – we are on a trajectory and we haven't seen anything, except maturing forest on the breeding grounds, to suggest that the decline will abate. It is possible that we will hit a threshold where all sorts of unknown consequences will kick in.

BB – the amount of footprint of urbanization is probably small within the core of the range. Mining, however, is 1.4 million acres and it is on ridgetops and in the core of the breeding area

WT – wintering habitat (36% remaining in Colombia, based on modeling). Disconnected habitat summer and winter.

DB – 10 % of core area is in the area subject to mountain top mining. Direct habitat loss is one effect, but hard edge effects greatly increase the impact into the surrounding forest.

BB – 7 to 10 year lifespan of mines. Can speculate that oak regeneration will become a standard practice, but it is not a common practice now so can't be considered in this exercise.

RD – forest regeneration has been continuing with the declining trend, so is already factored into trend data and may not exert any more of a push back than in the past.

DB – says that coal industry is limited by depth under ground. Jean instructed everyone to use the figures from the EIS presented by Cindy.

Steve – poses lines of reasoning to support the tails in the distribution of scores

First, what evidence will support that the population is not declining or not declining at a rate within the CI?

JJ - Missing so many birds they can't all be declining

WT – there will be some remaining threshold of unaltered land as refugia

DB – the core will remain a stronghold where the birds are doing okay, we will lose the periphery but the core will remain as an acceptable refugia

MN – just uncertainty in the tails

JJ – the population may stabilize but it will be considerably smaller and we can't estimate what that size will be.

Display breeding range map and discuss periphery vs. core of range – everything outside Appalachian core. 20 percent of the birds in 80 percent of the range. 80 percent of the birds are in 20 percent of the range.

Clarification on what is considered the “core:” parts of BCR 28 – Cumberland Plateau, Ohio Hills, Southern Allegheny Plateau, the states of TN, KY, OH, Southern Southwestern Penn, all of West Virginia

JJ – says birds will be gone from Ontario

Steve poses question: Describe how you expect things to play out, if the decline plays out as the population continues to decline at the CI rate. Will it manifest through a contraction of the range or a general dilution of populations everywhere (maintaining most of the range)? Will the range change or will the population decrease everywhere?

JJ – Probably a two stage process—1st dilution, then winking out of peripheral populations.

WT – population may already be falling away on western edge of the range, holding on a bit better in the eastern edge.

PH – All populations are likely evaporating at a constant rate and contracting to the core

MN – outer perimeter will shrink and centers of activity will diminish

DB – some populations in the west will persist, but they will become a more consolidated center of activity with more obvious cores.

BB – the cores will center on where habitat is the optimal

DB – 150 years ago birds were common. Although these estimates are biased.

PH – Forest regrowth will likely be positive into the future. We have lots of sawtimber forest now and poor market conditions that are projected to get worse. Trees will die and fall down within this overly dense forest canopy, creating openings. Succession might begin to drive the landscape to better quality habitat.

JJ – Will the ownership change result in land use change?

BB – many investment firms are putting conservation easement on all but prime development areas. BB doesn't believe that huge population growth will occur in the core.

PH – remoteness of the Appalachians may also affect the development potential

BB – biofuel might be the next industry in the core

Steve asks: What will happen in the areas of apparent increase (blue areas)?

JJ – Ken pointed out that the Northeastern part of the range was an expansion, but there is no evidence that they are still expanding. Expansion is probably an event that happened, but is not still happening.

RD – The expansion into Connecticut, Massachusetts, New Jersey, and Quebec is thought to be true because of new records of CERW occurrence. But no evidence there is expansion fueling a population increase.

BB – PA to CT, conservation project there. Some unique Delaware watergap jammed with all kinds of birds

JJ - VT NH largely forested already, but not well occupied. ON – 20 minutes north of northern extent is coniferous boreal forest.

NE – still part of central hardwood forest. ON is in northern hardwood forest. Central hardwood forest is floristically that is suited. Northern hardwoods may not be so good.

JJ - Habitat in ON, may be suboptimal. Sugar Maple dominate tree in canopy, but nowhere else.

RD – most of NE is northern hardwood, not central hardwood

JJ – peripheral population probably fed by core populations

PH – vines may be the critical feature that improves habitat potential

DB – says vines common in heart of range.

JJ – core has to be strong to keep the population going.

DB - TN and OH have good productivity, but depends on variation in good and bad years is there. ON is probably more susceptible to variable weather events, and subject to more up and down ears.

Steve asks: what about winter survival?

WT – Tapuis in Venezuela could be potential habitat. Could it be refugia?

PH – birds are there, but limited surveys because roads are few

JJ – grasslands separates Tapuis from Andes

WT – do we know that there are large numbers of birds in other unsurveyed areas?

DB - Does the model predict habitat in Peru?

MIM – no, model based on original vegetation not current vegetation

PH - development is the major reason, very difficult to access

MIM – epicent is coucco

PH - Green on map is model. Potential habitat is mapped, on green map.. Red map is overlay of available habitat. Confidence in these maps is low. Other models are in development and evaluation is underway. These maps may error on the more restrictive side than on the overestimate side.

RD – is there a reasonable likelihood that the rate of habitat change will continue at the same rate as in the past 50 yrs?

MIM – main deforestation has already happened. Forests on steep slopes remain. Removing shade from coffee plantations is the major remaining cause.

Steve poses question: is there a life history or body condition measure that might help us understand what is going on on the winter range.

DB – body mass measurements. Correlations are not good unless necropsy.

PH – pectoral mussels might help us judge condition and compare conditions across areas.

JJ - We don't have a good tracking mechanism for tracking over time. We need to judge whether coffee plantations are providing quality habitat for survival. We know that birds are stay in plantations up to migration, but don't know if they are surviving migration. We need: site fidelity, fitness, and condition are the three variables by age and sex.

Steve Asks: what explains the >40 year trend (upper tail)?

WT – population biology, below some critical threshold and collapse because of social issues

MIM – if the situation is worse. Not so negative . we might be increasing the conservation potential in both parts of the range

PH – trent could increase in rate if worst climate effects are realized and variability in weather and disruptions in the evolutionarily adjusted patterns in spring increase. Climate change such that warming from the south toward the north will push big areas into less good condition. ON might be a better even though it is floristically marginal.

PH - Paper in 2004 about how we can learn more about CERW. Looked at movement of centroid had 2 long east and 1 lat north with increase in elevation. Not much more elevation to go. Jennifer Baldy Masters thesis with weather influencing occupancy from year to year.

RD – combination of effects operating at the same time: global change, oak disease what changes forest structure in the core, mining in the core. Combining to intensify effects on

demographic rates. Could still see wintering grounds changes as conversion of shade plantations to other uses continues.

BB – pessimistic category. Things could go wrong,

DB – doesn't take much to shift 1 or 2 % change. We don't have as many possible scenarios to reverse the trend

MN – human population change is not linear and is increasing. Our demand in this area for forest resources is declining, but increased population pressure globally could change the direction of the trend.

WT – if there is a glimmer of hope, it's in John's analysis that Northeastern BCRs have positive increase in last 10 years. This might contribute more on a longer-term scale.

BB – new England might offset mining in WV

Steve asks: what would be the effect of stopover points

PH – we don't know how habitat-specific birds are in migration. They might be location specific, but we don't know if land use changes would have an effect in those areas.

RD – that presents an opportunity and a risk. If we identified stopover points, and there are concentrations, we could focus or secure those locations. We need to know where they are.

PH – . . . Melinda has demonstrated some shift (get from Paul)

DB – this birds does seem to have specific locations

PH – weak information on where they are, weak evidence indications they are in the highlands, but information is weak.

Steve Asks: what about social behavior, Alle affects, etc. What evidence for CERW small population effects?

WT: potential for semi-coloniality

JJ – warbler in trouble 1992

JJ – inference from classical Cons Bio theory. Information about CERW coloniality is mostly inferred.

BB - Uncertainty associated with estimates

PH – enormous amounts of afforestation implies a poorer future for cowbirds.

Jean says reboot mental computer – ask here for point references

She focuses on no speculation; weight how strong is evidence and how likely is it.

Rescore Done

Sensitivity Analysis

Steve Asks – take mountain top mining – if mountain top mining stopped today, would your mode change to another box? Would there be a change in your signal in your score.

WT – given that the core has 80% of the birds and MTM is right in the middle, he might move his mode up one notch

BB – wouldn't change mode but it would increase concern. add another affect and it would probably tip the balance to another mode

DB – agrees

RD – might change distribution of points but wouldn't change mode because most of the impact has probably already occurred

MIM and PH – agree with Randy

MN – would shift some points but not change mode

JJ – not change mode, didn't comment on point shift

Steve says he didn't pick the examples because of regulatory needs

Steve asks: What if the social behavior of this bird is not any more colonial than other warblers?

MN – compare to Kirtland's Warbler – no change in score

WT – no change

DB – could affect ability of bird to occupy small patches, but wouldn't change mode

All agreed

Point spread wouldn't change much. WT and PH maybe a few points would shift to more optimistic

Steve asks: What if habitat losses in the non-breeding range stopped today? Additional conversions and losses stop.

PH would shift to another mode. Will not change survival over 1 and therefore the population would not go to stale or positive

Randy agrees – survival rate is critical element here birds in that habitat now would have a higher overall survival rate and could see an increase in population.

BB agrees –

JJ – wouldn't change mode

DB – fair amount of agreement if we fix survival at the current condition, it would not change mode dramatically. Maybe a few points would shift upward, but not change mode

JJ – if we don't lose anymore habitat and we other habitat conditions don't change any further the rate of the past shouldn't change. Migration is probably the mortality bottleneck, and therefore might shift the trend.

BB - Maintain the current decline.

MIM – will help species because pressure of population has been constant with this species, the decline as predicted. Increase stability with predictability of habitat availability over time. If we stop the status might shift up. Increasing habitat availability would get better

MN would improve 1 or 2 levels.

WT – would probably move mode up one category, but Dave's and Jim's PVA indicate that just increasing survival alone is not as useful. Stability on wintering grounds if it improves condition will probably help

DB – core +/- core survival and reproduction are within tracking distance of being a stable population. A bump in survival could bump into stable or increasing

WT – shade coffee plants are suboptimal,

Group discussion - data on non-breeding habitat use are new and haven't been reviewed by anyone

JJ – takes folks back to migration habitat.

RD population level survival could go up.

Loss of habitat in wintering ground may condition

Steve asks: nest success and number fledged go to best case scenario most optimistic as they vary across the range, if that happened would it change your mode. Most optimistic rates you can envision

RD – would change mode

JJ – would change mode, but not go positive or stable

BB – not change because doesn't know how it would affect wintering success

JJ – when repro rates have gone up, but

DB – effect does depends on whether winter mortality

PH – it might buffer the migration loss, but it wouldn't necessarily make the difference because the other factor could still swamp the negative effect. We could “fill the bucket”

DB - Bucket with holes and filling the tap on faster (pers com PK)

WT – say that space is full, if you are always filling bucket. Range contraction is still an issue

JJ – could have consequences on lifetime reproductive success if it compromises survival because of late migration start, for example

WT – early impact of increased reproduction, speculation

Steve proposes two more: Oak loss & parcelization

Any other factors that would drive you to change your mode:

- Contrary evidence of decline because of better population monitoring
- Decrease in Migration risk, but he cant think of how that would happen
- Post fledging survival—we don't know what is going on there and it could be critical if we could manage for it
- Corvid populations decline
- If we find that there are differential problems with females that we cant figure out by studying males. It could make a big hole in the bucket. Could dramatically increase assessment of risk potential

Combinations of changes could change scores for the better or worse.