## 14 June

discussion of table received from Sauer
instructions for trend projected forward - don't speculate where there is no data, but where you have information,
scoring time - 8 people distributing 100 pts
15 in no decline
60 in better than 40-yr trend (-2.0\%/yr or better)
285 in lower range 40-yr trend (-2 to -3.1)
310 in upper range 40 yr trend ( -3.1 to -4.2)
130 in worse than 40 yr trend ( $-4.2 \% / \mathrm{yr}$ or worse)
Wayne - some people maybe considering small-population, Allee effects, etc.
Paul - it's like using a stethoscope through a parka - the instrument may be too fine to detect the patient.
Jason - don't see any reason to think trends aren't going to continue or get worse
Brett - focusing so much on negatives - all the bad things that could possibly happen, I agree they probably are negative, but I think there are some positives - aging forests are probably a good thing - maybe not for foraging habitat but for other stuff
Dave - we're on this trajectory and haven't seen anything to date except maturing forest that suggests trend won't continue or worsen. I'm worried about threshold concepts below which things get really worse - terms of wintering habitat remaining
Brett - risk and landscape - whole urbanization thing - ain't nothing. Footprint will be miniscule. at the same time, was thinking mining would be same thing. If it's going to 1.4 million acres, that's huge - those will be ridetop - prime breeding habitat ... 10\% in core area
Wayne - plays into percolation theory. if we get down into winter habitat, down to $36 \%$ if you get down around 30\%, get disconnected habitat, may have trouble getting from patch to patch
Dave - get back to 10\% of core area - if you buffer all those areas and impair repro performance in the buffer, greatly increases repro performance - great decrease in net performance in core
Brett - as devil's advocate - but after mining, could get good habitat back, but we can't speculate - they can do it, but they're not ...
Randy - and the estimate of 1.4 million acres is an older estimate and it ends soon there will be more coming.
Dave - when coal people made presentation in March, they made it pretty clear this is sort of going to be it - they're going so low down to get to these seams, and putting overburden back on top of it, they aren't expecting to go back. But economics may make it feasible that they'll go after some more seams

Steve - out on the "better" tail - what are the lines of reasoning someone might use to support scoring in the better two options, or is this just the result of your uncertainty.

Jason - missing so many birds in our survey - can't all be declining
Wayne - at some point, will be land people just won't use, and that will remain - acts as refugia, so that's potentially where birds will hold on - not sure what land would look like - land that can't be developed or farmed in South America ...
Dave - perhaps in the core where birds might be demographically ok, will lose periphery, but core will be ok
Mark - stat estimates are so uncertain that there is some probability in the tails
Jason - going back to Dave's point - pop may stabilize, but will be so much smaller than it is now, will need to rethink what we're doing
Dave - comment on "peripheral" what we're talking about is everything outside of the Appal core - about $80 \%$ of the range - peripheral isn't just Paul down on the Miss on the edge ...
Brett - what percent of birds in "periphery"
Dave - 20\% of the birds are in $80 \%$ of the range
Jean - what do we mean by "core"
Dave - I think BBS map does reasonable job - BCR 28
Wayne - even within that, WV portion
Dave - Ohio hills - BCR 28 goes too far n and too far s. cumberland plateau, ohio hills, s Allegheny mtns in states of TN, KY, OH, and sw corner of PA, and WV
Randy - Jason, do you expect to lose what you gained over next century Jason - yes. if pop trajectory does not change, will lose northern pops

Steve - what I saw was that as future rolls out, will be decline by any measure, and pretty substantially at 40-50 years. So across range, fewer birds in the future. As we move out towards that 100 year horizon, does this, in your opinion, play out as contraction towards the core, or is this sort of a general dilution where core area becomes less and less but whole range still has birds but with less frequency. Do we have vastly different range in the future?
Jason - two-stage process. Dilution then winking out of peripheral populations - already at lower abundances
Wayne - from plotting lambdas against BCRs, population seems to be falling away on western edge, holding a bit better on eastern edge, but still there and in core, declining, so combination of contraction and dilution - I see that western edge falling away fast
Paul - process like drop of water on table - all evaporating at constant rate but ends up contracting to core
Mark = some effect of home ranges sizes, MCP vs kernel - outer perimeter may stay, but centers of activity within will diminish
Dave - I think I agree with that. Still some areas in west - Ozarks - that are likely to persist, but consolidation will happen, with more obvious holes than we have now
Brett - where will center be, I wonder - climate, etc. not sure where core will be

Dave - historic accounts from Miss RV and Ohio RV - core has probalby shifted from waht it was historically
Paul - I think we have a bias in the oservations - looking at BBS, in terms of climate, SE OH and wWV will be last stronghold
Brett - because that's where the strength is now
Paul - yes
Teresa - clarify
Paul - Ohio Hills in ohio and wv
what Pat talked about and FIA folks told us about forest trends - now have lots of sawtimber-sized forest and poor markets conditions projected to get worse - means to me trees will eventually die and fall down in context of this overly dense forest canopy, which is going to potentially create gaps that will grow back, causing better habitat due to natural development
Jason - but ownership of forest changes
Paul - overwhelmingly private already
Brett - will shift to less timber ownerships can only build so many homes - some conservation easements, but what acres do they leave out - the acres around lakes and in prime habitat - this BCR is not where we're seeing big human pop growth, but will see $2^{\text {nd }}$ homes popping up
Paul - and if price of fuel stays high, may slow
Jason - unless firewood cutting come in
Brett - might be biofuel, though
Wayne - interview with head of Chevron - even if we lose petroleum reserves - have forests, coal reviews - Appal may be next gas tank
Jean - but can't speculate
Wayne - just balancing Paul's overly rosy picture
Steve - thoughts about "expansion" part of the range?
Jason - Ken's point was excellent - it WAS and expansion - no evidence continuing to expand - some work going on that may help figure that out
Randy - geographically - looked like was eNY,CT, MA,
Jason - few records in VT ...
Randy - no evidence its continuing to fuel an increase
Jean - do you see anything different in the future
Brett - one thing I'm just noticing - the PA/CT corridor is a conservation focus
Jason - Delaware water gap is jammed with birds.
Jason - NH is ? $70 \%$ ? forested, and Vermot it not much less - so if could lure birds in ... but in Ontario, go 20 min north and you're in conifer forest, so not going further north. get to ME, same thing - little bit of hardwood.
Jean - anything different going on across the Delaware Water Gap
Paul - that area is still part of the central hardwoods region. you guys (Jason) aren't . so this expansion has been into an area floristically predisposed to receive them. If climate change is pushing the birds north, may be pushing them north into less good area - northern hardwoods is not as good as central hardwoods
Jason - your point that evolutionarily our area is suboptimal habitat is good - where else do you get $90 \%$ sugar maple canopy?

Randy - may be possible explanation for why expansion goes so much further east (vm I think)
Jason - models say peripheral pops aren't supposed to do as well as core populations always getting rescued ...
Paul - vines - no vines in Ontario
Dave - grape vines everywhere in good Cumberland habitat
Paul - this may be a differentiating thing - every tree has vines up trunk and out limbs and I'll be juvenile dispersal habitat is grape vine tangles
Jason - if our pops are on the edge, that means core pops have to be producing indivs acting as sources - and we have no evidence - all the evidence is our pop is producing better than anything that's being studies
Dave - OH and TN (vm - I think) pops are doing better when not having ice storms
Dave - would think more catastrophic weather events at periphery - that variability is somewhat fortunate because you were there to measure it, but reflective of reality

Steve - analagous conversation to playing out of declines spatially ... want to shift to winter survival - won't pose a specific question now - can we look at the wintering range wrt winter survival

Wayne - yesterday, something curious - Tapuis - is that typical or common habitat?
Tom - in Ven?
Paul - se Ven highlands very difficult to access - whenever they go, report finding birds, but \# of roads very small
Wayne - but that's good for cerw - if they occur there, where it's very hard to develop, could be
Jason - but it's very disjunct - hard to know how many birds it can get - it's disjunct form Andes - grassland in between
Brett - but some going there already
Wayne - no sense of how many of our birds are going to Andes - could be going to Tapuis and we wouldn't have a clue
Paul - it's conceivable - that's where studies would be helpful
Dave - why no red in Peru
M-I - main part of Peru is desert
Dave - so no habitat based on model? (get map up - not much green there)
Randy - wrong elevation, or lost forest?
M-I - model map based on original vegetation not current vegetation
Jason - so Tapuis represents up to a third of remaining habitat
Paul - difficult to access. our confidence as we think about the S Am map is less than we think it is - other models for the bird - El Grupo has generated other maps. now are working to evaluate pops in areas of disagreement among models to see if it's as bad as we currently think or somewhat better. little activity in Tapuis.
Teresa - clarify bias/certainty
Paul - map shows somewhat less habitat than there might be
Randy - is there a reasonable prob that the rate of hab change within cerw elev going to continue at rate of past 50 yrs ?

M-I - main deforestation in last 50 years - right now have steep slope forests and plantations that hold cerw. have to connect patches, maintain patches
Randy - but not anticipating much more major deforest
M-I - most deforestation already done - only steep stuff left
Steve - measures on warblers themselves - body condidtions, that happen on winter range?
Dave - traditionally just measured body mass to measure condition - corrected for wing chord - can measure that and determine that birds that are heavier can survive at better rates
Jason - it does correlate with body fat
Paul - and in winter, probably not any fat in a true wintering bird - fat is just a fuel source but are measures of the shape of the pectoral muscle that in company with those would tell us whether birds in habitat A are in more robust condition than in habitat $B$
Jason - not only want to compare across habitat types, but track through season to see if they're maintaining condition - only way to see if coffee plantation are providing good habitats or if birds need to shift habitats to bulk up. Know birds stay at plantations up to migration, but don't know if they're surviving migration, or if they're returning. Some data suggests return.

Break
Steve - what lines of evidence are behind the worst tail scores?
Wayne - at some pt pop could get to level it just collapses due to sociality issues
Paul - I would see the trend increasing in rate if my worst fears about the potential effects of climate were to be realized in that variability of wind patterns - hurricanes in fall and disruptions to evolutionarily adjusted patterns in spring (prey avlblty, leaf out -vm ) increases. If so, big portions of geog range will be less good, will make Ontario look climately better even though its floristically marginal. Paper 2004 - how to learn more about ceruleans - looked at movement of centroid of BBS - weighted average of lat long - 2 long degr east, one degr lat north, and because of what I had perceived, incr in elev - not much more elev to go, not much more north to go. and tight relationship between weather and areas of rel abundance (Jen Baldy research).
Randy - to me, would be a combination of effects operating at same time - global climate change, oak disease, mining effects that hit core - all accumulating to reality incr threat, affect demogr param. And on the wintering grounds, even tho M-I thinks major deforest over, think could see conversion of coffee plantations, degradation of habitat, so get steeper pop decline.
Brett - it's just the pessimist's category. So many things that can go wrong ...
Dave - that's the way I feel - when I think about the pop change, doesn't take much to get a 1-2\% change in that direction, and we have lots of candidate scenarios in that direction, and not so many that balance it in the positive?
Mark - I'm in that pessimist's group Brett's talking about. Specific example. Pop biology of humans is not linear. Resource requirements resulting from it not linear. Even tho demand for timber may be going down, in next 100 years, I think there could be another upward pulse due to pop issue.

Wayne - if there's any glimmer of hope, looking at John's analysis, for last 10 years, Ct, NJ, Pen, NY have positive increase - not credible, but positive - if it plays out on a longer scale --- maybe we're seeing a migr of the core - I don't know
Jason - but so little space there for them to move into
Brett - might be enough space to offset mining loss - might be a million acres
Paul - missed it - stopover habitat
Randy - if we could identify those locations and they really are concentration points for the species on migration, could focus conservation. If we don't identify them, it's a huge risk to the bird
Dave - how good is the evidence that this bird more than most other warblers has very specific stopover places and is not using the whole array of habitats
Paul - in Cent Am, Mex - rel weak but interestingly suggestive - good evid they're not at lower elev and generally distrib, but evid they're in the highlands in more than a couple of places, but no resources to get better info

Steve - coloniality, Alle, threshold effects - inferred from many other studies about sociality - part cerulean based, part general info
Randy - but Jason and Paul have notions about this - I don't know the details, but it sounds intriguing - never seen anything in the lit
Jason - there is a suggestion as a warbler in trouble, and Dave's seen it, we've seen it, Paul's seen it - are we measuring the right variables, who knows. Is it just conspecific attraction - presence of a conspecific means good habitat - coloniality implies benefits from interaction, not just location - who knows ...
Steve - last pass
Brett - uncertainty associated with estimates
Paul - enormous aforestation in southern Miss Valley is a poorer future for cowbirds
rescore, reproject
23, 67, 237, 365, 108 (earlier was 1560285310 130) mode is better part of 40-yr trend ( $3^{\text {rd }}$ category) for 1 person mode is lower part of $40-\mathrm{yr}$ trend ( $4^{\text {th }}$ category) for other 7
modal category value ranges from 35 to $80 \%$
Steve - impressions?
Jason - less weight on worst scenario
Wayne - 2 more people in upper tail
Steve - scenario - everyone has a mode in their distribution - consider moutain-top mining. Let's say mountain top mining (stopped today) would your modal category change? This isn't my dream question - just trying it out ...
Wayne - core has $80 \%$ of indivs, and mttop mining smack dab in the middle of the core Brett - with something else, probably will
Dave - wouldn't move me, but would shift balance to equally weight two categories
Randy - prob would change distrib, not mode

Steve - what if social behavior - hint of coloniality - what if we find it's as non-colonial as other warblers (or could go to major coloniality - can discuss asymmetry) - what would that do to your scores?
Mark - ref I would use is a species like Kirtland's - compare rel coloniality - look at how constrained that breeding range is, small patches - I would build an argument that that, in itself won't change things
Wayne - won't change my mode
Dave - behavior may reduce ability to occupy small patches - won't change my assessment
Jason - no change
Paul - no change
Teresa - no change in mode - all: yes

Steve - what if everything in habitat in wintering habitat stopped today - no additional changes, conversions - whatever proposition $A$ is not true - isn't going to project into the future
Wayne - no net loss?
Paul - you mean if existence and quality of existing winter habitat stabilized at present levels
Steve - yes
Paul - this is the first where I might just move to the next better category
Steve - OK - would it push you all the way to stable or increasing
Paul - no - can't increase survival over 1
Randy - mode would go up, not to top (stable or increasing) - I would expect survival would at least stabilize, and increase in existing birds - lessen decline
Brett - mode would go up at least 1 category
Jason - wouldn't change
Dave - half a category - predicated on fair amount of agreement that birds are declining and if we fix overwinter survival under current conditions, wouldn't get better
Randy - if can stabilize habitat, current birds would have better overall survival rate than birds that would be affected by loss - will survive to breed, contribute to better situation.
Jason - so if we don't lose any and remaining don't degrade - I think Dave's idea that survival wouldn't change is valid. if we buy that birds are persisting in habitat in S Am, then losses are on migration - saving wintering grounds won't change that - not enough in just stopping habitat loss - that stabilizes trend, but doesn't improve it -
Brett - I think that's what some of us are saying - we would go up to in line with current decline
M-I - stop deforest will help species - pressure has been constant. If we can stop pressure then decline will continue, but every year birds will come and find forest and survive
Mark - improve mode one or two levels -
Wayne - I'd probably move mine up 1 category, but what holds me back is Dave and Jim's PVA which suggested just incr survival won't be useful. But I'm thinking that,
as M-I suggested, that may translate into better condition. Probably move it up 1 knotch.
Dave - if core, we're probably in the range of productivity, so if we could bump up survival, it might make a difference.
Jason - if just stabilize, that won't influence survival unless there is some value to predicatability/fidelity - not having to prospect for home every winter ...
Dave - our measured survival rates incl loss of habitat . we might see those lost it
Jason - black-throated blue migration mort is 15 times higher than at other times. unless we're improving habitat ...

Steve - clutch size and juv surv went to maximum values, would that change your mode to more optimistic category
Dave - why not just say best-case scenario on clutch size and juv surv
Paul - clarification? -
Dave - most optimistic rates you could envision for \# fledged
Brett - env'l max is going to vary across the range
Dave - what we're actually saying to adjust numbers for most optimistic you could envision for each region, and compile those
/discussion, all birds reproducing at local maxima/
Randy - would increase to optimistic
Jason - would bump me up but not to top category
Brett - if we produce all these birds and winter hab can't feed them all, I wouldn't go up a category
Dave - some birds incr due to incr production, some do run out of food on wintering ground
Paul - it makes me happy, for sure, but absent something else, pop is as big as its going to be every June, so we're pushing the top up higher, with buffers variability on migration, but if $S$ Am is full, no joy
Wayne - if you're always overfilling the bucket, then it never declines
Paul - if it's always the same sense
Wayne - I think I would be more optimistic - effects on both survival and repro. you're pouring in plenty of water, and trend should flatten out some
Brett - we could be filling the bucket - we don't know
Dave - and to continue - it's like a bucket with holes in it, and you're turning the tap on faster - the level can increase.
Jason - if we do maximize every pops repro, have neg implic on life span compromising future survival
Wayne - but earlier babies are worth more
Jason - and we're well into the realm of speculation here!
Steve - other scenarios - oaks, fragmentation
Brett - is another way to ask this - what factors would cause us to change our mode?
Steve - yes
Dave - migration is the most significant period of loss. I can't envision a positive change that would make migr less risky, but that might allow me to bump up a category

Randy - I was going to say the same thing. I don't know if I have a sense whether conditions that lead to mortality during migration have been changing in the last 40 years
Jason - and winter conditions influence spring mortality and breeding stress influences fall mortality
Dave - other black box is juvenile survival. Grouse go from 10-12/nest to 1-2 in postfledging period in exactly the same habitat. I think all of our productivity could be compromised right out of the nest. If you could double post fledging survival could have a huge impact. That would bump me up.
Mark - West Nile wipes out the jays ...
Paul - everything we think we know is based on what's known about males. Anything different about females could make things much worse
Jason - or much better
Paul - well, it could, but I don't think of females as advantaged rel to males. Maybe I'm wrong ... Wouldn't change rel measure of my scores, but I would shift down yet another row to very, very bad.

Steve - any desire to rescore again?
Paul - all scenarios only a factor at a time - multiples might change things ...

## Lunch

Setting population goals - Randy Dettmers ringleading Tom Will joins the panel

Randy - migratory bird program has a management need to develop conservation action plans for a certain set of focal species. A way to account for our time and be sure we're doing good things for birds. Through this process what we'd like to do is inform the CERW conservation partnership. The CERW Technical Group has been working on technical ways to conserve the species. We'd like your input on what is an appropriate goal for CERW.
An appropriate goal for a partnership of multiple actors - not all government.
Questions, then discussion.
Dave - time frame?
Randy - 40 years from now. but initially, will try to give you some categories:
arrest decline w/in 40 years
stable population equal to current population
pop increase less than $2 x$ current
PiF goal: $2 x$ current
Randy - what is the most appropriate and effective goal for a partnership, for 40 years from now, bearing in mind the partnership includes timber companies, coal mining companies, so probably shouldn't be completely unrealistic

Arrest decline in 40 years - 3
Stable pop equal to current pop-2
Pop incr less than $2 x$ current - 3

Brett - Looks bimodal. I think there's different interpretation. I think the most realistic is \#1, but I don't think it's necessarily the best for the population, so maybe should be something a little higher we should shoot for.
Paul - looks uniform to me. Issue of what do we think can happen and what should happen. If we only arrest decline, we only learn to stop negative stuff, no effort to learn how to make pop grow. By going for stable or an incr, are put ourselves on the spot not just to blunt negative, but also to find a way to enable positive
Jason - if we can stop the decline, we give the birds time to "figure things out". Would I love to be able to put my mark down on 4 , or even 2 , or 3 ... But
Randy - obviously a little bit of personal perspective, and what do we think, societally is a reasonable mark. So you feel if we arrest decline, we would have done something successful to help the species.
Jason - if we arrest the decline, that would be monumental.
Randy - would you see any additional benefits to trying to go beyond that and see we should have a pop equal to current
Jason - sure, but I don't think it's the right goal now.
Dave - the pragmatist in me says arrest the decline, but the dreamer says the Miss is going to be growing big forests that can hold birds - so aim high. We can always hit low. Let's envision the lower part of the habitat being productive.
Brett - time line issues - I didn't do a good job of this. We'd all like to go to the 2 x - when is that going to happen. May be arrest is legit at 40 yrs but at 50, something else is.
Jason - but I like the thought that setting the goal a little high - goals are never met ...
Dave - maybe set "arrest decline" at 20 yrs and get on with recovering \#s
Mark - that's what I wanted to say - arrest decline in 20 years and hold onto numbers from there on. I thought the PiF goal ( $2 x$ ) was a ridiculous goal - how will people outside the bird community perceive that.
Paul - current decline for 40 years takes us to 25\%-100,000 indiv. if we assume 400,000 now, or 150,000 if we assume 600,000 now.
Wayne - if we reduce it to $2 \%$ in 15 yrs and $1 \%$ in $\qquad$ yrs $=170,000$ indiv.
Paul - that's why my suggestion is to aim to bring it up, to work hard on stopping decline.
Wayne - who are we selling this goal to - anyone involved in mgt isn't going to be working any harder than they are already. That's the only reason I can see for aiming high - a PR gambit.
Paul - I wasn't saying shoot at $2 x$, shoot at stable pop to incr chance of arresting decline Wayne - what gives you the increased chance of arresting decline
Dave - if your goal is $2 x$ or $1.7 x$, ask how much habitat you need, and start growing it, so then it makes a big difference what your goal is.
Wayne - you can have a mech to shoot for, but if it doesn't recognize constraints, doesn't help you achieve goal. Have to recognize that, not w/in40 yrs, but within next century, could have $2 x$ as many people. If all we do is arrest the decline, that's huge. That many people, that much resources use ... If we can secure habitat for 170,000
indiv, given all the demands on ag development etc., that's reasonable. Whereas going from there - I'm not sure it's reasonable
Tom - my approach is to think about what a goal is. I'm sensitive to discussion about what's possible. OMB aside, primary reason for a goal is to offer a visionary statement. One capacity of a goal is its capacity to inspire. The goal is a communication tool. Within a partnership context, need a wide array of partners, a lot of those partners are interested in other things. Trying to bring along an array of partners interested in forests. In my opinion, that implies an increase - that's the inspiration I would aspire to. Could step down to "arrest decline" - I betray my PiF background - I'm not interested in just maintaining - I want to keep common birds common - I want the spectacle of birds in the canopy.
Jason - but don't you value the achievement of arresting decline
Tom - I sure do - I want to build that in as a first step.
TJ - maybe a nearterm goal of arresting decline. There's a reason everyone's here we're looking at this as a potential candidate. An interest-based goal is more powerful - it's in the interest of some people out there to keep this species from achieving a position on our list.
Wayne - so what is that goal
Dave - but some, arresting the decline dodges the bullet
Paul - last slide I showed - we should be in a position to produce, not to protect. I think we challenge ourselves when we set out to produce. Experimentation may tell us control is the best for the birds. But if we're only worried about stopping the decline, we lose clientele, looking at nature the wrong way

Randy - would this goal - arrest decline within 20 years and achieve population equal to current pop in 40 years - appeal to you more?
Jason - that's a rewrite of \#2
Randy - it's one version
Jason - what are your other options
Randy - hold current pop steady
Jason - instantaneously arrest decline?!
Paul - the way you just wrote it suggests population expanding rapidly at 40 years
Brett - it also suggests that \#3 is in there - at the end of 10 years, will have population increasing
Dave - so if we decr for 20\%, have to have some crazy increase for the next 20 to get back up
Randy - so maybe the second half isn't realistic
Vicky - what about no \# for how fast growing at 40
Randy - arrest decline within 20 and growing population within 40 - shooting for replacement. (this becomes the $5^{\text {th }}$ option in the ranking choices)
Paul - could say - have to prove it was growing as indicated by trend by BBS with interval that doesn't include zero
Randy - don't want to set anything that numerical
Rechoose (Tom doesn't think any of these are goals)

Arrest decline in 40 years - 1
Arrest decline w/in 20 yrs and growing population w/in 40 yrs - 7
Tom - I think this is a good goal from the standpoint of a technical committee, but not in terms of promoting action. I want something that says "give me something to change my life."
Dave - I think there's a difference between having the goal and how you choose to communicate it - my version is "Bring back the Cerulean!" - the communication is different from the technical aspects
Mark - I agree - "we're going to be going in a new direction!" and that's still this goal.

Steve ringleading - identifying conservation actions and research needs
Maria-Isabel - there is a "legal" stamp with a cerulean warbler on it. the additional fee that you pay for it goes to American Bird Conservancy for habitat protection purchase online from USPO.

Steve - We need to have a coherent way to go about brainstorming a list ... Think about some broad categories of problems that have to be solved. We built a list based on yesterday's work and can do some assessment, see if it needs to be added to ... we'll have you show us which ones are most important, or needs to be dealt with first.

10-category list on screen
Jason - 3 of those are at deeper levels than the others - forest structure, mining, collision risk are subsets of other or absent items Add a category on "reduce direct adult mortality" and put "collision risk" in it
Dave - take "conduct demographic research" out - deal with it when we do research needs
Tom - I'm OK with these changes. I think the intent on restore and improve forest structure - restoration as in "make new" and improve as "make better"
Jason - I'm not sure mining is different enough
Dave - keep it explicit
Paul - approach to that will be different than approach to fragmentation
Brett - I agree with Jason, but I'm OK with it on there
Jason - I agree with Paul that it takes a very different approach
Randy - maybe add something on improving communication ...
Steve - is that a subset of all of these or a basic action
Wayne - to do any of these you'd have to educate somebody
Randy - is it a single process, or many processes, one in each category
Tom - I always think of education and outreach as a strategy to carry out an action plan, not as an action plan
Jason - education plan should be somewhat umbrella-ish
Brett - how will we rank it with the other ones

Jason - can't do the other ones without it
Steve - I'm thinking taking it off just to ease ranking
Randy - hard to rank - take it off
Jason - want to revision research issue that Dave brought up - was only one that's not
... I worry that basic research on the biology of the bird is going to get lost. our response variables are going to aspects of the basic biology. I'd love to think we had the luxury of doing basic research independent of the research needs for conservation.
Paul - we don't have that luxury - it's too urgent just to do aimless research - needs to be doing things that inform conservation
Jason - need to keep track of response variables to be sure we're doing that.
Wayne - most of those actions affect species, then one conducts research to see if actions are evaluating effectiveness and improves it and cycles back. I would delete demographic research because those will always be there - which actions are actually going to do.
Steve - would you replace that item with an adaptive mgt program
Wayne - if we're being efficient, we're going to have an adaptive process anyway Rank

Break
Restore habitat in Andes - 7
Non-habitat limiting factors - 5
Restore breeding habitat - 4
Improve core habitat - 4
Decrease frag in breeding habitat - 2
Decrease fragmentation in nonbreeding habitat 2
Protect migration 2
Reduce impacts mining 1
M-I - what do you mean by restore habitat - need to reduce fragmentation first
Randy - so let's talk about what should be done with Andes, and then can deal with what we do to accomplish that
Tom - when we had a parallel situation on the breeding ground - we made distinction for restore and improve, so we made both in nonbreeding ground. I personally saw that as create new, improve existing ... We basically mean improve quantity and quality
Randy and Tom - basically deal with "habitat issues" in the Andes
Steve - want 5-6 key elements for each of these
Tom - increase overall amount of habitat strategically by filling in gaps - mitigate frag M-I - reduce deforestation rate
Jason - conserve current habitat
Paul - strong action on that front - Pro Aves is biggest example
Jason - includes conserve shade coffee - prevent conversion to banana-coffee plantation

Paul - improve understanding of distribution of age and sex groups among habitats, and value of different habitats
Dave - complete and maintain accurate habitat map
M-I - research on wintering grounds
Randy - some way to address incentives?
M-I - give money to owners to pay taxes so they can conserve forest
M-I - reduce incentives for development
Paul - is it different to say - provide mechanism for price support for crops grown on the land so that appropriate ag continues
Tom - create and maintain programs to bring conservation dollars to the Andes
Steve - before move on to \#2, did we prioritize this list in the process of building it - are there 1 or 2 that are really key ...
Justin - some won't happen without others getting done
Tom - I'm encouraged that this nonbreeding grounds thing rose to the top of the list and I hope that FWS in particular gets the message and spreads to other agencies that conservation of birds at home means conservation internationally
Wayne - it's at the top of the list because we split the breeding ground
Vicky - we split them both. But when one piece of the nonbreeding ground rose to the top, we let it represent the other pieces.
Justin - and we can't recover the bird without addressing our own back yard - we do have to consider the whole cycle
Wayne - which is why it's so disappointing that migration habitat scored so low
Steve - identify and address non-habitat limiting factors
Justin - model potential for effect of catastrophic weather events on all stages of life cycle - ice storms, droughts, hurricanes
Wayne - explore potential effects of mercury, disease
James - collisions
Paul - explore foraging constraints on migratory fattening
Jason - learn about postfledging survival
Tom - establish extent and pattern of migratory connectivity
Jason - learn about dispersal
Jason and Paul - biology of females
Brett - this list is moving away from actions - very academic
Vicky - isn't that peculiar to \#2 that we have to identify first?
Randy - can you specify what we might learn ...
Paul - we study habitat use by males and learn about song perches - we may be learning about stag bars. If females use habitats differently, we may be considering the wrong habitats.
Brett - I think any of these should have specific examples
Steve - comments on list
Vicky - collisions isn't on there
Jason - intrinsic limits - study them
Dave - collisions
Teresa - what

Randy - assess and reduce risks about collisions
Tom - what action goes with understanding catastrophic weather
Jason - allows us to understand what productivity we need
Dave - also allows us better to communicate with policy makers about implications of climate change
Teresa wording - study intrinsic limits to fecundity to target management
Jason - I like that link
/discussion of Iverson and Prasad paper on climate change and forest composition/
Teresa - investigate correlations between climate change and forest availability to better predict future population change and management needs

Steve - want to do one more, before Dave has to leave
Dave - could we lump breeding habitat as we lumped Andes - lump 3 and 4 - restore and reduce fragmentation, improve
Teresa - Restore and improve habitat in the breeding range (subsumes restore, reduce fragmentation, impacts from mining, habitat structure)
Paul - improve understanding of relationship between specific silvicultural practices and habitat use by segments of the population
Tom - find resources to support demographic research on cerw at necessary scale
Vicky - can you lock up lots of habitat in core
Paul - the Wayne NF is the core
Brett - bigger problem is anti-public land sentiment
Dave - state has acquired a lot of land in TN
Vicky - closed to coal?
Dave - no, and coal is worth 10x the land.
Teresa - target large patches of forest lands in the core for CE
Brett - develop BCR-specific HSI models, produce estimates and maps of habitat area
Tom - develop cerw-friendly forest reclamation (for mining) prescriptions
Brett - tax incentives, or state/fed programs for cerw conservation
Jason - we know what bad cerw habitat is, not good
Dave - I'd put that under demographic research
Randy - develop and communicate appropriate general management prescriptions
Wayne - are there conflicts in appropriate management?
Vicky - fledging habitat vs adult habitat - gaps in forests?
Jason - on our study site, nests near gaps fail (gaps are > 10 sq m).
Paul - female wants to take her fledglings to the biggest grapevine tangle she can find, which will be near a gap. Your study site doesn't have grapevines, and that probably influences what you learn about gaps. Our experimentation is designed to find out when young habitat becomes good (vm - i may have this wrong)
Jason - vine may be critical, not gap - in ours, best post-fledging habitat is in the canopy
Wayne - seems it would be useful to understand why Ontario is different
Jason - my gut is that females like gaps because there are caterpillars there, are trying to minimize energetics in foraging, so moving closer to gaps, which, in our area, is exposing them to visual predators - blue jays. Gaps with vine tangles would reduce the conflict

Dave - think I'm kind of missing is that we have all this mature forest - how do we move to higher quality? - subsumed under other points
break

Steve - on to "protect migration habitat"
Wayne - as with others - mapping migratory stopover habitat is necessary to prioritize.
Brett - then start protecting it
Paul - document patterns of use of migratory stopover habitat by population segment
Wayne - did we already deal with migratory connectedness
Paul - include it here so we get passage patterns and timing from isotope data which can feed into risk assessments from wind patterns and weather
Brett - if you can get migratory connectivity and use it to link schools along migratory routes to the migratory routes
Randy - do we suspect that in spring migration, after Gulf, habitat on the Gulf coast is critical, or do they just continue inward?
Tom - conventional wisdom is that if birds encounter n wind, they're in trouble and first place they can get to land is critical? The Biloxi stopover meeting - need fastfood, need real food ... need to rebuild coastal vegetation that provides shelter and food. Always was there - if replaced entirely by condominium, will be a problem
Wayne - could sell that given the loss of buffer wetlands and flooding
Vicky - can get some migratory habitat in built environment
Jason - off-shore oil platforms are apparently an enormous source of mortality - lights are on 24-7
Wayne - would be appropriate to identify info deficits by having a stage-specific life history model to identify critical seasons for various aspects
Tom - landfall habitat - as long as we have fire-escape habitats, add the convenience store habitat, and assume "full-service hotel" is breeding-bird habitat inshore further

## Steve - let's review

Tom - conservation education under all points?
/discussion of ways to use and improve usefulness of FIA data/
Dismissed
Tom - announcement- next fall, thru winter and spring and years thereafter - can go online to Ebird and watch the cerw migration live on your home screen www.ebird.org/primi

