0024094

From: Britta Muiznieks
To: Mike Murray
Cc: Thayer Broili; Darrell Echols
Subject: Re: Draft DFCs for PIPL and Sea Turtles
Date: 09/16/2009 02:44 PM
Attachments: PIPL nesting & breeding pairs (Southern Region).xlsx

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Mike-
I've spent some time looking at historical plover data to see if I could come up with something better than the 5 year average of 24% of NC breeding pairs. Looking at the data again, it may not be too unreasonable. What I don't like is that these numbers are strongly influenced by what is happening on CALO. Other than CALO there are very few other nesting pairs in the state. This basically means that if CALO has increases, we are expected to have the same increases. The 5 year average for NC (2004-2008) is 45.6 based on the tables on the FWS website (http://www.fws.gov/northeast/pipingplover/index.html, under the "status updates"). The data is only as good as the data that was provided to them which I know for CAHA the data is incorrect. Even though FWS calls them nesting pairs they appear to be including "breeding pairs" (i.e.pairs for which no nests were found) in their numbers. I'm assuming that the table from the state is what FWS uses for their calculations. Some years the numbers were just plain incorrect and other years they used breeding pairs (not nesting pairs). If the table is supposed to represent nesting pairs and not breeding pairs, then the data (2000-2007) is incorrect for 5 of the 8 years. I don't know the CALO data well enough to determine if their numbers represent nesting or breeding pairs or if they have as many discrepancies as we do.

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cape Hateras Nat. Seashore-State Data	4	3	2	3	3	3	5	6	NA
CAHA Nesting Prs NPS annual report	2	3	2	2	2	2	4	6	11
CAHA Breeding Prs NPS annual report	2	3	2	2	3	3	6	6	11

The 5 year pair average of 24% for NC is 45.6, however I'm not sure if this represents breeding pairs or nesting pairs. So if we assume it won't change too much in the future, to meet this requirement we would have to maintain around 11 nesting pairs. The challenge will be determining what the baseline numbers actually are (i.e going back to the data) instead of using someone else's summary tables (i.e. state and FWS) where the errors keep getting replicated.

PIPL nesting & breeding pairs (Southern Region).xlsx

I guess what I am trying to say, is that I am OK with the 5 year average of 24%, just don't ask me to calculate it!

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I
▼ Mike Murray/CAHA/NPS

Mike Murray/CAHA/NPS

09/15/2009 04:02 PM

To Timothy Pinion/Atlanta/NPS@NPS
cc Britta Muiznieks/CAHA/NPS@NPS, Cherry Green/Atlanta/NPS@NPS, Darrell Echols/CAHA/NPS@NPS, Sandra Hamilton/DENVER/NPS@NPS, Sherri Fields/Atlanta/NPS@NPS, Thayer Broili/CAHA/NPS@NPS
Subject Re: Draft DFCs for PIPL and Sea Turtles

Thanks Tim. We'll talk about the % of NC nesting pairs for PIPL and sea turtle hatchling emergence variables and get back to you.

One thing I forgot to mention in my last email is that we think it would be good to have a PIPL target for "availability of habitat for nonbreeding PIPL" but don't have any well formulated ideas for what that should be. We included a line in the table for it, but did not suggest any ideas.

One thought would be to create a "habitat availability" target that is based on and assessed by data to be acquired from using the nonbreeding monitoring protocol. Ideally, as we accrue data over time, we would adjust the nonbreeding closures to ensure that some % of the most desirable habitat is relatively protected from human disturbance and "available." I'm not familiar enough with the details of the protocol to make a good suggestion; but for example, if the monitoring includes monitoring transects at the spits and Cape Point with habitat both inside of and outside of resource closures, we could have a target along the lines of "X % of nonbreeding PIPL observations occur within resource closures" or "no more than Y% of observations occur in areas open to ORVs." (Again, I don't know enough about the specifics of the protocol to know if the example I've used is relevant.)

In any case, we ask that you try to come up with something as a target for the "availability of nonbreeding habitat" for PIPLs. Maybe Mike Byrnes would have some ideas about how to create a target that relates to the information that will be gathered from the nonbreeding monitoring protocol.

Thanks again,

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▼ Timothy Pinion/Atlanta/NPS

Timothy Pinion/Atlanta/NPS

09/15/2009 02:02 PM

To Mike Murray/CAHA/NPS@NPS

cc Britta Muiznieks/CAHA/NPS@NPS, Cherry Green/Atlanta/NPS@NPS, Darrell Echols/CAHA/NPS@NPS, Sandra Hamilton/DENVER/NPS@NPS, Sherri Fields/Atlanta/NPS@NPS, Thayer Broili/CAHA/NPS@NPS

Subject Re: Draft DFCs for PIPL and Sea Turtles

Hi, Mike and gang. Thanks for your review of these tables. I think that they are much improved with the definition of "short-term" and "long-term," and by specifying multi-year averages, rather than single-year measures.

Here are some additional thoughts on a couple of the variables.
I included "PIPL % of NC nesting pairs" to try and link CAHA performance to regional trends, much like we've done for sea turtles. Suppose, for example, that we don't achieve the target of 15 breeding pairs, it could be that our lower numbers reflect an overall lower trend for North Carolina. I agree that 24% in 10 years is optimistic, but I would make the case that it is no more optimistic than achieving 15 breeding pairs over that same period.

For sea turtle "hatchling emergence." you are right that there is no longer a target in the loggerhead recovery plan. The recovery team felt that too much emphasis was being

placed on maximizing success by using invasive nest management approaches. The move to less intensive management, as reflected in our "number of nests relocated" target, seems to be a good direction to go. (In a recent email exchange with Matthew Godfrey, he suggested that < 30% may be more appropriate for North Carolina). I included the "hatchling emergence" target, set at a fairly low bar, as a safety net to ensure that we were still producing loggerhead hatchlings and not missing some other habitat condition that may impact emergence rates (sand compaction due to pedestrians or vehicles, lower or higher water table, undocumented depredation). Having said that, I think that leaving the variable out as a target would be fine, as long as it is something that we still measure.

Thanks for your ideas on AMOY, CWBs, and amaranth. During the next week, I will draft some tables and distribute them to you for review.

--Tim

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▼ Mike Murray/CAHA/NPS

Mike Murray/CAHA/NPS

09/14/2009 09:42 AM

To Timothy Pinion/Atlanta/NPS@NPS

cc Sherri Fields/Atlanta/NPS@NPS, Cherry Green/Atlanta/NPS@NPS, Sandra Hamilton/DENVER/NPS@NPS, Britta Muiznieks/CAHA/NPS@NPS, Thayer Broili/CAHA/NPS@NPS, Darrell Echols/CAHA/NPS@NPS

Subject Draft DFCs for PIPL and Sea Turtles

Tim,

We have reviewed the draft Desired Future Conditions for PIPL and Sea Turtles and offer the attached edits. Overall, we like the format and simplicity of your approach, and our edits are in the realm of fine tuning. We really appreciate your efforts on this and think this is a positive step forward!
In general, we thought is was best to eliminate the PIPL "**% of NC nesting pairs**" and the sea turtle "**hatchling emergence**" targets. On the former, since CALO and CAHA account for a high percentage of the total PIPL breeding prs in NC, so mathematically the percentage approach is really, in effect, contrasting CAHA with CALO. Given the obvious differences in the two parks (CALO has no bridges, highways, 8 villages, or the man-made dune ridge running the length of the seashore), we think the CAHA-specific PIPL targets are more meaningful. See message below for additional background information and spreadsheets.

On the Sea Turtle DFCs, though the old loggerhead recovery put some emphasis on hatchling emergence rates, the new 2008 loggerhead recovery plan puts more emphasis on reducing manageable impacts (predation, artificial lighting, etc.) but avoiding management manipulation such as nest relocations, hatcheries, and other active management approaches in general, even though such approaches may seem desirable for enhancing hatchling emergence rates. In other words, there is less emphasis on emergence rate and more emphasis on natural hatching results. A quick read of the recovery plan and I can find no reference to a target emergence rate, so we think it is better to not list it as a DFC variable. We will still monitor and document emergence rates, but do not want to have a numerical goals for it (unless the recovery plan changes in the future).

[attachment "DRAFT DFC.PIPL.091109.park edits.docx" deleted by Timothy Pinion/Atlanta/NPS] [attachment "DRAFT DFC.SeaTurtles.091109.park edits.docx" deleted by Timothy Pinion/Atlanta/NPS]

We think we also need to have DFCs for AMOY, CWB, and seabeach amaranth and request your assistance and Sherri's support in developing those. We are working on a draft message to you that will suggest possible variables and targets, and identify reference materials. We do need your assistance to look through that information to develop it into practical DFCs as you have done with PIPL and sea turtles.

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----- Forwarded by Mike Murray/CAHA/NPS on 09/11/2009 08:39 AM -----

Britta Muiznieks/CAHA/NPS

09/10/2009 04:19 PM

To Mike Murray/CAHA/NPS@NPS
cc Darrell Echols/CAHA/NPS@NPS, Thayer Broili/CAHA/NPS@NPS
Subject Re: Please review Draft DFCs

Mike-
The 2% increase is really affected by the number that you use as your baseline. I created and excel table to do the calculations and I think a 2% annual increase is different than a 20% increase in 10 years. If we use the 5 year average from 2004-2008 of 77.2 then our 10 year goal will be 94.1 nests and our 20 year goal will be 114.7 nests resulting in a goal of 201nests in 50 years. Some people may have issues if our 10 year goal is less than we have had in the last 2 years but I think we can expect to have some bad years in the future which will average things out in the long run.

If we include this year's nests (average from 2005-2009) then our baseline is 89. With a baseline of 89 nests, our 10 year goal is 108 nests and 20 year goal is 132 nests resulting in a goal of 232 nests in 50 years.

In the table you can change the baseline nest number and it will do the 2% increase calculations for you.

[attachment "Turtle Growth.xlsx" deleted by Timothy Pinion/Atlanta/NPS]

I do like the idea of keeping the % of NC nests in the table even though it is from the BO.

In the PIPL table the percent of NC total breeding pairs, the 5 year average of 24% seems a little high. In the last 10 years we've never been over 20% in any single year. The 5 year average is around 12%. Doubling this for a 5 year average of 24% seems very optimistic to me. You may have a more updated table than I do.

[attachment "PIPL pairs in NC.xlsx" deleted by Timothy Pinion/Atlanta/NPS]

Call if you have any questions.

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▼ Mike Murray/CAHA/NPS

Mike Murray/CAHA/NPS

09/10/2009 03:17 PM

To Britta Muiznieks/CAHA/NPS@NPS, Darrell Echols/CAHA/NPS@NPS
cc Thayer Broili/CAHA/NPS@NPS
Subject Please review Draft DFCs

Britta and Darrell,

Please review the attached revised draft Desired Future Conditions, which I revised after our discussion yesterday. Please make any suggested changes and return to me.

Notes:

1) I wasn't sure if we had decided to add or leave out a DFC on "Availability of Habitat for NonBreeding PIPL." I realize it may be difficult to come up with a practical and meaningful measure for it, but I decided to put it in the table and ask Tim to try to come up with something for us to react to. Since we currently have 4 units of designated critical habitat for wintering PIPL and have identified measures in our resource protection tables to monitor nonbreeding birds and provide for nonbreeding habitat protection, it makes sense to me to have some sort of related DFC.

2) For Sea Turtles, I revised the "number of nests" element to specify "loggerhead nests" and used the loggerhead recovery plan objective of an average of 2% annual increase to calculate numerical short-term (10-yr) and long-term (20-yr) nest targets. In his written comments to RegNeg, Pete Benjamin (where he recommend a goal of 200 nest in 50 years), he used the recovery plan 50-year goal of 14,000 or more nests for the northern recovery unit and the approximate distribution of nests in NC as 14% of 14,000 to come up with a 50-yr goal for NC of about 2,000 nests. He then assumed CAHA historically accounts for about 10% of nests in NC to come up with a proposed 50 year target of 200 nests for CAHA (i.e., he did not start with a current baseline # of nests). To come up with the specific 10-yr and 20-yr target numbers I determined that we would need to use a baseline number of about 82 nests/yr to have a 50-year target of 200 nests @ 2% increase per year. I tried various subsets of # of nests in recent years (looked at 5-year, 10-yr totals, etc.) to come up with a baseline average that would produce the desired result (2000-2009 avg is 83). I then multiplied 83 by 1.2 (assuming a 20% increase in 10 years) to get approx. 100; then multiplied 100 by 1.2 to get the 20-year target of 120. If you continue multiplying the new total by 1.2 a few more times, you end up with a little over 200 nests in 50 years. My gut sense is that the resulting short and long-term target nest numbers (100 and 120) are ambitious but not too unrealistic, BUT only if the statewide nest totals increase similarly. SO, rather than rely only on the 2% annual increase as a target for the number of nests, I think it would be good to retain a "percentage of NC nests" target, just in case the recovery plan approach proves to be unrealistic. I would expect that if we meet the 10 and 20-yr targets based on the 2% increase per year, then we would also meet the 10% of NC nests target; but I can envision the possibility of falling short on the park's targets due to factors beyond our control (such as it there is not such a big increase in NC, why would we expect to have a much bigger % increase than the state?). If the latter were to occur, I think we would still want to at least meet the 10% of NC nests target.

In any case, please review and provide comments.

[attachment "DRAFT DFC.PIPL.091009.park edits.docx" deleted by Timothy Pinion/Atlanta/NPS] [attachment "DRAFT DFC.SeaTurtles.091009.park edits.docx" deleted by Timothy Pinion/Atlanta/NPS]

Thanks,

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0024100

	2000		2001		2002		2003		2004		2005
	Nesting Pairs	Productivity	Nesting Pairs	Productivity	Nesting Pairs	Productivity	Nesting Pairs	Productivity	Nesting Pairs	Productivity	Nesting Pairs
Delaware	3	1.67	6	1.5	6	1.17	6	2.33	7	1.14	8
Maryland	60	0.8	60	0.92	60	1.85	59	1.56	66	1.86	63
Virginia	96	1.42	119	1.52	120/108	1.19	114/101	1.9	152/134	2.23	192/183
North Carolina	24	0.54	23	0.5	23	0.17	24	0.46	20	0.65	37
Total Nesting Prs	183	1.09	208	1.22	209/197 197	1.27	203/190 190	1.63	245/227 227	1.95	300/291 291

CAHA NESTING PRS	2	0.74	3	0	2	0	2	0.5	2	0	2
CAHA Breeding Pairs	2		3		2		2		3		3
% of Southern Region	0.01		0.01		0.01		0.01		0.01		0.01
% of North Carolina	0.08		0.13		0.09		0.08		0.10		0.05

NC Pairs (5 yr ave)	CAHANesting Pairs (5 yr ave)	CAHA Breeding Pairs (5 yr ave)
20	2	3
37	2	3
46	4	6
61	6	6
64	11	11
45.6	5	5.8

0024101

	2006		2007		2008		2009	
Productivity	Nesting Pairs	Productivity	Nesting Pairs	Productivity	Nesting Pairs	Productivity	Nesting Pairs	Productivity
1.5	9	1.44	9	1.33	10	0.3		
1.25	64	1.06	64	0.78	49	0.41		
1.52	202/193	1.19	199/187	1.16	208/202	0.87		
0.92	46	0.87	61	0.26	64	0.3		
1.38	321/312	1.12	333/321	0.92	331/335	0.67		
	312		321		325			

2	4	0.5	6	0.67	11	0.64	9	0.67
	6		6		11		9	

	0.01		0.02		0.03			
	0.09		0.10		0.17			