

From: [Britta Muiznieks](#)
To: [Darrell Echols](#)
Cc: [Mike Murray](#)
Subject: Fw: Final revision of DFCs!
Date: 11/12/2009 01:19 PM

Darrell-

I haven't been involved in some of the conversations that you have had with Region so I'm not sure why some recommendations were ruled out vs. others. I remembered a conversation I had with Mike regarding the state's goals for these species. I'm not sure how the state came up with their numbers but decided to take a closer look at them to see if our short term goals could be based on them. I still used the 3 year average as the baseline since CWB numbers fluctuate so much from year to year. I tried to go back one more year but there were too many holes in the 2006 data to utilize it (e.g. Green Island was not surveyed in '06, "numerous" COTE nests on South Pt etc.). This is what I came up with:

Year	Peak Nest Count			
	LETE	COTE	BLSK	GUTE
2009	577	53	61	0
2008	232	19	4	0
2007	194	109	11	6
3 Yr. Average	334	60	25	2

	LETE	COTE	BLSK	GUTE
NC Goals (NCWRC)	2000	2500	1000	300
3 Yr. Average	334	60	25	2
% of NC Goal	16.70%	2.40%	2.50%	0.66%
Increase of 5% towards NC Goal	21.70%	7.40%	7.50%	5.66%
Short term DFC	434	185	75	17
3 year Average Doubled	668	120	50	4

Any thoughts? At least we are basing our goals on real numbers.

Britta Muiznieks
 Wildlife Biologist
 Cape Hatteras National Seashore

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----- Forwarded by Britta Muiznieks/CAHA/NPS on 11/12/2009 11:19 AM -----

Mike

0024633

Murray/CAHA/NPS

To Darrell Echols/CAHA/NPS@NPS, Britta Muiznieks/CAHA/NPS@NPS

11/10/2009 05:39 PM

cc

Subject Final revision of DFCs!

Darrell and Britta,

See Tim's comments below. Please review the latest version of the CWB DFCs and see if you can come up with language to explain the variation in multiplication factor (doubling or 4x or 10x) for each species, or re-design the DFC for GUTE and BLSK so it is consistent with the targets for LETE and COTE.

[attachment "Desired Future Conditions combined.11.10.09.mbm.doc" deleted by Britta Muiznieks/CAHA/NPS]

Thanks,

Mike Murray
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----- Forwarded by Mike Murray/CAHA/NPS on 11/10/2009 05:24 PM -----

Timothy
Pinion/Atlanta/NPS

To Mike Murray/CAHA/NPS@NPS
cc Britta Muiznieks/CAHA/NPS@NPS, Darrell Echols/CAHA/NPS@NPS, Sandra Hamilton/DENVER/NPS@NPS

11/09/2009 04:38 PM

Subject Re: Last chance to review DFCs! 

If these numbers seem reasonable to you guys, I can go along with them. We will probably want to think about how we will justify a target set by doubling the 3-year average (or 10x or 4x), but I like that it sets an ambitious, and hopefully achievable, target.

There are still a few notes to ourselves scattered in the source column and some of the footnotes. I assume that these will be pulled out of the final version.

Thanks for the opportunity to review.
--Tim

Tim Pinion
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Timothy_Pinion@nps.gov

▼ Mike Murray/CAHA/NPS

**Mike
Murray/CAHA/NPS**

11/09/2009 04:20 PM

To Timothy Pinion/Atlanta/NPS@NPS, Britta
Muiznieks/CAHA/NPS@NPS

cc Sandra Hamilton/DENVER/NPS@NPS, Darrell
Echols/CAHA/NPS@NPS

Subject Last chance to review DFCs! 

Tim and Britta,

See attached final revised draft DFCs, which includes revised DFCs for CWBs. Britta came up with average nest totals by CWB for the past three years. See below. For least terns and common terns, our short-term target would be to double the number of nests (i.e., 2x the baseline 3-yr average). For gull-billed terns, because of the low baseline number, we would have a short-term target of a 10x increase and a 4x increase for black skimmers. Please review attached edited draft and provide any final comments. Hopefully, we can wrap this up!

[attachment "Desired Future Conditions combined.11.9.09.mbm.doc" deleted by Mike Murray/CAHA/NPS]

Thanks for all your help!

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----- Forwarded by Mike Murray/CAHA/NPS on 11/09/2009 04:01 PM -----

**Britta
Muiznieks/CAHA/NPS**

To Mike Murray/CAHA/NPS@NPS

0024635

11/09/2009 03:09 PM cc Darrell Echols/CAHA/NPS@NPS
Subject Re: Fw: Please Review revised DFCs

Mike-

As we discussed, here are the new numbers that I came up with using the average for the last 3 years of data and then doubling that number. I think this is better than just pulling numbers out of the air.

Year:	Peak Nest Count:			
	LETE	COTE	BLSK	GUTE
2009	577	53	61	0
2008	232	19	4	0
2007	194	109	11	6
3 Yr. Average	334	60	25	2
3 Yr Average doubled	668	120	50	4

[attachment "Desired Future Conditions combined.11.9.09.doc" deleted by Mike Murray/CAHA/NPS]

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▼ Timothy Pinion/Atlanta/NPS

Timothy
Pinion/Atlanta/NPS

11/09/2009 09:21 AM

To Mike Murray/CAHA/NPS@NPS
cc Britta Muiznieks/CAHA/NPS@NPS, Sandra Hamilton/DENVER/NPS@NPS
Subject Re: Please Review revised DFCs

Hi, Mike.

If we use only 2008 data, then the CWB short-term target to "Establish trend of increasing or stable number of nests" would translate to:
least tern: greater than or equal to 232 nests
common tern: greater than or equal to 19 nests
gull-billed tern: greater than or equal to 0 nests

black skimmer: greater than or equal to 4 nests

Adding 2007 data doesn't really change this translation much at all.

My concern is that we might be left without meaningful targets, especially for gull-billed terns and black skimmers. Consider that the maximum number of nests since 2001 for these species was:

least tern: 232 in 2008

common tern: 573 in 2001

gull-billed tern: 108 in 2001

black skimmer: 342 in 2004

While these numbers may not be achievable for a variety of reasons (changing beach, differing survey methodology), it seems that we need to account in our targets for a greater potential to host CWB nests at the seashore.

"Increasing or stable" probably works for least tern, but I suggest something like these short-term targets for the other species:

common tern: 100

gull-billed tern: 20

black skimmer: 100

These targets are well below the 5-year average for these species. The bar is especially low for gull-billed terns, but the idea is to have these birds nesting again at the seashore.

As for changing the survey methodology to one that is less-intrusive, that seems like a good direction to go, as long as we understand the effects of that change on our survey results. Are we likely to get a significantly higher nest count if we include birds in an incubating posture? Will this make it difficult to compare next year's data to past year's data? Perhaps for next year we could conduct a peak nest count with the old methodology followed a week later by a count using the new methodology to see how different the results are.

For the sea turtle relocation target, this text would suffice: "target from pers. communication with Matthew Godfrey, NCWRC."

--Tim

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▼ [Mike Murray/CAHA/NPS](#)

**Mike
Murray/CAHA/NPS**

To: Timothy Pinion/Atlanta/NPS@NPS
cc: Sandra Hamilton/DENVER/NPS@NPS, Britta

0024637

11/06/2009 05:30 PM

Muiznieks/CAHA/NPS@NPS

Subject Please Review revised DFCs 

Tim,

See attached which contains edits based on your message below and subsequent input on your input from Britta. Rather than put a specific number to the short-term target for CWB, she thinks we need to use data we are confident in (2008) as the initial starting point for evaluating the short-term (5-yr and 10-yr) trend.

After having some discussion with WRC and FWS about CWB nest surveys (discussion about coordinating our respective nest count survey methodology and timing), Britta thinks that we should limit the number of intensive/intrusive surveys we've been doing (i.e., the walk through nest counts) because of the level of disturbance they cause and thinks we should rely on less intrusive methodology of estimating the numbers of nests that would include considering observed "incubating posture" as a nest (without necessarily flushing the bird to see if there are eggs present). I can live with the change in methodology. Can you live with the revisions?

Also, please review the explanation in the "Source" block for the <30% (instead of <20%) nest relocation target for sea turtles. I'm not sure I've captured what Matthew Godfrey told you accurately. And I don't know if we still need to leave Sandy McPherson's input in the explanation or not. PLEASE FIX THE SOURCE EXPLANATION SO THAT IT MAKES SENSE TO YOU.

[attachment "Desired Future Conditions combined.11.6.09.doc" deleted by Mike Murray/CAHA/NPS]

Thanks,

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▼ [Timothy Pinion/Atlanta/NPS](#)

Timothy
Pinion/Atlanta/NPS

To Sandra Hamilton/DENVER/NPS, mike_murray@nps.gov
cc

11/06/2009 09:35 AM

Subject

Re: Fw: Desired Future Conditions 

Hi, Sandy and Mike. I realize that I am a bit tardy on this response. Mike and I had a chance to talk briefly about the DFCs this week. I think that the version below is reasonable for the reasons that Mike describes. One change that I recommend is for the number of sea turtle nests relocated. Based on a conversation with Matthew Godfrey, <30% is probably a better target in North Carolina. I have not been able to come up with a good habitat variable for PIPL. The depredation rate target for AMOY should be verified by the park (it probably already has) to make sure that it is reasonable. VA DGIF didn't have any data that could help refine this target. Finally, it might be useful to translate the CWB short-term and long-term targets into specific numbers based on 2007 and 2008 surveys.

--Tim

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▼ [Sandra Hamilton/DENVER/NPS](#)

**Sandra
Hamilton/DENVER/NPS**

To Timothy Pinion/Atlanta/NPS@NPS
cc

10/30/2009 06:44 PM

Subject Fw: Desired Future Conditions

Here they are (below attached to Mike's email). Thanks, Tim!

Sandy Hamilton
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----- Forwarded by Sandra Hamilton/DENVER/NPS on 10/30/2009 04:43 PM -----

**Mike
Murray/CAHA/NPS**

To Timothy Pinion/Atlanta/NPS@NPS
cc Sandra Hamilton/DENVER/NPS@NPS,
lfox@louisberger.com, Darrell Echols/CAHA/NPS@NPS,

10/22/2009 09:09 AM

Subject Desired Future Conditions

Tim,

Please review the attached, latest draft of Desired Future Conditions (DFCs), which the park considers a final draft, and offer any feedback or suggestions. As background:

- We used some of Greg Eckert's work to edit and create an introductory narrative description of what "Desired Future Conditions" are. Please edit this freely to make it make sense to you (hopefully in plain English and not in scientific jargon). If the NPS has a standard description of DFCs, I would prefer to use it since it is probably already well reviewed and tested, but I am not aware of such language.
- In principle, we think that there should be a few more DFCs for T&E species, than for non-T&E species. The only exception is for seabeach amaranth, since we appear to be in a "none present" situation.
- **Piping Plover:** We have left a place holder for a DFC on "habitat availability." Need to decide if we can come up with a practical target or not, and move forward.
- **Sea Turtles:** We eliminated "depredation rate" and "hatchling disorientation" from the sea turtle DFCs for several reasons: We felt there were too many DFCs for sea turtles compared to the number for piping plovers, so we selected the four we believed to be most significant. Compared to the impacts of predation on shorebird nesting, predation of sea turtle nests has generally been a potential, but limited actual concern here. Predator impacts of sea turtle nests will continue to be monitored, documented, and addressed, in part, through the predator control plan. Hatchling disorientation will continue to be monitored, documented and evaluated as well. For example, we have identified creating a lighting assessment tool in the Adaptive Management Initiatives section of the Species Management Strategy Table. Once we have that sort of tool, we would be better able to determine if there is a statistical correlation between hatchling disorientation incidents and proximity to particular light sources, although our ability to address some light sources may be limited. The reality is that light sources outside of the Seashore are not under our control and we may have little influence on the establishment of a light ordinance. (We have recent communications indicating less interest on the part of Dare County and the state in pursuing the light ordinance option, so that appears to be deferred for the foreseeable

future.)

- **AMOY:** As discussed previously, we decided to eliminate "nest survival" as a DFC for AMOY, since the fledge rate is the ultimate indicator of success and we wanted to reduce the number of DFCs to the most meaningful indicators.
- **CWB:** We decided not to use the "% of NC goal by species" that you had fleshed out for us. Once we saw the numbers that were calculated (we appreciate your effort to do that!), it was clear that some of the potential targets (e.g., least terns) were realistic and achievable, and some were not (e.g., for common tern and gull-billed tern) given the current status of breeding activity on the Seashore. One issue that has become more clear to us about basing the CWB targets on any calculation using older data is that for both the park and state data prior to 2007, it is unclear whether consistent survey methodology (technique, timing, etc.), data compilation, and quality assurance occurred. Britta has spent countless hours reviewing the data and seems convinced that we have no way of ensuring a valid comparison of CWB data collected prior to 2007. A second issue is that when nesting numbers are low (as with COTE and GUTE), it is more difficult to stabilize and increase the nesting population to a sustainable level than it is to produce an increase when there is already a sustainable level present (as with LETE). As a result, we believe it would be an appropriate short-term DFC to have a qualitative target of achieving a positive trend of increasing or stable level of nesting activity, then use that as a starting point on which to base a long-term target of a 20% increase over the level of nesting achieved in the short-term. If you have other ideas that would provide a realistic but ambitious target, feel free to suggest something else.

Hopefully, these changes make sense to you too. If you have thoughts or suggestions on how to improve any of the above, please feel free to suggest it

[attachment "Desired Future Conditions combined.10.22.09.doc" deleted by Timothy Pinion/Atlanta/NPS]

Thanks,

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