

**From:** [Joe DeVivo](#)  
**To:** [Margaret Carfioli](#)  
**Cc:** [Sandra Hamilton](#); [Thayer Broili](#)  
**Subject:** Re: Fw: Indicator species?  
**Date:** 10/25/2010 07:33 AM

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A little explanation...

We have several vital signs that would be potentially applicable as an indicator of ORV impacts:

1. Wintering & Migratory Shorebirds
2. T&E Species (this general category would include the turtles and nesting shorebirds the park is monitoring )
3. Amphibian communities
4. Landbird communities
5. Plant communities

Of those, only the first two do I feel confident in actually making the link of the vital signs serving as an indicator of ORV use/impacts based on our current understanding of the systems and the data we have collected. The last three vital signs are designed to eventually produce indicator "metrics" similar to what is used in water quality monitoring like the index of biotic integrity. (i.e., % of the individuals sampled within the community that are "tolerant" species). We are still a few years away from identifying which metrics are most appropriate for each park, though, and I'm not sure that the diversity of those community groups within the ORV-use zone would justify their use as indicators.

There is an additional possibility of sea beach amaranth, but as of yet there's no formal protocol in place, and the species' distribution is limited / relic so its utility at this time is questionable.

One of the challenges with any indicator-based approach is determining the cutoff points defining "good," "fair," "poor," or other condition classes that you might be interested in, and to date these haven't been defined for any of the vital signs listed above. That said, this is the main purpose of the Natural Resource Condition Assessment program that we have going on right now and will begin at CAHA this winter. My goal is to define defensible assessment criteria for each vital sign and any other resources of interest/ value for the park that would be included in the park's resource stewardship strategy, resource management plans, and the GMP.

Cheers, and have a great week!

Joe

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For information and updates from the Southeast Coast Network, visit our website at <http://science.nature.nps.gov/im/units/secn/> or follow us on

Twitter [@SECoastNetwkNPS](https://twitter.com/SECoastNetwkNPS).

▼ [Margaret Carfioli/CAHA/NPS](#)

**Margaret  
Carfioli/CAHA/NPS**

10/25/2010 08:48 AM

To joe\_devivo@nps.gov

cc Thayer Broilli/CAHA/NPS, Sandra  
Hamilton/DENVER/NPS@NPS

Subject Fw: Indicator species?

Hi Joe,

Do you have some time to chat with Sandy Hamilton to address her questions? I'm in a meeting this morning and training tomorrow & Wednesday.

Thanks,  
Meghan

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Meghan Carfioli, Natural Resource Manager  
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tel (252) 473-2111 x 135 : fax (252) 473-2595 :  
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We have not inherited the world from our forefathers.  
We have borrowed it from our children.  
- Kashmiri proverb -

----- Forwarded by Margaret Carfioli/CAHA/NPS on 10/25/2010 08:47 AM -----

**Thayer  
Broilli/CAHA/NPS**

10/25/2010 08:34 AM

To Margaret Carfioli/CAHA/NPS@NPS

cc

Subject Fw: Indicator species?

Since you're the I&M guru, can you check this out and generate a short response?

Thayer Broilli  
Chief of Resource Management  
Cape Hatteras National Seashore

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----- Forwarded by Thayer Broili/CAHA/NPS on 10/25/2010 08:33 AM -----

**Sandra  
Hamilton/DENVER/NPS**

To Thayer Broili/CAHA/NPS@NPS  
cc

10/25/2010 08:11 AM Subject Indicator species?

Hi Thayer,

As part of the I&M network vital signs work, are there any indicator species identified for the Seashore? Any vital signs? Am I making sense?

Thanks.

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