Appendix 5B-5: Submerged Aquatic Vegetation Coverage in the Stormwater Treatment Areas Based on Ground Surveys

Matthew Powers, Manual Zamorano, Michelle Kharbanda[1], Sara R. Carrano[1], Dawn Sierer Finn[1], Cassandra A. Cummins[1], and Michael Chimney

Ground surveys were conducted by airboat on a periodic basis in Water Year 2016 (WY2016) (May 1, 2015–April 30, 2016) to map the coverage of submerged aquatic vegetation (SAV) taxa within stormwater treatment areas (STA) cells designated as having predominately SAV communities. Assessments were made at a network of fixed geo-referenced sites arranged in a grid pattern within each cell. The relative abundance of SAV taxa at each site was evaluated based on the areal coverage of SAV in the water column visible to an observer within the immediate vicinity of the airboat. In cases where the water column was turbid or no SAV was visible, a garden rake was dragged along the bottom to collect plant material. Staff from the South Florida Water Management District (SFWMD or District) and DB Environmental, Inc. conducted SAV surveys this year. SFWMD staff used a 4-point ordinal scale to evaluate SAV coverage: *None* = no plants observed, *Low* = 1 to 33 percent areal coverage, *Medium* = 34 to 66 percent areal coverage, and *High* > 66 percent areal coverage, whereas DB Environmental, Inc., used a 5-point ordinal scale in their assessments: *None* = no plants observed, *Sparse* = 1 to 10 percent areal coverage, *Moderately Dense* = 11 to 40 percent areal coverage, *Dense* = 41 to 80 percent areal coverage, and *Very Dense*: > 80 percent areal coverage. Areal coverage assessments were made for each SAV taxon and for all SAV taxa taken together. These data were used to generate SAV coverage maps for the cells surveyed (**Figures 1** to **14**). Eight SAV taxa were identified during the surveys this year (**Table 1**).

Table 1. Species name and common name of all SAV taxa identified during ground surveys conducted in the STAs during WY2016.

Species Name	Common Name
Ceratophyllum demersum	coontail
Chara sp.	muskgrass
Hydrilla verticillata	hydrilla
Najas guadalupensis	southern naiad
Najas marina	spiny naiad
Potamogeton illinoensis	pondweed

[1] DB Environmental Laboratories, Inc., 365 Gus Hipp Boulevard, Rockledge, FL 32955.

Utricularia sp.	bladderwort	

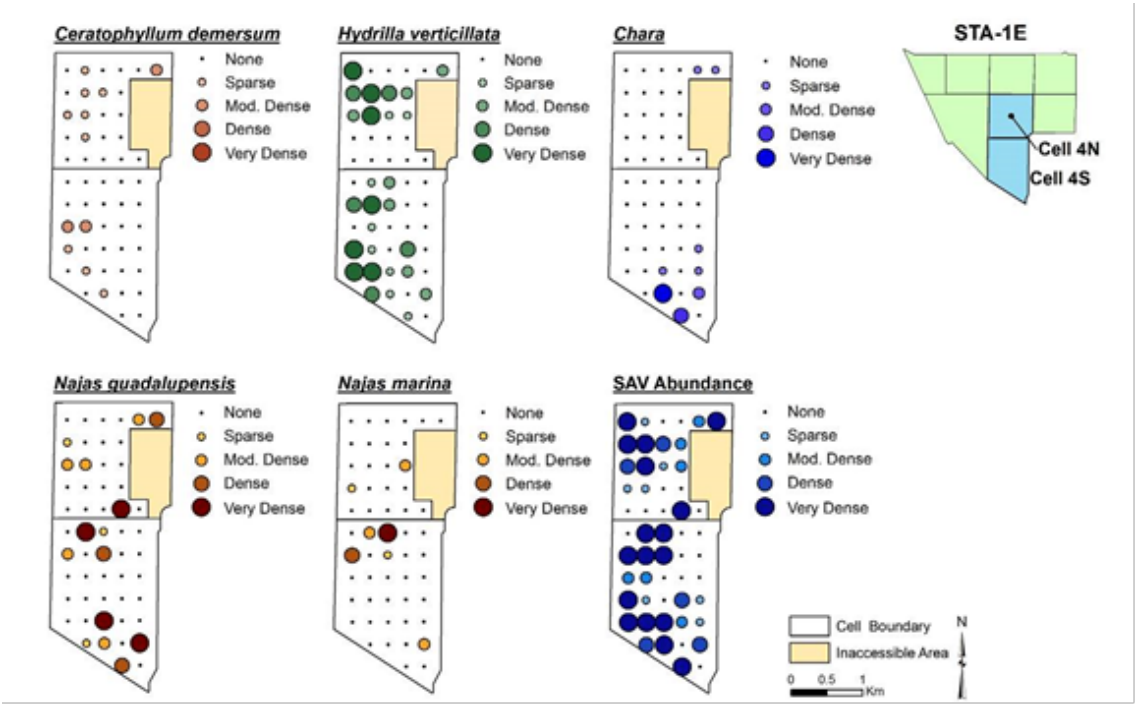

Figure 1. Areal coverage maps of coontail, hydrilla, muskgrass, southern naiad, spiny naiad, and all SAV taxa grouped together (SAV abundance) based on ground surveys conducted by DB Environmental, Inc. in STA-1E Cells 4N and 4B on July 8, 2015. Dots indicate locations of SAV survey sites.

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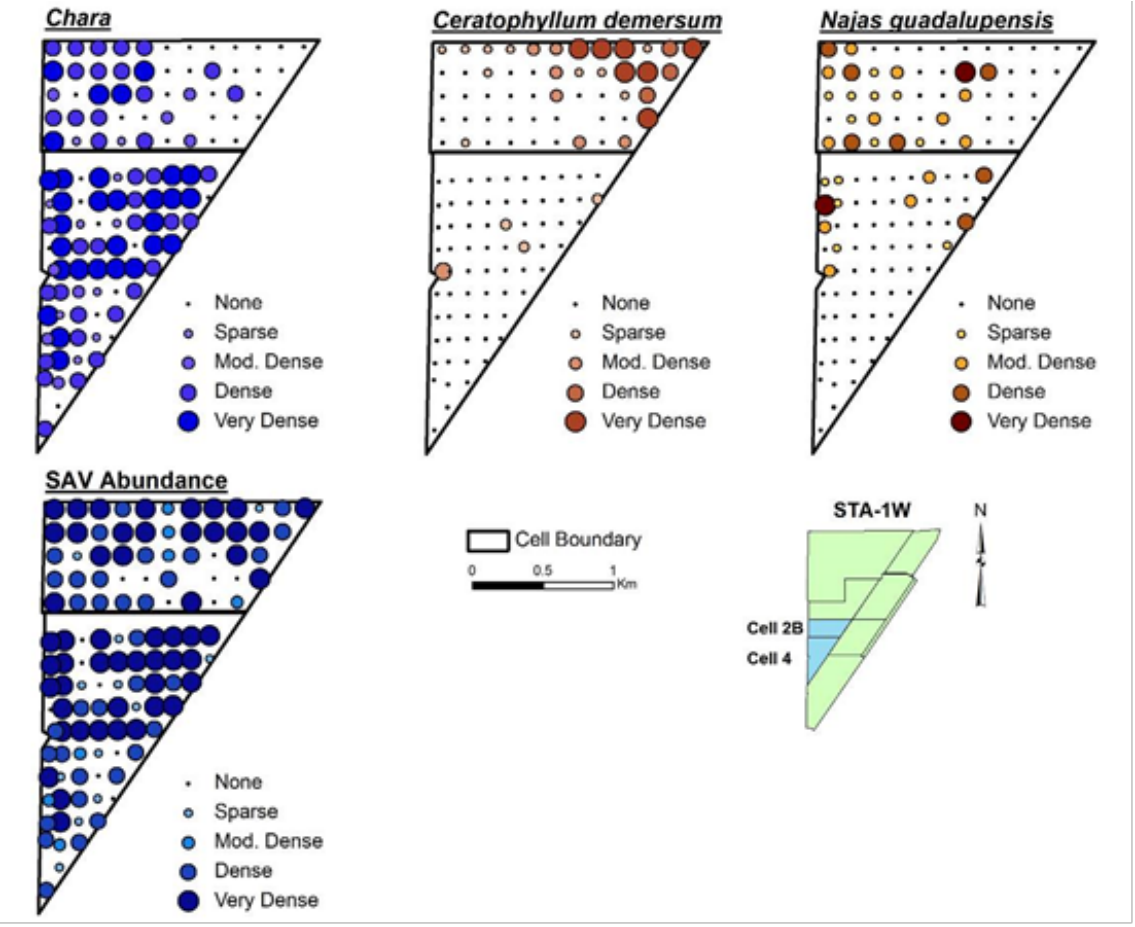

Figure 2. Areal coverage maps of muskgrass, coontail, southern naiad, and all SAV taxa grouped together (SAV abundance) based on ground surveys conducted by DB Environmental, Inc. in STA-1W Cells 2B and 4 on August 4, 2015. Dots indicate locations of SAV survey sites.

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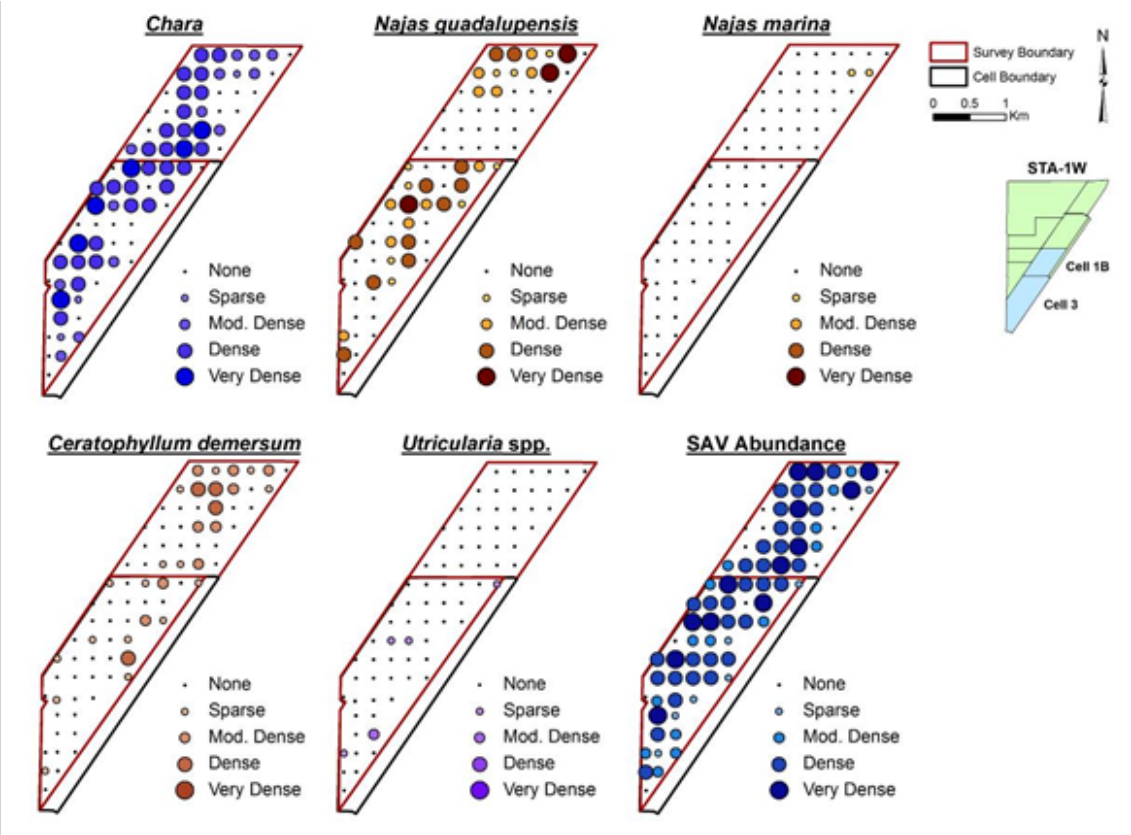

Figure 3. Areal coverage maps of muskgrass, southern naiad, spiny naiad, coontail, bladderwort, and all SAV taxa grouped together (SAV abundance) based on ground surveys conducted by DB Environmental, Inc. in STA-1W Cells 1B and 3 on August 4, 2015. Dots indicate locations of SAV survey sites.

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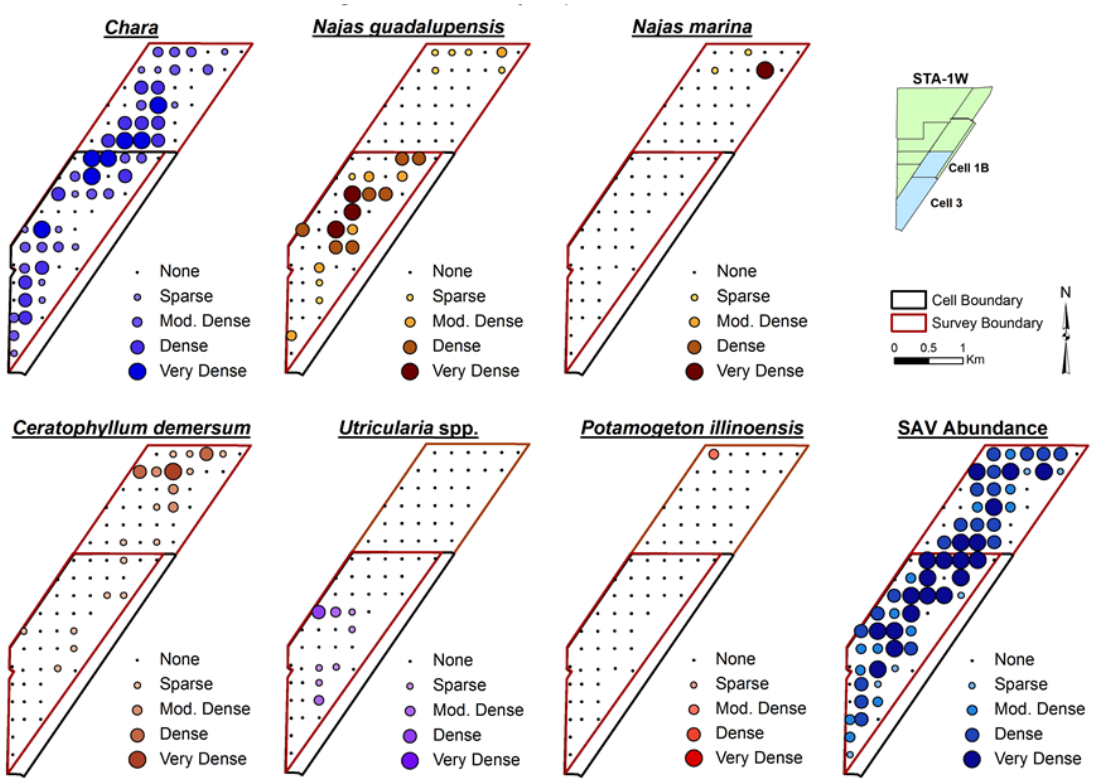

Figure 4. Areal coverage maps of muskgrass, southern naiad, spiny naiad, coontail, bladderwort, pondweed, and all SAV taxa grouped together (SAV abundance) based on ground surveys conducted by DB Environmental, Inc. in STA-1W Cells 1B and 3 on April 28, 2016. Dots indicate locations of SAV survey sites.

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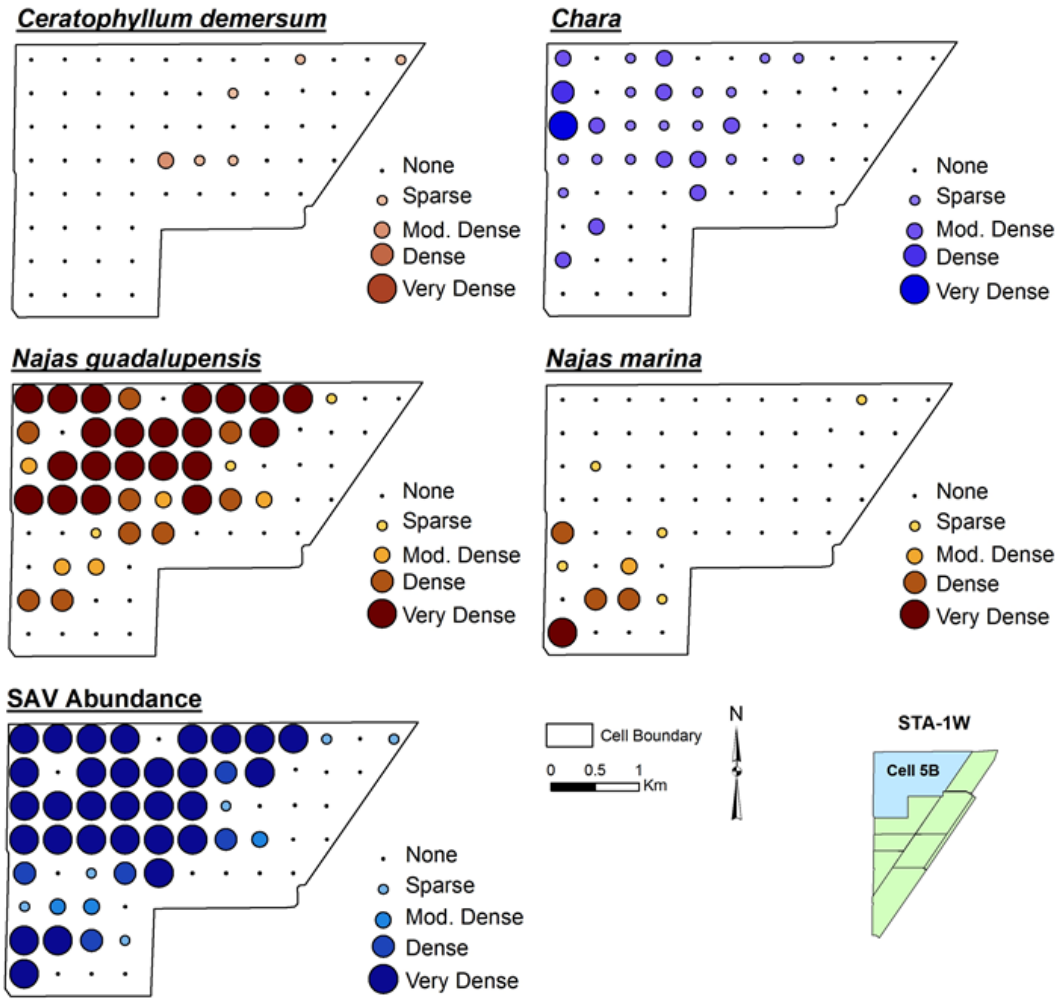

Figure 5. Areal coverage maps of coontail, muskgrass, southern naiad, spiny naiad, and all SAV taxa grouped together (SAV abundance) based on ground surveys conducted by DB Environmental, Inc. in STA-1W Cell 5B on August 26, 2015. Dots indicate locations of SAV survey sites.

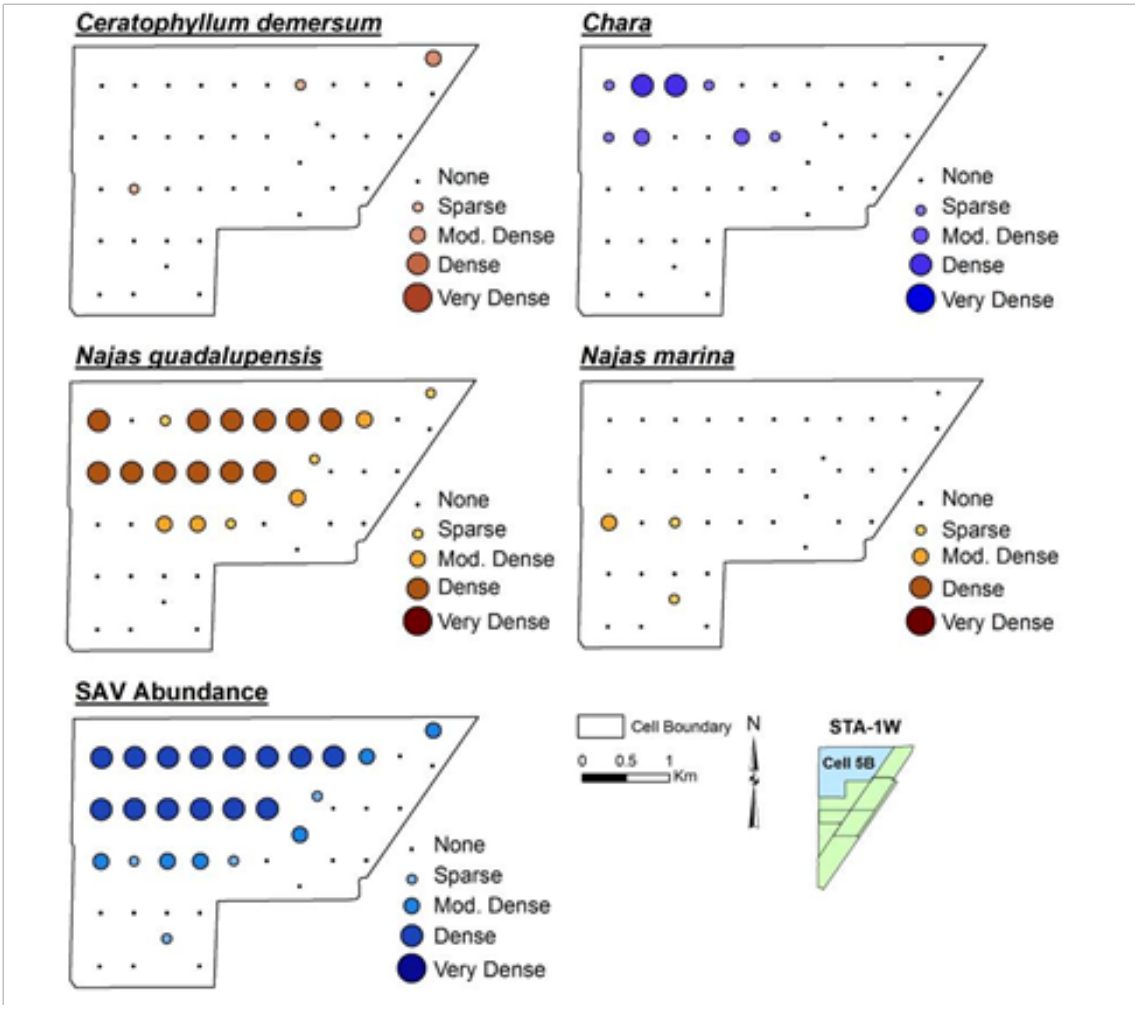

Figure 6. Areal coverage maps of coontail, muskgrass, southern naiad, spiny naiad, and all SAV taxa grouped together (SAV abundance) based on ground surveys conducted by DB Environmental, Inc. in STA-1W Cell 5B on February 18, 2016. Dots indicate locations of SAV survey sites.

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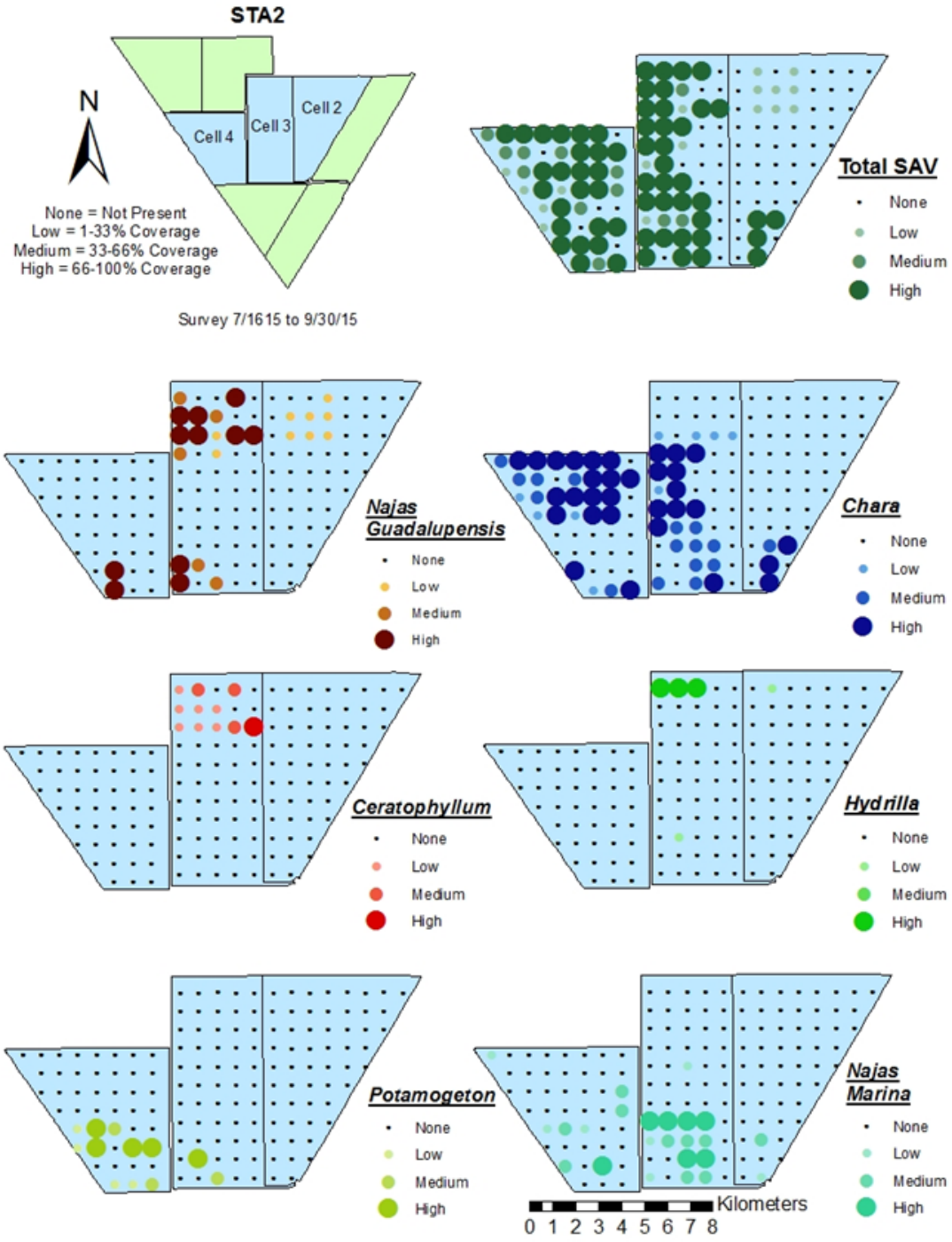

Figure 7. Areal coverage maps of southern naiad, coontail, pondweed, muskgrass, hydrilla, spiny naiad, and all SAV taxa grouped together (total SAV) based on ground surveys conducted by SFWMD in STA-2 Cells 2, 3, and 4 from July 16 to September 3, 2015. Dots indicate locations of SAV survey sites.

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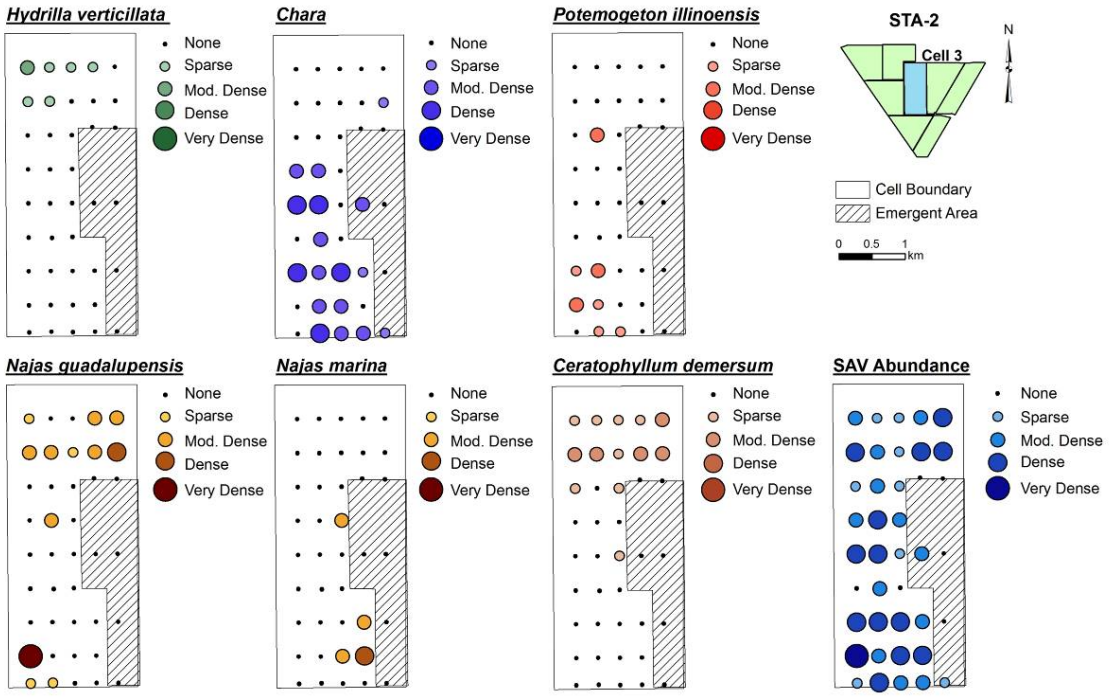

Figure 8. Areal coverage maps of hydrilla, muskgrass, pondweed, southern naiad, spiny naiad, coontail, and all SAV taxa grouped together (SAV abundance) based on ground surveys conducted by DB Environmental, Inc. in STA-2 Cell 3 on February 25, 2016. Dots indicate locations of SAV survey sites.

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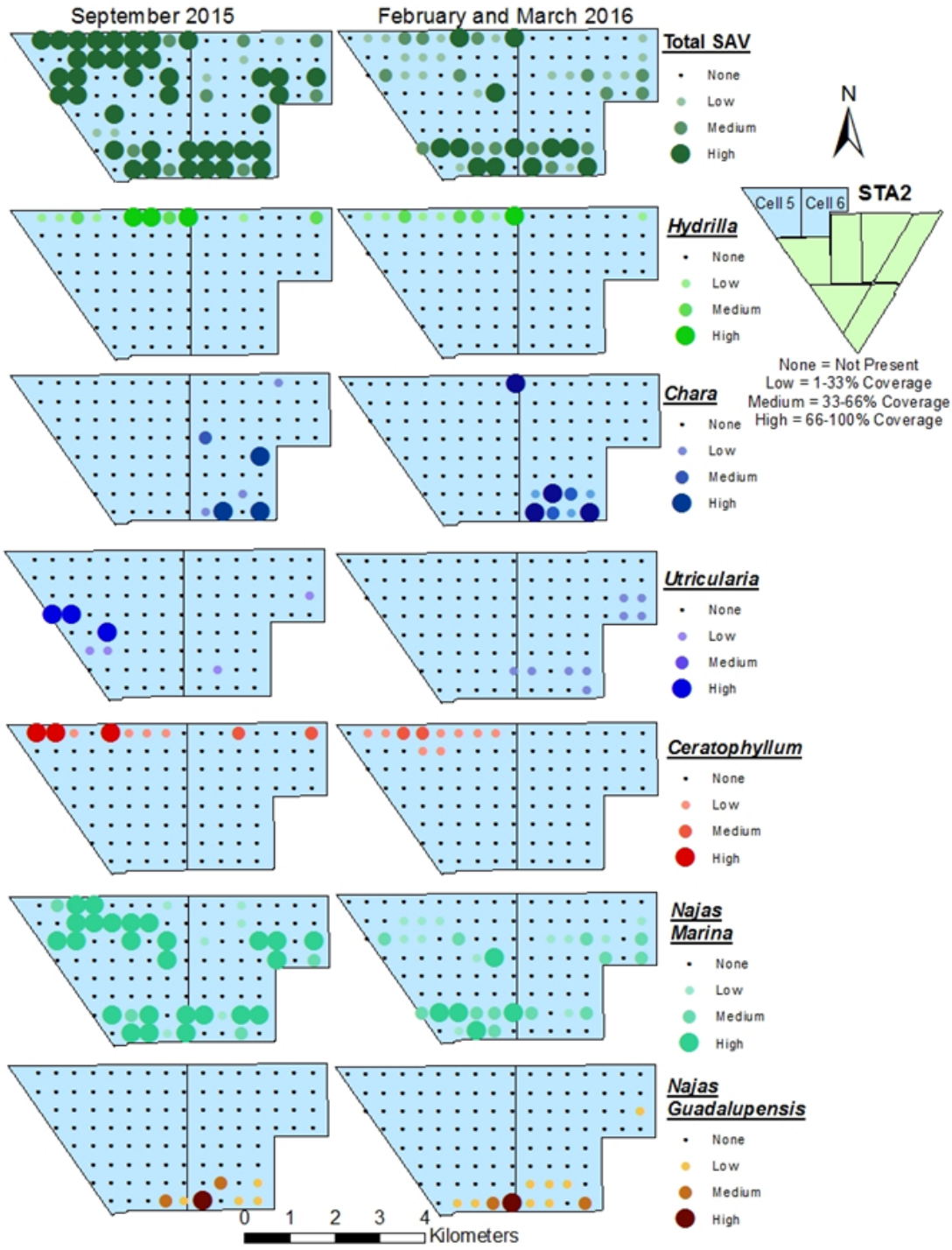

Figure 9. Areal coverage maps of hydrilla, muskgrass, bladderwort, coontail, spiny naiad, southern naiad, and all SAV taxa grouped together (total SAV) based on ground surveys conducted by SFWMD in STA-2 Cells 5 and 6 in September 2015 and February to March 2016. Dots indicate locations of SAV survey sites.

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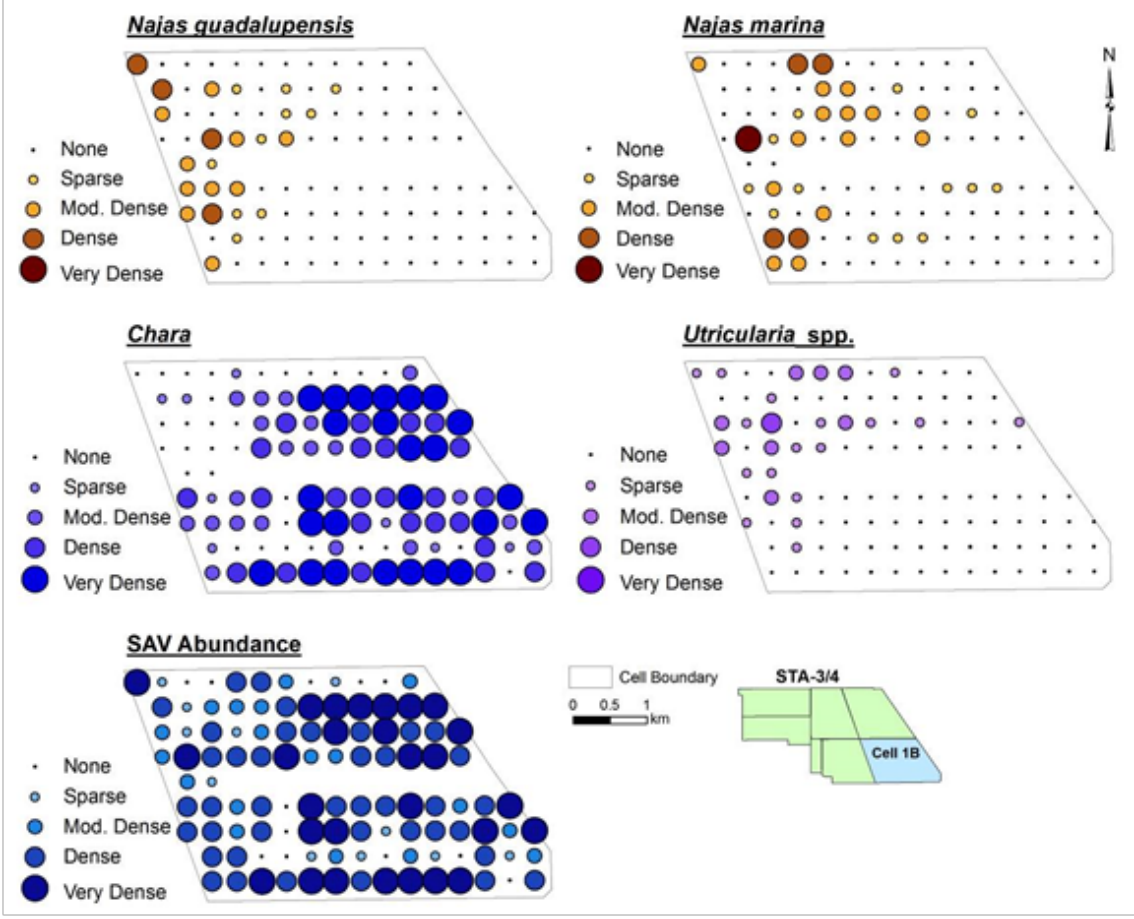

Figure 10. Areal coverage maps of southern naiad, spiny naiad, muskgrass, bladderwort, and all SAV taxa grouped together (SAV abundance) based on ground surveys conducted by DB Environmental, Inc. in STA-3/4 Cell 1B on October 8, 2015. Dots indicate locations of SAV survey sites.

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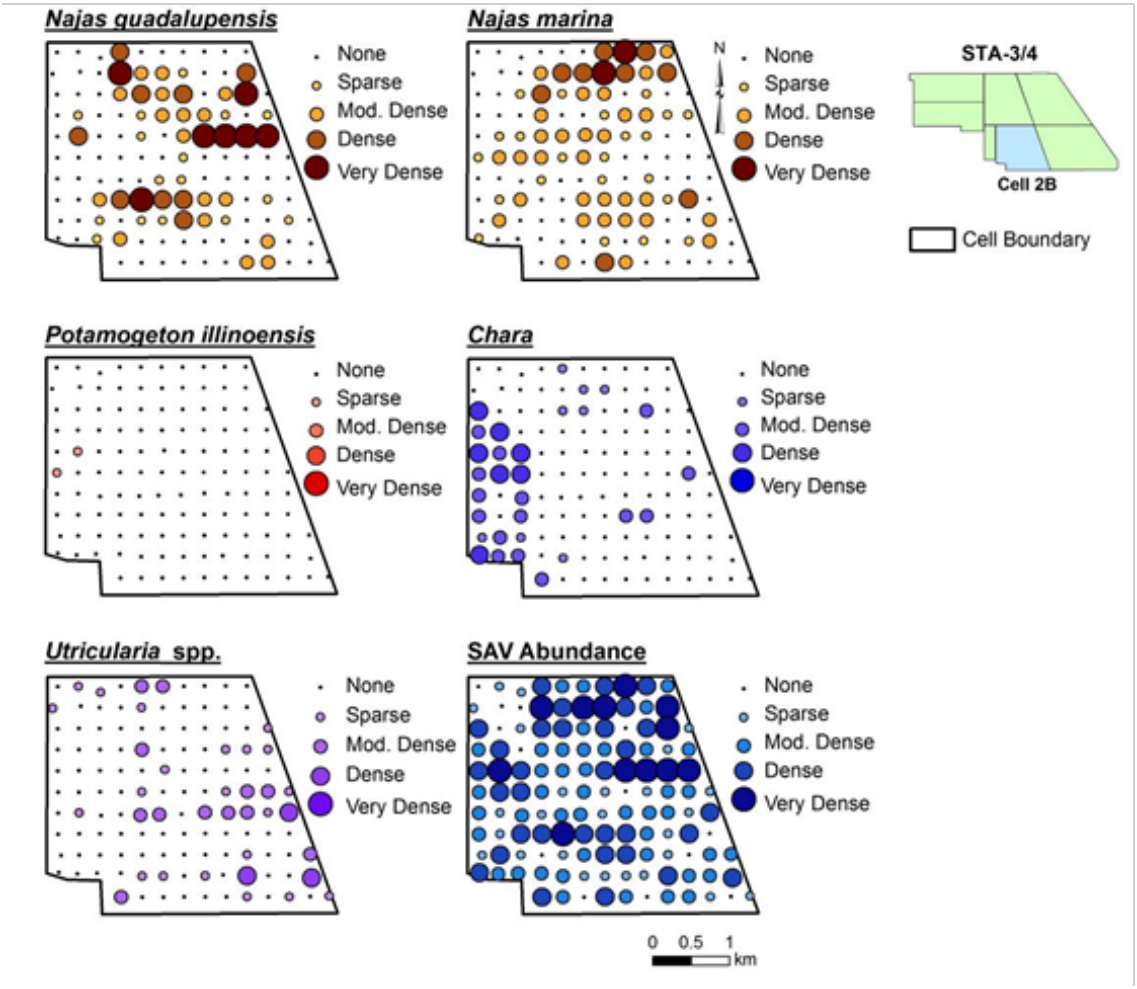

Figure 11. Areal coverage maps of southern naiad, spiny naiad, pondweed, muskgrass, bladderwort, and all SAV taxa grouped together (SAV abundance) based on ground surveys conducted by DB Environmental, Inc. in STA-3/4 Cell 2B on July 21, 2015. Dots indicate locations of SAV survey sites.

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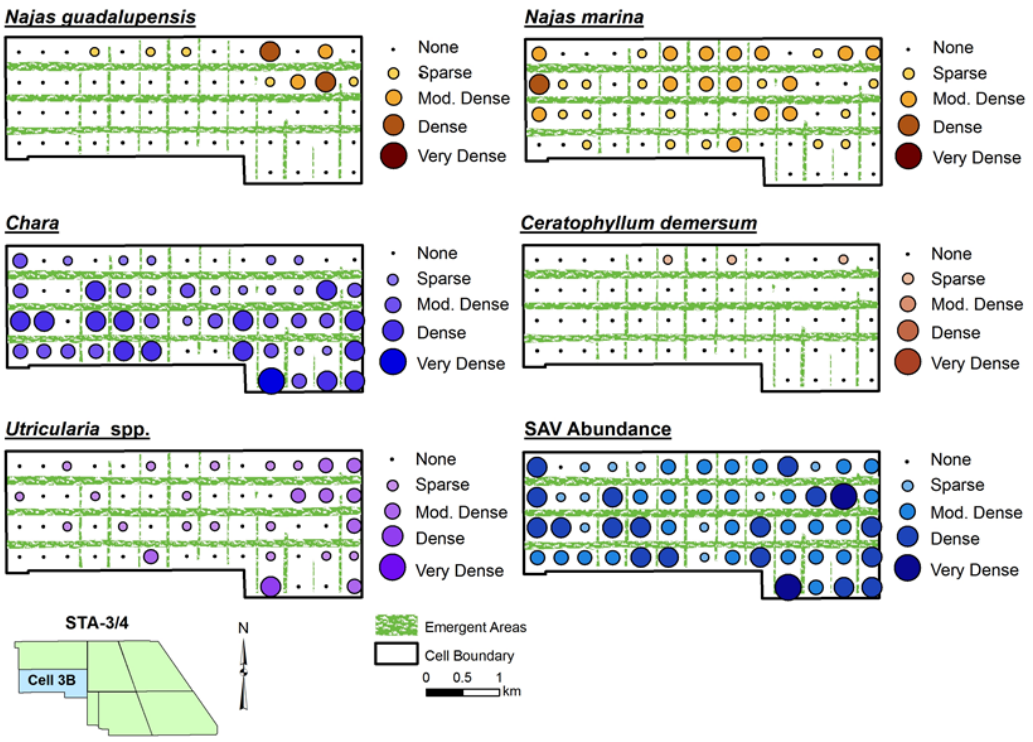

Figure 12. Areal coverage maps of southern naiad, spiny naiad, muskgrass, coontail, bladderwort, and all SAV taxa grouped together (SAV abundance) based on ground surveys conducted by DB Environmental, Inc. in STA-3/4 Cell 3B on June 24, 2015. Dots indicate locations of SAV survey sites.

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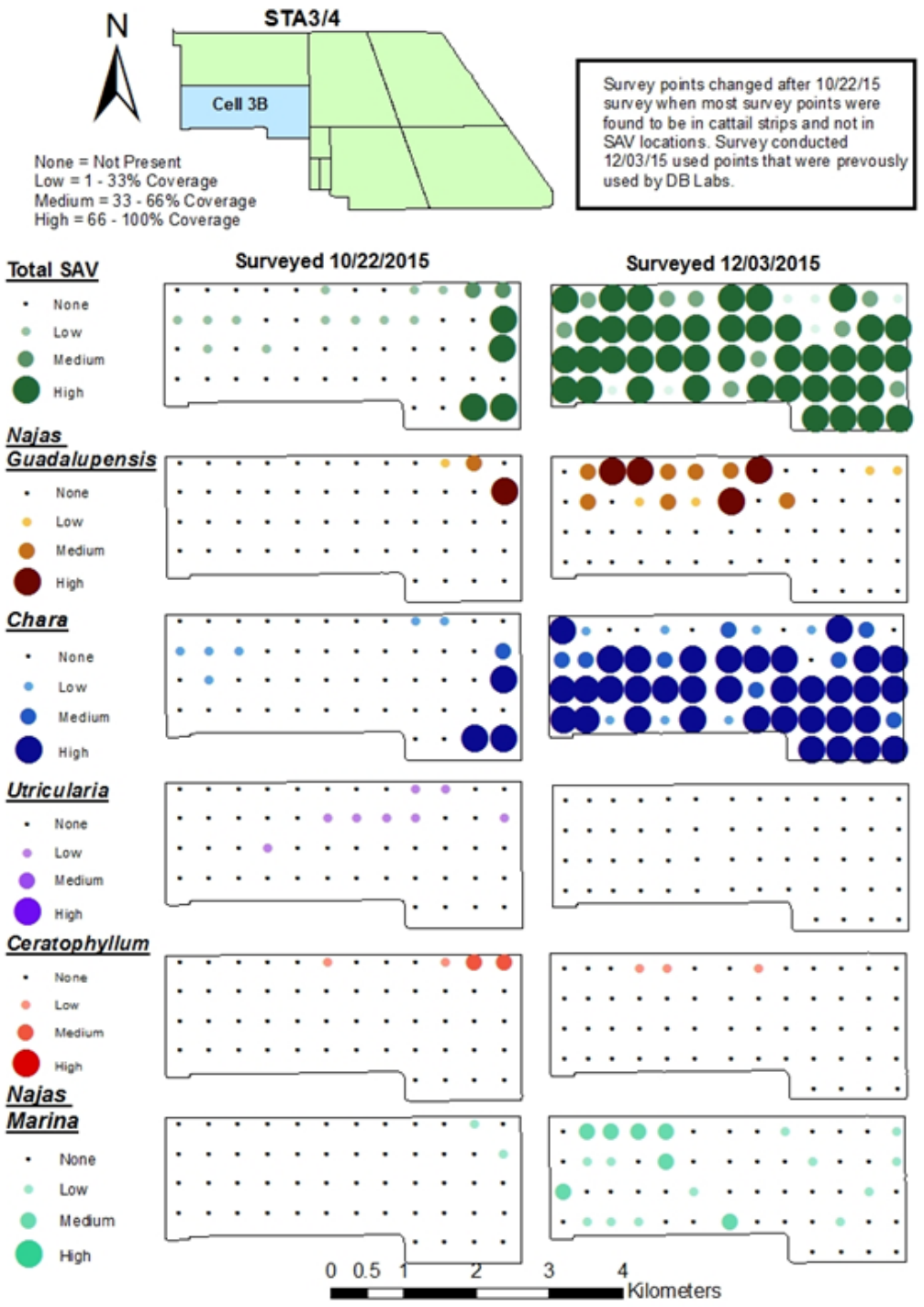

Figure 13. Areal coverage maps of southern naiad, muskgrass, bladderwort, coontail, spiny naiad, and all SAV taxa grouped together (total SAV) based on ground surveys conducted by SFWMD in STA-3/4 Cell 3B on October 22 and December 3, 2015. Dots indicate locations of SAV survey sites.

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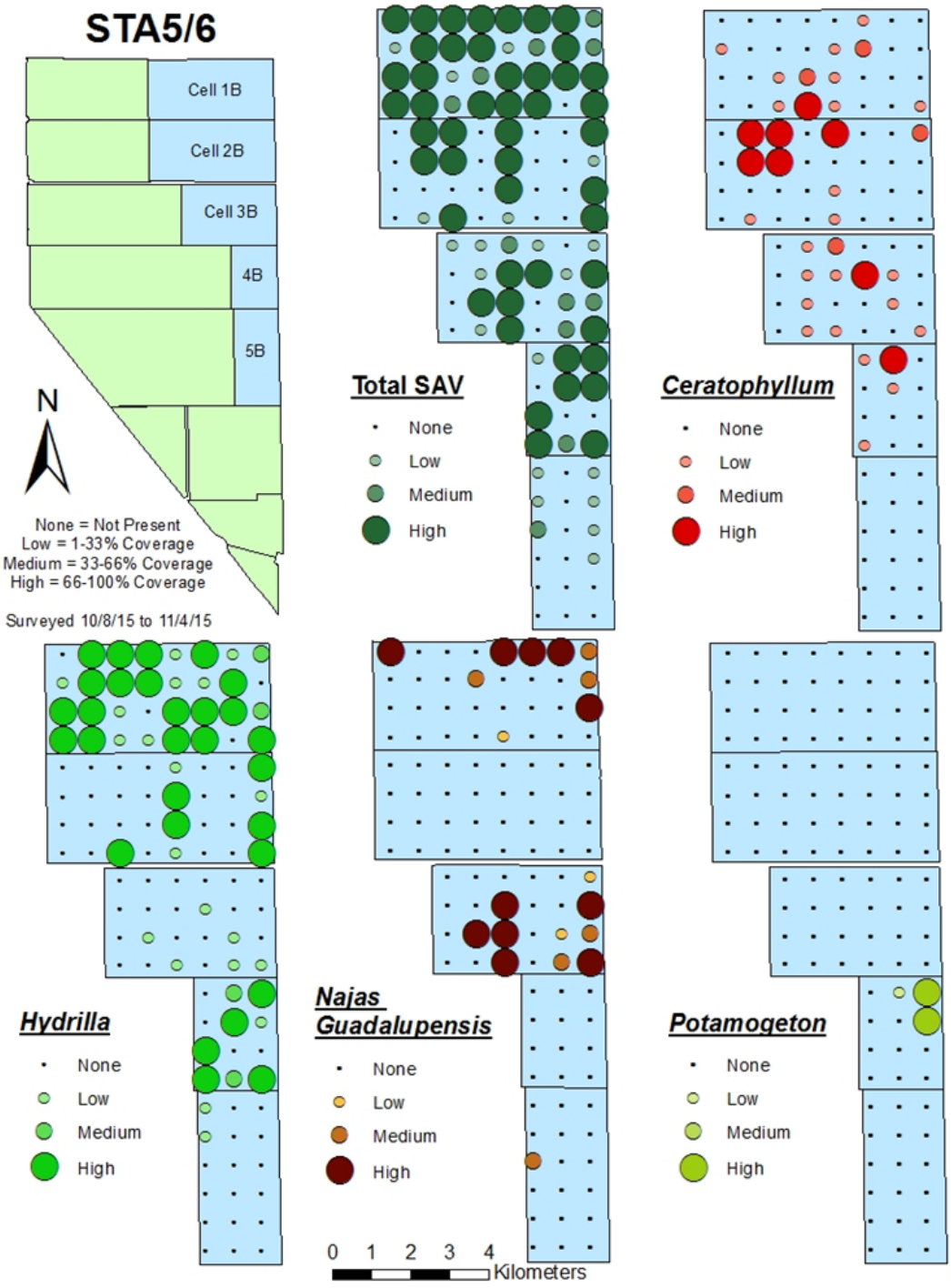

Figure 14. Areal coverage maps of coontail, hydrilla, southern naiad, pondweed, and all SAV taxa grouped together (total SAV) based on ground surveys conducted by SFWMD in STA-5/6 Cells 5-1B, 5-2B, 5-3B, 5-4B, and 5-5B from October 8 to November 4, 2015. Dots indicate locations of SAV survey sites.