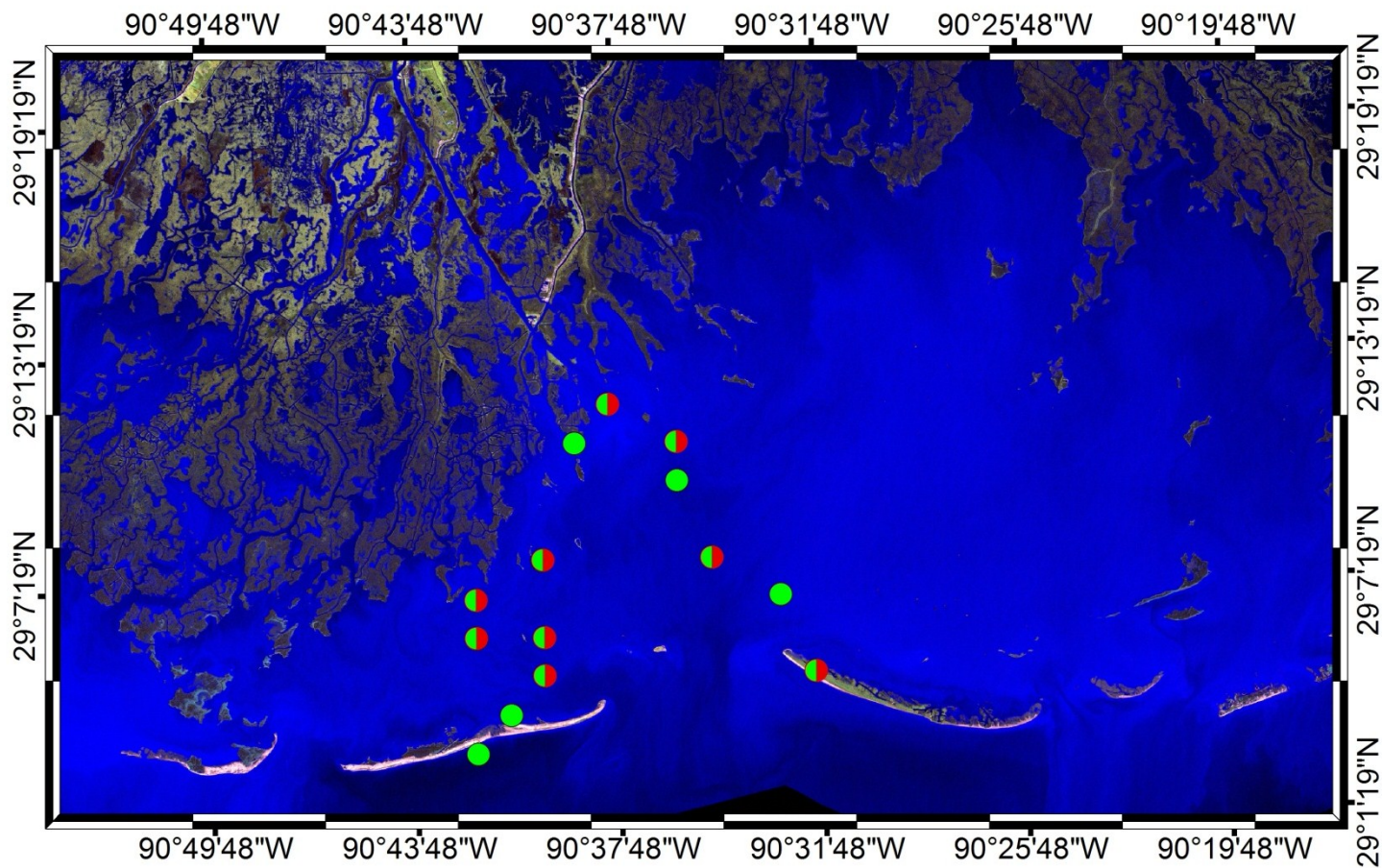
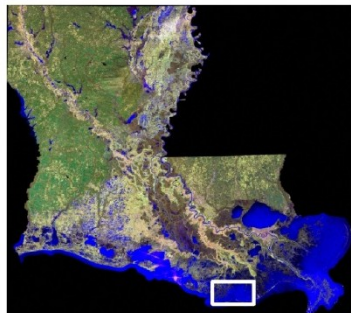


GEOSPATIAL FIGURES & TABLES

Created by Jennifer A. Lentz

Published Figures

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Legend

- Shark Sampling Sites
- Sampling Sites



Figure 1

on page 136 of

Garcia AC, Bargu S, Dash P,
Rabalais NN, Sutor M,
Morrison W, Walker ND

(2009) Evaluating the potential
risk of microcystins to blue crab
(*Callinectes sapidus*) fisheries
and human health in a
eutrophic estuary.
Harmful Algae 9(2):134-143.

This figure adapted from the
figure on the following slide
which was created as part of a
map making tutorial entitled

“How to Create Maps &
Figures in ArcView 9x”

by J.A. Lentz © 2008

available online at:

[http://JenniferALentz.info/
Teaching/Tutorials/
MakingMaps.pdf](http://JenniferALentz.info/Teaching/Tutorials/MakingMaps.pdf)

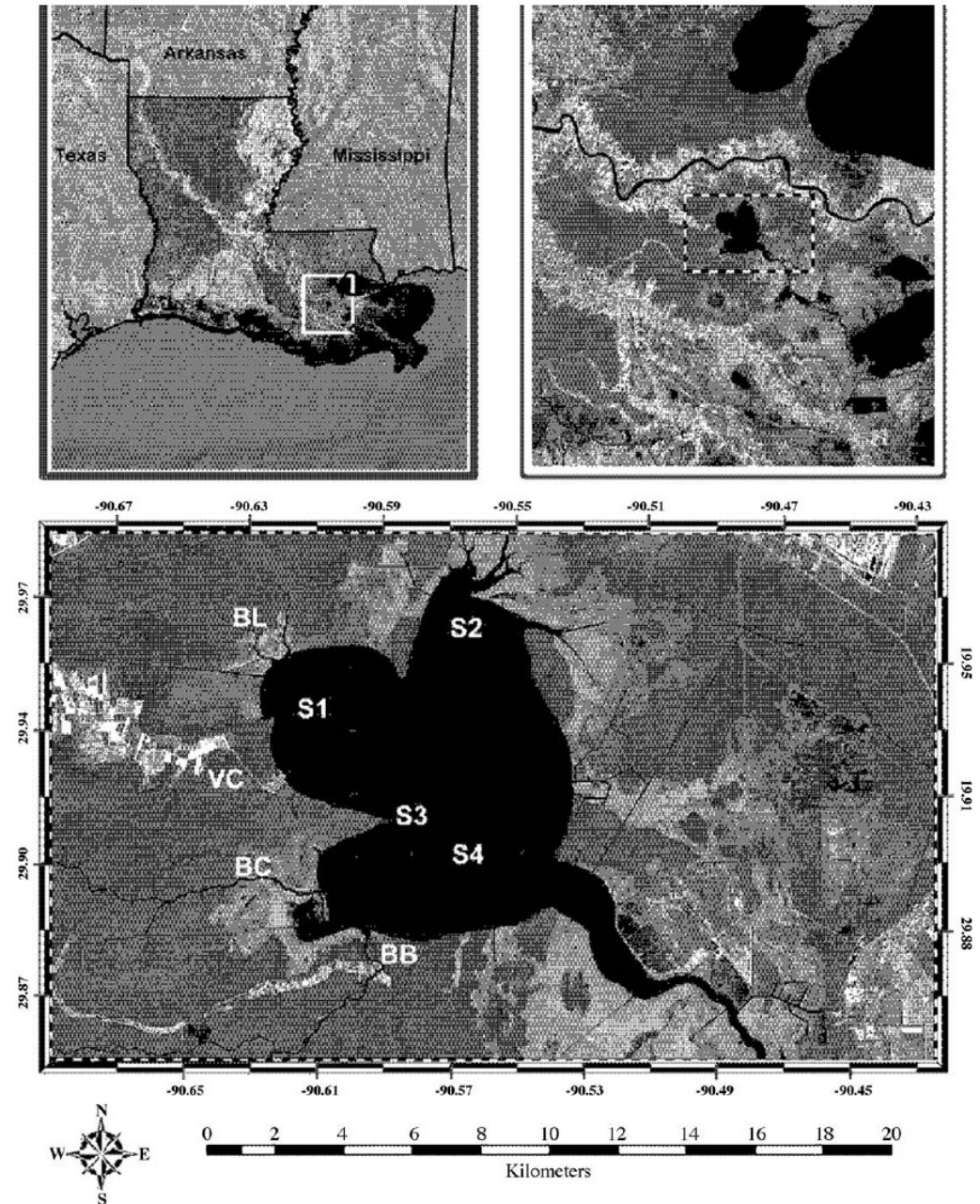


Fig. 1. Location of Lac des Allemands within the upper Barataria estuary, with four sample sites indicated. Points of significant nutrient loading are BB—Bayou Boeuf, BC—Bayou Chevreuril, BL—Bayou Lassene, VC—Vacherie Canal.

This figure was created as part of a map making tutorial entitled

“How to Create Maps & Figures in ArcView 9x”

by J.A. Lentz © 2008

available online at:

<http://JenniferALentz.info/Teaching/Tutorials/MakingMaps.pdf>

An adapted version of this figure was later published by **Garcia et al. 2009** as Figure 1 on page 136 in *Harmful Algae* 9(2)

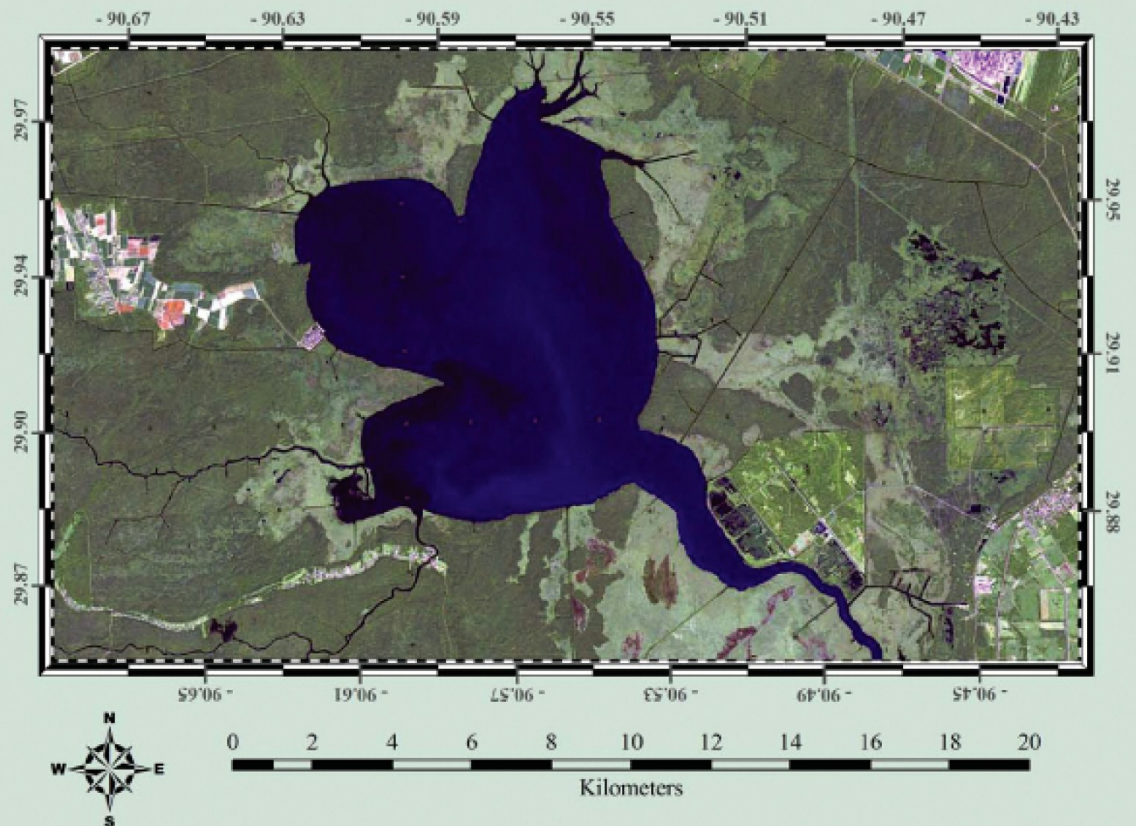
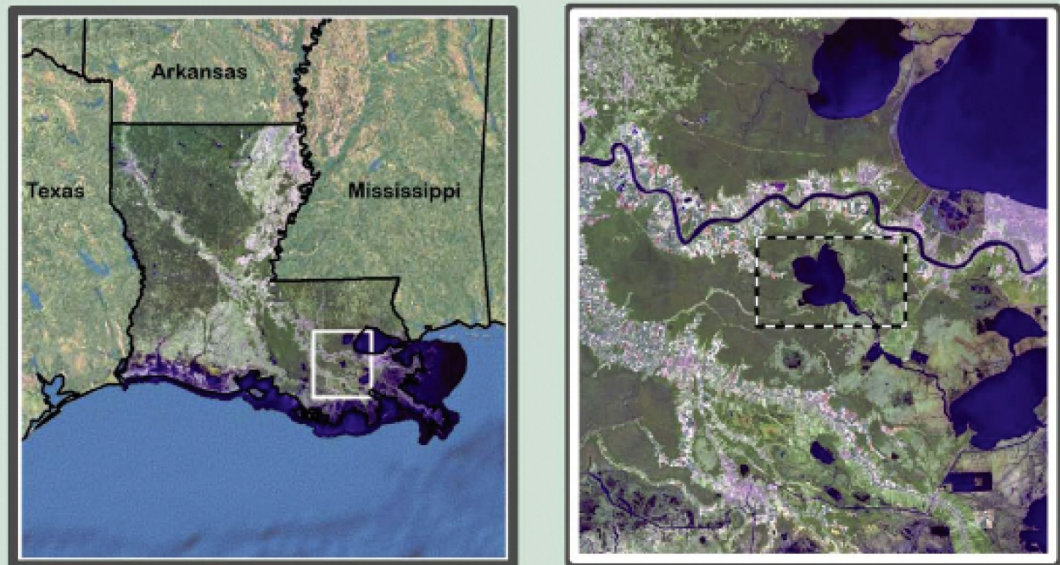
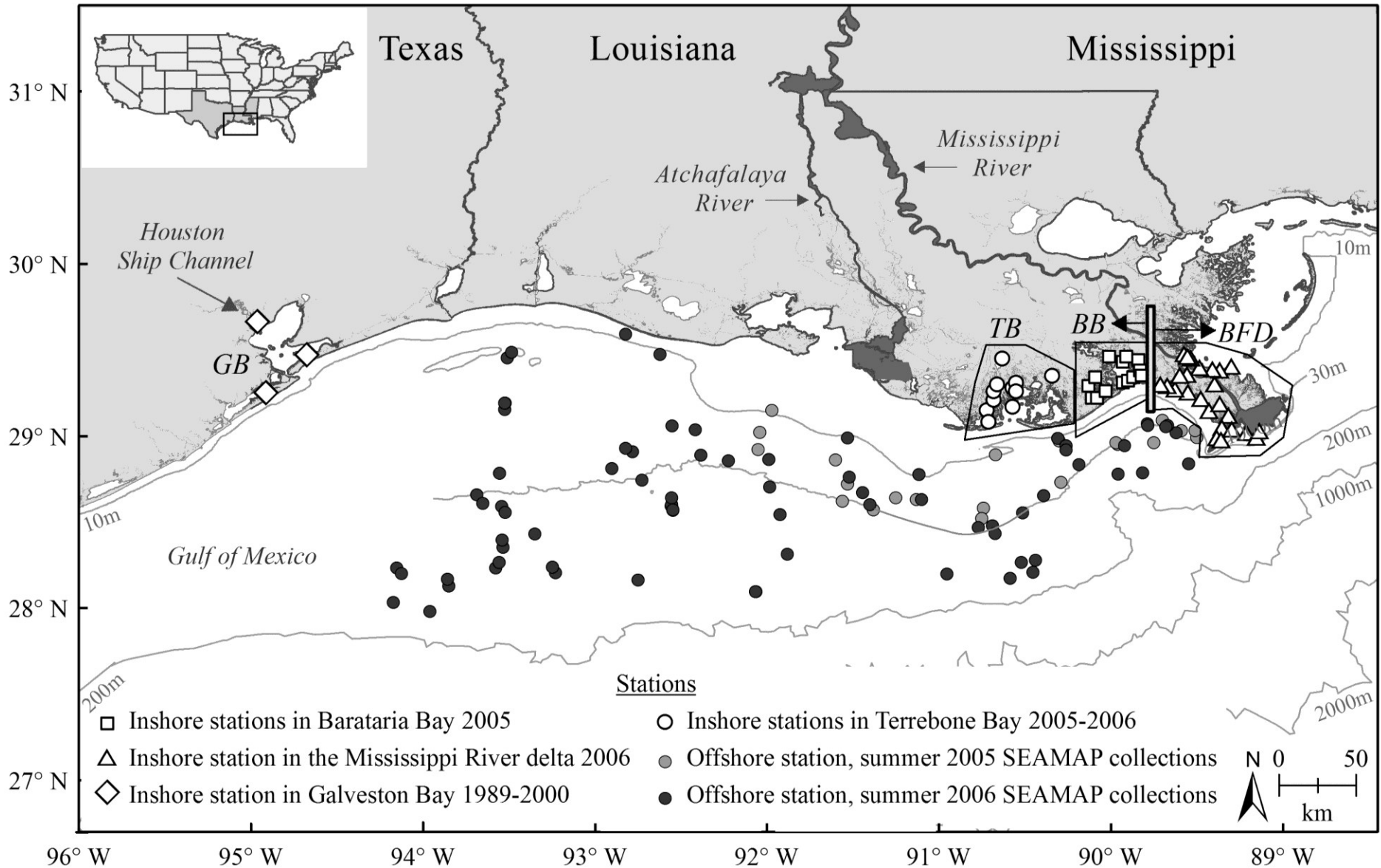
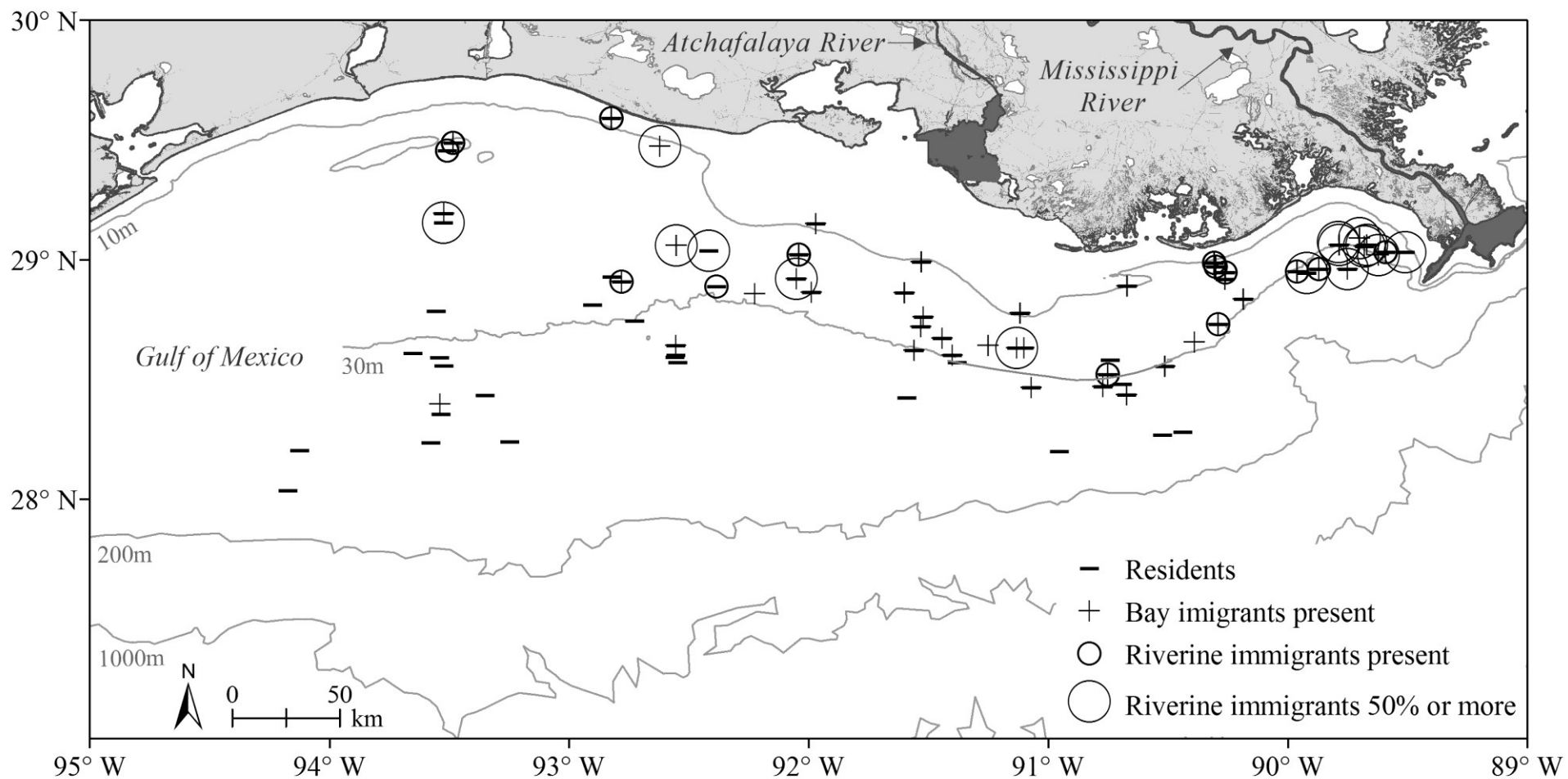


Figure 1



on page 149 of

Figure 6



on page 154 of

Fry B (2011) Mississippi River sustenance of brown shrimp (*Farfantepenaeus aztecus*) in Louisiana coastal waters. *Fisheries Bulletin* 109(2):147-161.

Commissioned by Dr. Fry during the Fall of 2010

Figure 7

on page 155 of

Fry B (2011) Mississippi River sustenance of brown shrimp (*Farfantepenaeus aztecus*) in Louisiana coastal waters. *Fisheries Bulletin* 109(2):147-161.

Commissioned by Dr. Fry during the Fall of 2010

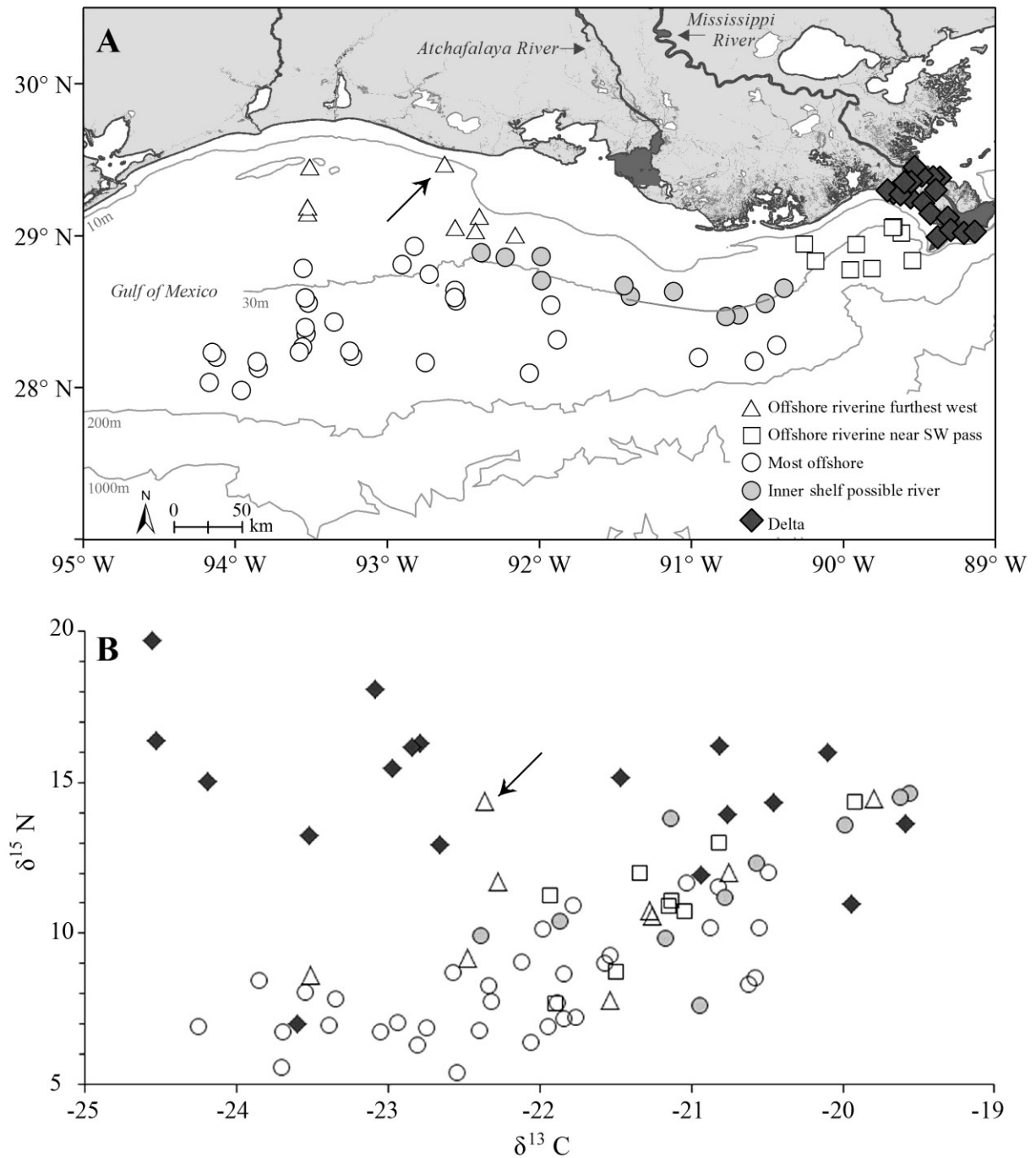
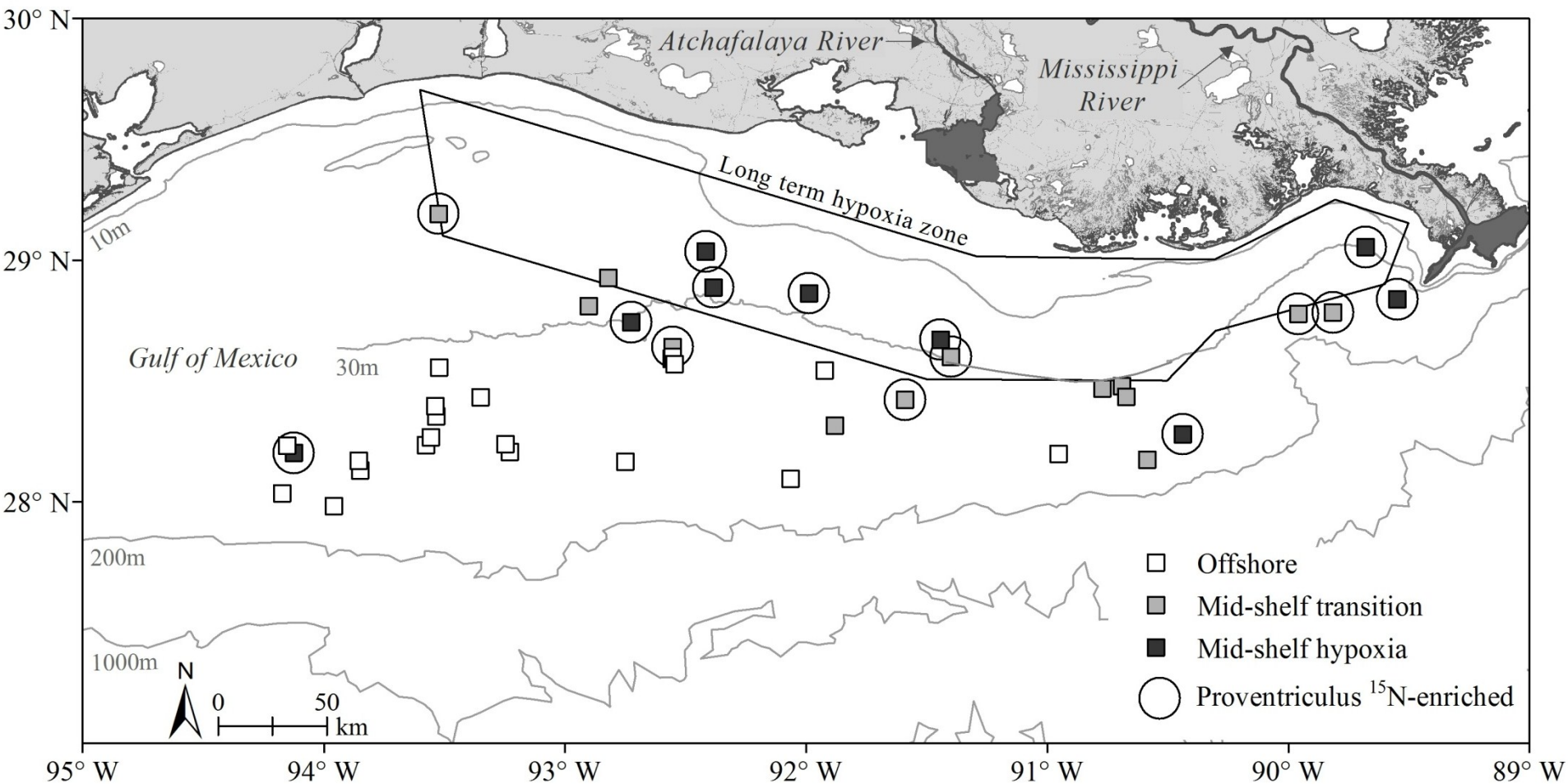


Figure 8



on page 156 of

Fry B (2011) Mississippi River sustenance of brown shrimp (*Farfantepenaeus aztecus*) in Louisiana coastal waters. *Fisheries Bulletin* 109(2):147-161.

Commissioned by Dr. Fry during the Fall of 2010

Figure 1

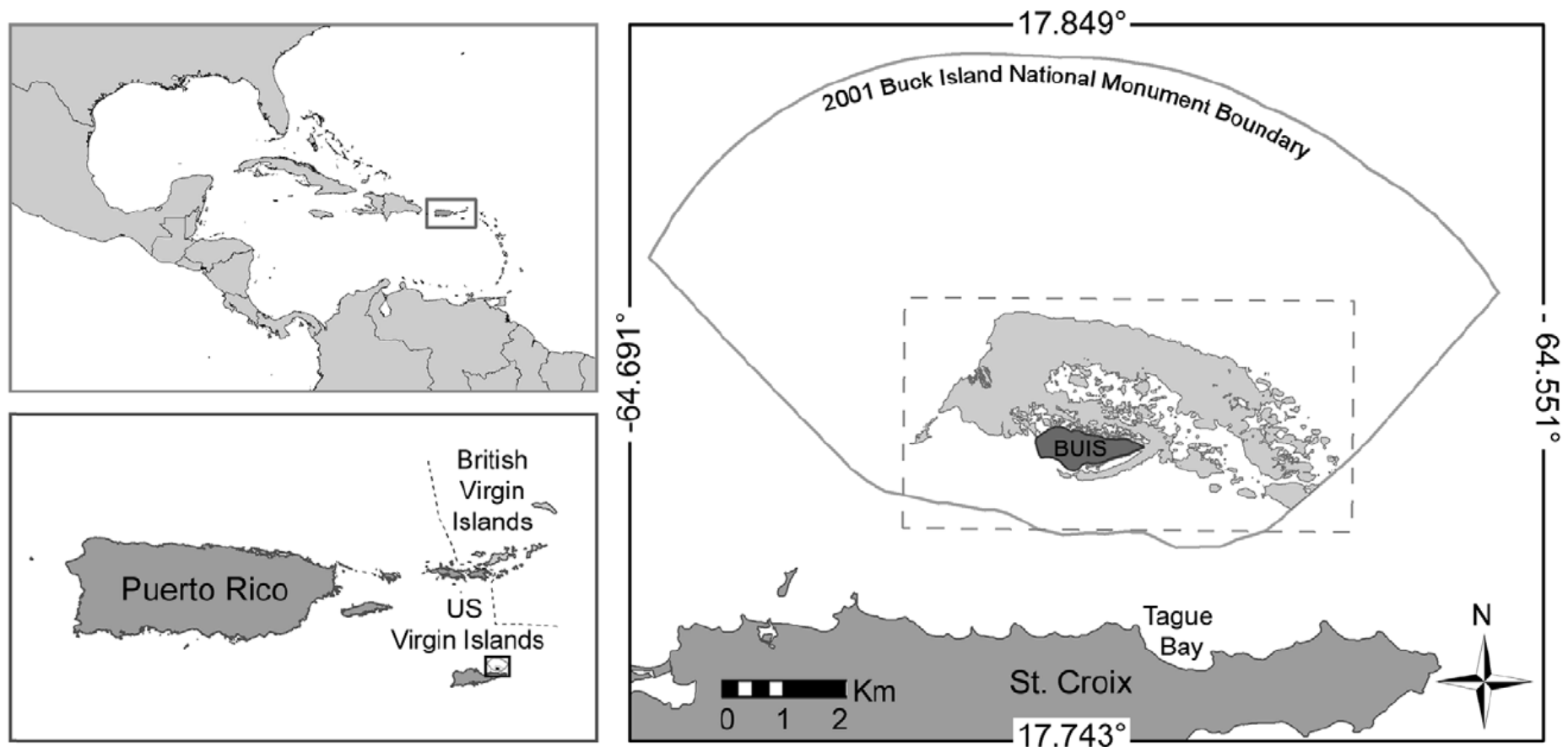


Figure 1. The study area. Buck Island (BUIS) Reef National Monument, located just north of the island of St. Croix, US Virgin Islands (USVI). Mayor et al. 's [56] study area is delineated by the light grey area surrounding BUIS, consisting primarily of hard-bottom substrate less than 10 m deep. The extent of the grid surface used in the DMAP analysis is depicted by the dashed rectangle surrounding Mayor et al. 's [56] study area. doi:10.1371/journal.pone.0021830.g001

in

Lentz JA, Blackburn JK, Curtis AJ (2011) Evaluating Patterns of a White-Band Disease (WBD) Outbreak in *Acropora palmata* Using Spatial Analysis: A Comparison of Transect and Colony Clustering. *PLoS one* 6:e21830

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<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0021830#s5>

Figure 2

in

Lentz JA, Blackburn JK, Curtis AJ (2011) Evaluating Patterns of a White-Band Disease (WBD) Outbreak in *Acropora palmata* Using Spatial Analysis: A Comparison of Transect and Colony Clustering. *PLoS one* 6:e21830

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<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0021830#s5>

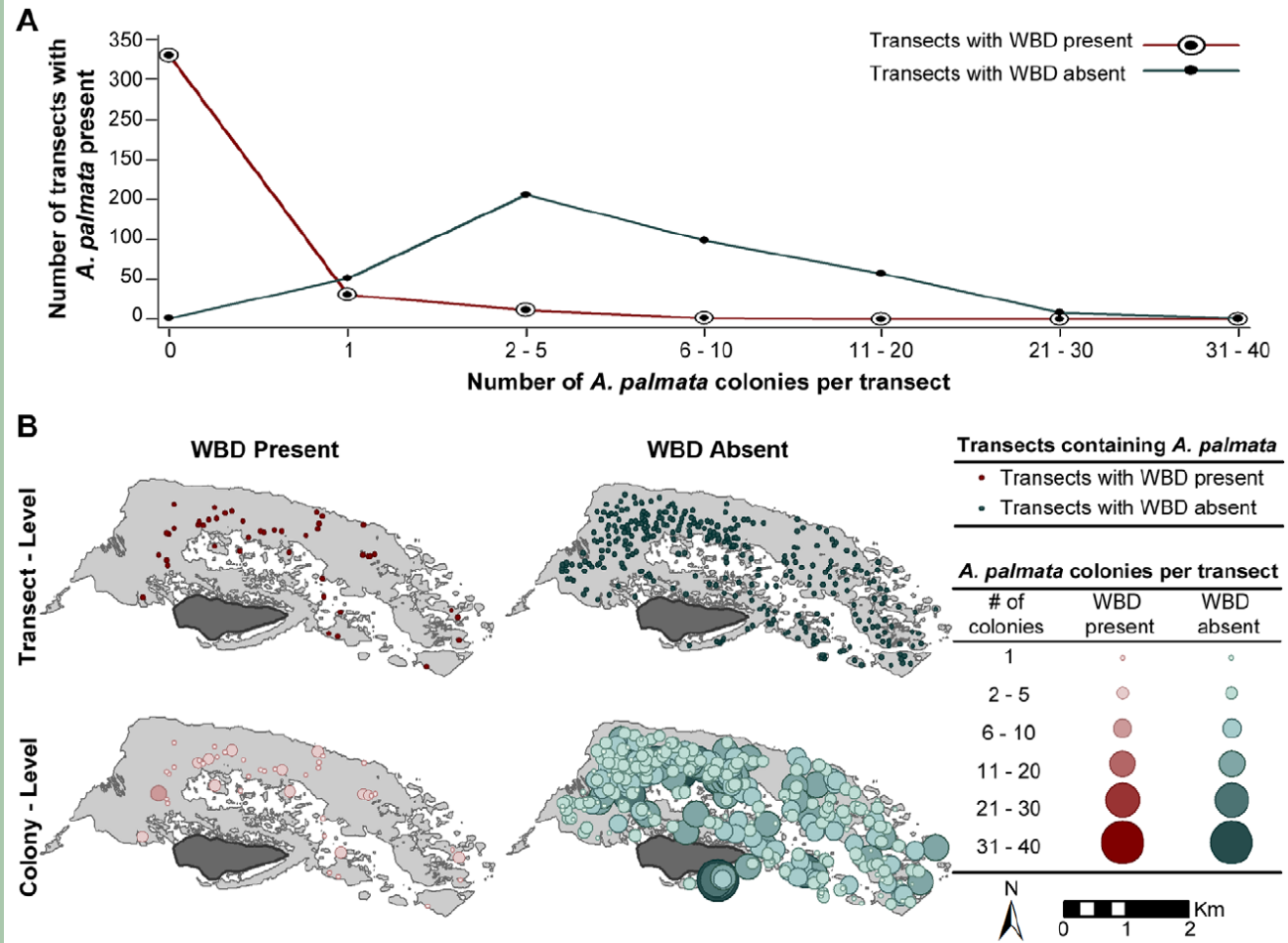


Figure 2. This figure visually depicts the differences between the transect- and colony-level versions of the dataset. (A) Colony densities (the number of colonies per transect) are plotted against the total number of transects with a given colony density, resulting in the cumulative frequency of the colony densities with and without white-band disease (WBD) present. **(B)** Circular symbols are used to indicate the locations of transects with and without WBD present, from the transect-level version of the dataset (top row). The colony-level dataset is depicted using a graduated symbol map in which the size and color of the symbols used to indicate the locations of each transect are scaled according to the number of colonies within that transect to depicts the colony-level dataset (bottom row). doi:10.1371/journal.pone.0021830.g002

Figure 3

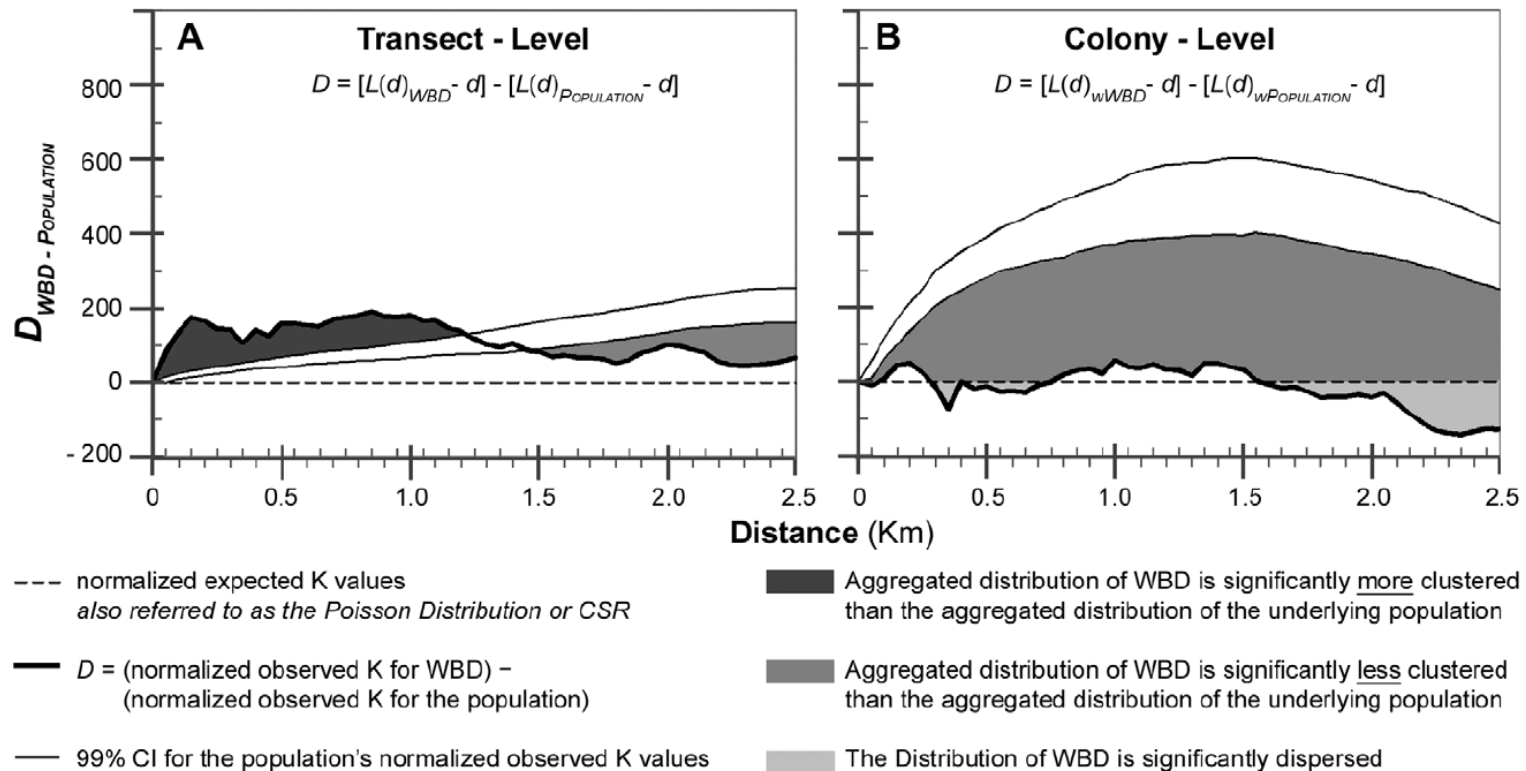


Figure 3. The results of the Ripley's K spatial autocorrelation analysis. Normalized Ripley's K plots were used to assess the spatial distribution of white-band disease (WBD) among *Acropora palmata* over a distance of 2.5 m. Transect-level and colony-level versions of the K function were performed in order to compare the spatial distributions of WBD based on data analyzed at the (A) transect- and (B) colony-levels (respectively). In order to insure that the observed spatial distribution was reflecting the spatial nature of WBD, and not the spatial patterning of the underlying population, the transect and colony-level observed K values for the underlying population were subtracted from the observed Ks of WBD at the transect- and colony-levels, respectively. The resulting K values for WBD were then plotted against distance. The spatial nature of WBD was then assessed by comparing these K values for WBD (thick line) to a spatially random (Poisson) distribution (dashed line at $y=0$), in which WBD values above the Poisson distribution indicates WBD was aggregated within the underlying population, while values below this line indicated WBD was more dispersed than the underlying population. The 99% confidence intervals (thin lines) generated from the observed K values for the population were used to determine the statistical significance of distribution of WBD within the underlying population of susceptible corals.
 doi:10.1371/journal.pone.0021830.g003

Lentz JA, Blackburn JK, Curtis AJ (2011) Evaluating Patterns of a White-Band Disease (WBD) Outbreak in *Acropora palmata* Using Spatial Analysis: A Comparison of Transect and Colony Clustering. *PLoS one* 6:e21830

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<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0021830#s5>

Figure 4

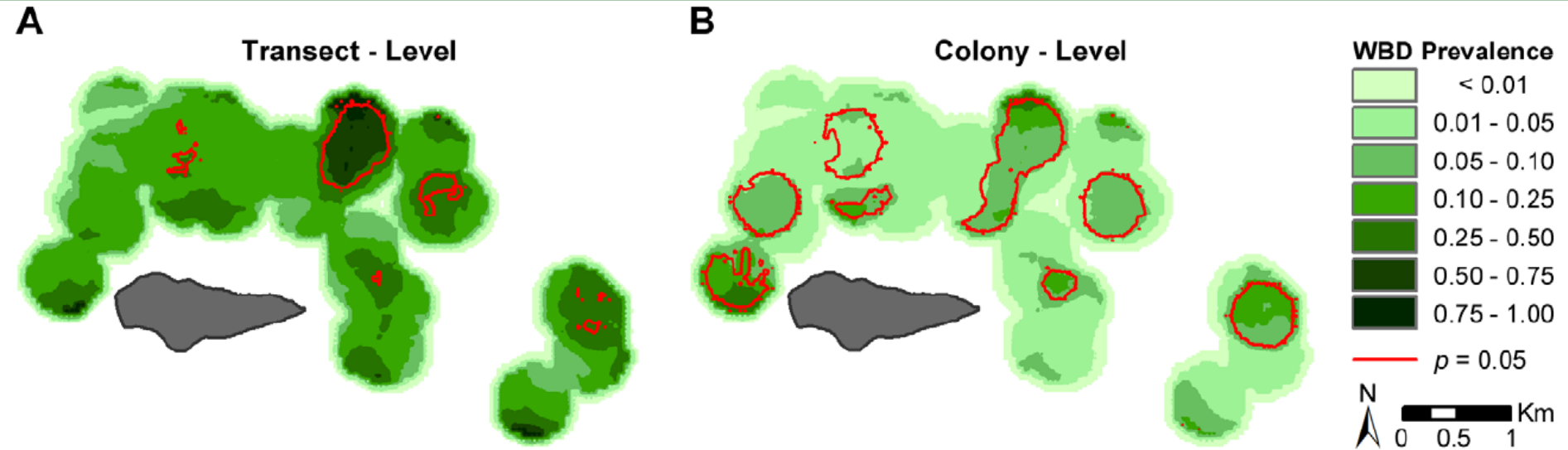


Figure 4. The results of the Disease Mapping and Analysis Program (DMAP) spatial filtering analysis. Comparing the difference between analyzing the coral dataset at the transect (A) versus colony-level (B) using DMAP. The following spatial parameters were used for both analyses: a 50 m² grid cell resolution; and a 342.55 m filter radius, calculated using the Optimized Bandwidth (h_{opt}) estimation method. The prevalence of white-band disease (WBD) clustering are shown in green, with darker shades indicating increased prevalence. Areas with statistically significant clustering rates ($p \leq 0.05$), based on 1000 Monte Carlo simulations, are outlined in red. The numbers placed beside each significant clustering were used solely for identification purposes, and have no empirical value.
doi:10.1371/journal.pone.0021830.g004

in

Lentz JA, Blackburn JK, Curtis AJ (2011) Evaluating Patterns of a White-Band Disease (WBD) Outbreak in *Acropora palmata* Using Spatial Analysis: A Comparison of Transect and Colony Clustering. *PLoS one* 6:e21830

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<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0021830#s5>

Figure S1

in

Lentz JA, Blackburn JK, Curtis AJ (2011)

Evaluating Patterns of a White-Band Disease (WBD) Outbreak in *Acropora palmata* Using Spatial Analysis: A Comparison of Transect and Colony Clustering. *PLoS one* 6:e21830

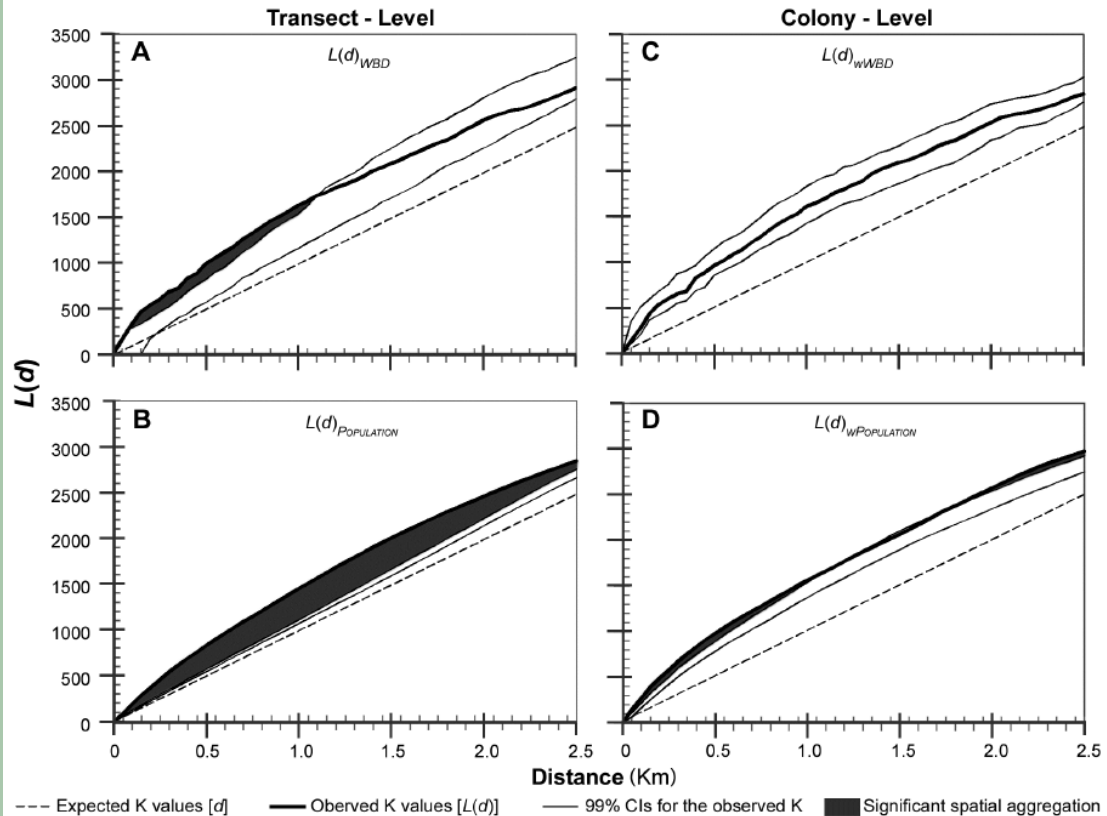


Figure S1. Ripley's K plots of the diseased and underlying population at both the transect and colony-levels. Ripley's K plots comparing the spatial patterning of white-band disease (WBD) and the underlying *Acropora palmata* population, and showing the affect distance has on each of these spatial patterns. The null distribution of complete spatial randomness (CSR) is represented by the Expected K values (d) which are equal to the distance interval in which they are being tests (for example, the Expected K value at a distance of 500 m would be 500), thus as the distance threshold increases so will the Expected K values. In all cases the Observed K (thick lines), and their corresponding 99% confidence intervals (thin lines) fell above the CSR benchmark (dashed line) indicating that both WBD and the underlying coral population had aggregated (clustered) spatial distributions across all of the tested distances at both the transect and colony-level. The results of the non-weighted K functions (A–B) assess the degree of clustering or dispersion present in the spatial distribution of the transect locations; while the results of the weighted K functions (C–D), in which each transect location was weighted by the number of colonies within it, evaluate the degree of clustering or dispersion of the colonies. (A) Significant clustering (shaded region) was detected in the spatial distribution of transects with WBD present at distances to ≤ 1.1 km, and non-significant clustering was detected up to 2.5 km (the maximum distance tested). (B) The spatial distribution of the 375 transects containing *A. palmata* showed significant clustering at all of the tested distances. (C) When the locations of transects with WBD present were weighted by the number of WBD colonies within them, their resulting spatial distribution was clustered, but not to a statistically significant extent. (D) When the transect locations of the underlying population were weighted by the total number of colonies within them, their resulting spatial distribution showed signs of aggregation at all of the distances tested, but only detected significant clustering at distances ≤ 1.05 km and ≥ 1.75 km.

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Figure S2

in

Lentz JA, Blackburn JK, Curtis AJ (2011) Evaluating Patterns of a White-Band Disease (WBD) Outbreak in *Acropora palmata* Using Spatial Analysis: A Comparison of Transect and Colony Clustering. *PLoS one* 6:e21830

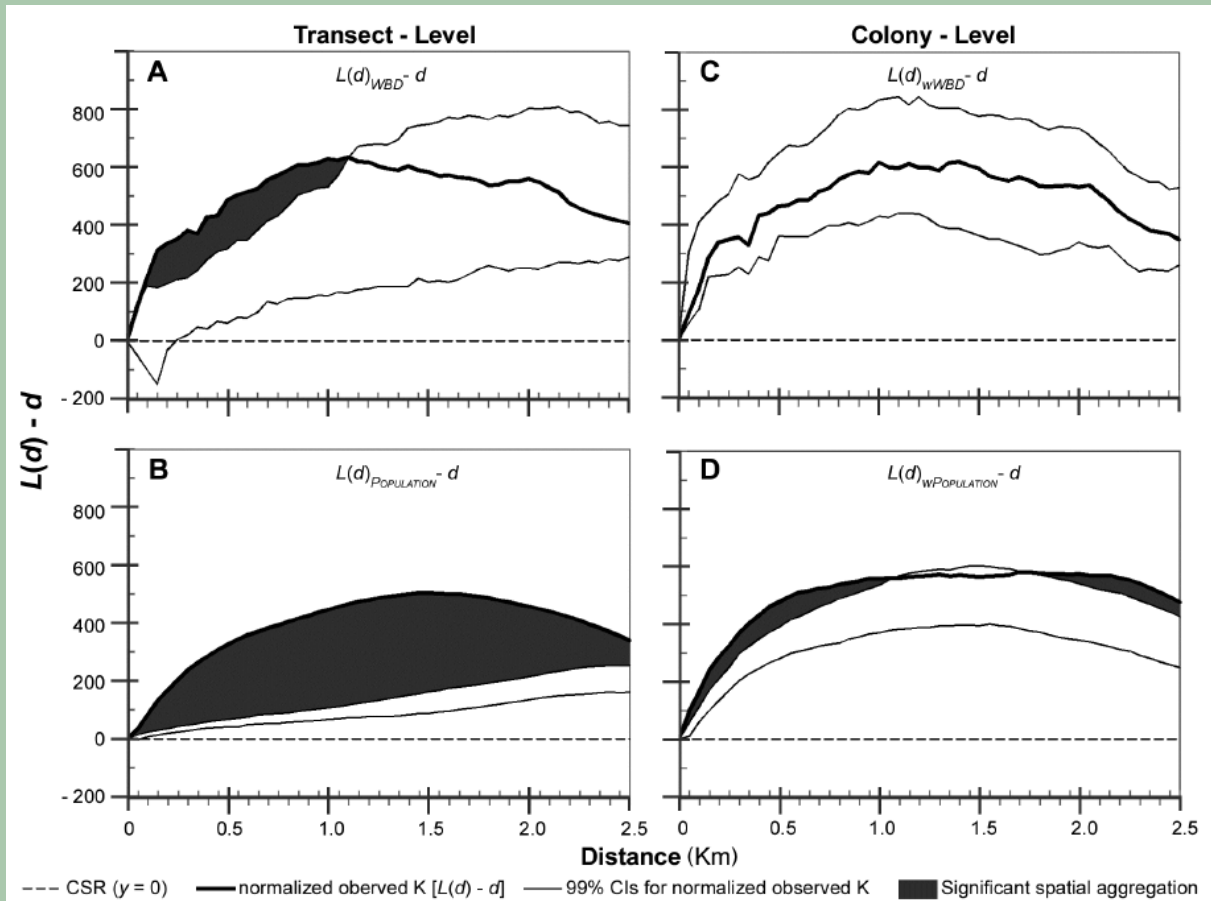


Figure S2. Normalized Ripley's K plots depicting the same information as shown in Figure S1. The transect locations for both white-band disease (WBD, **A**) and the underlying population (**B**) were clustered at all spatial distances tested (0–2.5 km); with the population showing significant clustering (shaded region) at all distances <2.5 km and significant clustering only occurring at distances ≤ 1.1 km for transects in which WBD was present. (**C**) Transects containing WBD colonies still appear to be spatially aggregated across all of the tested spatial scales, but not to a statistically significant extent. (**D**) As in the transect-level analysis, the distribution of transects containing both diseased and non-diseased *A. palmata* colonies was also spatially aggregated; however, when the transects are weighted by the number of colonies within them, they only appear to have statistically significant clustering when tested using distances thresholds ≤ 1.15 or ≥ 1.7 km.

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Figure S3

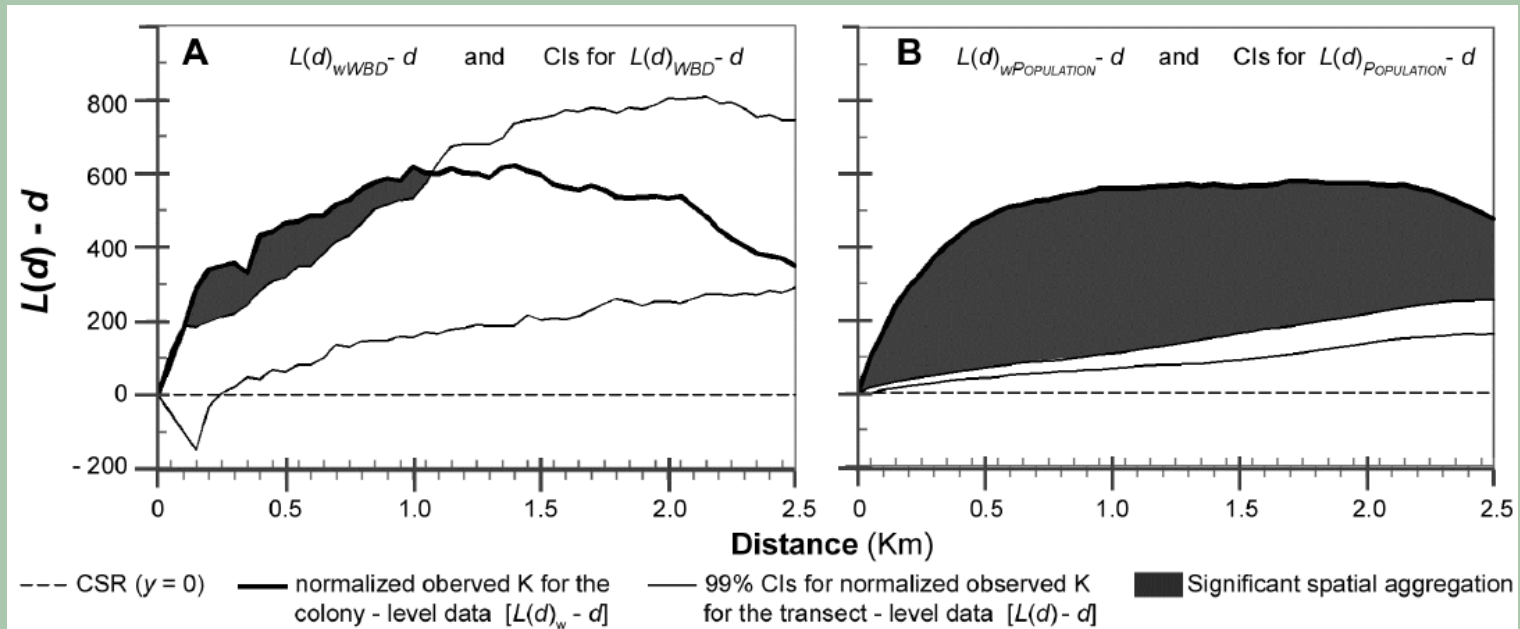


Figure S3. Normalized Ripley's K Plots used to test the null hypothesis H_{S3} . Graphical representation of the test of the null hypothesis (H_{S3}) that transects weighted by the number of colonies within them will not be significantly more clustered or dispersed than the underlying spatial distribution based on the transect locations alone. In order for the null hypothesis to be accepted the observed K based on the colony-level data (thick line) must fall within the upper and lower 99% confidence intervals (CIs, depicted as thin lines) estimated using the transect-level data. (A) The null hypothesis was rejected at distances <1.1 km and accepted at distances >1.1 km for white-band disease (WBD). (B) The null hypothesis was rejected for the population data at all of the distances tested.

in

Lentz JA, Blackburn JK, Curtis AJ (2011) Evaluating Patterns of a White-Band Disease (WBD) Outbreak in *Acropora palmata* Using Spatial Analysis: A Comparison of Transect and Colony Clustering. *PLoS one* 6:e21830

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Figure S4

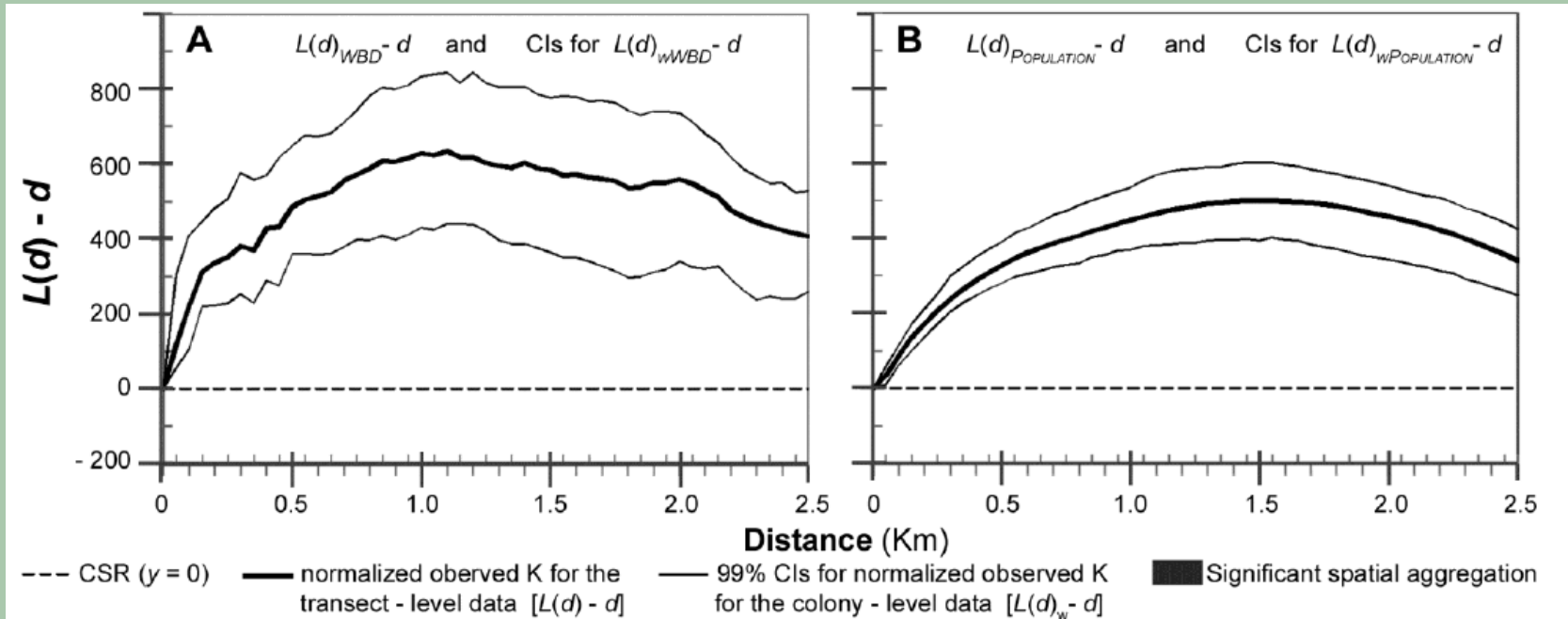


Figure S4. Normalized Ripley's K Plots used to test the null hypothesis H_{S4} . A graphical representation of the test of the null hypothesis (H_{S4}) that the spatial distribution of the colony-level data would be more clustered or dispersed than they would be through chance alone. This hypothesis was rejected for both (A) white-band disease (WBD) and the (B) underlying population because the observed K (thick line) based on the transect-level data falls within the 99% confidence intervals (CIs, depicted as thin lines) based on the observed K estimated using the colony-level data.

in

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