Supplementary Materials

Harnessing Machine Learning Techniques for Large-scale Mapping of Inland Aquaculture Waterbodies in Bangladesh

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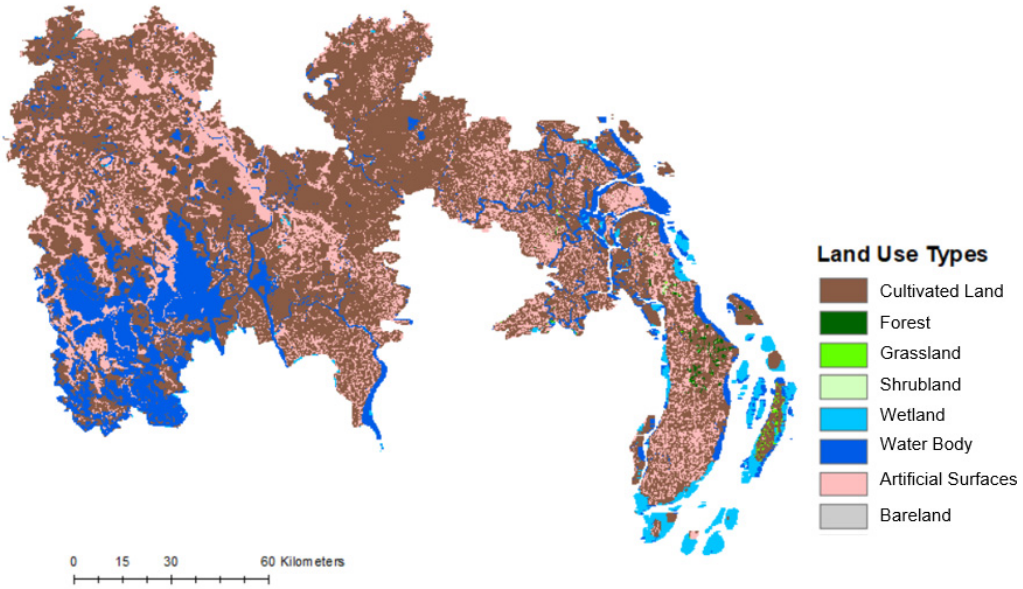


Figure S1. Land use map of the study region (adapted from (China Ministry of Natural Resources [29])

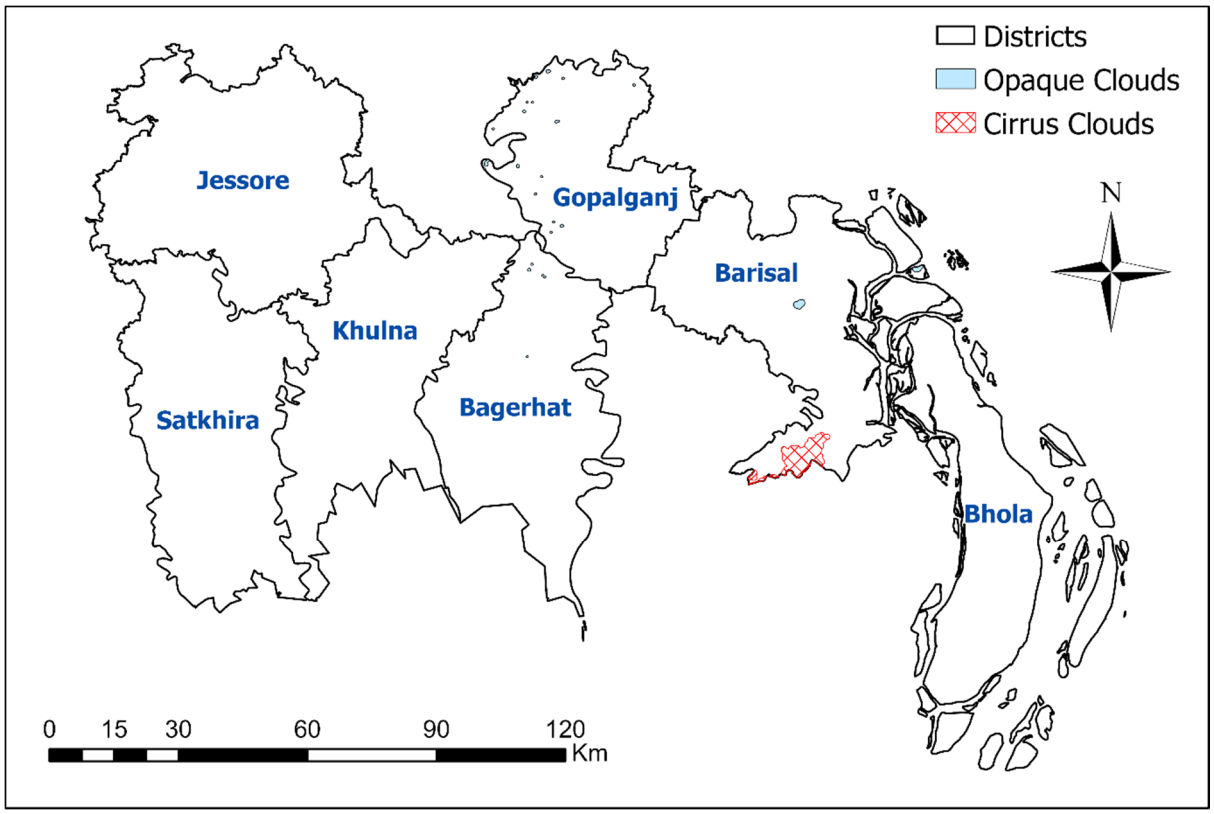


Figure S2. Cloud mask distribution in the study area for the single-day Sentinel-2 imagery.

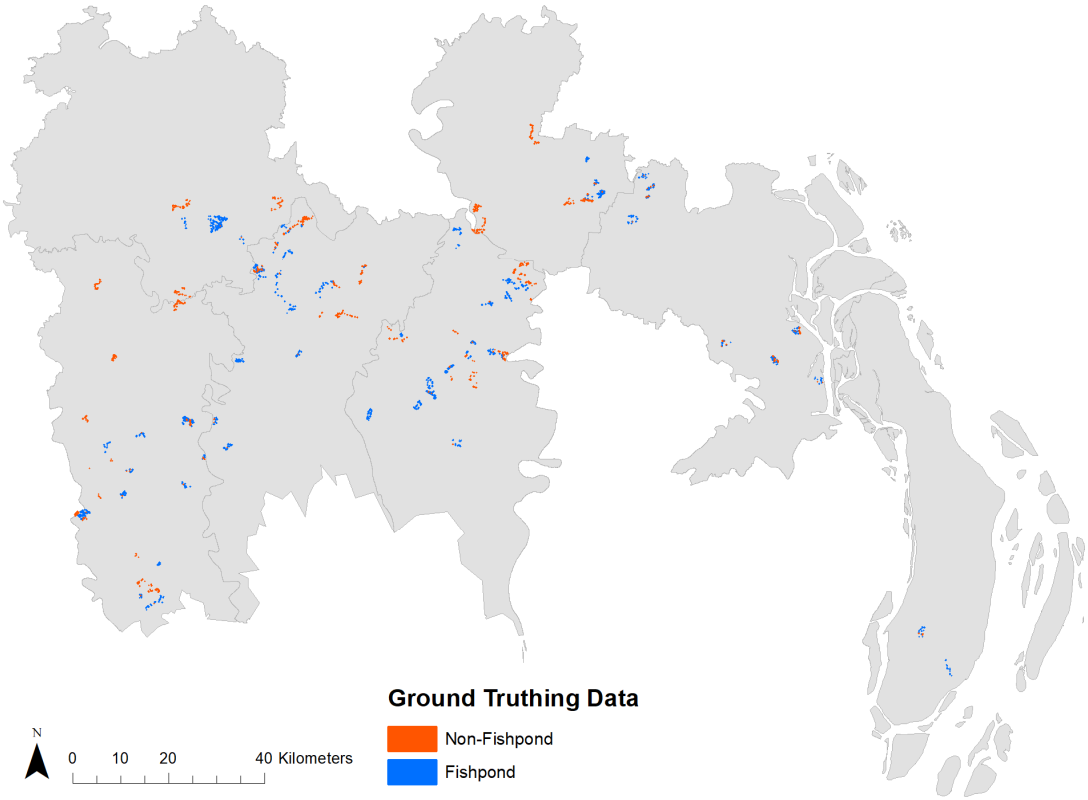
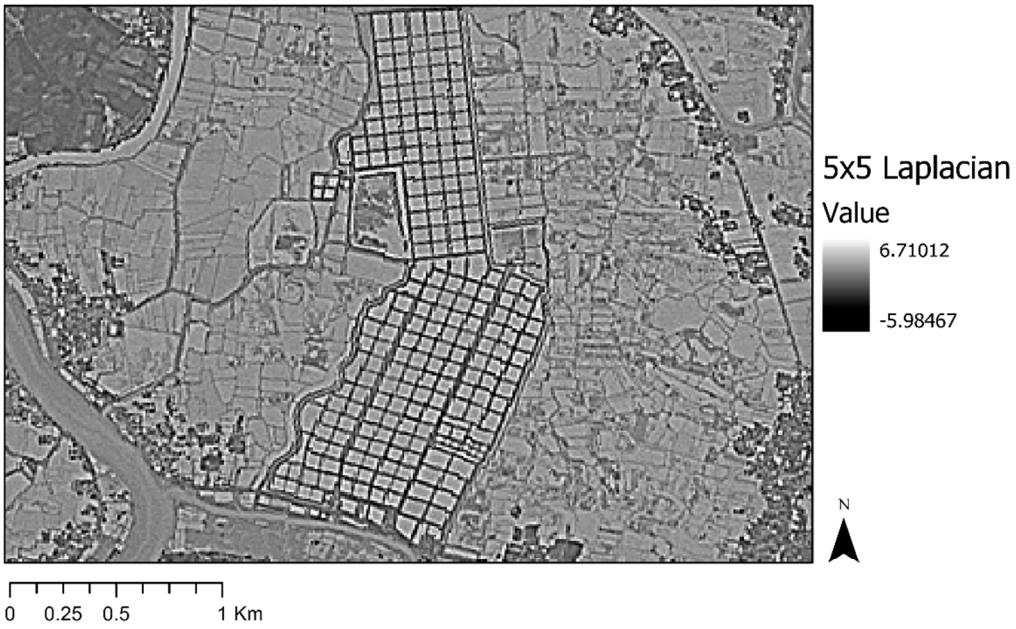
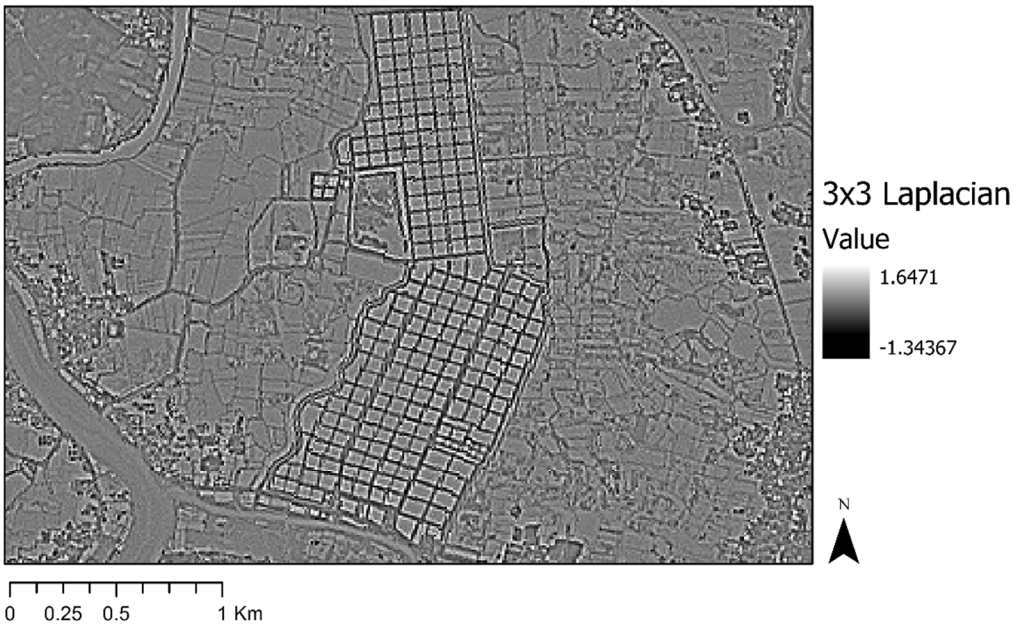


Figure S3. Distribution of Ground Truthing Data locations by type





Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Figure S4. Comparison of results of the 5×5 Laplacian Convolution Filter (top) and the 3×3 Laplacian Convolution Filter (bottom) in Satkhira. (Centroid: 22° 34' 36.1416" N, 89° 12' 10.3896" E)

Table S1. Land cover as percentage of area for each district within the study region (China Ministry of Natural Resources[29])

Land Cover	Percentage of area within each District						
	Bagerhat	Barisal	Bhola	Gopalganj	Jessore	Khulna	Satkhira
Cultivated Land	69.9	60.7	52.5	84.1	67.4	56.0	38.2
Forest	0	0.1	2.0	0	0	0	0
Grass Land	0	0.1	1.0	0	0	0	0
Shrub Land	0	0	0.3	0	0	0	0
Wetland	0.4	0.7	13.3	0.1	0.2	0.4	0.1
Water Body	6.3	9.2	7.0	2.2	3.0	22.6	39.0
Artificial Surfaces	23.4	29.1	23.8	13.6	29.4	21.0	22.7
Bareland	0	0.1	0.1	0	0	0	0

Table S2. Numbers of ground-truthing data fishponds and non-fishponds by district

District	Number of fishponds	Number of non-fishponds
Bagerhat	235	144
Barisal	168	32
Bhola	27	2
Gopalganj	77	131
Jessore	113	111
Khulna	163	146
Satkhira	208	175

Table S3. Base method comparison for all seven districts

District	Bagerhat		Barisal		Bhola		Gopalganj		Jessore		Khulna		Satkhira	
Classifier Type	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**
Percentage of GT*** fishpond area identified pre-classifier	9%	9%	0.2%	0.2%	0%	0%	6%	6%	0.8%	0.8%	0%	0%	0%	0%
GT*** fishponds identified pre-classification	25 of 235	25 of 235	1 of 168	1 of 168	0 of 27	0 of 27	7 of 77	7 of 77	13 of 113	13 of 113	1 of 163	1 of 163	0 of 208	0 of 208
Percentage of GT*** fishpond area identified post-classifier	9%	5%	0%	0%	0%	0%	6%	5%	0.5%	0.2%	0%	0%	0%	0%
GT*** fishponds identified post-classification	16 of 235	5 of 235	0 of 168	0 of 168	0 of 27	0 of 27	3 of 77	2 of 77	4 of 113	2 of 113	0 of 163	0 of 163	0 of 208	0 of 208

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S4. Time period comparison for Bagerhat

Time Frame	Year		Month		Day	
Classifier Type	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	5	5	5	5
Percentage of GT*** fishpond area identified pre-classifier	9%	9%	52%	52%	67%	67%
GT*** fishponds identified pre-classification	25 of 235	25 of 235	139 of 235	139 of 235	182 of 235	182 of 235
Percentage of GT*** fishpond area identified post-classifier	9%	5%	51%	19%	66%	16%
GT*** fishponds identified post-classification	16 of 235	5 of 235	117 of 235	49 of 235	159 of 235	51 of 235

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S5. Time period comparison for Barisal

Time Frame	Year		Month		Day	
Classifier Type	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	5	5	5	5
Percentage of GT*** fishpond area identified pre-classifier	0.2%	0.2%	4%	4%	16%	16%
GT*** fishponds identified pre-classification	1 of 168	1 of 168	8 of 168	8 of 168	28 of 168	28 of 168
Percentage of GT*** fishpond area identified post-classifier	0%	0%	4%	4%	13%	12%
GT*** fishponds identified post-classification	0 of 168	0 of 168	3 of 168	4 of 168	11 of 168	10 of 168

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S6. Time period comparison for Bhola

Time Frame	Year		Month		Day	
Classifier Type	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	5	5	5	5
Percentage of GT*** fishpond area identified pre-classifier	0%	0%	0%	0%	3%	3%
GT*** fishponds identified pre-classification	0 of 27	0 of 27	0 of 27	0 of 27	1 of 27	1 of 27
Percentage of GT*** fishpond area identified post-classifier	0%	0%	0%	0%	3%	3%
GT*** fishponds identified post-classification	0 of 27	0 of 27	0 of 27	0 of 27	1 of 27	1 of 27

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S7. Time period comparison for Gopaglanj

Time Frame	Year		Month		Day	
Classifier Type	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	5	5	5	5
Percentage of GT*** fishpond area identified pre-classifier	6%	6%	22%	22%	36%	36%
GT*** fishponds identified pre-classification	7 of 77	7 of 77	44 of 77	44 of 77	66 of 77	66 of 77
Percentage of GT*** fishpond area identified post-classifier	6%	5%	19%	11%	30%	23%
GT*** fishponds identified post-classification	3 of 77	2 of 77	19 of 77	6 of 77	36 of 77	22 of 77

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S8. Time period comparison for Jessore

Time Frame	Year		Month		Day	
Classifier Type	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	5	5	5	5
Percentage of GT*** fishpond area identified pre-classifier	1%	1%	44%	44%	91%	91%
GT*** fishponds identified pre-classification	13 of 113	13 of 113	70 of 113	70 of 113	99 of 113	99 of 113
Percentage of GT*** fishpond area identified post-classifier	0.5%	0.2%	43%	6%	91%	3%
GT*** fishponds identified post-classification	4 of 113	2 of 113	59 of 113	9 of 113	90 of 113	7 of 113

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S9. Time period comparison for Khulna

Time Frame	Year		Month		Day	
Classifier Type	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	5	5	5	5
Percentage of GT*** fishpond area identified pre-classifier	0%	0%	36%	36%	67%	67%
GT*** fishponds identified pre-classification	1 of 163	1 of 163	71 of 163	71 of 163	112 of 163	112 of 163
Percentage of GT*** fishpond area identified post-classifier	0%	0%	33%	9%	65%	5%
GT*** fishponds identified post-classification	0 of 163	0 of 163	60 of 163	19 of 163	95 of 163	15 of 163

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S10. Time period comparison for Satkhira

Time Frame	Year		Month		Day	
Classifier Type	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	5	5	5	5
Percentage of GT*** fishpond area identified pre-classifier	0%	0%	66%	66%	85%	85%
GT*** fishponds identified pre-classification	0 of 208	0 of 208	75 of 208	75 of 208	115 of 208	115 of 208
Percentage of GT*** fishpond area identified post-classifier	0%	0%	66%	1%	84%	1%
GT*** fishponds identified post-classification	0 of 208	0 of 208	72 of 208	9 of 208	103 of 208	14 of 208

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S11. Buffer size comparison for Bagerhat for both month and single day

Time frame	Month		Month		Month		Month		Day		Day		Day		Day	
Classifier type	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	3	3	1	1	0	0	5	5	3	3	1	1	0	0
Percentage of GT*** fishpond area identified pre-classifier	52%	52%	50%	50%	45%	45%	42%	42%	67%	67%	66%	66%	61%	61%	58%	58%
GT*** fishponds identified pre-classification	139 of 235	139 of 235	136 of 235	136 of 235	111 of 235	111 of 235	95 of 235	95 of 235	182 of 235	182 of 235	180 of 235	180 of 235	157 of 235	157 of 235	141 of 235	141 of 235
Percentage of GT*** fishpond area identified post-classifier	51%	19%	49%	17%	44%	0%	41%	13%	66%	16%	65%	15%	60%	13%	57%	15%
GT*** fishponds identified post-classification	117 of 235	49 of 235	107 of 235	48 of 235	87 of 235	0 of 235	80 of 235	39 of 235	159 of 235	51 of 235	156 of 235	50 of 235	138 of 235	46 of 235	131 of 235	44 of 235

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S12. Buffer size comparison for Barisal for both month and single day

Time frame	Month		Month		Month		Month		Day		Day		Day		Day	
Classifier type	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	3	3	1	1	0	0	5	5	3	3	1	1	0	0
Percentage of GT*** fishpond area identified pre-classifier	4.3%	4.3%	3%	3%	1%	1%	1%	1%	16%	16%	13%	13%	10%	10%	6%	6%
GT*** fishponds identified pre-classification	8 of 168	8 of 168	7 of 168	7 of 168	4 of 168	4 of 168	2 of 168	2 of 168	28 of 168	28 of 168	22 of 168	22 of 168	12 of 168	12 of 168	8 of 168	8 of 168
Percentage of GT*** fishpond area identified post-classifier	4%	4%	2%	3%	1%	0%	0%	1%	13%	12%	12%	8%	9%	6%	5%	4%
GT*** fishponds identified post-classification	3 of 168	4 of 168	3 of 168	4 of 168	1 of 168	0 of 168	0 of 168	1 of 168	11 of 168	10 of 168	11 of 168	6 of 168	9 of 168	3 of 168	4 of 168	3 of 168

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S13. Buffer size comparison for Bhola for both month and single day

Time frame	Month		Month		Month		Month		Day		Day		Day		Day	
Classifier type	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	3	3	1	1	0	0	5	5	3	3	1	1	0	0
Percentage of GT*** fishpond area identified pre-classifier	0%	0%	0%	0%	0%	0%	0%	0%	3%	3%	1%	1%	0%	0%	0%	0%
GT*** fishponds identified pre-classification	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	1 of 27	1 of 27	1 of 27	1 of 27	0 of 27	0 of 27	0 of 27	0 of 27
Percentage of GT*** fishpond area identified post-classifier	0%	0%	0%	0%	0%	0%	0%	0%	3%	3%	0%	0%	0%	0%	0%	0%
GT*** fishponds identified post-classification	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	1 of 27	1 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S14. Buffer size comparison for Gopalganj for both month and single day

Time frame	Month		Month		Month		Month		Day		Day		Day		Day	
Classifier type	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	3	3	1	1	0	0	5	5	3	3	1	1	0	0
Percentage of GT*** fishpond area identified pre-classifier	22%	22%	20%	20%	13%	13%	9%	9%	36%	36%	35%	35%	32%	32%	30%	30%
GT*** fishponds identified pre-classification	44 of 77	44 of 77	42 of 77	42 of 77	24 of 77	24 of 77	13 of 77	13 of 77	66 of 77	66 of 77	65 of 77	65 of 77	62 of 77	62 of 77	55 of 77	55 of 77
Percentage of GT*** fishpond area identified post-classifier	19%	11%	18%	13%	8%	0%	9%	6%	30%	23%	30%	23%	28%	21%	28%	18%
GT*** fishponds identified post-classification	19 of 77	6 of 77	19 of 77	9 of 77	8 of 77	0 of 77	7 of 77	3 of 77	36 of 77	22 of 77	38 of 77	21 of 77	36 of 77	20 of 77	37 of 77	15 of 77

* Logistic Regression

** Classification and Regression Trees

***Ground truthing

Table S15. Buffer size comparison for Jessore for both month and single day

Time frame	Month		Month		Month		Month		Day		Day		Day		Day	
Classifier type	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	3	3	1	1	0	0	5	5	3	3	1	1	0	0
Percentage of GT*** fishpond area identified pre-classifier	44%	44%	38%	38%	22%	22%	18%	18%	91%	91%	91%	91%	89%	89%	86%	86%
GT*** fishponds identified pre-classification	70 of 113	70 of 113	62 of 113	62 of 113	43 of 113	43 of 113	35 of 113	35 of 113	99 of 113	99 of 113	97 of 113	97 of 113	91 of 113	91 of 113	90 of 113	90 of 113
Percentage of GT*** fishpond area identified post-classifier	43%	6%	37%	6%	21%	0%	17%	6%	91%	3%	90%	1%	88%	1%	86%	1%
GT*** fishponds identified post-classification	59 of 113	9 of 113	55 of 113	13 of 113	33 of 113	0 of 113	26 of 113	10 of 113	90 of 113	7 of 113	90 of 113	5 of 113	88 of 113	6 of 113	85 of 113	5 of 113

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S16. Buffer size comparison for Khulna for both month and single day

Time frame	Month		Month		Month		Month		Day		Day		Day		Day	
Classifier type	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	3	3	1	1	0	0	5	5	3	3	1	1	0	0
Percentage of GT*** fishpond area identified pre-classifier	36%	36%	32%	32%	29%	29%	27%	27%	67%	67%	66%	66%	62%	62%	59%	59%
GT*** fishponds identified pre-classification	71 of 163	71 of 163	66 of 163	66 of 163	60 of 163	60 of 163	58 of 163	58 of 163	112 of 163	112 of 163	110 of 163	110 of 163	103 of 163	103 of 163	98 of 163	98 of 163
Percentage of GT*** fishpond area identified post-classifier	33%	9%	30%	8%	27%	0%	0%	7%	65%	5%	65%	6%	61%	5%	56%	9%
GT*** fishponds identified post-classification	60 of 163	19 of 163	56 of 163	19 of 163	48 of 163	0 of 163	0 of 163	15 of 163	95 of 163	15 of 163	93 of 163	16 of 163	90 of 163	17 of 163	84 of 163	21 of 163

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S17. Buffer size comparison for Satkhira for both month and single day

Time frame	Month		Month		Month		Month		Day		Day		Day		Day	
Classifier type	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**	LR*	CART**
Buffer Size	5	5	3	3	1	1	0	0	5	5	3	3	1	1	0	0
Percentage of GT*** fishpond area identified pre-classifier	66%	66%	64%	64%	61%	61%	60%	60%	85%	85%	84%	84%	84%	84%	83%	83%
GT*** fishponds identified pre-classification	75 of 208	75 of 208	73 of 208	73 of 208	69 of 208	69 of 208	67 of 208	67 of 208	115 of 208	115 of 208	108 of 208	108 of 208	101 of 208	101 of 208	94 of 208	94 of 208
Percentage of GT*** fishpond area identified post-classifier	66%	1%	64%	2%	61%	1%	60%	5%	84%	1%	84%	1%	83%	1%	83%	1%
GT*** fishponds identified post-classification	72 of 208	9 of 208	69 of 208	9 of 208	65 of 208	7 of 208	62 of 208	10 of 208	103 of 208	14 of 208	101 of 208	13 of 208	91 of 208	6 of 208	91 of 208	6 of 208

* Logistic Regression
** Classification and Regression Trees
***Ground truthing

Table S18. *Mode* reducer applied for one month period in Bagerhat comparing water-identifying index combinations

Index Type	Combined		AWEI[d]		MNDWI[e]		NDWI[f]	
Classifier Type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	64%	64%	74%	74%	57%	57%	62%	62%
GT[c] fishponds identified pre-classification	171 of 235	171 of 235	183 of 235	183 of 235	145 of 235	145 of 235	182 of 235	182 of 235
Percentage of GT[c] fishpond area identified post-classifier	63%	19%	73%	15%	56%	22%	60%	19%
GT[c] fishponds identified post-classification	141 of 235	59 of 235	174 of 235	37 of 235	129 of 235	57 of 235	142 of 235	51 of 235

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S19. *Mode* reducer applied for one month period in Barisal comparing water-identifying index combinations.

Index Type	Combined		AWEI[d]		MNDWI[e]		NDWI[f]	
Classifier Type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	12%	12%	14%	14%	8%	8%	17%	17%
GT[c] fishponds identified pre-classification	17 of 168	17 of 168	20 of 168	20 of 168	11 of 168	11 of 168	40 of 168	40 of 168
Percentage of GT[c] fishpond area identified post-classifier	11%	9%	13%	11%	8%	7%	13%	13%
GT[c] fishponds identified post-classification	12 of 168	6 of 168	15 of 168	10 of 168	7 of 168	5 of 168	14 of 168	13 of 168

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S20. *Mode* reducer applied for one month period in Bhola comparing water-identifying index combinations

Index Type	Combined		AWEI[d]		MNDWI[e]		NDWI[f]	
Classifier Type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	0%	0%	0%	0%	0%	0%	7%	7%
GT[c] fishponds identified pre-classification	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	5 of 27	5 of 27
Percentage of GT[c] fishpond area identified post-classifier	0%	0%	0%	0%	0%	0%	0%	0%
GT[c] fishponds identified post-classification	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S21. *Mode* reducer applied for one month period in Gopalganj comparing water-identifying index combinations

Index Type	Combined		AWEI[d]		MNDWI[e]		NDWI[f]	
Classifier Type	LR [a]	CART [b]	LR [a]	CART [b]	LR [a]	CART [b]	LR [a]	CART [b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	30%	30%	48%	48%	14%	14%	33%	33%
GT[c] fishponds identified pre-classification	58 of 77	58 of 77	62 of 77	62 of 77	22 of 77	22 of 77	61 of 77	61 of 77
Percentage of GT[c] fishpond area identified post-classifier	24%	19%	46%	30%	10%	9%	26%	20%
GT[c] fishponds identified post- classification	25 of 77	14 of 77	49 of 77	26 of 77	10 of 77	7of 77	26 of 77	16 of 77

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S22. *Mode* reducer applied for one month period in Jessore comparing water-identifying index combinations

Index Type	Combined		AWEI[d]		MNDWI[e]		NDWI[f]	
Classifier Type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	88%	88%	94%	94%	85%	85%	85%	85%
GT[c] fishponds identified pre- classification	95 of 113	95 of 113	98 of 113	98 of 113	87 of 113	87 of 113	98 of 113	98 of 113
Percentage of GT[c] fishpond area identified post-classifier	87%	1%	94%	3%	84%	0%	84%	3%
GT[c] fishponds identified post- classification	88 of 113	5 of 113	94 of 113	6 of 113	84 of 113	2 of 113	87 of 113	10 of 113

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S23. *Mode* reducer applied for one month period in Khulna comparing water-identifying index combinations

Index Type	Combined		AWEI[d]		MNDWI[e]		NDWI[f]	
Classifier Type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	65%	65%	69%	69%	61%	61%	64%	64%
GT[c] fishponds identified pre-classification	104 of 163	104 of 163	107 of 163	107 of 163	93 of 163	93 of 163	115 of 163	115 of 163
Percentage of GT[c] fishpond area identified post-classifier	64%	7%	67%	6%	60%	9%	62%	6%
GT[c] fishponds identified post- classification	93 of 163	18 of 163	96 of 163	17 of 163	88 of 163	21 of 163	94 of 163	14 of 163

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S24. *Mode* reducer applied for one month period in Satkhira comparing water-identifying index combinations

Index Type	Combined		AWEI[d]		MNDWI[e]		NDWI[f]	
Classifier Type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	84%	84%	84%	84%	82%	82%	86%	86%
GT[c] fishponds identified pre-classification	100 of 208	100 of 208	102 of 208	102 of 208	93 of 208	93 of 208	126 of 208	126 of 208
Percentage of GT[c] fishpond area identified post-classifier	83%	1%	83%	1%	82%	1%	86%	1%
GT[c] fishponds identified post-classification	92 of 208	6 of 208	95 of 208	9 of 208	88 of 208	6 of 208	112 of 208	6 of 208

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S25. *allNonZero* reducer applied for one month period in Bagerhat comparing water-identifying index combinations

Time frame	Month		Month		Month		Month	
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	52%	52%	60%	60%	48%	48%	52%	52%
GT[c] fishponds identified pre-classification	139 of 235	139 of 235	156 of 235	156 of 235	122 of 235	122 of 235	157 of 235	157 of 235
Percentage of GT[c] fishpond area identified post-classifier	51%	19%	60%	14%	47%	18%	50%	14%
GT[c] fishponds identified post-classification	117 of 235	49 of 235	134 of 235	46 of 235	108 of 235	50 of 235	115 of 235	49 of 235

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S26. *allNonZero* reducer applied for one month period in Barisal comparing water-identifying index combinations

Time frame	Month	Month	Month	Month	Month	Month	Month	Month
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	4.3%	4.3%	6%	6%	3%	3%	6%	6%
GT[c] fishponds identified pre-classification	8 of 168	8 of 168	10 of 168	10 of 168	6 of 168	6 of 168	18 of 168	18 of 168
Percentage of GT[c] fishpond area identified post-classifier	4%	4%	6%	5%	2%	2%	4%	5%
GT[c] fishponds identified post-classification	3 of 168	4 of 168	5 of 168	4 of 168	3 of 168	3 of 168	5 of 168	6 of 168

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S27. *allNonZero* reducer applied for one month period in Bhola comparing water-identifying index combinations

Time frame	Month		Month		Month		Month	
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	0%	0%	0%	0%	0%	0%	0%	0%
GT[c] fishponds identified pre-classification	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27
Percentage of GT[c] fishpond area identified post-classifier	0%	0%	0%	0%	0%	0%	0%	0%
GT[c] fishponds identified post-classification	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27	0 of 27

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S28. *allNonZero* reducer applied for one month period in Gopalganj comparing water-identifying index combinations

Time frame	Month		Month		Month		Month	
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	22%	22%	38%	38%	10%	10%	25%	25%
GT[c] fishponds identified pre-classification	44 of 77	44 of 77	56 of 77	56 of 77	14 of 77	14 of 77	53 of 77	53 of 77
Percentage of GT[c] fishpond area identified post-classifier	19%	11%	35%	26%	7%	3%	21%	16%
GT[c] fishponds identified post-classification	19 of 77	6 of 77	38 of 77	24 of 77	8 of 77	3 of 77	22 of 77	12 of 77

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S29. *allNonZero* reducer applied for one month period in Jessore comparing water-identifying index combinations

Time frame	Month		Month		Month		Month	
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	44%	44%	53%	53%	24%	24%	66%	66%
GT[c] fishponds identified pre-classification	70 of 113	70 of 113	74 of 113	74 of 113	41 of 113	41 of 113	86 of 113	86 of 113
Percentage of GT[c] fishpond area identified post-classifier	42.8%	6%	52.3%	10%	23.0%	4%	65.1%	10%
GT[c] fishponds identified post-classification	59 of 113	9 of 113	71 of 113	9 of 113	38 of 113	10 of 113	74 of 113	12 of 113

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S30. *allNonZero* reducer applied for one month period in Khulna comparing water-identifying index combinations

Time frame	Month	Month	Month	Month	Month	Month	Month	Month
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	36%	36%	43%	43%	33%	33%	31%	31%
GT[c] fishponds identified pre-classification	71 of 163	71 of 163	79 of 163	79 of 163	67 of 163	67 of 163	64 of 163	64 of 163
Percentage of GT[c] fishpond area identified post-classifier	33%	9%	42%	43%	32%	8%	28%	10%
GT[c] fishponds identified post-classification	60 of 163	19 of 163	69 of 163	79 of 163	62 of 163	21 of 163	47 of 163	17 of 163

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S31. *allNonZero* reducer applied for one month period in Satkhira comparing water-identifying index combinations

Time frame	Month		Month		Month		Month	
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	66%	66%	69%	69%	63%	63%	62%	62%
GT[c] fishponds identified pre-classification	75 of 208	75 of 208	75 of 208	75 of 208	73 of 208	73 of 208	80 of 208	80 of 208
Percentage of GT[c] fishpond area identified post-classifier	66%	1%	69%	3%	63%	1%	61%	2%
GT[c] fishponds identified post-classification	72 of 208	9 of 208	72 of 208	6 of 208	70 of 208	8 of 208	72 of 208	9 of 208

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S32. Water-identifying index combination comparison for Bagerhat using single day time period

Time frame	Day	Day	Day	Day	Day	Day	Day	Day
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	67%	67%	76%	76%	62%	62%	67%	67%
GT[c] fishponds identified pre-classification	182 of 235	182 of 235	190 of 235	190 of 235	155 of 235	155 of 235	197 of 235	197 of 235
Percentage of GT[c] fishpond area identified post-classifier	66%	16%	76%	13%	61%	16%	65%	16%
GT[c] fishponds identified post-classification	159 of 235	51 of 235	181 of 235	30 of 235	138 of 235	50 of 235	164 of 235	54 of 235

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S33. Water-identifying index combination comparison for Barisal using single day time period

Time frame	Day	Day	Day	Day	Day	Day	Day	Day
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	16.3%	16.3%	19%	19%	11%	11%	26%	26%
GT[c] fishponds identified pre-classification	28 of 168	28 of 168	28 of 168	28 of 168	12 of 168	12 of 168	61 of 168	61 of 168
Percentage of GT[c] fishpond area identified post-classifier	13%	12%	15%	15%	10%	6%	20%	17%
GT[c] fishponds identified post-classification	11 of 168	10 of 168	13 of 168	12 of 168	8 of 168	3 of 168	21 of 168	16 of 168

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S34. Water-identifying index combination comparison for Bhola using single day time period

Time frame	Day		Day		Day		Day	
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	3%	3%	3%	3%	0%	0%	20%	20%
GT[c] fishponds identified pre-classification	1 of 27	1 of 27	2 of 27	2 of 27	0 of 27	0 of 27	10 of 27	10 of 27
Percentage of GT[c] fishpond area identified post-classifier	3%	3%	3%	0%	0%	0%	12%	9%
GT[c] fishponds identified post-classification	1 of 27	1 of 27	1 of 27	0 of 27	0 of 27	0 of 27	4 of 27	3 of 27

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S35. Water-identifying index combination comparison for Gopalganj using single day time period

Time frame	Day		Day		Day		Day	
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	36%	36%	54%	54%	21%	21%	38%	38%
GT[c] fishponds identified pre-classification	66 of 77	66 of 77	67 of 77	67 of 77	38 of 77	38 of 77	69 of 77	69 of 77
Percentage of GT[c] fishpond area identified post-classifier	30%	23%	50%	28%	15%	15%	31%	23%
GT[c] fishponds identified post-classification	36 of 77	22 of 77	56 of 77	26 of 77	20 of 77	13 of 77	37 of 77	22 of 77

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S36. Water-identifying index combination comparison for Jessore using single day time period

Time frame	Day	Day	Day	Day	Day	Day	Day	Day
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	91.2%	91%	95%	95%	90%	90%	88%	88%
GT[c] fishponds identified pre-classification	99 of 113	99 of 113	102 of 113	102 of 113	91 of 113	91 of 113	103 of 113	103 of 113
Percentage of GT[c] fishpond area identified post-classifier	90.7%	3%	94.3%	3%	89.8%	2%	87.6%	4%
GT[c] fishponds identified post-classification	90 of 113	7 of 113	95 of 113	7 of 113	89 of 113	5 of 113	92 of 113	7 of 113

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S37. Water-identifying index combination comparison for Khulna using single day time period

Time frame	Day	Day	Day	Day	Day	Day	Day	Day
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	67%	67%	74%	74%	63%	63%	67%	67%
GT[c] fishponds identified pre-classification	112 of 163	112 of 163	117 of 163	117 of 163	103 of 163	103 of 163	122 of 163	122 of 163
Percentage of GT[c] fishpond area identified post-classifier	65%	5%	73%	6%	62%	5%	56%	7%
GT[c] fishponds identified post-classification	95 of 163	15 of 163	109 of 163	19 of 163	94 of 163	15 of 163	88 of 163	18 of 163

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S38. Water-identifying index combination comparison for Satkhira using single day time period

Time frame	Day		Day		Day		Day	
Index Type	Combined	Combined	AWEI[d]	AWEI[d]	MNDWI[e]	MNDWI[e]	NDWI[f]	NDWI[f]
Classifier type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5
Percentage of GT[c] fishpond area identified pre-classifier	85%	85%	84%	84%	84%	84%	91%	91%
GT[c] fishponds identified pre-classification	115 of 208	115 of 208	114 of 208	114 of 208	100 of 208	100 of 208	159 of 208	159 of 208
Percentage of GT[c] fishpond area identified post-classifier	84%	1%	84%	2%	84%	1%	91%	0%
GT[c] fishponds identified post-classification	103 of 208	14 of 208	103 of 208	14 of 208	93 of 208	6 of 208	133 of 208	6 of 208

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Modified Normalized Difference Water Index
[f] Normalized Difference Water Index

Table S39. Best results of the index tests for each of the seven districts

District	Bagerhat		Barisal		Bhola		Gopalganj		Jessore		Khulna		Satkhira	
Water Index	AWEI[d]		NDWI[e]		NDWI[e]		AWEI[d]		AWEI[d]		AWEI[d]		NDWI[e]	
Image date	10/28/2020		10/13/2020		11/7/2020		10/28/2020		11/5/2020		11/7/2020		11/5/2020	
Classifier Type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]
Buffer Size	5	5	0	0	5	5	5	5	5	5	5	5	5	5
Percentage of GT[c] Fishpond area identified pre-classifier	76%	76%	26%	26%	20%	20%	54%	54%	95%	95%	74%	74%	91%	91%
GT[c] Fishponds Identified	190 of 235	190 of 235	61 of 168	61 of 168	10 of 27	10 of 27	67 of 77	67 of 77	102 of 113	102 of 113	117 of 163	117 of 163	159 of 208	159 of 208
Percentage of GT[c] Fishpond area identified post-classifier	76%	13%	20%	17%	12%	9%	50%	28%	94.3%	3%	73%	6%	91%	0.3%
GT[c] Fishponds Identified After Classification	181 of 235	30 of 235	21 of 168	16 of 168	4 of 27	3 of 27	56 of 77	26 of 77	95 of 113	7 of 113	109 of 163	19 of 163	133 of 208	6 of 208

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Normalized Difference Water Index

Table S40. Results from adding the Laplacian 5×5 convolution filter for each district

District	Bagerhat		Barisal		Bhola		Gopalganj		Jessore		Khulna		Satkhira	
Water Index	AWEI[d]		NDWI[e]		NDWI[e]		AWEI[d]		AWEI[d]		AWEI[d]		NDWI[e]	
Image date	10/28/2020		10/13/2020		11/7/2020		10/28/2020		11/5/2020		11/7/2020		11/5/2020	
Classifier Type	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]	LR[a]	CART[b]
Buffer Size	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Percentage of GT[c] Fishpond area identified pre-classifier	76%	76%	58%	58%	57%	57%	68%	68%	91.5%	91%	78%	78%	82%	82%
GT[c] Fishponds Identified	235 of 235	235 of 235	160 of 168	160 of 168	27 of 27	27 of 27	77 of 77	77 of 77	113 of 113	113 of 113	163 of 163	163 of 163	206 of 208	206 of 208
Percentage of GT[c] Fishpond area identified post-classifier	25%	2%	44%	37%	43%	33%	19%	3%	91.4%	0%	56%	1%	56%	5%
GT[c] Fishponds Identified After Classification	131 of 235	40 of 235	90 of 168	83 of 168	16 of 27	14 of 27	30 of 77	10 of 77	113 of 113	3 of 113	134 of 163	239 of 163	138 of 208	56 of 208
# of Hits	131	40	90	83	16	14	30	10	113	3	134	23	138	56
# of Classified Fishponds	94794	66043	219955	185758	115902	98263	47046	33129	123786	83825	97045	66392	155887	126110
# of GT[c] Fishponds	235	235	168	168	27	27	77	77	113	113	163	163	208	208

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Ground truthing
[d] Automated Water Extraction Index
[e] Normalized Difference Water Index

Table S41. Comparison of LR, CART, RF, and SVM results when applied to ground-truthing fishpond data for Bagerhat, Barisal, Bhola, and Gopalganj during one day with that district's best performing water-identifying index

District	Bagerhat				Barisal				Bhola				Gopalganj			
Water Index	AWEI[f]				NDWI[g]				NDWI[g]				AWEI[f]			
Image Date	10/28/2020				10/13/2020				11/7/2020				10/28/2020			
Classifier Type	LR[a]	CART[b]	RF[c]	SVM[d]	LR[a]	CART[b]	RF[c]	SVM[d]	LR[a]	CART[b]	RF[c]	SVM[d]	LR[a]	CART[b]	RF[c]	SVM[d]
Buffer Size	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Percentage of GT[e] Fishpond area identified pre-classifier	76%	76%	76%	76%	58%	58%	58%	58%	57%	57%	57%	57%	68%	68%	68%	68%
GT[e] Fishponds Identified	235 of 235	235 of 235	235 of 235	235 of 235	160 of 168	160 of 168	160 of 168	160 of 168	27 of 27	27 of 27	27 of 27	27 of 27	77 of 77	77 of 77	77 of 77	77 of 77
Percentage of GT[e] Fishpond area identified post-classifier	25%	2%	2%	26%	44%	37%	35%	42%	43%	33%	33%	41%	19%	3%	3%	20%
GT[e] Fishponds Identified Post-Classifier	131 of 235	40 of 235	37 of 235	153 of 235	90 of 168	83 of 168	76 of 168	103 of 168	16 of 27	14 of 27	14 of 27	17 of 27	30 of 77	10 of 77	10 of 77	38 of 77
# of Hits	131	40	37	153	90	83	76	103	16	14	14	17	30	10	10	38
# of Classified Fishponds	94794	66043	58466	426858	219955	185758	154127	666932	115902	98263	80723	446448	47046	33129	28794	243441
# of GT[e] Fishponds	235	235	235	235	168	168	168	168	27	27	27	27	77	77	77	77

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Random Forest
[d] Support Vector Machine
[e] Ground truthing
[f] Automated Water Extraction Index
[g] Normalized Difference Water Index

Table S42. Comparison of LR, CART, RF, and SVM results when applied to ground-truthing fishpond data for Jessore, Khulna, and Satkhira during one day with that district's best performing water-identifying index

District	Jessore				Khulna				Satkhira			
Water Index	AWEI[f]				AWEI[f]				NDWI[g]			
Image Date	11/5/2020				11/7/2020				11/5/2020			
Classifier Type	LR[a]	CART[b]	RF[c]	SVM[d]	LR[a]	CART[b]	RF[c]	SVM[d]	LR[a]	CART[b]	RF[c]	SVM[d]
Buffer Size	5	5	5	5	5	5	5	5	5	5	5	5
Percentage of GT[e] Fishpond area identified pre-classifier	91.5%	91%	91.5%	91%	78%	78%	78%	78%	82%	82%	82%	82%
GT[e] Fishponds Identified	113 of 113	113 of 113	113 of 113	113 of 113	163 of 163	163 of 163	163 of 163	163 of 163	206 of 208	206 of 208	206 of 208	206 of 208
Percentage of GT[e] Fishpond area identified post-classifier	91.4%	0%	0.3%	91%	56%	1%	1%	56%	56%	5%	4%	56%
GT[e] Fishponds Identified Post-Classifier	113 of 113	3 of 113	3 of 113	113 of 113	134 of 163	23 of 163	23 of 163	136 of 163	138 of 208	56 of 208	51 of 208	147 of 208
# of Hits	113	3	3	113	134	23	23	136	138	56	51	147
# of Classified Fishponds	123786	83825	74365	667161	97045	66392	58987	477444	155887	126110	104324	389366
# of GT[e] Fishponds	113	113	113	113	163	163	163	163	208	208	208	208

[a] Logistic Regression
[b] Classification and Regression Trees
[c] Random Forest
[d] Support Vector Machine
[e] Ground truthing
[f] Automated Water Extraction Index
[g] Normalized Difference Water Index

Table S43. Land use as percent of total area for 10 meter buffer around ground truth fishpond locations for each district

Land Use	District						
	Bagerhat	Barisal	Bhola	Gopalganj	Jessore	Khulna	Satkhira
Cultivated Land	79	46	21	67	90	63	6
Forest	0	0	0	0	0	0	0
Grass Land	0	0	0	0	0	0	0
Shrub Land	0	0	0	0	0	0	0
Wetland	0	0	0	0	0	0	0
Water Body	8	0	0	0	1	19	82
Artificial Surfaces	13	54	79	33	9	18	12
Bareland	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0

Table S44. Land use as percent of total area for 50 meter buffer around ground truth fishpond locations for each district

Land Use	District						
	Bagerhat	Barisal	Bhola	Gopalganj	Jessore	Khulna	Satkhira
Cultivated Land	80	46	26	68	86	61	10
Forest	0	0	0	0	0	0	0
Grass Land	0	0	0	0	0	0	0
Shrub Land	0	0	0	0	0	0	0
Wetland	0	0	0	0	0	0	0
Water Body	7	0	0	0	1	16	69
Artificial Surfaces	13	54	74	32	13	23	21
Bareland	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0

Table S45. Land use as percent of total area for 100 meter buffer around ground truth fishpond locations for each district

Land Use	District						
	Bagerhat	Barisal	Bhola	Gopalganj	Jessore	Khulna	Satkhira
Cultivated Land	78	50.4	27	71	82	59	12
Forest	0	0	0	0	0	0	0
Grass Land	0	0	0	0	0	0	0
Shrub Land	0	0	0	0	0	0	0
Wetland	0	0	0	0	0	0	0
Water Body	7	0.1	0	0	2	15	63
Artificial Surfaces	15	49.5	73	29	16	26	25
Bareland	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0

Table S46. Median ground truth fishpond size for each district

Statistic	District						
	Bagerhat	Barisal	Bhola	Gopalganj	Jessore	Khulna	Satkhira
Median Ground truth fishpond size (m^2)	2503	833	713	2237	3169	2972	1252