

Transect Report

Overview

This report provides summary statistics and figures for ongoing transect sampling. The first section of the report focuses on the current sampling (Winter 2020-2021) and how the collected data compare to last year's sampling (Winter 2019-2020). So far 0 days have been sampled this season. The second half of the report gives summaries of all of the data that have been collected since the beginning of the project (2010-05-27). In total, 93 days have been sampled over this entire project.

Definition of Localities

LOCALITY	LOCATION
BT	Big Trout
CK	Cedar Key
CR	Corrigan's Reef
HB	Horseshoe Beach
LC	Lone Cabbage
LT	Little Trout
NN	No Name

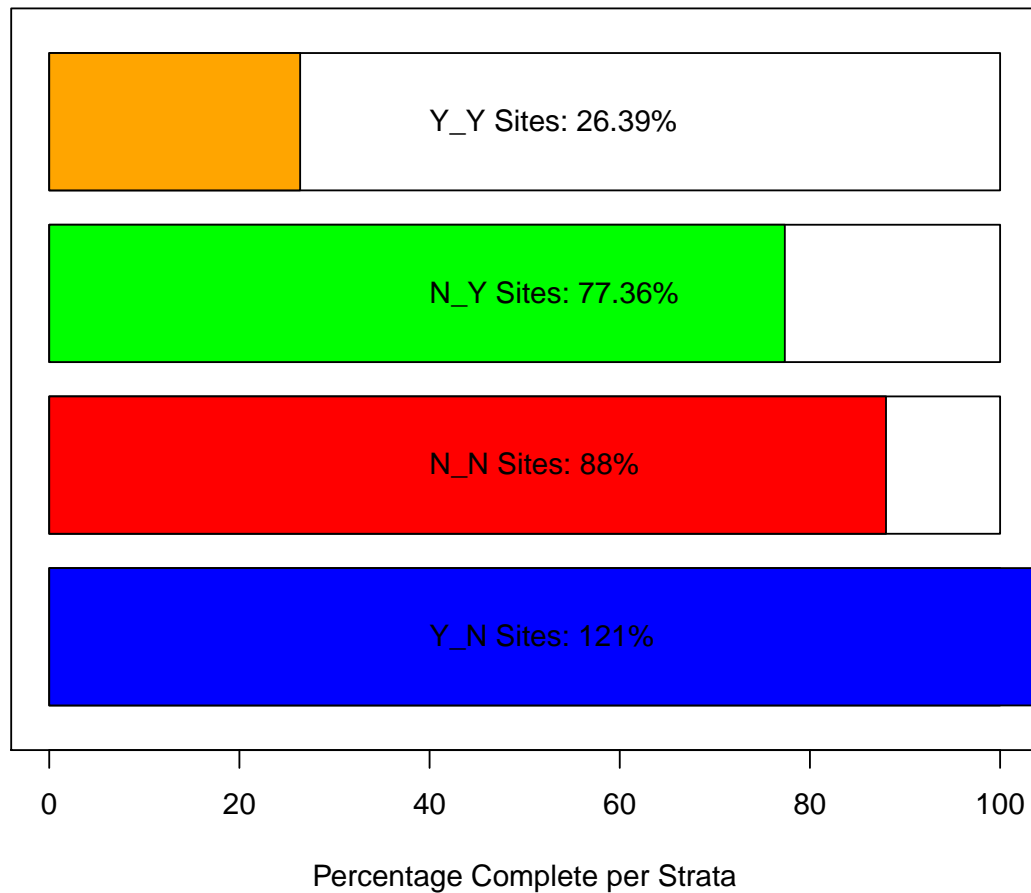
Definition of Strata

STRATA	DEFINITION
Y_NA	Harvest, No Rock
Y_SM	Harvest, Small Rock
N_NA	No Harvest, No Rock
N_SM	No Harvest, Small Rock
N_LG	No Harvest, Large Rock
N_PILOT	No Harvest, Pilot Rocks

Current Sampling

Here, we provide a progress bar showing how much of the sampling has been completed for this season, plus summary tables and plots comparing live counts and density of oysters between this current season and last year. **The current sampling period is period 22, and last year's sampling period is period 20.**

Field Sites– Strata Progress



Summary Tables for Periods 20 and 22

These summary tables provide summary statistics on live counts and oyster densities for just periods **20 (Winter 2019-2020)** and **22 (Winter 2020-2021)**.

Summary statistics include:

- Locality or Strata or Period - Mean
- Median
- Standard Deviation (SD)
- Variance (Var)
- Coefficient of variation (CV)
- Standard Error (SE)
- Lower 95% Confidence Interval assuming normal distribution (L95)
- Upper 95% Confidence Interval assuming normal distribution (U95)
- Bootstrap Mean (Bstrap Mean)
- Lower 95% Confidence Interval from Bootstrap Values (L95 Bstrap)
- Upper 95% Confidence Interval from Bootstrap Values (U95 Bstrap)

Total Counts by Locality

Locality	Mean	Median	SD	Var	CV	SE	L95	U95	Bstrap_Mean	L95_Bstrap	U95_Bstrap
BT	4881	4881	5100	26006472	1.04	3606	-2187	11949	4906	1275	8487
LC	1870	1253	2188	4786493	1.17	381	1123	2616	1855	1187	2676
LT	1331	1062	788	620695	0.59	298	747	1914	1322	828	1909
NN	1093	747	858	736488	0.79	429	252	1934	1069	564	1958

Total Counts by Strata

Strata	Mean	Median	SD	Var	CV	SE	L95	U95	Bstrap_Mean	L95_Bstrap	U95_Bstrap
N_LG	4168	3820	3172	10059446	0.76	1418	1388	6948	4083	1960	6839
N_NA	1660	1162	1828	3341160	1.10	431	816	2505	1691	1032	2677
N_PILOT	356	356	NA	NA	NA	NA	NA	NA	173	7	344
N_SM	1253	1253	NA	NA	NA	NA	NA	NA	622	33	1219
Y_NA	1010	855	818	668486	0.81	198	621	1398	1002	661	1411
Y_SM	3914	2086	3688	13598157	0.94	1844	300	7528	3819	2052	7604

Total Counts by Period

Period	Mean	Median	SD	Var	CV	SE	L95	U95	Bstrap_Mean	L95_Bstrap	U95_Bstrap
20	1851	1226	2148	4614979	1.2	317	1230	2472	1847	1308	2488

Density by Locality

Locality	Mean	Median	SD	Var	CV	SE	L95	U95	Bstrap_Mean	L95_Bstrap	U95_Bstrap
BT	556	556	335	112324	0.60	237	92	1021	548	319	793
LC	210	183	138	18943	0.65	24	163	257	211	166	261
LT	386	373	149	22338	0.39	56	275	496	385	265	481
NN	305	154	356	126476	1.17	178	-43	654	302	99	663

Density by Strata

Strata	Mean	Median	SD	Var	CV	SE	L95	U95	Bstrap_Mean	L95_Bstrap	U95_Bstrap
N_LG	163	179	61	3667	0.37	27	110	216	163	112	206
N_NA	347	329	225	50652	0.65	53	243	451	349	257	452
N_PILOT	102	102	NA	NA	NA	NA	NA	NA	51	3	99
N_SM	99	99	NA	NA	NA	NA	NA	NA	50	3	96
Y_NA	221	199	169	28665	0.77	41	141	302	221	146	306
Y_SM	238	227	63	3919	0.26	31	176	299	237	184	295

Density by Period

Period	Mean	Median	SD	Var	CV	SE	L95	U95	Bstrap_Mean	L95_Bstrap	U95_Bstrap
20	260	206	189	35730	0.73	28	206	315	259	208	313

Summary Plots for Periods 20 and 22

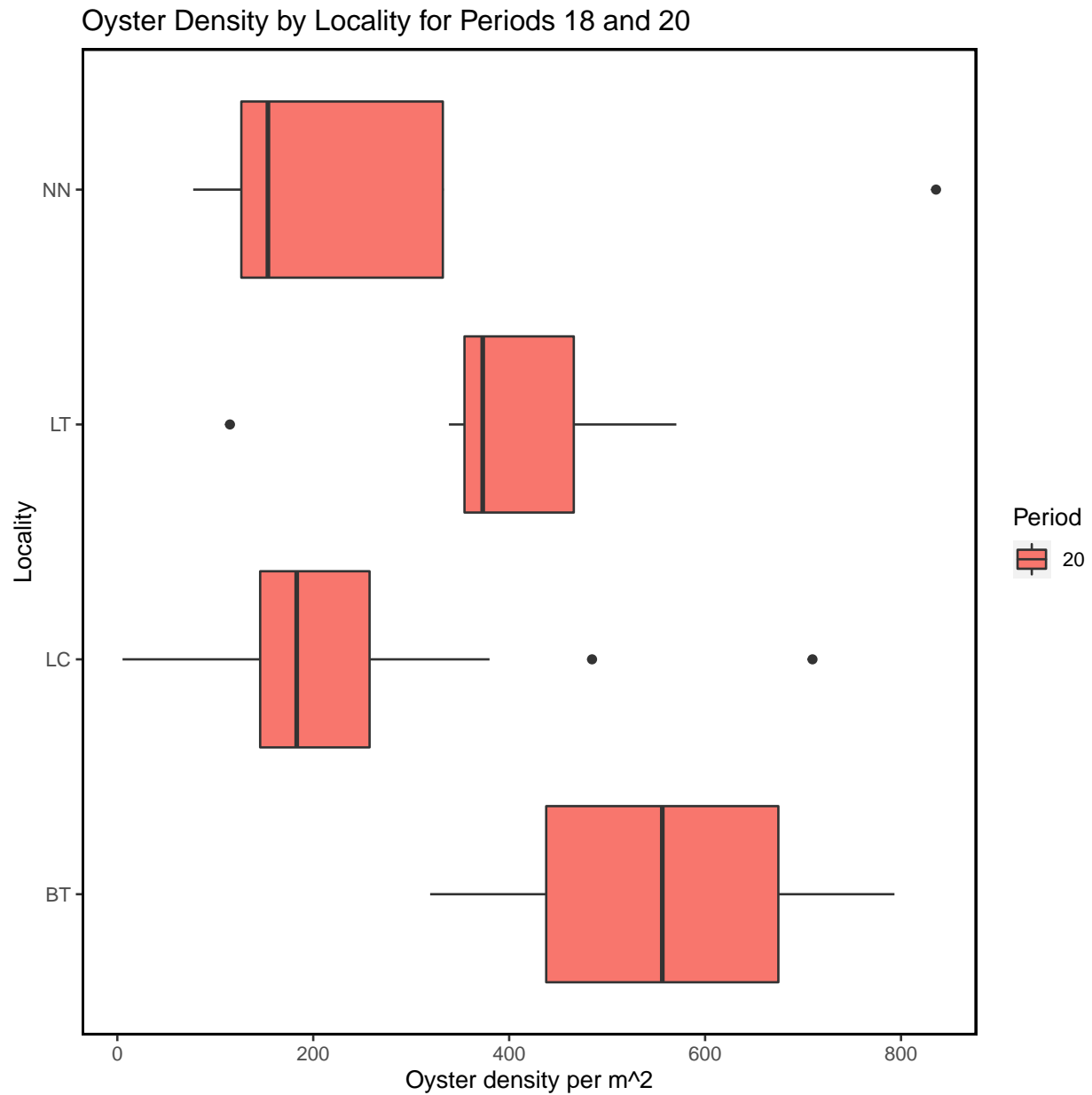


Figure- Calculated oyster density by locality for periods 20 (Winter 2019-2020) and 22 (Winter 2020-2022) with the last sample date of period 22 as 2020-01-13.

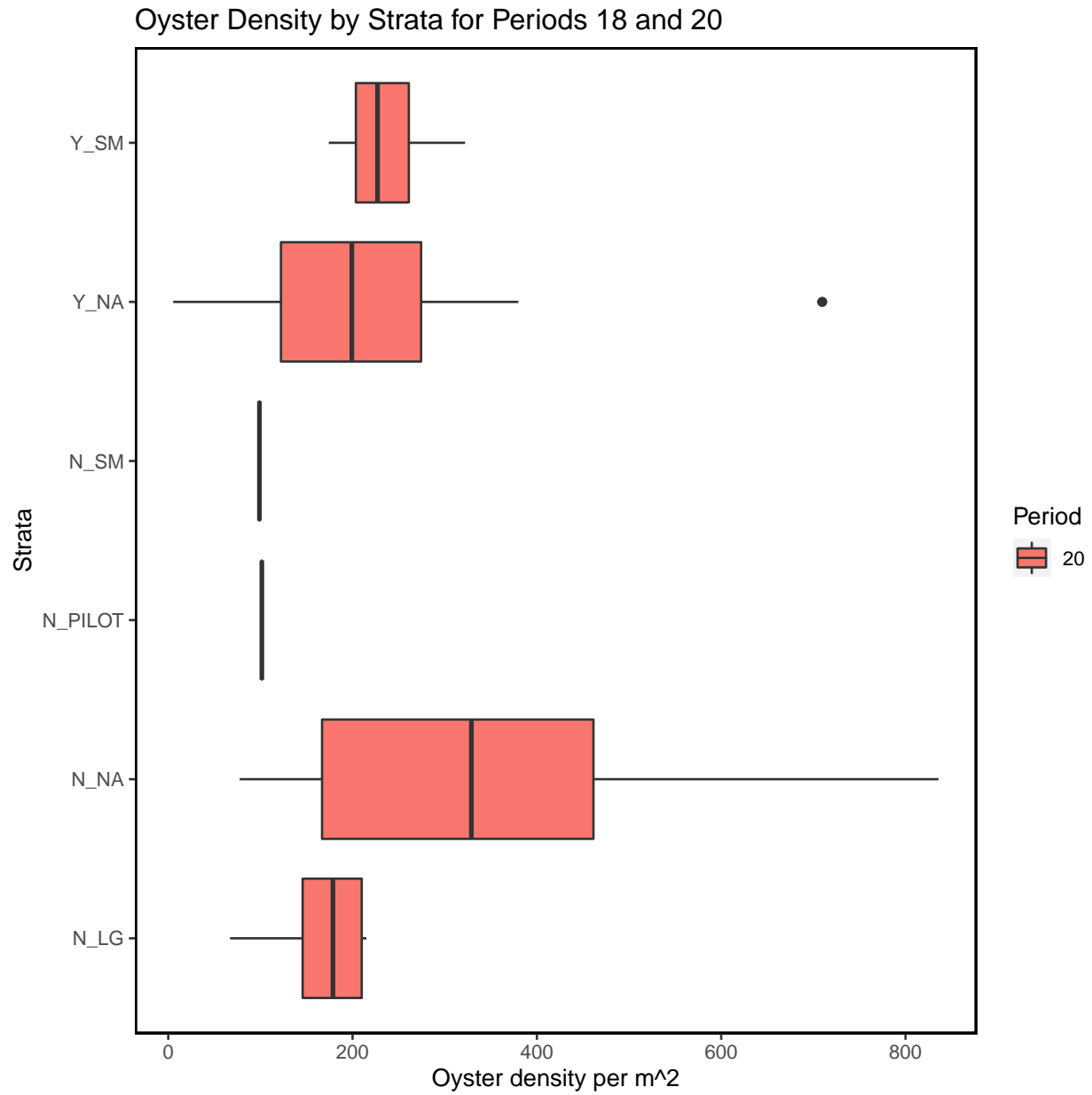


Figure- Calculated oyster density by strata for periods 20 (Winter 2019-2020) and 20 (Winter 2019-2020) with the last sample date of period 22 as 2020-01-13.

The following summary plot is calculated in R using the `geom_density` (https://ggplot2.tidyverse.org/reference/geom_density.html) statistical function in `ggplot`. The `geom_density` function computes and draws kernel density estimates, which is then represented as a smoothed version of a histogram.

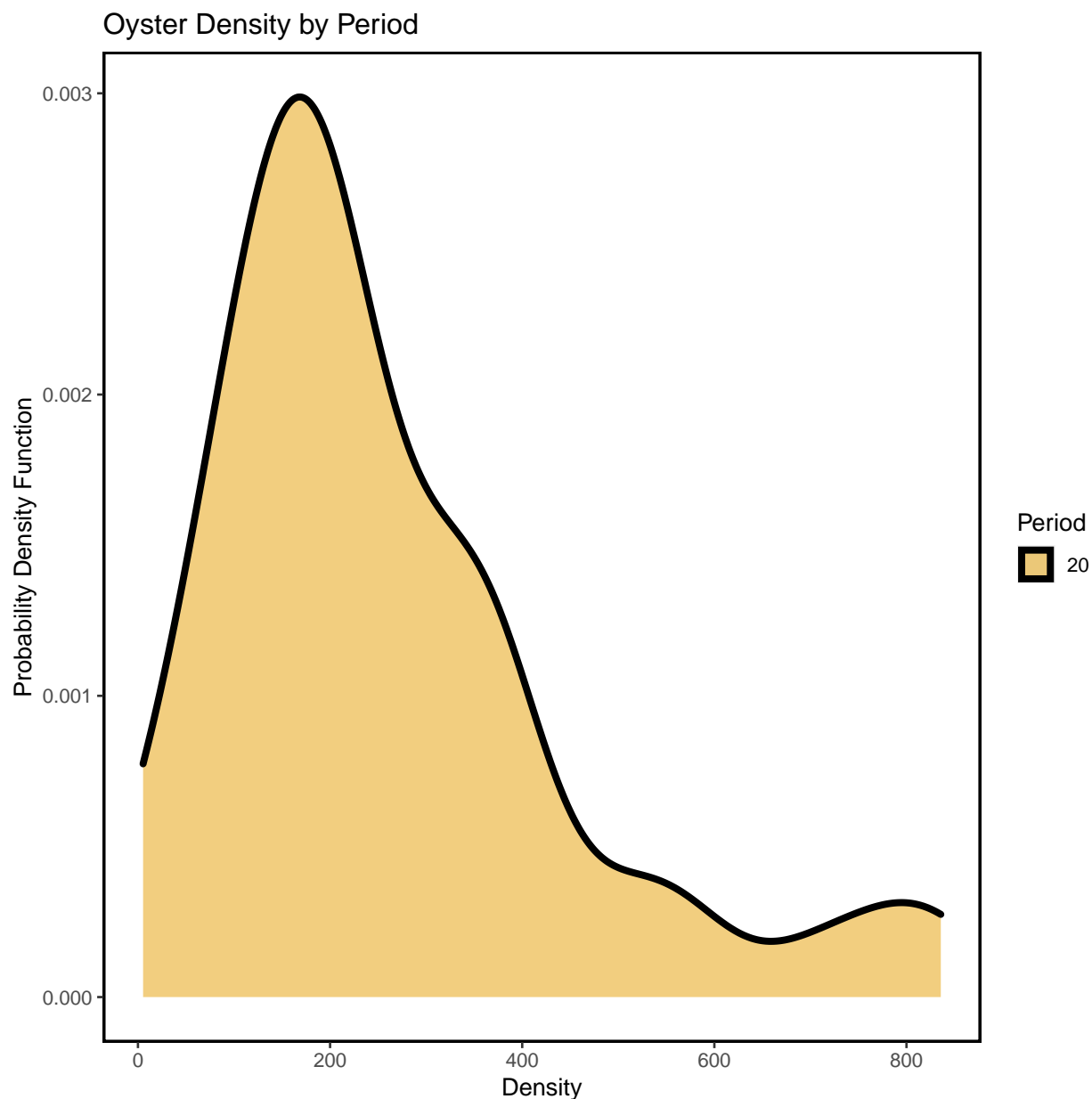


Figure- Calculated oyster density by periods 20 (Winter 2019-2020) and 22 (Winter 2020-2021) using a probability density function with the last sample date of period 20 as 2020-01-13.

Sampling for all Periods

Next, we provide summary tables and plots for all transect sampling. These data were collected between 2010-05-27 and 2020-01-13.

Definitions of Periods

PERIOD	SEASON	YEAR
1	Summer	2010
2	Winter	2010-2011
3	Summer	2011
4	Winter	2011-2012
5	Summer	2012
6	Winter	2012-2013
7	Summer	2013
8	Winter	2013-2014
9	Summer	2014
10	Winter	2014-2015
11	Summer	2015
12	Winter	2015-2016
13	Summer	2016
14	Winter	2016-2017
15	Summer	2017
16	Winter	2017-2018
17	Summer	2018
18	Winter	2018-2019
19	Summer	2019
20	Winter	2019-2020
21	Summer	2020
22	Winter	2020-2021

Summary of Effort for all Periods

These effort summaries show the total number of transects and total number of meters walked per locality, strata, locality per period, and strata per period. **These tables contain all data collected on the transects.**

Effort by Locality

Locality	Number of Transects	Total Length (m)
BT	8	334
CK	26	712
CR	46	1330
HB	45	1129
LC	158	7390
LT	13	353
NN	8	210

Effort by Strata

Strata	Number of Transects	Total Length (m)
N_LG	14	1400
N_NA	93	3166
N_PILOT	13	799
N_SM	5	450
Y_NA	171	4876
Y_SM	8	766

Effort by Period

Period	Number of Transects	Total Length (m)
1	42	1086
2	30	753
3	25	619
6	33	874
7	8	528
10	8	512
11	8	511
16	8	528
18	61	2632
19	35	921
20	46	2493

Effort by Locality and Period

Period	Locality	Number of Transects	Total Length (m)
1	CK	9	242
1	CR	10	300
1	HB	12	293
1	LC	11	250
10	LC	8	512
11	LC	8	511
16	LC	8	528
18	BT	6	238
18	LC	45	2128
18	LT	6	182
18	NN	4	84
19	CK	9	221
19	CR	9	227

19	HB	9	247
19	LC	8	226
2	CR	9	283
2	HB	11	271
2	LC	10	199
20	BT	2	96
20	LC	33	2100
20	LT	7	171
20	NN	4	126
3	CR	9	269
3	HB	7	184
3	LC	9	167
6	CK	8	248
6	CR	9	250
6	HB	6	134
6	LC	10	242
7	LC	8	528

Effort by Strata and Period

Period	Strata	Number of Transects	Total Length (m)
1	N_NA	8	149
1	Y_NA	34	937
10	N_NA	4	256
10	N_PILOT	4	256
11	N_NA	4	255
11	N_PILOT	4	256
16	N_NA	4	264
16	N_PILOT	4	264
18	N_LG	9	595
18	N_NA	18	571
18	N_SM	4	366
18	Y_NA	26	723
18	Y_SM	4	376
19	N_NA	5	80
19	Y_NA	30	841
2	N_NA	8	148
2	Y_NA	22	605
20	N_LG	5	805
20	N_NA	18	590
20	N_PILOT	1	23
20	N_SM	1	83
20	Y_NA	17	602
20	Y_SM	4	390
3	N_NA	8	147
3	Y_NA	17	472
6	N_NA	8	178
6	Y_NA	25	695
7	N_NA	8	528

Effort Plot Summaries for all Periods

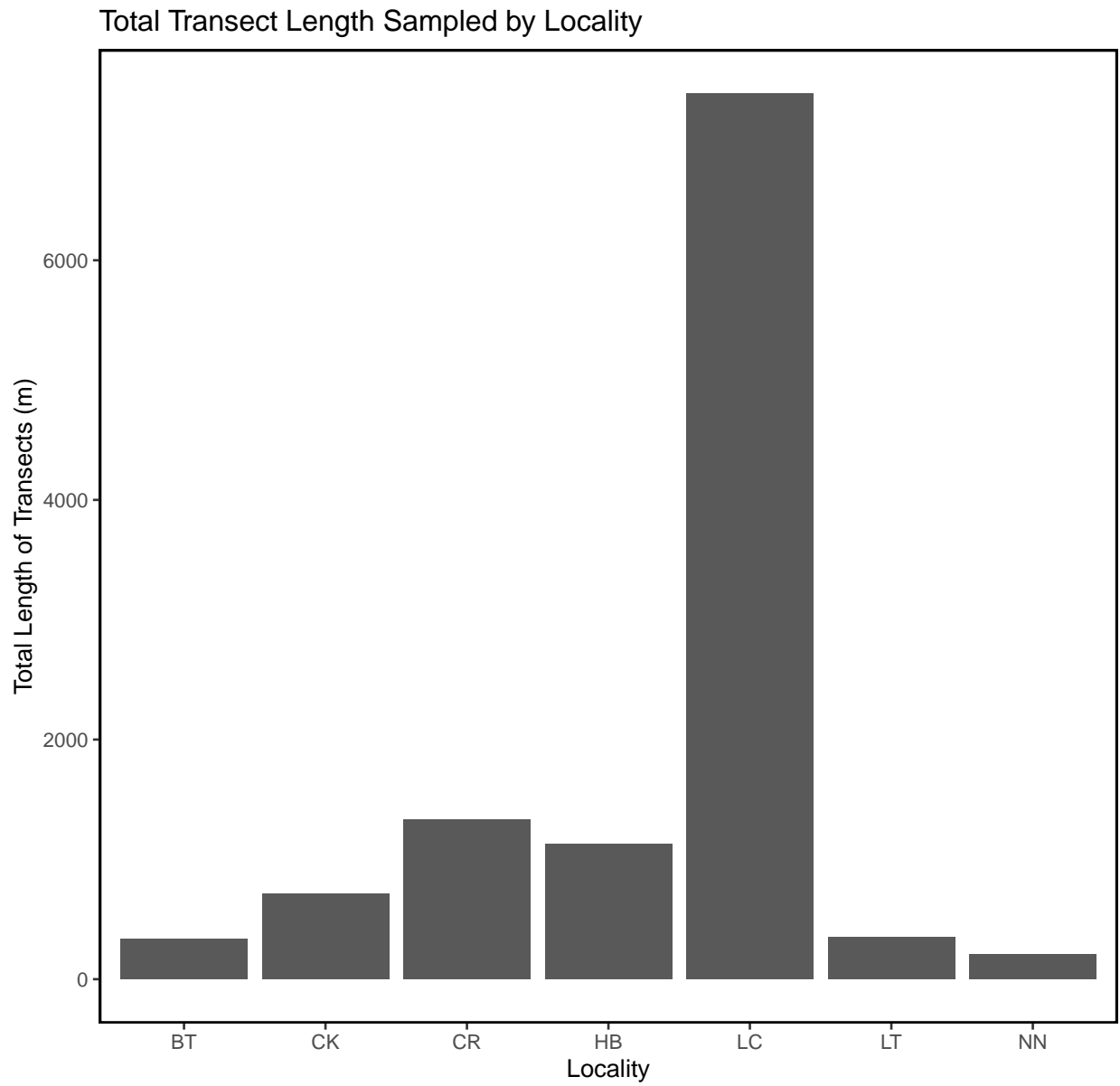


Figure – Bar plot of total transect length in meters sampled by locality for all periods.

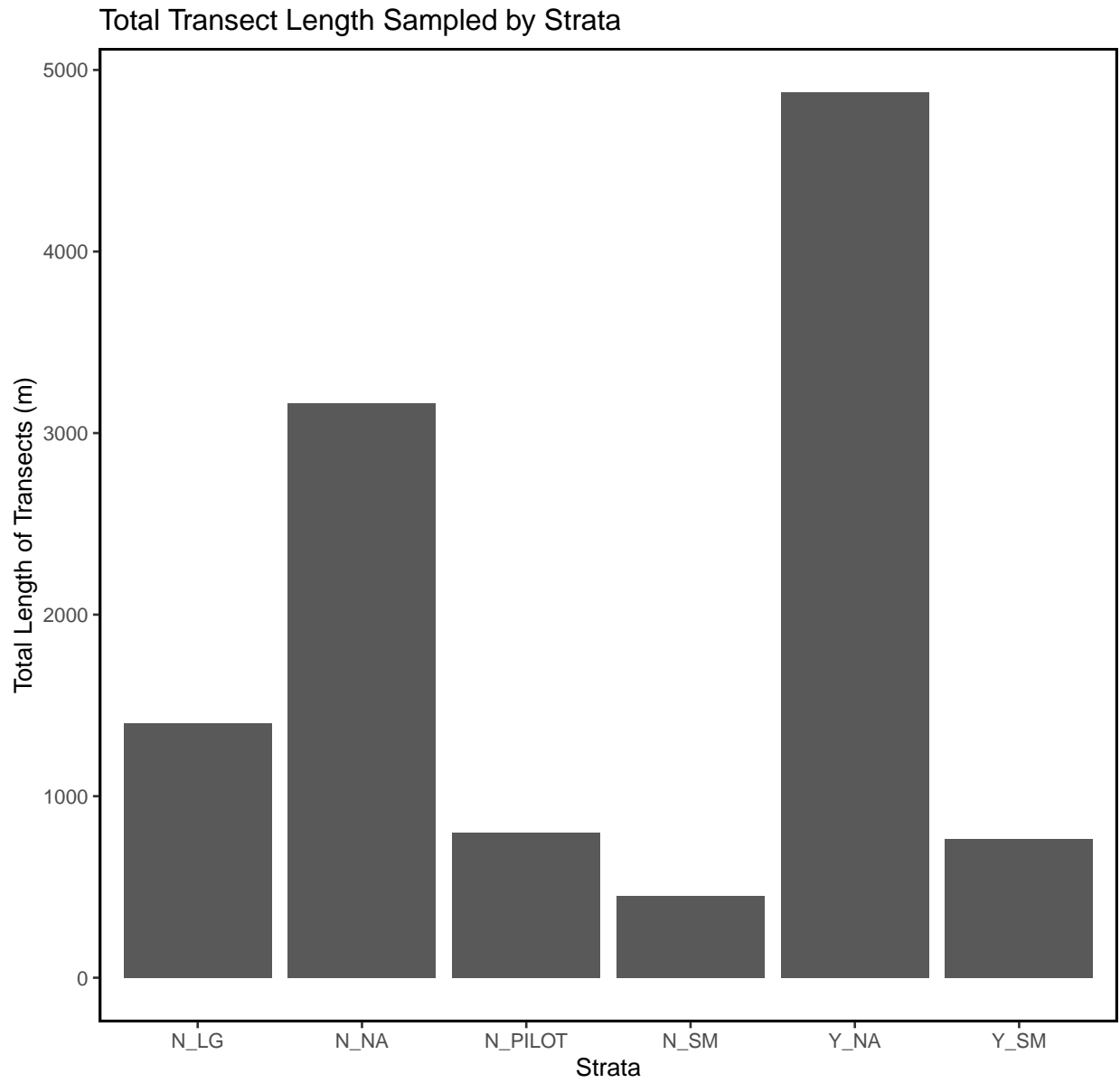
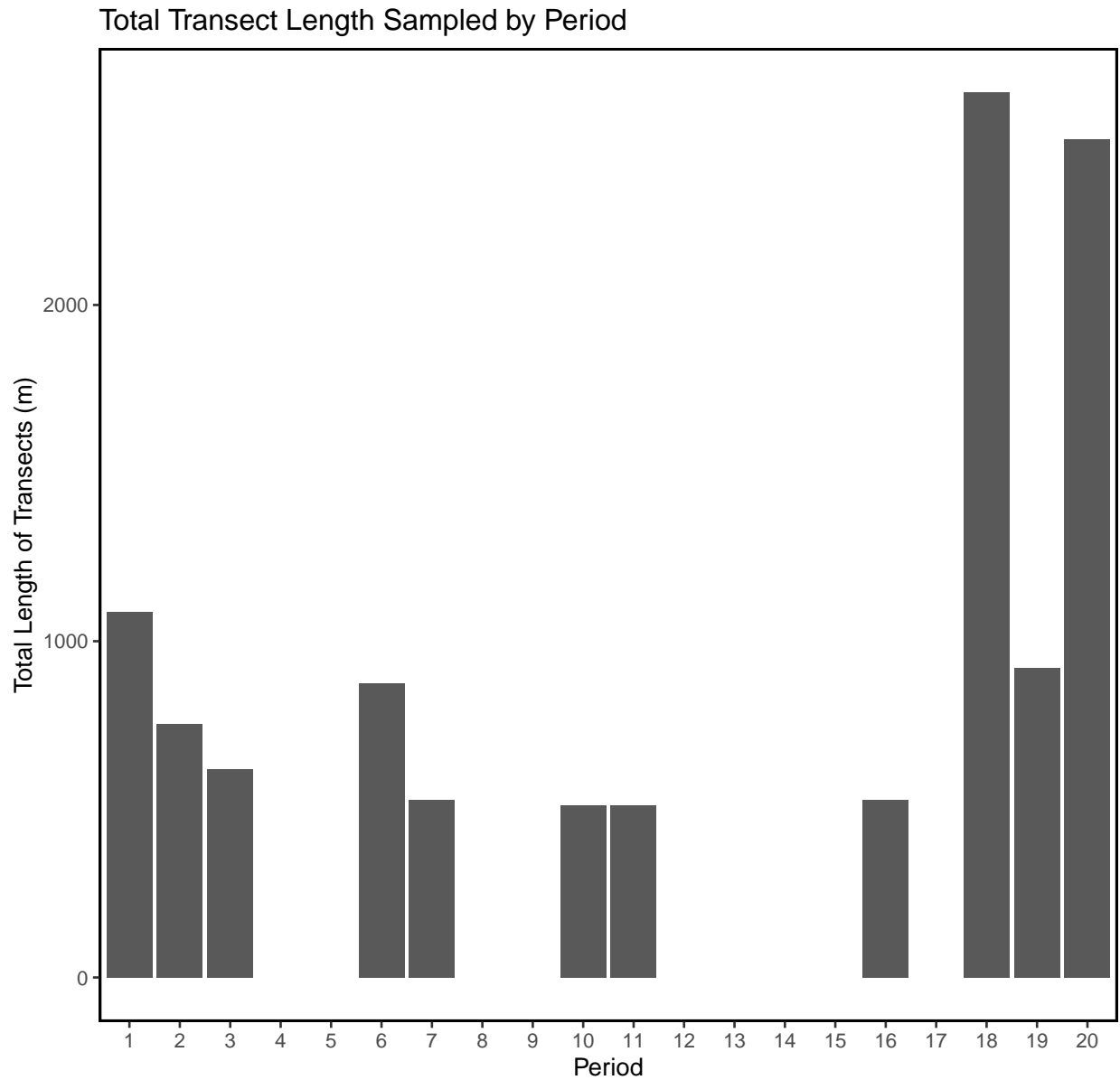


Figure – Bar plot of total transect length in meters sampled by strata for all periods.



Figure– Bar plot of total transect length in meters sampled by period for all periods.

Summary Tables for all Periods

These summaries display summary statistics of live oysters by locality, strata, and period. These contain all data collected on the oyster transects.

The summary statistics include:

- Locality or Strata or Period - Mean
- Median
- Standard Deviation (SD)
- Variance (Var)
- Coefficient of variation (CV)
- Standard Error (SE)
- Lower 95% Confidence Interval assuming normal distribution (L95)
- Upper 95% Confidence Interval assuming normal distribution (U95)
- Bootstrap Mean (Bstrap Mean)
- Lower 95% Confidence Interval from Bootstrap Values (L95 Bstrap)
- Upper 95% Confidence Interval from Bootstrap Values (U95 Bstrap)

Live Count Statistics for all Periods

Total Counts by Locality

Locality	Mean	Median	SD	Var	CV	SE	L95	U95	Bstrap_Mean	L95_Bstrap	U95_Bstrap
BT	2316	1192	2713	7359423	1.17	959	436	4195	2281	936	4200
CK	857	444	1091	1190933	1.27	214	438	1277	852	493	1282
CR	1026	716	1035	1072162	1.01	153	727	1325	1025	741	1360
HB	902	364	1047	1095622	1.16	158	592	1211	908	621	1252
LC	988	638	1309	1714526	1.33	105	782	1194	991	803	1215
LT	1108	883	680	461737	0.61	188	739	1478	1109	781	1469
NN	780	649	692	478603	0.89	245	301	1260	781	411	1304

Total Counts by Strata

Strata	Mean	Median	SD	Var	CV	SE	L95	U95	Bstrap_Mean	L95_Bstrap	U95_Bstrap
N_LG	1965	1057	2476	6132879	1.26	662	667	3262	1981	897	3378
N_NA	1060	823	1138	1295006	1.07	119	828	1293	1064	847	1321
N_PILOT	1046	1109	627	392853	0.60	174	705	1386	1047	724	1386
N_SM	2352	3060	1497	2241005	0.64	669	1040	3664	2345	1110	3464
Y_NA	795	431	942	886815	1.18	73	653	938	798	662	946
Y_SM	2190	1376	3040	9243678	1.39	1075	83	4297	2243	760	4444

Total Counts by Period

Period	Mean	Median	SD	Var	CV	SE	L95	U95	Bstrap_Mean	L95_Bstrap	U95_Bstrap
1	1404	1018	1288	1657932	0.92	199	1014	1793	1415	1056	1808
2	890	476	945	893727	1.06	176	546	1234	889	554	1251
3	738	296	817	668064	1.11	167	411	1065	732	439	1068
6	433	176	534	284791	1.23	96	245	621	429	259	629
7	50	29	56	3186	1.12	20	11	90	50	18	91
10	1207	1074	671	449607	0.56	237	743	1672	1215	816	1648
11	886	776	678	459708	0.77	240	416	1356	894	512	1359
16	494	366	467	217855	0.95	165	170	817	492	208	813
18	982	695	935	874733	0.95	120	748	1217	983	762	1224
19	555	329	573	328431	1.03	97	365	745	550	371	736
20	1851	1226	2148	4614979	1.16	317	1230	2472	1827	1270	2467

Density Statistics for all Periods

Density by Locality

Locality	Mean	Median	SD	Var	CV	SE	L95	U95	Bstrap_Mean	L95_Bstrap	U95_Bstrap
BT	321	279	216	46621	0.67	76	171	471	318	200	464
CK	241	112	321	102795	1.33	63	118	365	244	135	381
CR	288	181	294	86231	1.02	43	203	373	288	210	373
HB	257	101	303	92052	1.18	46	168	347	257	167	359
LC	160	121	161	25829	1.01	13	134	185	160	136	184
LT	289	249	159	25148	0.55	44	203	375	289	208	382
NN	238	154	256	65757	1.08	91	60	415	239	110	421

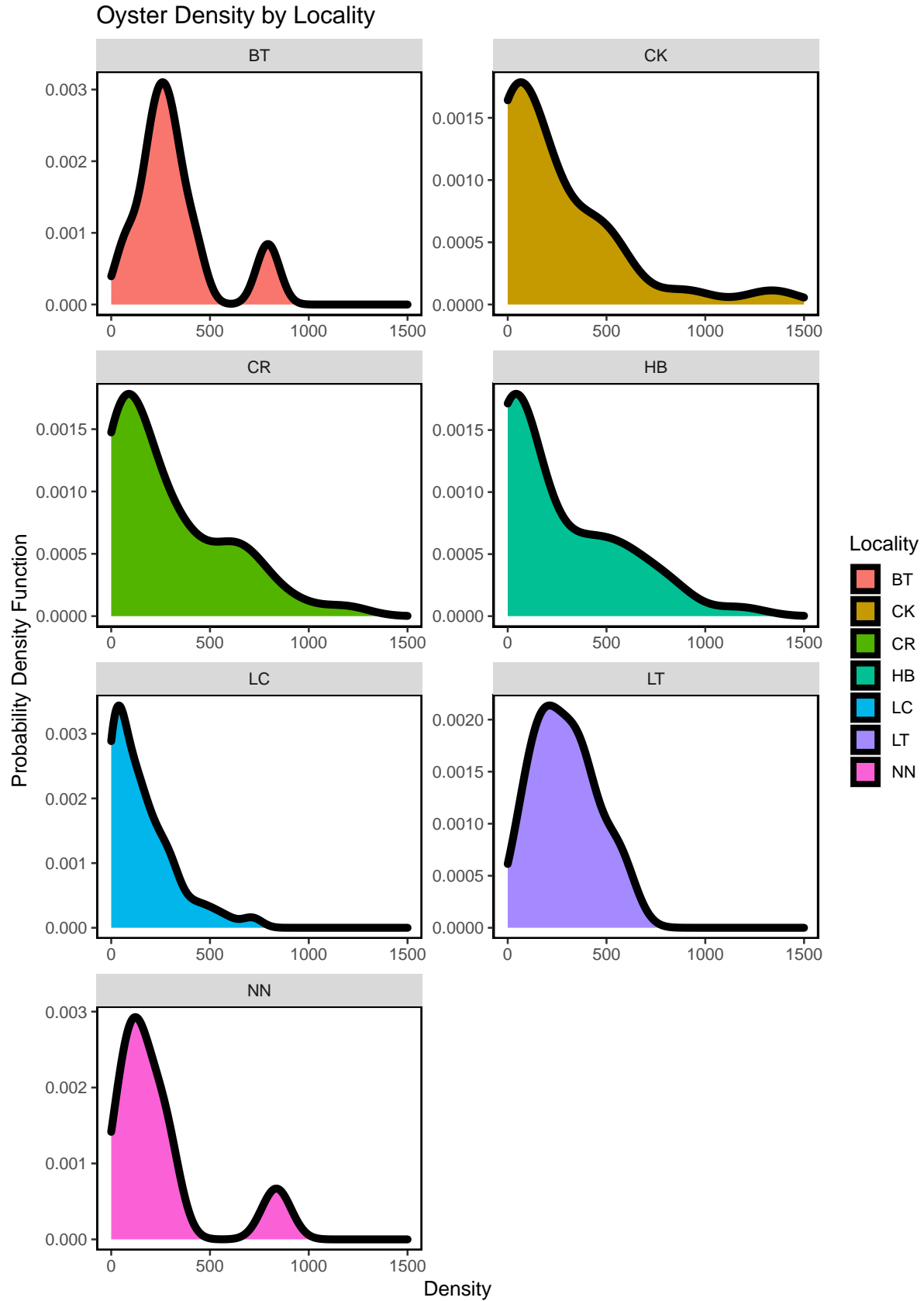
Density by Strata

Strata	Mean	Median	SD	Var	CV	SE	L95	U95	Bstrap_Mean	L95_Bstrap	U95_Bstrap
N_LG	137	134	91	8230	0.66	24	89	184	136	93	183
N_NA	283	212	275	75876	0.97	29	226	339	282	228	339
N_PILOT	111	111	60	3604	0.54	17	79	144	112	83	146
N_SM	189	135	149	22063	0.79	66	58	319	189	78	308
Y_NA	193	108	225	50478	1.16	17	159	227	192	162	227
Y_SM	135	105	117	13779	0.87	42	53	216	136	68	211

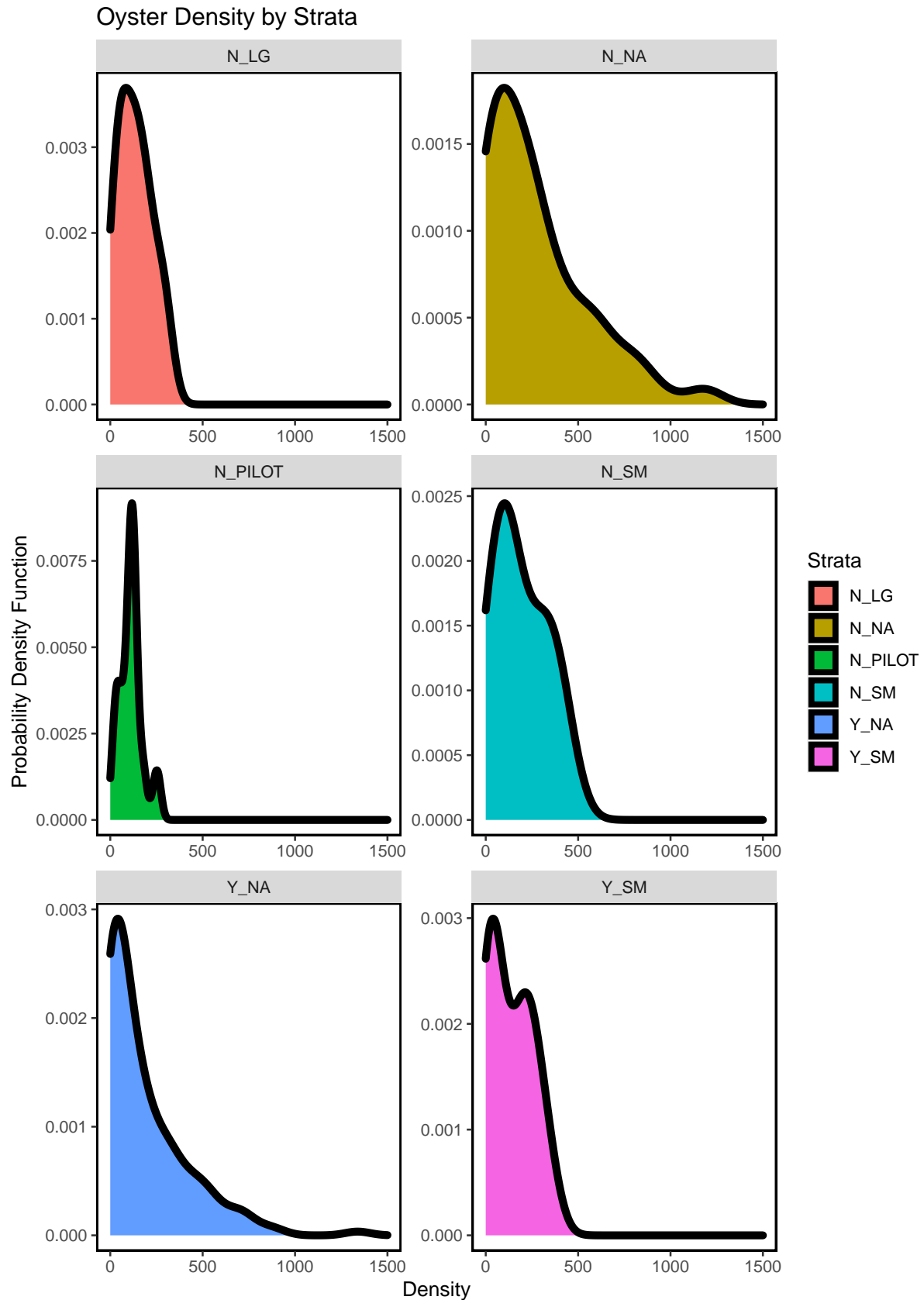
Density by Period

Period	Mean	Median	SD	Var	CV	SE	L95	U95	Bstrap_Mean	L95_Bstrap	U95_Bstrap
1	393	300.8	362.6	131444	0.92	56	283.8	503.1	395.3	287.6	501.4
2	255	119.0	285.2	81348	1.12	53	151.3	358.9	257.5	156.8	369.4
3	234	85.3	269.3	72523	1.15	55	126.1	341.6	233.7	134.0	339.0
6	122	72.2	150.9	22769	1.24	27	68.6	174.9	121.1	72.0	178.8
7	5	2.9	5.6	31	1.12	2	1.1	8.9	4.9	1.7	8.7
10	124	113.3	67.4	4536	0.54	24	76.9	170.3	123.4	83.9	168.6
11	90	79.5	67.8	4596	0.75	24	43.4	137.4	89.1	45.5	135.9
16	49	36.3	46.4	2154	0.95	16	16.9	81.2	48.9	21.2	81.7
18	177	154.5	130.8	17117	0.74	17	144.3	210.0	176.9	145.3	208.8
19	160	85.6	171.9	29552	1.08	29	102.9	216.8	160.0	107.7	214.5
20	260	206.3	189.0	35730	0.73	28	205.6	314.9	259.9	211.0	315.1

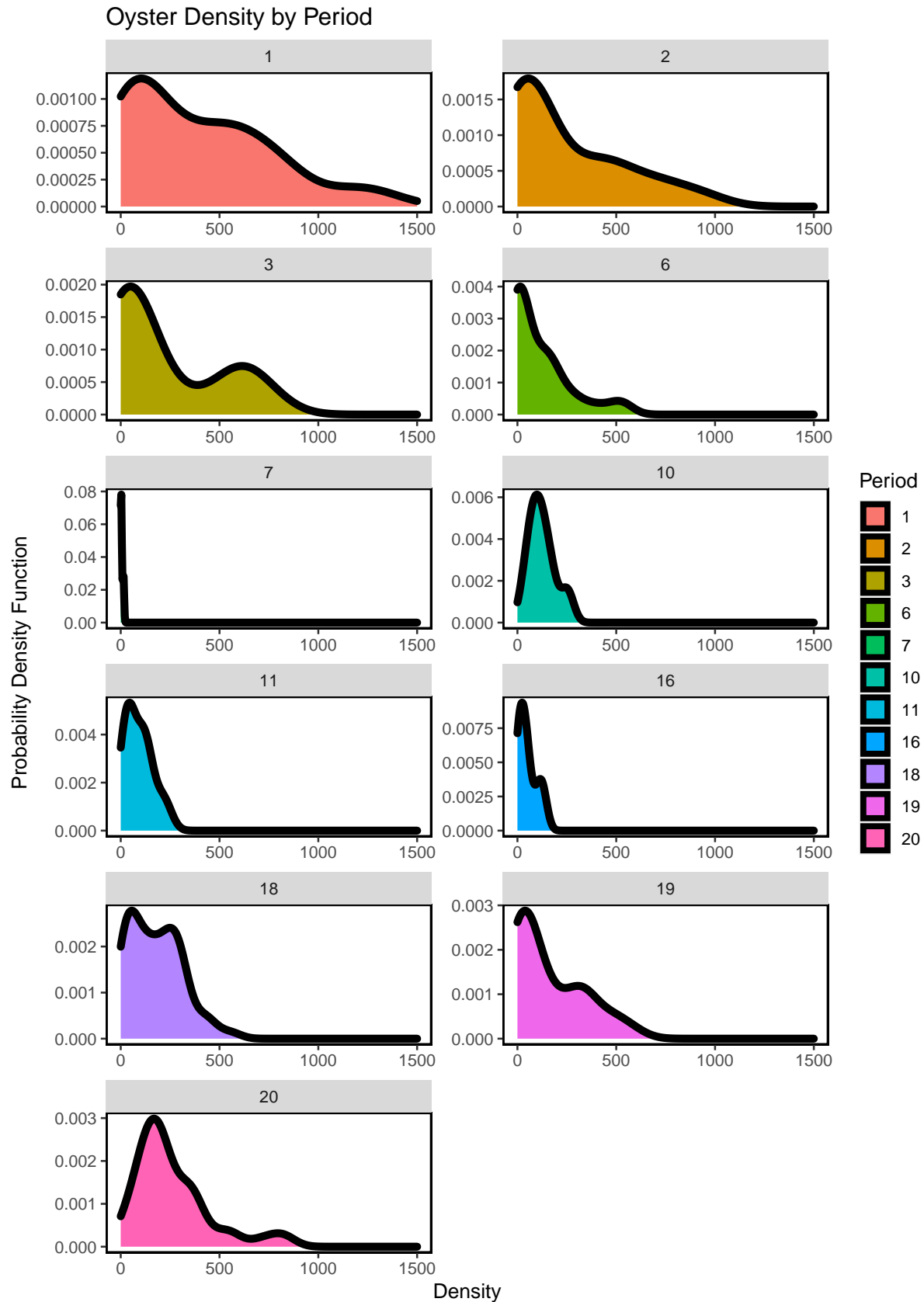
Summary Density Plots for all Periods



Figure– Calculated oyster density by locality for all periods including period 20 (current period).

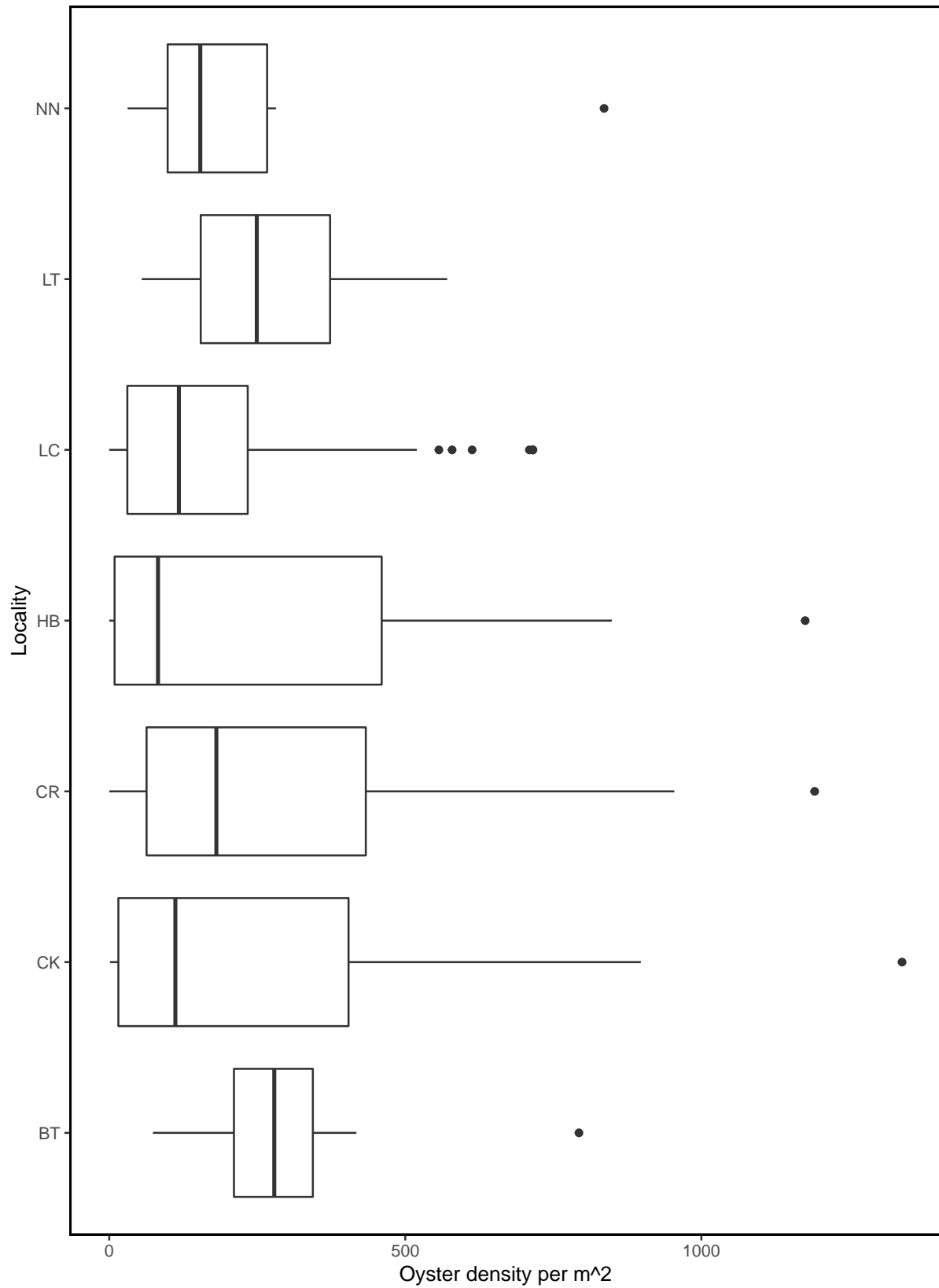


Figure– Calculated oyster density by strata for all periods including period 20 (current period).

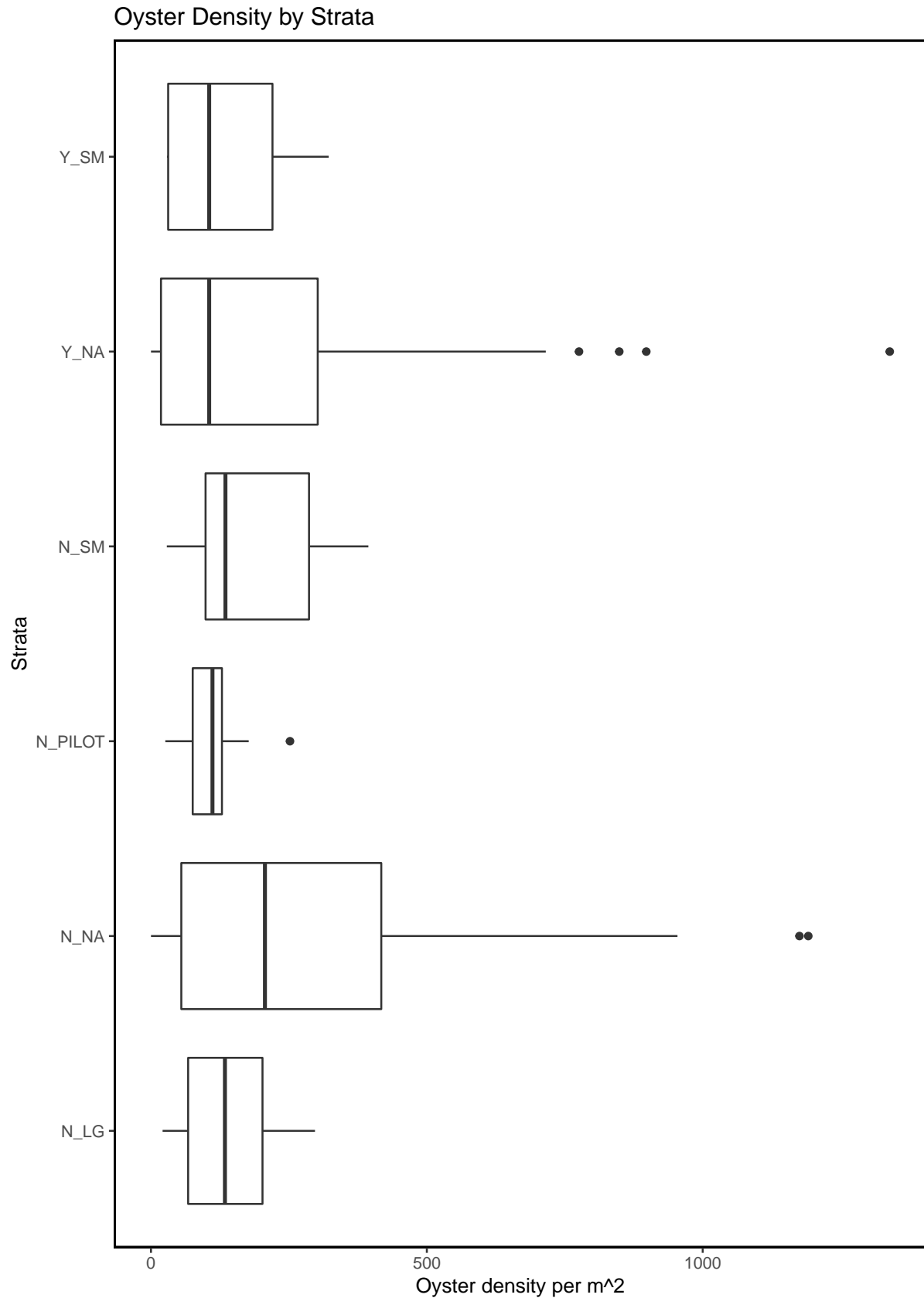


Figure– Calculated oyster density for all periods including period 20 (current period) using a probability density fu

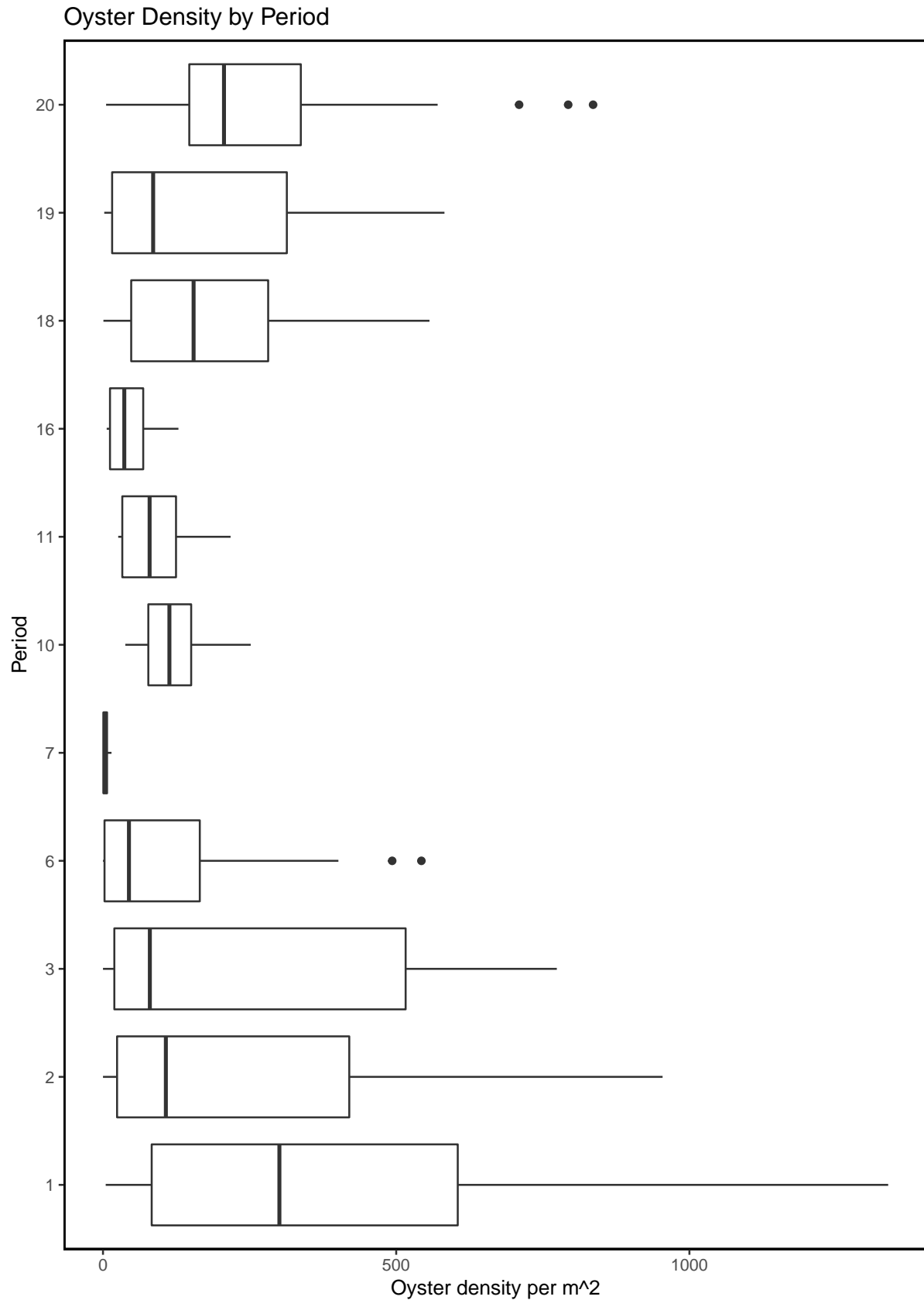
Oyster Density by Locality



Figure– Box plot depicting density by locality for all periods including period 20 (current period).



Figure– Box plot depicting density by strata for all periods including period 20 (current period).



Figure– Box plot depicting density by period for all periods including period 20 (current period).

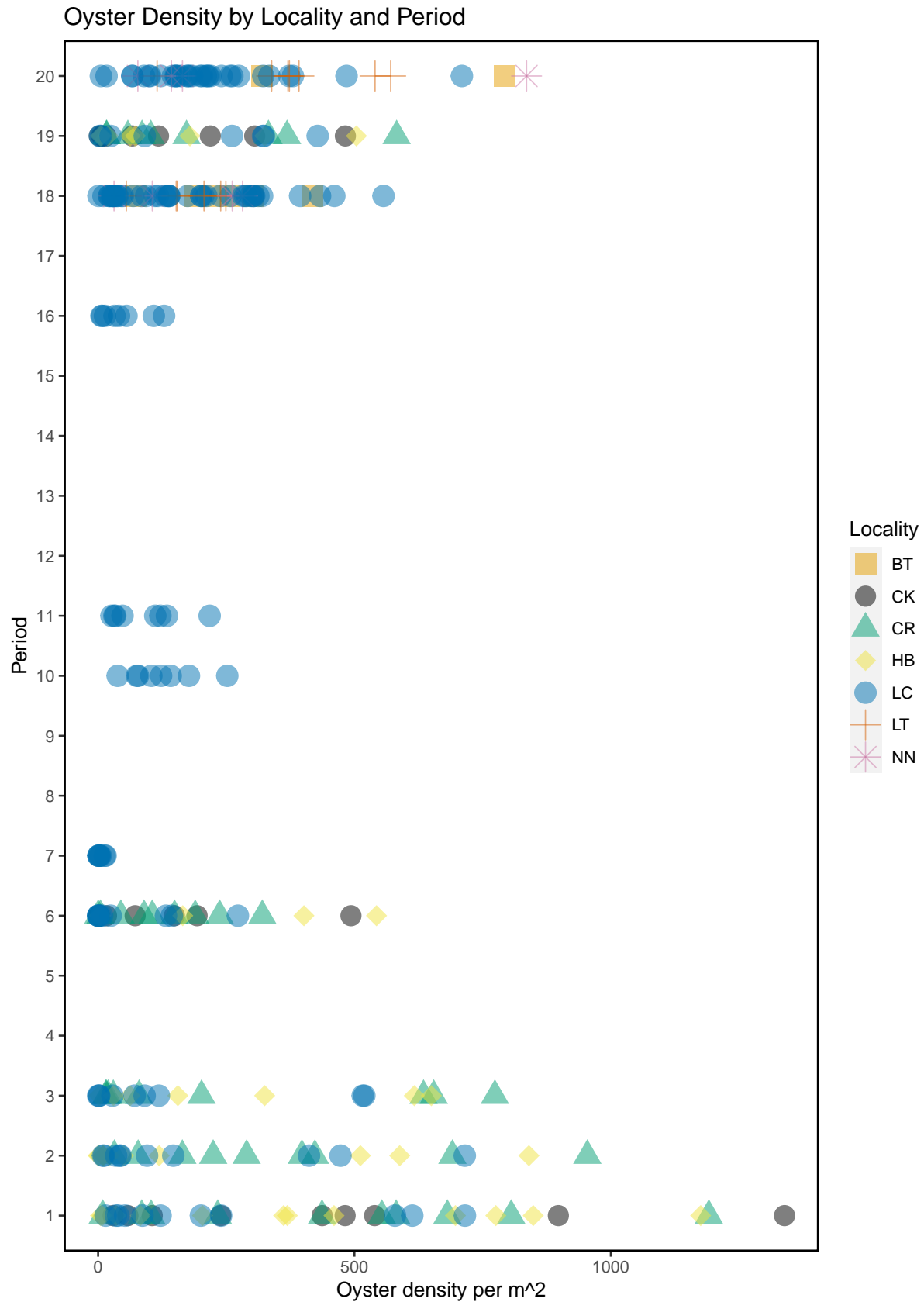


Figure – Oyster density by locality and period for all periods including period 20 (current period).

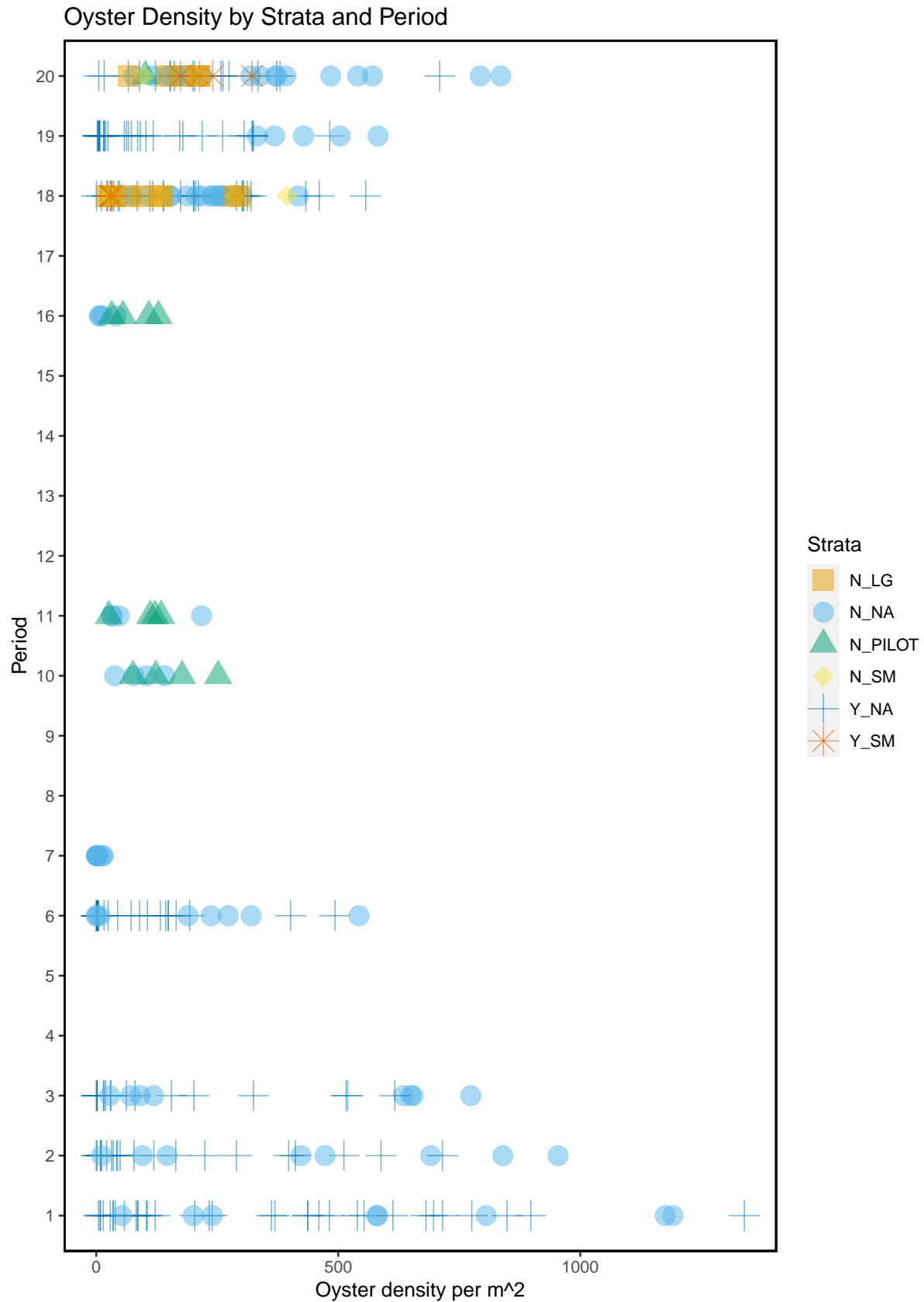


Figure – Oyster density by strata and period for all periods including period 20 (current period).

Summary Plots for Pilot Study Sites

A subset of the oyster transect locations were sampled over time for a pilot study. Here we provide plots of live oyster counts and density for these pilot stations with Lone Cabbage (LCO10B, LCO11A, LCO8B, LCO9A).

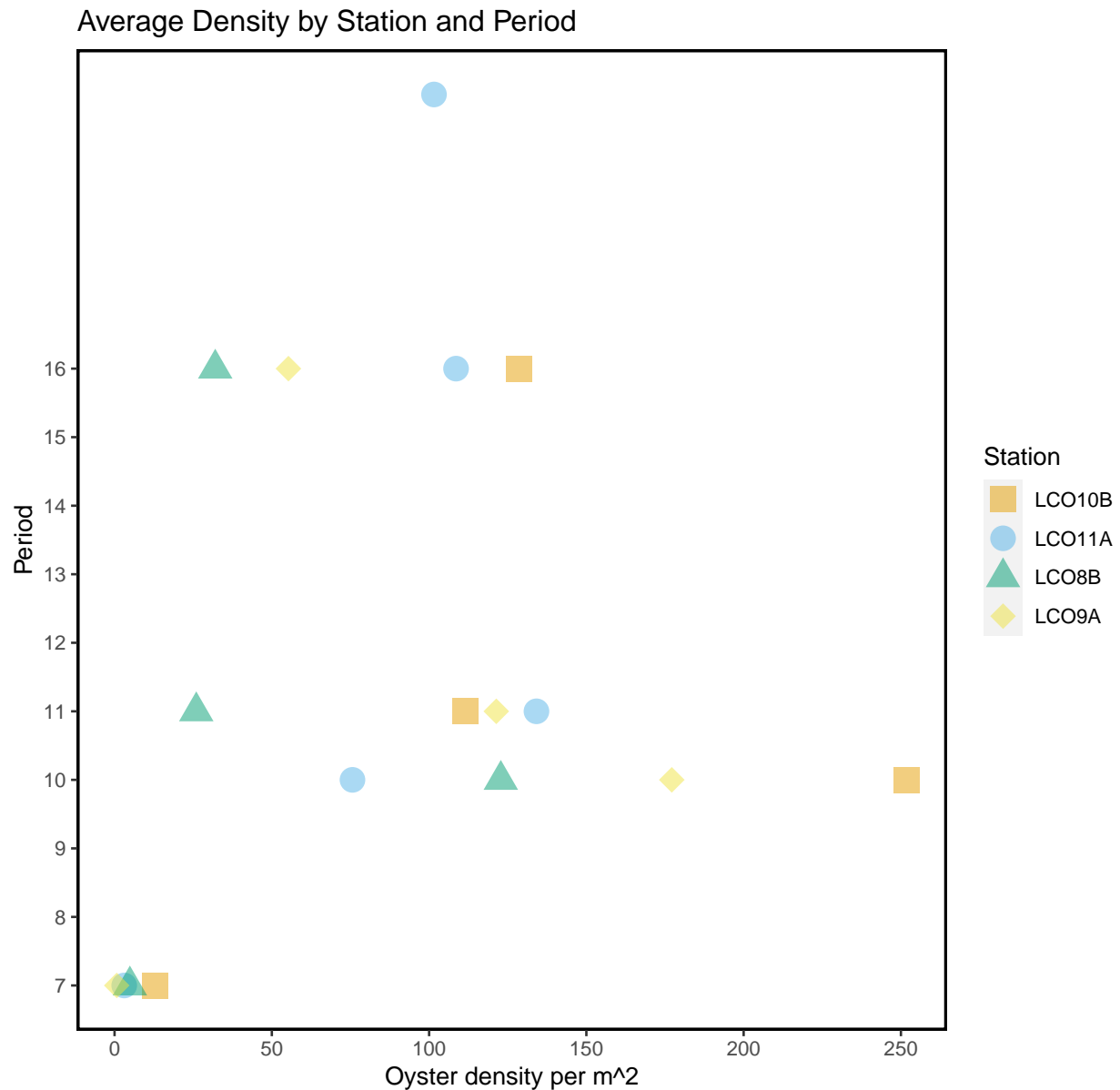


Figure – Average density comparison by period for all stations that were sampled during the pilot study.

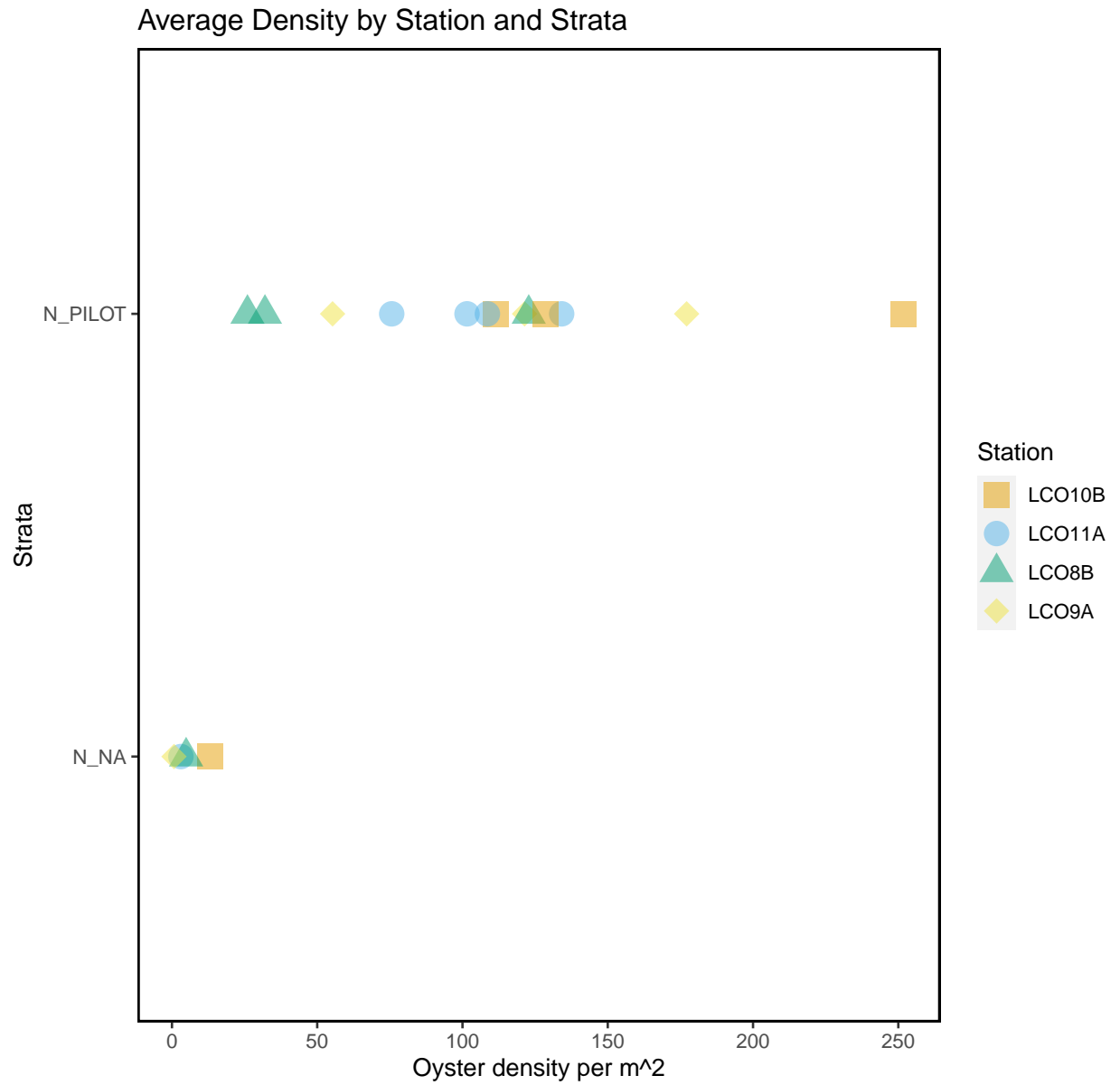


Figure – Average density comparison by strata and period for all stations that were sampled during the pilot stuc

Latest Data Entered

Displayed are the entries for the last date of sampling (2020-01-13).

date	station	tran_length	count_live	count_dead	treatment	strata
2020-01-13	LC018	2.5	61	2	rocks	Y_SM
2020-01-13	LC018	5.0	70	1	rocks	Y_SM
2020-01-13	LC018	7.5	45	0	rocks	Y_SM
2020-01-13	LC018	10.0	23	0	rocks	Y_SM
2020-01-13	LC018	12.5	46	4	rocks	Y_SM
2020-01-13	LC018	15.0	25	4	rocks	Y_SM
2020-01-13	LC018	17.5	30	0	rocks	Y_SM
2020-01-13	LC018	20.0	47	0	rocks	Y_SM
2020-01-13	LC018	22.1	32	3	rocks	Y_SM
2020-01-13	LC018	2.5	36	2	rocks	Y_SM
2020-01-13	LC018	5.0	130	4	rocks	Y_SM
2020-01-13	LC018	7.5	112	3	rocks	Y_SM
2020-01-13	LC018	10.0	75	0	rocks	Y_SM
2020-01-13	LC018	12.5	140	11	rocks	Y_SM
2020-01-13	LC018	15.0	143	7	rocks	Y_SM
2020-01-13	LC018	17.5	87	2	rocks	Y_SM
2020-01-13	LC018	20.0	144	9	rocks	Y_SM
2020-01-13	LC018	21.3	42	2	rocks	Y_SM
2020-01-13	LC018	2.5	117	3	rocks	Y_SM
2020-01-13	LC018	5.0	126	12	rocks	Y_SM
2020-01-13	LC018	7.5	75	5	rocks	Y_SM
2020-01-13	LC018	10.0	84	6	rocks	Y_SM
2020-01-13	LC018	12.5	87	8	rocks	Y_SM
2020-01-13	LC018	15.0	94	6	rocks	Y_SM
2020-01-13	LC018	17.5	81	4	rocks	Y_SM
2020-01-13	LC018	20.0	124	5	rocks	Y_SM
2020-01-13	LC018	20.9	15	1	rocks	Y_SM