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Reef Structure Alternatives for Restoration of Oyster (Crassostrea virginica) Populations in New Hampshire

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Reef structure alternatives for restoration of oyster (*Crassostrea virginica*) populations in New Hampshire

A Final Report to

The New Hampshire Estuaries Project

Submitted by

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Date of Report

3 August 2006

This report was funded by a grant from the New Hampshire Estuaries Project, as authorized by the U.S. Environmental Protection Agency pursuant to Section 320 of the Clean Water Act.

NewHampshire EstuariesProject

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Executive Summary

Eastern oyster (*Crassostrea virginica*) populations in New Hampshire have experienced severe declines since the 1990s, and restoration of oyster populations has been a major goal for New Hampshire management agencies. The most widely used technique in recent years in New Hampshire has been "spat seeding" which involves setting larvae from disease-resistant and/or fast-growth broodstock onto cultch material in large shore-based tanks, then distributing the spat attached to cultch onto the bottom to initiate reef restoration. This approach has the dual potential of providing direct population enhancement as well as introduction to the local gene pool of disease-resistance and/or fast-growth potential. Although spat seeding has been shown to be an effective technique much remains to be learned about the overall restoration process, particularly specific design criteria, the most effective combinations of methods, and long-term viability of "restored" bottom areas.

The present project was designed in part based on results of earlier experimental work (mainly the use of spat seeding) to address the general management question: "How should reefs be structurally enhanced (if at all) to enhance oyster populations and improve spat set?" This question was addressed by comparing the early (2 years) performance (survival, growth, natural spat set) of replicate "large" (6 m diameter) constructed reefs to replicate clusters of "small" (3.2 m diameter) constructed reefs; this is an example of the general ecological "SLOSS" (single large or several small) question applied to oyster restoration. The present project required two major deliverables: (1) 1.25 to 2.50 acres of restored oyster reefs; and (2) a proposed economically and ecologically effective protocol for restoring oyster reefs in New Hampshire when remote setting and spat seeding are appropriate.

Early reef performance (dependent variables: oyster density, mean shell height, and spat [oysters < 40 mm shell height] density) did not differ significantly for the "large" constructed reefs compared to "small" in any of the three dependent variables measured four times over the duration (20 months) of the experiment. Both types of constructed/restored reefs, however, differed substantially and significantly from both types of controls (exposed to harvest and unharvested) in oyster density and spat set, with mean densities of 3 to 6 times higher on the constructed reefs.

A total of 1.25 acres of bottom area was considered "restored" oyster bottom at the completion of the project. Including direct and match costs for the present project, it was estimated that restoring 1 acre of oyster bottom using spat seeding would require about $54,800. A recommended protocol for design of reef restoration projects that involve spat seeding consisted of the following components:

- Review previous research on the restoration site for limiting factors and recommended restoration methods (e.g. Langan 2000)
- Assess available larval sources (i.e. broodstock from which larvae are produced) to optimize the match to restoration goals and constraints
- Maximize vertical relief of constructed/restored area using suitable hard substrate
- Consider "shell planting" as a supplement to spat seeding
- Protect actual construction/restoration area from human harvest
- Design and implement a monitoring protocol that provides information sufficient to respond appropriately (e.g. supplemental shell planting, multiple spat seeding) to development of the constructed/restored area

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Introduction

Eastern oyster (*Crassostrea virginica*) populations in New Hampshire have experienced severe declines since the 1990s. Sampling by New Hampshire Fish and Game Department indicates that densities of adult oysters on the four major reefs in the Great Bay estuarine system in 2001 averaged only about 10% of the 1993 levels (Trowbridge 2002). Infection by protozoan parasites (MSX and Dermo) probably has been a major cause for the declines since the first documented mortality event in New Hampshire in 1995 (Barber et al. 1997). However, other factors such as lack of suitable substrate, excess sedimentation, over-harvest, and limitied recruitment are involved, probably with reef-specific combinations of factors contributing to the declines (Langan 1997, 2000; Smith 2002; Trowbridge 2003).

Restoration of oyster populations has been a major goal for New Hampshire management agencies since the 1990s (NHEP 2000). The most widely used technique for restoration of oyster reefs in most areas has been the placement of shell or other "cultch" material directly onto existing reefs (or areas thought to be potentially productive oyster bottom) to provide suitable substrate for natural settlement of spat. This well-tested method has been shown to be effective as well as relatively inexpensive (Haven et al. 1978; Kennedy 1989; Hargis and Haven 1999; Kennedy and Sanford 1999). But its effectiveness depends on a number of factors, including the kind of cultch material used, placement of the cultch, environmental conditions such as siltation rates, prevalence of disease, and reproductive output of the native oyster populations. For example, in the Chesapeake Bay region extensive "shell planting" programs resulted in substantial increases in oyster production from the 1940s until oyster diseases (MSX and Dermo) became widespread (MacKenzie 1999). For the past several decades, oyster populations in the Chesapeake region have continued to decline and managers are testing a variety of restoration methods that can be used in conjunction with shell plantings (see references in Luckenbach et al. 1999).

Probably the most common enhancement technique used in conjunction with shell plantings is "spat seeding" which involves setting larvae from disease-resistant and/or fast-growth broodstock onto cultch material in large shore-based tanks, then distributing the spat attached to cultch onto the reef areas (Supan et al. 1999). This approach has the dual potential of providing direct population enhancement as well as introduction to the local gene pool of disease-resistance and/or fast-growth potential. Moreover, although each particular operation is different, the remote setting process in general has been found to be "...fundamentally a low-cost technology for producing seed oysters..." (Supan et al. 1999; also see Ayer et al. 1970). Thus far, our research has shown that spat seeding using remotely set larvae is an effective technique for use on New Hampshire reefs.

Another question area that was the topic of some of the earliest research efforts concerns the arrangement of constructed reefs. Brooks (1891) suggested that cultch material should be placed in piles or arranged in ridges to produce secondary currents and thus better mixing to carry away sediments. Grave (1905) found that such an arrangement also affected spat settlement, with too much spat settlement and subsequent stunting of the oysters in some areas. Unfortunately very little subsequent work has been directed at spatial characteristics of constructed reefs. Fluid mechanical theory predicts that multiple small reefs will enhance mixing and vertical transport compared to one large reef (Newell et al. 1995), thus potentially explaining some of the results described by Brooks and Grave. Landscape theory also predicts potentially strong effects of reef size on various reef characteristics (Eggleston 1999). Recent field experiments have indicated that reef structural characteristics such as height (Lenihan 1999, Lenihan et al. 1999) and size (Luckenbach and Ross 2003) can affect performance, but the responses can be complicated and they vary depending on local environmental conditions.

Project Goals, Objectives, and Deliverables

The present project was designed in part based on results of earlier experimental work (mainly the use of spat seeding) to address the general management question: "How should reefs be structurally enhanced (if at all) to enhance oyster populations and improve spat set?" This question was addressed by comparing the early (2 years) performance (survival, growth, natural spat set) of replicate "large" constructed reefs to replicate clusters of "small" constructed reefs; this is an example of the general ecological "SLOSS" (single large or several small) question applied to oyster restoration. The overall goal of addressing the SLOSS question was met by accomplishing five objectives: (1) remotely set larvae; (2) construct experimental reefs in restoration area; (3) monitor development of restored areas; (4) determine the success of the restoration experiment; (5) assess the ecological and economic effectiveness of the tested reef restoration methods.

The New Hampshire Estuaries Project (NHEP) established a goal of restoring 20 acres of oyster bottom by 2010 (Trowbridge 2003). All recent oyster restoration efforts in New Hampshire before the present project were on experimental scales (each involving < 0.2 acre) with the general goal being development of appropriate and effective methods for full-scale restoration. The present project was experimental but involved a total of about 2 acres of bottom area, which represents a significant amount of area in the context of the NHEP goal of 20 acres. Hence, it was also designed to make a significant contribution to the NHEP 2010 goal.

The present project required two major deliverables: (1) 1.25 to 2.50 acres of restored oyster reefs; and (2) a proposed economically and ecologically effective protocol for restoring oyster reefs in New Hampshire when remote setting and spat seeding are appropriate.

Methods

Study site

The present project consisted of a field experiment at one site in Great Bay between Woodman Point and Nannie Island (Fig. 1). Langan (2000) identified three "limiting factors" for the Nannie Island reef: lack of clean shell (because of siltation and fouling), disease, and predation. The present project focused on the first two by providing clean cultch material (with attached disease-resistant/fast-growth spat) elevated above the surrounding bottom to minimize siltation. Hence, the overall experimental design was based on site-specific restoration recommendations.

Another related consideration in the proposed design was the general location of the restoration area, which is in waters approved for shellfish harvesting. Thus, it was possible that human harvesting might affect the experiment. To try to minimize the chances of human disturbance of the site, the restoration area was marked with a sign indicating it was an experimental area and closed for harvesting. Additionally, a letter explaining the project was sent to all New Hampshire shellfish license holders. The same procedure was followed and has been successful since the initiation in 2002 of a similar project at Adams

Point in Great Bay. The long-term aim in both projects is to explore the possibility of the constructed reefs becoming small broodstock sanctuaries in an area open to harvesting.

Field and laboratory methods (by objective)

Objective 1. Approximately 10 million larvae (from fast-growth broodstock from the Damariscotta River, Maine) were purchased from Muscongus Bay Aquaculture, and remotely set in two 2,000-gallon tanks at Jackson Estuarine Laboratory (JEL) in July 2004. Standard remote setting techniques that have been developed at JEL and based on general protocols in Castagna et al. (1996) and Supan et al. (1999) were followed. A rock mixture of crushed concrete and granite was used as cultch and suspended in the tanks in plastic net material. The spat-on-cultch were transferred to a nursery raft adjacent to JEL and held in suspension until 14-17 September 2004 (~2 months), then transferred to the study site for reef construction (Objective 2).

Objective 2. A total of eight experimental reef plots (each 25 m x 25 m) were marked in the general area of the existing reef at Nannie Island in Great Bay (Figs. 1 and 2). On each of the eight plots, the bases of either one large reef (6 m in diameter) or four smaller reefs (3.2 m diameter) were constructed during 18-20 August 2004 by depositing crushed granite material (5 to 10 cm in longest dimension) mounded up approximately 20 cm above the surrounding bottom. The final stage in reef construction, adding of spat-on-cultch ("spat seeding"), was accomplished during 14-17 September 2004. In addition to the eight constructed reef plots, four plots inside the overall closed area on the natural reef ("Unharvested Control") were also established among the constructed reefs (Fig. 2). Finally, to compare the enhancement work to natural beds that experience harvest, four plots were randomly selected about 200 m west of the experimental closed area ("Harvested Control"). See more details in Experimental Design and Data Analysis section below.

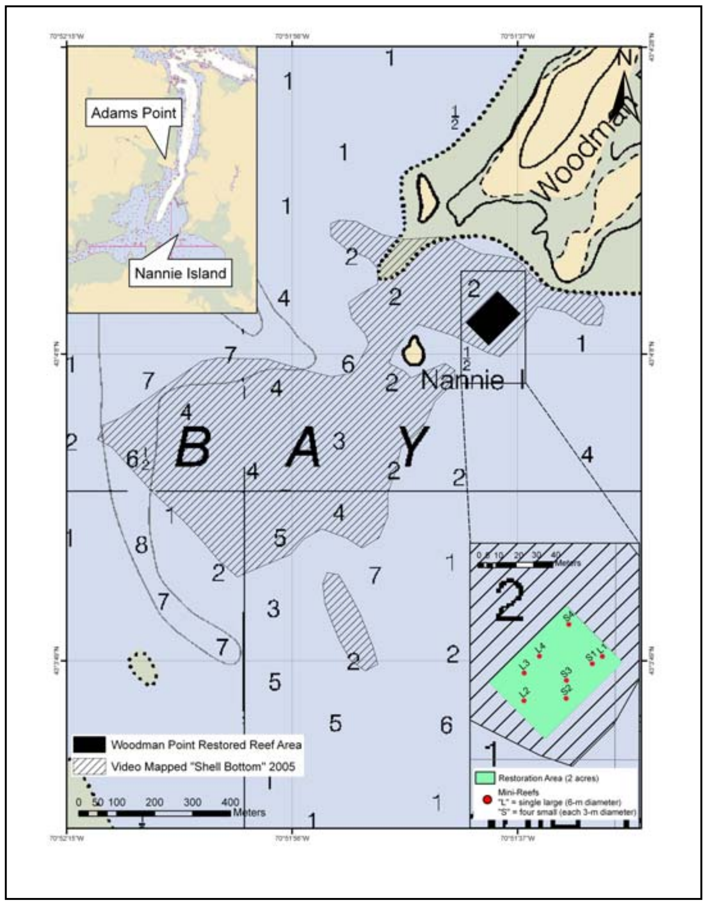

Fig. 1. Location of constructed experimental reefs inside box which delimits overall 2-acre "restoration area" on eastern side of natural oyster reef northeast of Nannie Island. "Unharvested Control" area was ~200 m west of "restoration area."

Objective 3. *Monitor development of restored reef areas.* Restoration success was assessed by sampling each of the constructed reef areas in fall and spring each of the two study years by taking four replicate quadrat samples from each of the four replicates of the two reef types (single large or several small; Fig. 2). All live oysters in each quadrat were counted, and shell height measured with calipers to nearest mm; dependent variables for further analyses (see below) were the means for total oyster density (#/m^2), shell height (mm), and spat (oysters with shell height < 40 mm) density (# spat/m^2). Samples were taken on 28 October 2004, 31 May-1 June 2005, 16 and 24 October 2005, and June 2006 (20 months post-reef construction).

Objective 4. Determine success of restoration experiment. Overall success was estimated by comparing oyster data from the constructed reefs (Objective 3) with data (using same sampling methods as on constructed reefs; see Objective 3) from the "Harvested Control" and "Unharvested Control" areas (see next section for details on data analysis).

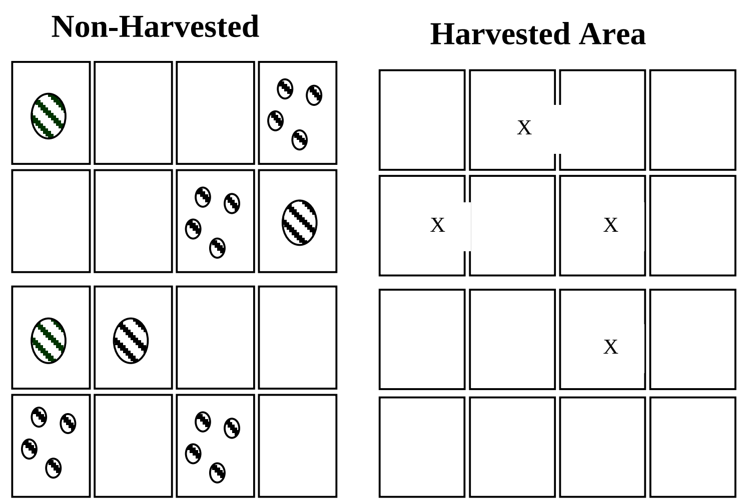

Fig. 2. Experimental design to test reef structure alternatives (single large vs. several small) for oyster restoration. "Non-Harvested" area shows eight total constructed experimental reefs (either single large or several [four] small, each replicated four times), and eight possible Unharvested Control areas (empty boxes). The "Harvested Area" indicates Harvested Control area about 200 m west of "Non-Harvested" area with "X" marking four replicate sampling areas (see Fig. 1).

<u>Experimental design and data analysis</u>

The overall experiment was a single-factor (reef type) design with four treatments (Fig. 2): single large constructed reef, several (four per replicate area) small constructed reefs, unharvested control reef (inside marked "restoration area"), and harvested control reef (outside "restoration area" and exposed to harvesters). Each treatment (including controls) was replicated four times, and all replicates were arranged in a completely randomized design. Dependent variables differed somewhat between reef types over time. Growth and survival of seeded spat could only be compared between the two constructed reef types (single large or several small) because these were the only reef types that would be seeded with spat from remotely set larvae. Natural spat set during year 2 (summer 2005), however, was compared across all four reef types using fall 2005 data. The following hypotheses stated in null form were tested.

Hypothesis H_1: Structural arrangement of constructed reefs (Single Large or Several Small) does not affect growth or survival of spat from remotely set larvae.

Hypothesis H_2: Natural spat set is similar on the constructed reefs compared to natural (degraded) reefs (harvested and non-harvested).

Hypothesis H_3: Natural spat set is similar on the natural (control) non-harvested reefs compared to natural (control) harvested reefs.

Testing hypothesis H_1 provided information for answering in part and in the short-term the question "How should reefs be structurally enhanced (if at all) to enhance oyster populations and improve spat set?" Testing the remaining two hypotheses provided information relevant to long-term enhancement techniques as well as a longer term answer to the above question because full restoration is dependent upon reef growth and maintenance by natural reproduction and spat set. Testing the latter two hypotheses also provided information on the effects of constructed reefs on nearby natural (degraded) reefs, and thus appropriate spatial scales for actual reef construction. For example, we anticipated that greater spat set would occur on natural reef bottom adjacent to the constructed reefs compared to the nearby harvested reef outside the constructed reef area. ANOVAs (followed by Tukey tests when significant differences among the means were indicated) using Systat version 10 were used to compare means.

Results and Discussion

Major findings

Mean total oyster densities on the "Single Large" and "Several Small" constructed reefs were not significantly different from one another during all four sampling periods, averaging about 150/m^2 for the first year then suffering 60% mortality (decreasing to 60/m^2) during the second year (Fig. 3A). Growth rates of the oysters on the two types of constructed reefs also were very similar with no significant differences ($P>0.05$) between the two reef types for any of the sampling periods; shell height on both reef types averaged about 28 mm when constructed, increasing to 59 mm after 13 months, then to about 62 mm after 20 months (Fig. 3B). Hence, null *Hypothesis H_1* was not rejected; there were no differences in growth or survival comparing the two constructed reef types.

Natural spat set could only be measured in 2005 (October sampling period) because there is only one setting period per year (typically in July/August) in Great Bay. There were no significant differences in spat set between the two constructed reef types, both between 5 and 10 spat/m^2 (Fig. 3C). There were, however, substantial and significant ($P<0.05$) differences between the constructed reefs and the two natural (control) reefs, with very little spat set in the control areas (Fig. 3C). *Hypothesis H_2* was therefore rejected, but this conclusion should be qualified because there appeared (based on diver observations) to be much less hard substrate available for spat set in the natural (control) reef areas. *Hypothesis H_3* was not rejected because there was very little spat set on either of the natural (control) reef types.

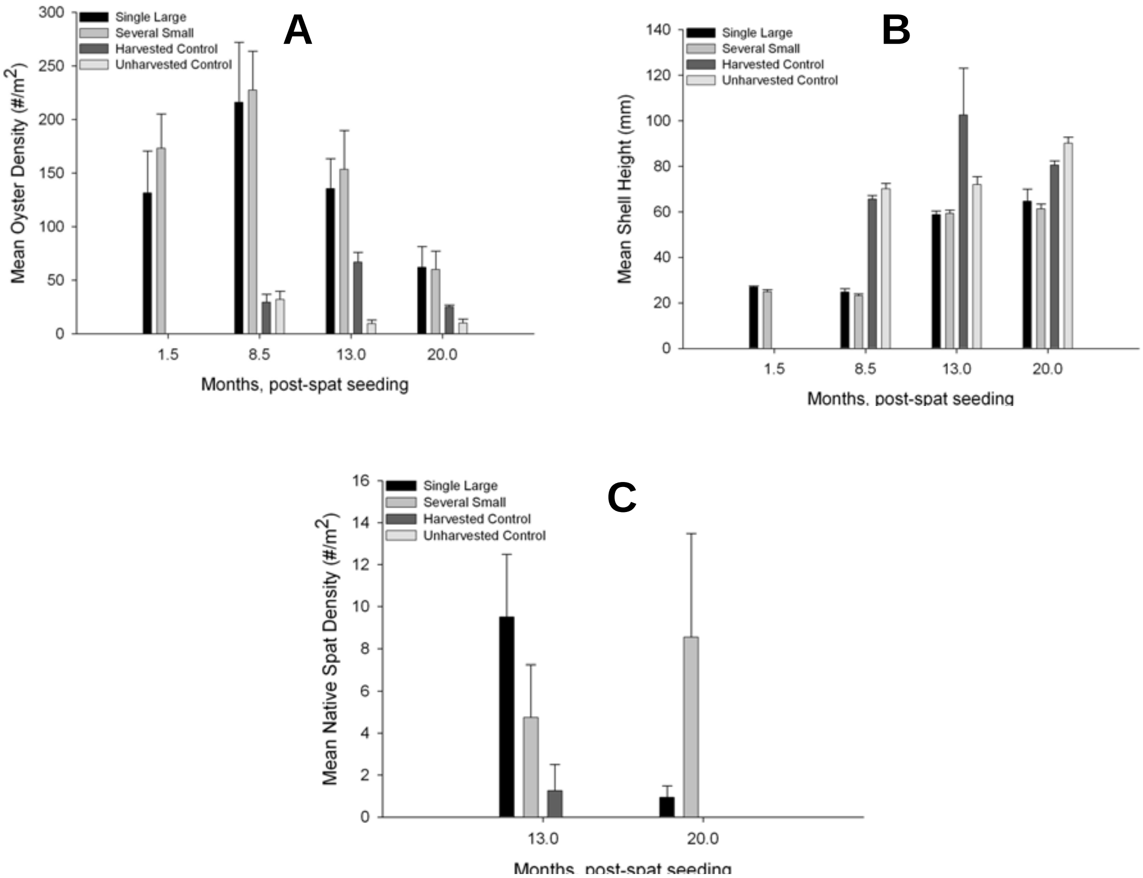

Fig. 3. Mean total oyster densities (A), shell height (B), and spat (shell height < 40 mm) densities (C) on four reef types from October 2004 (1.5 mo post-construction) to June 2006 (20 mo post-construction). Note: no spat were collected on the control reefs at 20 mo post-construction.

The above findings allow two major conclusions to be drawn with respect to the overall question addressed by the present study: "How should reefs be structurally enhanced (if at all) to enhance oyster populations and improve spat set?" Perhaps the most important finding was that both constructed reef types caught similar spat sets. The long-term viability of any "restored" reefs will be dependent upon sufficient natural recruitment after the reefs are initially constructed. Our findings suggest that differences in reef size/configuration (SLOSS) at the scale tested (6 m vs. 3 m diameter) had no effect on natural spat set. In the only study we are aware of comparing constructed reefs of different sizes, Luckenbach and Ross (2003) found only a weak (and not statistically significant) inverse relation between spat set and constructed reef size on reefs ranging from 400 to 8,000 m^2 in total surface area. Hence, available data suggest that reef size/configuration (SLOSS; on the scales tested) does not strongly affect natural recruitment.

A second conclusion that can be drawn from our data is that the differences in reef size/configuration (SLOSS) at the scale tested (6 m vs. 3 m diameter) had no effect on growth or survival of the remotely set spat initially used to construct the reefs. The oysters on both constructed reef sizes/configurations showed fast growth and nearly 100% survival through the first year, but about 60% mortality by 20 months post-construction.

It should also be noted that during all four sampling periods the constructed reefs had between 3 and 6x higher densities overall compared to the adjacent natural (control) reefs.

Hence, the spat seeding has thus far (20 months post reef construction) substantially enhanced the densities of live oysters in the general area. Although not a part of this study, several oysters from the initial spat seeding had ripened gonads in July 2006 indicating they probably would be spawning later in the year. Taken together, these findings indicate that the constructed reefs have substantially enhanced oyster densities in the general area, and at least some of the "seeded" spat have survived to reach reproductive age.

Quantification of restored bottom area

One of the two major deliverables for the present project was 1.25 to 2.50 acres of "restored" oyster reefs. In the context of the NHEP goal of 20 acres of restored oyster bottom by 2010, no specific criteria have been established to determine restoration success; the total restored area for each project "…will be determined by the restoration project manager." (Trowbridge 2003).

As of June 2006, the two constructed reef types (SLOSS) averaged about 60 oysters/m^2, which was 3 to 6 times the density of live oysters in the adjacent "control" areas (natural reef bottom). Although the immediately adjacent natural reef bottom in each of the eight 25 x 25 m plots established for the replicate constructed reef types (Fig. 2) was not sampled, those areas are considered "restored" as well. It should be noted that longer-term restoration success will be assessed by future sampling as well as ongoing experiments on natural spat settlement around the constructed reefs. The present project has resulted in restoration of a total of 1.25 acres of oyster bottom.

Ecological and economic effectiveness of the tested restoration methods

None of the four major "ecological services" (habitat creation, water filtration, food, and erosion control) potentially provided by oyster reefs were directly measured by the present project. Enhanced ecological services are assumed based on the fact that live oyster densities were increased several-fold compared to the adjacent natural oyster bottom (see above). If it is further assumed that 1.25 acres were enhanced, the appropriate cost figures for the project can be used to estimate economic effectiveness.

Total budget for the present project over 2 years, including direct and match costs, was $214,137. Most of these costs were for work tasks involved in administration, reef monitoring, report writing, and other tasks not directly needed for oyster restoration. To estimate the costs for reef restoration, only those costs associated with permitting, remote setting, and reef construction (some Administrative costs and above Objectives 1 and 2) were considered, and including charges to NHEP as well as UNH match costs (Table 1).

Table 1. Estimated costs for restoration of 1 acre of oyster bottom based on budget for the present project.

	Permitting	Oyster Larvae	Remote Setting; Nursery Raft	Reef Base Construction	"Spat Seeding"	**TOTALS**
NHEP costs:	$2,100	$3,000	$14,400	$8,800	$1,200	$29,500
UNH Match:	$2,100	$0	$17,600	$4,400	$1,200	$25,300
TOTALS:	$4,200	$3,000	$32,000	$13,200	$2,400	**$54,800**

It is emphasized that the total estimated cost of $54,800 for restoring 1 acre of oyster bottom (Table 1) is based on the methods used in the present project, as per the project proposal. Actual costs for oyster reef restoration will depend on the methods used and can vary widely from site to site. For example, if sufficient natural spat set regularly occurred in an area and there was a paucity of hard substrate in that area, then adding clean shell to the bottom just before oyster spawning in mid to late summer could be sufficient to initiate restoration; costs for this could be less than half the above per acre rate, depending on how much shell was used. Each restoration project should be designed based on the possible causes for decline of the particular reef and potential recommended restoration methods (Langan 2000).

<u>Preliminary recommended protocol for oyster reef restoration in New Hampshire</u>

The second major deliverable for the present project was a recommended restoration protocol where remote setting and spat seeding (methods used in present study) are appropriate. Spat seeding using remotely set larvae has been used recently in several areas in New Hampshire (including the present project) for two major reasons: to increase the low densities of live oysters on most reefs, and to introduce enhanced (genetically) disease resistance and/or fast growth. Results from the present project and a similar project at Adams Point (Greene and Grizzle 2005) strongly indicate that spat seeding can be used effectively to initiate reef restoration. Sampling in 2006 (3 years post-construction) on the Adams Point reefs showed the experimental reefs had declined to densities comparable to surrounding areas. However, natural sets had occurred in 2004 and 2005 onto the originally "seeded" oysters, and they had reached reproductive age in 2005 — all good indicators of the potential for long-term viability. Although these studies suggest that spat seeding can continue to be recommended as an effective method for future restoration projects in New Hampshire, each restoration area should be assessed with respect to its particular reason(s) for oyster decline and potential restoration methods (Langan 2000).

As discussed above, probably the most widely used technique for restoration of eastern oyster reefs in most areas has been "shell planting," the placement of shell or other cultch material directly onto existing reefs (or areas thought to be potentially productive oyster bottom) to provide suitable substrate for natural settlement of spat. In the Chesapeake Bay region extensive shell planting programs resulted in substantial increases in oyster production from the 1940s until oyster diseases (MSX and Dermo) became widespread (MacKenzie 1999). For the past several decades, oyster populations have continued to decline and managers are testing a variety of restoration methods, including spat seeding with disease-resistant oysters, that can be used in conjunction with shell plantings (see references in Luckenbach et al. 1999). Shell planting programs in New Hampshire have been undertaken twice over the past several decades. In the 1960s, a project that investigated the potential for seed oyster production in Great Bay also included planting large volumes of shell at several locations throughout the estuary (Ayer et al 1970). Later in the 1980s, surf clam shell was placed on several reefs for the purpose of bed improvement (Nelson 1988). Both programs demonstrated that planted shell was effective in catching oyster spat, but subsequently the oyster disease MSX severely reduced oyster populations in the entire area (Barber et al. 1997). Spat monitoring (in the fall each year) since the early 1990s through 2001 by NHF&G has shown minimal sets (typically <10 spat/m^2) on all reefs monitored except in 1999 and 2002 (Trowbridge 2003, 2005). It is not possible to directly compare these data with data from the Chesapeake because volumetric units are used there (Jordan et al. 2002). However, the same trend of minimal sets during the 1990s occurred in both areas (www.chesapeakebay.net/status/oysterspat).

Langan (2000) identified several restoration (enhancement) techniques potentially appropriate for each of five major New Hampshire oyster reefs. Nearly all included planting "clean shell." Lack of hard substrate, particularly clean oyster shell, is needed in most areas to catch natural spat sets thereby enhancing the likelihood for long-term viability of each reef. Remote setting using spat-on-shell (or other hard material) increases suitable substrate, but typically not in the amounts needed for long-term enhanced natural spat sets. A recently completed project in the Bellamy River indicates that shell planting may be needed as the constructed reef develops to provide sufficient substrate for natural spat sets to be successful (Grizzle et al. 2006). Shell planting may be needed at many sites as a supplement to spat seeding, initially and as the restored area develops.

Another design characteristic that needs to be considered is vertical structure. Natural eastern oyster reefs typically develop over time to attain substantial vertical relief, which can be quickly diminished by most modern harvesting techniques (Bahr and Lanier 1981; Kennedy and Sanford 1999). Existing reefs in most areas rarely extend vertically more than 0.5 m above the seafloor, but historical anecdotal information suggests that in many areas oyster reefs extended up to several meters above the seafloor. Theoretical and empirical research has shown that vertical relief affects a variety of ecological processes important to the oysters themselves including mixing of the water column and transport of food, oxygen, and larvae (Newell et al. 1995; Coen et al. 1999; Lenihan 1999; Kennedy and Sanford 1999). Oysters elevated above the bottom on constructed reefs in North Carolina fared better in several respects, including less intensity of disease (Dermo) infection, compared to oysters closer to the bottom (Lenihan et al. 1999). Vertical structure also enhances various ecological processes such as recruitment by fish and other animals that naturally occur on the reefs (Breitburg et al. 2000). The present project used crushed granite to raise the bases of the experimental reefs approximately 20 cm above the surrounding bottom, but this may not be possible (for permitting, cost or other reasons) in some areas. In any case, enhanced vertical relief should be considered in the design of future projects.

A final design topic that needs to be considered for projects involving spat seeding is larval source. To date, we have conducted five projects involving remote setting and subsequent spat seeding to experimental reefs in New Hampshire. The remote setting has involved larvae from four different broodstocks and three hatcheries: Cooperative Regional Oyster Selective Breeding (CROSBreed) broodstock from a mid-Atlantic consortium; native New York broodstock from Frank Flower & Sons Hatchery; native New England broodstock from Damaristcotta River, Maine, from Muscongus Bay Aquaculture; and native Great Bay, New Hampshire broodstock spawned at Muscongus Bay Aquaculture. Larvae and spat from all four broodstock sources (except the New York larvae) have demonstrated characteristics showing potential for use in restoration in New Hampshire, and our number of trials is far too limited to make specific recommendations. We can state at this time, however, that the New England oysters (Maine and New Hampshire) have performed best overall when considering remote setting success, spat survival, and early reef performance (up to 3 years post-construction).

In light of the above considerations, we recommend the following general protocol for the design of oyster reef restoration projects in New Hampshire when spat seeding is involved:

- Review previous research on the restoration site for limiting factors and recommended restoration methods (e.g. Langan 2000)
- Assess available larval sources (i.e. broodstock from which larvae are produced) to optimize the match to restoration goals and constraints
- Maximize vertical relief of constructed/restored area using suitable hard substrate
- Consider "shell planting" as a supplement to spat seeding
- Protect actual construction/restoration area from human harvest
- Design and implement a monitoring protocol that provides information sufficient to respond appropriately (e.g. supplemental shell planting, multiple spat seeding) to development of the constructed/restored area

Recommendations

A recommended protocol for designing oyster restoration projects in New Hampshire was given above. Several components of this protocol require additional research, particularly for application in New Hampshire. We recommend the following as priority topics: (1) the use of shell planting as a routine restoration method, particularly in combination with spat seeding; (2) the potential for establishing "no harvest" areas to function as broodstock sanctuaries; and (3) development of an adaptive management approach to long-term monitoring of constructed/restored areas.

As noted above, shell planting has been used effectively in oyster restoration programs for decades in many areas. Its effectiveness, however, in temperate areas (with limited spawning) is dependent upon correct timing of shell placement just before natural spat set occurs. Shell planting should be further investigated as a complementary method for use with spat seeding. The present project indicated that configuration/size of constructed reefs on the scale tested (single 6-m diameter large reef vs. several small 3-m diameter reefs) did not affect early reef performance, but natural recruitment in the control areas may have been affected by lack of shell on the bottom. Effective ways to combine spat seeding with shell planting should be further investigated.

The present project involved marking the overall 2.5-acre experimental area as a "no harvest" area, thereby at least potentially protecting the constructed reefs from human harvest. No harvesting was observed in the area on any visits to the site, and there was no physical evidence that any of the experimental reefs had been damaged. Hence, it was assumed that the area remained unaffected by human harvest. The immediate intent was to protect the integrity of the experiment, but in the long-term such protection could result in the area functioning as a broodstock sanctuary. Broodstock sanctuaries have been used effectively in other areas as a management tool for oysters and clams that provides stock enhancement when larvae are transported and recruit to areas outside the sanctuary. This approach should be further explored for use in New Hampshire in combination with other restoration methods.

Finally, restoration projects typically lose funding when the project is "completed," typically (as the present project) after 2 years when the funding cycle ends. Oyster restoration cannot be "completed" in any meaningful way in only 2 years. Our research suggests that 5 or more years are required in New Hampshire for a constructed reef to begin to have characteristics indicative of a viable oyster reef such as coalesced shells of live oysters consisting of multiple age/year classes, some vertical relief, and reproductive individuals successfully spawning. Moreover, as a "restored" reef develops it may require repeated spat seeding or shell planting in response to die-offs or storm events that erode shell to enhance the chances for long-term viability. Adaptive management approaches need to be explored that allow feedback from monitoring to the overall restoration process.

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Appendix A - Raw Data - Oyster Density (#/m^2)

Date	Type	Reef	Quadrat	# Oysters
10/28/2004	Experimental	L1	1	19
10/28/2004	Experimental	L1	2	26
10/28/2004	Experimental	L1	3	49
10/28/2004	Experimental	L1	4	3
10/28/2004	Experimental	L2	1	5
10/28/2004	Experimental	L2	2	3
10/28/2004	Experimental	L2	3	17
10/28/2004	Experimental	L2	4	3
10/28/2004	Experimental	L3	1	20
10/28/2004	Experimental	L3	2	7
10/28/2004	Experimental	L3	3	4
10/28/2004	Experimental	L3	4	2
10/28/2004	Experimental	L4	1	38
10/28/2004	Experimental	L4	2	1
10/28/2004	Experimental	L4	3	6
10/28/2004	Experimental	L4	4	7
10/28/2004	Experimental	S1	1	8
10/28/2004	Experimental	S1	2	40
10/28/2004	Experimental	S1	3	22
10/28/2004	Experimental	S1	4	13
10/28/2004	Experimental	S2	1	0
10/28/2004	Experimental	S2	2	4
10/28/2004	Experimental	S2	3	5
10/28/2004	Experimental	S2	4	22
10/28/2004	Experimental	S3	1	16
10/28/2004	Experimental	S3	2	27
10/28/2004	Experimental	S3	3	5
10/28/2004	Experimental	S3	4	34
10/28/2004	Experimental	S4	1	28
10/28/2004	Experimental	S4	2	5
10/28/2004	Experimental	S4	3	18
10/28/2004	Experimental	S4	4	30
6/2/2005	Experimental	L1	1	31
6/2/2005	Experimental	L1	2	10
6/2/2005	Experimental	L1	3	1
6/2/2005	Experimental	L1	4	2
6/2/2005	Experimental	L2	1	26
6/2/2005	Experimental	L2	2	21
6/2/2005	Experimental	L2	3	5
6/2/2005	Experimental	L2	4	2
6/2/2005	Experimental	L3	1	25
6/2/2005	Experimental	L3	2	36
6/2/2005	Experimental	L3	3	45
6/2/2005	Experimental	L3	4	29
6/2/2005	Experimental	L4	1	19
6/2/2005	Experimental	L4	2	5
6/2/2005	Experimental	L4	3	0
6/2/2005	Experimental	L4	4	19
6/2/2005	Experimental	S1	1	45
6/2/2005	Experimental	S1	2	53
6/2/2005	Experimental	S1	3	20
6/2/2005	Experimental	S1	4	0
6/2/2005	Experimental	S2	1	3
6/2/2005	Experimental	S2	2	3
6/2/2005	Experimental	S2	3	44

	Date	Mean # Oysters	Oysters/m^2	Quad Size
Large 1	10/28/2004	24.3	242.5	.1m2
Large 2	10/28/2004	7.0	70.0	
Large 3	10/28/2004	8.3	82.5	
Large 4	10/28/2004	13.0	130.0	
Small 1	10/28/2004	20.8	207.5	
Small 2	10/28/2004	7.8	77.5	
Small 3	10/28/2004	20.5	205.0	
Small 4	10/28/2004	20.3	202.5	
All Single Large	10/28/2004	13.1	131.3	
All Several Small	10/28/2004	17.3	173.1	
All reefs	10/28/2004	15.2	152.2	
Large 1	6/2/2005	11.0	121.0	.09m2
Large 2	6/2/2005	13.5	148.5	
Large 3	6/2/2005	33.8	371.3	
Large 4	6/2/2005	20.3	222.8	
Small 1	6/2/2005	29.5	324.5	
Small 2	6/2/2005	19.0	209.0	
Small 3	6/2/2005	20.5	225.5	
Small 4	6/2/2005	13.8	151.3	
All Single Large	6/2/2005	17.3	189.8	
All Several Small	6/2/2005	20.7	227.6	
All reefs	6/2/2005	19.0	208.7	
UC 1	6/2/2005	1.3	10.0	.125m2
UC 2	6/2/2005	4.0	32.0	
UC 3	6/2/2005	5.3	42.0	
UC 4	6/2/2005	5.5	44.0	
HC 1	6/2/2005	6.0	48.0	
HC 2	6/2/2005	4.3	34.0	
HC 3	6/2/2005	2.3	18.0	
HC 4	6/2/2005	2.3	18.0	
All Unharv Control	6/2/2005	2.3	18.0	
All Harv Control	6/2/2005	1.8	14.0	
All reefs	6/2/2005	2.5	20.0	
Large 1	10/16/2005	14.8	118.0	.125m2
Large 2	10/16/2005	15.3	122.0	
Large 3	10/16/2005	10.8	86.0	
Large 4	10/16/2005	27.0	216.0	
Small 1	10/16/2005	17.8	142.0	
Small 2	10/16/2005	7.3	58.0	
Small 3	10/16/2005	23.3	186.0	
Small 4	10/16/2005	28.5	228.0	
All Single Large	10/16/2005	16.9	135.5	
All Several Small	10/16/2005	19.2	153.5	
All reefs	10/16/2005	18.1	144.5	
UC 1	10/24/2005	0.3	2.5	.1m2
UC 2	10/24/2005	1.8	17.5	
UC 3	10/24/2005	1.3	12.5	
UC 4	10/24/2005	0.5	5	
HC 1	10/24/2005	4.8	47.5	
HC 2	10/24/2005	5.5	55	
HC 3	10/24/2005	8.5	85	
HC 4	10/24/2005	8.0	80	
All Unharv Control	10/24/2005	0.9	9.375	
All Harv Control	10/24/2005	6.7	66.875	
All reefs	10/24/2005	3.8	38.125	

6/2/2005	Experimental	S2	4	26
6/2/2005	Experimental	S3	1	3
6/2/2005	Experimental	S3	2	78
6/2/2005	Experimental	S3	3	0
6/2/2005	Experimental	S3	4	1
6/2/2005	Experimental	S4	1	10
6/2/2005	Experimental	S4	2	29
6/2/2005	Experimental	S4	3	16
6/2/2005	Experimental	S4	4	0
6/2/2005	Control	C1	1	0
6/2/2005	Control	C1	2	4
6/2/2005	Control	C1	3	1
6/2/2005	Control	C1	4	0
6/2/2005	Control	C2	1	11
6/2/2005	Control	C2	2	9
6/2/2005	Control	C2	3	2
6/2/2005	Control	C2	4	2
6/2/2005	Control	C3	1	4
6/2/2005	Control	C3	2	1
6/2/2005	Control	C3	3	2
6/2/2005	Control	C3	4	2
6/2/2005	Control	C4	1	2
6/2/2005	Control	C4	2	0
6/2/2005	Control	C4	3	0
6/2/2005	Control	C4	4	0
6/2/2005	Control	FC1	1	8
6/2/2005	Control	FC1	2	7
6/2/2005	Control	FC1	3	13
6/2/2005	Control	FC1	4	15
6/2/2005	Control	FC2	1	6
6/2/2005	Control	FC2	2	11
6/2/2005	Control	FC2	3	3
6/2/2005	Control	FC2	4	14
6/2/2005	Control	FC3	1	5
6/2/2005	Control	FC3	2	6
6/2/2005	Control	FC3	3	0
6/2/2005	Control	FC3	4	3
6/2/2005	Control	FC4	1	2
6/2/2005	Control	FC4	2	4
6/2/2005	Control	FC4	3	12
6/2/2005	Control	FC4	4	1
10/16/2005	Experimental	L1	1	5
10/16/2005	Experimental	L1	2	24
10/16/2005	Experimental	L1	3	28
10/16/2005	Experimental	L1	4	2
10/16/2005	Experimental	L2	1	5
10/16/2005	Experimental	L2	2	7
10/16/2005	Experimental	L2	3	31
10/16/2005	Experimental	L2	4	18
10/16/2005	Experimental	L3	1	14
10/16/2005	Experimental	L3	2	12
10/16/2005	Experimental	L3	3	17
10/16/2005	Experimental	L3	4	0
10/16/2005	Experimental	L4	1	26
10/16/2005	Experimental	L4	2	17
10/16/2005	Experimental	L4	3	24
10/16/2005	Experimental	L4	4	41
10/16/2005	Experimental	S1	1	3
10/16/2005	Experimental	S1	2	7
10/16/2005	Experimental	S1	3	0
10/16/2005	Experimental	S1	4	61

Large 1	6/19/2006	0.8	7.5	.1m2
Large 2	6/19/2006	10.0	100	
Large 3	6/19/2006	6.5	65	
Large 4	6/19/2006	7.5	75	
Small 1	6/19/2006	5.8	57.5	
Small 2	6/19/2006	1.3	12.5	
Small 3	6/19/2006	8.5	85	
Small 4	6/19/2006	8.5	85	
All Single Large	6/19/2006	6.2	61.875	
All Several Small	6/19/2006	6.0	60	
All reefs	6/19/2006	6.1	60.9375	
UC 1	6/19/2006	1.3	12.5	.1m2
UC 2	6/19/2006	1.8	17.5	
UC 3	6/19/2006	1	10	
UC 4	6/19/2006	0	0	
HC 1	6/19/2006	2	20	
HC 2	6/19/2006	2.5	25	
HC 3	6/19/2006	2.75	27.5	
HC 4	6/19/2006	2.75	27.5	
All Unharv Control	6/19/2006	1.0	10	
All Harv Control	6/19/2006	2.5	25	
All reefs	6/19/2006	1.75	17.5	

10/16/2005	Experimental	S2	1	5
10/16/2005	Experimental	S2	2	10
10/16/2005	Experimental	S2	3	7
10/16/2005	Experimental	S2	4	7
10/16/2005	Experimental	S3	1	73
10/16/2005	Experimental	S3	2	3
10/16/2005	Experimental	S3	3	8
10/16/2005	Experimental	S3	4	9
10/16/2005	Experimental	S4	1	65
10/16/2005	Experimental	S4	2	22
10/16/2005	Experimental	S4	3	20
10/16/2005	Experimental	S4	4	7
10/24/2005	Control	C1	1	0
10/24/2005	Control	C1	2	0
10/24/2005	Control	C1	3	1
10/24/2005	Control	C1	4	0
10/24/2005	Control	C2	1	0
10/24/2005	Control	C2	2	2
10/24/2005	Control	C2	3	2
10/24/2005	Control	C2	4	3
10/24/2005	Control	C3	1	0
10/24/2005	Control	C3	2	2
10/24/2005	Control	C3	3	3
10/24/2005	Control	C3	4	0
10/24/2005	Control	C4	1	0
10/24/2005	Control	C4	2	2
10/24/2005	Control	C4	3	0
10/24/2005	Control	C4	4	0
10/24/2005	Control	FC1	1	5
10/24/2005	Control	FC1	2	6
10/24/2005	Control	FC1	3	3
10/24/2005	Control	FC1	4	5
10/24/2005	Control	FC2	1	0
10/24/2005	Control	FC2	2	7
10/24/2005	Control	FC2	3	4
10/24/2005	Control	FC2	4	11
10/24/2005	Control	FC3	1	4
10/24/2005	Control	FC3	2	10
10/24/2005	Control	FC3	3	7
10/24/2005	Control	FC3	4	13
10/24/2005	Control	FC4	1	1
10/24/2005	Control	FC4	2	6
10/24/2005	Control	FC4	3	9
10/24/2005	Control	FC4	4	16
6/19/2006	Experimental	L1	1	1
6/19/2006	Experimental	L1	2	2
6/19/2006	Experimental	L1	3	0
6/19/2006	Experimental	L1	4	0
6/19/2006	Experimental	L2	1	5
6/19/2006	Experimental	L2	2	16
6/19/2006	Experimental	L2	3	6
6/19/2006	Experimental	L2	4	13
6/19/2006	Experimental	L3	1	9
6/19/2006	Experimental	L3	2	12
6/19/2006	Experimental	L3	3	0
6/19/2006	Experimental	L3	4	5
6/19/2006	Experimental	L4	1	0
6/19/2006	Experimental	L4	2	13
6/19/2006	Experimental	L4	3	0
6/19/2006	Experimental	L4	4	17

6/19/2006	Experimental	S1	1	2
6/19/2006	Experimental	S1	2	3
6/19/2006	Experimental	S1	3	15
6/19/2006	Experimental	S1	4	3
6/19/2006	Experimental	S2	1	0
6/19/2006	Experimental	S2	2	0
6/19/2006	Experimental	S2	3	5
6/19/2006	Experimental	S2	4	0
6/19/2006	Experimental	S3	1	1
6/19/2006	Experimental	S3	2	18
6/19/2006	Experimental	S3	3	15
6/19/2006	Experimental	S3	4	0
6/19/2006	Experimental	S4	1	8
6/19/2006	Experimental	S4	2	0
6/19/2006	Experimental	S4	3	24
6/19/2006	Experimental	S4	4	2
6/19/2006	Control	C1	1	1
6/19/2006	Control	C1	2	3
6/19/2006	Control	C1	3	1
6/19/2006	Control	C1	4	0
6/19/2006	Control	C2	1	2
6/19/2006	Control	C2	2	0
6/19/2006	Control	C2	3	3
6/19/2006	Control	C2	4	2
6/19/2006	Control	C3	1	4
6/19/2006	Control	C3	2	0
6/19/2006	Control	C3	3	0
6/19/2006	Control	C3	4	0
6/19/2006	Control	C4	1	0
6/19/2006	Control	C4	2	0
6/19/2006	Control	C4	3	0
6/19/2006	Control	C4	4	0
6/19/2006	Control	FC1	1	1
6/19/2006	Control	FC1	2	2
6/19/2006	Control	FC1	3	4
6/19/2006	Control	FC1	4	1
6/19/2006	Control	FC2	1	5
6/19/2006	Control	FC2	2	1
6/19/2006	Control	FC2	3	1
6/19/2006	Control	FC2	4	3
6/19/2006	Control	FC3	1	3
6/19/2006	Control	FC3	2	2
6/19/2006	Control	FC3	3	3
6/19/2006	Control	FC3	4	3
6/19/2006	Control	FC4	1	2
6/19/2006	Control	FC4	2	5
6/19/2006	Control	FC4	3	3
6/19/2006	Control	FC4	4	1

Raw Data – Oyster Size (mm)

Date	Type	Reef	Quadrat	Size of Oysters
10/28/2004	Experimental	L1	1	31.0
10/28/2004	Experimental	L1	1	29.0
10/28/2004	Experimental	L1	1	24.0
10/28/2004	Experimental	L1	1	25.0
10/28/2004	Experimental	L1	1	20.0
10/28/2004	Experimental	L1	1	28.0
10/28/2004	Experimental	L1	1	24.0
10/28/2004	Experimental	L1	1	24.0
10/28/2004	Experimental	L1	1	26.0
10/28/2004	Experimental	L1	1	21.0
10/28/2004	Experimental	L1	1	26.0
10/28/2004	Experimental	L1	1	27.0
10/28/2004	Experimental	L1	1	25.0
10/28/2004	Experimental	L1	1	32.0
10/28/2004	Experimental	L1	1	29.0
10/28/2004	Experimental	L1	1	21.0
10/28/2004	Experimental	L1	1	23.0
10/28/2004	Experimental	L1	1	37.0
10/28/2004	Experimental	L1	1	29.0
10/28/2004	Experimental	L1	2	30.0
10/28/2004	Experimental	L1	2	19.2
10/28/2004	Experimental	L1	2	17.0
10/28/2004	Experimental	L1	2	24.4
10/28/2004	Experimental	L1	2	17.4
10/28/2004	Experimental	L1	2	36.0
10/28/2004	Experimental	L1	2	25.7
10/28/2004	Experimental	L1	2	16.3
10/28/2004	Experimental	L1	2	17.4
10/28/2004	Experimental	L1	2	23.5
10/28/2004	Experimental	L1	2	25.7
10/28/2004	Experimental	L1	2	20.6
10/28/2004	Experimental	L1	2	30.0
10/28/2004	Experimental	L1	2	26.4
10/28/2004	Experimental	L1	2	28.6
10/28/2004	Experimental	L1	2	23.0
10/28/2004	Experimental	L1	2	27.0
10/28/2004	Experimental	L1	2	21.2
10/28/2004	Experimental	L1	2	24.0
10/28/2004	Experimental	L1	2	18.0
10/28/2004	Experimental	L1	2	20.6
10/28/2004	Experimental	L1	2	24.2
10/28/2004	Experimental	L1	2	15.2
10/28/2004	Experimental	L1	2	13.8
10/28/2004	Experimental	L1	2	32.6
10/28/2004	Experimental	L1	3	24.2

Date	Type	Reef	Quadrat	Size of Oysters
10/28/2004	Experimental	L1	3	25.5
10/28/2004	Experimental	L1	3	30.5
10/28/2004	Experimental	L1	3	25.7
10/28/2004	Experimental	L1	3	31.0
10/28/2004	Experimental	L1	3	19.4
10/28/2004	Experimental	L1	3	37.0
10/28/2004	Experimental	L1	3	26.0
10/28/2004	Experimental	L1	3	17.4
10/28/2004	Experimental	L1	3	11.8
10/28/2004	Experimental	L1	3	21.2
10/28/2004	Experimental	L1	3	30.5
10/28/2004	Experimental	L1	3	25.0
10/28/2004	Experimental	L1	3	26.0
10/28/2004	Experimental	L1	3	20.0
10/28/2004	Experimental	L1	3	40.0
10/28/2004	Experimental	L1	3	26.0
10/28/2004	Experimental	L1	3	30.0
10/28/2004	Experimental	L1	3	33.0
10/28/2004	Experimental	L1	3	21.5
10/28/2004	Experimental	L1	3	15.5
10/28/2004	Experimental	L1	3	23.0
10/28/2004	Experimental	L1	3	20.3
10/28/2004	Experimental	L1	3	29.5
10/28/2004	Experimental	L1	3	27.5
10/28/2004	Experimental	L1	3	19.2
10/28/2004	Experimental	L1	3	29.4
10/28/2004	Experimental	L1	3	27.6
10/28/2004	Experimental	L1	3	19.5
10/28/2004	Experimental	L1	3	15.0
10/28/2004	Experimental	L1	4	28.0
10/28/2004	Experimental	L1	4	31.0
10/28/2004	Experimental	L1	4	31.0
10/28/2004	Experimental	L2	1	37.0
10/28/2004	Experimental	L2	1	33.0
10/28/2004	Experimental	L2	1	19.2
10/28/2004	Experimental	L2	1	35.7
10/28/2004	Experimental	L2	1	31.0
10/28/2004	Experimental	L2	2	17.3
10/28/2004	Experimental	L2	2	31.5
10/28/2004	Experimental	L2	2	31.7
10/28/2004	Experimental	L2	3	28.8
10/28/2004	Experimental	L2	3	16.2
10/28/2004	Experimental	L2	3	24.5
10/28/2004	Experimental	L2	3	27.8
10/28/2004	Experimental	L2	3	17.5

Date	Type	Reef	Quadrat	Size of Oysters
10/28/2004	Experimental	L2	3	28.3
10/28/2004	Experimental	L2	3	15.8
10/28/2004	Experimental	L2	3	19.6
10/28/2004	Experimental	L2	3	23.2
10/28/2004	Experimental	L2	3	23.1
10/28/2004	Experimental	L2	3	17.0
10/28/2004	Experimental	L2	3	28.0
10/28/2004	Experimental	L2	3	29.0
10/28/2004	Experimental	L2	3	21.7
10/28/2004	Experimental	L2	3	43.3
10/28/2004	Experimental	L2	3	32.0
10/28/2004	Experimental	L2	3	20.2
10/28/2004	Experimental	L2	4	25.7
10/28/2004	Experimental	L2	4	31.0
10/28/2004	Experimental	L2	4	37.2
10/28/2004	Experimental	L3	1	22.7
10/28/2004	Experimental	L3	1	29.5
10/28/2004	Experimental	L3	1	21.1
10/28/2004	Experimental	L3	1	19.4
10/28/2004	Experimental	L3	1	13.7
10/28/2004	Experimental	L3	1	11.5
10/28/2004	Experimental	L3	1	22.0
10/28/2004	Experimental	L3	1	16.8
10/28/2004	Experimental	L3	1	31.0
10/28/2004	Experimental	L3	1	33.8
10/28/2004	Experimental	L3	1	31.3
10/28/2004	Experimental	L3	1	32.6
10/28/2004	Experimental	L3	1	38.2
10/28/2004	Experimental	L3	1	25.7
10/28/2004	Experimental	L3	1	18.9
10/28/2004	Experimental	L3	1	20.8
10/28/2004	Experimental	L3	1	25.4
10/28/2004	Experimental	L3	1	20.0
10/28/2004	Experimental	L3	1	13.8
10/28/2004	Experimental	L3	1	11.7
10/28/2004	Experimental	L3	2	22.8
10/28/2004	Experimental	L3	2	26.5
10/28/2004	Experimental	L3	2	32.0
10/28/2004	Experimental	L3	2	26.8
10/28/2004	Experimental	L3	2	24.8
10/28/2004	Experimental	L3	2	24.8
10/28/2004	Experimental	L3	2	26.4
10/28/2004	Experimental	L3	3	23.1
10/28/2004	Experimental	L3	3	21.0
10/28/2004	Experimental	L3	3	21.8

Date	Type	Reef	Quadrat	Size of Oysters
10/28/2004	Experimental	L3	3	24.8
10/28/2004	Experimental	L3	4	32.1
10/28/2004	Experimental	L3	4	30.8
10/28/2004	Experimental	L4	1	20.6
10/28/2004	Experimental	L4	1	23.0
10/28/2004	Experimental	L4	1	27.2
10/28/2004	Experimental	L4	1	24.2
10/28/2004	Experimental	L4	1	25.6
10/28/2004	Experimental	L4	1	14.3
10/28/2004	Experimental	L4	1	17.7
10/28/2004	Experimental	L4	1	15.5
10/28/2004	Experimental	L4	1	14.5
10/28/2004	Experimental	L4	1	13.8
10/28/2004	Experimental	L4	1	16.1
10/28/2004	Experimental	L4	1	16.3
10/28/2004	Experimental	L4	1	25.0
10/28/2004	Experimental	L4	1	10.0
10/28/2004	Experimental	L4	1	12.8
10/28/2004	Experimental	L4	1	14.0
10/28/2004	Experimental	L4	1	16.4
10/28/2004	Experimental	L4	1	10.6
10/28/2004	Experimental	L4	1	31.5
10/28/2004	Experimental	L4	1	11.0
10/28/2004	Experimental	L4	1	16.5
10/28/2004	Experimental	L4	1	19.6
10/28/2004	Experimental	L4	1	18.5
10/28/2004	Experimental	L4	1	11.6
10/28/2004	Experimental	L4	1	19.0
10/28/2004	Experimental	L4	1	22.5
10/28/2004	Experimental	L4	1	14.0
10/28/2004	Experimental	L4	1	23.7
10/28/2004	Experimental	L4	1	24.0
10/28/2004	Experimental	L4	1	27.5
10/28/2004	Experimental	L4	2	36.2
10/28/2004	Experimental	L4	3	33.2
10/28/2004	Experimental	L4	3	22.2
10/28/2004	Experimental	L4	3	20.8
10/28/2004	Experimental	L4	3	16.6
10/28/2004	Experimental	L4	3	17.6
10/28/2004	Experimental	L4	3	28.8
10/28/2004	Experimental	L4	4	26.2
10/28/2004	Experimental	L4	4	27.5
10/28/2004	Experimental	L4	4	29.5
10/28/2004	Experimental	L4	4	34.5
10/28/2004	Experimental	L4	4	33.5

Date	Type	Reef	Quadrat	Size of Oysters
10/28/2004	Experimental	L4	4	32.2
10/28/2004	Experimental	L4	4	28.0
10/28/2004	Experimental	S1	1	27.0
10/28/2004	Experimental	S1	1	14.2
10/28/2004	Experimental	S1	1	20.0
10/28/2004	Experimental	S1	1	36.9
10/28/2004	Experimental	S1	1	17.0
10/28/2004	Experimental	S1	1	28.0
10/28/2004	Experimental	S1	1	24.8
10/28/2004	Experimental	S1	1	32.1
10/28/2004	Experimental	S1	2	30.0
10/28/2004	Experimental	S1	2	17.0
10/28/2004	Experimental	S1	2	15.0
10/28/2004	Experimental	S1	2	23.0
10/28/2004	Experimental	S1	2	15.0
10/28/2004	Experimental	S1	2	22.0
10/28/2004	Experimental	S1	2	12.0
10/28/2004	Experimental	S1	2	23.0
10/28/2004	Experimental	S1	2	12.0
10/28/2004	Experimental	S1	2	15.0
10/28/2004	Experimental	S1	2	21.0
10/28/2004	Experimental	S1	2	18.0
10/28/2004	Experimental	S1	2	13.0
10/28/2004	Experimental	S1	2	25.0
10/28/2004	Experimental	S1	2	28.0
10/28/2004	Experimental	S1	2	29.7
10/28/2004	Experimental	S1	2	30.1
10/28/2004	Experimental	S1	2	35.5
10/28/2004	Experimental	S1	2	28.8
10/28/2004	Experimental	S1	2	23.0
10/28/2004	Experimental	S1	2	14.1
10/28/2004	Experimental	S1	2	25.1
10/28/2004	Experimental	S1	2	34.9
10/28/2004	Experimental	S1	2	22.0
10/28/2004	Experimental	S1	2	27.5
10/28/2004	Experimental	S1	2	20.8
10/28/2004	Experimental	S1	2	38.2
10/28/2004	Experimental	S1	2	22.0
10/28/2004	Experimental	S1	2	29.0
10/28/2004	Experimental	S1	2	25.3
10/28/2004	Experimental	S1	3	19.0
10/28/2004	Experimental	S1	3	22.0
10/28/2004	Experimental	S1	3	39.6
10/28/2004	Experimental	S1	3	16.7

Date	Type	Reef	Quadrat	Size of Oysters
10/28/2004	Experimental	S1	3	8.0
10/28/2004	Experimental	S1	3	16.8
10/28/2004	Experimental	S1	3	16.0
10/28/2004	Experimental	S1	3	23.2
10/28/2004	Experimental	S1	3	23.3
10/28/2004	Experimental	S1	3	24.7
10/28/2004	Experimental	S1	3	19.0
10/28/2004	Experimental	S1	3	26.7
10/28/2004	Experimental	S1	3	22.5
10/28/2004	Experimental	S1	3	21.4
10/28/2004	Experimental	S1	3	21.0
10/28/2004	Experimental	S1	3	23.0
10/28/2004	Experimental	S1	3	17.4
10/28/2004	Experimental	S1	3	22.0
10/28/2004	Experimental	S1	3	17.8
10/28/2004	Experimental	S1	3	20.5
10/28/2004	Experimental	S1	3	24.2
10/28/2004	Experimental	S1	3	38.3
10/28/2004	Experimental	S1	4	27.7
10/28/2004	Experimental	S1	4	23.5
10/28/2004	Experimental	S1	4	15.5
10/28/2004	Experimental	S1	4	11.5
10/28/2004	Experimental	S1	4	11.6
10/28/2004	Experimental	S1	4	17.4
10/28/2004	Experimental	S1	4	20.6
10/28/2004	Experimental	S1	4	31.5
10/28/2004	Experimental	S1	4	31.0
10/28/2004	Experimental	S1	4	22.5
10/28/2004	Experimental	S1	4	26.3
10/28/2004	Experimental	S1	4	16.8
10/28/2004	Experimental	S1	4	22.0
10/28/2004	Experimental	S2	1	none
10/28/2004	Experimental	S2	2	27.1
10/28/2004	Experimental	S2	2	33.5
10/28/2004	Experimental	S2	2	29.2
10/28/2004	Experimental	S2	2	34.5
10/28/2004	Experimental	S2	3	33.4
10/28/2004	Experimental	S2	3	23.8
10/28/2004	Experimental	S2	3	23.8
10/28/2004	Experimental	S2	3	22.8
10/28/2004	Experimental	S2	3	23.2
10/28/2004	Experimental	S2	4	27.2
10/28/2004	Experimental	S2	4	27.1
10/28/2004	Experimental	S2	4	36.5
10/28/2004	Experimental	S2	4	36.5

Date	Type	Reef	Quadrat	Size of Oysters
10/28/2004	Experimental	S2	4	21.0
10/28/2004	Experimental	S2	4	13.8
10/28/2004	Experimental	S2	4	20.0
10/28/2004	Experimental	S2	4	21.5
10/28/2004	Experimental	S2	4	20.4
10/28/2004	Experimental	S2	4	30.8
10/28/2004	Experimental	S2	4	29.2
10/28/2004	Experimental	S2	4	22.5
10/28/2004	Experimental	S2	4	19.8
10/28/2004	Experimental	S2	4	27.0
10/28/2004	Experimental	S2	4	18.8
10/28/2004	Experimental	S2	4	27.4
10/28/2004	Experimental	S2	4	33.0
10/28/2004	Experimental	S2	4	21.0
10/28/2004	Experimental	S2	4	19.1
10/28/2004	Experimental	S2	4	22.0
10/28/2004	Experimental	S2	4	20.3
10/28/2004	Experimental	S2	4	24.5
10/28/2004	Experimental	S3	1	26.1
10/28/2004	Experimental	S3	1	14.8
10/28/2004	Experimental	S3	1	23.8
10/28/2004	Experimental	S3	1	15.1
10/28/2004	Experimental	S3	1	23.4
10/28/2004	Experimental	S3	1	24.0
10/28/2004	Experimental	S3	1	20.4
10/28/2004	Experimental	S3	1	24.8
10/28/2004	Experimental	S3	1	25.8
10/28/2004	Experimental	S3	1	24.8
10/28/2004	Experimental	S3	1	13.2
10/28/2004	Experimental	S3	1	20.0
10/28/2004	Experimental	S3	1	17.0
10/28/2004	Experimental	S3	1	20.8
10/28/2004	Experimental	S3	1	25.5
10/28/2004	Experimental	S3	1	10.9
10/28/2004	Experimental	S3	2	33.8
10/28/2004	Experimental	S3	2	28.5
10/28/2004	Experimental	S3	2	35.0
10/28/2004	Experimental	S3	2	23.0
10/28/2004	Experimental	S3	2	30.6
10/28/2004	Experimental	S3	2	36.0
10/28/2004	Experimental	S3	2	32.1
10/28/2004	Experimental	S3	2	18.0
10/28/2004	Experimental	S3	2	22.2
10/28/2004	Experimental	S3	2	21.8
10/28/2004	Experimental	S3	2	22.0

Date	Type	Reef	Quadrat	Size of Oysters
10/28/2004	Experimental	S3	2	31.5
10/28/2004	Experimental	S3	2	25.3
10/28/2004	Experimental	S3	2	25.6
10/28/2004	Experimental	S3	2	26.0
10/28/2004	Experimental	S3	2	18.2
10/28/2004	Experimental	S3	2	16.5
10/28/2004	Experimental	S3	2	17.2
10/28/2004	Experimental	S3	2	27.2
10/28/2004	Experimental	S3	2	19.0
10/28/2004	Experimental	S3	2	26.5
10/28/2004	Experimental	S3	2	26.8
10/28/2004	Experimental	S3	2	43.7
10/28/2004	Experimental	S3	2	31.8
10/28/2004	Experimental	S3	2	41.4
10/28/2004	Experimental	S3	2	35.0
10/28/2004	Experimental	S3	2	33.7
10/28/2004	Experimental	S3	3	33.0
10/28/2004	Experimental	S3	3	20.0
10/28/2004	Experimental	S3	3	26.8
10/28/2004	Experimental	S3	3	25.2
10/28/2004	Experimental	S3	3	22.5
10/28/2004	Experimental	S3	4	16.8
10/28/2004	Experimental	S3	4	19.0
10/28/2004	Experimental	S3	4	24.5
10/28/2004	Experimental	S3	4	22.5
10/28/2004	Experimental	S3	4	26.5
10/28/2004	Experimental	S3	4	21.5
10/28/2004	Experimental	S3	4	14.0
10/28/2004	Experimental	S3	4	23.0
10/28/2004	Experimental	S3	4	15.5
10/28/2004	Experimental	S3	4	24.0
10/28/2004	Experimental	S3	4	30.5
10/28/2004	Experimental	S3	4	30.0
10/28/2004	Experimental	S3	4	18.5
10/28/2004	Experimental	S3	4	12.0
10/28/2004	Experimental	S3	4	37.2
10/28/2004	Experimental	S3	4	31.8
10/28/2004	Experimental	S3	4	20.0
10/28/2004	Experimental	S3	4	31.5
10/28/2004	Experimental	S3	4	23.0
10/28/2004	Experimental	S3	4	29.5
10/28/2004	Experimental	S3	4	15.0
10/28/2004	Experimental	S3	4	27.0
10/28/2004	Experimental	S3	4	25.0
10/28/2004	Experimental	S3	4	13.8

Date	Type	Reef	Quadrat	Size of Oysters
10/28/2004	Experimental	S3	4	16.8
10/28/2004	Experimental	S3	4	15.9
10/28/2004	Experimental	S3	4	18.2
10/28/2004	Experimental	S3	4	32.5
10/28/2004	Experimental	S3	4	32.0
10/28/2004	Experimental	S3	4	28.0
10/28/2004	Experimental	S4	1	25.7
10/28/2004	Experimental	S4	1	22.2
10/28/2004	Experimental	S4	1	16.0
10/28/2004	Experimental	S4	1	16.5
10/28/2004	Experimental	S4	1	15.0
10/28/2004	Experimental	S4	1	19.0
10/28/2004	Experimental	S4	1	18.5
10/28/2004	Experimental	S4	1	17.0
10/28/2004	Experimental	S4	1	24.0
10/28/2004	Experimental	S4	1	14.5
10/28/2004	Experimental	S4	1	22.0
10/28/2004	Experimental	S4	1	19.0
10/28/2004	Experimental	S4	1	36.8
10/28/2004	Experimental	S4	1	28.2
10/28/2004	Experimental	S4	1	28.0
10/28/2004	Experimental	S4	1	22.0
10/28/2004	Experimental	S4	1	34.2
10/28/2004	Experimental	S4	1	18.0
10/28/2004	Experimental	S4	1	28.5
10/28/2004	Experimental	S4	1	22.0
10/28/2004	Experimental	S4	1	29.0
10/28/2004	Experimental	S4	1	23.5
10/28/2004	Experimental	S4	1	23.5
10/28/2004	Experimental	S4	1	23.0
10/28/2004	Experimental	S4	1	17.3
10/28/2004	Experimental	S4	1	15.0
10/28/2004	Experimental	S4	1	21.0
10/28/2004	Experimental	S4	1	22.5
10/28/2004	Experimental	S4	2	47.4
10/28/2004	Experimental	S4	2	41.5
10/28/2004	Experimental	S4	2	27.7
10/28/2004	Experimental	S4	2	32.9
10/28/2004	Experimental	S4	2	13.8
10/28/2004	Experimental	S4	3	24.5
10/28/2004	Experimental	S4	3	19.2
10/28/2004	Experimental	S4	3	19.1
10/28/2004	Experimental	S4	3	17.7
10/28/2004	Experimental	S4	3	25.5
10/28/2004	Experimental	S4	3	25.8

Date	Type	Reef	Quadrat	Size of Oysters
10/28/2004	Experimental	S4	3	16.5
10/28/2004	Experimental	S4	3	15.5
10/28/2004	Experimental	S4	3	27.0
10/28/2004	Experimental	S4	3	31.2
10/28/2004	Experimental	S4	3	23.8
10/28/2004	Experimental	S4	3	24.0
10/28/2004	Experimental	S4	3	28.5
10/28/2004	Experimental	S4	3	25.8
10/28/2004	Experimental	S4	3	21.7
10/28/2004	Experimental	S4	3	18.2
10/28/2004	Experimental	S4	3	26.5
10/28/2004	Experimental	S4	3	24.5
10/28/2004	Experimental	S4	4	28.0
10/28/2004	Experimental	S4	4	23.5
10/28/2004	Experimental	S4	4	29.4
10/28/2004	Experimental	S4	4	30.0
10/28/2004	Experimental	S4	4	19.7
10/28/2004	Experimental	S4	4	28.8
10/28/2004	Experimental	S4	4	21.0
10/28/2004	Experimental	S4	4	27.4
10/28/2004	Experimental	S4	4	22.0
10/28/2004	Experimental	S4	4	20.5
10/28/2004	Experimental	S4	4	27.5
10/28/2004	Experimental	S4	4	21.0
10/28/2004	Experimental	S4	4	18.5
10/28/2004	Experimental	S4	4	17.4
10/28/2004	Experimental	S4	4	21.7
10/28/2004	Experimental	S4	4	32.2
10/28/2004	Experimental	S4	4	31.5
10/28/2004	Experimental	S4	4	27.0
10/28/2004	Experimental	S4	4	21.5
10/28/2004	Experimental	S4	4	30.6
10/28/2004	Experimental	S4	4	15.0
10/28/2004	Experimental	S4	4	17.7
10/28/2004	Experimental	S4	4	26.1
10/28/2004	Experimental	S4	4	18.8
10/28/2004	Experimental	S4	4	23.0
10/28/2004	Experimental	S4	4	19.4
10/28/2004	Experimental	S4	4	21.6
10/28/2004	Experimental	S4	4	31.1
10/28/2004	Experimental	S4	4	10.9
10/28/2004	Experimental	S4	4	29.8
6/2/2005	Experimental	L1	1	23.5
6/2/2005	Experimental	L1	1	16.0
6/2/2005	Experimental	L1	1	19.0

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Experimental	L1	1	17.5
6/2/2005	Experimental	L1	1	25.0
6/2/2005	Experimental	L1	1	18.0
6/2/2005	Experimental	L1	1	18.0
6/2/2005	Experimental	L1	1	25.0
6/2/2005	Experimental	L1	1	25.0
6/2/2005	Experimental	L1	1	18.0
6/2/2005	Experimental	L1	1	29.0
6/2/2005	Experimental	L1	1	24.0
6/2/2005	Experimental	L1	1	21.0
6/2/2005	Experimental	L1	1	23.0
6/2/2005	Experimental	L1	1	19.0
6/2/2005	Experimental	L1	1	20.0
6/2/2005	Experimental	L1	1	25.0
6/2/2005	Experimental	L1	1	16.5
6/2/2005	Experimental	L1	1	20.0
6/2/2005	Experimental	L1	1	12.0
6/2/2005	Experimental	L1	1	17.0
6/2/2005	Experimental	L1	1	27.0
6/2/2005	Experimental	L1	1	26.0
6/2/2005	Experimental	L1	1	17.5
6/2/2005	Experimental	L1	1	17.0
6/2/2005	Experimental	L1	1	15.0
6/2/2005	Experimental	L1	1	21.0
6/2/2005	Experimental	L1	1	25.0
6/2/2005	Experimental	L1	1	23.0
6/2/2005	Experimental	L1	1	20.0
6/2/2005	Experimental	L1	2	20.0
6/2/2005	Experimental	L1	2	16.5
6/2/2005	Experimental	L1	2	15.0
6/2/2005	Experimental	L1	2	20.0
6/2/2005	Experimental	L1	2	28.0
6/2/2005	Experimental	L1	2	22.0
6/2/2005	Experimental	L1	2	29.0
6/2/2005	Experimental	L1	2	27.0
6/2/2005	Experimental	L1	2	32.0
6/2/2005	Experimental	L1	2	20.0
6/2/2005	Experimental	L1	3	27.0
6/2/2005	Experimental	L1	4	37.0
6/2/2005	Experimental	L1	4	15.0
6/2/2005	Experimental	L2	1	31.0
6/2/2005	Experimental	L2	1	35.5
6/2/2005	Experimental	L2	1	32.0
6/2/2005	Experimental	L2	1	27.0

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Experimental	L2	1	31.0
6/2/2005	Experimental	L2	1	26.5
6/2/2005	Experimental	L2	1	24.0
6/2/2005	Experimental	L2	1	30.0
6/2/2005	Experimental	L2	1	27.0
6/2/2005	Experimental	L2	1	25.5
6/2/2005	Experimental	L2	1	25.0
6/2/2005	Experimental	L2	1	28.5
6/2/2005	Experimental	L2	1	31.0
6/2/2005	Experimental	L2	1	24.0
6/2/2005	Experimental	L2	1	22.0
6/2/2005	Experimental	L2	1	35.5
6/2/2005	Experimental	L2	1	15.5
6/2/2005	Experimental	L2	1	27.5
6/2/2005	Experimental	L2	1	31.5
6/2/2005	Experimental	L2	1	31.5
6/2/2005	Experimental	L2	1	24.5
6/2/2005	Experimental	L2	1	23.0
6/2/2005	Experimental	L2	1	21.0
6/2/2005	Experimental	L2	1	23.5
6/2/2005	Experimental	L2	1	21.5
6/2/2005	Experimental	L2	1	34.0
6/2/2005	Experimental	L2	2	41.0
6/2/2005	Experimental	L2	2	31.5
6/2/2005	Experimental	L2	2	25.0
6/2/2005	Experimental	L2	2	27.0
6/2/2005	Experimental	L2	2	31.0
6/2/2005	Experimental	L2	2	20.0
6/2/2005	Experimental	L2	2	25.5
6/2/2005	Experimental	L2	2	24.0
6/2/2005	Experimental	L2	2	14.0
6/2/2005	Experimental	L2	2	18.0
6/2/2005	Experimental	L2	2	15.0
6/2/2005	Experimental	L2	2	22.5
6/2/2005	Experimental	L2	2	15.0
6/2/2005	Experimental	L2	2	23.0
6/2/2005	Experimental	L2	2	20.0
6/2/2005	Experimental	L2	2	22.5
6/2/2005	Experimental	L2	2	21.0
6/2/2005	Experimental	L2	2	20.0
6/2/2005	Experimental	L2	2	27.0
6/2/2005	Experimental	L2	2	20.0
6/2/2005	Experimental	L2	2	26.5
6/2/2005	Experimental	L2	3	36.5

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Experimental	L2	3	35.5
6/2/2005	Experimental	L2	3	22.5
6/2/2005	Experimental	L2	3	31.5
6/2/2005	Experimental	L2	3	37.5
6/2/2005	Experimental	L2	4	38.0
6/2/2005	Experimental	L2	4	25.0
6/2/2005	Experimental	L3	1	18.5
6/2/2005	Experimental	L3	1	29.0
6/2/2005	Experimental	L3	1	35.0
6/2/2005	Experimental	L3	1	33.0
6/2/2005	Experimental	L3	1	22.5
6/2/2005	Experimental	L3	1	35.5
6/2/2005	Experimental	L3	1	33.5
6/2/2005	Experimental	L3	1	32.5
6/2/2005	Experimental	L3	1	30.5
6/2/2005	Experimental	L3	1	32.5
6/2/2005	Experimental	L3	1	39.0
6/2/2005	Experimental	L3	1	24.0
6/2/2005	Experimental	L3	1	27.0
6/2/2005	Experimental	L3	1	21.0
6/2/2005	Experimental	L3	1	20.5
6/2/2005	Experimental	L3	1	19.0
6/2/2005	Experimental	L3	1	24.5
6/2/2005	Experimental	L3	1	30.0
6/2/2005	Experimental	L3	1	30.5
6/2/2005	Experimental	L3	1	28.0
6/2/2005	Experimental	L3	1	30.0
6/2/2005	Experimental	L3	1	26.0
6/2/2005	Experimental	L3	1	15.5
6/2/2005	Experimental	L3	1	18.0
6/2/2005	Experimental	L3	1	15.0
6/2/2005	Experimental	L3	2	23.0
6/2/2005	Experimental	L3	2	21.5
6/2/2005	Experimental	L3	2	25.0
6/2/2005	Experimental	L3	2	32.5
6/2/2005	Experimental	L3	2	29.0
6/2/2005	Experimental	L3	2	24.5
6/2/2005	Experimental	L3	2	18.0
6/2/2005	Experimental	L3	2	23.0
6/2/2005	Experimental	L3	2	32.0
6/2/2005	Experimental	L3	2	31.0
6/2/2005	Experimental	L3	2	38.5
6/2/2005	Experimental	L3	2	28.0
6/2/2005	Experimental	L3	2	21.5
6/2/2005	Experimental	L3	2	24.0
6/2/2005	Experimental	L3	2	22.5
6/2/2005	Experimental	L3	2	30.0
6/2/2005	Experimental	L3	2	31.5

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Experimental	L3	2	28.5
6/2/2005	Experimental	L3	2	19.0
6/2/2005	Experimental	L3	2	19.5
6/2/2005	Experimental	L3	2	17.0
6/2/2005	Experimental	L3	2	16.5
6/2/2005	Experimental	L3	2	18.5
6/2/2005	Experimental	L3	2	18.0
6/2/2005	Experimental	L3	2	33.0
6/2/2005	Experimental	L3	2	27.0
6/2/2005	Experimental	L3	2	23.0
6/2/2005	Experimental	L3	2	29.0
6/2/2005	Experimental	L3	2	30.0
6/2/2005	Experimental	L3	2	32.0
6/2/2005	Experimental	L3	3	31.5
6/2/2005	Experimental	L3	3	26.5
6/2/2005	Experimental	L3	3	19.5
6/2/2005	Experimental	L3	3	32.5
6/2/2005	Experimental	L3	3	15.0
6/2/2005	Experimental	L3	3	20.0
6/2/2005	Experimental	L3	3	24.0
6/2/2005	Experimental	L3	3	23.5
6/2/2005	Experimental	L3	3	23.5
6/2/2005	Experimental	L3	3	23.0
6/2/2005	Experimental	L3	3	21.5
6/2/2005	Experimental	L3	3	15.0
6/2/2005	Experimental	L3	3	23.5
6/2/2005	Experimental	L3	3	20.0
6/2/2005	Experimental	L3	3	17.0
6/2/2005	Experimental	L3	3	15.5
6/2/2005	Experimental	L3	3	22.0
6/2/2005	Experimental	L3	3	20.0
6/2/2005	Experimental	L3	3	17.0
6/2/2005	Experimental	L3	3	15.5
6/2/2005	Experimental	L3	3	19.5
6/2/2005	Experimental	L3	3	24.0
6/2/2005	Experimental	L3	3	50.0
6/2/2005	Experimental	L3	3	21.5
6/2/2005	Experimental	L3	3	22.0
6/2/2005	Experimental	L3	3	22.0
6/2/2005	Experimental	L3	3	18.0
6/2/2005	Experimental	L3	3	23.0
6/2/2005	Experimental	L3	3	24.0
6/2/2005	Experimental	L3	3	18.5
6/2/2005	Experimental	L3	4	28.0
6/2/2005	Experimental	L3	4	17.0
6/2/2005	Experimental	L3	4	31.0
6/2/2005	Experimental	L3	4	29.0
6/2/2005	Experimental	L3	4	25.0

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Experimental	L3	4	21.0
6/2/2005	Experimental	L3	4	17.0
6/2/2005	Experimental	L3	4	30.0
6/2/2005	Experimental	L3	4	24.0
6/2/2005	Experimental	L3	4	27.5
6/2/2005	Experimental	L3	4	25.5
6/2/2005	Experimental	L3	4	19.5
6/2/2005	Experimental	L3	4	20.0
6/2/2005	Experimental	L3	4	17.5
6/2/2005	Experimental	L3	4	23.5
6/2/2005	Experimental	L3	4	17.5
6/2/2005	Experimental	L3	4	17.0
6/2/2005	Experimental	L3	4	19.0
6/2/2005	Experimental	L3	4	30.0
6/2/2005	Experimental	L3	4	23.0
6/2/2005	Experimental	L3	4	17.0
6/2/2005	Experimental	L3	4	16.0
6/2/2005	Experimental	L3	4	21.0
6/2/2005	Experimental	L3	4	22.5
6/2/2005	Experimental	L3	4	25.0
6/2/2005	Experimental	L3	4	30.0
6/2/2005	Experimental	L3	4	28.0
6/2/2005	Experimental	L3	4	34.0
6/2/2005	Experimental	L3	4	21.5
6/2/2005	Experimental	L4	1	34.0
6/2/2005	Experimental	L4	1	27.0
6/2/2005	Experimental	L4	1	18.5
6/2/2005	Experimental	L4	1	15.0
6/2/2005	Experimental	L4	1	15.0
6/2/2005	Experimental	L4	1	14.0
6/2/2005	Experimental	L4	1	19.0
6/2/2005	Experimental	L4	1	14.0
6/2/2005	Experimental	L4	1	15.5
6/2/2005	Experimental	L4	1	30.0
6/2/2005	Experimental	L4	1	26.0
6/2/2005	Experimental	L4	1	16.5
6/2/2005	Experimental	L4	1	17.5
6/2/2005	Experimental	L4	1	17.0
6/2/2005	Experimental	L4	1	15.0
6/2/2005	Experimental	L4	1	15.0

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Experimental	L4	1	14.0
6/2/2005	Experimental	L4	1	11.5
6/2/2005	Experimental	L4	1	10.0
6/2/2005	Experimental	L4	2	27.5
6/2/2005	Experimental	L4	2	21.0
6/2/2005	Experimental	L4	2	21.0
6/2/2005	Experimental	L4	2	16.5
6/2/2005	Experimental	L4	2	41.5
6/2/2005	Experimental	L4	3	none
6/2/2005	Experimental	L4	4	35.5
6/2/2005	Experimental	L4	4	26.5
6/2/2005	Experimental	L4	4	21.5
6/2/2005	Experimental	L4	4	20.5
6/2/2005	Experimental	L4	4	25.0
6/2/2005	Experimental	L4	4	27.0
6/2/2005	Experimental	L4	4	21.0
6/2/2005	Experimental	L4	4	16.0
6/2/2005	Experimental	L4	4	19.5
6/2/2005	Experimental	L4	4	14.0
6/2/2005	Experimental	L4	4	21.0
6/2/2005	Experimental	L4	4	16.0
6/2/2005	Experimental	L4	4	21.0
6/2/2005	Experimental	L4	4	21.5
6/2/2005	Experimental	L4	4	24.5
6/2/2005	Experimental	L4	4	27.0
6/2/2005	Experimental	L4	4	20.5
6/2/2005	Experimental	L4	4	15.0
6/2/2005	Experimental	L4	4	19.0
6/2/2005	Experimental	S1	1	33.0
6/2/2005	Experimental	S1	1	25.0
6/2/2005	Experimental	S1	1	21.0
6/2/2005	Experimental	S1	1	28.5
6/2/2005	Experimental	S1	1	23.0
6/2/2005	Experimental	S1	1	19.0
6/2/2005	Experimental	S1	1	18.0
6/2/2005	Experimental	S1	1	18.5
6/2/2005	Experimental	S1	1	33.0
6/2/2005	Experimental	S1	1	32.5
6/2/2005	Experimental	S1	1	26.0
6/2/2005	Experimental	S1	1	17.5
6/2/2005	Experimental	S1	1	19.5
6/2/2005	Experimental	S1	1	24.0
6/2/2005	Experimental	S1	1	17.0
6/2/2005	Experimental	S1	1	24.0

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Experimental	S1	1	27.5
6/2/2005	Experimental	S1	1	23.5
6/2/2005	Experimental	S1	1	25.5
6/2/2005	Experimental	S1	1	22.5
6/2/2005	Experimental	S1	1	28.0
6/2/2005	Experimental	S1	1	34.0
6/2/2005	Experimental	S1	1	20.0
6/2/2005	Experimental	S1	1	15.0
6/2/2005	Experimental	S1	1	30.5
6/2/2005	Experimental	S1	1	27.5
6/2/2005	Experimental	S1	1	27.0
6/2/2005	Experimental	S1	1	33.0
6/2/2005	Experimental	S1	1	34.5
6/2/2005	Experimental	S1	1	23.0
6/2/2005	Experimental	S1	2	32.5
6/2/2005	Experimental	S1	2	36.5
6/2/2005	Experimental	S1	2	29.5
6/2/2005	Experimental	S1	2	19.0
6/2/2005	Experimental	S1	2	25.0
6/2/2005	Experimental	S1	2	28.0
6/2/2005	Experimental	S1	2	29.5
6/2/2005	Experimental	S1	2	22.5
6/2/2005	Experimental	S1	2	32.0
6/2/2005	Experimental	S1	2	29.0
6/2/2005	Experimental	S1	2	15.0
6/2/2005	Experimental	S1	2	20.0
6/2/2005	Experimental	S1	2	22.0
6/2/2005	Experimental	S1	2	15.0
6/2/2005	Experimental	S1	2	19.0
6/2/2005	Experimental	S1	2	9.0
6/2/2005	Experimental	S1	2	15.0
6/2/2005	Experimental	S1	2	17.5
6/2/2005	Experimental	S1	2	14.0
6/2/2005	Experimental	S1	2	15.5
6/2/2005	Experimental	S1	2	14.0
6/2/2005	Experimental	S1	2	17.5
6/2/2005	Experimental	S1	2	31.5
6/2/2005	Experimental	S1	2	25.5
6/2/2005	Experimental	S1	2	30.0
6/2/2005	Experimental	S1	2	34.0
6/2/2005	Experimental	S1	2	20.0
6/2/2005	Experimental	S1	2	18.5
6/2/2005	Experimental	S1	2	17.0
6/2/2005	Experimental	S1	2	22.0

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Experimental	S1	3	29.5
6/2/2005	Experimental	S1	3	20.0
6/2/2005	Experimental	S1	3	30.5
6/2/2005	Experimental	S1	3	30.0
6/2/2005	Experimental	S1	3	27.0
6/2/2005	Experimental	S1	3	16.0
6/2/2005	Experimental	S1	3	17.5
6/2/2005	Experimental	S1	3	17.0
6/2/2005	Experimental	S1	3	20.0
6/2/2005	Experimental	S1	3	26.0
6/2/2005	Experimental	S1	3	28.0
6/2/2005	Experimental	S1	3	20.0
6/2/2005	Experimental	S1	3	20.0
6/2/2005	Experimental	S1	3	17.5
6/2/2005	Experimental	S1	3	36.0
6/2/2005	Experimental	S1	3	24.0
6/2/2005	Experimental	S1	3	29.5
6/2/2005	Experimental	S1	3	30.0
6/2/2005	Experimental	S1	3	30.0
6/2/2005	Experimental	S1	3	20.0
6/2/2005	Experimental	S1	4	none
6/2/2005	Experimental	S2	1	30.0
6/2/2005	Experimental	S2	1	29.0
6/2/2005	Experimental	S2	1	31.5
6/2/2005	Experimental	S2	2	28.0
6/2/2005	Experimental	S2	2	17.0
6/2/2005	Experimental	S2	2	14.5
6/2/2005	Experimental	S2	3	50.0
6/2/2005	Experimental	S2	3	23.5
6/2/2005	Experimental	S2	3	19.5
6/2/2005	Experimental	S2	3	25.0
6/2/2005	Experimental	S2	3	20.0
6/2/2005	Experimental	S2	3	21.5
6/2/2005	Experimental	S2	3	26.5
6/2/2005	Experimental	S2	3	26.0
6/2/2005	Experimental	S2	3	29.0
6/2/2005	Experimental	S2	3	26.5
6/2/2005	Experimental	S2	3	17.0
6/2/2005	Experimental	S2	3	16.5
6/2/2005	Experimental	S2	3	30.0
6/2/2005	Experimental	S2	3	22.0
6/2/2005	Experimental	S2	3	22.0
6/2/2005	Experimental	S2	3	28.0
6/2/2005	Experimental	S2	3	31.5

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Experimental	S2	3	16.0
6/2/2005	Experimental	S2	3	15.0
6/2/2005	Experimental	S2	3	18.5
6/2/2005	Experimental	S2	3	35.5
6/2/2005	Experimental	S2	3	27.5
6/2/2005	Experimental	S2	3	19.5
6/2/2005	Experimental	S2	3	23.0
6/2/2005	Experimental	S2	3	29.5
6/2/2005	Experimental	S2	3	20.0
6/2/2005	Experimental	S2	3	21.0
6/2/2005	Experimental	S2	3	18.0
6/2/2005	Experimental	S2	3	12.0
6/2/2005	Experimental	S2	3	15.5
6/2/2005	Experimental	S2	4	18.0
6/2/2005	Experimental	S2	4	25.5
6/2/2005	Experimental	S2	4	14.5
6/2/2005	Experimental	S2	4	17.0
6/2/2005	Experimental	S2	4	17.0
6/2/2005	Experimental	S2	4	13.0
6/2/2005	Experimental	S2	4	22.5
6/2/2005	Experimental	S2	4	14.0
6/2/2005	Experimental	S2	4	14.0
6/2/2005	Experimental	S2	4	14.0
6/2/2005	Experimental	S2	4	17.5
6/2/2005	Experimental	S2	4	30.0
6/2/2005	Experimental	S2	4	22.5
6/2/2005	Experimental	S2	4	23.5
6/2/2005	Experimental	S2	4	19.0
6/2/2005	Experimental	S2	4	17.0
6/2/2005	Experimental	S2	4	26.0
6/2/2005	Experimental	S2	4	23.0
6/2/2005	Experimental	S2	4	15.0
6/2/2005	Experimental	S2	4	18.5
6/2/2005	Experimental	S2	4	16.5
6/2/2005	Experimental	S2	4	41.0
6/2/2005	Experimental	S2	4	37.0
6/2/2005	Experimental	S2	4	39.0
6/2/2005	Experimental	S2	4	38.0
6/2/2005	Experimental	S2	4	35.5
6/2/2005	Experimental	S3	1	27.0
6/2/2005	Experimental	S3	1	24.5
6/2/2005	Experimental	S3	1	15.5
6/2/2005	Experimental	S3	2	26.0
6/2/2005	Experimental	S3	2	32.0

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Experimental	S3	2	17.5
6/2/2005	Experimental	S3	2	20.5
6/2/2005	Experimental	S3	2	14.0
6/2/2005	Experimental	S3	2	23.0
6/2/2005	Experimental	S3	2	35.0
6/2/2005	Experimental	S3	2	20.5
6/2/2005	Experimental	S3	2	13.5
6/2/2005	Experimental	S3	2	20.5
6/2/2005	Experimental	S3	2	10.5
6/2/2005	Experimental	S3	2	11.5
6/2/2005	Experimental	S3	2	40.0
6/2/2005	Experimental	S3	2	27.0
6/2/2005	Experimental	S3	2	17.0
6/2/2005	Experimental	S3	2	40.0
6/2/2005	Experimental	S3	2	30.0
6/2/2005	Experimental	S3	2	27.0
6/2/2005	Experimental	S3	2	29.0
6/2/2005	Experimental	S3	2	24.0
6/2/2005	Experimental	S3	2	21.5
6/2/2005	Experimental	S3	2	36.5
6/2/2005	Experimental	S3	2	31.5
6/2/2005	Experimental	S3	2	20.5
6/2/2005	Experimental	S3	2	23.5
6/2/2005	Experimental	S3	2	16.5
6/2/2005	Experimental	S3	2	31.0
6/2/2005	Experimental	S3	2	18.5
6/2/2005	Experimental	S3	2	17.0
6/2/2005	Experimental	S3	2	30.0
6/2/2005	Experimental	S3	3	none
6/2/2005	Experimental	S3	4	35.0
6/2/2005	Experimental	S4	1	22.0
6/2/2005	Experimental	S4	1	32.0
6/2/2005	Experimental	S4	1	26.0
6/2/2005	Experimental	S4	1	20.0
6/2/2005	Experimental	S4	1	14.0
6/2/2005	Experimental	S4	1	11.0
6/2/2005	Experimental	S4	1	35.0
6/2/2005	Experimental	S4	1	30.0
6/2/2005	Experimental	S4	1	32.0
6/2/2005	Experimental	S4	1	30.0
6/2/2005	Experimental	S4	2	25.5
6/2/2005	Experimental	S4	2	33.0
6/2/2005	Experimental	S4	2	30.0
6/2/2005	Experimental	S4	2	30.0

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Experimental	S4	2	30.0
6/2/2005	Experimental	S4	2	33.0
6/2/2005	Experimental	S4	2	18.5
6/2/2005	Experimental	S4	2	17.0
6/2/2005	Experimental	S4	2	16.0
6/2/2005	Experimental	S4	2	22.0
6/2/2005	Experimental	S4	2	15.0
6/2/2005	Experimental	S4	2	20.0
6/2/2005	Experimental	S4	2	26.0
6/2/2005	Experimental	S4	2	37.0
6/2/2005	Experimental	S4	2	19.0
6/2/2005	Experimental	S4	2	12.0
6/2/2005	Experimental	S4	2	20.0
6/2/2005	Experimental	S4	2	20.0
6/2/2005	Experimental	S4	2	12.0
6/2/2005	Experimental	S4	2	16.0
6/2/2005	Experimental	S4	2	17.0
6/2/2005	Experimental	S4	2	22.0
6/2/2005	Experimental	S4	2	15.5
6/2/2005	Experimental	S4	2	12.0
6/2/2005	Experimental	S4	2	12.0
6/2/2005	Experimental	S4	2	17.5
6/2/2005	Experimental	S4	2	14.0
6/2/2005	Experimental	S4	2	14.0
6/2/2005	Experimental	S4	2	11.0
6/2/2005	Experimental	S4	3	29.0
6/2/2005	Experimental	S4	3	24.0
6/2/2005	Experimental	S4	3	39.0
6/2/2005	Experimental	S4	3	27.0
6/2/2005	Experimental	S4	3	20.5
6/2/2005	Experimental	S4	3	27.0
6/2/2005	Experimental	S4	3	31.0
6/2/2005	Experimental	S4	3	32.0
6/2/2005	Experimental	S4	3	27.0
6/2/2005	Experimental	S4	3	30.0
6/2/2005	Experimental	S4	3	27.0
6/2/2005	Experimental	S4	3	16.0
6/2/2005	Experimental	S4	3	31.0
6/2/2005	Experimental	S4	3	3.0
6/2/2005	Experimental	S4	3	26.0
6/2/2005	Experimental	S4	3	26.5
6/2/2005	Experimental	S4	4	none
6/2/2005	Control	C1	1	none
6/2/2005	Control	C1	2	40.5

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Control	C1	2	50.5
6/2/2005	Control	C1	2	76.5
6/2/2005	Control	C1	2	85.0
6/2/2005	Control	C1	3	89.0
6/2/2005	Control	C1	4	none
6/2/2005	Control	C2	1	73.5
6/2/2005	Control	C2	1	68.0
6/2/2005	Control	C2	1	110.0
6/2/2005	Control	C2	1	55.0
6/2/2005	Control	C2	1	68.0
6/2/2005	Control	C2	1	73.5
6/2/2005	Control	C2	1	123.0
6/2/2005	Control	C2	1	61.0
6/2/2005	Control	C2	1	49.0
6/2/2005	Control	C2	1	68.0
6/2/2005	Control	C2	1	57.0
6/2/2005	Control	C2	2	55.5
6/2/2005	Control	C2	3	59.5
6/2/2005	Control	C2	3	80.0
6/2/2005	Control	C2	3	64.5
6/2/2005	Control	C2	3	94.5
6/2/2005	Control	C2	3	73.5
6/2/2005	Control	C2	4	84.0
6/2/2005	Control	C2	4	84.0
6/2/2005	Control	C3	1	64.0
6/2/2005	Control	C3	2	73.5
6/2/2005	Control	C3	2	73.5
6/2/2005	Control	C3	2	60.5
6/2/2005	Control	C3	2	109.0
6/2/2005	Control	C3	3	70.5
6/2/2005	Control	C3	3	47.0
6/2/2005	Control	C3	4	55.0
6/2/2005	Control	C4	1	57.5
6/2/2005	Control	C4	1	78.5
6/2/2005	Control	C4	2	none
6/2/2005	Control	C4	3	none
6/2/2005	Control	C4	4	none
6/2/2005	Control	FC1	1	87.5
6/2/2005	Control	FC1	1	57.0
6/2/2005	Control	FC1	1	70.0
6/2/2005	Control	FC1	1	92.0
6/2/2005	Control	FC1	1	74.5
6/2/2005	Control	FC1	1	75.5
6/2/2005	Control	FC1	1	69.0

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Control	FC1	1	98.0
6/2/2005	Control	FC1	2	73.5
6/2/2005	Control	FC1	2	37.5
6/2/2005	Control	FC1	2	56.0
6/2/2005	Control	FC1	2	53.5
6/2/2005	Control	FC1	2	68.0
6/2/2005	Control	FC1	2	70.0
6/2/2005	Control	FC1	2	69.0
6/2/2005	Control	FC1	3	72.0
6/2/2005	Control	FC1	3	72.0
6/2/2005	Control	FC1	3	62.0
6/2/2005	Control	FC1	3	55.0
6/2/2005	Control	FC1	3	46.0
6/2/2005	Control	FC1	3	69.0
6/2/2005	Control	FC1	3	60.0
6/2/2005	Control	FC1	3	49.5
6/2/2005	Control	FC1	3	66.0
6/2/2005	Control	FC1	3	70.0
6/2/2005	Control	FC1	3	38.5
6/2/2005	Control	FC1	3	52.0
6/2/2005	Control	FC1	3	51.5
6/2/2005	Control	FC1	4	72.0
6/2/2005	Control	FC1	4	36.0
6/2/2005	Control	FC1	4	47.5
6/2/2005	Control	FC1	4	56.0
6/2/2005	Control	FC1	4	61.5
6/2/2005	Control	FC1	4	72.5
6/2/2005	Control	FC1	4	58.5
6/2/2005	Control	FC1	4	79.5
6/2/2005	Control	FC1	4	58.0
6/2/2005	Control	FC1	4	104.0
6/2/2005	Control	FC1	4	57.5
6/2/2005	Control	FC1	4	72.0
6/2/2005	Control	FC1	4	57.0
6/2/2005	Control	FC1	4	62.5
6/2/2005	Control	FC2	1	88.5
6/2/2005	Control	FC2	1	61.0
6/2/2005	Control	FC2	1	51.5
6/2/2005	Control	FC2	1	57.0
6/2/2005	Control	FC2	1	56.0
6/2/2005	Control	FC2	1	99.0
6/2/2005	Control	FC2	2	53.5
6/2/2005	Control	FC2	2	58.0
6/2/2005	Control	FC2	2	77.0

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Control	FC2	2	82.0
6/2/2005	Control	FC2	2	70.0
6/2/2005	Control	FC2	2	55.5
6/2/2005	Control	FC2	2	80.0
6/2/2005	Control	FC2	2	98.0
6/2/2005	Control	FC2	2	91.0
6/2/2005	Control	FC2	2	68.0
6/2/2005	Control	FC2	2	60.0
6/2/2005	Control	FC2	3	50.5
6/2/2005	Control	FC2	3	56.0
6/2/2005	Control	FC2	3	65.0
6/2/2005	Control	FC2	4	49.0
6/2/2005	Control	FC2	4	48.5
6/2/2005	Control	FC2	4	63.0
6/2/2005	Control	FC2	4	55.0
6/2/2005	Control	FC2	4	67.0
6/2/2005	Control	FC2	4	79.5
6/2/2005	Control	FC2	4	72.5
6/2/2005	Control	FC2	4	85.0
6/2/2005	Control	FC2	4	49.5
6/2/2005	Control	FC2	4	41.0
6/2/2005	Control	FC2	4	75.0
6/2/2005	Control	FC2	4	67.0
6/2/2005	Control	FC2	4	45.5
6/2/2005	Control	FC2	4	78.0
6/2/2005	Control	FC3	1	64.0
6/2/2005	Control	FC3	1	55.5
6/2/2005	Control	FC3	1	67.0
6/2/2005	Control	FC3	1	74.5
6/2/2005	Control	FC3	1	83.5
6/2/2005	Control	FC3	1	70.5
6/2/2005	Control	FC3	1	62.0
6/2/2005	Control	FC3	1	89.0
6/2/2005	Control	FC3	1	89.0
6/2/2005	Control	FC3	1	56.5
6/2/2005	Control	FC3	1	95.0
6/2/2005	Control	FC3	1	134.5
6/2/2005	Control	FC3	1	53.0
6/2/2005	Control	FC3	2	74.0
6/2/2005	Control	FC3	2	61.5
6/2/2005	Control	FC3	2	61.0
6/2/2005	Control	FC3	2	70.5
6/2/2005	Control	FC3	3	55.5
6/2/2005	Control	FC3	3	61.0

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Control	FC3	3	66.0
6/2/2005	Control	FC3	3	68.5
6/2/2005	Control	FC3	3	66.5
6/2/2005	Control	FC3	3	70.0
6/2/2005	Control	FC3	3	106.5
6/2/2005	Control	FC3	3	60.0
6/2/2005	Control	FC3	3	64.0
6/2/2005	Control	FC3	3	57.5
6/2/2005	Control	FC3	4	67.5
6/2/2005	Control	FC3	4	67.0
6/2/2005	Control	FC3	4	75.0
6/2/2005	Control	FC3	4	94.5
6/2/2005	Control	FC3	4	55.5
6/2/2005	Control	FC3	4	65.0
6/2/2005	Control	FC3	4	53.5
6/2/2005	Control	FC4	1	51.5
6/2/2005	Control	FC4	2	69.0
6/2/2005	Control	FC4	2	69.0
6/2/2005	Control	FC4	2	63.0
6/2/2005	Control	FC4	2	46.5
6/2/2005	Control	FC4	2	64.0
6/2/2005	Control	FC4	2	71.5
6/2/2005	Control	FC4	3	99.5
6/2/2005	Control	FC4	3	64.0
6/2/2005	Control	FC4	3	70.0
6/2/2005	Control	FC4	3	52.0
6/2/2005	Control	FC4	3	60.0
6/2/2005	Control	FC4	3	68.0
6/2/2005	Control	FC4	3	50.0
6/2/2005	Control	FC4	3	62.0
6/2/2005	Control	FC4	3	61.0
6/2/2005	Control	FC4	4	68.5
6/2/2005	Control	FC4	4	75.0
6/2/2005	Control	FC4	4	78.0
6/2/2005	Control	FC4	4	67.0
6/2/2005	Control	FC4	4	55.5
6/2/2005	Control	FC4	4	69.5
6/2/2005	Control	FC4	4	44.0
6/2/2005	Control	FC4	4	53.5
6/2/2005	Control	FC4	4	67.0
6/2/2005	Control	FC4	4	63.5
6/2/2005	Control	FC4	4	85.0

Date	Type	Reef	Quadrat	Size of Oysters
6/2/2005	Control	FC4	4	66.5
6/2/2005	Control	FC4	4	55.5
6/2/2005	Control	FC4	4	84.5
6/2/2005	Control	FC4	4	62.5
6/2/2005	Control	FC4	4	67.0
10/16/2005	Experimental	L1	1	57.4
10/16/2005	Experimental	L1	1	65.2
10/16/2005	Experimental	L1	1	74.0
10/16/2005	Experimental	L1	1	72.0
10/16/2005	Experimental	L1	1	61.8
10/16/2005	Experimental	L1	2	44.4
10/16/2005	Experimental	L1	2	67.7
10/16/2005	Experimental	L1	2	59.0
10/16/2005	Experimental	L1	2	35.1
10/16/2005	Experimental	L1	2	61.2
10/16/2005	Experimental	L1	2	63.6
10/16/2005	Experimental	L1	2	68.0
10/16/2005	Experimental	L1	2	57.4
10/16/2005	Experimental	L1	2	74.6
10/16/2005	Experimental	L1	2	67.0
10/16/2005	Experimental	L1	2	68.1
10/16/2005	Experimental	L1	2	50.9
10/16/2005	Experimental	L1	2	75.2
10/16/2005	Experimental	L1	2	67.8
10/16/2005	Experimental	L1	2	45.1
10/16/2005	Experimental	L1	2	44.8
10/16/2005	Experimental	L1	2	49.7
10/16/2005	Experimental	L1	2	68.1
10/16/2005	Experimental	L1	2	61.5
10/16/2005	Experimental	L1	2	65.4
10/16/2005	Experimental	L1	2	51.9
10/16/2005	Experimental	L1	2	61.9
10/16/2005	Experimental	L1	2	61.3
10/16/2005	Experimental	L1	2	61.3
10/16/2005	Experimental	L1	3	88.1
10/16/2005	Experimental	L1	3	54.5
10/16/2005	Experimental	L1	3	41.3
10/16/2005	Experimental	L1	3	36.7
10/16/2005	Experimental	L1	3	63.0
10/16/2005	Experimental	L1	3	63.0
10/16/2005	Experimental	L1	3	87.3
10/16/2005	Experimental	L1	3	40.4

Date	Type	Reef	Quadrat	Size of Oysters
10/16/2005	Experimental	L1	3	40.1
10/16/2005	Experimental	L1	3	42.1
10/16/2005	Experimental	L1	3	65.5
10/16/2005	Experimental	L1	3	68.2
10/16/2005	Experimental	L1	3	70.0
10/16/2005	Experimental	L1	3	74.1
10/16/2005	Experimental	L1	3	51.7
10/16/2005	Experimental	L1	3	20.0
10/16/2005	Experimental	L1	3	65.4
10/16/2005	Experimental	L1	3	65.3
10/16/2005	Experimental	L1	3	65.5
10/16/2005	Experimental	L1	3	79.1
10/16/2005	Experimental	L1	3	50.2
10/16/2005	Experimental	L1	3	59.0
10/16/2005	Experimental	L1	3	81.3
10/16/2005	Experimental	L1	3	63.0
10/16/2005	Experimental	L1	3	68.2
10/16/2005	Experimental	L1	3	52.0
10/16/2005	Experimental	L1	3	43.1
10/16/2005	Experimental	L1	3	50.9
10/16/2005	Experimental	L1	4	70.3
10/16/2005	Experimental	L1	4	58.1
10/16/2005	Experimental	L2	1	45.2
10/16/2005	Experimental	L2	1	45.5
10/16/2005	Experimental	L2	1	51.7
10/16/2005	Experimental	L2	1	61.3
10/16/2005	Experimental	L2	1	44.8
10/16/2005	Experimental	L2	2	62.4
10/16/2005	Experimental	L2	2	66.3
10/16/2005	Experimental	L2	2	50.9
10/16/2005	Experimental	L2	2	32.3
10/16/2005	Experimental	L2	2	35.9
10/16/2005	Experimental	L2	2	67.4
10/16/2005	Experimental	L2	2	48.0
10/16/2005	Experimental	L2	3	59.0
10/16/2005	Experimental	L2	3	63.9
10/16/2005	Experimental	L2	3	50.2
10/16/2005	Experimental	L2	3	50.4
10/16/2005	Experimental	L2	3	51.0
10/16/2005	Experimental	L2	3	65.7
10/16/2005	Experimental	L2	3	82.4
10/16/2005	Experimental	L2	3	53.2
10/16/2005	Experimental	L2	3	47.5

Date	Type	Reef	Quadrat	Size of Oysters
10/16/2005	Experimental	L2	3	72.4
10/16/2005	Experimental	L2	3	73.2
10/16/2005	Experimental	L2	3	67.8
10/16/2005	Experimental	L2	3	78.3
10/16/2005	Experimental	L2	3	39.6
10/16/2005	Experimental	L2	3	78.3
10/16/2005	Experimental	L2	3	63.9
10/16/2005	Experimental	L2	3	70.5
10/16/2005	Experimental	L2	3	52.4
10/16/2005	Experimental	L2	3	64.1
10/16/2005	Experimental	L2	3	50.7
10/16/2005	Experimental	L2	3	42.3
10/16/2005	Experimental	L2	3	53.6
10/16/2005	Experimental	L2	3	43.8
10/16/2005	Experimental	L2	3	70.0
10/16/2005	Experimental	L2	3	51.8
10/16/2005	Experimental	L2	3	47.6
10/16/2005	Experimental	L2	3	28.2
10/16/2005	Experimental	L2	3	80.3
10/16/2005	Experimental	L2	3	51.8
10/16/2005	Experimental	L2	3	40.2
10/16/2005	Experimental	L2	4	47.2
10/16/2005	Experimental	L2	4	55.7
10/16/2005	Experimental	L2	4	73.6
10/16/2005	Experimental	L2	4	61.3
10/16/2005	Experimental	L2	4	63.0
10/16/2005	Experimental	L2	4	61.5
10/16/2005	Experimental	L2	4	65.2
10/16/2005	Experimental	L2	4	67.8
10/16/2005	Experimental	L2	4	59.2
10/16/2005	Experimental	L2	4	80.8
10/16/2005	Experimental	L2	4	60.2
10/16/2005	Experimental	L2	4	58.1
10/16/2005	Experimental	L2	4	43.0
10/16/2005	Experimental	L2	4	46.4
10/16/2005	Experimental	L2	4	60.8
10/16/2005	Experimental	L2	4	40.0
10/16/2005	Experimental	L2	4	52.8
10/16/2005	Experimental	L2	4	67.3
10/16/2005	Experimental	L3	1	44.4
10/16/2005	Experimental	L3	1	67.5
10/16/2005	Experimental	L3	1	56.1
10/16/2005	Experimental	L3	1	24.2
10/16/2005	Experimental	L3	1	41.6

Date	Type	Reef	Quadrat	Size of Oysters
10/16/2005	Experimental	L3	1	50.9
10/16/2005	Experimental	L3	1	61.3
10/16/2005	Experimental	L3	1	62.0
10/16/2005	Experimental	L3	1	62.3
10/16/2005	Experimental	L3	1	42.4
10/16/2005	Experimental	L3	1	65.3
10/16/2005	Experimental	L3	1	75.1
10/16/2005	Experimental	L3	1	51.6
10/16/2005	Experimental	L3	1	57.0
10/16/2005	Experimental	L3	2	68.4
10/16/2005	Experimental	L3	2	78.3
10/16/2005	Experimental	L3	2	80.9
10/16/2005	Experimental	L3	2	64.2
10/16/2005	Experimental	L3	2	80.5
10/16/2005	Experimental	L3	2	73.2
10/16/2005	Experimental	L3	2	63.0
10/16/2005	Experimental	L3	2	78.5
10/16/2005	Experimental	L3	2	50.4
10/16/2005	Experimental	L3	2	58.9
10/16/2005	Experimental	L3	2	44.6
10/16/2005	Experimental	L3	2	63.0
10/16/2005	Experimental	L3	3	50.4
10/16/2005	Experimental	L3	3	44.7
10/16/2005	Experimental	L3	3	41.4
10/16/2005	Experimental	L3	3	86.3
10/16/2005	Experimental	L3	3	45.9
10/16/2005	Experimental	L3	3	58.0
10/16/2005	Experimental	L3	3	60.1
10/16/2005	Experimental	L3	3	64.1
10/16/2005	Experimental	L3	3	65.5
10/16/2005	Experimental	L3	3	40.9
10/16/2005	Experimental	L3	3	46.1
10/16/2005	Experimental	L3	3	51.9
10/16/2005	Experimental	L3	3	62.0
10/16/2005	Experimental	L3	3	68.0
10/16/2005	Experimental	L3	3	73.5
10/16/2005	Experimental	L3	3	62.1
10/16/2005	Experimental	L3	3	75.2
10/16/2005	Experimental	L3	4	none
10/16/2005	Experimental	L4	1	40.6
10/16/2005	Experimental	L4	1	73.2
10/16/2005	Experimental	L4	1	63.0
10/16/2005	Experimental	L4	1	63.0
10/16/2005	Experimental	L4	1	64.1

Date	Type	Reef	Quadrat	Size of Oysters
10/16/2005	Experimental	L4	1	61.2
10/16/2005	Experimental	L4	1	79.5
10/16/2005	Experimental	L4	1	46.5
10/16/2005	Experimental	L4	1	40.2
10/16/2005	Experimental	L4	1	18.6
10/16/2005	Experimental	L4	1	61.2
10/16/2005	Experimental	L4	1	60.3
10/16/2005	Experimental	L4	1	83.1
10/16/2005	Experimental	L4	1	57.5
10/16/2005	Experimental	L4	1	70.8
10/16/2005	Experimental	L4	1	79.7
10/16/2005	Experimental	L4	1	66.0
10/16/2005	Experimental	L4	1	88.1
10/16/2005	Experimental	L4	1	75.1
10/16/2005	Experimental	L4	1	43.6
10/16/2005	Experimental	L4	1	40.8
10/16/2005	Experimental	L4	1	53.3
10/16/2005	Experimental	L4	1	50.2
10/16/2005	Experimental	L4	1	76.1
10/16/2005	Experimental	L4	1	58.6
10/16/2005	Experimental	L4	1	57.0
10/16/2005	Experimental	L4	2	76.3
10/16/2005	Experimental	L4	2	84.1
10/16/2005	Experimental	L4	2	50.4
10/16/2005	Experimental	L4	2	38.1
10/16/2005	Experimental	L4	2	44.4
10/16/2005	Experimental	L4	2	65.3
10/16/2005	Experimental	L4	2	65.9
10/16/2005	Experimental	L4	2	48.4
10/16/2005	Experimental	L4	2	56.9
10/16/2005	Experimental	L4	2	40.7
10/16/2005	Experimental	L4	2	19.5
10/16/2005	Experimental	L4	2	35.1
10/16/2005	Experimental	L4	2	67.8
10/16/2005	Experimental	L4	2	53.5
10/16/2005	Experimental	L4	2	40.7
10/16/2005	Experimental	L4	2	39.1
10/16/2005	Experimental	L4	2	66.7
10/16/2005	Experimental	L4	3	63.3
10/16/2005	Experimental	L4	3	43.5
10/16/2005	Experimental	L4	3	68.6
10/16/2005	Experimental	L4	3	58.2
10/16/2005	Experimental	L4	3	36.1
10/16/2005	Experimental	L4	3	60.4

Date	Type	Reef	Quadrat	Size of Oysters
10/16/2005	Experimental	L4	3	62.3
10/16/2005	Experimental	L4	3	60.9
10/16/2005	Experimental	L4	3	52.9
10/16/2005	Experimental	L4	3	64.3
10/16/2005	Experimental	L4	3	69.2
10/16/2005	Experimental	L4	3	48.7
10/16/2005	Experimental	L4	3	46.4
10/16/2005	Experimental	L4	3	43.1
10/16/2005	Experimental	L4	3	77.8
10/16/2005	Experimental	L4	3	80.1
10/16/2005	Experimental	L4	3	54.5
10/16/2005	Experimental	L4	3	67.3
10/16/2005	Experimental	L4	3	44.2
10/16/2005	Experimental	L4	3	62.2
10/16/2005	Experimental	L4	3	61.9
10/16/2005	Experimental	L4	3	65.3
10/16/2005	Experimental	L4	3	65.1
10/16/2005	Experimental	L4	3	79.0
10/16/2005	Experimental	L4	4	73.5
10/16/2005	Experimental	L4	4	50.2
10/16/2005	Experimental	L4	4	82.0
10/16/2005	Experimental	L4	4	63.2
10/16/2005	Experimental	L4	4	54.7
10/16/2005	Experimental	L4	4	55.0
10/16/2005	Experimental	L4	4	63.2
10/16/2005	Experimental	L4	4	63.3
10/16/2005	Experimental	L4	4	61.2
10/16/2005	Experimental	L4	4	26.1
10/16/2005	Experimental	L4	4	85.3
10/16/2005	Experimental	L4	4	44.9
10/16/2005	Experimental	L4	4	47.3
10/16/2005	Experimental	L4	4	52.7
10/16/2005	Experimental	L4	4	57.2
10/16/2005	Experimental	L4	4	60.8
10/16/2005	Experimental	L4	4	77.3
10/16/2005	Experimental	L4	4	44.0
10/16/2005	Experimental	L4	4	60.3
10/16/2005	Experimental	L4	4	64.1
10/16/2005	Experimental	L4	4	65.5
10/16/2005	Experimental	L4	4	60.9
10/16/2005	Experimental	L4	4	64.4
10/16/2005	Experimental	L4	4	45.1
10/16/2005	Experimental	L4	4	50.9
10/16/2005	Experimental	L4	4	49.7

Date	Type	Reef	Quadrat	Size of Oysters
10/16/2005	Experimental	L4	4	51.8
10/16/2005	Experimental	L4	4	71.3
10/16/2005	Experimental	L4	4	71.6
10/16/2005	Experimental	L4	4	68.0
10/16/2005	Experimental	S1	1	33.1
10/16/2005	Experimental	S1	1	67.3
10/16/2005	Experimental	S1	1	48.1
10/16/2005	Experimental	S1	2	61.7
10/16/2005	Experimental	S1	2	61.3
10/16/2005	Experimental	S1	2	61.3
10/16/2005	Experimental	S1	2	62.0
10/16/2005	Experimental	S1	2	62.1
10/16/2005	Experimental	S1	2	74.6
10/16/2005	Experimental	S1	2	50.7
10/16/2005	Experimental	S1	3	none
10/16/2005	Experimental	S1	4	60.1
10/16/2005	Experimental	S1	4	65.1
10/16/2005	Experimental	S1	4	84.4
10/16/2005	Experimental	S1	4	78.3
10/16/2005	Experimental	S1	4	74.6
10/16/2005	Experimental	S1	4	57.3
10/16/2005	Experimental	S1	4	61.2
10/16/2005	Experimental	S1	4	59.0
10/16/2005	Experimental	S1	4	67.7
10/16/2005	Experimental	S1	4	62.1
10/16/2005	Experimental	S1	4	46.2
10/16/2005	Experimental	S1	4	59.0
10/16/2005	Experimental	S1	4	53.4
10/16/2005	Experimental	S1	4	58.9
10/16/2005	Experimental	S1	4	62.1
10/16/2005	Experimental	S1	4	78.7
10/16/2005	Experimental	S1	4	86.1
10/16/2005	Experimental	S1	4	50.2
10/16/2005	Experimental	S1	4	43.1
10/16/2005	Experimental	S1	4	81.8
10/16/2005	Experimental	S1	4	40.8
10/16/2005	Experimental	S1	4	50.3
10/16/2005	Experimental	S1	4	52.5
10/16/2005	Experimental	S1	4	57.2
10/16/2005	Experimental	S1	4	68.0
10/16/2005	Experimental	S1	4	63.2
10/16/2005	Experimental	S1	4	70.1
10/16/2005	Experimental	S1	4	72.3
10/16/2005	Experimental	S1	4	49.2

Date	Type	Reef	Quadrat	Size of Oysters
10/16/2005	Experimental	S1	4	76.4
10/16/2005	Experimental	S2	1	65.2
10/16/2005	Experimental	S2	1	73.0
10/16/2005	Experimental	S2	1	53.4
10/16/2005	Experimental	S2	1	55.6
10/16/2005	Experimental	S2	1	68.3
10/16/2005	Experimental	S2	2	46.3
10/16/2005	Experimental	S2	2	59.0
10/16/2005	Experimental	S2	2	65.9
10/16/2005	Experimental	S2	2	52.0
10/16/2005	Experimental	S2	2	44.4
10/16/2005	Experimental	S2	2	75.2
10/16/2005	Experimental	S2	2	60.8
10/16/2005	Experimental	S2	2	80.3
10/16/2005	Experimental	S2	2	52.5
10/16/2005	Experimental	S2	2	66.1
10/16/2005	Experimental	S2	3	23.0
10/16/2005	Experimental	S2	3	43.8
10/16/2005	Experimental	S2	3	81.2
10/16/2005	Experimental	S2	3	76.4
10/16/2005	Experimental	S2	3	61.2
10/16/2005	Experimental	S2	3	63.0
10/16/2005	Experimental	S2	3	56.8
10/16/2005	Experimental	S2	4	61.0
10/16/2005	Experimental	S2	4	33.1
10/16/2005	Experimental	S2	4	68.2
10/16/2005	Experimental	S2	4	49.9
10/16/2005	Experimental	S2	4	44.8
10/16/2005	Experimental	S2	4	46.0
10/16/2005	Experimental	S2	4	61.7
10/16/2005	Experimental	S3	1	50.0
10/16/2005	Experimental	S3	1	68.5
10/16/2005	Experimental	S3	1	70.1
10/16/2005	Experimental	S3	1	64.0
10/16/2005	Experimental	S3	1	64.0
10/16/2005	Experimental	S3	1	85.2
10/16/2005	Experimental	S3	1	79.0
10/16/2005	Experimental	S3	1	46.3
10/16/2005	Experimental	S3	1	82.1
10/16/2005	Experimental	S3	1	52.5
10/16/2005	Experimental	S3	1	65.1
10/16/2005	Experimental	S3	1	40.2
10/16/2005	Experimental	S3	1	41.3
10/16/2005	Experimental	S3	1	51.7

Date	Type	Reef	Quadrat	Size of Oysters
10/16/2005	Experimental	S3	1	45.7
10/16/2005	Experimental	S3	1	48.1
10/16/2005	Experimental	S3	1	61.3
10/16/2005	Experimental	S3	1	45.2
10/16/2005	Experimental	S3	1	76.0
10/16/2005	Experimental	S3	1	52.1
10/16/2005	Experimental	S3	1	63.0
10/16/2005	Experimental	S3	1	63.0
10/16/2005	Experimental	S3	1	35.2
10/16/2005	Experimental	S3	1	19.0
10/16/2005	Experimental	S3	1	67.3
10/16/2005	Experimental	S3	1	60.1
10/16/2005	Experimental	S3	1	59.3
10/16/2005	Experimental	S3	1	43.2
10/16/2005	Experimental	S3	1	72.0
10/16/2005	Experimental	S3	1	46.4
10/16/2005	Experimental	S3	2	82.1
10/16/2005	Experimental	S3	2	69.5
10/16/2005	Experimental	S3	2	79.3
10/16/2005	Experimental	S3	3	48.7
10/16/2005	Experimental	S3	3	44.2
10/16/2005	Experimental	S3	3	52.2
10/16/2005	Experimental	S3	3	82.1
10/16/2005	Experimental	S3	3	73.5
10/16/2005	Experimental	S3	3	53.6
10/16/2005	Experimental	S3	3	69.1
10/16/2005	Experimental	S3	3	60.0
10/16/2005	Experimental	S3	3	40.7
10/16/2005	Experimental	S3	4	36.3
10/16/2005	Experimental	S3	4	50.1
10/16/2005	Experimental	S3	4	64.4
10/16/2005	Experimental	S3	4	50.3
10/16/2005	Experimental	S3	4	77.5
10/16/2005	Experimental	S3	4	60.5
10/16/2005	Experimental	S3	4	62.1
10/16/2005	Experimental	S3	4	70.3
10/16/2005	Experimental	S3	4	81.1
10/16/2005	Experimental	S4	1	42.8
10/16/2005	Experimental	S4	1	75.7
10/16/2005	Experimental	S4	1	50.4
10/16/2005	Experimental	S4	1	80.5
10/16/2005	Experimental	S4	1	60.3
10/16/2005	Experimental	S4	1	64.2
10/16/2005	Experimental	S4	1	64.2

Date	Type	Reef	Quadrat	Size of Oysters
10/16/2005	Experimental	S4	1	53.5
10/16/2005	Experimental	S4	1	65.8
10/16/2005	Experimental	S4	1	57.8
10/16/2005	Experimental	S4	1	87.4
10/16/2005	Experimental	S4	1	70.0
10/16/2005	Experimental	S4	1	62.4
10/16/2005	Experimental	S4	1	78.3
10/16/2005	Experimental	S4	1	47.4
10/16/2005	Experimental	S4	1	78.5
10/16/2005	Experimental	S4	1	82.1
10/16/2005	Experimental	S4	1	52.5
10/16/2005	Experimental	S4	1	85.1
10/16/2005	Experimental	S4	1	65.5
10/16/2005	Experimental	S4	1	40.1
10/16/2005	Experimental	S4	1	58.7
10/16/2005	Experimental	S4	1	58.9
10/16/2005	Experimental	S4	1	46.4
10/16/2005	Experimental	S4	1	63.5
10/16/2005	Experimental	S4	1	60.2
10/16/2005	Experimental	S4	1	63.9
10/16/2005	Experimental	S4	1	53.3
10/16/2005	Experimental	S4	1	63.3
10/16/2005	Experimental	S4	1	49.5
10/16/2005	Experimental	S4	2	57.5
10/16/2005	Experimental	S4	2	71.8
10/16/2005	Experimental	S4	2	52.3
10/16/2005	Experimental	S4	2	68.0
10/16/2005	Experimental	S4	2	59.4
10/16/2005	Experimental	S4	2	37.1
10/16/2005	Experimental	S4	2	17.5
10/16/2005	Experimental	S4	2	42.7
10/16/2005	Experimental	S4	2	54.6
10/16/2005	Experimental	S4	2	56.4
10/16/2005	Experimental	S4	2	80.1
10/16/2005	Experimental	S4	2	55.5
10/16/2005	Experimental	S4	2	48.1
10/16/2005	Experimental	S4	2	47.6
10/16/2005	Experimental	S4	2	47.8
10/16/2005	Experimental	S4	2	71.2
10/16/2005	Experimental	S4	2	59.9
10/16/2005	Experimental	S4	2	61.1
10/16/2005	Experimental	S4	2	33.0
10/16/2005	Experimental	S4	2	60.6
10/16/2005	Experimental	S4	2	68.2

Date	Type	Reef	Quadrat	Size of Oysters
10/16/2005	Experimental	S4	2	57.0
10/16/2005	Experimental	S4	3	52.5
10/16/2005	Experimental	S4	3	38.3
10/16/2005	Experimental	S4	3	49.1
10/16/2005	Experimental	S4	3	56.7
10/16/2005	Experimental	S4	3	69.5
10/16/2005	Experimental	S4	3	70.2
10/16/2005	Experimental	S4	3	64.8
10/16/2005	Experimental	S4	3	53.5
10/16/2005	Experimental	S4	3	65.8
10/16/2005	Experimental	S4	3	64.4
10/16/2005	Experimental	S4	3	50.3
10/16/2005	Experimental	S4	3	77.5
10/16/2005	Experimental	S4	3	62.6
10/16/2005	Experimental	S4	3	80.1
10/16/2005	Experimental	S4	3	50.4
10/16/2005	Experimental	S4	3	63.3
10/16/2005	Experimental	S4	3	40.8
10/16/2005	Experimental	S4	3	48.2
10/16/2005	Experimental	S4	3	81.6
10/16/2005	Experimental	S4	3	60.3
10/16/2005	Experimental	S4	4	48.6
10/16/2005	Experimental	S4	4	20.1
10/16/2005	Experimental	S4	4	54.8
10/16/2005	Experimental	S4	4	56.8
10/16/2005	Experimental	S4	4	55.5
10/16/2005	Experimental	S4	4	47.9
10/16/2005	Experimental	S4	4	71.3
10/24/2005	Control	C1	1	none
10/24/2005	Control	C1	2	none
10/24/2005	Control	C1	3	80.0
10/24/2005	Control	C1	4	none
10/24/2005	Control	C2	1	80.2
10/24/2005	Control	C2	1	95.2
10/24/2005	Control	C2	2	55.5
10/24/2005	Control	C2	3	59.5
10/24/2005	Control	C2	3	80.0
10/24/2005	Control	C2	3	64.5
10/24/2005	Control	C2	3	94.5
10/24/2005	Control	C2	3	73.5
10/24/2005	Control	C2	4	84.0
10/24/2005	Control	C2	4	84.0
10/24/2005	Control	C3	1	64.0
10/24/2005	Control	C3	2	73.5

Date	Type	Reef	Quadrat	Size of Oysters
10/24/2005	Control	C3	2	73.5
10/24/2005	Control	C3	2	60.5
10/24/2005	Control	C3	2	109.0
10/24/2005	Control	C3	3	70.5
10/24/2005	Control	C3	3	47.0
10/24/2005	Control	C3	4	55.0
10/24/2005	Control	C4	1	57.5
10/24/2005	Control	C4	1	78.5
10/24/2005	Control	C4	2	none
10/24/2005	Control	C4	3	none
10/24/2005	Control	C4	4	none
10/24/2005	Control	FC1	1	87.5
10/24/2005	Control	FC1	1	57.0
10/24/2005	Control	FC1	1	70.0
10/24/2005	Control	FC1	1	92.0
10/24/2005	Control	FC1	1	74.5
10/24/2005	Control	FC1	1	75.5
10/24/2005	Control	FC1	1	69.0
10/24/2005	Control	FC1	1	98.0
10/24/2005	Control	FC1	2	73.5
10/24/2005	Control	FC1	2	37.5
10/24/2005	Control	FC1	2	56.0
10/24/2005	Control	FC1	2	53.5
10/24/2005	Control	FC1	2	68.0
10/24/2005	Control	FC1	2	70.0
10/24/2005	Control	FC1	2	69.0
10/24/2005	Control	FC1	3	72.0
10/24/2005	Control	FC1	3	72.0
10/24/2005	Control	FC1	3	62.0
10/24/2005	Control	FC1	3	55.0
10/24/2005	Control	FC1	3	46.0
10/24/2005	Control	FC1	3	69.0
10/24/2005	Control	FC1	3	60.0
10/24/2005	Control	FC1	3	49.5
10/24/2005	Control	FC1	3	66.0
10/24/2005	Control	FC1	3	70.0
10/24/2005	Control	FC1	3	38.5
10/24/2005	Control	FC1	3	52.0
10/24/2005	Control	FC1	3	51.5
10/24/2005	Control	FC1	4	72.0
10/24/2005	Control	FC1	4	36.0
10/24/2005	Control	FC1	4	47.5
10/24/2005	Control	FC1	4	56.0
10/24/2005	Control	FC1	4	61.5

Date	Type	Reef	Quadrat	Size of Oysters
10/24/2005	Control	FC1	4	72.5
10/24/2005	Control	FC1	4	58.5
10/24/2005	Control	FC1	4	79.5
10/24/2005	Control	FC1	4	58.0
10/24/2005	Control	FC1	4	104.0
10/24/2005	Control	FC1	4	57.5
10/24/2005	Control	FC1	4	72.0
10/24/2005	Control	FC1	4	57.0
10/24/2005	Control	FC1	4	62.5
10/24/2005	Control	FC2	1	88.5
10/24/2005	Control	FC2	1	61.0
10/24/2005	Control	FC2	1	51.5
10/24/2005	Control	FC2	1	57.0
10/24/2005	Control	FC2	1	56.0
10/24/2005	Control	FC2	1	99.0
10/24/2005	Control	FC2	2	53.5
10/24/2005	Control	FC2	2	58.0
10/24/2005	Control	FC2	2	77.0
10/24/2005	Control	FC2	2	82.0
10/24/2005	Control	FC2	2	70.0
10/24/2005	Control	FC2	2	55.5
10/24/2005	Control	FC2	2	80.0
10/24/2005	Control	FC2	2	98.0
10/24/2005	Control	FC2	2	91.0
10/24/2005	Control	FC2	2	68.0
10/24/2005	Control	FC2	2	60.0
10/24/2005	Control	FC2	3	50.5
10/24/2005	Control	FC2	3	56.0
10/24/2005	Control	FC2	3	65.0
10/24/2005	Control	FC2	4	49.0
10/24/2005	Control	FC2	4	48.5
10/24/2005	Control	FC2	4	63.0
10/24/2005	Control	FC2	4	55.0
10/24/2005	Control	FC2	4	67.0
10/24/2005	Control	FC2	4	79.5
10/24/2005	Control	FC2	4	72.5
10/24/2005	Control	FC2	4	85.0
10/24/2005	Control	FC2	4	49.5
10/24/2005	Control	FC2	4	41.0
10/24/2005	Control	FC2	4	75.0
10/24/2005	Control	FC2	4	67.0
10/24/2005	Control	FC2	4	45.5
10/24/2005	Control	FC2	4	78.0
10/24/2005	Control	FC3	1	64.0
10/24/2005	Control	FC3	1	55.5
10/24/2005	Control	FC3	1	74.5
10/24/2005	Control	FC3	1	83.5

Date	Type	Reef	Quadrat	Size of Oysters
10/24/2005	Control	FC3	1	67.0
10/24/2005	Control	FC3	1	70.5
10/24/2005	Control	FC3	1	62.0
10/24/2005	Control	FC3	1	89.0
10/24/2005	Control	FC3	1	89.0
10/24/2005	Control	FC3	1	56.5
10/24/2005	Control	FC3	1	95.0
10/24/2005	Control	FC3	1	134.5
10/24/2005	Control	FC3	1	53.0
10/24/2005	Control	FC3	2	74.0
10/24/2005	Control	FC3	2	61.5
10/24/2005	Control	FC3	2	61.0
10/24/2005	Control	FC3	2	70.5
10/24/2005	Control	FC3	3	55.5
10/24/2005	Control	FC3	3	61.0
10/24/2005	Control	FC3	3	66.0
10/24/2005	Control	FC3	3	68.5
10/24/2005	Control	FC3	3	66.5
10/24/2005	Control	FC3	3	70.0
10/24/2005	Control	FC3	3	106.5
10/24/2005	Control	FC3	3	60.0
10/24/2005	Control	FC3	3	64.0
10/24/2005	Control	FC3	3	57.5
10/24/2005	Control	FC3	4	67.5
10/24/2005	Control	FC3	4	67.0
10/24/2005	Control	FC3	4	75.0
10/24/2005	Control	FC3	4	94.5
10/24/2005	Control	FC3	4	55.5
10/24/2005	Control	FC3	4	65.0
10/24/2005	Control	FC3	4	53.5
10/24/2005	Control	FC4	1	51.5
10/24/2005	Control	FC4	2	69.0
10/24/2005	Control	FC4	2	69.0
10/24/2005	Control	FC4	2	63.0
10/24/2005	Control	FC4	2	46.5
10/24/2005	Control	FC4	2	64.0
10/24/2005	Control	FC4	2	71.5
10/24/2005	Control	FC4	3	99.5
10/24/2005	Control	FC4	3	64.0
10/24/2005	Control	FC4	3	70.0
10/24/2005	Control	FC4	3	52.0

Date	Type	Reef	Quadrat	Size of Oysters
10/24/2005	Control	FC4	3	60.0
10/24/2005	Control	FC4	3	68.0
10/24/2005	Control	FC4	3	50.0
10/24/2005	Control	FC4	3	62.0
10/24/2005	Control	FC4	3	61.0
10/24/2005	Control	FC4	4	68.5
10/24/2005	Control	FC4	4	75.0
10/24/2005	Control	FC4	4	78.0
10/24/2005	Control	FC4	4	67.0
10/24/2005	Control	FC4	4	55.5
10/24/2005	Control	FC4	4	69.5
10/24/2005	Control	FC4	4	44.0
10/24/2005	Control	FC4	4	53.5
10/24/2005	Control	FC4	4	67.0
10/24/2005	Control	FC4	4	63.5
10/24/2005	Control	FC4	4	85.0
10/24/2005	Control	FC4	4	66.5
10/24/2005	Control	FC4	4	55.5
10/24/2005	Control	FC4	4	84.5
10/24/2005	Control	FC4	4	62.5
10/24/2005	Control	FC4	4	67.0
6/19/2006	Experimental	L1	1	none
6/19/2006	Experimental	L1	2	85.0
6/19/2006	Experimental	L1	3	64.0
6/19/2006	Experimental	L1	3	85.0
6/19/2006	Experimental	L1	4	none
6/19/2006	Experimental	L2	1	54.0
6/19/2006	Experimental	L2	1	80.0
6/19/2006	Experimental	L2	1	74.0
6/19/2006	Experimental	L2	1	61.0
6/19/2006	Experimental	L2	1	69.0
6/19/2006	Experimental	L2	2	59.0
6/19/2006	Experimental	L2	2	50.0
6/19/2006	Experimental	L2	2	85.0
6/19/2006	Experimental	L2	2	78.0
6/19/2006	Experimental	L2	2	75.0
6/19/2006	Experimental	L2	2	74.0
6/19/2006	Experimental	L2	2	60.0
6/19/2006	Experimental	L2	2	55.0
6/19/2006	Experimental	L2	2	65.0
6/19/2006	Experimental	L2	2	82.0
6/19/2006	Experimental	L2	2	82.0
6/19/2006	Experimental	L2	2	61.0
6/19/2006	Experimental	L2	2	68.0

Date	Type	Reef	Quadrat	Size of Oysters
6/19/2006	Experimental	L2	3	75.0
6/19/2006	Experimental	L2	3	62.0
6/19/2006	Experimental	L2	3	44.0
6/19/2006	Experimental	L2	3	65.0
6/19/2006	Experimental	L2	3	71.0
6/19/2006	Experimental	L2	3	76.0
6/19/2006	Experimental	L2	3	57.0
6/19/2006	Experimental	L2	3	70.0
6/19/2006	Experimental	L2	3	63.0
6/19/2006	Experimental	L2	4	85.0
6/19/2006	Experimental	L2	4	62.0
6/19/2006	Experimental	L2	4	65.0
6/19/2006	Experimental	L2	4	47.0
6/19/2006	Experimental	L2	4	43.0
6/19/2006	Experimental	L2	4	42.0
6/19/2006	Experimental	L2	4	61.0
6/19/2006	Experimental	L2	4	67.0
6/19/2006	Experimental	L2	4	72.0
6/19/2006	Experimental	L2	4	72.0
6/19/2006	Experimental	L2	4	82.0
6/19/2006	Experimental	L2	4	35.0
6/19/2006	Experimental	L2	4	55.0
6/19/2006	Experimental	L2	4	57.0
6/19/2006	Experimental	L2	4	14.0
6/19/2006	Experimental	L3	1	none
6/19/2006	Experimental	L3	2	none
6/19/2006	Experimental	L3	3	62.0
6/19/2006	Experimental	L3	3	17.0
6/19/2006	Experimental	L3	3	60.0
6/19/2006	Experimental	L3	3	63.0
6/19/2006	Experimental	L3	3	67.0
6/19/2006	Experimental	L3	4	75.0
6/19/2006	Experimental	L3	4	73.0
6/19/2006	Experimental	L3	4	79.0
6/19/2006	Experimental	L3	4	27.0
6/19/2006	Experimental	L3	4	51.0
6/19/2006	Experimental	L3	4	48.0
6/19/2006	Experimental	L3	4	52.0
6/19/2006	Experimental	L3	4	94.0
6/19/2006	Experimental	L3	4	67.0
6/19/2006	Experimental	L3	4	63.0
6/19/2006	Experimental	L3	4	63.0
6/19/2006	Experimental	L3	4	17.0
6/19/2006	Experimental	L3	4	68.0

Date	Type	Reef	Quadrat	Size of Oysters
6/19/2006	Experimental	L4	1	64.0
6/19/2006	Experimental	L4	1	56.0
6/19/2006	Experimental	L4	1	84.0
6/19/2006	Experimental	L4	1	71.0
6/19/2006	Experimental	L4	1	46.0
6/19/2006	Experimental	L4	1	75.0
6/19/2006	Experimental	L4	1	61.0
6/19/2006	Experimental	L4	1	54.0
6/19/2006	Experimental	L4	1	53.0
6/19/2006	Experimental	L4	1	59.0
6/19/2006	Experimental	L4	1	78.0
6/19/2006	Experimental	L4	1	44.0
6/19/2006	Experimental	L4	1	51.0
6/19/2006	Experimental	L4	2	none
6/19/2006	Experimental	L4	3	54.0
6/19/2006	Experimental	L4	3	72.0
6/19/2006	Experimental	L4	3	71.0
6/19/2006	Experimental	L4	3	51.0
6/19/2006	Experimental	L4	3	59.0
6/19/2006	Experimental	L4	3	41.0
6/19/2006	Experimental	L4	3	73.0
6/19/2006	Experimental	L4	3	86.0
6/19/2006	Experimental	L4	3	68.0
6/19/2006	Experimental	L4	3	57.0
6/19/2006	Experimental	L4	3	76.0
6/19/2006	Experimental	L4	3	67.0
6/19/2006	Experimental	L4	3	66.0
6/19/2006	Experimental	L4	3	62.0
6/19/2006	Experimental	L4	3	79.0
6/19/2006	Experimental	L4	3	68.0
6/19/2006	Experimental	L4	3	110.0
6/19/2006	Experimental	L4	4	15.0
6/19/2006	Experimental	L4	4	71.0
6/19/2006	Experimental	S1	1	none
6/19/2006	Experimental	S1	2	72.0
6/19/2006	Experimental	S1	2	77.0
6/19/2006	Experimental	S1	2	46.0
6/19/2006	Experimental	S1	2	82.0
6/19/2006	Experimental	S1	2	64.0
6/19/2006	Experimental	S1	2	54.0
6/19/2006	Experimental	S1	2	73.0
6/19/2006	Experimental	S1	2	63.0
6/19/2006	Experimental	S1	2	66.0
6/19/2006	Experimental	S1	2	67.0

Date	Type	Reef	Quadrat	Size of Oysters
6/19/2006	Experimental	S1	2	49.0
6/19/2006	Experimental	S1	2	80.0
6/19/2006	Experimental	S1	2	59.0
6/19/2006	Experimental	S1	3	76.0
6/19/2006	Experimental	S1	3	70.0
6/19/2006	Experimental	S1	3	67.0
6/19/2006	Experimental	S1	4	57.0
6/19/2006	Experimental	S1	4	60.0
6/19/2006	Experimental	S1	4	69.0
6/19/2006	Experimental	S2	1	none
6/19/2006	Experimental	S2	2	61.0
6/19/2006	Experimental	S2	2	71.0
6/19/2006	Experimental	S2	2	45.0
6/19/2006	Experimental	S2	2	69.0
6/19/2006	Experimental	S2	2	50.0
6/19/2006	Experimental	S2	3	none
6/19/2006	Experimental	S2	4	none
6/19/2006	Experimental	S3	1	76.0
6/19/2006	Experimental	S3	2	56.0
6/19/2006	Experimental	S3	2	63.0
6/19/2006	Experimental	S3	2	60.0
6/19/2006	Experimental	S3	2	79.0
6/19/2006	Experimental	S3	2	62.0
6/19/2006	Experimental	S3	2	59.0
6/19/2006	Experimental	S3	2	35.0
6/19/2006	Experimental	S3	2	66.0
6/19/2006	Experimental	S3	2	15.0
6/19/2006	Experimental	S3	2	20.0
6/19/2006	Experimental	S3	2	13.0
6/19/2006	Experimental	S3	2	61.0
6/19/2006	Experimental	S3	2	76.0
6/19/2006	Experimental	S3	2	59.0
6/19/2006	Experimental	S3	2	56.0
6/19/2006	Experimental	S3	2	34.0
6/19/2006	Experimental	S3	2	55.0
6/19/2006	Experimental	S3	2	83.0
6/19/2006	Experimental	S3	3	70.0
6/19/2006	Experimental	S3	3	59.0
6/19/2006	Experimental	S3	3	78.0
6/19/2006	Experimental	S3	3	43.0
6/19/2006	Experimental	S3	3	73.0
6/19/2006	Experimental	S3	3	55.0
6/19/2006	Experimental	S3	3	60.0
6/19/2006	Experimental	S3	3	70.0

Date	Type	Reef	Quadrat	Size of Oysters
6/19/2006	Experimental	S3	3	80.0
6/19/2006	Experimental	S3	3	72.0
6/19/2006	Experimental	S3	3	68.0
6/19/2006	Experimental	S3	3	48.0
6/19/2006	Experimental	S3	3	68.0
6/19/2006	Experimental	S3	3	31.0
6/19/2006	Experimental	S3	3	34.0
6/19/2006	Experimental	S3	4	none
6/19/2006	Experimental	S4	1	19.0
6/19/2006	Experimental	S4	1	67.0
6/19/2006	Experimental	S4	1	30.0
6/19/2006	Experimental	S4	1	84.0
6/19/2006	Experimental	S4	1	39.0
6/19/2006	Experimental	S4	1	44.0
6/19/2006	Experimental	S4	1	75.0
6/19/2006	Experimental	S4	1	65.0
6/19/2006	Experimental	S4	2	62.0
6/19/2006	Experimental	S4	2	70.0
6/19/2006	Experimental	S4	2	21.0
6/19/2006	Experimental	S4	2	81.0
6/19/2006	Experimental	S4	2	69.0
6/19/2006	Experimental	S4	2	52.0
6/19/2006	Experimental	S4	2	90.0
6/19/2006	Experimental	S4	2	55.0
6/19/2006	Experimental	S4	2	79.0
6/19/2006	Experimental	S4	2	65.0
6/19/2006	Experimental	S4	2	85.0
6/19/2006	Experimental	S4	2	88.0
6/19/2006	Experimental	S4	2	43.0
6/19/2006	Experimental	S4	2	54.0
6/19/2006	Experimental	S4	2	82.0
6/19/2006	Experimental	S4	2	22.0
6/19/2006	Experimental	S4	2	55.0
6/19/2006	Experimental	S4	2	56.0
6/19/2006	Experimental	S4	2	25.0
6/19/2006	Experimental	S4	2	71.0
6/19/2006	Experimental	S4	2	72.0
6/19/2006	Experimental	S4	2	68.0
6/19/2006	Experimental	S4	2	43.0
6/19/2006	Experimental	S4	2	61.0
6/19/2006	Experimental	S4	3	59.0
6/19/2006	Experimental	S4	3	53.0
6/19/2006	Experimental	S4	4	none
6/19/2006	Control	C1	1	97.0

Date	Type	Reef	Quadrat	Size of Oysters
6/19/2006	Control	C1	2	101.0
6/19/2006	Control	C1	2	76.0
6/19/2006	Control	C1	2	94.0
6/19/2006	Control	C1	3	67.0
6/19/2006	Control	C1	4	none
6/19/2006	Control	C2	1	126.0
6/19/2006	Control	C2	1	82.0
6/19/2006	Control	C2	2	none
6/19/2006	Control	C2	3	76.0
6/19/2006	Control	C2	3	95.0
6/19/2006	Control	C2	3	100.0
6/19/2006	Control	C2	4	85.0
6/19/2006	Control	C2	4	76.0
6/19/2006	Control	C3	1	78.0
6/19/2006	Control	C3	1	95.0
6/19/2006	Control	C3	1	96.0
6/19/2006	Control	C3	1	106.0
6/19/2006	Control	C3	2	none
6/19/2006	Control	C3	3	none
6/19/2006	Control	C3	4	none
6/19/2006	Control	C4	1	none
6/19/2006	Control	C4	2	none
6/19/2006	Control	C4	3	none
6/19/2006	Control	C4	4	none
6/19/2006	Control	FC1	1	80.0
6/19/2006	Control	FC1	2	87.0
6/19/2006	Control	FC1	2	66.0
6/19/2006	Control	FC1	3	95.0
6/19/2006	Control	FC1	3	73.0
6/19/2006	Control	FC1	3	67.0
6/19/2006	Control	FC1	3	71.0
6/19/2006	Control	FC1	4	98.0
6/19/2006	Control	FC2	1	62.0
6/19/2006	Control	FC2	1	74.0
6/19/2006	Control	FC2	1	94.0
6/19/2006	Control	FC2	1	93.0
6/19/2006	Control	FC2	1	91.0
6/19/2006	Control	FC2	2	100.0
6/19/2006	Control	FC2	3	80.0
6/19/2006	Control	FC2	4	78.0
6/19/2006	Control	FC2	4	78.0
6/19/2006	Control	FC2	4	66.0
6/19/2006	Control	FC3	1	59.0
6/19/2006	Control	FC3	1	110.0

Date	Type	Reef	Quadrat	Size of Oysters
6/19/2006	Control	FC3	1	80.0
6/19/2006	Control	FC3	2	79.0
6/19/2006	Control	FC3	2	77.0
6/19/2006	Control	FC3	3	103.0
6/19/2006	Control	FC3	3	76.0
6/19/2006	Control	FC3	3	53.0
6/19/2006	Control	FC3	4	77.0
6/19/2006	Control	FC3	4	73.0
6/19/2006	Control	FC3	4	76.0
6/19/2006	Control	FC4	1	93.0
6/19/2006	Control	FC4	1	92.0
6/19/2006	Control	FC4	2	73.0
6/19/2006	Control	FC4	2	63.0
6/19/2006	Control	FC4	2	76.0
6/19/2006	Control	FC4	2	95.0
6/19/2006	Control	FC4	2	60.0
6/19/2006	Control	FC4	3	84.0
6/19/2006	Control	FC4	3	68.0
6/19/2006	Control	FC4	3	66.0
6/19/2006	Control	FC4	4	68.0