

BUREAU OF WATER

South Carolina Department of Health and Environmental Control

2008 SHELLFISH GROWING AREA STATUS REPORT

**Including Classification Trends For
Report Years 1986 through 2008**

**Shellfish Sanitation Section
Water Monitoring, Assessment and Protection Division
Environmental Quality Control - Bureau of Water
2600 Bull Street
Columbia, SC 29201**

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INCLUDING CLASSIFICATION TRENDS FOR
REPORT YEARS 1986 THROUGH 2008



Charles L. Newell
Shellfish Sanitation Section
Water Monitoring, Assessment, and Protection Division
Environmental Quality Control - Bureau of Water

AND

Mike Pearson
Shellfish Sanitation Section
Water Monitoring, Assessment, and Protection Division
Environmental Quality Control - Bureau of Water

Charles M. Gorman, Division Director
Water Monitoring, Assessment, and Protection Division
Environmental Quality Control - Bureau of Water

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Executive Summary

The South Carolina Department of Health and Environmental Control is responsible for the classification of approximately 578,369 acres of estuarine and riverine habitat having the potential to be utilized for the cultivation and harvest of molluscan bivalve shellfish. These classifications are implemented through S.C. Regulation 61-47, Shellfish, which was promulgated for the purpose of public health protection. Waters used for shellfish cultivation and harvest activities are maintained and protected under the standards established under Regulation 61-68, Water Classifications and Standards.

Coastal shellfish growing areas are classified annually. The classification category acreage totals determined using water quality data summarized in the 2008 annual shellfish growing area reports indicate overall stability when compared to classification category totals from the 2007 Shellfish Growing Area Status (Trend) Report. Classification categories percentages for this report are virtually identical to those for CY 2007. The 2008 report year acreage data has been rectified with the 2006 and 2007 report years data.

A review of classification data used in growing area reports produced from 1986 through 2008 indicates general stability within all classification categories over the entire period, although upward and downward oscillations within classification types are routinely observed from year to year. Oscillations between the *Approved* and *Restricted* classifications are typically due to water quality impacts from precipitation runoff and/or river flow.

INTRODUCTION

South Carolina has approximately 578,368 acres of estuarine and riverine growing area habitat suitable for the cultivation and harvest of molluscan shellfish. Shellfish growing areas are assigned water quality classifications for the primary purpose of public health protection. The South Carolina Department of Health and Environmental Control (DHEC) establishes these classifications based upon the quality of the overlying water within the growing areas. The purpose of this document is to provide an overview of the current classifications of these areas, as well as classification trends for the period 1986 to 2007. Additionally, a brief overview of the regulations used to establish these classifications is provided.

BACKGROUND

DHEC annually updates the acreage potentially available for molluscan bivalve shellfish harvesting and makes data available through growing area sanitary survey reports. Prior to 1996, growing area acreages were calculated utilizing a hand held planimeter and National Oceanic and Atmospheric Administration (NOAA) Mercator Projection Charts at 1:80,000 and 1:40,000 scales. Since the 1996 annual report, acreages have been computer generated utilizing data digitized from 1:24,000 National Wetlands Inventory quadrangles. The computer generated acreage excludes approximately

60,000 acres of habitat that were included in the past estimates and which were determined to be physically unsuitable for shellfish propagation. The current GIS methodology is vastly superior to the planimetry method and more accurately reflects growing area acreage. Classified acreage described in this document is based on data derived through implementation of the Shellfish Sanitation Program's ambient monitoring network. The growing area water quality monitoring strategy adheres to guidelines established by the United States Food and Drug Administration's National Shellfish Sanitation Program (NSSP) and South Carolina Regulation 61-47. Classifications are developed from the Shellfish Sanitation Program water quality management areas database. Statewide shellfish growing area totals during the period 1997-2000 fluctuated slightly due to modification of several growing area boundaries; however, these data have been rectified. Additionally, in 2006, and continuing through 2008, some growing areas acreages were modified to adjust for mapping differences between DHEC and South Carolina Department of Natural Resources (SCDNR) geographical information system base layers. The previous 2006 and 2007 report years total have been rectified to 578,352 acres and the current 2008 total acreage has subsequently increased to 578,369 acres.

CLASSIFICATION SYSTEM

Regulation 61-47, Shellfish, provides shellfish harvesting classifications which are used to protect public health by ensuring that shellfish are harvested from areas that have acceptable water quality, and that meet the requirements of the NSSP. South Carolina currently classifies 578,369 acres of growing area habitat within 25 Shellfish Management Areas. Acreage classified as *Approved*, *Conditionally Approved*, *Restricted*, or *Conditionally Restricted* is designated by the Department as having a potential for existing use for shellfish harvest.

Classification Designations

Approved Area – means a growing area where the water quality has been classified by the Department for harvesting shellfish for direct marketing for human consumption.

Conditionally Approved Area – means a growing area that meets approved area criteria under certain environmental conditions determined by the Department. Direct harvesting of shellfish for human consumption is allowed at times and under conditions determined by the Department through collection of water quality and pollution source data. Conditionally approved area management employs criteria specified in a management plan. Areas may be classified in this category when they are subject to temporary conditions of actual or potential pollution that are predictable (ex., rainfall runoff, river discharges.)

Restricted Area – means a growing area that has been classified by the Department as not meeting water quality criteria that would allow harvesting shellfish for direct marketing for human consumption. In a restricted area, shellfish may be harvested only by special permit and direct marketing of harvested shellfish is not allowed.

Conditionally Restricted Area – means a growing area that meets Restricted Area criteria under specific conditions determined by the Department. Conditionally restricted area management employs criteria specified in a management plan.

Prohibited Area – means a growing area that has been closed by the Department for the harvesting of shellfish for any purpose related to direct human consumption.

RESTORATION EFFORTS

DHEC and SCDNR coordinate the development and implementation of procedures related to the management of coastal molluscan shellfish growing waters. Although each department has distinctly different duties and goals with respect to shellfish management, the development and implementation of procedures related to the management of coastal molluscan shellfish growing waters and resources are closely coordinated. One major component of this cooperative effort is the restoration of shellfish growing waters closed to harvesting for public health reasons. Each year, DHEC develops a listing for all coastal areas not classified as *Approved* for the harvest of shellfish. The listing of non-administrative closure classifications is provided to SCDNR for prioritization for resource restoration purposes, and submitted to the United States Environmental Protection Agency (EPA) in partial fulfillment of DHEC reporting requirements under the Federal Clean Water Act (303d). DHEC also uses the listing and subsequent input from SCDNR in prioritizing shellfish area water quality restoration efforts. These efforts satisfy the goals outlined in Regulation 61-68 regarding maintenance and improvement of classified waters and furthers the concept of shellfish harvest restoration as established by the Interstate Shellfish Sanitation Conference (ISSC). DHEC is the South Carolina member/representative to the ISSC. As part of the restoration component, DHEC received funding through EPA and initiated a project for the collection of thermal imagery data for pollution source identification purposes. Field data collection has been completed and is being reviewed and summarized for inclusion in a written report.

TREND DATA

For the 2008 report year, no significant changes from 2007 report year levels are observed. Classification category percent of total acreage for 2008 are virtually identical to 2007 percentages.

A review of classification data for the 1986 through 2008 annual shellfish reports (data through 2006) continues to indicate relative stability in terms of acreage within individual classification types. For the 1986 – 2008 report review periods, *Approved* area acreage ranges from a low of 64.1% in report year 2000 (includes documented *El Niño* wet weather period data 1997-1998), to a high of 70.2 % in report year 2003. Current 2008 report year *Approved* classification acreage represents 68.1% of total classified acreage.

Restricted area acreage ranges from 15.4% in 2003 to 20.2% in 2000, with a 2008 report year level of 17.9%.

Conditionally Approved area acreage ranges from a low of 0.2% in 1992 and 1994 to a high of 3.5% in 1986, with a 2008 report year level of 1.8%. Manpower and budget constraints often limit the amount of area that may be managed as *Conditionally Approved*. Areas classified as *Conditionally Approved* are included on the 303d list of impaired waters.

Prohibited classification acreage ranges from a low of 11.0% during 1986 to a high of 13.7% in 1999, with a 2008 report year level of 12.3%. The *Prohibited* classification is an administrative classification and may not be indicative of poor water quality.

2008 SUMMARY OF CHANGES

The following is a summary of major shellfish classification changes for the 2007 report year by region:

◆ **Region 6 (Horry, Georgetown)**

- Area 4 (net upgrade)
 - Murrells Inlet - 200 acres upgraded from *Conditionally Approved* to *Approved*.
 - Murrells Inlet - 42 acres downgraded from *Conditionally Approved* to *Restricted*

◆ **Region 6B (Berkeley, Charleston, Dorchester)**

- Area 6B (Cape Romain/McClellanville) – 380 acres *Approved* added to growing area in support of SCDNR mapping. Acreage addition was rectified for 2006 and 2007.
- Area 9B (net downgrade)
 - Wando River and tributaries - 440 acres upgraded from *Restricted* to *Approved*.
 - Wando River and tributaries – 2033 acres downgraded from *Approved* to *Restricted*.
- Area 10A (Folly Beach/James Island area) – 106 acres upgraded from *Restricted* to *Approved*.
- Area 11 (net upgrade)

- o Stono River, Kiawah River, and tributaries – 130 acres upgrade from *Prohibited to Restricted*.
- o Stono River, Kiawah River, and tributaries – 17 acres *Restricted* added to growing area. Acreage addition was not rectified for 2006 and 2007.
- Area 12B (net upgrade/addition to growing area)
 - o 29 acres upgraded from *Restricted to Approved*.
 - o 26 acres downgraded from *Approved to Restricted*.
 - o 299 acres *Approved* addition to growing area to match SCDNR mapping.

◆ **Region 8 (Beaufort, Colleton, Jasper)**

- Area 14 (net upgrade)
 - o Ashepoo River - 565 acres upgraded from *Restricted to Approved*.
 - o Huspah Creek/Campbell Creek – 1043 acres upgraded from *Restricted to Approved*
- Area 17 (net downgrade)
 - o Hazzard Creek – 593 acres downgraded from *Approved to Restricted*.
 - o Ballast Creek – 164 acres upgraded from *Restricted to Approved*.

CONCLUSIONS

The South Carolina Department of Health and Environmental Control classifies approximately 578,369 acres of estuarine and riverine habitat included in 25 separate shellfish growing areas for purposes of molluscan bivalve shellfish cultivation and harvest. Classification categories used in shellfish growing area management are established by S.C. Regulation 61-47, *Shellfish*, for the primary purpose of public health protection. Waters used for shellfish cultivation and harvest activities are maintained and protected under the standards established under Regulation 61-68, Water Classifications and Standards.

Coastal shellfish growing areas are classified annually. With the exception of the Prohibited classification, all classification categories are based upon water quality, and acreage totals are determined based upon water quality data summarized in annual shellfish growing area reports. The Prohibited classification is an administrative classification used adjacent to point source discharges

and marinas.

Statewide classification category percentages determined for this report indicate overall stability when compared to classification category percentages from the 2007 Shellfish Growing Area Status (Trend) Report. Statewide classification categories percentages for this report are virtually identical to those for CY 2007.

Review of classification data produced for growing area reports during the period 1986 through 2008 indicates general stability within all classification categories over the entire period, although upward and downward oscillations within classification types are routinely observed from year to year. Oscillations in the *Approved* and *Restricted* classifications are typically due to water quality impacts from precipitation and resulting runoff and/or river flow.

Figure 1

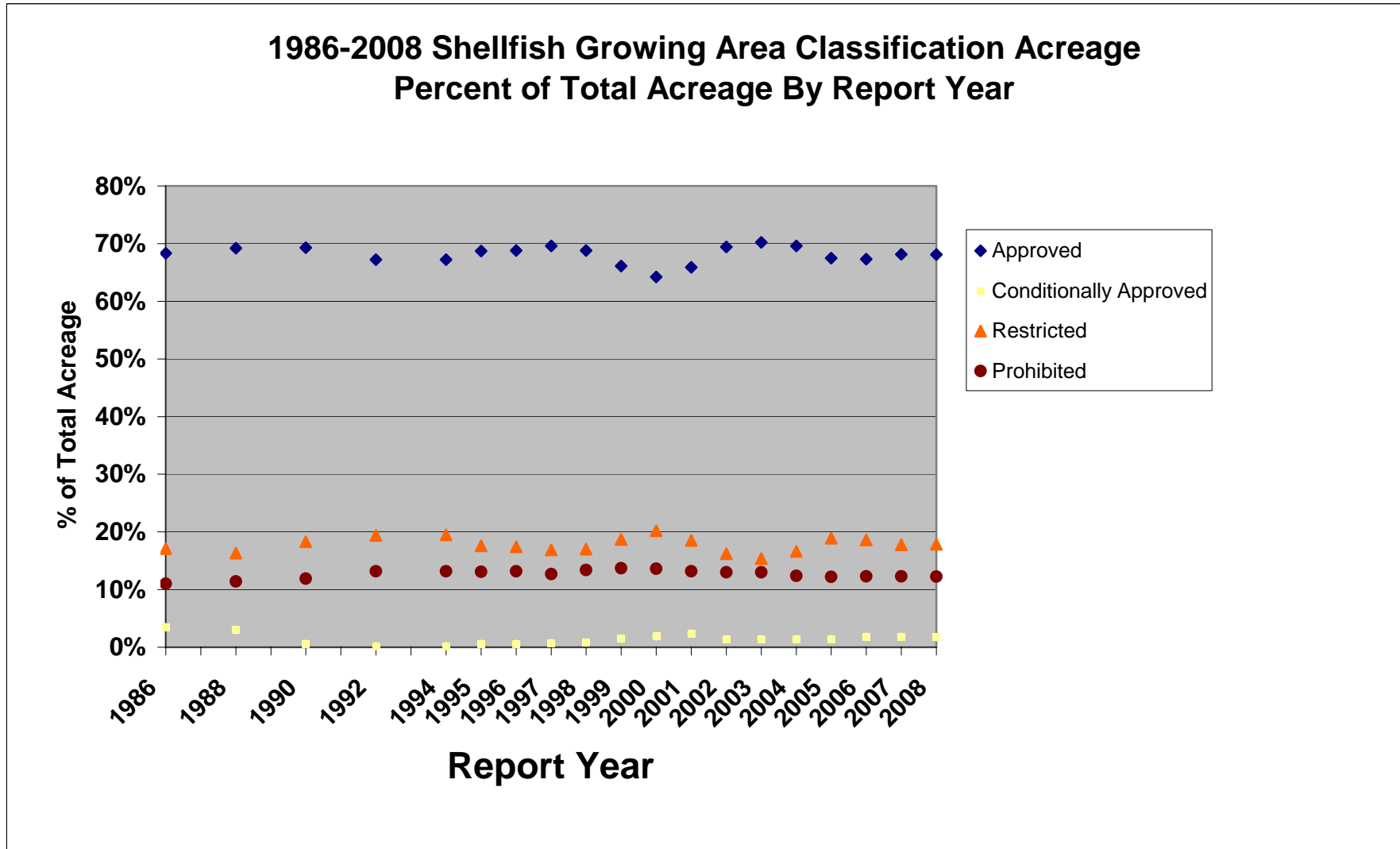


Table 1

**Shellfish Growing Area Acreage
By Classification Type and
Classification Type as Percent of Total**

Report Year	Approved		Conditionally Approved		Restricted		Prohibited		Total	
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
1986	433,817	68.3%	22,363	3.5%	108,896	17.1%	70,077	11.0%	635,153	100.0%
1988	437,763	69.2%	18,970	3.0%	103,309	16.3%	72,231	11.4%	632,273	100.0%
1990	437,982	69.3%	3,704	0.6%	115,635	18.3%	74,945	11.9%	632,266	100.0%
1992	424,750	67.2%	1,352	0.2%	122,549	19.4%	83,205	13.2%	631,856	100.0%
1994	424,228	67.2%	1,107	0.2%	122,849	19.5%	83,405	13.2%	631,589	100.0%
1995	392,242	68.7%	3,192	0.6%	100,759	17.6%	74,847	13.1%	571,040	100.0%
1996	393,039	68.8%	3,192	0.6%	99,608	17.4%	75,200	13.2%	571,039	100.0%
1997	397,708	69.6%	4,096	0.7%	96,476	16.9%	72,760	12.7%	571,040	100.0%
1998	393,064	68.8%	4,811	0.8%	96,853	17.0%	76,313	13.4%	571,041	100.0%
1999	377,486	66.1%	8,712	1.5%	106,772	18.7%	78,069	13.7%	571,039	100.0%
2000	366,795	64.2%	11,089	1.9%	115,218	20.2%	77,937	13.6%	571,039	100.0%
2001	376,309	65.9%	13,827	2.4%	105,435	18.5%	75,469	13.2%	571,040	100.0%
2002	396,090	69.4%	7,964	1.4%	92,522	16.2%	74,433	13.0%	571,010	100.0%
2003	400,706	70.2%	7,860	1.4%	87,971	15.4%	74,473	13.0%	571,010	100.0%
2004	397,589	69.6%	8,001	1.4%	94,678	16.6%	70,744	12.4%	571,012	100.0%
2005	390,108	67.5%	8,081	1.4%	109,069	18.9%	70,432	12.2%	577,690	100.0%
2006	389,172	67.3%	10,564	1.8%	107,527	18.6%	71,088	12.3%	578,352	100.0%
2007	394,020	68.1%	10,427	1.8%	102,817	17.8%	71,088	12.3%	578,352	100.0%
2008	393,914	68.1%	10,185	1.8%	103,311	17.9%	70,958	12.3%	578,369	100.0%