

Project Title: Oyster Resource Management: Shell Recycling. Shell Planting, Monitoring and Assessment

Project PIs: Nancy Hadley, Ben Dyar and Peter Kingsley-Smith

Reporting Period: July 1, 2009 to June 30, 2010

Project Objectives:

- Maintain shellfish resources for recreational harvesting on public and state shellfish grounds through large-scale shell and oyster seed planting operations.
- Provide habitat for finfish, invertebrates and other marine species dependent on oyster reef structure for critical inshore shelter.
- Recycle oyster shells and ensure they are quarantined prior to planting. Establish new drop-off sites at convenient locations and promote public participation in DNR's shell recycling program. Develop partnerships with NGOs, caterers and private companies to expand shell recycling.
- Delineate state and public shellfish grounds and distribute maps to the public.
- Continue updating shellfish resource maps using recently acquired high resolution imagery; collect additional imagery; and ground-truth selected imagery.
- Work to integrate assessment methods employed by shellfish biologists throughout SCDNR's Marine Resources Division to compensate for senior staff retirements and provide flexibility for future staffing.

Summary of Activities/Accomplishments to Date:

- In the 2009-2010 shellfish season (October-April), a record total of **20,374** bushels of shell was recycled (Figure 1), an increase of 34% from the previous year. Twenty-three public drop-off sites were maintained. Recycled shell collected from these public coastal drop-off facilities, individual oyster roasts, oyster roast caterers and local restaurants resulted in a savings of over **\$34,840** by not having to purchase an equivalent quantity of Gulf Coast and whelk shells.
- The increase in recycled shell is attributed largely to greater public awareness. Partner groups (e.g. Coastal Conservation Association and The Nature Conservancy) have assisted in spreading the word and DNR has been successful in getting press coverage. Shell drop-off sites are increasing each year in the coastal counties and strong relationships have been developed with oyster roast caterers, local restaurants and environmental organizations.
- This year also saw the initiation of shell recycling from downtown Charleston restaurants through a partnership with The Nature Conservancy and Fisher Recycling. This private/public partnership is expected to expand to other counties in the future.

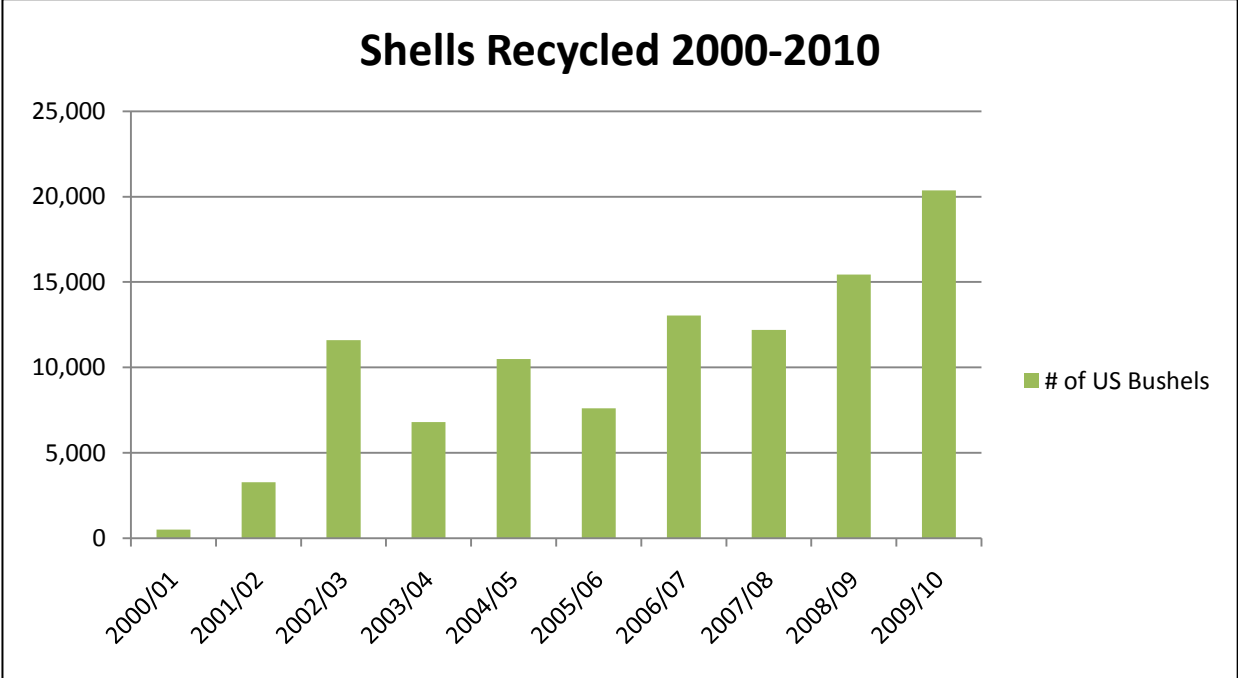


Figure 1. Since its genesis in 2000, nearly 100,000 bushels of oyster shells have been recycled through the contributions of individual consumers, local volunteers, commercial oyster roast caterers, and local restaurants. Increasing contributions reflect both an expanded program and increased public awareness.



Hydraulic dump trailers are utilized as semi-permanent drop-off sites in some areas as well as for large oyster roasts. Dump trailers allow SCDNR's recycling program to be more publicly accessible.



SCDNR has received positive feedback from local officials and the public for utilizing concrete barriers to create oyster shell recycling bins, due to their ease of maintenance.



A single planted shell attracts many juvenile oysters.

- Investments in oyster shell planting are returning a three dimensional standing crop yield, many times greater than the volume of shell planted. Most single planted shells are found with several juvenile oysters attached, illustrating the multiple returns on volume of shells planted. Many recreational oyster gatherers have commented to the media and SCDNR biologists about the positive impact shell planting is having on oyster resources in their area.
- A total of **21,762** bushels of oyster and whelk shells was planted on State and Public Shellfish Grounds between July 1, 2009 and June 30, 2010.
 - Charleston County
 - Kiawah River SSG (S-194) – **6,772** bushels
 - First Sisters SSG (S-206)(two sites) - **4,211** bushels
 - Total – **10,983** bushels of oyster shells and live seed oysters
 - Beaufort County
 - Wallace Creek SSG (S-117) – **5,579** bushels
 - Station Creek PSG (R-089) (three sites)- **5,200** bushels
 - Total – **10,779** bushels

Shell planting volume decreased from the previous year (see Figure 2) due to mid-year budget cuts, which prevented the program from contracting with commercial barges to plant in multiple locations.



Shell being planted in First Sisters Creek in Charleston County (S-206).

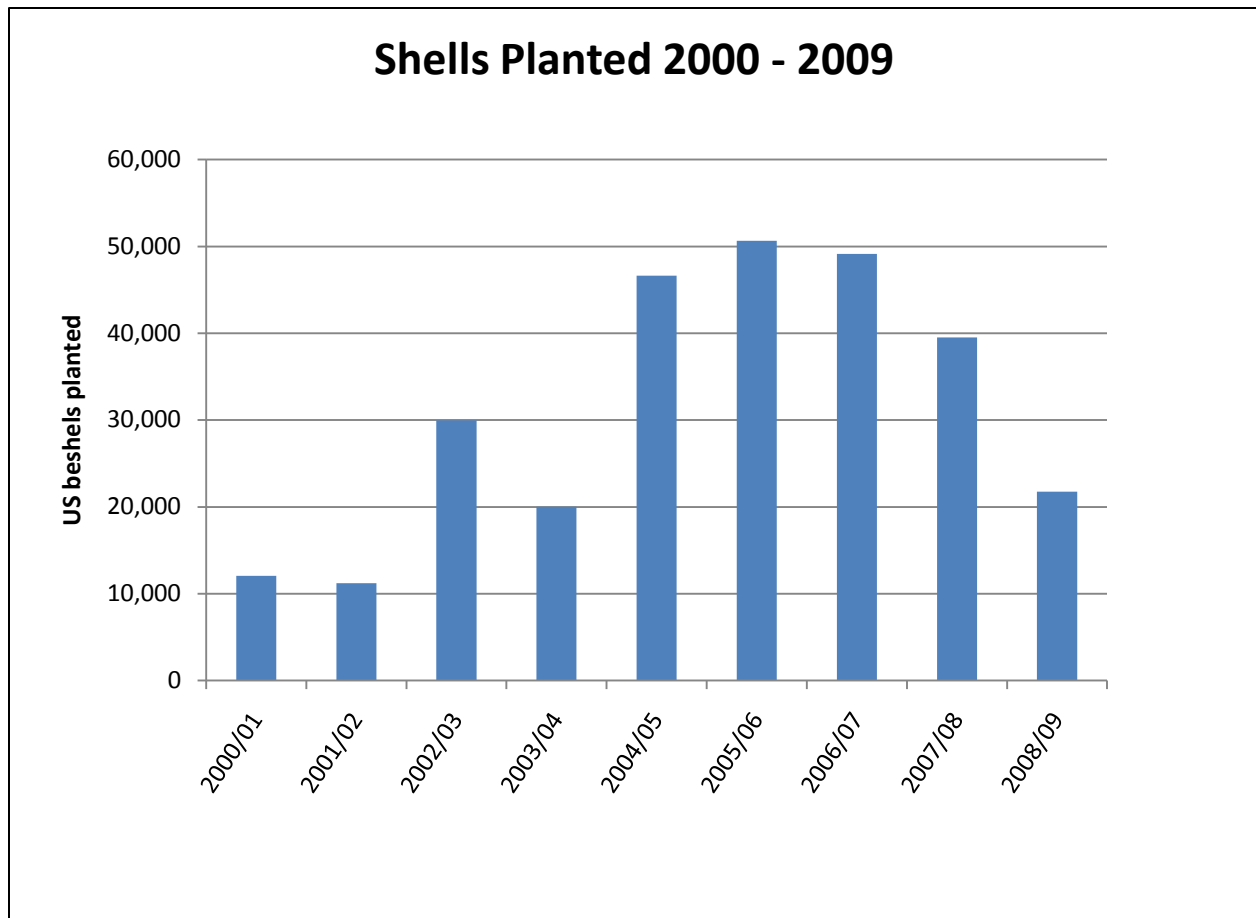


Figure 2. Bushels of shell planted on public grounds for the last 9 seasons.

- Research and management staff jointly conducted shellfish ground assessments this year in our continuing effort to develop integrated assessment methods.
- Shellfish ground maps were made available to the public both via internet access and in hard copy upon request. Signs were replaced on recreational grounds in Charleston County this year.
- This year we continued to acquire low-altitude high-resolution imagery and on-the-ground data to improve our shellfish resource database. Imagery from the McClellanville and North Island USGS quadrangles was acquired this year, although additional time will be needed to incorporate the information into the ArcGIS database. Shellfish resource imagery is now available online at SCDNR's data clearinghouse and is updated as new imagery or ground-truthing information is acquired.