Commercial Shellfish Aquaculture Sites

This layer shows commercial aquaculture sites, areas allocated for bottom aquaculture of shellfish (primarily oysters and hard clams). These data points are managed by Virginia Marine Resource Commission (VMRC) in order to better assess, plan, and manage aquaculture development throughout Virginia's coastal zone.

Status of the data
This layer was created in 2002.

Data Source
Aquaculture Sites (2003). Virginia Institute of Marine Science

To access this data layer/tool directly, please visit:

http://ccrm.vims.edu/gis_data_maps/interactive_maps/

An aerial view of clam aquaculture on Virginia's Eastern Shore. Photo courtesy of the Virginia Institute of Marine Science.

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Why should we care?
Shellfish cultivation can have positive ecological effects, given that most of the shellfish cultivated (clams and oysters) are filter feeders. Filter feeders remove algae and fine sediment from the water column, thereby "cleaning" it and allowing sunlight to penetrate to the bottom so that underwater grasses can grow. Grass beds and oyster reefs also provide food and shelter for other marine organisms and therefore support biological diversity.Shellfish cultivation can also provide tremendous economic value. On the Eastern Shore of Virginia, clam farms on both the seaside and the bayside lead the nation in production. In 2005 178 million hard clams were sold by aquaculturists valued at about $27 million. This industry provided 133 full-time and 73 part-time jobs in 2005. Oyster cultivation is also on the rise with 2.8 million oysters sold in 2005 and projections for 5.2 million to be sold in 2006.

Links to find more information:
Economic Value of Shellfish Aquaculture in Virginia
VMRC's website on aquaculture

How is this resource managed?
The Virginia Marine Resources Commission issues permits and leases for aquaculture activities.Through grants from the Virginia CZM Program between 1999 and 2003 VMRC developed a regulation authorizing the placement of certain aquaculture structures on leased shellfish ground (4 VAC 20-336-10 et seq.) and developed an abbreviated application process. They also prepared a booklet summarizing all of Virginia's laws and regulations pertaining to shellfish aquaculture and created a GIS data layer to identify existing aquaculture sites. To better accommodate more intensive "off bottom" aquaculture activities, VMRC developed draft legislation to provide a procedure for leasing areas of the water column for aquaculture purposes. This water column leasing program would have provided the aquaculture industry with necessary water rights and protection while minimizing potential conflicts with other user groups and existing natural resources. The 2004 Virginia General Assembly adopted this program as Senate Bill 605, however it was not to be implemented unless funds were appropriated to the program. Funds never were appropriated and the legislation has now expired. The legislation had been recommended by the Virginia Delegation to the Chesapeake Bay Commission and was based on the draft legislation developed during previous years of this CZM-funded Aquaculture Management Initiative.Currently, clam aquaculture activities are "permitted" through the leasing of private oyster grounds.

Links to find more information about how this resource is managed:
Aquaculture Management Grant to MRC
Marking Leased Oyster GroundsMarking Leased Oyster Grounds
On-Bottom Shellfish Aquaculture Regulations

Why was the GIS data created?
This layer was created to inventory aquaculture activities in Virginia as part of the Aquaculture Management Projectconducted by the Virginia CZM Program and the Virginia Institute of Marine Science. As individual permits are issued or denied, this data allows us to make better decisions as to where these activities should and should not occur.

Links to projects that funded this data acquisition:
Aquaculture Management Grant to VIMS
Blue Infrastructure Maps Grant

How was the GIS data created?
VMRC provided information on Aquaculture permitted sites that was incorporated into the ArcView shape files. Aquaculture sites were imported into ArcView and projected into UTM zone 18.

Future Directions?
VRMC recently upgradede their AutoCAD database to a format which easily converts to an ArcInfo Geographic Information System format. Updates to this data layer are expected to occur within the coming year.