

Neuse River Basin - Summary

Neuse River Basin Description

The Neuse River originates in north central North Carolina in Person and Orange counties and flows southeasterly until it reaches tidal waters near Streets Ferry upstream of New Bern (Figure *i*). At New Bern, the river broadens dramatically and changes from a free-flowing river to a tidal estuary that eventually flows into the Pamlico Sound. The Neuse River basin is the third largest river basin in North Carolina (6,235 square miles) and is one of only four major river basins whose boundaries are located entirely within the state.

There are 3,389 freshwater stream miles, 17,902 acres of freshwater reservoirs and lakes, 143 saltwater stream miles, and 370,779 estuarine/saltwater acres in the Neuse River basin (Table *i*). There are also numerous miles of unmapped small perennial, intermittent and ephemeral streams. Extensive wetland communities are also found in the lower Neuse River basin.

The Neuse River basin encompasses all or portions of 18 counties and 77 municipalities. The population of these 18 counties increased by 27 percent from 1990 to 2000 and is expected to increase by 44 percent between 2000 and 2020. The population is projected to grow by more than 867,000 with the total number of people living within the Neuse River basin to be over 2,000,000 by 2020.

Water Quality Monitoring & Assessment Summary

Biological, chemical and physical monitoring data presented in this basinwide water quality plan is based on data collected in calendar years 2002 through 2006. This is the same data window used for the 2008 Integrated Report (303(d) and 305(b) listings). The routine biological monitoring in the Neuse River basin took place in 2005. Several ambient and biological monitoring special studies also took place in the Neuse River basin during this assessment period. Each subbasin has its own characteristics and water quality concerns. Maps of each subbasin are included in each of the subbasin chapters (Chapters 1-14).

In the entire Neuse River basin, 459 freshwater stream miles (14 percent of the total miles), 13,538 freshwater acres (76 percent), 35 saltwater stream miles (25 percent), and 57,648 saltwater acres (16 percent) were impaired for one or more surface water quality standards. Table *i* presents the totals of all the monitored streams, lakes and estuarine waters and gives a summary of miles and acres impaired and supporting. Table *ii* (found at the end of this summary) lists the Neuse River basin's impaired waters from the 2008 Integrated Report (IR).

Table i Summary of Monitored and Unmonitored Waters in the Neuse River Basin.

Water Type	Total	Total Monitored Waters		Total Supporting Waters			Total Impaired Waters			Total Not Rated Waters			Total No Data Waters	
	Miles/Acres	Miles/Acres	Percent of Total Waters	Miles/Acres	Percent of Total Waters	Percent of Monitored	Miles/Acres	Percent of Total Waters	Percent of Monitored	Miles/Acres	Percent of Total Waters	Percent of Monitored	Miles/Acres	Percent of Total Waters
Freshwater Acres (impoundments)	17,901	15,732	88	1,683	9	11	13,538	76	86	511	3	3	2,170	12
Freshwater Miles (streams)	3,389	1,483	44	846	25	57	459	14	31	178	5	12	1,906	56
Estuarine Acres	370,779	365,688	99	308,040	83	84	57,648	16	16	0	0	0	5,091	1
Estuarine Miles	143	46	33	11	8	24	35	25	76	0	0	0	96	68

The majority of the freshwater stream miles in the Neuse River basin are impaired due to impaired biological integrity (BI), low dissolved oxygen levels and elevated turbidity (Figure *ii*). The majority of the fresh and saltwater acres are impaired as a result of elevated chlorophyll *a* and high pH (due to elevated nutrients), turbidity and bacteria (fecal coliform and enterococci) levels (Figure *iii*).

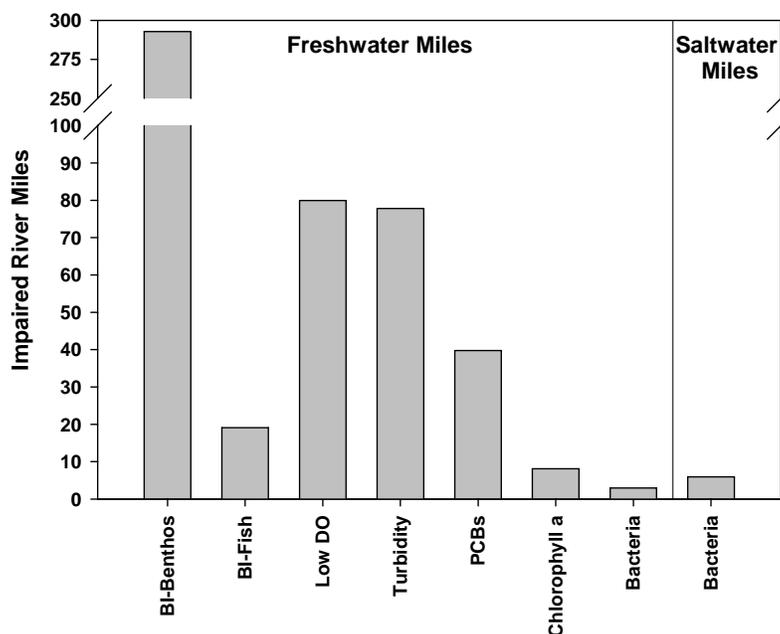


Figure *ii*. Neuse River Basin Impaired River Miles by Parameter.

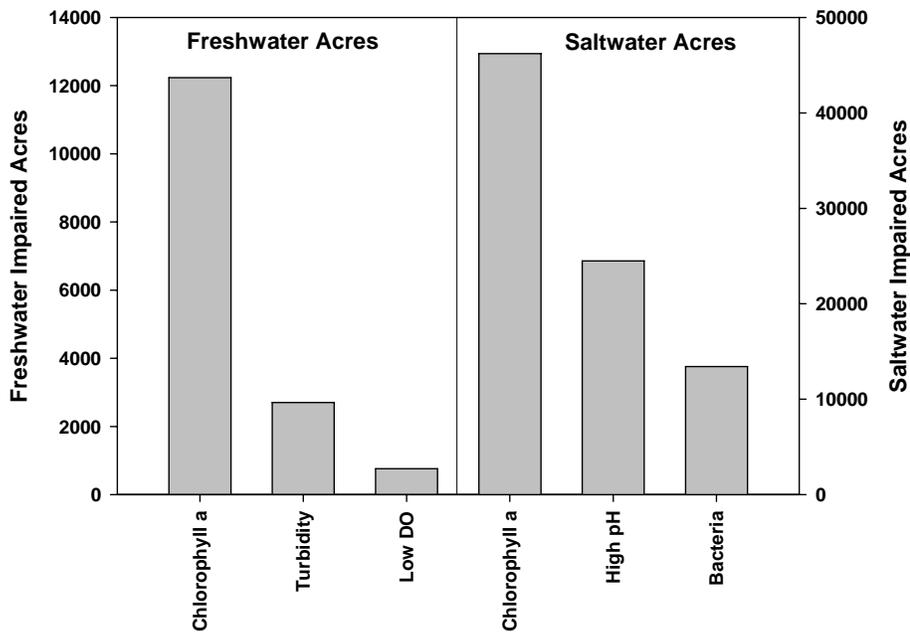


Figure *iii*. Neuse River Basin Impaired Acres by Parameter.
(Note: scales are different for each water type.)

Nonpoint source runoff from a variety of land use practices is identified as the primary source of impacted surface waters in the Neuse River Basin (Table *iii*; see Chapters 1-14 and 17 for more details). Runoff from rain events carries sediment, nutrients and toxicants that affect the aquatic ecosystem and fecal coliform bacteria that result in impairment of the recreation and shellfish harvesting use support categories.

Urban development within the Neuse River basin is altering the watershed hydrology, resulting in downstream flooding, streambank erosion, channel incision, increased turbidity and degrading aquatic habitat and biological health (see Chapter 17 or the *Supplemental Guide to North Carolina's Basinwide Planning* document (<http://h2o.enr.state.nc.us/basinwide/SupplementalGuide.htm>) on how urban development affects the watershed).

Excessive nutrient loading is ultimately the primary stressor in the Neuse River basin resulting in the chlorophyll *a* impairment of Falls Lake and the Neuse River Estuary, as seen in figure *iii*. While great strides have been made in the reduction of nitrogen contribution from both point and nonpoint sources to the Neuse River Basin, many challenges remain in developing a thorough understanding of the complex nutrient delivery system and the management strategies that will be most effective to achieve timely water quality improvements.

Table *iii* Estimated Freshwater Stream Miles Potentially Impacted* by Nonpoint Source Runoff (based on best professional judgment and land use activities).

Nonpoint Sources of Runoff/Stormwater	Impacted Freshwater (Miles)**	Total Miles
<i>Urban Nonpoint Source Stormwater/Runoff</i>		
MS4 [^] NPDES Stormwater	428	
Non - MS4 Stormwater	406	
Construction	94	
Land Clearing	77	
Total – Urban Runoff		1005 miles
<i>Other Nonpoint Source Runoff</i>		
General Agriculture	534	
Row Crop Agriculture	143	
Forest Harvesting	14	
Total – Other Runoff		691 miles
Total Urban and Other NPS Runoff		1,696 miles⁺

* Impacted waters – Waters determined to have a $\geq 7\%$ standard violation of an ambient monitored parameter, biological bioclassification assessment of Good-Fair or less and/or best professional judgment when visual observations at a particular stream segment indicated such conditions.

**Data is from the NC 2008 Integrated Report.

[^] MS4 – Municipal Separate Storm Sewer System.

⁺ Total number of freshwater stream miles in the Neuse River Basin is 3,389 miles (at least 50% of the streams lengths are impacted by nonpoint source runoff, this number is likely much higher).

Water Quality Improvements

There were several water quality improvements noted in the Neuse River basin during this assessment period (Table *iv*). Eighty-five freshwater stream miles were removed from the North Carolina 2008 Impaired Waters list due to specific water quality improvement; 34 miles for dissolved oxygen and 51 miles for newly supporting biological integrity.

Many of these improvements are likely due to concerted efforts made in these watersheds by the point source contributors and the agricultural community. Twenty-seven miles of the Nahunta Swamp and 15 miles of Core Creek were removed from the 2008 303(d) impaired waters list due to improved biological integrity. The macroinvertebrate community ratings went from fair to good-fair in 2005. It appears that the agricultural BMPs implemented through funding by the Clean Water Management Trust Fund and the Agriculture Cost Share Program was successful in reducing the water quality impacts to the biological community from the agricultural practices within these watersheds. More information can be found in Chapter 7, section 7.3.6 and Chapter 8, section 8.3.1 for Nahunta Swamp and Core Creek, respectively.

The most upstream portion of the Neuse River Estuary (2,790 saltwater acres) was also removed from the 2008 Impaired Waters list (Table *iv*). This segment of the estuary did not exceed the state chlorophyll *a* standard of 40 µg/l in more than 10 percent of the samples assessed. This is the first complete evaluation of the estuary (headwater to mouth) and represents only the current status that existed during this assessment period (1/1/2002-12/31/06). This does not necessarily represent a change in the water quality status in this area. The data collected during the next assessment period will give a better indication as to the changes that are taking place in the estuary. It is likely that the spatial extent of the chlorophyll *a* impairment will shift up and down in the estuary depending on several factors like major climatic events, river flows and nutrient contribution.

Table *iv* Water quality improvements resulting in delisting off the North Carolina 2008 Impaired Waters list.

Assessment Unit	Subbasin	Stream Name	Length	Unit	Listing Year	Parameter*	Delisting Reason
27-43-15-(1)a	03-04-03	Middle Creek	1	FW Miles	2004	DO	No Criteria Exceeded
27-45-(14)	03-04-04	Black Creek	2	FW Miles	2004	DO	No Criteria Exceeded
27-57-(20.2)a	03-04-06	Little River	9	FW Miles	2004	DO	No Criteria Exceeded
27-57-(8.5)b	03-04-06	Little River (Tarpleys Pond)	12	FW Miles	2004	DO	No Criteria Exceeded
27-68	03-04-05	Walnut Creek (Lake Wackena, Spring Lake)	7	FW Miles	2004	DO	No Criteria Exceeded
27-86-14	03-04-07	Nahunta Swamp	27	FW Miles	1998	Benthos	Biological Improvement
27-86-2-4	03-04-07	Little Creek (West Side)	4	FW Miles	1998	DO	No Criteria Exceeded
27-90b	03-04-08	Core Creek	15	FW Miles	1998	Benthos	Biological Improvement
27-97-(0.5)a2	03-04-09	Swift Creek	5	FW Miles	1998	Benthos	Biological Improvement
27-97-5b	03-04-09	Clayroot Swamp	3	FW Miles	1998	Benthos	Biological Improvement
27-(96)a	03-04-08	Neuse R. Estuary	427	SW Acres	2004	Chlorophyll <i>a</i>	No Criteria Exceeded
27-(96)b1	03-04-10	Neuse R. Estuary	2,363	SW Acres	2004	Chlorophyll <i>a</i>	No Criteria Exceeded
Water Quality Improvements Totals							
			DO	34 FW Miles			
			Biological	51 FW Miles			
			Chlorophyll <i>a</i>	2,790 SW Acres			

* Parameters - DO – Dissolved Oxygen

Benthos – Biological Integrity, Macroinvertebrate Organisms

Water Quality Management Strategies and Activities

Falls of the Neuse Reservoir

The Falls of the Neuse Reservoir (Falls Lake) has been placed on the 2008 303(d) list of impaired waters due to chlorophyll *a* standard violations for the entire lake and turbidity standard violations in the upper portion of the lake (Table *ii*). In addition, a Nutrient Management Strategy to be implemented through rules is under development for the lake per the 2005 Senate Bill 981. DWQ is working with a Technical Advisory Committee of local governments, environmental interests and resource agencies to develop a lake and watershed model to support a comprehensive nutrient management strategy. This comprehensive strategy will be developed with broader stakeholder participation and is anticipated to require additional reductions in nutrients from all sources in the watershed.

Neuse River Estuary

The impairment due to chlorophyll *a* standard violations in the Lower Neuse River Estuary has been extended to below Cherry Point (total area is 45,196 saltwater acres; Table *ii*). A large section of the Neuse River Estuary is also impaired due to high pH standard violations (24,493 saltwater acres; Table *ii*). These impairments are directly linked to the elevated presence of algae in the estuary.

Since the full spatial extent of the chlorophyll *a* impairment was not assessed until this data window, DWQ can not determine if the chlorophyll *a* impairments have expanded or not due to the lack of sufficient data for comparison.

Due to historical nuisance algal blooms and fish kills, the lower Neuse River Estuary is classified as Nutrient Sensitive Waters (NSW) and has a NSW Management Strategy in place; as well as a legislative requirement to meet a 30% reduction in nitrogen loading (Session Law 1995, Section 572). The Neuse River NSW Management Strategy became effective as permanent rules on August 1, 1998. In 1999 and 2002, a Total Maximum Daily Load (TMDL) for nitrogen and phosphorus was developed based on the NSW Management Strategy and additional environmental modeling. Rules to support the management strategy and TMDL were fully implemented by 2003. The Neuse River NSW management strategy and TMDL are described in detail in Chapter 24.

Since full implementation of the nutrient reduction strategy, nitrogen loads from point sources have been reduced by 65 percent and the agriculture community has reduced their estimated nitrogen loss from cropland and pastureland by approximately 45 percent. Over 1,850 fertilizer applicators have received nutrient management training and the 15 local governments covered under the Neuse Stormwater Rule have adopted and implemented local stormwater programs to limit nitrogen inputs from stormwater runoff resulting from new development.

At this point the data do not seem to indicate any significant decrease in actual nutrient loading to the estuary. Thus the goal of a 30 percent reduction in total nitrogen loading at Fort Barnwell and the reduction of chlorophyll *a* standard violations within the Neuse River Estuary have not yet been achieved (Chapter 24). Reductions in nutrient inputs may take time to detect in measured loading, due to year-to-year variability in precipitation and flow. Based on the results of recent trend analysis (see Chapter 24), it is evident that it will take more than five years to discern a 30 percent decrease in load to the estuary.

DWQ is pursuing further analysis of current data and will be reassessing our monitoring and research needs to ensure that sufficient information is being collected to fully characterize all inputs. It is important to note that at this time, DWQ is not reassessing the TMDL or suggesting that the current NSW rules be modified.

DWQ Recommendations

The long-range mission of basinwide planning is to provide a means of addressing the complex problem of planning for increased development and economic growth while maintaining, protecting and enhancing water quality in the Neuse River basin's surface waters.

The following are the more overarching recommendations and research needs identified in this management plan. The actions DWQ plans to take to implement these recommendations are laid out in Table v. More site-specific recommendations can be found in the individual chapters.

Source Assessment and Trends

- Coordinate efforts with the Division of Air Quality to assess atmospheric nitrogen contributions to the watershed and develop recommendations on better ongoing characterization of atmospheric nitrogen deposition and emission source regulatory considerations.
 - Specifically address better characterization of the contribution of ammonia emissions from CAFO operations.
- Develop a more detailed analysis of current and historic data in order to better quantify the status of nutrient loading to the estuary; conduct additional trend and loading analysis upstream of the Neuse River Estuary focusing on smaller watersheds with dominant land use types; this will allow staff to better gauge the effectiveness and progress of strategy implementation.
- Identify the need for additional monitoring locations and parameters to better characterize basin nutrient sources and relative contributions.
- Lead in the development of the Falls of the Neuse Reservoir Nutrient Management Strategy per legislative timeline.
- Complete the CAFO monitoring plan rulemaking process.
- Review Neuse Buffer compliance tracking and assessment needs. Use Compliance data to assess impacts to the basin.

Stormwater Needs

- Develop a full assessment and recommendations on stormwater programmatic coverage gaps and need to meet nutrient strategy goals on new development activities. Include recommendations on most appropriate regulatory approach.
 - Designate new Phase II stormwater communities where criteria are appropriate.

- Require Phase II stormwater permit holders to initiate nutrient controls upon permit renewal or designated as Phase II if appropriate.
- Assessment of stormwater Phase II and Neuse Stormwater permitting programs. Make recommendations on how to strengthen the current program to be more environmentally protective.
- Audit local stormwater programs for effectiveness and work with local governments to strengthen their implementation.
- Evaluate the magnitude of nitrogen loading in runoff from existing development areas and develop recommendations on the need to address this source under the strategy.
- Review stormwater and sediment and erosion control compliance activities; assess need for additional staff for inspection and enforcement needs.

Additional Issues

- Lead the interagency workgroup established to improve accounting of land use changes and net progress toward strategy goals.
- Evaluate regulatory issues associated with nutrient loading potential from high rate infiltration wastewater systems in the basin.
- Work with the Division of Coastal Management to assess the cumulative impacts of marinas on nutrient and bacterial related water quality.

Voluntary Actions

- Implement the 2003 UNRBA Upper Neuse Watershed Management Plan and other local watershed plans.
- Require stormwater best management practices for existing and new development.
- Develop, strengthen and enforce riparian buffer ordinances.
- Implement comprehensive land use planning that assesses and reduces the impact of development on natural resources.
- Develop and enforce local erosion control ordinances.
- Implement pet waste and residential fertilizer reduction ordinances.

- Work with local resource agencies to install appropriate BMPs in order to reduce the contribution of nutrient, sediment, bacteria and toxicants as well as addresses stormwater volume and velocity issues.
 - Community Conservation Assistance Program
 - Agriculture Cost Share Program
 - Conservation Reserve Enhancement Program
- Cultivate local champions in impaired watersheds toward initiating voluntary watershed projects. [Basinwide – URW program]

Research Needs Identified

- Develop monitoring to better characterize the nature, magnitude and trends in atmospheric and groundwater derived nutrient contributions to the Neuse River Estuary.
- Characterize the location, geographic extent and functionality of tile drains under agricultural fields.
- Quantify the potential magnitude of nutrient loading from spray fields, directly from animal housing and holding, and waste storage facilities on confined animal feeding operations (CAFOs).
- Characterize the geographic extent and quantify the potential magnitude of nutrient loading from dry litter poultry facilities, animal housing and waste storage.
- Characterize the potential for groundwater contamination and transport of nutrients from biosolids and wastewater land application fields to the surface waters of the Neuse Basin.
- Quantify the nitrogen contributions from conventional on-site wastewater treatment systems to surface waters of the Neuse Basin.
- Better quantification of BMP effectiveness (agricultural and stormwater BMPs); improve accounting tools.
- Improve upon current stormwater impact assessment methods and develop better tools to reduce the environmental impacts from stormwater.
- Characterize nutrient loading from various pasture management practices which leads to a better understanding of pasture's nutrient contributions and the value of different management options.

Research Initiated to Fulfill Research Needs Described Above

- Under a FY2008 319 grant for \$150,000, DWQ APS and USGS are on a three-year project which will use USGS gauging stations and DWQ ambient monitoring data to determine base flow (groundwater discharge rate) and overall nutrient export from selected watersheds in the Neuse River basin. The final report from this study will be expected in 2011.
- In association with the above FY2008 319 grant, during 2009-2010 DWQ APS will also conduct nutrient sampling during baseflow from a small number of headwater streams adjacent to non-point sources of nutrients (including wastewater and residuals application fields) to provide additional measures of the degree to which nutrients applied to the land discharge to streams via groundwater.
- In association with the above FY2008 319 grant, during 2009-2010 DWQ APS will compile estimates of the total land-applied nitrogen load at residuals and wastewater application fields in selected watersheds in the Neuse Basin. This compilation will serve as a baseline from which to calculate potential nutrient loads to surface waters from these facilities.
- As part of its Groundwater Resource Evaluation Program, DWQ APS has recently completed a pilot study of poultry litter impacts to groundwater and soils in Wilkes County. The report on this study is in preparation and should be released in 2009.
- During 2009-2011, under a FFY2007 319 grant for \$204,325, researchers at NCSU and USDA will complete a statistically valid survey of agriculture producers in the Neuse Basin to provide field-scale data consisting of information on animal numbers, nutrient management, agricultural crops, and best management practices (including tile drains and water control structures). The results of this survey will be utilized in the state supported nutrient tracking tools NLEW and PLAT.
- Under a FY2008 319 grant for \$99,974, researchers in the NCSU BAE department are currently evaluating the performance of level spreaders associated with riparian buffers to help determine overall water quality benefit gained and a better understanding of sediment and nutrient reduction achieved from properly designed level spreader / riparian buffer systems. The final report from this study will be expected in 2010.

Without proactive land use planning initiatives and local water quality strategies, population growth and development in the basin increases the risk of surface water impairment. Balancing economic growth and water quality protection will continue to be an immense challenge. This basinwide plan presents many water quality initiatives and accomplishments that are underway throughout the basin. These actions provide a foundation on which future initiatives can be built.

Table v Division of Water Quality Neuse River Basin Action Plan.

Recommendation/Goals	Responsible Parties	Action	Date
Source Assessment and Trends			
Coordinate efforts with the Division of Air Quality to assess atmospheric nitrogen contributions to the watershed and develop recommendations on better ongoing characterization of atmospheric nitrogen deposition and emission source regulatory considerations.	Planning Section - NPS Unit & BPU Unit	Initiated workgroup with DWQ & DAQ.	Late 2008
Identify the need for additional monitoring locations and parameters to better characterize basin nutrient sources and relative contributions; develop a more detailed analysis of current and historic data in order to better quantify the status of nutrient loading to the estuary; conduct additional trend and loading analysis upstream of the Neuse River Estuary focusing on smaller watersheds with dominant land use types.	Planning & Env. Sciences Sections	Initiate discussion within DWQ to pursue monitoring and funding options. Contract out for analysis	2009/2010 (funding dependent)
Complete development of the Falls of the Neuse Reservoir (Falls Lake) Nutrient Management Strategy Rules.	Planning Section – NPS Unit	Stakeholder process to develop rules, public hearings for comment, EMC adoption.	Target completion based on legislative requirements under consideration
Complete the CAFOs monitoring plan rulemaking process.	Aquifer Protection Section	Rule development, public comment, EMC decision	Target completion 2009/2010
Evaluate Neuse Buffer compliance tracking and assessment needs.	Wetlands and Stormwater Branch – NPS Assistance & Compliance Unit	Establish a DWQ workgroup to evaluate tracking methods and database needs.	Workgroup 2009 Recommendations 2010

Recommendation/Goals	Responsible Parties	Action	Date
Stormwater Needs Continued			
Review stormwater control compliance activities; assess need for additional staff for inspection and enforcement needs.	Wetlands and Stormwater Branch – NPS Assistance & Compliance Unit	Review existing and develop needs assessment.	2010
Review sediment and erosion control compliance activities; assess need for additional staff for inspection and enforcement needs.	Wetlands and Stormwater Branch – NPS Assistance & Compliance Unit	Continue the workgroup between DWQ & DLR.	2010
Additional Issues			
Lead the interagency workgroup established to improve accounting of land use changes and net progress toward strategy goals.	Planning Section – NPS Unit	Reconvene land accounting workgroup.	2009
Evaluate regulatory issues associated with nutrient loading potential from high rate infiltration wastewater systems in the basin.	Planning Section - BPU	Continue DWQ workgroup.	Recommendations Late 2009
Work with the Division of Coastal Management to assess the cumulative impacts of marinas on nutrient and bacterial related water quality.	Planning Section – NPS Unit & BPU	Coordinate ongoing efforts between DWQ, DCM & DEH. Assist with procuring funds to support the DCM Clean Marina Coordinator position.	2010

Table ii. Neuse River 2008 Draft Impaired Waters List.

(Note: From the 2008 DRAFT Impaired Waters List - 11/10/08. See Appendix XI for the most up to date version.)

Assessment Unit	2006 Subbasin #	Future Subbasin #	Stream Name	Stream Classification	Length/Area	Miles/Acres	Impairment
27-(1)	03-04-01	03020201	NEUSE RIVER (Falls Lake below normal pool elevation)	WS-IV;NSW,CA	2,703.6	FW Acres	Turbidity, Chlorophyll a
27-(5.5)	03-04-01	03020201	NEUSE RIVER (Falls Lake below normal pool elevation)	WS-IV,B;NSW,CA	9,530.3	FW Acres	Chlorophyll a
27-11-(0.5)	03-04-01	03020201	Lick Creek	WS-IV;NSW	6.5	FW Miles	Benthos
27-11-(1.5)	03-04-01	03020201	Lick Creek	WS-IV;NSW,CA	0.7	FW Miles	Benthos
27-15-(1)	03-04-01	03020201	Upper Barton Creek	WS-IV;NSW	4.9	FW Miles	Benthos
27-3-(8)	03-04-01	03020201	Flat River	WS-IV;NSW	1.1	FW Miles	Low Dissolved Oxygen
27-3-(9)	03-04-01	03020201	Flat River (including the Flat River Arm of Falls Lake)	WS-IV;NSW,CA	0.6	FW Miles	Low Dissolved Oxygen
27-4-(6)	03-04-01	03020201	Knap of Reeds Creek	WS-IV;NSW	5.6	FW Miles	Benthos
27-4-(8)	03-04-01	03020201	Knap of Reeds Creek	WS-IV;NSW,CA	0.6	FW Miles	Benthos
27-5-(0.3)	03-04-01	03020201	Ellerbe Creek	C;NSW	6.1	FW Miles	Fish
27-5-(0.7)	03-04-01	03020201	Ellerbe Creek	WS-IV;NSW	5.9	FW Miles	Fish
27-5-(2)	03-04-01	03020201	Ellerbe Creek	WS-IV;NSW,CA	0.5	FW Miles	Benthos
27-9-(0.5)	03-04-01	03020201	Little Lick Creek	WS-IV;NSW	7.2	FW Miles	Benthos, Turbidity, Low Dissolved Oxygen
27-9-(0.5)ut2	03-04-01	03020201	UT2 to Little Lick Creek	WS-IV;NSW	2.4	FW Miles	Low Dissolved Oxygen
27-9-(2)	03-04-01	03020201	Little Lick Creek (including portion of Little Lick Creek Arm of Falls Lake)	WS-IV;NSW,CA	0.6	FW Miles	Benthos, Turbidity, Low Dissolved Oxygen
27-9-(2)ut2	03-04-01	03020201	UT2 to Little Lick Creek (including portion of Little Lick Creek Arm of Falls Lake)	WS-IV;NSW,CA	0.9	FW Miles	Low Dissolved Oxygen
27-(38.5)	03-04-02	03020201	NEUSE RIVER	WS-IV;NSW	9.7	FW Miles	Turbidity
27-(41.7)	03-04-02	03020201	NEUSE RIVER	WS-V;NSW	26.2	FW Miles	Turbidity

Assessment Unit	2006 Subbasin #	Future Subbasin #	Stream Name	Stream Classification	Length/Area	Miles/Acres	Impairment
27-23-(2)	03-04-02	03020201	Smith Creek	C;NSW	5.8	FW Miles	Fish
27-24a1	03-04-02	03020201	Toms Creek (Mill Creek)	C;NSW	1.6	FW Miles	Benthos
27-24b	03-04-02	03020201	Toms Creek (Mill Creek)	C;NSW	1.5	FW Miles	Benthos
27-25-(1)	03-04-02	03020201	Perry Creek (Greshams Lake)	B;NSW	2.4	FW Miles	Benthos
27-25-(2)	03-04-02	03020201	Perry Creek	C;NSW	2.5	FW Miles	Benthos
27-33-(1)	03-04-02	03020201	Crabtree Creek	C;NSW	5.1	FW Miles	Benthos
27-33-(10)a	03-04-02	03020201	Crabtree Creek	C;NSW	2.0	FW Miles	Fish Consumption-PCB
27-33-(10)b	03-04-02	03020201	Crabtree Creek	C;NSW	10.9	FW Miles	Benthos, Turbidity, Fish Consumption-PCB
27-33-(10)c	03-04-02	03020201	Crabtree Creek	C;NSW	2.8	FW Miles	Fish Consumption-PCB
27-33-(3.5)a	03-04-02	03020201	Crabtree Creek (Crabtree Lake)	B;NSW	6.8	FW Miles	Benthos, Turbidity, Fish Consumption-PCB
27-33-(3.5)b	03-04-02	03020201	Crabtree Creek (Crabtree Lake)	B;NSW	5.4	FW Miles	Turbidity, Fish Consumption-PCB
27-33-11	03-04-02	03020201	Richlands Creek	C;NSW	4.7	FW Miles	Benthos
27-33-12-(1)	03-04-02	03020201	Hare Snipe Creek (Lake Lynn)	B;NSW	2.0	FW Miles	Benthos
27-33-12-(2)	03-04-02	03020201	Hare Snipe Creek	C;NSW	2.5	FW Miles	Benthos
27-33-14a	03-04-02	03020201	Mine Creek	C;NSW	3.3	FW Miles	Benthos
27-33-14b	03-04-02	03020201	Mine Creek	C;NSW	1.5	FW Miles	Benthos
27-33-18	03-04-02	03020201	Pigeon House Branch	C;NSW	2.9	FW Miles	Benthos, Recreation-Fecal, Copper
27-33-20	03-04-02	03020201	Marsh Creek	C;NSW	6.0	FW Miles	Benthos

Assessment Unit	2006 Subbasin #	Future Subbasin #	Stream Name	Stream Classification	Length/Area	Miles/Acres	Impairment
27-33-4	03-04-02	03020201	Brier Creek	C;NSW	6.5	FW Miles	Fish Consumption-PCB
27-33-4-1	03-04-02	03020201	Little Brier Creek	C;NSW	5.3	FW Miles	Fish Consumption-PCB
27-33-5	03-04-02	03020201	Black Creek	C;NSW	3.6	FW Miles	Benthos
27-33-8	03-04-02	03020201	Reedy Creek (Reedy Creek Lake)	B;NSW	28.8	FW Acres	Aquatic Weeds
27-33-9	03-04-02	03020201	Sycamore Creek (Big Lake)	B;NSW	61.8	FW Acres	Aquatic Weeds
27-34-(1.7)	03-04-02	03020201	Walnut Creek	C;NSW	1.4	FW Miles	Fish
27-34-(4)a	03-04-02	03020201	Walnut Creek	C;NSW	6.4	FW Miles	Benthos
27-34-(4)b	03-04-02	03020201	Walnut Creek	C;NSW	3.7	FW Miles	Turbidity
27-43-(1)a	03-04-02	03020201	Swift Creek	WS-III;NSW	2.6	FW Miles	Benthos
27-43-(1)b	03-04-02	03020201	Swift Creek	WS-III;NSW	5.5	FW Miles	Benthos
27-43-(1)d	03-04-02	03020201	Swift Creek	WS-III;NSW	2.4	FW Miles	Benthos
27-43-(5.5)a	03-04-02	03020201	Swift Creek (Lake Benson)	WS-III;NSW,CA	0.9	FW Miles	Benthos
27-43-12	03-04-02	03020201	Little Creek	C;NSW	11.4	FW Miles	Benthos
27-43-2	03-04-02	03020201	Williams Creek	WS-III;NSW	2.6	FW Miles	Benthos
27-43-15-(1)b1	03-04-03	03020201	Middle Creek	C;NSW	3.0	FW Miles	Benthos
27-43-15-(4)a	03-04-03	03020201	Middle Creek	C;NSW	7.2	FW Miles	Turbidity
27-45-(2)	03-04-04	03020201	Black Creek	C;NSW	22.6	FW Miles	Low Dissolved Oxygen
27-52-6a	03-04-04	03020201	Hannah Creek	C;NSW	10.3	FW Miles	Benthos
27-52-6a	03-04-04	03020201	Hannah Creek	C;NSW	10.3	FW Miles	Low Dissolved Oxygen
27-(56)b	03-04-05	03020201	NEUSE RIVER	C;NSW	21.5	FW Miles	Fish Consumption-Mercury
27-(75.7)b	03-04-05	03020202	NEUSE RIVER	C;NSW	6.5	FW Miles	Low Dissolved Oxygen
27-62	03-04-05	03020202	Stoney Creek	C;NSW	10.7	FW Miles	Benthos

Assessment Unit	2006 Subbasin #	Future Subbasin #	Stream Name	Stream Classification	Length/Area	Miles/Acres	Impairment
27-68	03-04-05	03020202	Walnut Creek (Lake Wackena, Spring Lake)	C;NSW	6.9	FW Miles	Aquatic Weeds
27-72-(0.1)	03-04-05	03020202	Bear Creek	C;Sw,NSW	12.4	FW Miles	Benthos
27-57-(1)b	03-04-06	03020201	Little River (Moores Pond, Mitchell Mill Pond)	WS-II;HQW,NSW	2.9	FW Miles	Low Dissolved Oxygen
27-57-16-(2)	03-04-06	03020201	Buffalo Creek	B;NSW	5.8	FW Miles	Benthos
27-86-(1)a	03-04-07	03020203	Contentnea Creek (Buckhorn Reservoir)	WS-V;NSW	758.2	FW Acres	Low Dissolved Oxygen
27-86-(7)b1	03-04-07	03020203	Contentnea Creek	C;Sw,NSW	15.1	FW Miles	Benthos
27-86-2	03-04-07	03020203	Moccasin Creek (Bunn Lake)	C;NSW	22.8	FW Miles	Low Dissolved Oxygen
27-86-26	03-04-07	03020203	Little Contentnea Creek	C;Sw,NSW	34.9	FW Miles	Benthos
27-86-3-(1)a2	03-04-07	03020203	Turkey Creek	C;NSW	2.0	FW Miles	Low Dissolved Oxygen
27-86-8	03-04-07	03020203	Hominy Swamp	C;Sw,NSW	9.9	FW Miles	Benthos
27-90a2	03-04-08	03020202	Core Creek	C;Sw,NSW	3.0	FW Miles	Benthos
27-97-(0.5)a1	03-04-09	03020202	Swift Creek	C;Sw,NSW	19.3	FW Miles	Benthos
27-97-(0.5)b	03-04-09	03020202	Swift Creek	C;Sw,NSW	14.4	FW Miles	Benthos
27-97-(6)	03-04-09	03020202	Swift Creek	SC;Sw,NSW	8.0	S Miles	Benthos
27-97-5-3	03-04-09	03020202	Creeping Swamp	C;Sw,NSW	8.1	FW Miles	Chlorophyll a
27-97-5a	03-04-09	03020202	Clayroot Swamp	C;Sw,NSW	9.5	FW Miles	Benthos
27-(104)a	03-04-10	03020204	NEUSE RIVER Estuary	SB;Sw,NSW	13,736.0	S Acres	Chlorophyll a, High pH
27-(104)b	03-04-10	03020204	NEUSE RIVER Estuary	SB;Sw,NSW	10,756.9	S Acres	Chlorophyll a, High pH
27-(118)a1	03-04-10	03020204	NEUSE RIVER Estuary	SA;HQW,NSW	17,135.4	S Acres	Chlorophyll a
27-(118)a1a	03-04-10	03020204	NEUSE RIVER Estuary at Camp Don Lee	SA;HQW,NSW	1.0	S Acres	Chlorophyll a, Recreation-Enterococcus

Assessment Unit	2006 Subbasin #	Future Subbasin #	Stream Name	Stream Classification	Length/Area	Miles/Acres	Impairment
27-(118)b	03-04-10	03020204	NEUSE RIVER Estuary	SA;HQW,NSW	96.2	S Acres	Shellfish-PRO
27-(118)c	03-04-10	03020204	NEUSE RIVER Estuary	SA;HQW,NSW	61.7	S Acres	Shellfish-PRO
27-(118)e	03-04-10	03020204	NEUSE RIVER Estuary	SA;HQW,NSW	210.0	S Acres	Shellfish-CAO
27-(118)f	03-04-10	03020204	NEUSE RIVER Estuary	SA;HQW,NSW	93.5	S Acres	Chlorophyll a
27-(118)f	03-04-10	03020204	NEUSE RIVER Estuary	SA;HQW,NSW	93.5	S Acres	Shellfish-PRO
27-(118)g	03-04-10	03020204	NEUSE RIVER Estuary	SA;HQW,NSW	8.2	S Acres	Shellfish-PRO
27-(118)h	03-04-10	03020204	NEUSE RIVER Estuary	SA;HQW,NSW	1.7	S Acres	Recreation-Adv
27-(96)b2	03-04-10	03020202	NEUSE RIVER Estuary	SC;Sw,NSW	3,473.6	S Acres	Chlorophyll a
27-101-(31)b	03-04-10	03020204	Trent River	SB;Sw,NSW	509.7	S Acres	Chlorophyll a
27-101-(39)	03-04-10	03020204	Trent River	SB;Sw,NSW	500.1	S Acres	Chlorophyll a
27-119	03-04-10	03020204	Cherry Branch	SA;HQW,NSW	1.2	S Miles	Shellfish-PRO
27-122	03-04-10	03020204	Sassafras Branch	SA;HQW,NSW	1.1	S Miles	Shellfish-PRO
27-123	03-04-10	03020204	Clubfoot Creek	SA;HQW,NSW	562.6	S Acres	Shellfish-PRO
27-123-1	03-04-10	03020204	Harlowe Canal	SA;HQW,NSW	0.6	S Miles	Shellfish-PRO
27-123-2	03-04-10	03020204	Mortons Mill Pond	SA;HQW,NSW	30.6	S Acres	Shellfish-PRO
27-123-2-1	03-04-10	03020204	West Prong Mortons Mill Pond	SA;HQW,NSW	1.4	S Miles	Shellfish-PRO
27-123-2-2	03-04-10	03020204	East Prong Mortons Mill Pond	SA;HQW,NSW	0.6	S Miles	Shellfish-PRO
27-123-3	03-04-10	03020204	Gulden Creek	SA;HQW,NSW	34.9	S Acres	Shellfish-Fecal
27-123-3	03-04-10	03020204	Gulden Creek	SA;HQW,NSW	34.9	S Acres	Shellfish-PRO
27-123-4	03-04-10	03020204	Mitchell Creek	SA;HQW,NSW	117.5	S Acres	Shellfish-PRO
27-123-4-1	03-04-10	03020204	Big Branch	SA;HQW,NSW	1.6	S Acres	Shellfish-PRO
27-123-4-2	03-04-10	03020204	Snake Branch	SA;HQW,NSW	0.9	S Miles	Shellfish-PRO
27-125-(6)a	03-04-10	03020204	Dawson Creek	SA;HQW,NSW	121.2	S Acres	Shellfish-PRO, Shellfish-Fecal, Recreation- Enterococcus
27-125-2	03-04-10	03020204	Fork Run	SC;NSW	2.6	S Miles	Benthos

Assessment Unit	2006 Subbasin #	Future Subbasin #	Stream Name	Stream Classification	Length/Area	Miles/Acres	Impairment
27-128-1.5	03-04-10	03020204	Jerry Bay	SA;HQW,NSW	52.2	S Acres	Shellfish-PRO
27-128-1a	03-04-10	03020204	Adams Creek Canal (Intracoastal Waterway)	SA;HQW,NSW	12.5	S Acres	Shellfish-CAC
27-128-1b	03-04-10	03020204	Adams Creek Canal (Intracoastal Waterway)	SA;HQW,NSW	126.3	S Acres	Shellfish-PRO
27-128-2	03-04-10	03020204	Isaac Creek	SA;HQW,NSW	39.1	S Acres	Shellfish-PRO
27-128-3a	03-04-10	03020204	Back Creek (Black Creek)	SA;HQW,NSW	259.5	S Acres	Shellfish-PRO, Recreation-Fecal
27-128-3b	03-04-10	03020204	Back Creek (Black Creek)	SA;HQW,NSW	2.1	S Acres	Shellfish-PRO
27-128-4	03-04-10	03020204	Kearney Creek	SA;HQW,NSW	4.0	S Acres	Shellfish-PRO
27-128-7a	03-04-10	03020204	Dumpling Creek	SA;HQW,NSW	20.0	S Acres	Shellfish-PRO
27-128c	03-04-10	03020204	Adams Creek	SA;HQW,NSW	317.0	S Acres	Shellfish-PRO
27-130	03-04-10	03020204	Whittaker Creek	SA;HQW,NSW	96.1	S Acres	Shellfish-PRO
27-133a	03-04-10	03020204	Pierce Creek	SA;HQW,NSW	48.9	S Acres	Shellfish-PRO
27-134-1	03-04-10	03020204	Bright Creek	SA;HQW,NSW	10.9	S Acres	Shellfish-PRO
27-134-2	03-04-10	03020204	Pasture Creek	SA;HQW,NSW	20.3	S Acres	Shellfish-PRO
27-134a	03-04-10	03020204	Orchard Creek	SA;HQW,NSW	37.1	S Acres	Shellfish-PRO
27-134b	03-04-10	03020204	Orchard Creek	SA;HQW,NSW	20.4	S Acres	Shellfish-PRO
27-135-1	03-04-10	03020204	West Fork South River	SA;HQW,NSW	35.5	S Acres	Shellfish-PRO
27-135-10	03-04-10	03020204	Eastman Creek	SA;HQW,NSW	95.6	S Acres	Shellfish-PRO, Shellfish-Fecal
27-135-11	03-04-10	03020204	Little Creek	SA;HQW,NSW	6.2	S Acres	Shellfish-CAO
27-135-12	03-04-10	03020204	Royal Creek	SA;HQW,NSW	10.1	S Acres	Shellfish-CAO
27-135-13	03-04-10	03020204	Coffee Creek	SA;HQW,NSW	6.1	S Acres	Shellfish-CAO
27-135-14	03-04-10	03020204	Dixon Creek	SA;HQW,NSW	2.3	S Acres	Shellfish-CAO

Assessment Unit	2006 Subbasin #	Future Subbasin #	Stream Name	Stream Classification	Length/ Area	Miles/ Acres	Impairment
27-135-15	03-04-10	03020204	Old House Creek	SA;HQW,NSW	3.2	S Acres	Shellfish-CAO
27-135-16	03-04-10	03020204	Mulberry Creek	SA;HQW,NSW	6.4	S Acres	Shellfish-CAO
27-135-17a	03-04-10	03020204	Big Creek	SA;HQW,NSW	59.6	S Acres	Shellfish-PRO
27-135-17b	03-04-10	03020204	Big Creek	SA;HQW,NSW	58.4	S Acres	Shellfish-CAO
27-135-18	03-04-10	03020204	Hardy Creek	SA;HQW,NSW	24.2	S Acres	Shellfish-PRO, Shellfish-Fecal
27-135-19	03-04-10	03020204	Horton Bay	SA;HQW,NSW	101.3	S Acres	Shellfish-CAO
27-135-2	03-04-10	03020204	East Fork South River	SA;HQW,NSW	14.3	S Acres	Shellfish-PRO
27-135-2-1	03-04-10	03020204	Rich Island Gut	SA;HQW,NSW	0.1	S Miles	Shellfish-PRO
27-135-3	03-04-10	03020204	Miry Gut	SA;HQW,NSW	0.1	S Acres	Shellfish-PRO
27-135-4	03-04-10	03020204	Elisha Creek	SA;HQW,NSW	2.2	S Acres	Shellfish-PRO
27-135-5	03-04-10	03020204	Neal Creek	SA;HQW,NSW	2.9	S Acres	Shellfish-PRO
27-135-6	03-04-10	03020204	Duck Creek	SA;HQW,NSW	2.6	S Acres	Shellfish-PRO
27-135-7	03-04-10	03020204	Buck Creek	SA;HQW,NSW	6.4	S Acres	Shellfish-PRO
27-135-8	03-04-10	03020204	Doe Creek	SA;HQW,NSW	4.9	S Acres	Shellfish-PRO
27-135-9	03-04-10	03020204	Southwest Creek	SA;HQW,NSW	151.3	S Acres	Shellfish-PRO, Shellfish-Fecal
27-135a	03-04-10	03020204	South River	SA;HQW,NSW	415.1	S Acres	Shellfish-PRO
27-135b	03-04-10	03020204	South River	SA;HQW,NSW	2,064.8	S Acres	Shellfish-CAO
27-137	03-04-10	03020204	Turnagain Bay	SA;HQW,NSW	1,556.8	S Acres	Shellfish-CAO
27-137-1	03-04-10	03020204	Sanborns Gut	SA;HQW,NSW	3.7	S Acres	Shellfish-CAO
27-137-2	03-04-10	03020204	Big Gut	SA;HQW,NSW	70.0	S Acres	Shellfish-CAO
27-137-3	03-04-10	03020204	Deep Gut	SA;HQW,NSW	51.0	S Acres	Shellfish-CAO
27-137-4	03-04-10	03020204	Broad Creek	SA;HQW,NSW	49.2	S Acres	Shellfish-CAO
27-137-4-1	03-04-10	03020204	Pitman Creek	SA;HQW,NSW	2.0	S Acres	Shellfish-CAO

Assessment Unit	2006 Subbasin #	Future Subbasin #	Stream Name	Stream Classification	Length/Area	Miles/Acres	Impairment
27-137-4-2	03-04-10	03020204	Parsons Creek	SA;HQW,NSW	26.7	S Acres	Shellfish-CAO
27-137-5	03-04-10	03020204	Abraham Bay	SA;HQW,NSW	96.9	S Acres	Shellfish-CAO
27-137-6	03-04-10	03020204	Tump Gut	SA;HQW,NSW	20.9	S Acres	Shellfish-CAO
27-137-7	03-04-10	03020204	Mulberry Point Creek	SA;HQW,NSW	15.7	S Acres	Shellfish-CAO
27-141-1	03-04-10	03020204	Ship Creek	SA;HQW,NSW	5.4	S Acres	Shellfish-PRO
27-141-2	03-04-10	03020204	Gideon Creek	SA;HQW,NSW	26.0	S Acres	Shellfish-PRO
27-141-3	03-04-10	03020204	Brown Creek	SA;HQW,NSW	122.4	S Acres	Shellfish-PRO
27-141-3-1	03-04-10	03020204	Spice Creek	SA;HQW,NSW	4.7	S Acres	Shellfish-PRO
27-141-3-2	03-04-10	03020204	Coffee Creek	SA;HQW,NSW	7.1	S Acres	Shellfish-PRO
27-141-4	03-04-10	03020204	Tar Creek	SA;HQW,NSW	44.3	S Acres	Shellfish-PRO
27-141a	03-04-10	03020204	Broad Creek	SA;HQW,NSW	202.3	S Acres	Shellfish-PRO
27-101-15	03-04-11	03020204	Beaver Creek	C;Sw,NSW	12.3	FW Miles	Benthos
27-101-17	03-04-11	03020204	Musselshell Creek	C;Sw,NSW	5.8	FW Miles	Benthos
27-(56)a	03-04-12	03020201	NEUSE RIVER	C;NSW	5.8	FW Miles	Fish Consumption-Mercury
27-150-(9.5)a1	03-04-13	03020204	Bay River	SA;HQW,NSW	672.0	S Acres	Shellfish-PRO, Shellfish-Fecal
27-150-(9.5)b1	03-04-13	03020204	Bay River	SA;HQW,NSW	100.0	S Acres	Shellfish-PRO
27-150-(9.5)b2	03-04-13	03020204	Bay River	SA;HQW,NSW	16.5	S Acres	Recreation-Adv
27-150-(9.5)b2	03-04-13	03020204	Bay River	SA;HQW,NSW	16.5	S Acres	Shellfish-PRO, Recreation-Enterococcus
27-150-10	03-04-13	03020204	Harper Creek	SA;HQW,NSW	32.5	S Acres	Shellfish-PRO
27-150-11	03-04-13	03020204	Tempe Gut	SA;HQW,NSW	0.9	S Acres	Shellfish-PRO
27-150-12	03-04-13	03020204	Moore Creek	SA;HQW,NSW	28.3	S Acres	Shellfish-PRO
27-150-12-1	03-04-13	03020204	Chappel Creek	SA;HQW,NSW	1.5	S Acres	Shellfish-PRO
27-150-13	03-04-13	03020204	Newton Creek	SA;HQW,NSW	3.8	S Acres	Shellfish-PRO

Assessment Unit	2006 Subbasin #	Future Subbasin #	Stream Name	Stream Classification	Length/Area	Miles/Acres	Impairment
27-150-20-1	03-04-13	03020204	Simpson Creek	SA;HQW,NSW	8.6	S Acres	Shellfish-PRO
27-150-20a	03-04-13	03020204	Ball Creek	SA;HQW,NSW	32.4	S Acres	Shellfish-PRO, Shellfish-Fecal
27-150-28-1	03-04-13	03020204	Bennett Creek	SA;HQW,NSW	15.7	S Acres	Shellfish-PRO
27-150-28-2	03-04-13	03020204	Win Creek	SA;HQW,NSW	1.2	S Acres	Shellfish-PRO
27-150-28a	03-04-13	03020204	Bear Creek	SA;HQW,NSW	199.9	S Acres	Shellfish-PRO, Shellfish-Fecal
27-150-28b1	03-04-13	03020204	Bear Creek	SA;HQW,NSW	18.2	S Acres	Shellfish-PRO
27-150-3	03-04-13	03020204	South Prong Bay River	SC;Sw,NSW	27.4	S Acres	Shellfish-PRO, Shellfish-Fecal
27-150-3-1	03-04-13	03020204	Neal Creek	SC;Sw,NSW	1.3	S Acres	Shellfish-PRO
27-150-31-1a	03-04-13	03020204	Intracoastal Waterway	SA;HQW,NSW	2.0	S Acres	Shellfish-PRO
27-150-31a	03-04-13	03020204	Gale Creek	SA;HQW,NSW	29.4	S Acres	Shellfish-PRO, Shellfish-Fecal
27-150-31b1	03-04-13	03020204	Gale Creek	SA;HQW,NSW	16.7	S Acres	Shellfish-PRO
27-152-1	03-04-13	03020204	Intracoastal Waterway	SA;HQW,NSW	7.0	S Acres	Shellfish-PRO
27-152-2	03-04-13	03020204	Henry Creek	SA;HQW,NSW	1.5	S Acres	Shellfish-PRO
27-152-3	03-04-13	03020204	Bills Creek	SA;HQW,NSW	8.1	S Acres	Shellfish-PRO, Shellfish-Fecal
27-152a	03-04-13	03020204	Jones Bay	SA;HQW,NSW	17.3	S Acres	Shellfish-PRO, Shellfish-Fecal
27-147.5c	03-04-14	03020204	PAMLICO SOUND	SA;HQW,NSW	12.5	S Acres	Shellfish-PRO
27-147.5c	03-04-14	03020204	PAMLICO SOUND	SA;HQW,NSW	12.5	S Acres	Shellfish-PRO
27-148-1-2	03-04-14	03020204	Golden Creek	SA;HQW,NSW	9.7	S Acres	Shellfish-PRO, Shellfish-Fecal
27-148-1-6-1a	03-04-14	03020204	Old Canal	SA;HQW,NSW	6.4	S Acres	Shellfish-CAO
27-148-2a	03-04-14	03020204	West Thorofare Bay	SA;HQW,NSW	1.8	S Acres	Shellfish-PRO

Assessment Unit	2006 Subbasin #	Future Subbasin #	Stream Name	Stream Classification	Length/Area	Miles/Acres	Impairment
27-149-1	03-04-14	03020105	Thorofare Bay	SA;ORW,NSW	1,674.5	S Acres	Shellfish-CAO
27-149-1-1	03-04-14	03020105	Thorofare	SA;HQW,NSW	34.9	S Acres	Shellfish-PRO
27-149-1-2	03-04-14	03020105	Merkle Hammock Creek	SA;NSW,ORW	186.0	S Acres	Shellfish-CAO
27-149-1-3	03-04-14	03020105	Barry Bay	SA;ORW,NSW	606.6	S Acres	Shellfish-CAO
27-149-4-1	03-04-14	03020105	Great Pond	SA;ORW,NSW	3.0	S Acres	Shellfish-PRO, Shellfish-Fecal
99-(5)	03-04-14	03020204	Atlantic Ocean	SB;NSW	18.6	Coast Miles	Fish Consumption- Mercury

Note: This list is from the 2008 DRAFT Impaired Waters List as of November 10, 2008. These could change before the list is finalized. Other parameters could be added. Please See Appendix XI for the most up to date version.

Benthos – Macroinvertebrate assessment

Shellfish-PRO – Prohibited shellfish harvesting area

Shellfish-CAO – Conditionally approved open shellfish harvesting area

Shellfish-CAC – Conditionally approved closed shellfish harvesting area

Recreations-Adv – Recreations beach advisory closings