

HOWELL TOWNSHIP

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APPENDIX A: Private Well Testing Act

The Private Well Testing Act (*N.J.S.A. 58:12A-26 et seq.*), passed in 2002 and administered by NJDEP, requires that well water be tested for contaminants when properties served by certain types of drinking water wells are sold or leased. The law does not prohibit the sale of property if the water fails one or more drinking water test standards. Rather, the fundamental goal of the PWTA is to ensure that purchasers and lessees of properties served by private potable wells are fully aware of the quality of the untreated drinking water sources prior to sale or lease. The state law allows the buyer and seller to determine which party will pay for the test, as well as what actions, if any, need to be taken if test results indicate a contaminant is present in the water above an applicable standard. However, individual county health rules may mandate that certain actions are required in order for a real estate transaction to be finalized.

The PWTA program requires that water be tested for primary contaminants (health-based) and secondary parameters (aesthetic characteristics). Primary contaminants are contaminants that may cause a potential health risk if consumed on a regular basis above the established maximum contaminant level (MCL). New Jersey regulates 18 primary contaminants, five more than federal EPA requirements. Primary contaminants include bacteriological (fecal coliform and *E. coli*), Volatile Organic Compounds (VOCs), inorganics (arsenic, lead, mercury, and nitrates), and radiological (radium decay) substances. A certified laboratory must collect a water sample at a point before the water goes through any treatment. This sample represents the condition of the ground water in the aquifer, which may be different from water out of a kitchen faucet. Property owners may choose to also have the tap water tested to assure that filters or treatments are working effectively.

The PWTA program requires tests for three naturally occurring secondary parameters: pH, iron, and manganese. Secondary drinking water standards address aesthetics, such as corrosivity, taste, and color, and testing for these parameters determines if water is suitable for laundering, plumbing, and showering. For example, due to the nature of soils and geology in southern New Jersey, the ground waters tend to be acidic (pH below 7), while ground waters in northern New Jersey are neutral (pH=7) to basic (pH above 7). If the pH is too low (less than 6.5), water has a bitter metallic taste and causes corrosion of pipes and fixtures. If the pH is too high (greater than 8.5), the water has a slippery feel, it tastes like soda, and deposits can form on plumbing fixtures.

Test results are reported by the lab to the person who requested the testing, to NJDEP, and to the local health authority.

Suspicious or unexpected results are neither confirmed nor

verified by NJDEP. Local health authorities will investigate suspect results, if necessary.

Volatile Organic Compounds regulated by NJDEP

- Benzene
- Carbon Tetrachloride
- meta-Dichlorobenzene
- ortho-Dichlorobenzene
- para-Dichlorobenzene
- 1, 1-Dichloroethane
- 1, 2-Dichloroethane
- 1, 1-Dichloroethylene
- *cis* – 1, 2-Dichloroethylene
- *trans* – 1, 2-Dichloroethylene
- 1, 2-Dichloropropane
- Ethylbenzene
- Methyl tertiary butyl ether
- Methylene Chloride
- Monochlorobenzene
- Naphthalene
- Styrene
- 1, 1, 2, 2-Tetrachloroethane
- Tetrachloroethylene
- Toluene
- 1, 2, 4-Trichlorobenzene
- 1, 1, 1-Trichloroethane
- 1, 2, 2-Trichloroethane
- Trichloroethylene
- Vinyl Chloride
- Xylenes (Total)

In February 2004, NJDEP released an online report summarizing the initial well test results reported to the agency during the PWTA program's first six months (September 2002 to March 2003). Results for 5,179 wells are included, which represent approximately one percent of private wells used as potable water supplies in New Jersey. The compilation of water test results is organized by county and municipality but does not include the names of specific property owners, their addresses, or well locations, because releasing that information is prohibited by law. About 92 percent of the 5,179 wells passed all the required (health-based) standards, with the exception of lead. Of the eight percent (417 wells) of wells sampled that exceeded the maximum contaminant level for primary contaminants, the most common reason for failure statewide was nitrate (inorganics), followed by fecal coliform (bacteriological), and VOCs. Nitrates are found in ground water due to a number of factors, including natural deposits, runoff from fertilizer, leaching from septic tanks, and from sewage pipes.

More wells in northern New Jersey were found to have fecal coliform or *E. coli* bacteria than in southern New Jersey. The northern/southern difference is probably due to the different geology in these regions. Northern New Jersey is characterized by limestone subject to solution cavities, fractured bedrock, or gravel water-bearing zones, while the southern part of the state is composed mainly of coastal plain sand and gravel, which appears to provide better protection for ground water from fecal contaminants.

For those wells in the counties where mercury testing is required, 14 wells failed for mercury. Nine southern counties, including Burlington, Camden, Gloucester, and Salem, are required to test for mercury, which has been linked to neurological problems.

The test results for Monmouth County and Howell Township are summarized in the table below. NJDEP's initial report indicates the presence of several drinking water contaminants, including mercury, gross alpha (radium), 1, 2, 3 trichloropropane, and 1, 2 dichloropropane, in the county's groundwater, but not necessarily in the township's groundwater.

**Summary of PWTA Test Results for Monmouth County (Most recent data available:
September 2002 – March 2003)**

Municipality	# Wells sampled	Total # Wells over the MCL*	Fecal coliform/ E. coli	Nitrate	Mercury	Any VOC** over the MCL
Howell Township	89	3	0	2	0	1
<i>Monmouth County Totals</i>	286	8	0	4	0	4

Source: NJDEP, Division of Science, Research, and Technology (DSRT)

* MCL – Maximum Contaminant Level, set as the limit of a particular substance allowable to achieve a water quality standard.

** VOC – Volatile Organic Compound.

APPENDIX B: Federal and State Conservation Programs for Farmers

There are several financial and economic incentive programs and technical assistance to help farmers plan and use conservation practices on their farms. The United States Department of Agriculture Natural Resources Conservation Service (NRCS) has Farm Service Agency offices in Bordentown, Freehold, and Lawrenceville, which all serve Monmouth County. NRCS staff members are available to work with farmers to help identify their conservation goals and then craft appropriate conservation plans to meet those goals.

Numerous programs provide financial incentives to help farmers voluntarily engage in these practices. Financial incentives can include rental payments to farmers for reserved land, easement payments, and cost-sharing (up to 100 percent) for some programs to develop and follow conservation plans.

The **Conservation Reserve Program (CRP)** is offered by NRCS and is administered by the Farm Service Agency. It provides technical and financial aid and gives farmers assistance in complying with federal, state, and tribal environmental laws. The primary environmental goals of this program include reducing soil erosion, reducing sedimentation in streams and lakes, improving water quality, establishing wildlife habitat, and enhancing forest and wetland resources. Website: <http://www.nrcs.usda.gov/programs/crp/>.

The state of New Jersey partnered with the USDA to help farmers protect water quality by establishing a \$100 million **Conservation Reserve Enhancement Program (CREP)**, which is the New Jersey version of the federal program. Under an agreement signed by Governor McGreevy in February 2004, the USDA provides \$77 million and the state contributes \$23 million for New Jersey farmers to install stream buffers in order to reduce the flow of nonpoint source pollution into the state's waterways. New Jersey's goal is to enroll 30,000 acres of agricultural land into this state-federal program over a 10-year period. Types of buffers to be installed include trees, shrubs, vegetative filter strips, contour grass strips, and grass waterways. Under the program, a landowner installs and maintains approved practices through a 10- or 15-year rental contract agreement. A landowner entering the state Farmland Preservation Program or Green Acres Program also may opt for a permanent easement under the Conservation Reserve Enhancement Program. This would provide additional payment for permanent maintenance of approved conservation practices. The program will pay landowners annual rental and incentive payments for participating in the program, as well as 100 percent of the cost to establish approved practices. Additional information can be found at www.fsa.usda.gov, or contact the local FSA office or Soil and Water Conservation District Office.

Another program targeted for wetlands preservation is called the **Wetlands Reserve Program (WRP)**. WRP is a voluntary resource conservation program that provides landowners the opportunity to receive financial incentives to restore, protect, and enhance wetlands in exchange for returning marginal land from agriculture. WRP is made possible by a reauthorization in the Farm Security and Rural Investment Act of 2002, known as the Farm Bill. The program has three enrollment options: permanent easement, 30-year easement, or restoration cost-share agreement, which has a minimum 10-year commitment. Applications are accepted on a

continuous basis and may be obtained and filed at any time. Please see the website for more details: www.nrcs.usda.gov/programs/farmbill/2002/

The **Grassland Reserve Program (GRP)** is another conservation program authorized by the Farm Bill of 2002. GRP is a voluntary program that protects grasslands, pasturelands, and rangelands without prohibiting grazing. Participants voluntarily put limitations on the future land use of their land while retaining the ability and right to conduct grazing practices, hay production, mow or harvest for seed production, conduct fire rehabilitation, and construct firebreaks and fences. There are four enrollment options: permanent easement; 30-year easement; rental agreement, which is available in 10-, 15-, 20-, or 30-year contracts; and restoration agreement. Participants are compensated in different ways according to the enrollment option. For more information and application procedures, visit the GRP website: www.fsa.usda.gov/dafp/GRP/default1.htm

The **Wildlife Habitat Incentives Program (WHIP)** is similar to those above in that it is also a USDA voluntary program, but differs in that WHIP targets landowners who want to preserve and protect fish and wildlife habitat on nonfederal lands. The program provides technical and cost sharing provisions to protect these environments. Enrollment consists of a cost-share agreement lasting from 5 to 10 years. In New Jersey, NRCS has received over \$900,000 to implement WHIP since 1998, where the majority of funds have been used for cost-share payments to landowners. A state plan has been developed in New Jersey and targets several areas as priority wildlife habitat areas. NRCS has also targeted a priority species, the bog turtle, for protection. For more information, visit the NRCS New Jersey website: www.nj.nrcs.usda.gov

The **Environmental Quality Incentives Program (EQIP)** is also a part of the reauthorized Farm Bill of 2002. EQIP is a voluntary program that focuses on conservation that promotes both agricultural production and environmental quality. The program itself offers technical and financial assistance with installation and implementation of structural and management practices on agricultural land. EQIP features a minimum contract term compared to other programs lasting a maximum of 10 years. Landowners are eligible for incentive and cost-share payments of up to 75 percent and sometimes up to 90 percent while still engaging in livestock or agricultural production activities. For more information, please visit the website: www.nrcs.usda.gov/programs/eqip

The **Conservation Security Program (CSP)** is a voluntary program administered by the NRCS and authorized by the Farm Bill 2002. This program is intended to promote conservation and improvement of soil, water, air, energy, plant, and animal life on tribal and private working lands. Working lands refer to a variety of land types including cropland, grassland, prairie land, improved pasture, and rangeland. In some cases, forested lands would also be included in this category. CSP is available in 50 states, as well as the Caribbean and Pacific Basin areas, and provides equal access to funding. For more information, please visit the website: www.nrcs.usda.gov/programs/csp/

The **Forestland Enhancement Program (FLEP)** is also authorized through the Farm Bill 2002 and replaces the Stewardship Incentives Program (SIP) and the Forestry Incentives Program (FIP). FLEP is a voluntary program for landowners of nonindustrial private forest and provides

technical, educational, and cost-sharing assistance in an effort to promote the conservation of these forested areas. Landowners must have a forest management plan and are limited to 1,000 acres per year for the cost-share practices. For more information about this program, please visit the website: <http://www.fs.fed.us/spf/coop/programs/loa/flep.shtml> and the National Association of State Foresters website to find your local agency: www.stateforesters.org

The **Farm and Ranch Lands Protection Program (FRPP)** is a voluntary land conservation program that assists farmers to keep their lands for agricultural purposes. FRPP provides matching funds to those provided by state, tribal, local government, or nongovernment organizations offering farm and ranch protection programs designed to purchase conservation easements. The FRPP is authorized by the Farm Bill 2002 and is managed by the NRCS. Conservation easements are purchased by the state, tribal, or local entity. The participating landowner agrees not to convert his or her land to nonagricultural uses, as well as to develop a conservation plan for any highly erodible lands. Landowners do, however, maintain all of their rights to utilize their land for agricultural purposes. For more information about FRPP, please visit the website: www.nrcs.usda.gov/programs/farmland/2002/ and search for the Farm and Ranch Lands Protection Program.

The **State Agricultural Development Committee (SADC) in New Jersey** has made soil and water conservation grants available as part of the Farmland Preservation Program. The grants give landowners up to 50 percent of costs associated with approved soil and water conservation projects. Farms are only eligible if they are already enrolled in a permanent or eight-year easement program. Soil projects can include measures to prevent or control erosion, control pollution on agricultural land, and improve water management for agricultural purposes. Projects must be completed within three years of SADC funding approval. However, under special circumstances, the grant may be renewed for an additional year. For more information, contact the local Soil Conservation District or the State Agricultural Development Committee at (609) 984-2504 or visit the website: <http://www.state.nj.us/agriculture/sadc/sadc.htm> for additional details.

The **Landowner Incentive Program (LIP)** is a preservation program for private landowners who wish to protect and conserve rare wildlife habitat and species. LIP is funded by the U.S. Fish and Wildlife Service and is administered by the New Jersey Department of Environmental Protection's Division of Fish and Wildlife Endangered Nongame Species Program. Participating landowners receive both technical and financial assistance through this competitive grant program. Grants are awarded for a variety of preservation programs, including habitat improvements, habitat management, and habitat protection projects. Generally, a five-year minimum commitment is required and longer terms are preferred. A 25 percent cost-share is required of the landowner. While the LIP is seeking funding for additional habitat protection projects, it may be another year before grants are available. Interested landowners are encouraged to contact Kim Korth, ENSP assistant zoologist, at (609) 984-1581 for additional details. To learn more about the program in general, visit the website: http://www.state.nj.us/dep/fgw/ensp/lip_prog.htm or http://www.state.nj.us/dep/fgw/ensp/pdf/lip_broch.pdf

APPENDIX C: Vertebrate Animals Known or Probable in Howell Township

Common Name	Scientific Name
Mammals	
Black bear	<i>Ursus americanus</i>
Bobcat	<i>Felis rufus</i>
Cottontail rabbit	<i>Sylvilagus floridanus</i>
House mouse	<i>Mus musculus</i>
Eastern chipmunk	<i>Tamias striatus</i>
Eastern coyote	<i>Canis latrans, var.</i>
Eastern gray squirrel	<i>Sciurus carolinensis</i>
Eastern mole	<i>Scalopus aquaticus</i>
Gray fox	<i>Urocyon cinereoargenteus</i>
Gray squirrel	<i>Sciurus carolinensis</i>
Little brown bat	<i>Myotis lucifugus</i>
Long-tailed weasel	<i>Mustela frenata</i>
Meadow vole	<i>Microtus pennsylvanicus</i>
Muskrat	<i>Ondatra zibethicus</i>
Opossum	<i>Didelphis marsupialis</i>
Raccoon	<i>Procyon lotor</i>
Red fox	<i>Vulpes vulpes</i>
River otter	<i>Lutra canadensis</i>
Short-tailed shrew	<i>Blarina brevicauda</i>
Southern flying squirrel	<i>Glaucomys volans</i>
Striped skunk	<i>Mephitis mephitis</i>
White-footed mouse	<i>Peromyscus leucopus</i>
White-tailed deer	<i>Odocoileus virginianus</i>
Woodchuck	<i>Marmota monax</i>
Birds	
American black duck	<i>Anas rubripes</i>
American crow	<i>Corvus brachyrhynchos</i>
American kestrel	<i>Falco sparverius</i>
American robin	<i>Turdus migratorius</i>
American woodcock	<i>Philohela minor</i>
Bald eagle	<i>Haliaeetus leucocephalus</i>
Baltimore oriole	<i>Icterus galbula</i>
Barred owl	<i>Strix varia</i>
Black skimmer	<i>Rynchops niger</i>
Black-crowned night-heron	<i>Nycticorax nycticorax</i>
Black-throated green warbler	<i>Dendroica caerulescens</i>
Blue jay	<i>Cyanocitta cristata</i>
Blue-winged teal	<i>Anas discors</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Bob-white quail	<i>Colinus virginianus</i>
Brown thrasher	<i>Toxostoma rufum</i>
Carolina chickadee	<i>Parus carolinensis</i>

Common Name	Scientific Name
Common grackle	<i>Quiscalus major</i>
Cooper's hawk	<i>Accipiter Cooperii</i>
Downy woodpecker	<i>Picoides pubescens</i>
Eastern towhee	<i>Pipilo erythrophthalmus</i>
Eastern wild turkey	<i>Meleagris gallopavo</i>
European starling	<i>Sturnus vulgaris</i>
Field sparrow	<i>Spizella pusilla</i>
Grasshopper sparrow	<i>Ammodramus savannarum</i>
Gray catbird	<i>Dumetella carolinensis</i>
Great horned owl	<i>Bubo virginianus</i>
House finch	<i>Carpodacus mexicanus</i>
House sparrow	<i>Passer domesticus</i>
Least bittern	<i>Ixobrychus exilis</i>
Least flycatcher	<i>Empidonax minimus</i>
Least tern	<i>Sterna antillarum</i>
Mourning dove	<i>Zenaida macroura</i>
Northern cardinal	<i>Cardinalis cardinalis</i>
Northern flicker	<i>Colaptes auratus</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Northern parula	<i>Parula americana</i>
Osprey	<i>Pandion haliaetus</i>
Ovenbird	<i>Seiurus aurocapillus</i>
Peregrine falcon	<i>Falco peregrinus</i>
Pied-billed grebe	<i>Podilymbus podiceps</i>
Pileated woodpecker	<i>Dryocopus pileatus</i>
Piping plover	<i>Charadrius melodus</i>
Red-bellied woodpecker	<i>Melanerpes carolinus</i>
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>
Red-shouldered hawk	<i>Buteo lineatus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Rough-legged hawk	<i>Buteo lagopus</i>
Ruffed grouse	<i>Bonasa umbellus</i>
Savannah sparrow	<i>Passerculus sandwichensis</i>
Scarlet tanager	<i>Piranga olivacea</i>
Sharp-shinned hawk	<i>Accipiter striatus</i>
Tufted titmouse	<i>Parus bicolor</i>
Turkey vulture	<i>Cathartes aura</i>
Upland sandpiper	<i>Bartramia longicauda</i>
Vesper sparrow	<i>Pooecetes gramineus</i>
Warblers	
Whip-poor-will (Whippoorwill)	<i>Caprimulgus vociferus</i>
Wood thrush	<i>Hylocichla mustelina</i>
Yellow-crowned night-heron	<i>Nyctanassa violaceus</i>
Reptiles	
Black racer	<i>Coluber c. constrictor</i>

Common Name	Scientific Name
Bog turtle	<i>Clemmys muhlenbergi</i>
Common snapping turtle	<i>Chelydra s. serpentina</i>
Eastern box turtle	<i>Terrapene c. carolina</i>
Eastern garter snake	<i>Thamnophis s. sirtalis</i>
Eastern milk snake	<i>Lampropeltis t. triangulum</i>
Eastern painted turtle	<i>Chrysemys p. picta</i>
Eastern worm snake	<i>Carphophis a. amoenus</i>
Fence swift lizard	<i>Sceloporus undulatus hyacinthinus</i>
Keeled green snake	<i>Opheodrys aestivus</i>
Northern pine snake	<i>Pituophis m. melanoleucus</i>
Northern water snake	<i>Nerodia s. sipedon</i>
Ringnecked snake	<i>Diadophis punctatus edwardsi</i>
Spotted turtle	<i>Clemmys guttata</i>
Timber rattlesnake	<i>Crotalus h. horridus</i>
Wood turtle	<i>Clemmys insculpta</i>
Amphibians	
Eastern spadefoot toad	<i>Scaphiopus h. holbrookii</i>
Fowler's toad	<i>Bufo woodhousii fowleri</i>
Gray tree frog	<i>Hyla versicolor</i>
Green frog	<i>Rana clamitans melanota</i>
Northern spring peeper	<i>Hyla c. crucifer</i>
Northern spring salamander	<i>Gyrinophilus p. porphyriticus</i>
Pickerel frog	<i>Rana palustris</i>
Pine barrens treefrog	<i>Hyla andersonii</i>
Red-backed salamander	<i>Plethodon c. cinereus</i>
Southern leopard frog	<i>Rana spenocephala</i>
Spotted salamander	<i>Ambystoma maculatum</i>
Wood frog	<i>Rana sylvatica</i>
Fish	
Alewife	<i>Alosa pseudoharengus</i>
American brook lamprey	<i>Lampetra appendix</i>
American eel	<i>Anguilla rostrata</i>
Banded killfish	<i>Fundulus diaphanus</i>
Banded sunfish	<i>Enneacanthus obesus</i>
Black crappie	<i>Pomoxis nigromaculatus</i>
Blacknose dace	<i>Rhinichthys atratulus</i>
Bluegill	<i>Lepomis macrochirus</i>
Bluespotted sunfish	<i>Enneacanthus chaetodon</i>
Brook trout	<i>Salvelinus fontinalis</i>
Brown bullhead	<i>Ameiurus nebulosus</i>
Brown trout	<i>Salmo trutta</i>
Chain pickerel	<i>Esox niger</i>
Channel catfish	<i>Ictalurus punctatus</i>
Creek chubsucker	<i>Erimyzon oblongus</i>
Eastern mudminnow	<i>Umbra pygmaca</i>

Common Name	Scientific Name
Fallfish	<i>Semotilus corporalis</i>
Fathead minnow	<i>Pimephales promelas</i>
Gizzard shad	<i>Dorosoma cepedianum</i>
Golden shiner	<i>Notemigonous crysoleucas</i>
Johnny darter	<i>Etheostoma nigrim</i>
Largemouth bass	<i>Micropterus salmoides</i>
Mud sunfish	<i>Acantharchus pomotis</i>
Pirate perch	<i>Aphredoderus sayanus</i>
Pumpkinseed	<i>Lepomis gibbosus</i>
Rainbow trout	<i>Oncorhynchus mykiss</i>
Redbreast sunfish	<i>Lepomis auritus</i>
Redfin pickerel	<i>Esox americanus</i>
Sea lamprey	<i>Petromyzon marinus</i>
Smallmouth bass	<i>Micropterus dolomieu</i>
Spotted shiner	<i>Notropis hudsonius</i>
Swamp darter	<i>Etheostoma fusiforme</i>
Tadpole madtom	<i>Noturus gyrinus</i>
Tessellated darter	<i>Etheostoma olmstedii</i>
White sucker	<i>Catostomus commersonnii</i>

Sources: NJDEP; Herpetological Associates (2002); Fish data obtained from NJ Division of Fish & Wildlife, Bureau of Fisheries and from Arndt, Rudolf G. "Annotated Checklist and distribution of New Jersey Freshwater Fishes..." (2004) and ESP Associates "Fish Survey of Selected Streams..." (1993).

APPENDIX D: Rare Plant and Animal Species and Natural Communities Presently Recorded in the NJ Natural Heritage Database for Howell Township

Common Name	Scientific Name	Federal Status*	NJ Status*	Global Rank**	State Rank***
Eco-Systems/Habitat					
Bald eagle foraging area	<i>Haliaeetus leucocephalus</i>	LT	E	G4	S1B, S2N
Bald eagle nest buffer	<i>Haliaeetus leucocephalus</i>	LT	E	G4	S1B, S2N
Animals					
Barred owl	<i>Strix varia</i>		T/T	G5	S3B
Black-throated green warbler	<i>Dendroica virens</i>		Special Concern	G5	S3B
Bobcat	<i>Lynx rufus</i>		E	G5	S3
Bog turtle	<i>Clemmys muhlenbergii</i>	LT	E	G3	S2
Cooper's hawk	<i>Accipiter cooperii</i>		T/T	G5	S3B, S4N
Eastern box turtle	<i>Terrapene carolina carolina</i>		Special Concern	G5	S3
Fowler's toad	<i>Bufo woodhousii fowleri</i>		Special Concern	G5	S3
Great blue heron	<i>Ardea herodias</i>		S/S	G5	S2B, S4N
Least flycatcher	<i>Empidonax minimus</i>		Special Concern	G5	S3B
Northern parula	<i>Parula americana</i>		Special Concern	G5	S3B
Northern pine snake	<i>Pituophis m. melanoleucus</i>		T	G4T4	S3
Northern spring salamander	<i>Gyrinophilus p. porphyriticus</i>		Special Concern	G5T5	S3
Pine Barrens bluet	<i>Enallagma recurvatum</i>			G3	S3
Pine Barrens treefrog	<i>Hyla andersonii</i>		T	G4	S3
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>		T/T	G5	S2B, S2N
Spotted turtle	<i>Clemmys guttata</i>		Special Concern	G5	S3
Wood turtle	<i>Clemmys insculpta</i>		T	G4	S3
Plant Species					
Swamp-pink	<i>Helonias bullata</i>	LT	E	G3	S3
New Jersey rush	<i>Juncus caesariensis</i>		E	G2	S2
Greene's rush	<i>Juncus greenii</i>			G5	S2
Southern twayblade	<i>Listera australis</i>			G4	S2
Climbing fern	<i>Lygodium palmatum</i>			G4	S2
Greenish-flower wintergreen	<i>Pylora chlorantha</i>		E	G5	S1
Knieskern's beaked-rush	<i>Rhynchospora knieskernii</i>	LT	E	G2	S2
Pale beaked-rush	<i>Rhynchospora pallida</i>			G3	S3

*** Key to Federal and State Status Codes**

T	Threatened species – may become endangered if conditions surrounding the species begin to or continue to deteriorate.
E	Endangered species – one whose prospects for survival within the state are in immediate danger due to one or many factors.
INC	Increasing species – population has exhibited a significant increase
S	Stable species
D	Declining species – species that exhibited a continued decline in population numbers over the years.

**** Key to Global Element Rank**

G1	Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction
G2	Imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range
G3	Either very rare or local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single western state, a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout its range; with the number of occurrences in the range of 21 to 100.
G4	Apparently secure globally; although it may be quite rare in parts of its range, especially at the periphery
G5	Demonstrably secure globally; although it may be quite rare in parts of its range, especially at the periphery
T	Element ranks containing a “T” indicate that infraspecific taxon is being ranked differently than the full species.

***** Key to State Element Rank**

S1	Critically imperiled in NJ because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres).
S2	Imperiled in NJ because of rarity (6 to 20 occurrences).
S3	Rare in state with 21 to 50 occurrences. Includes elements that are widely distributed but with small populations/acreage, or with restricted distribution but locally abundant.
S4	Apparently secure in state, with many occurrences.
S5	Demonstrably secure in state and essentially ineradicable under present conditions.
B	Breeding populations
N	Non-breeding populations

CAUTIONS AND RESTRICTIONS ON NATURAL HERITAGE DATA

The quantity and quality of data collected by the Natural Heritage Program is dependent on the research and observations of many individuals and organizations. Not all of this information is the result of comprehensive or site-specific field surveys. Some natural areas in New Jersey have never been thoroughly surveyed. As a result, new locations for plant and animal species are continuously added to the database. Since data acquisition is a dynamic, ongoing process, the Natural Heritage Program cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of New Jersey. Information supplied by the Natural Heritage Program summarizes existing data known to the program at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The attached data is provided as one source of information to assist others in the preservation of natural diversity.

This office cannot provide a letter of interpretation or a statement addressing the classification of wetlands as defined by the Freshwater Wetlands Act. Requests for such determination should be sent to the DEP Land Use Regulation Program, P.O. Box 401, Trenton, NJ 08625-0401.

The Landscape Project was developed by the Division of Fish & Wildlife, Endangered and Nongame Species Program to map critical habitat for rare animal species. Some of the rare species data in the Landscape Project is in the Natural Heritage Database, while other records were obtained from other sources. Natural Heritage Database response letters will list all species (if any) found during a search of the Landscape Project. However, any reports that are included with the response letter will only reference specific records if they are in the Natural Heritage Database. This office cannot answer any inquiries about the Landscape Project. All questions should be directed to the DEP Division of Fish and Wildlife, Endangered and Nongame Species Program, P.O. Box 400, Trenton, NJ 08625-0400.

This cautions and restrictions notice must be included whenever information provided by the Natural Heritage Database is published.



NJ Department of Environmental Protection
Division of Parks and Forestry
Natural Lands Management

APPENDIX E: State Endangered and Threatened Species

Birds			
Endangered		Threatened	
American Bittern	<i>Botaurus lentiginos</i>	Bobolink	<i>Dolichonyx oryzivorus</i> BR
Eagle, bald	<i>Haliaeetus leucocephalus</i> BR*, **	Eagle, bald	<i>Haliaeetus leucocephalus</i> NB*, **
Falcon, peregrine	<i>Falco peregrinus</i>	Hawk, Cooper's	<i>Accipiter cooperii</i>
Goshawk, northern	<i>Accipiter gentilis</i> BR	Hawk, red-shouldered	<i>Buteo lineatus</i> NB
Grebe, pied-billed	<i>Podilymbus podiceps</i> **	Night-heron, black-crowned	<i>Nycticorax nycticorax</i> BR
Harrier, northern	<i>Circus cyaneus</i> BR	Night-heron, yellow-crowned	<i>Nyctanassa violaceus</i>
Hawk, red-shouldered	<i>Buteo lineatus</i> BR	Knot, red	<i>Calidris canutus</i> BR
Owl, short-eared	<i>Asio flammeus</i> BR	Osprey	<i>Pandion haliaetus</i> BR
Plover, piping	<i>Charadrius melodus</i> **	Owl, barred	<i>Strix varia</i>
Sandpiper, upland	<i>Batramia longicauda</i>	Owl, long-eared	<i>Asio otus</i>
Shrike, loggerhead	<i>Lanius ludovicianus</i>	Rail, black	<i>Laterallus jamaicensis</i>
Skimmer, black	<i>Rynchops niger</i> BR	Skimmer, black	<i>Rynchops niger</i> NB
Sparrow, Henslow's	<i>Ammodramus henslowii</i>	Sparrow, grasshopper	<i>Ammodramus savannarum</i> BR
Sparrow, vesper	<i>Poocetes gramineus</i> BR	Sparrow, Savannah	<i>Passerculus sandwichensis</i> BR
Tern, least	<i>Sterna antillarum</i>	Sparrow, vesper	<i>Poocetes gramineus</i> NB
Tern, roseate	<i>Sterna dougallii</i> **	Woodpecker, red-headed	<i>Melanerpes erythrocephalus</i>
Wren, sedge	<i>Cistothorus platensis</i>		
Reptiles			
Endangered		Threatened	
Rattlesnake, timber	<i>Crotalus h. horridus</i>	Snake, northern pine	<i>Pituophis m. melanoleucus</i>
Snake, corn	<i>Elaphe g. guttata</i>	Turtle, Atlantic green	<i>Chelonia mydas</i> **
Snake, queen	<i>Regina septemvittata</i>	Turtle, wood	<i>Clemmys insculpta</i>
Turtle, bog	<i>Clemmys muhlenbergii</i> **		
Atlantic hawksbill	<i>Eretmochelys imbricata</i> **		
Atlantic leatherback	<i>Dermochelys coriacea</i> **		
Atlantic loggerhead	<i>Caretta caretta</i> **		
Atlantic Ridley	<i>Lepidochelys kempi</i> **		
Amphibians			
Endangered		Threatened	
Salamander, blue-spotted	<i>Ambystoma laterale</i>	Salamander, eastern mud	<i>Pseudotriton montanus</i>
Salamander, eastern tiger	<i>Ambystoma tigrinum</i>	Salamander, long-tailed	<i>Eurycea longicauda</i>

Treefrog, southern gray	<i>Hyla chrysocelis</i>	Treefrog, Pine Barrens	<i>Hyla andersonii</i>
Invertebrates			
Endangered		Threatened	
Beetle, American burying	<i>Nicrophorus mericanus</i> **	Elfin, frosted (butterfly)	<i>Callophrys irus</i>
Beetle, northeastern beach tiger	<i>Cincindela d. dorsalis</i> **	Floater, triangle (mussel)	<i>Alasmidonta undulata</i>
Copper, bronze	<i>Lycaena hyllus</i>	Fritillary, silver-bordered (butterfly)	<i>Bolaria selene myrina</i>
Floater, brook (mussel)	<i>Alasmidonta varicosa</i>	Lampmussel, eastern (mussel)	<i>Lampsilis radiata</i>
Floater, green (mussel)	<i>Lasmigona subviridis</i>	Lampmussel, yellow (mussel)	<i>Lampsilis cariosa</i>
Satyr, Mitchell's (butterfly)	<i>Neonympha m. mitchellii</i> **	Mucket, tidewater (mussel)	<i>Leptodea ochracea</i>
Skipper, arogos (butterfly)	<i>Atrytone arogos arogos</i>	Pondmussel, eastern (mussel)	<i>Ligumia nasuta</i>
Skipper, Appalachian grizzled (butterfly)	<i>Pyrgus wyandot</i>	White, checkered (butterfly)	<i>Pontia protodice</i>
Wedgemussel, dwarf	<i>Alasmidonta heterodon</i> **		
Mammals		Fishes	
Endangered		Endangered	
Bat, Indiana	<i>Myotis sodalis</i> **	Sturgeon, shortnose	<i>Acipenser brevirostrum</i> **
Bobcat	<i>Lynx rufus</i>		
Whale, black right	<i>Balaena glacialis</i> **		
Whale, blue	<i>Balaenoptera musculus</i> **		
Whale, fin	<i>Balaenoptera physalus</i> **		
Whale, humpback	<i>Megaptera novaeangliae</i> **		
Whale, sei	<i>Balaenoptera borealis</i> **		
Whale, sperm	<i>Physeter macrocephalus</i> **		
Woodrat, Allegheny	<i>Neotoma floridana magister</i>		

* BR Only breeding population considered endangered or threatened; NB Non-breeding population only

** Federally endangered or threatened

APPENDIX F: Public Non-Community Wells in Howell Township

Public Water Supply ID	Original Owner	Well Depth
1319365	272 Hwy 9 Complex	180
1352305	Allaire State Park	180
1319396	Apollo Diner	180
1319333	Bell Atlantic	226
1319359	Bethany Baptist Church	180
1319381	Boston Chicken	180
1319463	Bridges Day Treatment Center	208
1319345	Brookside Country Club	130
1319397	C & E Italian Deli	180
1319346	Caldwell Banker/John Ruggeri	180
1319319	Camp Sacajawea	180
1319351	Camp Sacajawea	180
1319436	Camp Sacajawea	180
1319442	Camp Sacajawea	180
1319373	Capri Motel	95
1319327	Chicken-N-More	180
1319339	Coastal Learning Center	107
1319446	Coastal Learning Ctr Gym	100
1319400	Cumberland Farms	65
1319331	Dunkin Donuts	85
1319450	Exxon USA 3-8576	180
1319402	Fairfield Indust Park	180
1319418	Fairfield Indust Park	180
1319419	Fairfield Indust Park	180
1319391	Fast Forward Inc	180
1319338	Flame Motel	250
1319458	Freehold Lumber	105
1319449	Freewood Acres Food Mark	180
1319459	Getty Station #00658	180
1319445	Gold's Gym	180
1319326	GPU Energy	182
1319307	Howell Complex	180
1319460	Howell Farm Market	180
1319334	Howell Golf Course	180
1319350	Howell Golf Course	180
1319306	Howell Lanes	180
1319448	Howell Mini Park	180
1319455	Howell Pizza	180
1319412	Ivy League Restuarant	180
1319375	Jewish Community Center	180
1319456	Kolala 'T' Kids Inc	160
1319384	Lakewood Maennerchor Inc	80
1319348	Lakewood Prep	90
1319462	Lakewood Prep School	100
1319316	Land O Pines School	180

Public Water Supply ID	Original Owner	Well Depth
1319309	Latvian Society	180
1319454	Manasquan Reservoir Pk	224
1319454	Manasquan Reservoir Pk	500
1319321	McDonalds Restaurant	500
1319437	McDonalds Restaurant	160
1319426	Military Sealift Fire Fi	180
1319426	Military Sealift Fire Fi	180
1319308	Monmouth County Fire Academy	180
1319369	Moon Motel	365
1319329	Mulligans Bar & Grill	180
1319444	NJ Transit Bus Operation	271
1319394	Oak Glen Park	184
1319364	Open Door Bible Church	180
1319341	Our House Tavern	138
1319461	Precious Angels Preschool	124
1319378	Quality Flooring	180
1319317	Regent Diner	180
1319416	Rodina Hall Club	180
1319386	Roseland Shopping Center	180
1319447	Safe Havens-Resid. Group	145
1319370	Sizzler Steak House	180
1319383	Solomon Schecter Academy	384
1319431	Sweetie Pies	180
1319323	Talmudical Academy	180
1319408	Talmudical Academy	90
1319415	Talmudical Academy	100
1319399	Talmudical Academy NW Dm	328
1319304	The Chapter House	230
1319452	The Race Place	271
1314304	Tiger Distributors, Wise	180
1319343	Toms Tavern	180
1319395	Universal Imported Foods	89
1319457	Wawa #910	220
1319320	Wendy's Restaurant	395
1319440	Wonderland Preschool	180

Source: NJDEP

APPENDIX G: Howell Township Local Historical Sites

Jerseyville School House – Route 33, just west of intersection with Brickyard/Fairfield Rd.

Bethesda Methodist Church – Currently located on County Rt. 524 in Adelpia. Originally located on Wycoff Mills Rd., just south of Rt. 524.

Bethesda Methodist Cemetary – Wycoff Mills Rd., former site of church

Jerseyville Methodist Church – Howell Rd., south of Rt. 33 intersection.

Ardena Baptist Church – County Rt. 524, east of Vanderveer Rd. intersection.

West Farms School House (currently Bethany Baptist Church) – Located on West Farms Rd., at Casino Drive intersection

Ardena School House – Currently located at Preventorium Rd., Old Tavern Rd. Originally sited across Rt. 524 from Ardena Baptist Church.

Preventorium – Currently serves as part of Howell Township Municipal Complex, located on Preventorium Rd. near intersection with Old Tavern Rd.

MacKenzie House (original part built prior to 1730, then called settlers cabin) – Located on Lakewood/Farmingdale Rd., east of I-195.

Our House Tavern (formerly Marriner's Tavern) – County Rt. 524 at Ketchum Rd.

Brewer Cemetary – Located on County Rd. 524, east of Hurley Pond Rd. intersection.

Captain Matthews Cemetery – Located on Peskin Rd., near Casino Dr. intersection.

Southard School House (currently Southard Grange) – Rt. 9

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

Publication Abstract

Title: *Environmental Resource Inventory of the Conservation Element of the Howell Township Master Plan* **Date Published:** November 2008
Publication No. 08072

Geographic Area Covered: Howell Township, Monmouth, New Jersey

Key Words: Agriculture, air, aquifers, biodiversity, biological resources, built environment, climate, conservation, development, endangered species, environmental issues, environmental resource inventory, floodplains, forests, grasslands, groundwater, habitat, Howell Township, land preservation, Landscape Project, Manasquan River, master planning, Metedeconk River, natural resources, open space, population, soils, steep slopes, topography, U.S. Census, vernal pools, water quality, watersheds, wetlands.

ABSTRACT

This publication documents the natural and community resources of Howell Township, Monmouth County, New Jersey. The natural resource information includes descriptions, tables, and maps of: land use; soils; drinking water, aquifers, and wells; surface waters, including watersheds, streams, lakes, wetlands, and floodplains; impacts on water resources and surface water quality; impervious coverage; vegetation, including wetlands, forests, and grasslands; animal communities; threatened and endangered species; deer management; Heritage Priority Sites; and known contaminated sites. Community resources that are briefly described include population, transportation, township utilities and services, and protected open space. A short history of the community is also included.

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