Geographic distribution of reported drownings at regulated swimming pools and beaches in NYS.
Drownings at regulated pools and beaches compared to all drownings in New York State.

Intentional drownings and those related to motor vehicle incidents are not included in counts.

* All drownings of NYS residents occurring in and out of NYS. Data not yet available for 2010; N/A = Not Available.
** Includes drownings for anyone occurring at a regulated NYS Bathing Facility.
† ICD 9 Codes used 1987-1998 and include E 830, E 832, and E 910. ICD 10 Codes used 1999-Present and include W 85 - W 74.

Source: NYSDOH Bureaus of Biometrics and Health Statistics, Community Environmental Health and Food Protection, and Environmental and Occupational Epidemiology.
The number of drowning incidents may vary greatly from year to year, which may in part be due to weather conditions. Nice weather increases number of exposure days for patrons.
NEW YORK STATE DROWNINGS at REGULATED FACILITIES
Percent Change in Incidence from Prior Year 1988 to 1998

<table>
<thead>
<tr>
<th>Year</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>4.3%</td>
</tr>
<tr>
<td>1989</td>
<td>-8.3%</td>
</tr>
<tr>
<td>1990</td>
<td>9.6%</td>
</tr>
<tr>
<td>1991</td>
<td>-3.1%</td>
</tr>
<tr>
<td>1992</td>
<td>-21.8%</td>
</tr>
<tr>
<td>1993</td>
<td>13.6%</td>
</tr>
<tr>
<td>1994</td>
<td>-13.8%</td>
</tr>
<tr>
<td>1995</td>
<td>16.7%</td>
</tr>
<tr>
<td>1996</td>
<td>-26.2%</td>
</tr>
<tr>
<td>1997</td>
<td>-9.7%</td>
</tr>
<tr>
<td>1998</td>
<td>37.5%</td>
</tr>
</tbody>
</table>

Intentional drownings and those related to motor vehicle incidents are not included in counts.

* All drownings of NYS residents occurring in and out of NYS. ICD 9 Codes used 1987-1998 and include E 830, E 832, and E 910.

** Includes all drownings occurring at a regulated NYS Bathing Facility, regardless of State of residence of victim.

Source: NYSDOH Bureaus of Biometrics and Health Statistics, Community Environmental Health and Food Protection, and Environmental and Occupational Epidemiology.
NEW YORK STATE DROWNINGS 
at REGULATED FACILITIES 
Percent Change in Incidence from Prior Year 
1999 to 2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>-14.3%</td>
</tr>
<tr>
<td>2000</td>
<td>-16.7%</td>
</tr>
<tr>
<td>2001</td>
<td>-3.6%</td>
</tr>
<tr>
<td>2002</td>
<td>22.6%</td>
</tr>
<tr>
<td>2003</td>
<td>-35.4%</td>
</tr>
<tr>
<td>2004</td>
<td>13.1%</td>
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<tr>
<td>2005</td>
<td>29.5%</td>
</tr>
<tr>
<td>2006</td>
<td>0.8%</td>
</tr>
<tr>
<td>2007</td>
<td>-9.7%</td>
</tr>
<tr>
<td>2008</td>
<td>-8.9%</td>
</tr>
<tr>
<td>2009</td>
<td>-26.5%</td>
</tr>
<tr>
<td>2010</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Intentional drownings and those related to motor vehicle incidents are not included in counts.

* All drownings of NYS residents occurring in and out of NYS. ICD 10 Codes used 1999-Present and include W 65 - W 74. Data not yet available for 2010; N/A = Not Available.

** Includes all drownings occurring at a regulated NYS Bathing Facility, regardless of State of residence of victim.

Source: NYSDOH Bureaus of Biometrics and Health Statistics, Community Environmental Health and Food Protection, and Environmental and Occupational Epidemiology.
**Part 6.** Aquatic Amusement Parks, Municipal, Apartment Complex, Health Clubs, YMCA, School, Spa, Mobile Home Park, and Homeowner Association Pools.

**State.** Operated by NYS Office of Parks, Recreation and Historic Preservation and Department of Environmental Conservation.

**Children’s Camp.** Day and Overnight.

**Temporary Residence.** Hotel, Motel, Campground, Bungalow Colony.
Beaches have a much higher average drowning rate than pools. Possible factors include: greater number of bathers, water clarity, currents, depths and bottom conditions.

The time periods above correspond to significant changes to supervision requirements in the State Sanitary Code for bathing facilities.

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### AVERAGE ANNUAL RATES* of DROWNING at REGULATED FACILITIES

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Swimming Pools</th>
<th>Bathing Beaches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Facilities</td>
<td>Drowning Incidents</td>
</tr>
<tr>
<td>1987-1990</td>
<td>6,357</td>
<td>25</td>
</tr>
<tr>
<td>1991-2000</td>
<td>6,435</td>
<td>25</td>
</tr>
<tr>
<td>2001-2010</td>
<td>6,435</td>
<td>35</td>
</tr>
<tr>
<td>Cumulative</td>
<td>6,422</td>
<td>85</td>
</tr>
</tbody>
</table>

* Rates per 1000 Facilities
** Based on Average # of Facilities

State. Operated by NYS Office of Parks, Recreation and Historic Preservation and Department of Environmental Conservation.

Children’s Camp. Day and Overnight.

Temporary Residence. Hotel, Motel, Campground, Bungalow Colony.
Other than State Park Bathing facilities, the number of drownings is proportional to the number of facilities for each facility type.

Based on the number of facilities, the proportion of drownings at State Parks is higher than for other facility types. However, this can be misleading because the proportion does not take into account the actual numbers of bathers, which are generally very high at State Park facilities.
As expected, more drownings occur during summer months when outdoor swimming facilities are open.
DROWNINGS at REGULATED FACILITIES
Day of the Week
1987 - 2010

Day of Week

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>14</td>
<td>26</td>
<td>27</td>
<td>15</td>
<td>34</td>
<td>33</td>
</tr>
</tbody>
</table>

N = 171
Most drowning occurs after noon. The highest incidence of drowning occurs at the end of the day between 4:00 and 6:00 P.M. Some possible factors include: more bathers during this time of day, bather fatigue, lifeguard fatigue.
There is a high incidence of drownings that occur when low numbers of bathers are present. Diligence in supervising bathers is needed at all times, not just when there are large numbers of bathers.
A significant number of drownings occur in water less than 5ft. deep. Diligence in supervising bathers is needed for any depth of water, not just for deep water.
DROWNINGS at REGULATED FACILITIES
Water Depth at Location of Submersion 1987 - 2010

Pools (N=85)
- >6 feet (N=37)
- 1-5 feet (N=68)
- Unknown (N=2)

Beaches (N=86)
- >6 feet (N=39)
- 1-5 feet (N=29)
- Unknown (N=18)

54%
44%
21%
45%
34%
Males are 4 times more likely to be drowning victims than females. Many people think that toddlers are the most at risk; however, most drowning victims are between 11 and 25 years old.
Black males and females have a significantly higher drowning rate than White and Hispanic males and females.
DROWNINGS at REGULATED FACILITIES
Contributing Factors*: Victim 1987 - 2001**

Supervision
90 (52%)

Environment
38 (22%)

Victim
46 (26%)

- Hyperventilation: 4
- Drugs, Alcohol, Medication: 9
- Developmental Disability: 11
- Seizure Disorder: 13
- Other Medical†: 9
  † 1 Diabetes, 7 Cardiac, 1 Unknown event

** Contributing Factors pertaining to the victim are being reassessed and will be updated in the future.
It is commonly thought that most drowning victims are “non-swimmers”. When swimming abilities were determined, people who were considered to be “swimmers” drowned more frequently than “non-swimmers”.

Risk vs. exposure - Although non-swimmers may be more at risk of drowning because of their inability to swim, their exposure is often less because they spend less time in the water. Swimmers have a lower risk of drowning based on ability; however, their exposure may be greater because they spend more time in the water.
Water clarity is the most frequently identified environmental contributing factor. The ability to see submerged bathers and to locate them promptly during a rescue is severely compromised when water clarity is poor. Unfortunately, several drownings where poor water clarity affected rescues occurred at swimming pools.

** Contributing Factors pertaining to the environment are being reassessed and will be updated in the future.
Many drowning incidents occur at lifeguarded facilities. It is believed that this is because the number of bathers present is much greater at lifeguarded bathing facilities.

**Responsible person:** Non-lifeguard supervisory personnel present at the bathing facility.

**Temporary Residence Sign Option:** No facility supervisory staff present at the Temporary Residence (hotel, motel, campground, bungalow colony, etc.). Patron use rules are posted on signs at bathing facilities.
Lifeguard distraction/not recognizing victim and lifeguard positioning are the most frequently identified contributing factors pertaining to supervision.
Contributing factors pertaining to Supervision were analyzed for 2002 and 2003. A similar assessment is planned for all drowning data in the future.