River Quest 2019:
Break the Grip of the Rip!

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MN Science Standard 6.2.2.2.1 Motion
Next Generation (WI) Science Standard
MS-ESS2-5 Earth Systems

Synopsis: Swimmers in the oceans and Great Lakes have to worry about currents not found in inland lakes, and one of these is a Rip Current. *Rip currents are strong, narrow, fast-moving currents of water that typically form on sandy beaches (like Park Point Beach) during wavy conditions.* These currents move faster than Olympic swimmers can swim, and are responsible for more than 80 percent of lifeguard rescues and claim more than 100 lives in the U.S. each year. The Great Lakes has an average of *12 rip current-related deaths every year, and in 2017, there were two in Duluth*. The force of the outflowing current will move the swimmer away from shore. Swimming against this current may slow the outward pull, but since rip currents are much faster than a swimmer, this may result in an exhausted swimmer that is no closer to shore, but still stuck in the current.

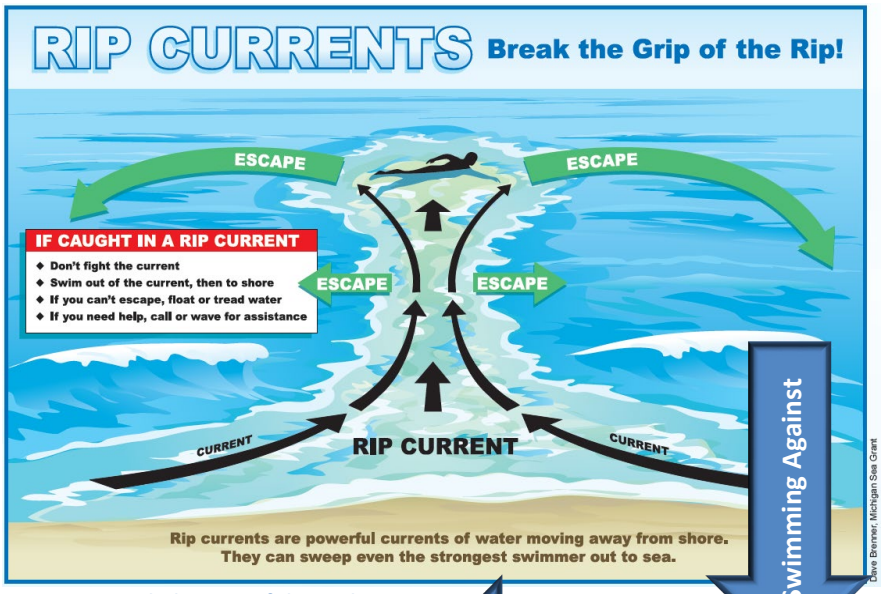

Figure 1. Break the Grip of the Rip!

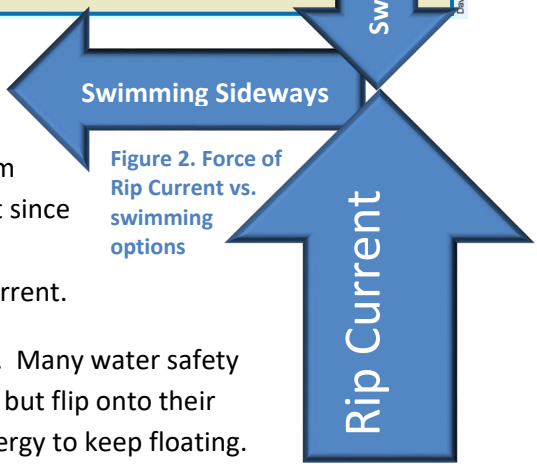

Figure 2. Force of Rip Current vs. swimming options

If you get caught in a rip current, swimmers have two options (Fig. 2). Many water safety organizations are recommending that swimmers not resist this force, but flip onto their backs and float with the current, while calling for help. This saves energy to keep floating. As they move away from shore, the rip current will dissipate, and often carry the swimmer back to shore with the waves. Another option for good swimmers is to swim at right angles to the current. By creating a *new force* at right angles to the current, the swimmer will still be moved towards deeper water, but will soon exit the side of the current, and escape.

Two local resources help beach users know if today's a good day to head to Park Point beach: http://ParkPointBeach.org website, Facebook, and Twitter for real-time beach conditions, including rip current risk, all summer long, and an electronic sign and flags posted at 4 spots along Park Point: green flags means low risk, yellow means moderate risk, and red flags mean a high risk of rip currents.

Reference Material:

1. MN Sea Grant Rip Current website: http://www.seagrant.umn.edu/rip Website Includes: Videos of rip currents, warning flags, interviews with victims and survivors, and more.
2. Dangerous Currents 101 Lesson: http://www.miseagrant.umich.edu/lessons/lessons/by-broad-concept/physical-science/dangerous-currents-101/

Vocabulary List: Rip Current