



# Water Rescue Rope: Part 1 Making the Kit

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Ready to Serve and Sustain Our Community

***If you don't know how to swim, you can still rescue people in the water.***

In an emergency, fast action saves lives. Water rescue is risky, especially if you don't know how to swim. Even if you know how to swim, water rescue is risky.

If you don't know how to swim, you can use a water rescue rope to save people in the water. The idea is simple enough: a non-swimmer throws a water rescue rope to the person in the water. Then they pull the person to shore.

A water rescue rope is a simple to make. Anyone living near water or in a flood zone should have one.



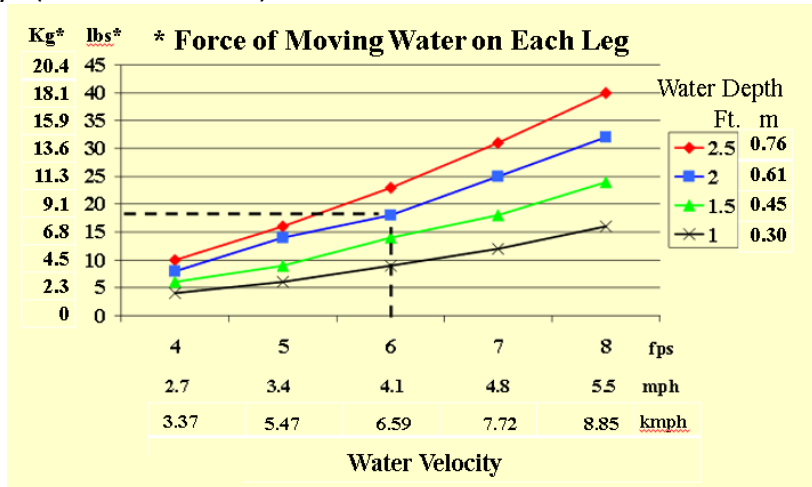
Professionals know the riskiest rescue method is going in the water. Other than having to deal with the frightened and struggling victim, there are other hazards and concerns.

- **Most flood waters are muddy.** This makes it hard to see and know what is under the water. There could be obstructions (e.g. rocks and debris) to entangle you.
- **Flowing water is powerful.** Shallow flowing water from a flashflood can sweep you off your feet and carry you away. (See table below.)

## Be Aware of the Force of Moving Water

Water rescue ropes can be used from the shore, a pier, or a boat to rescue people in the water. The "target" (person being rescued) needs to be conscious and able to grab the rescue rope.

The table on the right shows the force of flowing water on each leg. This applies when you wade into the water from the shore or cross a stream or shallow river. This also applies to flashflood situations with water flowing over roads or in gullies and ditches which are normally dry.



Adapted from <http://www.nws.noaa.gov/os/water/tadd/pdfs/WaterPhysics.pdf>

This paper will teach you how to make a water rescue throw rope. Making the rope is just the beginning. The water rescue throw rope is a tool. Learning how to use the tool, and practicing to develop to skillfully use it is the hard part. It will take more study and even more practice. But that's the topic for another lesson.

**What makes a good water rescue rope:** Some characteristics of a water rescue rope are:

Characteristic	Description / Comment	Polypropylene Rope
<b>Floats</b>	What good is the rope if it sinks well below the water surface?	It floats; does not absorb water. Yellow is best for visibility.
<b>Strong</b>	The water rescue throw rope must be strong. (See side bar below.)	Polypropylene stretches (a good characteristic for water rescue). Twisted is stronger than hollow rope.
<b>Easy to handle</b>	The rope must be thick enough to grab and not slippery.	Suggest rope size: 6, 8, 10 mm diameter.
<b>Lightweight</b>	If it is too heavy, you will not carry it	A 25 m rope weighs 0.5-1 kg.
<b>Durable</b>	Does not rot; resists mildew.	Store it away from sunlight.
<b>Affordable</b>	Reasonably priced.	Cost varies by rope diameter; ranges from \$0.8 to \$0.25 per meter.

Polypropylene Rope Strength			
Rope Diameter		Ave breaking strength	
(in)	(mm)	lbs.	kg
1/4	6	1,270	576
5/16	8	1,920	871
3/8	10	2,550	1,157

**Additional Notes.**

- Water rescue ropes should not be used for vertical lifting.
- Store polypropylene rope out of sunlight.
- Avoid pulling polypropylene rope over rough surfaces. It abrades and weakens it.
- Inspect and replace polypropylene rope as needed. Don't take a chance; it could mean someone's life. (Keep old water rescue ropes for training and practice.)

**Parts of the Water Rescue Rope Kit.**

A basic water rescue rope kit consists of:

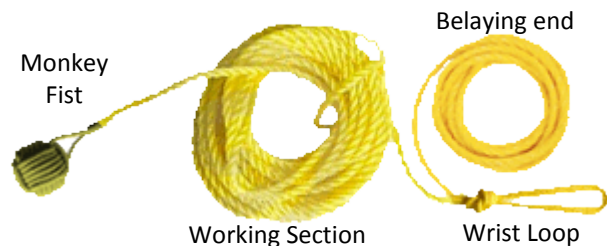
- the rescue rope with a monkey fist knot at one end,
- whistle,
- storage bag
- Life vest,



**Making the Water rescue rope**

Water rescue ropes are often made 10 m, 15 m, or 22 m long. Pick a length that is reasonable for the typical rescue situation you will encounter. For example, if you make a water rescue rope for rescue work along a river, estimate the distance you expect to be from the person in the water. Allow extra rope for the fact you want to throw the rope past the swimmer not just to them.

The water rescue rope has three basic parts: 1) the monkey fist knot, the working line,



2) a wrist loop, and 3) the belaying end. The total length of the throw line will be longer when you add the wrist loop and belaying end.

The Monkey Fist: Many throw lines use the storage bag as the throwing end. We prefer using a monkey fist knot on the throwing end of the rope. To learn how to tie a monkey fist knot visit <http://m.wikihow.com/Make-a-Monkey-Fist>

The Working Line: The monkey fist is one end of the working line. The knot is the heavy throwing end of the throw line. This is the end you throw out to the person in the water. The length of the working line should be 10 m, 15 m, or 22 m. Consider your anticipated rescue situations to determine the working line length. Remember, if you have more than one throw line available, you can connect them if more length is needed.

The Wrist Loop is a handy way for easy access to the throw line if you need to retrieve it to quickly try to throw it out again. However, the loop should be large enough to easily slip over your wrist to avoid being pulled into the water accidentally. [**Note**: Never tie the water rescue throwing rope to yourself.]

The Belaying End is the section where others help pull the person from the water. This should be another 6 m of rope. Consider adding knots in the line spaced about 30 cm apart for a better grip. [**Note**: Never tie the water rescue throwing rope to anyone.]

### Terminology

Dominant Throwing Hand: This is the hand/arm you will use to throw the water rescue rope.

“Off Hand”: This is the hand that will hold most of the water rescue rope. Once the rope is thrown, the working part of the water rescue rope pays “off” this hand smoothly; no tangles.

Wrist Loop: This loop makes it easier for you to retrieve the rope to get ready to throw it again. There are two ways to use this loop. 1) slip your hand through the loop so it rests loosely around your wrist. You want it to easily slip off your wrist so you won't be accidentally pulled into the water. 2) slip your 4 fingers through the loop (but not your thumb) and make a fist. This way you just open your fist to be free of the rope to avoid being accidentally pulled into the water.

The Belaying End: This is the loose end of the water rescue rope. **DO NOT TIE THIS TO YOURSELF OR ANYONE ON YOUR TEAM.** This is the portion of the rope used to start pulling the survivor from the water. 🍌

***Water rescue is risky.***

***A water rescue rope is just a tool. Using it to save lives requires knowledge and skills. It involves hours of study and practice.***

***Making a polypropylene water rescue rope is just the beginning.***