

## FLY-FISHING MERIT BADGE COUNSELOR GUIDE



The merit badge program is one of Scouting's basic character-developing tools. Earning merit badges gives boys and girls the kind of self-confidence that comes only from overcoming difficult obstacles to achieve a goal. Through the merit badge program, Scouts learn career skills that might help them choose their lifework, develop physical fitness, and/or provide hobbies that give a lifetime of healthful recreation. Working with a merit badge counselor gives Scouts contact with an adult with whom they might not be acquainted. This is a valuable experience. The Scouts could be shy and fearful in this new situation, so the counselor must see that the counseling session is relaxed, informal, and friendly.<sup>1</sup>

Fly-fishing is a specialized form of fishing that combines skill and artistry. It is rich with tradition, and is a passion for millions of people. The beauty of the water, the solitude, and the skills that the sport requires have all made fly-fishing important in the lives of many notable people.

The Fly-Fishing merit badge is a natural connection with Scouting. Initiated in 2002, this merit badge is popular with Scouts who want to improve their fishing skills and take them to the next level. This is not an easy merit badge to earn. It requires work to learn new, sometimes counterintuitive skills.

To serve as a merit badge counselor, you first need to register with the BSA. A potential merit badge counselor must complete the **Adult Application** form, No. 524-501, and submit it along with the BSA **Merit Badge Counselor Information** form, No. 34405. See the Scouting Forms from the National Council page at [www.Scouting.org](http://www.Scouting.org). Search for "Merit Badge Counselor" - you will be taken to <https://www.scouting.org/?s=merit+badge+counselor>. Your local Scoutmaster can help you obtain and fill out these forms. There is no cost. If you are new to merit badge counseling, we recommend that you review the **Merit Badge Counselor Orientation**, No. 34542, and **A Guide for Merit Badge Counseling**, No. 512-065.

Any qualified individual of good character can be a merit badge counselor. If you are over the age of 18 and have the skills to teach fly-fishing, you can become a merit badge counselor. You should also have the patience and skills to work with Scout-age boys and girls. Merit badge counselors are critical to the success of BSA's merit badge program. They offer their time, experience, and knowledge to help guide Scouts in one or more of the merit badge subjects.

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<sup>1</sup> From Merit Badge Counselor Orientation, SKU 34542

The BSA also requires that you complete the online Youth Protection training prior to working with Scouts. To take the training, go to [www.MyScouting.org](http://www.MyScouting.org) and establish an account using the member number you receive when you register for BSA membership. Note that this program addresses strategies for personal safety for youth as well as adults. Youth Protection includes training for two-deep leadership where an adult is not allowed to interact singly with a Scout. In addition to no one-on-one Scout-adult interaction, adult leaders are taught to respect a Scout's privacy and to report potential problems or infractions.

The Fly-Fishing Merit Badge pamphlet is available for purchase at the local council Scout Store or online at: <http://www.Scoutstuff.org>. You can find the most current requirements for the FMB and also a Merit Badge Primer video that describes the merit badge process on the National BSA website at: <http://www.Scouting.org>. Just conduct a search for "Merit Badge".

Only an authorized counselor may sign off on the Scout's work toward the merit badge requirements. The Fly-Fishing merit badge pamphlet is available for purchase at your local council's Scout shop or online at Scoutstuff.org. On Scouting.org, you can find the current requirements for the Fly-Fishing merit badge.

It is important to realize that the merit badge program is based on Scouts learning the skills needed to become reasonably competent in the subject. For the Fly-Fishing merit badge, the Scout does not need to become an expert at tying or casting a fly to earn the merit badge.

**It is also important to note that a merit badge counselor is not to change, or deviate in any way, from the established requirements in the merit badge pamphlet. Some accommodations, however, are allowed for Scouts with certain disabilities.**

The merit badge counselor will:

- *Assist the Scout as he or she plans the assigned projects and activities to meet the merit badge requirements.*
- *Coach the Scout through interviews and demonstrations on how to do the required skills.*
- *Follow the requirements of the merit badge, making no deletions or additions, ensuring that the advancement standards are fair and uniform for all Scouts.*
- *Certify the Scout after determining that he or she has completed all requirements and is qualified for the merit badge.*

Once contact has been established with the Scoutmaster or the Scouts, the counselor will develop a program schedule convenient to all. Be aware that Scouts may arrive at the first session knowing little or nothing about fly-fishing or the equipment used in the sport. The Scout may not have read the merit badge pamphlet or may have an out-of-date copy.

Because the requirements have changed slightly over the years, it is the responsibility of the counselor to obtain and follow the most current requirements, available online at <http://www.usscouts.org/usscouts/mb/mb136.asp>.

Remember, Scouts may arrive with little or no preparation. Some Scouts may show up to simply earn another merit badge, learn something about fishing, or accompany a pal who wants to earn the badge.

Your job as counselor is to bring enthusiasm, knowledge, and skills to each session and share that with the Scouts. By the time you are finished, each of your Scouts should be equally enthusiastic about the sport of fly-fishing and be grateful to you for taking the time and effort to teach them how to participate in the sport. Make the time with the Scouts fun and exciting.

It is recommended that you bring all fly-tying supplies, knot-tying materials, fly rod outfits, and any other equipment and materials you may need. Relying on the Scouts to bring their equipment is a mistake. If they have it at all, Scouts may bring such a diversity of equipment that by the time you straighten it out, you will lose the attention of the other Scouts. It is better for all Scouts to use the same equipment.

Remember, to earn the merit badge, Scouts do not have to become experts in the sport. Your job is to bring them along to a level of competence that allows them to successfully catch a fish with a fly and have fun doing so. Keep your instruction in simple modules and keep your program moving to prevent boredom and distractions.

You are not alone! Although you may have the knowledge and skills to be a good angler, you may want to call on others with special expertise. They will also help you maintain two-deep leadership with your Scouts. Contact your local Council Fishing Committee to find Certified Angling Instructors (CAIs) in your area. You can also go to <http://bsafishing.com/> for more information. Remember - only a registered counselor may sign off a Scout's work on merit badge requirements, but other adults can serve as instructors under your supervision, whether they are registered Scouters or not. Registered Scouters should have current Youth Protection Training (YPT). Non-registered adults should be encouraged to take YPT or at least be briefed on BSA youth protection policies.

## Requirements

Each requirement will be addressed individually with tips offered to help you become oriented to the tasks required of each Scout. The Fly-Fishing merit badge pamphlet, available at all BSA Scout shops, will discuss each of the points in the requirements so the counselor is encouraged to read it thoroughly before interacting with Scouts. The latest requirements are also listed in the annual Boy Scout Requirements publication, No. 33216. Preparation, flexibility, and a great attitude are the keys to success.

### 1. Do the following:

- a. **Explain to your counselor the most likely hazards you may encounter while participating in fly-fishing activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards. Name and explain five safety practices you should always follow while fly-fishing.**
- b. **Discuss the prevention of and treatment for health concerns that could occur while fly-fishing, including cuts and scratches, puncture wounds, insect bites, hypothermia, dehydration, heat exhaustion, heatstroke, and sunburn.**
- c. **Explain how to remove a hook that has lodged in your arm.**

First, remember that this is not a first-aid course. The Scout is not learning to become a doctor but is being cautioned to be prepared for some of the accidents that might occur while fishing. The counselor should lead a discussion on injuries that could happen on any typical fly-fishing expedition. The Scout should already know something about first aid for wounds, broken bones, hypothermia, and heat exhaustion. The counselor's role is to draw out information from the Scout. If multiple Scouts are earning the badge, the discussion becomes easier as each Scout will contribute a different perspective. Watch for Scouts who might be exceptionally quiet and draw them gradually into the conversation with specific questions.

Above all, caution that hooks are sharp and that they can cause puncture wounds. Also, an errant weighted fly that is driven into the back of the head on the forward cast can really sting. When casting, the angler must always be cautious of individuals behind him or her and also be aware of the wind direction to reduce being struck by a windblown fly. When possible, orient the Scouts so the wind comes from the direction of their non-casting arms. Sooner or later a hook will impale an angler, but it need not disrupt an otherwise great fishing experience.

There are two first-aid techniques for removing hooks. In both cases, the first step is to **cut the line** from the hook. Most anglers are familiar with the "push the hook through" procedure where the barbed section is cut off and the remaining shank portion is withdrawn from the entrance hole. Like everything, it has its advantages and disadvantages. Although this technique is simple and relatively straightforward, you will need a wire-cutting tool capable of cutting the embedded hook. Moreover, you will create a second puncture wound when you push the hook point up through the skin to expose the barb prior to cutting the hook. Skin is amazingly tough and this is hard to do without pain.

The second hook removal technique, "snap-pull," also has its limitations. Be aware that earlier editions of the Fly-Fishing merit badge pamphlet may show an incorrect graphic depicting the string pull point occurring near the center of the hook shaft. The correct string pull point is at the hook bend. This technique shouldn't be used anywhere from the neck and up, especially where there is underlying soft tissue like an earlobe.

Bring an orange or section of closed-cell foam (like a pool noodle) to the session, and use it to demonstrate both hook removal techniques. Note that ice applied to the area might serve as an expedient anesthetic.

Scouts should be cautioned to use these techniques only if they feel comfortable doing so. As with any wound, there may be exposure to blood, which also may be a concern. When in doubt, the Scout could immobilize the hook using tape or a bandage and get the patient to an appropriate medical facility.

Some of the safety practices to follow when fly-fishing include:

- Bring a first-aid kit.
- Take precautions to prevent heat reactions, dehydration, or hypothermia.
- Wear sunscreen.
- Limit physical activity.

- Wear eye protection (e.g., sunglasses) and a hat.
- Slipping, falling into underwater holes, being swept downriver by flowing water, lightning and storms, and vulnerability to large wild animals are additional concerns. The farther out you go, the risks increase—so ***Be Prepared!***
- Write a trip plan and leave it with someone.

Again, the counselor might lead a discussion to draw out these points and encourage the Scouts to add to or embellish each point on the above list.

**2. Demonstrate how to match a fly rod, line, and leader to get a balanced system. Discuss several types of fly lines, and explain how and when each would be used. Review with your counselor how to care for this equipment.**

The counselor might bring several fly rods of different lengths, and rated for different line weights, to demonstrate the variances in equipment. For example, an 8-ft, 6-in 5-weight rod might be compared with a 9-ft 8- or 9-weight rod. Similarly, bringing several weights and types of fly line might be useful in explaining how and when each might be used. Be sure to show the thickness difference in the front part of a weight-forward fly line as compared to the running part of the line. Explain that it is the heavy part of the weight-forward line that helps propel the almost weightless fly to its fishy destination on the water. Explain also the letter/number designation manufacturers use to describe fly lines and how they may match up to the rod and fish size being sought.

All of these items may be left conveniently on display for Scouts to carefully inspect further during breaks in the session.

Caring for equipment includes washing or rinsing with clean water after use and allowing to dry thoroughly. Oiling or lubricating the reel and cleaning the fly line with a dressing every once in a while can increase their useful lives. Never store your equipment in a hot car as the heat and sunlight degrades the plastic coating of fly lines and weakens monofilament leaders. Similarly, insect repellants and some sunscreens have components that ruin lines.

**3. Demonstrate how to tie proper knots to prepare a fly rod for fishing:**

- Tie backing to the arbor of a fly reel spool using an *arbor knot*.**
- Tie backing to the fly line using a *nail knot*.**
- Attach a leader to the fly line using a *nail knot* or a *loop-to-loop connection*.**
- Add a tippet to a leader using a *surgeon's knot* or a *loop-to-loop connection*.**
- Tie a fly onto the terminal end of the leader using an *improved clinch knot*.**

Understand that some Scouts will be able to visualize the process of knot-tying and some will not. You will quickly notice those Scouts who are having problems and need special attention.

Use of the E.D.G.E. method (Explain / Demonstrate / Guide / Enable) has worked well with hands-on activities like knot-tying. Use of this method, developed for Scouts, can be found at <https://www.rapidstartleadership.com/how-to-teach-using-the-edge-method-2-minute-tip/>.

Each recommended knot is described fully in the FFMB pamphlet. Some step-by-step instructions are available at <https://www.101knots.com/category/fishing-knots> and animated step-by-step tutorials are available at <https://www.animatedknots.com/fishing-knots>. These websites are a great resource for you and can be used to help Scouts visualize how to tie the knots.

It will be helpful to bring pre-cut 36- to 48-inch lengths of backing, fly line, and leader material to demonstrate each knot and have the Scouts put together a complete setup, “from reel to fly”. While serving as a measure of accomplishment for this requirement, it should be retained by the Scout for future reference. It would be even better to get your hands on some fishing knot-tying pamphlets to hand to Scouts for later review. Many tackle shops, websites, and angling manufacturers provide them free of charge.

Although the counselor might have considerable experience in “better” knots, only the knots outlined in the requirements should be used. If a Scout asks for a different knot, note that you will demonstrate it afterward or during the lunch break. Introduction of additional information during this difficult session will confuse some Scouts.

Rehearse exactly what you plan to do beforehand. If you seem confused and have to refer to a pamphlet for a given knot, the Scouts may quickly lose confidence in you or interest in the session and it will be difficult to bring them back to task.

Have the Scouts pair off and encourage them to work together to tie the knots. Try to pair Scouts who quickly understand the knots with Scouts who are having trouble. Just ensure that you are there to help them through it. Knots can be difficult and your help is critical. A skilled assistant or two will make the process flow better and give the Scouts the individual attention they need.

**4. Explain how and when each of the following types of flies is used: dry flies, wet flies, nymphs, streamers, bass bugs, poppers, and saltwater flies. Tell what each one imitates. Tie at least two types of the flies mentioned in this requirement.**

Bring in several of these different types of flies to demonstrate and facilitate a discussion on this requirement. If flowing water is available, such as a kitchen tap, a streamer fly held through its eye with a bodkin brings home the point of a small fish swimming in water. A dry fly in a cup of water demonstrates its ability to float like a real insect. Mark the flies as to type and leave them displayed for later examination. This requirement can be a great opportunity to build excitement as the Scouts begin to see it all come together. Be enthusiastic and the Scouts will usually react similarly!

If possible, to vividly explain the concept of “match the hatch”, capture some live aquatic insects or other critters. Put them in a shallow white plate, white egg carton or white ice cube tray with some water so they can move around. Compare them with imitations. This has been

a real “aha” moment for those who are unaware of the diversity of aquatic insect life and the ability of an experienced fly tier to match specific fish foods.

If possible, bring pedestal type vises. They are easy to use for both left- and right-handers and have the advantage of being easily passed back to an instructor for demonstrations or corrections. Meanwhile, the instructor is not painfully bending over the student as would happen if the vises were clamped to the table. To reduce distractions, have all of the materials for one fly available at each station and remove any tools that will not be used. Try to set up in a comfortable area with good lighting.

Some Scouts will insist on playing with the equipment, especially the vise, before you are ready for them to start. Caution them that if they change the adjustment of the vise, they will delay the fly tying session while you get the vises readjusted.

Avoid using lead wire. Rather, use lead-free wire, brass or tungsten beads, or lead-free dumbbell eyes to add weight to a fly. If you are going to tie a bead-headed fly, have the bead on the hook and insert it into the vise beforehand. This ensures that the vise is adjusted and that you don't have to either waste a lot of time chasing beads that fall off the tying table or removing the bead and inserting the hook point into the proper hole. Scouts are less likely to fiddle with the equipment if it's already set up. You can demonstrate how to insert the hook point into the small hole on the bead. Another tip is to have a model of the fly that you will be tying that can be passed around or at each station. Pre-printed pattern sheets, with a picture of the fly, a list of materials, and step-by-step instructions, are handy and give the Scout something to keep as a reference. Having a model fly in front of a Scout gives him or her a target of what he or she is trying to tie, and helps explain the idea of fly proportions.

Have plenty of extra bobbins threaded and ready to go. New fly tiers are noted for putting too much pressure on the thread or nicking the thread on the hook point. You don't want to waste your time rethreading bobbins during your session. The moment you do, the other students will be fiddling with something. Try to use 3/0 or heavier thread. The stronger thread will help reduce breakage. GSP or Kevlar threads work well and are almost unbreakable.

As you begin your fly-tying session, you might demonstrate how to tie the fly and explain the steps as you proceed. Go slowly enough for the Scouts to see what you are doing but not so slow that you lose their attention. Plan to use the E.D.G.E. method to Explain, Demonstrate, Guide and Enable the process. See the link above in the knot-tying section.

One of the best first flies is the ***Bead Head Woolly Worm***. It teaches basic fly-tying skills, and it is simple and large enough yet is an effective fly to catch all sorts of fish. One benefit of this fly is the fact that tail length is not an issue. When the fly is complete, simply cut the “tail” to the desired length (about the distance of the hook gap) and it is ready for fishing. Teach the “critical pinch” technique to tie the fly materials on top of the hook shank. Scouts will need to know this technique before they can tie other patterns.

To get started, remind the Scouts that you want everyone to stay at the same point in the fly-tying process. If Scouts go at a faster pace, results will vary dramatically. Keeping Scouts at the same step allows you to inspect their work and correct it if necessary before proceeding to the

next step. Following this procedure, every Scout will end up with a well-proportioned and “fishable” fly.

Do not teach how to use a whip finisher. Whip finishing is an advanced finishing-off technique and teaching how to use it will consume an inordinate amount of time. Rather, get some cheap ballpoint pens or plastic coffee stirrers and use these to tie a few half hitches. When you disassemble the pen into its components, you will have several “half hitch” tools, one of which should readily go over the bead. The pen bore can still be used to take notes!

Be prepared for the “oh wow” moment. As you are completing the fly and the Scout is palmering the hackle forward toward the eye for the first time, the feather’s fibers will splay outward much like a caterpillar’s legs. Since few Scouts ever have visualized a feather this way before, they often greet the moment with an “oh wow”, even if they have an example right in front of them!

Several other simple fly patterns might be used as the second fly. For example, the ***Bead Head Pheasant Tail Nymph, Elk Hair Caddis, Foam Beetle*** and ***Clouser Minnow*** are all effective choices. When time is really short, the ***San Juan Worm*** and the ***Killer Bug***, available on the Internet, are easy and effective alternatives. If time permits, try to introduce a fly pattern that is not too complicated or small in size and will have a high likelihood to catch fish in your area.

While Scouts may choose to stick their fly proudly into their hat, small (3x4) Ziploc bags available in craft stores, packing foam peanuts, or small corks make a good way for them to safely store their completed flies until they are ready to fish them.

If you are going to be teaching your program over several weeks, you may assign homework and allow the Scouts to take the vises home to work on additional flies. Be prepared to give them the appropriate hooks, materials and pattern sheets. While charging Scouts for simple materials is not out of the question, the counselor should refrain from assessing fees if at all possible. Note that some Scouts may not be able to afford an extra fee and even the suggestion might turn a few, who may be on the fence, off. Generally, the few fly-tying supplies are so cheap that visits to the local tackle shop or craft store can limit your costs to \$5 to \$10 for the fly-tying needs of your Scouts. Perhaps your local fly-fishing club has vises to lend, and provide other needed equipment and materials for your sessions. Who knows, there may even be a few volunteers to come along and help you out.

## **5. Demonstrate the ability to cast a fly 30 feet consistently and accurately using overhead and roll cast techniques.**

Make the following point: ***casting is merely a way of delivering a fly to a location where a fish is likely to be.*** Your role as counselor is not to make a Scout capable of becoming a fly-casting expert. Just get them to be able to make a reasonable cast - one where the fly line unfurls in a relatively straight line out in front of the angler. If the Scout can get a yarn “fly” to land inside a Hula Hoop at 30 feet after several tries on a calm day that should be sufficient.

Think about it; the best fly anglers will catch most of their fish well within 30 feet. Also, the index of refraction of light is different in water and air. Due to the laws of physics, a fish is



unlikely to see a Scout if he or she is standing about 35 feet away. Although the fish may not see him or her, the Scout should be aware that sounds travel very well in water. Fish may become nervous, not wanting to eat anything, much less the fly, if it hears or senses any unnatural sounds.

If possible, bring a rod for each Scout. One instructor can teach four to six Scouts at a time reasonably well. Initially, keep them all in the same sequence. By doing so, one Scout who gets it can help his fellow Scouts learn the timing and stroke. Emphasize that what you are looking for are a few good casts and not a whole bunch of marginal presentations. Flailing the water will result in a bunch of tired arms (and skittish fish). Have the Scouts note and celebrate a well-made cast!

Remind the Scouts that fly rods are knot-tying machines. When (not if) they get a tangle, the Scouts need to STOP and get it untied. Fly rods are NOT whips and the action is NOT whip-like. Rather they serve like a spring, where energy flows from your hand to the rod, to the line, back to the rod, and finally back to the line as they deliver the fly to the intended location. The line and fly will go in the direction of the rod tip during the backward and forward stroke.

You may want to “up-weight” the rod by one line weight over the designated rod weight. The added weight will help Scouts feel the “tug” on the rod when making a traditional back and forward cast and will help load the rod on both the overhead and roll casts.

Mark your fly lines at 30 feet. Make a black permanent mark about one inch in length all around the line 30 feet back from where you would attach the leader. While you’re at it, mark the front of the fly line to indicate its weight - a broad band for 5 and a narrow band for 1. A 6-weight line would then have one broad band and one narrow band. A 4-weight line would have four narrow bands.

You don’t need to use tapered leaders and can easily get by with 5 to 6 feet of 15-lb monofilament with a small tuft of yarn tied in at the terminal end to simulate a fly. A simple clinch knot works well for this. While this “leader” works fine for casting practice (and streamer fishing) note that a tapered leader is best for dry flies, wet flies and nymphs.

Important - Scouts must use some form of **eye protection** (glasses, sunglasses or inexpensive plastic goggles are fine) and wear a **hat**. Have about 10- to 12-foot separation between casting lanes and try to have the wind coming over their non-casting shoulder or perhaps from the rear. Asking a Scout to cast into a 20 knot wind is not fair or safe!

While there are many roads leading to Rome, a simple tried and true technique of casting instruction involves asking the Scout to remember only four things. Demonstrate each before anyone else picks up a rod.

1. **The thumb is placed on top of the grip.** This is because the thumb is the strongest finger and can apply the most pressure during the forward part of the cast. It helps if the Scout can “focus on the thumb” and point it just above the target on the forward stroke. The rod, line, leader, tippet and fly will follow.
2. **The stopping point of the rod tip on the back cast is at 1 o’clock.** With (1) and (2), the Scouts will be able to make a roll cast. Simply have them draw the rod tip **slowly** from

ground or water level to the 1 o'clock position and **stop**. Before anyone casts, have them all check where the rod tip is. Check where the reel is pointed (it should be in the direction of where you want the fly to go). Check the thumb placement (directly behind the rod grip and in the same plane where you want the fly to go). Check that the rod is in the 1 o'clock position. Have the rod lean slightly away from the Scout and check that there is a D-shaped curve in the fly line **behind** the Scout. With all the Scouts on the same page, have them make a forward stroke by putting hammer-like pressure and movement, pushing forward (not down) with their thumb. It may take a few repetitions to get them all making a roll cast, but with patience and a bit of peer pressure they all seem to get it quickly enough. For roll casting, you might start with only 25 feet of fly line beyond the rod tip. This is where a slightly heavier line helps load the rod and will give them more control. Remember, if they are using a typical 8.5- or 9-foot fly rod with a 5- or 6-foot practice leader, casting 25 feet of fly line in a roll cast actually delivers the fly outward to over 38 to 40 feet! Make a point of this with the Scout - they'll be amazed at how far they've cast with just a few minutes of instruction.

3. **The rod is a spring that stores and releases energy.** In preparing for the making the traditional overhead cast, Scouts will have to learn two more things. Have 25 to 30 feet of fly line laid out straight before them. The black mark on the line should help orient them. You should have already demonstrated that they need to bring the rod tip upward smoothly and vigorously from ground or water level and have it stop dead at the 1 o'clock position. Explain that with the rod tip lowered and in the same plane as the line before them, they initiate a lift slowly but with rapidly increasing vigor to bend (load) the rod. They have to put enough energy into the cast to get the fly line, leader and fly in the air. At this point most of the energy is in the rod as it loads. When the rod reaches the 1 o'clock position, the rod is stopped dead. Now the energy in the rod is transferred to the line, propelling it rearward. A tip for younger Scouts is to allow them to bring the non-casting hand to the butt of the fly rod, providing additional lifting energy to get the line into the air and flowing backward. Should you encounter a Scout in a wheelchair, sit on a chair or kneel on the ground next to him or her and make the cast from the lowered position. It is the same cast you would make when fishing from a boat.
4. **The back cast is the basis for the forward cast.** Encourage the Scout to get into a stance similar to baseball batting stance so he or she can watch the line unfurl rearward. Forward pressure is provided by the thumb just before the moment when the fly reaches its most rearward position and before the fly line starts to fall downward. Usually if a cast fails to develop, the Scout has brought the rod tip beyond the 1 o'clock position, is not waiting long enough for the fly to reach its full rearward position, or has not put enough energy into the back cast. Demonstrate that you can make a great cast by merely watching the line unfurl behind you. A good forward cast is made possible by a good back cast.

You will see "double pumps" where the Scout stops the tip at 1 o'clock and then just before the cast brings the rod tip further backward, wanting to hit a "home run." You may have to devise some techniques to prevent them from going beyond the 1 o'clock position. Watch for a Scout doing it correctly and bring attention to him or her. You may even wish to pair up that Scout

with another who needs help. Scouting is based on teaching skills from one Scout to another so this is very consistent with a Scout's development.

Excessive wrist bending is one of the most common faults. There are a number of tips to correct this. One is to tuck the butt end of the rod into the Scout's shirt sleeve, if he or she is wearing a long-sleeved shirt, or use some line or a rubber band to make a loop that fits over the Scout's wrist and the rod butt just behind the reel. Another is to ask him or her to temporarily use the "index-finger-on-top" grip. This forces his hand into a position where it's more difficult to bend the wrist back.

Tenkara fly-fishing was introduced at the 2017 National Jamboree and should be included in the next edition of the merit badge pamphlet. The casting technique for this style of fishing will be described in the pamphlet. There are also a number of good references and online YouTube videos on how to cast and fish Tenkara-style. It is a very simple technique and may be the best way to introduce Scouts to fly-fishing. Page 42 of the *Simple Fly Fishing* reference is a good place to start.

**6. Go to a suitable fishing location and observe what fish may be eating both above and beneath the water's surface. Explain the importance of matching the hatch.**

A great advantage of fly angling is that when an angler finds out what the fish are eating and can deliver a fly that mimics the prey organism in behavior, size, shape, and color, he or she is likely to catch a lot of fish. This merit badge requirement introduces the Scout to basic predator-prey relationships. The Scout must use observational skills to see small creatures and appreciate that fish rely on these critters for survival. Using this knowledge and their own creativity, they can tie flies that closely mimic and suggest to the fish that their fly is the real thing, or at least something worth sampling. Essentially, this is the game of fly-fishing - to find out what the fish may be feeding on and to tie on just the right fly, cast it to a place where a fish is likely to be, and make it behave as a natural fly. All to provoke a strike! You are not passively waiting for a fish to bite; you are tempting the fish to bite. Often this process is not easy, especially when you go to a new fishing location. But when the mystery is solved, a great day of catching can follow.

**7. Do the Following:**

- a. **Explain the importance of practicing *Leave No Trace* techniques. Discuss the positive effects of *Leave No Trace* on fly-fishing resources.**
- b. **Discuss the meaning and importance of *catch and release*. Describe how to properly release a fish safely to the water.**

**Leave No Trace** should be integrated into every element of fly-fishing. For example, it should be taught as part of fly tying (picking up the mess from all clipped materials) and in knot tying by collecting all tag clippings and putting them in a place where they can be disposed of properly.

If a fish is kept for dinner, all waste should be buried or disposed of according to procedures outlined by fishery managers. Some managers want the carcass to be cut up and thrown back

into the water as a way of replenishing nutrients for future generations of fish. When in doubt the remains should be disposed of as you would human waste.

Introduce the concept of “Biological Leave No Trace.” Scouts should be reminded that invasive species not native to the water body being fished can be a much bigger problem. Inadvertent transfer of invasive species is a real and long term problem. For example, New Zealand mud snails and *Didymosphenia geminata* (a diatomic form of aquatic algae) can be transferred by hitching a ride on common felt boot bottoms. While paper may last for one to five years before degrading, and plastics many more years than that, invasive biological organisms may last forever! Scouts should be aware of invasive organisms and cautioned to wash and sterilize their equipment before going from one water body to another. Three tablespoons of Clorox in a gallon of water will do the job.

**Catch and Release** is a valuable fishery management tool that allows a fish to be caught and enjoyed by more than one angler. Scouting’s founder, Lord Baden-Powell, was an early advocate of catch and release.

Various factors will determine if a released fish lives or dies, but the most important factor is the location where the fish is hooked. A fish hooked in the gills or throat has a much lower survival rate than a jaw-hooked fish. Fish caught with artificial flies generally survive better because the hooks are not often deeply swallowed. A fish profusely bleeding will have a good chance of dying within 24 hours of release and may be better served if taken and used for food if it is legal to do so.

While using barbless hooks does not significantly increase fish survival, their use can often ease the trauma of release by reducing handling time. Using wet hands and minimally handling a fish are always good practices. Get the fish back into the water as quickly as possible. A good rule of thumb might be to hold your breath while the fish is out of the water. When you have to breathe, so does the fish! Another common and even better rule of thumb is 10 seconds.

Ingesting a hook too deeply may call for cutting your line and releasing the fish with the embedded hook. With a bit of luck, the fish may soon expel the hook allowing the wound to heal naturally.

Minimize the time you play a fish. If you expect to catch larger fish, use a rod that is appropriately weighted and a tippet that is sufficiently strong. A lightweight rod and tippet used to catch a large fish will almost certainly extend the time to subdue the fish. Longer playing times contribute to fatigue and stress and make the fish more vulnerable to even larger predators upon release.

Higher temperature water holds less oxygen and can contribute to increased fishing mortality. Cold-water species like trout are especially vulnerable. Sometimes when the water is too warm, it may be better to fish for warm water species that can recover more quickly. In the same vein, in mid-summer it may be better to fish early in the morning when the water temperature is cooler rather than fishing in the afternoon when water temperature is the highest.

In rivers and streams, keeping the fish pointed into the water flow will help oxygenated water flow through its gills with minimal effort by the fish. Holding the fish gently underwater until it swims away on its own improves its chances of survival. Larger fish generally need a longer recovery period.

**8. Obtain and review a copy of the regulations affecting game fishing where you live or where you plan to fish. Explain why they were adopted and what is accomplished by following them.**

Fishing regulations are scientifically based and are developed over time to ensure that a fishery is managed consistent with long-term conservation goals. Fishery managers are constantly monitoring fish populations and making recommendations to fishery administrators based on their findings.

By following the law, anglers ensure that there will be fish to catch in future years. Elements in the regulations that follow management principles include season dates to protect spawning, size limits to protect smaller fish, slot limits to protect the larger spawning fish, and trophy limits to restrict the number of larger fish taken. In some cases, certain species may be caught but need to be released immediately. Again, these rules were not made to hassle the angler but to ensure that the fish are protected until they have had time to become reestablished and to optimize the overall quality of the fishery.

Each state publishes its own recreational fishing regulations. The intent here is to follow the regulations in the area you intend to fish. If the angling is to be done at summer camp, for example, be sure to use the regulations that apply to the location of that camp.

**9. Discuss what good outdoor sportsmanlike behavior is and how it relates to fishermen. Tell how the Outdoor Code of the Boy Scouts of America relates to a fishing enthusiast, including the aspects of littering, trespassing, courteous behavior, and obeying fishing regulations.**

The **Outdoor Code** of the BSA teaches cleanliness in the outdoors to ensure that future generations have the same or better habitats to enjoy. Care with campfires, consideration of others, respect of private property, the use of low-impact camping and hiking methods, and the use and promotion of good conservation practices in the field all contribute to this goal.

Following the Outdoor Code, a fly-angling Scout abides by conservation laws, asks for permission to use or cross someone's property, collects and carries out all trash and litter, and exhibits courteous behavior to others who may be using the same area.

Generally, anglers fishing upstream have the right-of-way and an angler fishing downstream should get out of the water and pass quietly downstream of the angler heading up river. If you see other anglers fishing, or even just sitting by the water, stay well away so you don't disturb them. Angling etiquette is important and a fly angler needs to learn to be a respectful member of this age-old fraternity.

## **10. Catch at least one fish and identify it.**

This requirement is what it is all about. The Scout tests his ability to match wits with a fish and to fool that fish into believing that the fly being offered is something worthy of being eaten. It is the moment of truth—that time when the focus is between the angler and the fish. Can the angler deliver the fly to an area likely to hold a fish? Can the angler provoke a strike? Can the angler use good line control techniques to set the hook and play the fish?

To bring a Scout to this point, the counselor should teach a Scout how to get line control (get the rod tip in position, retrieve slack line and be ready to pinch the fly line to the rod grip) immediately after a cast is made. Sometimes a strike will occur just as the fly hits the water, so a Scout has to be prepared. Getting line control has to be automatic and the Scout will need to practice the skill.

The counselor needs to emphasize how to fish dry flies by raising the rod tip (tip set) to set the hook versus fishing a wet fly, nymph or streamer where you strip set the hook by quickly tugging the line with the non-casting hand.

What constitutes a “catch”? The requirement states that at least one fish must be caught and identified. It doesn’t make any distinction between a fish 3 inches long and one 3 feet long. A fish can be 3 grams or 300<sup>2</sup> pounds! Any fish counts. Does the fish have to be landed? As long as the Scout can identify the type of fish (i.e., common name) after it has been impaled onto his hook, then that is a catch—even if it flips off before he or she is able to bring it to the net. Some call this an “early”, “remote” or “long distance” release. If the Scout delivers his fly to an area where a fish is likely to be, he or she makes the fly behave in a way that the fish believed it to be a natural prey, he or she sets the hook when the fish struck and he or she identifies it, then all of the elements of the requirement have been fulfilled.

For many Scouts, this might be their first fish ever. Try to remember to have a camera available to record that fish and that smile. For you as counselor, you have been rewarded for all your work. Well done!!

## **11. If regulations and health regulations allow, clean and cook a fish you have caught. Otherwise, acquire a fish and cook it.**

Although the requirement no longer requires a Scout to kill a fish, he or she should not be made to feel guilty in killing a fish if it is legal to do so and he or she plans to use it for food. This is consistent with Lord Baden-Powell’s observation that a “tenderfoot who starved on the bank of a river full of fish would look very silly yet it might happen to one who had never learned to catch a fish.”

Still, there is a concern that some areas conveniently available to Scouts might have catch-and-release restrictions making it unlawful to retain a fish for food. Similarly, some states have imposed restrictions on eating certain fish and it would also be wrong to encourage anyone to eat a fish that might make them ill. To address both concerns, a Scout is given credit for

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<sup>2</sup> Of course, if a Scout catches something this big, the BSA Fishing Committee would certainly like to know about it!

releasing his fish and then acquiring one from another angler or perhaps from a fish market. That fish is then cleaned and cooked. The Scout is not required to eat the fish.

## Resources

### Scouting Resources

- Boy Scout Requirements, No. 33216
- Boy Scout Handbook, No. 34554
- Fishing merit badge pamphlet, No. 35820
- Fly-Fishing merit badge pamphlet, No. 35824
- Camping merit badge pamphlet, No. 35866
- Cooking merit badge pamphlet, No. 35879
- Environmental Science merit badge pamphlet, No. 35892
- First Aid merit badge pamphlet, No. 35897
- Fish and Wildlife Management merit badge pamphlet, No. 35898
- Soil and Water Conservation merit badge pamphlet, No. 35952

### Books

- Alley, Robert H. ***40 Best Trout Flies***. Frank Amato Publications, 1996.
- Best, A. K. ***A. K. Best's Fly Box: How to Tie the Master Fly-Tyer's Patterns***. The Lyons Press, 2006.
- Chouinard, Yvon; Mathews, Craig and Mazzo, Mauro. ***Simple Fly Fishing: Techniques of Tenkara and Rod & Reel***, Patagonia, Inc., 2014.
- Culora, Jill; Culora, Tom and Sousa, Robert J. ***24 Greatest Flies You Don't Leave Home Without***. Husking Bee Books, 2010.
- Hughes, Dave. ***Essential Trout Flies***. Stackpole Books, 2000.
- Hughes, Dave. ***Trout Flies: The Tier's Reference***. Stackpole Books, 1999.
- Leiser, Eric. ***The Complete Book of Fly Tying***. Knopf, 1980.
- Lord, Macaulay. ***The L. L. Bean Fly-Casting Handbook***. The Lyons Press, 2000.
- Lyle, Morgan. ***Simple Flies: Easy -to-Tie Patterns that Catch Fish***. Stackpole Books, 2015.
- Martin, Darrell. ***Micropatterns: Tying and Fishing the Small Fly***. The Lyons Press, 1999.
- McKim, John F. ***Fly Tying: Adventures in Fur, Feathers, and Fun***. Mountain Press Publishing Company, 1986.

McNally, Tom, and Beecham, Tom. ***The Complete Book of Fly Fishing***. International Marine/Ragged Mountain, 1997.

Morris, Skip. ***Fly Tying Made Clear and Simple***. Frank Amato Publications, 2002.

Rosenbauer, Tom. ***The Orvis Fly-Fishing Guide***. The Lyons Press, 2007.

Rutter, Michael. ***Fly Fishing Made Easy: A Manual for Beginners With Tips for the Experienced***. Falcon, 2006.

Shook, Michael D. ***The Complete Idiot's Guide to Fly Fishing***. Alpha Books, 2005.

Sousa, Robert J. ***Learn to Fly Fish in 24 Hours***. McGraw-Hill, 2006.

Talleur, Dick. ***Modern Fly-Tying Materials***. The Lyons Press, 1995.

Whitlock, Dave. ***The L. L. Bean Fly-Fishing Handbook***. The Lyons Press, 2006.

Wulff, Joan. ***Joan Wulff's Fly-Casting Techniques***. The Lyons Press, 1994.

## DVDs

LaFontaine, Gary, and Dick Sharon. ***Successful Fly-Fishing Strategies***, 100 minutes. Miracle Productions, 2002.

Wulff, Joan. ***Joan Wulff's Dynamics of Fly Casting, From Solid Basics to Advanced Techniques***, 90 minutes. Miracle Productions, 2001.

Young, David, and Cheryl Young. ***Fly Fishing: The Lifetime Sport***, 240 minutes. Honeybear Press, 2005.

## Periodicals

***Fly Fish America*** magazine (<https://flyfishamerica.com/>)

***Fly Fishing and Fly Tying*** magazine (<https://www.flyfishing-and-flytying.co.uk/>)

***Fly Fisherman*** magazine (<https://www.flyfisherman.com/>)

***Fly Tyer*** magazine ([www.flytyer.com](http://www.flytyer.com))



## Organizations and Websites

### **American Museum of Fly Fishing**

P.O. Box 42  
4104 Main St.  
Manchester, VT 05254  
802-362-3300  
<http://www.amff.com>

### **Catskill Fly Fishing Center and Museum**

1031 Old Route 17  
Livingston Manor, NY 12758  
845-439-4810  
<https://cffcm.com/>

### **Fly Fishers International (FFI)**

5237 US Highway 89 S. Ste. 11  
Livingston, MT 59047  
406-222-9369  
<http://www.flyfishersinternational.org>

### **Recreational Boating and Fishing Foundation (RBFF)**

<https://www.takemefishing.org/>

### **International Game Fish Association**

300 Gulf Stream Way  
Dania, FL 33004  
954-927-2628  
<http://www.igfa.org>

### **Leave No Trace**

P.O. Box 997  
1830 17th St., Suite 100  
Boulder, CO 80304  
800-332-4100  
<http://www.lnt.org>

### **Trout Unlimited**

1300 N. 17th St., Suite 500  
Arlington, VA 22209  
800-834-2419  
<http://www.tu.org>

### **U.S. Fish and Wildlife Service**

Main Interior  
1849 C St., NW  
Washington, DC 20240  
<http://www.fws.gov>