The Meadows Center for Water and the Environment
Texas State University

Texas Stream Team

PROBE CORE TRAINER TRAINING AND EVALUATION

Trainer Certification

☐ *Phase I – Trainer trainee must be a certified Texas Stream Team citizen scientist.*

☐ *Phase II – Trainee assists a certified trainer in planning, coordination, and presenting at one citizen scientist training session.*

Trainer Name: _____
Trainer Signature: _____
Date: _____

☐ *Phase III – Trainee plans, coordinates, and presents all phases of one citizen scientist training assisted by a certified Texas Stream Team trainer (completed trainer's form is on file with Texas Stream Team).*

Trainer Name: _____
Trainer Signature: _____
Date: _____

☐ *Phase IV – Trainer submits a Texas Stream Team certificate request form for the trainee to Texas Stream Team. The newly certified trainer receives a certificate as a certified Texas Stream Team Trainer.*

Trainer Name: _____
Trainer Signature: _____
Date: _____

To Maintain Certification

A Texas Stream Team trainer is encouraged to participate in and/or lead at least two citizen scientist training sessions per year and provide information on these training sessions to Texas Stream Team in the form of completed citizen scientist training packets.

Note that if certification lapses for over one year, the trainer will be encouraged to repeat Phase II and III of the Trainer Certification process.

Texas Stream Team: Trainer Certification Record (Phase I-IV)

Trainee Name: _____

Organization/Group: _____

Address: _____

City: _____ *State:* _____ *Zip Code:* _____

Phone: _____ *Email:* _____

Trainee Signature: _____ *Date:* _____

PROBE CORE TRAINING CHECKLIST

1. INTRODUCTION

- ☐ Introduction from trainer – name, email, position, organization, etc.
- ☐ Distribute sign-in sheet and allow trainees to introduce themselves (recommended for smaller classes or if time allows).
- ☐ Explain citizen science water quality monitoring.
- ☐ Explain the Texas Stream Team Program and Partnerships.
- ☐ Explain Texas Stream Team and Partnership goals, services, mission, etc.

2. TRAININGS & DATA USES

- ☐ Provide a brief overview of the different types of citizen scientist certification training courses available through Texas Stream Team: Standard Core, Probe Core, Advanced, *E. coli*, Riparian Evaluation, Macroinvertebrate Bioassessment, TEEAC, and Trainer.
- ☐ Provide examples of data uses: increased understanding of overall quality of watersheds; data summary reports; partner data sharing; research projects; etc.

3. KEY CONCEPTS

- ☐ Properly define a watershed and the concept of stream order. Consider using the "watershed wiggle" to describe the stream order concept.
- ☐ Explain the major Texas River Basins and how they relate to individual watersheds.
- ☐ Define pollution: point source and nonpoint source (NPS) and the differences between them.
- ☐ Provide examples of NPS: pet waste, trash, fertilizers, herbicides, toxic chemicals from residential/agricultural runoff.

4. CORE TRAINING OVERVIEW

- ☐ List and briefly explain the Core water quality parameters to be tested: temperature, dissolved oxygen, pH, conductivity, field observations.
- ☐ Explain Phase I, II, and III of the training.
- ☐ Explain Probe Core upkeep, storage and troubleshooting.

5. FIELD OBSERVATIONS AND WATER SAMPLE COLLECTION

- ☐ Properly describe all field observations, what types of comments can be included and how to record them on the monitoring form.
- ☐ Demonstrate the process of collecting a sample and recording the sample date, time, and sample depth on the monitoring form.

6. TEMPERATURE

- ☐ Explain how temperatures can threaten aquatic life.
- ☐ Provide examples of human-induced sources of temperature changes: power plants, hydroelectric plants, decreased flows, etc.
- ☐ Demonstrate the process of determining water and air temperature Celsius(°C) during testing and where to input on the monitoring form.

7. CONDUCTIVITY

- ☐ Define conductivity: indirect measurement of total dissolved solids (TDS), presence of excess nutrients, sediments, etc.
- ☐ Explain how pollution/contaminants attach to sediments.
- ☐ Introduce conductivity measurement units: microsiemens per centimeter(µS/cm).
- ☐ Explain conductivity ranges in µS/cm: 0-800, 800-2,500, 2,500-10,000, and above 10,000.
- ☐ Demonstrate protocol used to calibrate the conductivity probe meter: pay close attention to the displays of "SA" and then "End" (in that order) and where to enter the calibration data on the monitoring form.
- ☐ Demonstrate protocol used to test for conductivity and where to record the data on the monitoring form.

8. PH

- ☐ Define and introduce pH, the pH scale, and the pH measurement unit, standard units.
- ☐ Explain the healthy range for freshwater aquatic life: 6-9 standard units.
- ☐ Provide examples of pH solutions for acidic pH, basic/alkaline pH, and ocean acidification.
- ☐ Demonstrate protocol used to calibrate the pH meter: pay close attention to the displays of "SA" and then "End" (in that order) and where to enter the calibration data on the monitoring form.
- ☐ Demonstrate protocol used to test for pH and where to record the data on the monitoring form.

9. DISSOLVED OXYGEN

- ☐ Define dissolved oxygen (DO).
- ☐ Explain the units of measurements (mg/L) and the amount of DO that is suitable for aquatic life.
- ☐ Provide examples of DO sources: diffusion from atmosphere, aquatic plants, high nutrients in the water system (eutrophication), etc.
- ☐ Explain DO fluctuations over the course of a day: sunlight, time of day, position of the sun, etc.
- ☐ Explain DO fluctuations seasonally: temperature, daily sunlight cycle, etc.
- ☐ Demonstrate protocol used to calibrate the DO probe meter paying close attention to the display of "101.7", then "SA", then "End" (in that order).
- ☐ Demonstrate protocol used to test for DO and where to record the data on the monitoring form.

10. MONITORING FORM REMINDERS

- ☐ Verify that all field observations, calibrations, and parameters tested are properly recorded on each trainee's monitoring form.
- ☐ Explain the required sections requesting total time spent sampling and traveling, total roundtrip distance traveled, and total number of participants and how to record it on the monitoring form.

11. CONCLUSION

- ☐ Did everyone provide their contact information? Explain that an email address is required in order to obtain an electronic copy of your certificate.
- ☐ Did the trainer request that trainees sign and date the Citizen Scientist Commitment Statement, Liability Release, and Equipment Loan Agreement form? Explain that this page must be signed by trainees in order to receive certification and begin monitoring.
- ☐ Did the trainer provide details on site selection, the Waterways Dataviewer and Datamap, online calendar, Community Forum and Blog, and videos?
- ☐ Did the trainer make sure everyone completed the Measures of Success survey?
- ☐ Did everyone leave with a copy of their instructions/packet and clear idea of how to start monitoring?
- ☐ Were all questions answered?