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Weed science is a young field of study compared to other pest management disciplines, such as entomology and plant pathology. It wasn't until October 1951 that the first issue of *Weeds* (later renamed *Weed Science*) was published by the Weed Science Society of America. This was followed in August 1962 with the *Hyacinth Control Journal*, published by the Hyacinth Control Society (this too was later changed to the *Journal of Aquatic Plant Management*, published by the Aquatic Plant Management Society). This timeline highlights the fact that the discipline of aquatic plant management grew out of the emerging field of weed science as recently as the 1960s and 1970s.

This new research emphasis was needed because of the inherent difficulty of conducting plant management in aquatic systems. The first challenge posed by aquatic weed control is more complex selectivity issues. In agronomic crops, the goal is typically to kill all plants present except the crop. In contrast, the strategy in aquatic plant management is usually to control a single plant species effectively without damaging the dozens of others that are essential to the quality, health, and value of the water body. A second challenge is that terrestrial herbicides can be applied in discrete plots that are side by side with little risk of contamination among treatments. This differs from aqueous systems, where pesticides quickly seek equilibrium in the water, making plot work in the field all but impossible. Therefore, our early aquatic weed scientists had to develop new methods every day in order to address these challenges and move us forward as a discipline.

These new methods were developed in the relatively recent past, and a number of members of the Aquatic Plant Management Society trained directly with these early pioneers and went on to develop additional time-proven aquatic research techniques. Because APMS still has direct access to this vast collection of firsthand knowledge, we are fortunate to be able to capture and document many of these experiences and protocols in this publication. Although the methods used for conducting aquatic plant management research are available in the published literature, most refereed articles only outline the steps taken to make an experiment successful and do not discuss the trial and error that led to the use of the published method. Therefore, with this issue we strive to capture the basics from our most experienced researchers, who discuss the keys to success and the most common mistakes from a variety of research topics—in other words, we want to share what NOT to do, along with describing the techniques that work best. Our goal is not to provide inflexible rules for research, but rather to share the experiences that have most often led to successful experimentation.

The Aquatic Plant Management Society hopes this publication will set a standard for conducting high-quality research for the next several decades. As the pioneers of these techniques move into retirement, we hope this collection of articles will help prepare the next generation of aquatic plant managers to lead our discipline with innovation and passion.