

Use of Personal Digital Assistants (PDAs) For Collecting Angler Survey Data



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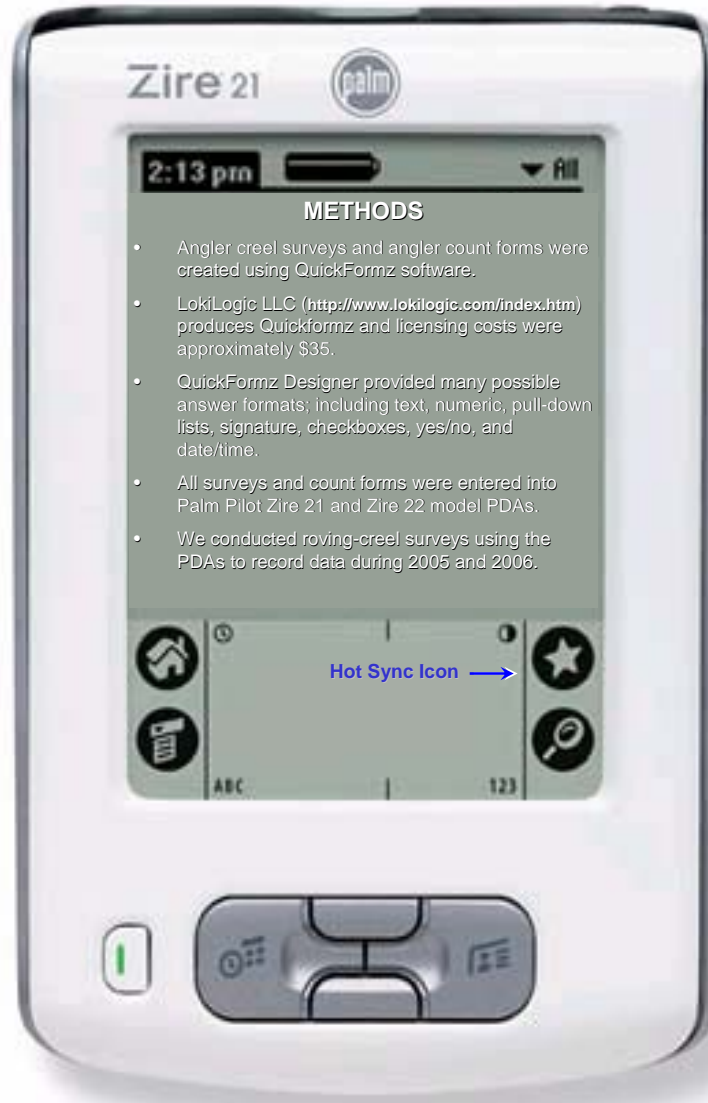


ABSTRACT

Angler surveys are a common and important method for sampling recreational fisheries. Typically, survey data are recorded using paper forms and manually entered into electronic databases for future analyses. Entering survey data is tedious, expensive, and a source of data error. As an alternative to paper forms, we used Palm® Personal Digital Assistants (PDAs) to collect angler survey data. Approximately 2,150 interviews and 1,850 instantaneous angler counts were recorded during 2005 and 2006, and all data were downloaded directly into a PC by connecting the PDA and PC with a USB cable and simply touching the Hot Sync icon. This technique was rapid and accurate, saving time, money, and eliminated a potential source of data entry error. Surveys were designed and administered using Quickformz software available through LokiLogic LLC (<http://www.lokilogic.com/index.htm>). Cost for each PDA was about \$100 and Quickformz licensing cost was about \$35. The PDAs proved durable with only two malfunctions in approximately 580 sampling trips. Frequently downloading data minimized the data lost from either malfunction. Quickformz Designer allowed for diverse question designs and multiple answer formats, including text, numeric, pull-down lists, signature, checkboxes, yes/no, date/time, and more. We used the PDAs and Quickformz software to record angler demographics, angler satisfaction rates, catch, harvest, effort, and date/time data. Overall, we found the use of PDAs for conducting angler surveys to be inexpensive, durable, reliable, and an efficient way of collecting angler survey data.

INTRODUCTION

- Angler surveys are an important and commonly used tool of fishery managers.
- Angler surveys traditionally are conducted face-to-face and the data are recorded on paper forms.
- Angler survey data must be entered manually into a computer database for summarization and statistical analysis.
- Manual data entry into a computer database is tedious, expensive, and a potential source of data error.
- Elimination of the manual data entry step would remove the potential for human error, reduce data management effort and costs, and lessen the cost of paper forms and the generation of waste paper.
- We used PDAs instead of paper forms for an intensive angler survey program involving five separate survey evaluations and five angler count forms.
- The objective of this study was to evaluate PDA efficacy as an angler survey instrument.



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RESULTS

- We conducted about 580 survey trips involving approximately 2,150 angler party interviews and 1,850 instantaneous angler counts.
- All data were recorded using PDAs and downloaded via USB connection and Hot Sync icon.
- Every data download saved correctly where we directed it to be saved to, without data loss or error.
- Every download opened correctly and the data were copied and pasted to a master file without incident.
- Although interview time length may have increased slightly compared to a paper form, no angler ever terminated an interview because "it was taking too long".
- Questions could be quickly skipped if they did not need to be asked of the respondent, shortening interview length.
- Only two PDA malfunctions occurred during the study; very little data were lost thanks to frequent downloading of data to a PC.
- At least one of the two malfunctions was due to the use of a refurbished PDA.

Right: Quickformz Designer allows the use of multiple question types and answer formats when designing angler surveys



CONCLUSIONS

- Recording angler survey data on Palm Pilots reduces data entry error, saves time and money, and frees seasonal employees to work on other projects.
- PDAs are durable and can be used while sealed in a plastic bag or in optional waterproof containers if protection from moisture becomes necessary.
- Readability may be an issue for individuals with poor eyesight, although there are PDA models available with larger font sizes.
- This technology is affordable, with a one-time cost of about \$35 for the software and \$100 for each PDA.
- PDAs should be purchased new to reduce data loss from failure of refurbished PDAs.
- PDAs have potential application in many other aspects of fisheries science, including water quality, hatchery management, population assessment, and more.