Wireless Fish Measuring Board from Lat 37

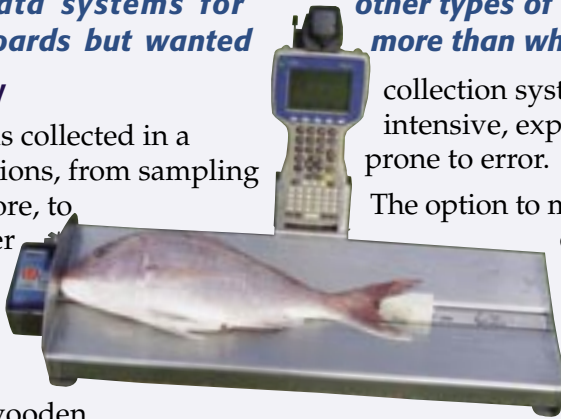*Simon Anderson, principal of **Lat 37**, has developed a successful electronic data collection system for rock lobster catch sampling and tag and release programs. Anderson saw the need to further develop electronic data systems for measuring boards but wanted other types of fisheries. He was aware of other electronic fish more than what those boards offered.*

A Brief History

Fisheries data is collected in a variety of locations, from sampling the catch onshore, to onboard catcher and factory vessels. Traditionally, fish have been measured on wooden boards, and lengths and meta data recorded on paper for data processing later.

Another system of manual recording includes paper mark-sense forms. After these forms are filled out they are taken and read by an optical scanner. These data collection systems are labor intensive, expensive and prone to error.

The option to manually record data using plastic coated paper is also available. This has made data-recording easier for field technicians, but has embedded fisheries authorities and managers with outdated technology.

The wFMB is Introduced

When designing the wFMB (wireless Fish Measuring Board), Lat 37 wanted to eliminate any cable connections because of the harsh environment a fish measuring board is typically used in. Anderson designed a measuring board to capture and transmit finfish lengths wirelessly to the Allegro, while other meta data (sex, gonad stage, otolith and scale collection, etc.) are keyed in directly.

Integrating the Allegro

In the development phase of the wFMB, Lat 37 chose the Allegro as part of their design because the Allegro's ruggedness and reliability has proven itself in the often intense marine environment. The Allegro is also used for other data collection tasks, making it more cost effective than purchasing a dedicated electronic measuring board.

Electronic data capture equipment for fisheries data collection must be rugged, portable and weather resistant. This is now possible with the latest weather-proof and waterproof handheld computers that have extended battery life.

Photo credit: Simon Anderson

Calibrating sea urchin roe color with a Minolta Spectrophotometer interfaced with Allegro CE/DOS.

Compared to manual data collection methods, the rugged Allegro Field PC ® offers potential savings in labor costs, improved data quality and more timely analysis of the collected data.

Using the Allegro with the wFMB, application generators like DataPlus ® and EASYDC ™ allow users to develop their own electronic forms. Lat 37 can also develop standalone applications specific to the client's needs.

Future developments for the wFMB include an integrated weigh scale allowing the user to measure and weigh the fish on one device. ■

Alaska Department of Fish and Game Using Wireless Fish Measuring Board

Testing rugged measurement devices in actual work environments is necessary in order to obtain important feedback from end-users. Their experiences are carefully evaluated and usefully incorporated in future designs. Lat 37 has been fortunate in having several fisheries agencies trial the early wFMB designs.

Photo credit: Jerry Smetzer

Salmon port sampling trials, Ketchikan, Alaska.

"Purchasing a number of systems isn't a matter of 'if' for us, it's really just a matter of how, when and how many."
–John Wilcock, Fisheries Biologist

John Wilcock, a Fisheries Biologist with Alaska Department of Fish and has been particularly helpful in identifying what is workable with the wFMB.

For example, most finfish are measured from the snout to the tail. However, because salmon requires a measurement from the middle of the eyeball to the end of the tail, there was a concern about the wFMB's ability to measure salmon.

Wilcock's feedback was evaluated and a work-around for salmon measurements was implemented by having Lat 37 incorporate an eye indexer that still allows the capture of total length, but creates a standard offset to accommodate the eye to tail measurement.

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