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Fisheries Science and Marine Ecotourism

A Natural Fit

by Captain Jan Negrijn

Looming out of the blue green depths, the pale outline of a snow crab pot gradually comes into view. Excited faces peer over the side of the boat, cries of "here it comes" and "can you see any crabs?" accompany its upward climb until at last, breaking the surface, its secrets are revealed. A jumble of snow crabs climb over one another in a heap of legs and claws. As the drawstring is released, the crabs tumble on to the deck and are quickly scooped up by eager hands, then deposited in holding pans for later data collection. A count will reveal a total of 35 individuals. Some, almost 6 inches across the shell, are the males while others, much smaller at about 3 inches, are the females of the species. Weight, measurement, sex, and general condition of each individual will be meticulously documented for further study.


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While the above may sound like a group of fisheries scientists and technicians conducting a detailed survey on board a research vessel, they are in fact a group of tourists participating in an educational eco-tour cruise. Part of a growing trend within marine ecotourism, these types of cruises are much more than traditional passive sight seeing trips. They offer people the opportunity for "hands-on" learning while at the same time collecting and documenting data which can lead to a much deeper understanding of our marine eco-systems and how they function.

From the tourism perspective, there is a large market to draw upon for this new type of experience. Research has indicated many people, especially the large cohort of baby boomers want to add meaning to their vacations, not only by learning something new themselves, but also by contributing to the betterment of their world. They seek out experiences that satisfy these desires and are turning increasingly to involvement in ongoing scientific research. While some sign on as assistants to

established scientific projects, others prefer to take part in educational cruises that have a scientific focus. The ability to get behind the scenes and work directly with local people and to participate in activities that have a direct relevance to their lives, is an added incentive.

There is also increased concern over environmental challenges by the general population, who, as they become more aware of climate change, the global decline of fish stocks, the effects of ocean pollution and other marine related issues, seek to find ways in which they can contribute their time and energy to help find solutions.

Combined with this is a recognized need to ensure that our youth, those who will be the marine policy makers, planners and managers of the future, become more ocean literate and better equipped to face the challenges of an increasingly complex world. In the marine field this comes at a time when funding for ocean science, especially fisheries research, is being reduced, global commercial stocks are in decline and small rural communities have been devasted by the collapse of the commercial fishery.

There are numerous examples of how this informal science and tourism are coming together. A number of progressive whale watching companies, in addition to their normal cruises, are offering "floating classroom" programs to school groups as well as to the general public. Some companies provide educational cruises that strive to give the participant a wider view of the marine ecosystem as a whole, highlighting the interrelationship and dependency of everything within that ecosystem, including human beings. Those within the commercial fishery are also beginning to offer educational experiences to their tourist guests.

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In Italy, for instance, the practice of taking tourists out on commercial fishing boats is called 'pescaturismo,' fisheries tourism. Tourists learn firsthand from the commercial fisherman how the gear is constructed and worked. In the process they learn about the individual species, their biology and behavior, as well as issues facing both the fisherman and fishery. Whether this is classed as "science" or "natural history" the results are the same - a greater understanding of the species and ecosystem dynamics.


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Capt. Jan Negrijn provides some instructions to guests aboard the *Coastal Explorer* on Ireland's Eye in Newfoundland as they prepare to embark on a scientific tour.

Tourism and fishing have always co-existed in coastal towns and villages throughout the world. Many of those communities that have been severely impacted by the decline of traditional commercial fisheries are now turning to new forms of tourism. Working with fisheries scientists and using traditional fishing methods, they recognize opportunities within the tourism sector that take advantage of already existing infrastructure, such as boats, wharves, buildings as well as their own comprehensive knowledge of the local coastal ocean and its eco-systems. Additional training is needed in interpretive techniques and scientific protocols as is work retrofitting vessels for increased safety is necessary, but with such a strong foundation to build upon, this type of activity is becoming more attractive to those concerned with rebuilding the economies of peripheral communities.

As with any tourism development, planning for sustainability is critical. Lessons of the past have shown that when comprehensive planning is neglected and unregulated growth is allowed to proceed, there are negative consequences to both those environments and communities that attracted the tourists in the first place. Any planning system that is adopted must find a balance between ensuring the environment is not degraded and maximizing economic benefit to the local area.

A recent document entitled 'Planning for Marine Ecotourism in the EU Atlantic Area: Best Practices' has outlined seven principles for genuinely sustainable tourism that provide a template for designing a planning system. The same document contains a toolkit designed to guide and assist those tasked with preparing such a system. While a comprehensive look at these principles is beyond the scope of this essay, the following is a brief outline.

The seven principles of genuinely sustainable tourism then are as follows:

1. Local Participation

This outlines the importance of involving local participation at the outset of any tourism planning and recognizes that in order to be successful any planning and management of tourism has to be "bottom up" rather than "top down;"

2. Environmental Protection as a Priority

In order to be sustainable the marine environments that attract tourism have to be protected against degradation and therefore planning decisions should consider this as a priority.

3. Balance of Statutory and Voluntary Approaches

It is recognized that a "bottom up" approach, involving the local organizations and communities from the beginning of the planning process seems to be most successful. However, government planning and policies should support those local initiatives that promote sustainability.

4. Education and Interpretation

Ecotourism is often seen as having the function of educating participants regarding issues of conservation and sustainability. In addition to helping people to become aware of these issues, programs should encourage the visitor to adapt their behavior to this new knowledge when they return home.

5. Collaborative Approach

Problems relating to establishing sustainability within the Marine Ecotourism field are complex and are unlikely to be solved by one group or agency alone. Whether the task be creating policy or devising planning and management strategies, a successful outcome is more likely when groups work together.

6. Responsible Marketing

Marketing is often aimed at constantly increasing the number of visitors to a particular venue. In addition, the expectations of visitors can be raised to a point where principles of conservation and sustainability are compromised. A responsible marketing campaign then, would seek a joint approach with those involved in planning and management to make sure that issues of sustainability were a priority.

7. Continual Monitoring of Actions against the Principles

This represents the feed-back loop of the system. In order to determine whether policies and actions are producing the required affect, they have to be evaluated against the adopted principles of sustainability. This evaluation needs to take into account long-term and cumulative impacts and not just those in the short term.

These seven principles then represent an ideal to strive towards, not only for individual operators but also all for those municipal, regional and national agencies involved in the development of sustainable marine ecotourism.

Individual marine ecotour providers are finding it useful to develop a Code of Ethics or Code of Conduct to help guide their operations. These are effective tools to ensure, not only that decisions reached enhance sustainability, but also they provide the opportunity to show prospective clients the company is "walking the walk." Marine ecotour clients are becoming much more aware and demanding when choosing a provider. There are checklists of questions to ask providers in order to establish that they are authentic and committed to sustainability, not just riding the bandwagon. These lists are posted on various websites and are used with increased frequency.

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As with most other occupations, providing experiences in the marine ecotourism field is becoming much more sophisticated. As the marketplace evolves, tour operators are recognizing that in order to stay competitive they need to take advantage of training opportunities provided by tourism organizations and formal educational institutions. This training takes many forms from on-line courses focused on theory, to practical hands-on experiential programs aimed at developing new skills; in

particular there is demand in interpreting fisheries and ocean science for clients that have little formal science education. The ability to make the subjects understandable, exciting and relevant is quite a challenge.

Coastal Connections Ltd. represents one model among many for incorporating fisheries and ocean science into a program of marine ecotourism. While there have been many mistakes and dead ends along the way, a strategy is emerging that is meeting with some success. Based in Smith Sound, Trinity Bay, Newfoundland and Labrador, the operation consists of the company's flagship, *Coastal Explorer* a 42 ft. research/tour vessel, several smaller outboard powered skiffs, two touch tanks and shore based infrastructure such a storage buildings and washrooms.

Smith Sound is the over wintering home of the largest remaining Northern Cod stock and is therefore an area of great interest to fisheries researchers. The company's year round operation provides the ability to work with a number of scientists in the off season when tourism activity is reduced. Either the scientists charter the vessel and conduct the work themselves or the company is contracted to do data collection.

Areas of interest range from water quality, cod stock acoustic biomass assessment, cod eggs/larvae collection, plankton sampling, to juvenile cod beach seining surveys and tagging projects utilizing acoustic tags and seabed hydrophones. Coastal Connections also works with a number of agencies to conduct long term monitoring of the sound, providing an opportunity for time series data to assist in identifying patterns that occur over longer time intervals. This work with the scientists also facilitates integration of some of the findings in the company's interpretive programs, as well as giving these tourism programs scientific credibility. During the summer tourism programs, participants collect data from locations that are of interest to researchers; the data is saved and made available to those researchers.

Coastal Connections works with both tourists and school groups in presenting its program entitled "Sand, Sea and Sky," which aims to give an overview of local ocean ecology including the role that human beings played. This brings into perspective the inshore commercial fishery. By examining fishing gear and actually using some of it, participants get first hand experience of how the fishery was conducted and the lives that fishers lived. Boat work is complemented by taking participants onshore where

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they see an operational fishing station and have an opportunity to talk to a practicing inshore fisher, followed by a walk back in history to examine an abandoned fishing community. The concluding portion of the program seeks to integrate the day's experiences of science, the inshore fishery, and the cultural and natural history of a unique area.

This is just one example of an emerging sector that presents exciting possibilities for future collaboration between fisheries science and tourism. For the scientist there exists the chance to work with skilled and knowledgeable local people who have the ability to conduct scientific data collection according to established protocols. Sampling at pre-arranged stations, this data complements that collected by the scientist and provides long term monitoring at a time when funding for such activity is scarce.

For the tour provider, working with scientists helps to extend the charter season and diversify economic opportunities while at the same time validating their interpretive programs. Conducting survey and sampling activities, with fishing gear and the latest scientific equipment, provides guests with an experience that is relevant, meaningful and enjoyable - one they will remember for years to come.

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