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Angling and Physical Activity

Angling Participation Research Theme Paper 3

An Interim Report for the Social and Community Benefits of Angling Research

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Angling and Physical Activity

'I choose to fish using highly active techniques – specifically lure fishing and fly fishing, where there is a constant cycle of cast-retrieve-move on. I also like to fish large natural or semi-natural (e.g. reservoirs) fisheries. Consequently, I've usually walked a few miles – often over difficult terrain – in a typical fishing session, and walking, as we're told, is great exercise. I'm convinced that this active fishing has contributed positively to my physical well-being.'[1]

Background

There are conflicting views about the level of physical activity involved in angling. While policymakers and the wider public generally perceive angling as an inactive, non-strenuous activity, angling participants speak of the considerable effort involved in carrying heavy fishing tackle across uneven ground, or the muscular endurance required to continuously cast a fishing rod or hold a fishing pole, or the physical fatigue caused by long periods of concentration.

Confusion about the physical nature of angling participation is exacerbated by the number of different angling disciplines that exist, and the specialist techniques, equipment and environments associated with them. For example, it is particularly difficult to compare the physical exertion necessary to 'jig' and retrieve a lure whilst deep water sea-fishing with the physical exertion of a 'cast and move' strategy used whilst fly-fishing on a loch.

Debate about angling and physical intensity has influenced recent funding of angling development in England. In 2008, Sport England declared that all angling should be classified as a low intensity activity[2], an announcement which effectively limited the extent of Sport England funding available to angling. However, the Angling Development Board (ADB) contested the low intensity classification, arguing that angling is a 'moderate' physical activity[3]. The ADB called for a review of Sport England's intensity classification for angling[4], and were ultimately successful in getting the intensity classification upgraded to moderate.

The uncertainty and variability that exists around the physical aspects of angling participation means that general assessments (or 'overviews') are not representative of the participation behaviour of a number of participants. There is a need to acknowledge the different forms and locations of angling practice if meaningful claims about the relationship between angling and physical activity – and any benefits accruing to individuals from physical activity during participation – are to be made.

Research commissioned by Sport England in 2009[5] provides further insight into the nature of the relationship between angling and physical activity. The research, which sought to understand and measure the quality of sporting experience across 45 sports in England, reported that amongst surveyed anglers (n=1,469) the domain of 'exertion and fitness'[6] had a relatively low impact on levels of satisfaction when compared to other sports. Put another way, the amount of physical activity involved in angling was found to have minimal effect on an angler's overall satisfaction with experience.

In terms of angling's contribution to physical fitness, only 25% of the anglers surveyed in the Sport England research claimed to be satisfied[7] with the opportunities that angling offered them to improve their level of fitness (compared to 70% for other sport participants), whilst 41% considered opportunities to improve fitness levels were 'not applicable' to angling. These results suggest that anglers are unlikely to participate to become physically fit. However, when asked about the relationship between participation and *overall* personal health, 56% of the surveyed anglers claimed to be satisfied

(74% for other sport participants).

Factors that Impact on the Amount of Physical Activity in Angling

‘Cast and retrieve’ versus ‘cast and leave’

There are essentially two approaches of angling practice, and each approach operates on very different principles with regard to exertion levels. Cast and retrieve angling involves the dynamic presentation of the hook to the fish, typically by using lures or flies. Generally speaking, the movement used in the cast and retrieve method requires substantially more physical effort from the angler than the ‘cast and leave’ approach, which relies on attracting the fish to a baited hook.

The variation in physical effort required for the two approaches was evident – at least visibly – during research fieldwork. Anglers using a ‘cast and leave’ approach in a coarse angling competition at New Millar Dam, Wakefield, were observed to move infrequently from a seated position during a four-hour period. There was some physical activity associated with casting, retrieving to re-bait a hook, or catching a fish – and the anglers displayed impressive levels of concentration – but overall the amount of physical exertion appeared minimal.

By contrast, a three-hour sea fishing trip from Whitby required a considerable amount of exertion from the anglers on-board. The continuous ‘jigging’ (moving up and down) of a plastic lure in very deep water to attract a fish, in addition to the ongoing retrieval of 100+ metres of fishing line (occasionally with one or two hooked fish on the line), placed a considerable workload on the arm and shoulder muscles of the anglers on-board.

A coarse angling competitor is seated whilst participating but has to physically manage a lot of specialist equipment

Mobile versus stationary angling

Some forms of angling require very little movement on the part of the angler and would have low personal benefit in terms of physical activity. One such example is where the angler drives a car to the fishing venue, has a short walk transferring angling equipment from the car to the edge of the water or the boat, and sets up equipment to fish from a seated position for the duration of the angling experience.

In other cases, the angler – either by choice or necessity – engages in a substantial amount of physical activity whilst angling. This might involve walking or cycling both to and from the fishing venue, moving around fishing site during the angling experience (i.e. walking along a beach or estuary, wading through a river, or rowing a boat), or continuously employing a cast-and-retrieve technique.

Data from anglers surveyed in 2010 as part of the *Angling in Rural Areas* component of this research demonstrates the influence that factors like landscape characteristics, fishing techniques and angler motivation can have on the amount of (perceived) physical activity needed to go fishing. Fieldwork for the *Angling in Rural Areas* research is based in Assynt, a remote rural area of the Scottish Highlands featuring numerous lochs, lochans, rivers and an extensive coastline.

Almost half (44.4%) of surveyed anglers (n=63) rated angling in the Assynt area as a high intensity activity, while a further 46% rated it a moderate intensity activity. The rugged topography of the lochs and hills, the ability to combine hiking with fishing, and the active nature of fishing for wild brown trout all lend themselves to this sort of finding.

Furthermore, comments made by anglers in Assynt suggest there is a view that considerable physical effort is needed in order to reach fishing locations that will yield a better quality of fish. For example:

'The best trout fishing involves considerable walking.'

'Generally the amount of effort required to reach the loch, the better the quality the fish.'

This is not to suggest that all angling in Assynt involves high intensity physical activity and/or hard-to-reach locations. As one angler noted, *'at 72 [years of age] walking becomes less attractive'*. There are lochs in Assynt that can be easily accessed from roadside carparks, some lochs have boats with outboard motors available for hire, and sea fishing is readily accessible from the beaches and headlands adjacent to popular campsites.

Able-bodied versus physically-impaired anglers

The Sport England research in 2009 referred to earlier in this paper[8] stated that approximately 39% of the 1,469 surveyed anglers had some form of long-standing illness, disability or infirmity. This was slightly more than double the figure of 19% reported for all other surveyed sports. Additionally, of those anglers who had some form of long-standing illness, disability or infirmity, 80% said that their illness or disability limited their activities in some way.

The older age of angling participants when compared to other sports is likely to have a link to the higher incidence of illness, disability or infirmity. Approximately 73% of anglers surveyed in the aforementioned Sport England research were aged 45 years or more (42% were 55+ years); whilst the mean age of anglers surveyed in 2009 for this research was 48.9 years.

The figures cited above suggest that any assessment of the physical exertion involved in angling participation must take into account the age, health and mobility of the participant. What a young, healthy, able-bodied angler might consider to be a mild or low level of exertion may constitute a much higher level of exertion for an elderly angler, or an angler

with a health or disability impairment. As the UK population continues to age, it is imperative to support the provision of physical activity opportunities which are suitable for people with restricted physical capacity. Angling has something to offer in this regard, as interviews with anglers at a Wakefield Angling Club event demonstrate.

One section of Wakefield Angling Club hosts coarse fishing matches for people with disabilities. These matches are also open to able-bodied people over the age of 65 years. Interviews conducted with six anglers at one of these matches revealed the extent of the ill-health experienced by participants; a broken back, knee replacements, heart conditions, circulation problems, and a stomach ailment were mentioned during the interviews. Despite suffering these health concerns, all the interviewed anglers managed to go fishing at least once a week, with two of the interviewed anglers stating they went fishing five times a week.

The anglers interviewed at Wakefield spoke about certain strategies they used to alleviate the more physically demanding aspects of their fishing activity – one angler had a bespoke motorised trolley to transport his fishing equipment from the car park to his fishing peg (*'without it I'd be knackered'*), while another made sure he could park his car very close to where he was fishing. A third angler relied on an able-bodied colleague to help carry his tackle box and fishing pole.

In some cases angling is one of the few recreational activities that an individual is physically capable of. A wheelchair-bound angler interviewed for this research told of a degenerative illness that makes all his bones brittle. Also a keen astronomer, he is no longer physically capable to use an astronomy telescope independently. Angling, however, is something he can still manage in physical terms, but his opportunities are diminishing as his illness becomes more severe. He had this to say about the physical aspects of his angling participation:

'I'm not able to be very physically active in a significant way, as I have to use a wheelchair and only get the physical involvement of casting and playing a fish ... [however] angling is the most physically demanding activity I do.'

In Focus: Could angling help keep you fit?

A study on green exercise in the UK countryside, published in 2007 by researchers at the University of Essex, provides scientific insight into the nature of physical exertion in angling (a full citation of the publication appears at the bottom of this article). Most notably, the study indicated that angling can have a significant positive effect on the physical health of participants, so long as participation is sustained for a relatively long period of time (i.e. 10-12 hours or a whole 'day').

The study, which involved four UK regions and 263 participants, measured the health effects (in terms of energy consumption) of 10 green exercise case studies. Angling was one of the green exercise case studies, along with walking, cycling, horse-riding, canal-boating and conservation activities. Angling activity focused on one site, the 'Layer Pit' lake in Essex, managed by Colchester Angling Preservation Society.

Measurements were expressed in terms of both the amount of energy (calories) used per hour, and the total amount of energy used in a session. Selected results are shown in the table below, which has been adapted from a table appearing in Pretty et al. (2007).

Activity	Mean energy per hour (MJ)	Rank (1-10)	Duration of activity (hours)	Mean energy used per session (MJ)	Rank (1-10)
Mountain biking	2.73	1st	4	10.92	3rd
Horse riding	2.25	3rd	2	4.50	6th
Woodland activities	2.15	4th	6	12.9	2nd
Walking	1.35	7th	2	2.70	8th
Angling	**1.23**	**9th**	**10**	**14.76**	**1st**
Canal-boating	0.43	10th	6	2.58	9th

Angling was reported as being about half as vigorous as activities like mountain biking or horse riding (in terms of mean energy used per hour); however, because the duration of an angling session was much longer than these activities, the total energy used per session was greater than any other activity. In other words, angling delivered the greatest overall physical health benefit to participants as a form of green exercise.

Despite the significance of this result for angling stakeholders, it would be unwise to conclude that angling is the best form of green exercise for physical health in the UK. The result is clearly dependent on a long session of activity, yet 10-12 hour sessions don't suit all anglers. George Holdsworth, who runs North Third Trout Fishery in Scotland, said he stopped selling all-day permits 2 years ago after demand *'went through the floor'* and now fields a growing number of enquiries from anglers for short duration fishing permits *'what we get most now is people phone up and, instead of the standard 7-hour permit we sell, they say 'do you do a 2 hour permit?''*

More work needs to be done - the results originate from just one study that collected data from just one angling site. Nevertheless, there is potential for angling to argue that it is deserving of the same recognition afforded to other forms of green exercise, like walking, cycling and conservation work.

Source: Pretty, J., Peacock, J., Hine, R., Sellens, M., South, N. and Griffin, M. (2007) "Green exercise in the UK countryside: Effects on health and psychological well-being, and implications for policy and planning", *Journal of Environmental Planning and Management*, 50: 2, 211 — 231.

Conclusions

- Different forms of angling are associated with considerably different levels of physical activity. All funders and policymakers with an interest in angling must develop a greater appreciation of this inherent variability. Assessments of angling and physical activity, such as the Active People Survey managed by Sport England, should be supplementing the aggregate data already collected and published (i.e. the data used to represent 'all' of angling) with more precise subsets of data that present a meaningful representation of participation; identifying the physical activity involved in sea, coarse and game angling participation, for example, would be a useful starting point.

- Because the physical demands of angling participation can vary between low, moderate or high intensity activity, at least some form of angling could be considered accessible (in basic physiological terms) to a wide range of people. This in turn means that angling is well-positioned to make a contribution to the health levels of the wider public. Angling also usually takes place in green spaces, and physical activity in green spaces has been identified and promoted as delivering social, mental health and physical health benefits to participants[9]. Organisations and bodies with public health responsibilities should therefore consider angling participation as a legitimate pathway for getting certain social groups, such as the elderly, the infirm or less able, urban populations and young people, to become more active.

- Debate around the intensity of physical activity involved in angling positions high intensity physical activity as desirable and low intensity physical activity as having little benefit to participants. However, such a view does not account for individual anglers who are incapable of little more than low intensity physical activity, such as those with a mobility impairment or long-standing health problem. An angling excursion may be one of the few opportunities for these people to be physically active and, even if the activity is of a low intensity, it can still make a significant contribute to their physical and mental well-being and add to their quality of life. These kind of benefits are explored in more detail in the Angling Participation Research Theme Paper 2: Angling and Personal Health & Well-being

- A number of dynamic, specialised forms of angling participation are emerging and they tend to be more physically challenging than 'traditional' forms of fishing. **Kayak-based fishing** – in both marine and fresh-water habitats – is claimed to be the 'most rapidly developing discipline in angling'[10]. By virtue of the paddling involved, participation in kayak angling requires participants to be active and mobile. In a similar way, the practice of **float-tubing**, whereby a fly-fishing angler uses fins to propel an inflatable tube around the water, is a more vigorous alternative to fly-fishing from a single area of shoreline or bank[11]. '**Street fishing**' is a niche section of angling participation that has attracted young people to attend events in France, Belgium and Holland. It has been described as 'a very active and innovative way of predator fishing from the banks of rivers and canals in urban surroundings'[12], and while not yet popular in the UK, there is considerable potential for it given the number of canals and rivers present in major cities.
- In 2011 this research will be collecting data from anglers wearing heart rate monitors in order to explore how certain aspects of angling affect the heart rate levels of individual participants. The rationale for taking this approach is to try and supplement existing data for this research, which are subjective assessments of physical exertion, with more objective measures. Obviously this process is not a substitute for true scientific research, but data is collected from a range of

anglers (i.e. different sexes, ages, fitness levels) across different disciplines than it should provide some interesting results that will help guide further work in this area.

[1] On-line comment submitted to www.anglingresearch.org.uk on 30th June 2010
[2] Based on data collected for the Active People Survey.
[3] Based on US data.
[4] Angling Development Board (2009) *The Angling Whole Sport Plan 2009-2013.*
[5] Sport England (2009) *Satisfaction with the Quality of the Sporting Experience (SQSE) Survey*.
[6] One of 10 domains used to measure satisfaction; the other domains were identified as: performance, release and diversion, social aspects, people & staff, ease of participating, facilities and playing environment, coaching, officials, and value for money.
[7] 'Satisfied' in the Sport England SQSE survey was defined as a rating score of 8, 9 or 10 out of 10.
[8] Sport England (2009) op. cit.,
[9] Faculty of Public Health (2010) *Great outdoors: How our natural health service uses green space to improve wellbeing*; Mind (2007) *Ecotherapy – the green agenda for mental health*, Mind week report May 2007.
[10] Taken from the Kayak Angling homepage of the Angling Trust website http://www.anglingtrust.net/page.asp?section=646&sectionTitle=Sign%20up%20for%20our%20new%20Angling%20Trust%20Kayak%20membership , accessed 17th December 2010.
[11] See http://www.bfta.org.uk/default.html for more information about float tubing in Britain.
[12] Smith, R. (2010) Street fishing: An urban explosion, *Tackle Trade World*, July 34-37.