

Lake Burley Griffin Investigation

Qualitative Data Analysis of Public Submissions

20th November 2011

Richard Reilly (BSc[Hons] PhD)
Environmental Consulting, Data Analysis
Reid ACT
reillyr@inet.net.au
Ph 0410 211 623

Introduction

Members of the public with an interest in the *Investigation into the state of the watercourses and catchments for Lake Burley Griffin* were invited to be involved in the investigation by lodging a submission with respect to the terms of reference on the Office of the Commissioner for Sustainability and Environment's website at www.envcomm.act.gov.au. Submissions formally closed on 30th September 2011. The Terms of Reference (TOR) for this investigation were:

Investigate the state of the water courses and catchments for Lake Burley Griffin including:

- 1. possible improvements for managing water quality and the appropriateness of the current protocols for lake closures;*
- 2. identifying the causes of lower water quality, including possible resource implications of addressing them;*
- 3. jurisdictional implications for water quality management of the lake; and*
- 4. the implication of these findings for the ACT's other major recreational waterways, such as Lake Ginninderra and Lake Tuggeranong.*

In response, twenty six (26) individuals or groups made submissions totaling 115 A4 pages including attachments. These respondents included individuals, business owners, fishing groups, amateur and professional sporting clubs and associations, and groups associated with land and water care. Submissions were generally clear, balanced and concise in their presentation of views although a few present unusual and unscientific interpretations of facts, and one business respondent appeared keen to provide a commercial solution for poor water quality in the ACT lake system.

In the context of this consultancy, submissions data was qualitatively analysed using *Coding Theory*. Early in this process it became obvious that the existing terms of reference would not provide adequate scope to describe and categorise the issues emerging from submissions, so additional themes were created to adequately describe these. These are shown in Table 1 along with approximate ranking of expressed views by theme.

Table 1: Quantitative Data Analysis themes

Theme	Number	Percent
Water quality management	51	39.8
General Management issues	26	20.3
Lake closure protocols	17	13.3
Jurisdictional issues	9	7.0
Lake design / vision	8	6.3
Public consultation	6	4.7
Resource implications	6	4.7
Investigation TOR	4	3.1
Lake ecology	1	0.8

This analysis identified one hundred and twenty eight (128) separate views in submissions. Similar views in different submission were recorded separately in this evaluation. Qualitative analysis of the submission information allowed grouping of views into themes and analysed further by sub-themes. Many of the issues raised in submissions were complex and did not neatly fall into a clearly evident theme or category. In these cases, the dominant expressed theme was used in this analysis.

Qualitative Data Analysis Results

Water quality

It is clear from Table 1 that *water quality management* issues were of primary concern to those making submissions to this investigation. Nearly forty percent (51/128) of all issues raised related to water quality or associated management issues in Lake Burley Griffin and other ACT lakes and ponds. The range of views here reflected general awareness and observation about effects of, and causal influences on, low water quality in the lake. In approximate rank order, these views included:

- **impact of lake closures** on water recreation activities and local and national sports events and training.
- sediment and other contaminated **runoff from development sites** in the local catchment;
- **sewage and nutrient-rich outflow** from upstream sewerage treatments systems;
- nutrient rich and other pollution **runoff from adjacent rural catchments**;
- **polluted suburban runoff** (residential, commercial, industrial);
- the polluting impacts of inadequate design and management of ACT government **Gross Pollution Traps (GPT)** located at key points in local creek and stream catchments; and
- adverse flow inputs resulting from **inadequate pest and weed control** in local and upstream catchments;

Views relating to the first point, that of the **negative impact of lake closures** on the National Capital image, on tourism, on water recreation and local and national water-sports training and events, comprised the largest set of associated responses in these submissions (nearly 13% or 16/128). From the responses it was apparent that poor water quality in ACT lakes and waterways was becoming a problem for local recreational uses, but increasingly it was also impinging on regional and national sporting competitions and events staged in Canberra as the National Capital. Respondents reiterated the negative effects this had on Canberra's reputation as a reliable and appropriate venue for national water-sports events.

Many tourism and associated businesses also rely on the amenity of Lake Burley Griffin and other ACT lakes and waterway. There were many expressions in these submissions of the substantial negative impact that poor water quality and lake closures had on these business activities.

Quotes from submissions reflect these views:

*The other fundamental problem is we tend to separate issues of water quality from water quantity.
(Public submission 5)*

The lake is a fantastic resource which is severely limited in use by pollution and the danger of blue green algae. (Public submission 22)

I understand the water quality in the lake is difficult to keep clean, as a lot of the catchment is from the Inner North and Inner South suburbs, and the storm water run-off into the lake is polluted. This is a problem, but this issue could be utilised to raise community awareness about pollution, how it moves from the point of pollution to the lake, how it builds up in the lake, how this impacts on the lake's ecosystem, and how pollution can be reduced and remediated. (Public submission 7)

The lake is situated within an urban environment on basically all sides and includes the catchment of Queanbeyan and Jerrabomberra as well as farmland upstream. As a result, particularly urban run-off, has a high nutrient loading including nitrates and phosphates. These nutrients are plant foods, ... conducive to excessive plant growth, particularly Blue Green Algae. (Public submission 26)

The stock run on the Jerrabomberra Wetlands appear to be a source of pollution of the waters of Lake Burley Griffin. Cattle can be seen to stand in the water and defecate, and dung accumulates on the grasslands that drain to the lake. (Public submission 18)

Simple water saving measures adopted by households could do much to ensure better river flows. (Public submission 5)

A legitimate question for ACT authorities is what contribution does nutrient run-off from the Dairy Flat turf farm and Royal Canberra Golf Course contribute to the nutrient status of LBG (rather than exclusively focusing on Queanbeyan sewage and NSW inflows). (Public submission 1)

Lake Burley Griffin is something akin to a soup in which blue-green algae can flourish. (Public submission 5)

Evidence of water quality deteriorating in Lake Tuggeranong over recent years has been witnessed by ... rowers with increased lake closures disrupting rowing sessions on a more regular basis. (Public submission 4)

There are questions arising from this unethical engineering practice of digging and piling up all top and sub soils in and around development sites Is it a best practice ... [for] such engineered removal of top and sub soils [to occur] from the whole suburb ... ? (Public submission 25a)

The lake is central to Canberra and is a tourist attraction. It is utilised to local and interstate sporting events as well as local recreation. It is featured on postcards and in books on Canberra, and many people take stunning photos of it. Our lake gives a lot to locals and visitors, and so we should make sure we look after it. (Public submission 7)

Our [watersports] industry has been seriously affected by the inconsistent quality of the Canberra lakes over recent years, with many events cancelled due to closure of various lakes. (Public submission 6)

Lake Tuggeranong has recorded more intense and adverse water quality issues than Lake Burley Griffin, which seems to not be addressed or perceived at the same level as the Lake Burley Griffin issues. (Public submission 4)

We trust that the inquiry will take the longer view into account, because we feel that further urban growth, increased water use and climate change will undoubtedly place significant further stress on the Molonglo and Queanbeyan catchments and Lake Burly Griffin. (Public submission 17)

General Management Issues

More general issues relating to ACT lake and waterways management were separated out in this data evaluation and comprised around 20% (or 26/128) of all views identified. Ranked responses here included calls for better control and monitoring of development sites, more effective design and maintenance of gross pollution traps, more effective catchment management, governance by a single water management body, more integrated solutions for low water quality, and more attention given to other lakes and ponds in the ACT.

Although information provided with one submission made it clear that regulatory controls and protocols were in place to minimize pollution and sediment **runoff from development sites**, other responses highlighted the fact that these controls did not appear to be working effectively. Suburban runoff at times turned local ponds into something resembling a “*chocolate coloured milkshake*” (Public submission 11).

Other issues of concern included **governance issues**. In one response this was presented as a conflict between the impacts of an expanding and developing urban landscape, and the ACT Government’s water management strategy objectives of maintaining inflow water quality similar to a well managed rural landscape. It was suggested that there should be a **single body** managing all aspects of water quality in Lake Burley Griffin along with removal of barriers existing within the present multi-jurisdictional management regime. Other water quality management suggestions included **engaging the community** in water conservation and waterway care along with better use being made of the Lake User Group. **More effective weed and pest control** (e.g. willow and carp control programs) were seen as important in any strategy to clean up ACT lakes and ponds. Although one respondent perceived **urban wetlands** as potentially effective in improving urban runoff water quality, the design and efficiency of these (specifically the Lyneham Wetland Project) was questioned and the cost seen as unrealistically high for the potential outcomes.

Submission comments reflected these views:

Yerrabi Pond ... following heavy rainfall last summer and [this] spring has turned the pond into "a chocolate coloured thickshake, totally unsuited for all water activity". "Visits to the nearby housing developments in Forde and Bonner revealed why this [sediment pollution] was occurring.(Public submission 11)

Public awareness of the consequences of indiscriminate littering, washing down and dumping is low in the ACT. The ACT Government makes no effort to improve this awareness, unlike many Australian Local Councils, particularly those with more obvious waterways to protect. (Public submission 2)

Riversmart is calling upon the governments, local, State and ACT and Federal, to come together with interested non-government organisations and technical experts to form an independent Capital Region Water and Rivers Commission. (Public submission 5)

I suggest that all property developers be advised that they are responsible for water runoff which caused environmental damage to surrounding waterways and heavy fines should be imposed if they fail to comply with stringent guidelines imposed by the ACT Government. (Public submission 11)

The lake users group is a good forum for more detailed discussions about the long term plans for the lake. We believe more and better use should be made of this forum. (Public submission 20)

The problems [with our lakes and river systems] are fixable It needs some political will, some business leaders and investors willing to step up from our community, and it needs people to understand we all have an impact on the health of these places, our river footprint, and so we can all help to make a difference. (Public submission 5)

Sullivans Creek GPT suggestions for lake improvement outcomes: (1) Design of the GPT should be revised/modified to better integrate it into expanding ANU and City; (2) GPT should be maintained in a clean and relatively dry state; (3) Implement forced aeration of the GPT ponds to increase water quality; (4) upgrade the GPT to allow for more frequent cleaning periods; (6) Need to eliminate anaerobic processes in the GPT in future to limit gas generation. (Public submission 2)

Mitigating measurers, such as the proposed SolarBees are also welcome. We believe that a combination of mitigation and prevention measures are required to produce a long term solution. A long term solution will give certainty to the many users of the lake about the lakes availability for recreational activities. (Public submission 20)

Lake Burley Griffin is something akin to a soup in which blue-green algae can flourish. The water is so impenetrable to light there is limited aquatic plant growth in most areas to help deal with the problem as nature intended. [Public submission 5]

Lake closure protocols

Issues relating to ACT lake and waterway closure due to poor water quality made up just over 13 percent (i.e. 17 /121) of all views identified. It is clear from both the number and content of submitted comments that closures due to poor water quality have substantial negative impact on the amenity and usefulness of Canberra's water resources. Loss of recreational amenity for individual and groups was an important issue raised in many submissions but, strikingly, it was the amateur and professional sporting organisations, and many commercial enterprises that were most vocal about the loss of recreational, training and sporting-event venue access. In addition, some organizations have invested substantially in infrastructure that is often threatened with closure due to lake water quality issues.

Several groups also commented on the impact of **lake closures** on lake sporting activity, highlighting the inconsistencies and delays often evident within the current sampling, testing and closure protocols. It was asserted that current testing protocols could actually create situations where safe venues were closed down whilst unsafe areas were not. Further, another respondent queried the need for strict exclusion of rowers from the lake during periods of algal blooms, and it was proposed that many sporting organizations had the capability to take full responsibility for the management of risk associated with lake poor water quality.

Another respondent suggested that water circulating devices, apparently currently being tested by the NCA, could be strategically sited in other suitable areas of the lake to provide alternative venues in the instance where original venue closure occurred due to algal blooms.

In many submissions, expressed views indicated some reluctance to the accept current scientific justification for lake closures, particularly when applied to those secondary-user activities such as

sailing, rowing, and canoeing that involved little direct contact with the water. These views were often associated with groups and organizations that have lost many members due to a shift to land-based sports which offer more reliable venue availability.

Again, these issues are reflected in responses:

The current protocols for lake closures need to be reviewed. From our experience, levels of contamination change drastically from one week to another in the various area of the lake. The current protocol requires two consecutive higher-than-limit test results to close an area of the lake and two consecutive lower-than-limit test results to open an area of the lake. This protocol has generated some interesting scenarios where an area above the limit would still be open (1st bad result) and an area below the limit would be closed (1st good result) forcing the event organiser to choose an area where the latest results show an obvious contamination. (Public submission 9)

All water based sports struggled to survive recent lake closures. ... Rowing ACT suggests that lake closure protocols should be changed so that individual sporting clubs are responsible for managing risk associated with poor water quality. (Public submission 8a).

The Australian Institute of Sport has recently invested significantly into building the capacity of its rowing centre adjacent to Lake Burley Griffin. This has included a partnership with Rowing Australia to develop the AIS facility into the National Rowing Centre of Excellence. It is now one of the most comprehensive rowing training environments in the world. However, changes in ACT Health policy in December 2009 enabled the centre's operations to continue as normal even during periods of high blue-green algae concentrations. The AIS hopes this investigation will result in management practices that ensure more consistent maintenance of Lake Burley Griffin's water quality for all lake users, and ensure a minimum impact on the NRCE operations during periods of decreased water quality. (Public submission 19)

What is hard to accept is that poor water quality management has the same affect on the sport as adverse weather events and affects our sport more regularly and more often than bad weather does. (Public submission 9)

From our [rowing] sport's perspective we would like to be responsible for risk management associated with lake quality, including it along with other risk that we currently manage including cold water, poor visibility, dehydration, sunburn and lake traffic accidents. (Public submission 8a)

A more affordable option would be to place the machines in specific areas of the lake. This approach would give an event organiser a contingency site to fall back to if the lake was closed at the primary event site. I strongly recommend that the investigation look closely at the viability of ... [this] option. (Public submission 9)

A consequence of past lake closures is that people have transferred from water sports to more "reliable" sports like cycling where the training venues are not randomly closed down. (Public submission 8)

With regard to the lake closures and their economic impact, ... the most difficult to quantify is the loss of the lake's reputation as a reliable training and sporting venue. (Public submission 8a)

Of further concern in Lake Tuggeranong is the delay in testing procedures. At times when algal growth is evident, rowing continues until the ACT Government carries out testing and declares the lake closed. (Public submission 4)

Our sport has consistently asked for a scientific justification for lake closures particularly when the health risks from blue-green algae appear virtually non-existent for secondary users like rowers, sailors, dragon boaters, kayakers, canoeists, and paddle boat users. (Public submission 8)

Finally I would like to question the presentation of information in the ACT's current Guidelines for Recreational Water Quality (29/6/2010) which indicates that blue green algae can be ingested as aerosol via nasal and pharyngeal mucous membranes, and implies that this is a common pathway for infection for secondary contact sports like rowers, kayakers, sailors, dragon boaters. What refereed scientific literature supports this assertion? (Public submission 1)

The difficulty our clubs and members have with lake closures in the ACT in the last 20 years is that ACT Health makes a risk assessment that is overly prescriptive and unrealistically cautious. (Public submission 8)

Whilst only partly related to the above, a waterskiing organization felt they were unjustifiably excluded from using parts of Lake Burley Griffin for training and events. This is despite (in their view) a successful trial having been completed where waterskiing was allowed in one section of Lake Burley Griffin.

Jurisdictional Issues

Many respondents seemed very aware of the complexity of water and water quality management in the ACT. This extended to understanding of potential sources of upstream water pollution such as the Captains Flat mine tailings outflow into the Queanbeyan and Molonglo Rivers, runoff from rural and urban catchments, treated and partially-treated sewage outflow from Queanbeyan, the pollution that can come from urban areas, and low quality runoff from development sites around Canberra. Although the NCA is responsible for Lake Burley Griffin water quality, one submission made the point that the NCA has “no say in what happens on the majority of the shoreline nor what flows into the lake via the Molonglo River, Jerrabomberra and Sullivans creeks and the major stormwater and creek lines draining Canberra” (Public submission 5). Overall responsibilities for all components of the Molonglo River and associated water systems were seen to be so fragmented as to limit the effectiveness of NCA actions.

For all this, feedback also acknowledged improved communication between catchment stakeholders in recent years. However, it was suggested that much more could be achieved in managing the catchment better to ensure the long term sustainability and health of this waterway system. The Queanbeyan Council was seen as a key stakeholder in future programs, as sewage spills are of particular concern, as is the normal nutrient-rich outflow from this sewage treatment centre. The Googong Dam, being the largest water storage above Lake Burley Griffin, was also perceived to be a key resource in maintaining water quality in the catchment.

Given the multi-jurisdictional management aspect of this extended catchment, ACT - NSW interagency cooperation was seen as critical to improving water quality in Lake Burley Griffin. It was suggested, however, that the ACT Government could still do much within its own jurisdiction to achieve this aim. There was some coherent support within responses supporting the need for vesting sole management

responsibility of Lake Burley Griffin in a single organisation. Existing catchment management was seen as highly fragmented and either the ACT Government or an independent Commission with cross-jurisdictional powers and representation should take over the management role.

Submissions reflected these views:

The NCA has been given an impossible task - responsibility for some of the lands surrounding the lake and all of its water - but no say in what happens on the majority of the shoreline nor what flows into the lake via the Molonglo River, Jerrabomberra and Sullivans creeks, and the major stormwater and creek lines draining Canberra. For the NCA, this is a classic 'poison chalice' situation. [Public submission No.5]

So how can the problems of our river and lakes be fixed? From an administrative perspective it suffers from fragmentation of effort. Too many jurisdictions doing their own thing and rarely in a collaborative way. The list of organisations with a finger in this [waterway] pie is mind boggling. (Public submission 5)

In contrast to this [multi-jurisdictional] governance gridlock paradigm, I suggest that the ACT Government can contribute significantly to improving lake quality, and its management ...[through] local management solutions (Public submission 1)

The majority of the catchments and inflow to Lake Burly Griffin (LBG) are from the Queanbeyan and Molonglo Rivers and are spread across Queanbeyan, Palerang and Cooma Monaro Shire areas and are subject to the relevant NSW Legislation. (Public submission 17)

Lake vision / design / purpose

Submissions showed evidence of varying perceptions of the ACT waterways functions and purposes. These views (6.3% or 6/128) ranged from understanding of waterways, ponds and lakes as pollutant and sediment traps, to perceptions of Canberra's water bodies as recreational features designed to provide amenity and suitable landscape settings for the city as the Nation's Capital. Only a few submissions showed evidence of a broader view of Canberra's water features, with one group paraphrasing the late Prof. Peter Cullen in nominating Lake Burley Griffin as "*the largest gross pollutant trap in the southern hemisphere*" (Public submission 15).

One submission eloquently wrote about the lake as the centerpiece of Canberra as the Nation's Capital, providing for a range of uses and users and having considerable aesthetic and environmental values for residents and the ACT in general. In other submissions, presented information supported the view that Canberra's lakes were designed as key venues for water sports and recreation. This view seemed to be shared by the majority of respondents who saw the lake in terms of providing recreational amenity, and venues for amateur and professional sporting activities and commercial enterprises. Fishing group respondents were keen to see the lake rehabilitated to support native fish, including removal of pest species such as carp.

Canberra waterskiing groups presented a sustained case for more access to ACT waterways as well as fewer constraints on current access during periods of low water quality, particularly during competition events. This group very clearly felt they should be allowed broader access to main lake areas and

expressed concerns they were being denied this through (negative) perceptions and opinions rather than facts.

Another respondent expressed concern about developers interest in the Jerrabomberra Wetlands as a potential development site, this presently being a key nature conservation resource in the ACT. The expressed view was that the wetland was being not maintained as it should be through lack of vision for what it could be as a site of high environmental value and a “gateway to the national capital” (Public submission 5).

These issues were reflected in respondent statements as:

In Canberra 1954-1980, Sparkes (1988), it is clear that the NCDC perceived (and designed) the lake as a key venue for water sports in the ACT. (Public submission 8a)

The Group notes that Lake Burley Griffin is, paraphrasing the late Professor Peter Cullen, the largest gross pollutant trap in the southern hemisphere. It is a large lake collecting stormwater from a large part of Canberra and all of Queanbeyan, as well as treated effluent from the Queanbeyan sewage treatment plant. If that is its primary role – to prevent pollution reaching the Murrumbidgee River – it is functioning correctly: we should expect to see what is happening as the pollution is trapped. If, as a community we want to use it for recreation, then we should expect additional recreational use to cost the community an additional amount to ensure it is safe and functional for that higher level of use. (Public submission 15)

Lake Burley Griffin (the Lake) is the centrepiece of Canberra, providing recreational opportunities for a range of users, as well as aesthetic and environmental values for residents and the ACT in general. These opportunities and values are being compromised by poor water quality and lack of coordination and funding for lake management and improvements. (Public submission 10)

The impression the reader gets from the [Jerrabomberra Wetlands] documentation put forward to justify the current development proposal is that this is an area of limited environmental values, and so why be concerned if it is further impacted upon by this proposal. [This] is death by a thousand cuts with gradual encroachment from various directions, management under resourcing, lack of control of weed and feral pests, and run down to the point where it is proposed that 'community interests would be better served if it were 'reclaimed' for built infrastructure. (Public submission 5)

For the past 30 years the Association has lobbied unsuccessfully for access to other waterways in the ACT. Despite funding and presenting environmental studies it has been perceptions and opinions that have won out over facts and have limited our opportunities. Identified sites have included Lake Ginninderra north arm, Lake Burley Griffin West Lake and Lake Burley Griffin West Basin. (Public submission 14)

Public Consultation / Communication

Whilst not appearing as a major issue in these submissions, communication and consultation with local community did seem to be valued by many respondents, particularly when it was related to some local issue.

One respondent wrote at length about the Lyneham Wetland project. Six separate points (4.7%) are identified in this submissions evaluation. There are indications this person was reasonably informed and experienced in this area of concern and was a key person in the community group actively engaging with this project. As recounted by the respondent, the community group queried many

aspects of the project design although they generally welcomed the idea of a wetland in the Lyneham area. In a project purportedly designed to protect and provide habitat, it was perceived that the proposed wetland would provide little habitat for less common species and, furthermore, involved the destruction of a stand of over 100 trees. It seemed these and other issues were never resolved to the satisfaction of the community group.

Furthermore, wetland objectives were stated to be unclear, and it was asserted that no hydrological or water quality measurements were made in the catchment prior to finalization of the wetland design. The ACT Government and technical advisory groups associated with the project either did not effectively respond, or failed to respond to issues raised by the local group.

In the Lyneham Wetlands consultation, the Department refused to give the community group any assurances on monitoring or remedial treatment if algae or biomass problems arise. (Public submission 3)

The community group requested that the project be designed to encourage some of the less common bird species but these were ignored. (Public submission 3)

The Department refused to release an economic analysis presumably because it does not exist or would not stand professional scrutiny. (Public submission 3)

Lake Burley Griffin Investigation

Several submissions contained comments, suggestions and feedback relating to the current Lake Burley Griffin Investigation. One comment argued that the investigation terms of reference were too narrow and should be expanded to include jurisdictional coordination of all management aspects, not just water quality. Another respondent expressed surprise that the Murrumbidgee River was not included in the TOR as it is part of the ACT waterway system and is a major recreational resource.

Two separate submissions (Public submissions 8 and 15) gave information about previous reports and studies associated with Lake Burley Griffin and ACT waterways, suggesting these may be useful in the investigation. Quotations relating to the above issues include:

It is somewhat surprising that the fourth term of reference did not include the Murrumbidgee River into which LBG flows and which is undoubtedly a major recreational waterway. (Public submission 17)

The inquiry may be premature because of the potential impact of the forthcoming the announcements/ consultations/ decisions of the Murray Darling Basin Commission and the relevant State and Federal Governments. (Public submission 17)

The Group has several sources of information that ... [OCSE] ... may find useful in the investigation (1) the Molonglo Catchment Strategy [www.molonglocatchment.org.au/catchment_planning.htm]; (2) Molonglo Waterwatch collected water quality data for the Molonglo River and Lake Burley Griffin. (Public submission 15)

You will be aware of the various studies commissioned by the NCA in 2010 from the University of

Central Queensland Centre for Environmental Management that addressed this issue. These studies provide an excellent introduction and background to the problem. (Public submission 8)

Resource Implications

One group respondent commented on the lack of transparency about the application of the *Water Abstraction Charge* revenue, and called for the Commissioner to advise the Minister on this potential source of funds for ACT waterway rehabilitation.

Another group representing recreational fishing in the ACT submitted a two page coherent argument for restoration and enhancement of the lake for native fish species habitat. This included improvement in water quality; control of invasive fish species such as European carp, Redfin Perch and Gambusia; and re-stocking with angling species (e.g. Golden Perch, Murray Cod, and Trout). The recommendation from this group was for the ACT Government to provide immediate funding for this work, stated in terms of:

... the Group notes the lack of transparency of the application of the revenue collected from the Water Abstraction Charge and strongly encourages the Office of the Commissioner for Sustainability and the Environment to provide advice to the Minister about this. (Public submission 15)

Recommendation to provide funding to conduct habitat enhancement trials in a smaller urban pond to inform a larger scale habitat program in all ACT ponds. (Public submission 10)

[Recommend] reinstatement of annual funding for stocking of native fish species in Lake Burley Griffin, ... (Public submission 10)

[Recommend] providing funding to identify Carp breeding areas in the Lake and to conduct Carp reduction trials in a smaller urban pond with the ultimate goal of control measures being implemented in all ACT waterways. (Public submission 10)

Lake Ecology

Lake Burley Griffin was perceived by one group as a recreational resource with reducing amenity due to poor **management** of lake ecology and fish stocks. Habitat improvement and restocking with native fish was a key priority for this group representing recreational fishers in the ACT:

A key ingredient to restoring native fish populations is the reinstatement of regular stocking of juvenile fish. This is required to overcome the inability of native fish to spawn successfully in the artificial environment of the Lake. ... The next ingredient is the reintroduction of suitable native fish habitat to the Lake. ... A further action to address the dominance of invasive species is through direct control measures, ... identifying [invasive species] breeding hotspots; physical removal (e.g. netting, trapping or fish-out events).

Report end.

Richard Reilly
20th November 2011