Pacific Fisheries Resource Conservation Council

# What's Happening to Wild Salmon in Your Community?

## *What the Council Heard: Vancouver Island Public Meetings*

*Prepared for Pacific Fisheries Resource Conservation Council by*
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October 2006

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**Johannes, Mark R.S. 2006. What's Happening to Wild Salmon in Your Community?** What the Council Heard: Vancouver Island Public Meetings. Vancouver, BC: Pacific Fisheries Resource Conservation Council.

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Printed and bound in Canada

ISBN 1-897110-32-4

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# 1. THE PFRCC'S APPROACH TO DISCUSSING "WHAT'S HAPPENING TO WILD SALMON IN YOUR COMMUNITY?"

## 1.1 Background

Since its inception, the Pacific Fisheries Resource Conservation Council (PFRCC) has maintained an interest in hearing from communities, First Nations, industry and stewards around British Columbia on the state of wild salmon. Council members have recognized the value of these dialogues in order to be informed on local issues; develop a work plan of future activities to address issues of interest and concern for BC's salmon stocks; and appraise federal and provincial Ministers of Fisheries on interests related to wild Pacific salmon.

Communities of place and interest have a wealth of knowledge with local and regional perspectives that can assist in understanding, finding solutions and potentially managing issues surrounding wild salmon. The goals of the PFRCC's 2006 community meetings were to:

- Share information on natural and human influences on wild salmon;
- Gather local knowledge; and
- Compile information and ideas to help the PFRCC develop and provide advice to government and help shape future interest and activities on wild salmon.

## 1.2 Public Opportunities for Public Input

The PFRCC held meetings on Vancouver Island in Port Hardy, Campbell River, Duncan and Port Alberni from March 27 to 30, 2006, to share information with communities and to receive their knowledge and views on the state of wild salmon. Meeting times and venues were promoted through local contacts, email, posters, a media advisory and press releases. The PFRCC will continue its community meetings in the fall 2006 and winter 2007 with ones to be held in the BC Interior and north coast.

Vancouver Island meeting agendas were developed to provide opportunities for comment and discussion by community participants. Comments on wild salmon were solicited through three approaches during meetings.

First, a simple background presentation was made to highlight some of the known issues on wild salmon populations including discussion of climate change, land and water use, and local salmon stock and habitat issues. This presentation was used to stimulate a question and answer discussion on local issues.

Second, a focused discussion around four topical questions was also used to solicit comment and dialogue. These questions included:

1. How are wild salmon stocks doing in your area relative to other parts of the coast?
2. How are changes in the marine and freshwater environments affecting salmon stocks in your area? (e.g., increases in water temperatures, stream and river flows, salinity, etc.)?
3. What is the impact of changes in water use and land use on salmon stocks and their habitat?
4. What does this mean for salmon management? What needs to be done to adapt to these changes?

Third, group discussions were convened around tables with use of maps and comment sheets to develop and record ideas and issues. PFRCC council members or staff helped facilitate table discussions. The Council asked community members to draw, write and comment on maps about wild salmon issues, solutions and management options. Comment sheets were distributed to provide community members an opportunity to address each of the four questions above.

Council members recorded all comments provided to them and found the discussions to be candid and valuable. This report develops a summary of these meetings, and attempts to capture many of the important ideas and themes that were expressed and heard by the PFRCC.

# 2. SYNOPSIS OF PUBLIC MEETINGS

This portion of the report summarizes the issues and ideas heard at the four Vancouver Island community meetings sponsored by the PFRCC in Port Hardy, Campbell River, Duncan and Port Alberni.

## 2.1 Purpose and Process

The Vancouver Island meetings were organized to listen to communities on local issues facing wild salmon and their habitats, information and management gaps and potential action or solutions to problems. The comments and discussion heard by the PFRCC are being used to direct future activities and help provide advice to government.

Meetings followed a flexible format including.

- Check-in, view displays, speak informally with PFRCC Council members
- Introduction to the PFRCC; goals and format of the meeting
- Brief technical presentation on issues facing wild salmon and questions/answers
- General discussion between Council members and participants
- Break out table discussions—maps and comment sheets
- Tables reporting to entire group
- Wrap-up & Closing Remarks

## 2.2 Meetings and Participation

Port Hardy, March 27, 2006—18 participants

Campbell River, March 28, 2006—60 participants

Duncan, March 29, 2006—50 participants

Port Alberni, March 30, 2006—40 participants

The four meetings drew interest and participation from a variety of groups and individuals (Table 1). The meeting participants showed a wide range of affiliation and background. The Duncan meeting garnered the largest proportion of attendance from community, hatchery and sport fish groups and individuals.

**Table 1. Affiliation (%) of community participants in Vancouver Island meetings.**

| Affiliation | Port Hardy % | Campbell River % | Duncan % | Port Alberni % |
|---|---|---|---|---|
| Salmon stewardship | 7 | 26 | 9 | 14 |
| Hatchery volunteer | 7 | 11 | 16 | 11 |
| Commercial Fisher | 7 | 11 | 5 | 4 |
| Sport Fisher | 21 | 11 | 36 | 14 |
| First Nation | 14 | 9 | 7 | 11 |
| Prov / Fed / Mun Gov | 21 | 7 | 7 | 21 |
| Community Group | 7 | 18 | 16 | 14 |
| Public | 16 | 7 | 4 | 11 |

## 2.3 Evaluation of the Purpose and Process

Council and staff provided evaluation forms at the end of meetings to allow participants to rate the value of the meetings in their community. Most participants rated the meetings as useful (3.6 points out of 5) and indicated that their views were heard (3.7 points out of 5). Many participants expressed an interest in not just blaming groups or agencies for declining local salmon stocks and habitats. Instead, they suggested that communities needed to be proactive and look for positive solutions through cooperation and integration of activities. There was interest having longer, more extensive meetings with a clearer agenda and conclusion.

The use of a technical presentation was only partially successful. The most engaged meeting was in Port Alberni, and used only a brief presentation to highlight some of the known or understood local issues. Comments on issues and ideas around wild salmon were best generated in open discussions framed around specific local issues and during table discussions using tools like maps and comment sheets. The most successful approaches to hearing community comments included: (a) engaging as many participants into the conversation as possible using local issues as context; (b) limiting comments from individuals with specific agendas; (c) respect and listening to all comments; (d) looking for positive ideas and comments on issues; and (e) engaging participants for follow-up on PFRCC activities.

## 2.4 Synopsis of Vancouver Island Meetings

Comments from communities on local salmon stocks and habitats were compiled into tables and maps as a summary of all dialogue heard by the PFRCC (Appendix I, Tables A1-A to A1-E, Maps A1-A to A1-E). Comments on local and regional salmon stock and habitat issues were assigned a low, medium and high level of priority. Priorities were set based on:

1. The frequency with which comments were heard; a comment with high frequency was assigned a high priority;

2. The perceived timing and magnitude of the issue as heard by the PFRCC, e.g., the immediate impacts of the Stolz slide on the Cowichan River and its effects on salmon habitat (Figure A1-D, Table A1-D, #8 comment) or the stock status of Nimpkish sockeye (Figure A1-A, Table A1-A, #4 comment); and

3. The priority of the issue as commented by local community experts (See Appendix: Definition of Priorities in Tables A1-A to A1-E).

The PFRCC heard that **high priority issues** in a community had great public concern, reflected a status for salmon stocks and habitats which is poor relative to historic levels; and had a public perception that management and information are insufficient to address issues.

**Medium priority issues** reflected some public concern that salmon stocks and habitats needed attention, the perception that stock and habitat status have declined and there may not be sufficient information to address issues.

**Low priority issues** reflected comments that problems in salmon stocks and habitats exist, but that the issues are being addressed with sufficient information and management.

The council heard the following high priority comments during community meetings.

## Port Hardy

Public meetings in Port Hardy suggested that poor regional salmon stock returns are a local issue of high priority (Table A1-A, Figure A1-A). Concern was raised about the low levels of abundance for Nimpkish sockeye salmon, and returns of pink salmon in Kingcome and Wakeman River in the Broughton Archipelago. Comments from participants suggested that local sockeye, chinook, coho, pink and steelhead returns were poor relative to historic levels, while levels of chum salmon remained stable.

Concern was raised about the high levels of seal and sea lion abundance relative to historic levels. The perception was that both species consistently consumed large quantities of smolt and adult salmon. Other high priority Port Hardy issues related to deteriorating or damaged local habitats through forest practices. Sewage and pollution were a concern in a number of local areas both in freshwater (Tsuiquate and Kluxewe Rivers) and coastal sites (Hardy Bay, Beaver Harbour, Queen Charlotte Strait). Marine based fish farms, forest harvesting and water diversion were high priority issues in coastal areas and watersheds of the Broughton Archipelago. Concerns were also raised about the high variability of sport and commercial catch for all salmon species.

## Campbell River / Gold River

Meetings in Campbell River suggested that poor regional salmon stock returns were a local issue of high priority (Table A1-B, Figure A1-B). Comments from participants suggested that local sockeye, chinook, coho, and steelhead returns were poor relative to historic levels, while levels of pink and chum salmon remained stable. Salmon stocks of concern included those in Bute Inlet, and the Oyster, Campbell and Quinsam Rivers.

Local concern was also raised about the high levels of freshwater and estuary habitat deterioration particularly related to freshwater quality and quantity in key salmon habitats, and riparian vegetation loss through development, mining and forestry activities. Comments were raised about the high levels of seals and the perception that they consumed large numbers of smolt and adult salmon. Praise was given to the efforts of local salmon enhancement and restoration initiatives; although concern was expressed about the need for ongoing funding support to maintain community salmon stewardship. A high priority was given to understanding the importance and interactions of salmon food supplies in the ocean. Krill (Euphausiids) and herring were identified as important food species for salmon. Questions were raised about the impacts of krill and herring harvesting and abundance on salmon growth and survival.

Gold River area salmon stocks and habitats were also discussed by community participants (Table A1-C, Figure A1-C). High priority concerns were raised about wild salmon stocks in the Gold River and deteriorating salmon habitats in Muchalat Inlet.

## Duncan / Cowichan

Meetings in Duncan suggested that poor Cowichan salmon stock returns were a local issue of high priority (Table A1-D, Figure A1-D). Comments from participants suggested that local chinook and coho returns were very poor relative to historic levels, while levels of chum salmon remained stable. Salmon stocks of particular concern included those in smaller streams flowing into Ladysmith Harbour, Bonsall Creek and Chemainus River, Somenos wetlands and Richards Creek, and the lower Cowichan River and estuary.

Local concern was also raised about the high levels of freshwater and estuary habitat deterioration, particularly related to sediment input from unstable banks (Stolz and Block 51 bank landslides) in key salmon spawning habitats in the Cowichan River, variable low water levels, riparian vegetation and off channel and side channel habitat loss through local development and forest industry activities. Nutrient pollution (eutrophication) through urban and agricultural development was raised as a concern in Cowichan, Somenos and Quamichan Lakes. Participants commented that uncontrolled private forest land development was perceived as having impacts on local salmon habitats. Concern was raised over the funding and investment by government into local and regional salmon stock assessment, habitat management and enhancement.

What was also apparent to Council at the Duncan meeting was the advanced level of multi-sectoral approaches to the resolution of habitat problems, the Stoltz Slide issue being one such example.

## Port Alberni / Alberni Valley / Barkley Sound

Public meetings in Port Alberni suggested that poor salmon stock returns were a local issue of high priority (Table A1-E, Figure A1-E). Comments from participants suggested that local wild chinook, coho, pink, chum and steelhead returns were poor relative to historic levels, while levels of sockeye and enhanced chinook salmon remained stable. Salmon stocks of particular concern included those in smaller streams flowing out of Port Alberni into the Somass River and Alberni Canal, sockeye in Henderson Lake—Clemens Creek, and chinook in the lower Somass River. Community participants suggested that mixed stock salmon fisheries, hatchery enhancement, and habitat damage were related to reduced wild salmon abundance.

The majority of the comments heard by PRFCC were on high priority habitat related issues across the Alberni Valley and Barkley Sound. Concern was raised about the high levels of freshwater, estuary and coastal marine habitat deterioration in the region. Very strong concern was raised about private forest lands in the Alberni Valley (Beaufort Range) and the impacts from harvesting activities on important local salmon streams. A number of comments were made about incidents of landslides, sediment input, declining freshwater quality and quantity related to private land forest harvesting practices.

Other high priority habitat concerns included: variable low water levels; high river temperatures; riparian vegetation, off and side channel, and smaller tributary habitat loss through local urban development, agriculture and forest harvest activities. Concern was raised on a mix of habitat issues related to sockeye and chinook migration and spawning through the Alberni canal and lower Somass into Stamp and Sproat River and Sproat and Great Central Lakes. Community participants suggested that there are important habitat issues for sockeye and chinook related to warm estuary and river temperatures, low river flows, and poor oxygen levels. It was suggested that these issues are a result of a mix of industrial pulp and paper activities and urban

development, warmer surface waters in surrounding lakes associated with climate warming, and a surface water control structure on the outlet of Great Central Lake. Concern was raised that there has been little concerted effort to develop solutions for the issues.

Participants also commented on a number of other important issues including: damaged salmon and fish habitat in Ucluelet Inlet; concerns about the interactions between fish farms and wild salmon in Clayoquot Sound; and high levels of seals and the perception that they consume large numbers of smolt and adult salmon.

## 2.5 Issues of Importance about Wild Salmon Populations

A number of key themes were heard, and rated as high priorities among all communities, on issues of importance about wild salmon populations.

- **Stock status:** The public commented that Chinook, coho and steelhead, and in some instances sockeye and pink salmon stocks had declined across the Vancouver Island relative to historic levels. Comments indicated that chum stock status remained fairly stable.
- **Salmon fisheries:** There was concern over lost sport and commercial fishing opportunities for salmon in smaller communities. It was emphasized that salmon play an integral part of many communities. For example, comments indicated the local, regional and international importance of a unique chinook sport fishing in the Cowichan River.
- **Seals and sea lions:** Concern was raised about the perceived effect of seals and sea lions feeding on salmon smolts leaving rivers, and on adult salmon returning.
- **Salmon ecosystems:** Public comments indicated a desire to end commercial harvest of krill and herring with a priority for food supply for salmon.
- **Funding:** Concern was expressed about reduced funding to agencies for research, stock assessment, management, and reduced local funding in support of salmon enhancement and stewardship.
- **Local stewardship:** Many communities expressed pride in their enhancement and stewardship activities and a belief that local stocks would either decline and or be eliminated without local enhancement efforts.
- **Fish farming:** A number of comments were received about perceived impact of fish farming in coastal areas on wild salmon.
- **Salmon habitats:** The dominant comment heard was about damaged or deteriorating salmon habitats and their impacts of salmon populations. The major issues raised included: forest harvesting practices on private lands, other forest harvesting problems, urban and land use development, water use, flow and temperature, estuary habitat deterioration and riparian vegetation loss. In all communities a specific habitat issue was put forward as a major threat to local salmon populations.

## 2.6 Local Solutions

The Council heard a number of key themes from communities on suggested solutions and potential management approaches for salmon and habitat issues of concern. Summary comments from community participants for suggested solutions and management approaches can be found at the end of the numbered comments provided in Tables A1-A to A1-E. Below, not in any particular order, are listed the key themes.

- **Local integrated management:** Community members expressed a desire to be involved in whole ecosystem management of resources, not single species, through an integrated, "common sense" approach to stewardship among First Nation, municipal, corporate and community groups. It was suggested that local management would benefit from improved cost efficiency and therefore provide better support for local enforcement, management and research. Examples from communities included:
    - A Cowichan River stewardship roundtable has been formed by multiple industry, agency and community groups in support of local planning for water and salmon.
    - Cowichan River water management forum was developed as a planning process to assist local groups in water control from the lake outlet; considered a local community initiative and success story.
    - Using the stewardship roundtable and management forum to actively manage water control during high and low flows to support improved downstream salmon habitats.
    - Somenos wetland management committee.
    - Alberni and Somass Watershed: there is a strong desire to form a group to support stakeholder input and balanced decisions during high and low flows or warm water events to help salmon migration and spawning. Water management planning is needed for Sproat, Stamp and Somass Rivers to coordinate options for inputting cooler water to reduce temperature impacts on migrating salmon.
- **Improved funding:** The Council heard comments from all communities about the need to improve funding to support both agency staff and activities, but also for local community stewardship to improve salmon and habitat assessment, protection, and management.
- **Salmon enhancement and stewardship:** In many communities enhancement, restoration and stewardship efforts represent local success stories. Communities perceive that local wild salmon stocks would further decline or become extinct without support from local stewardship activities. There was support within communities to continue funding local hatcheries and enhancement activities, e.g., Nitinat Hatchery, lake fertilization in Henderson Lake.
- **Estuary protection:** Community members indicated a need to develop a group empowered to control planning and development in estuaries. For example: the Campbell River estuary is experiencing unprecedented pressure from growth and a balance is needed to ensure salmon and wildlife habitat values are protected. In the Alberni canal and Somass estuary, past industry and development activities have created damaged habitats with little support to restore and enhance habitats for salmon and wildlife. In the Cowichan estuary, forest industry and log booming activities have damaged important salmon habitats.
- **Catch quotas:** There was discussion in a number of communities about equitable catch distribution among all user groups, and in some cases imposed catch limits and quotas for species like chinook and coho salmon where management solutions are needed to protect declining salmon returns.
- **High impact habitat restoration:** There were multiple examples given in each community of specific "hot spot" damaged habitats. Communities expressed a desire to mitigate or restore these sites through emergency restoration aid. For example: Cowichan restoration of

major landslides (Stolz slide and Block 51) which contribute high impacts from sediment on incubation success and fry survival in the lower Cowichan; its has been suggested that 60% of lower river sediments are contributed by the Stolz slide.

- **Dramatic declines in salmon status:** Communities identified it as a high priority to respond to local salmon stocks which have shown dramatic declines in abundance. This response can include local management and habitat protection initiatives. Communities also identified a need to make a concerted effort to find and rebuild lost salmon populations.
- **Riparian habitat protection:** Communities suggested a need for urban and rural riparian set backs large enough to protect salmon habitat. A concentrated effort should be made to restore and protect damaged urban riparian areas.
- **Private and public forest lands:** All communities suggested that improved regulation was needed for forest practices in private and public lands. In particular, private forest land regulations should be tightened to reflect those in effect on crown lands using ecosystem based management approaches. When private lands forests are harvested they should ensure conservation of wild salmon habitats and water quality and quantity.
- **Local municipal and regional planning:** Improved local planning is needed to support more sustainable and sound development for urban growth, agriculture and forest harvesting activities. Forestry, urban development and agriculture land use planning need to be connected into an integrated process to ensure protection and conservation of salmon habitats.
- **Climate issues:** Communities discussed a need for salmon management to reflect impacts from climate change on coastal marine and freshwater habitats. There was a perception that public concern about climate change is growing. In most cases the public does not know what needs to happen or actively get done to help. There is an interest for ongoing research and assessment on interactions of ocean and freshwater climate and impacts on ecosystems and salmon production and survival.
- **Salmon ecosystem research:** There is a need for research and management to support all aspects of salmon ecosystems. In particular a focus between food supplies (herring and krill) and salmon production.
- **Wild and farmed salmon interactions:** Communities expressed an interest in improved knowledge and research on the interactions between wild salmon and farmed salmon.
- **Seal and sea lion management:** Communities across Vancouver Island suggested a need to devise management systems to control high densities of harbour seals and sea lions in key salmon areas.
- **Pollution and nutrient control:** All communities commented on local examples of pollution and nutrient input causing impacts to salmon habitats. Continued planning and management is needed at local levels of government to protect and conserve salmon habitats. For example: Nutrient control and abatement in the lower Cowichan River small streams and wetlands to control eutrophication to protect oxygen levels and important salmon rearing habitats.

# 3. CONCLUDING REMARKS

The PFRCC has benefited from listening to comments and perspectives on local salmon issues during our meetings on Vancouver Island. The Council appreciates the passion and ideas communities have shared and the issues we are facing in order to maintain healthy salmon stocks and habitats. The PFRCC will continue this discussion with other communities across B.C. in support of healthy salmon populations and high quality habitat. The Council will share the information obtained with federal and provincial fisheries ministers.

# APPENDIX

A summary of public comments received during Vancouver Island meetings in Port Hardy, Campbell River, Duncan and Port Alberni. Tables and mapped comments represent public comment recorded on PFRCC community based maps, written comment sheets and verbally during open discussions.

## Definition of Priorities in Tables A1-A to A1-E

Tables A1-A to A1-E give a summary of comments, assigned priority, and numbers on maps referring to issues of concern mentioned at: (A) Port Hardy, (B) Campbell River, (C) Gold River, (D) Duncan and (E) Port Alberni.

Low, medium and high priorities were assigned to comments based on: (a) the frequency with which comments were heard; a comment with high frequency was assigned a high priority; (b) the perceived timing and magnitude of the issue as heard by the council, e.g., the immediate impacts of the Stolz slide on the Cowichan River and its effects on salmon habitat; and (c) the priority of the issue as commented on by known experts from the community (e.g., confers with Johannes et al. 2002, Assembly of a map-based stream narrative to facilitate stakeholder involvement in watershed management. *Journal of the American Water Resources Association* 38: 555–562).

- **Low Priority:** while problems for salmon stocks and habitats exist, the public perception is that these issues are being addressed with satisfactory levels of management.
- **Medium Priority:** some public concern, salmon stocks and habitat need attention, the perception is that salmon stocks and habitats have declined, or there is not sufficient information to understand issues or manage changes.
- **High Priority:** great public concern, salmon stocks and habitats are perceived to be doing poorly relative to historic levels. There is a public perception that management and information may not be sufficient to address issues.

Following each table is a list of comments heard on Suggested Solutions and Management Approaches. Comments were not ordered in any manner.

## Port Hardy Meeting

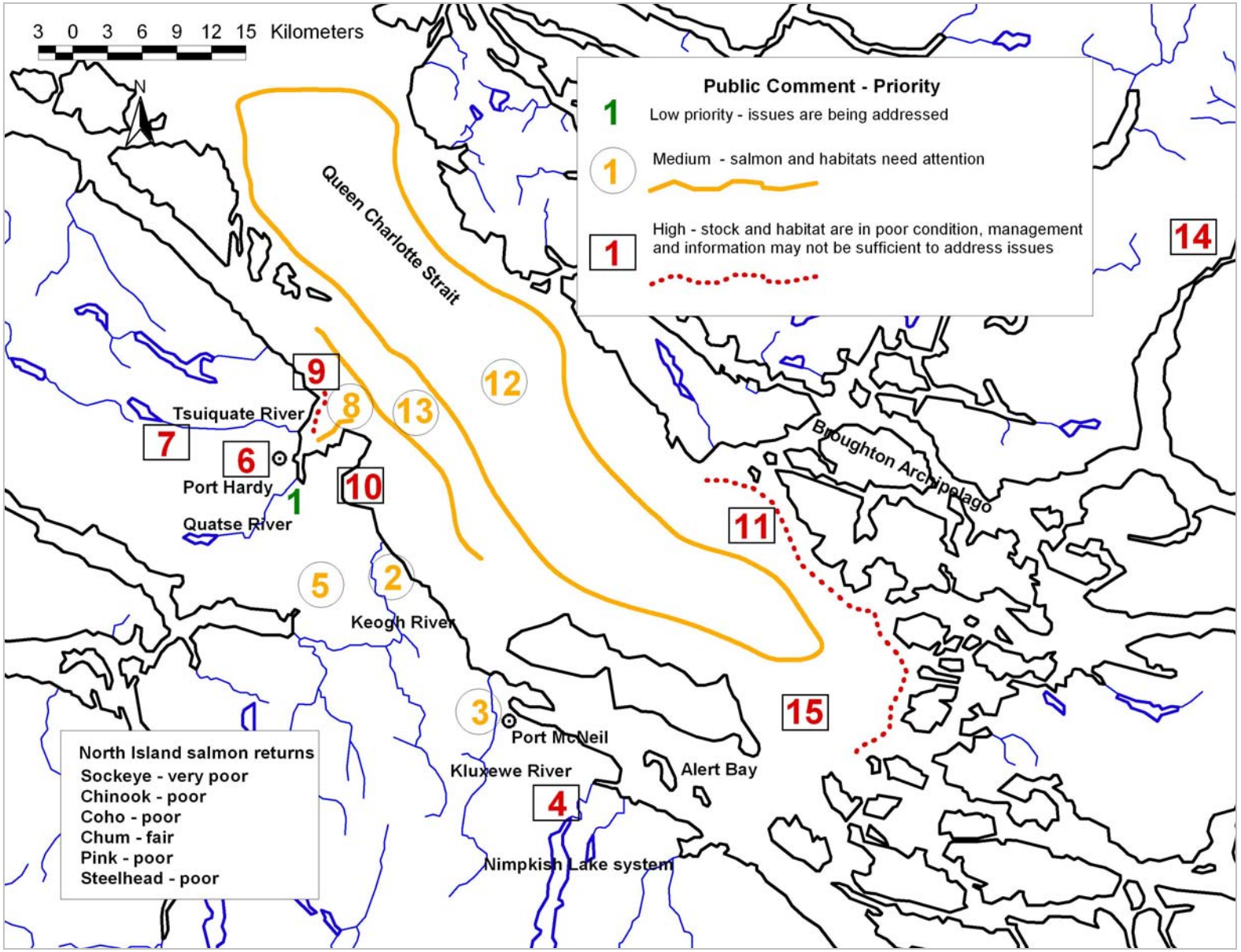
**Table A1-A. Port Hardy Meeting—March 27, 2006.**

| Map # | Priority | Public Comments |
|---|---|---|
| 1 | Low | Quatse River—hatchery and enhancement—outstanding efforts to community and salmon resources to help support low run sizes. |
| 2 | Medium | Keogh River—research and assessment for various salmon life history stages. Steelhead, coho and pink salmon survivals lower than expected over the last 5 to 10 years. Some questions about historic pesticide use in the watershed. |
| 3 | Medium | Kluxewe River—garbage dump, river issues, continued controversy with salmon and water resources in Port McNeil. |
| 4 | High | Nimpkish River—poor survival and returns of chinook, steelhead and sockeye. Questions about sea lice on Nimpkish salmon smolts. Historic fisheries for early run sockeye are now lost due to very poor run returns. A positive note was expressed about the success of lake fertilization in the Nimpkish system. |
| 5 | Medium | Area covered by Douglas Treaty—important land management issues coming to federal court for decision of First Nation land rights. These decisions will have implications on lands, forests, salmon and salmon habitats. |
| 6 | High | Port Hardy community—sewage outfall into historically vibrant fishing areas, treatment needs improvement. Additional urban / rural issues include municipal stormwater runoff in local streams, improved public awareness needed on local resource issues including salmon. |
| 7 | High | Tsuiquate River—river degrading quickly, few pink and chum salmon returning due to forest harvest and road development. |
| 8 | Medium | Hardy Bay—Historic juvenile black cod and yelloweye rockfish nursery areas, recent poor abundance due to municipal pollution in coastal areas and local overfishing. |
| 9 | High | Hardy Bay—Historic halibut fishing area. In recent years poor to no fish caught due to overfishing. |
| 10 | High | Beaver Harbour—Coastal nutrient problem associated with housing and community development with few or no septic systems. |
| 11 | High | Aquaculture and logging impacts on wild salmon in the Broughton Archipelago. In particular Kingcome and Wakeman. |
| 12 | Medium | Queen Charlotte Strait—dramatic declines in all fished and harvested species; Highly variable salmon ocean survival; Aquaculture impacts and sea lice interactions with wild salmon; Coastal eelgrass beds eroded and damaged; Recent Toxic algae blooms. Little known or understood on local cause and effects. There is some discussion and association to climate issues, aquaculture and overfishing. |
| 13 | Medium | Goletas Channel—110 Fathom depth—recent changes in ocean temperatures and salinity, high variation in recreational fishing success between years. |
| 14 | High | Klanaklini River in Knights Inlet—large impacts from water diversion, logging and aquaculture. |
| 15 | High | Queen Charlotte Strait—seal and sea lions are too abundant and eating large quantities of salmon. |

## Port Hardy: Suggested Solutions—Management Approaches

- High desire to develop local management of resources through integrated stewardship among First Nation, municipal, corporate and community groups. Local management support can assist in developing "common sense" approaches when there is a failure to communicate with government agencies. Local communities can support more efficient use of funding to protect and manage salmon resources and habitats.
- Strong local support to manage whole ecosystems, rather single species or resource sector.
- Port Hardy is centred between DFO management styles on the north and south coasts. There needs to be clarification and distinction between the other regions in order to develop and manage a fishery in this area to the benefit of local communities.
- There is a need in this area to support additional enforcement, management and research.
- Volunteers are tired; they need to know their efforts are appreciated and effectively used by agency staff.

**Figure A1-A. Summary of comments and priorities heard by the PFRCC in Port Hardy, March 27, 2006.**



## Campbell River Meeting

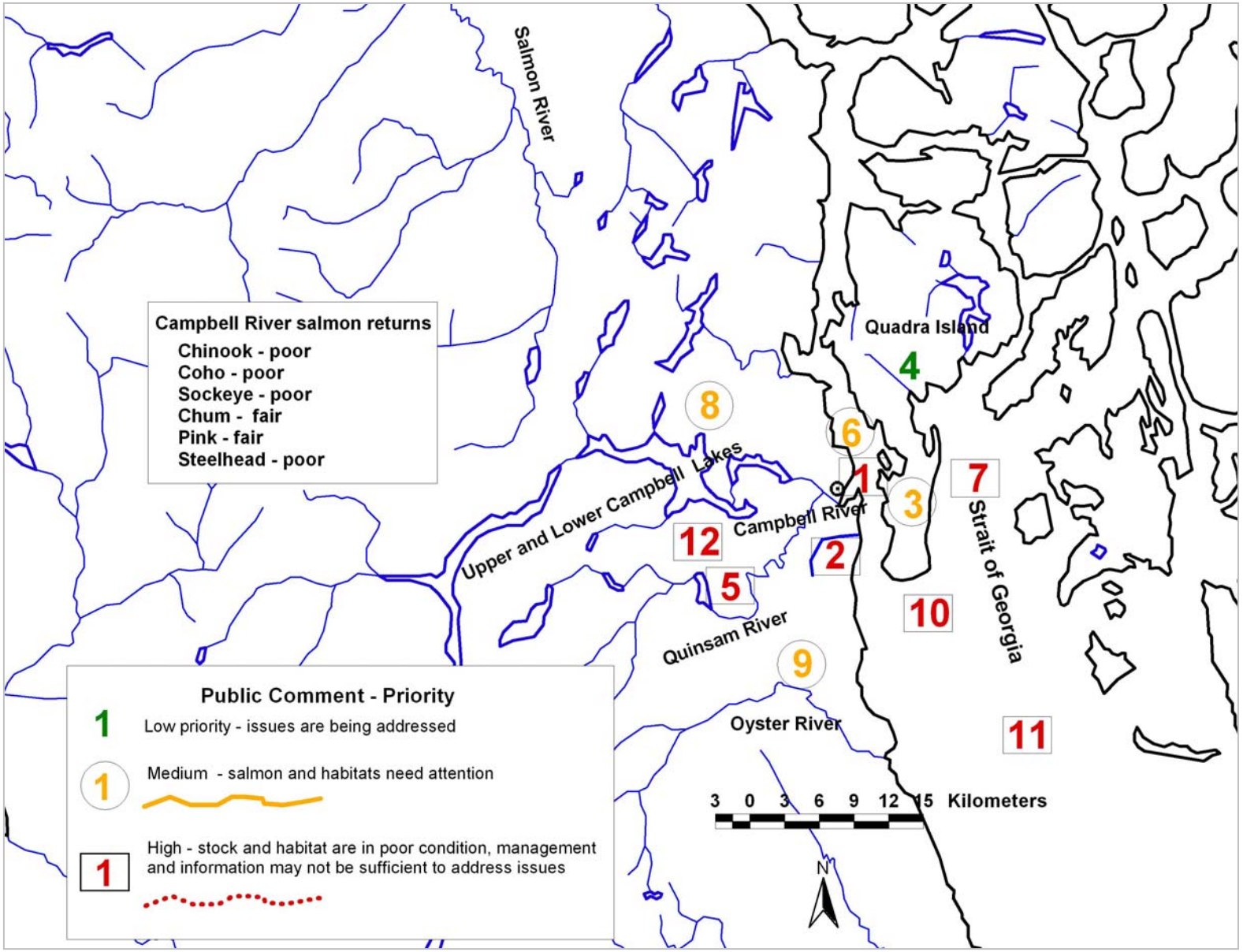
**Table A1-B. Campbell River Meeting—March 28, 2006.**

| Map # | Priority | Public Comments |
|---|---|---|
| 1 | High | Campbell River—estuary needs restoration and enhancement.<br>Shoreline development has eliminated chum spawning areas along shore.<br>Lower Campbell River development along river channel has eliminated off-channel coho habitat including riparian areas. |
| 2 | High | Simms Creek—small tributary in Campbell River municipal area where salmon habitat protection is required; Off-channel and wetland habitat protection needed, particularly riparian corridors; Stormwater management required along smaller urban stream systems like Simms Creek. Urban areas of Campbell River are under recent land—housing development pressures. Riparian set backs do not seem sufficient to protect valuable salmon habitats locally. |
| 3 | Medium | Lower Quadra Island streams—land use and development impacts. |
| 4 | Low | Upper Quadra Island streams—low flow water concerns, but in good shape, developing stewardship interests for stream corridor protection; 90% of freshwater salmon habitats on the island are in this northern portion; Land development and forestry concerns are increasing in upper island area. |
| 5 | High | Quinsam River—coal mine issues are causing water quality concerns. |
| 6 | Medium | Discovery Passage—cruise ship discharges in coastal waters. |
| 7 | High | Regional streams and salmon populations—coho and sockeye stocks in poor shape. After 2000, smolts counts and salmon returns have steadily declined in many streams around central / north Vancouver Island. |
| 8 | Medium | Regional streams—extensive loss of riparian vegetation through rural development and past forest harvesting activities. |
| 9 | Medium | Oyster River—large investments in steelhead enhancement have not produced perceived benefits. Additional enforcement and monitoring needed in the system. |
| 10 | High | Seal culls are needed in the Campbell River area. |
| 11 | High | Strait of Georgia—high public interest and concern about harvesting krill (Euphausiids) and herring without concern about salmon food supplies. |
| 12 | High | Campbell River area—public concerns about shutting down local hatcheries. There is a strong local belief that present enhancement and hatcheries are the only support for poor wild salmon stock returns. |
| 13 | High | Bute Inlet area—First Nation concerns on the decline of streams and salmon stocks. The belief is that local smaller stocks are damaged by larger mixed stock fisheries. |

## Campbell River: Public Suggested Solutions—Management Approaches

- A need to improve funding to agency staff and community based stewardship groups to support local and regional initiatives and management for salmon and habitats. High concerns about funding to support information and management of local and regional salmon stocks and habitats.
- Improve planning to create improved approaches for urban development.
- A need to develop local Campbell River Estuary Commission to assist in management and development planning and approvals.
- Salmon management solutions should consider seal and sea lion management—which may include selective culling.
- A need to review salmon aquaculture and Alaskan salmon ranching in the context of interactions with wild salmon stocks.
- Riparian set backs should be greater than 30m for development near salmon habitat.
- Concerns of salmon stocks at risk relative to larger stock and fisheries interests.
- Realign management approaches to reflect impacts from climate change on coastal marine and freshwater habitats.
- Improve conservation, enforcement through regulation and development terminal fishing options.
- Reduce responsibility of federal agencies in favour of more local management. In many cases the assessment and research is not sufficient to assist enhancement, fisheries and management of salmon and habitat resources. There is large local support from traditional knowledge and conventional wisdom in many areas of the BC coast.
- Riparian revegetation across region as a high restoration priority.
- Greater need for enforcement and research to support all aspects of ecosystems to salmon stocks. In particular a focus between food supplies (herring and krill) and salmon production.
- Public concerns about climate change is growing. In most cases the public does not know what needs to happen or actively get done to help.

**Figure A1-B. Summary of comments and priorities heard by the PFRCC in Campbell River, March 28, 2006.**



## Gold River (Port Hardy & Campbell River Meeting)

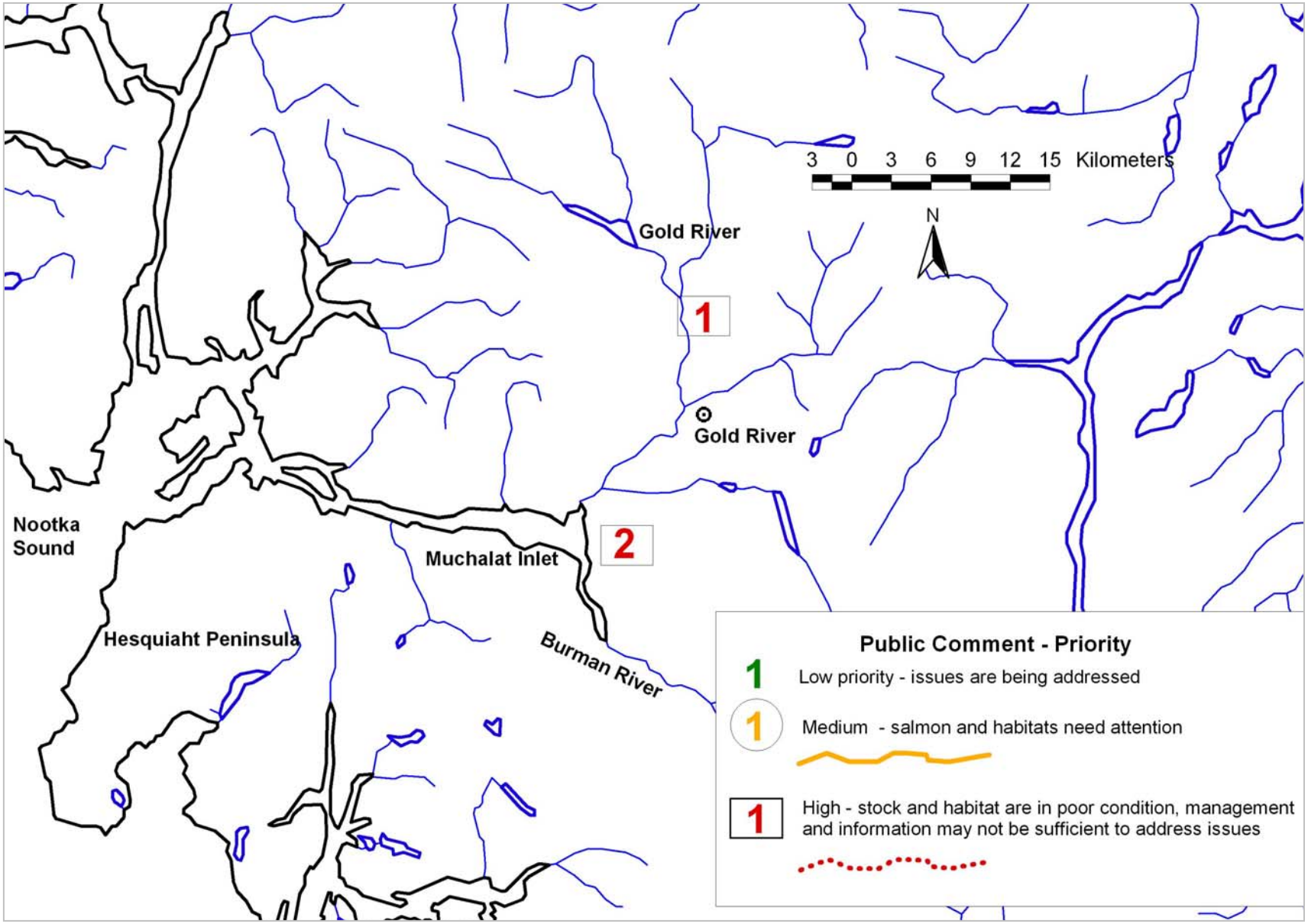
**Table A1-C. Gold River (Port Hardy & Campbell River Meeting)—March 27, 28, 2006.**

| Map # | Priority | Public Comments |
|---|---|---|
| 1 | High | Gold River—wild salmon stocks at very low levels with declines predicted to continue. |
| 2 | High | Muchalat Inlet streams—salmon stocks declining due to abrupt changes in freshwater temperatures and reduced water flows during low flow periods. |

### Gold River: Suggested Solutions—Management Approaches

- Improve overall coordination and planning for Gold River area salmon stocks and habitats.
- Greater involvement of stewardship groups in salmon management, enhancement and habitat restoration.
- Greater funding to support Fisheries and Oceans Canada in local communities.

**Figure A1-C. Summary of comments and priorities heard on Gold River by the PFRCC in Port Hardy and Campbell River, March 27–28, 2006.**



## Duncan / Cowichan Meetings

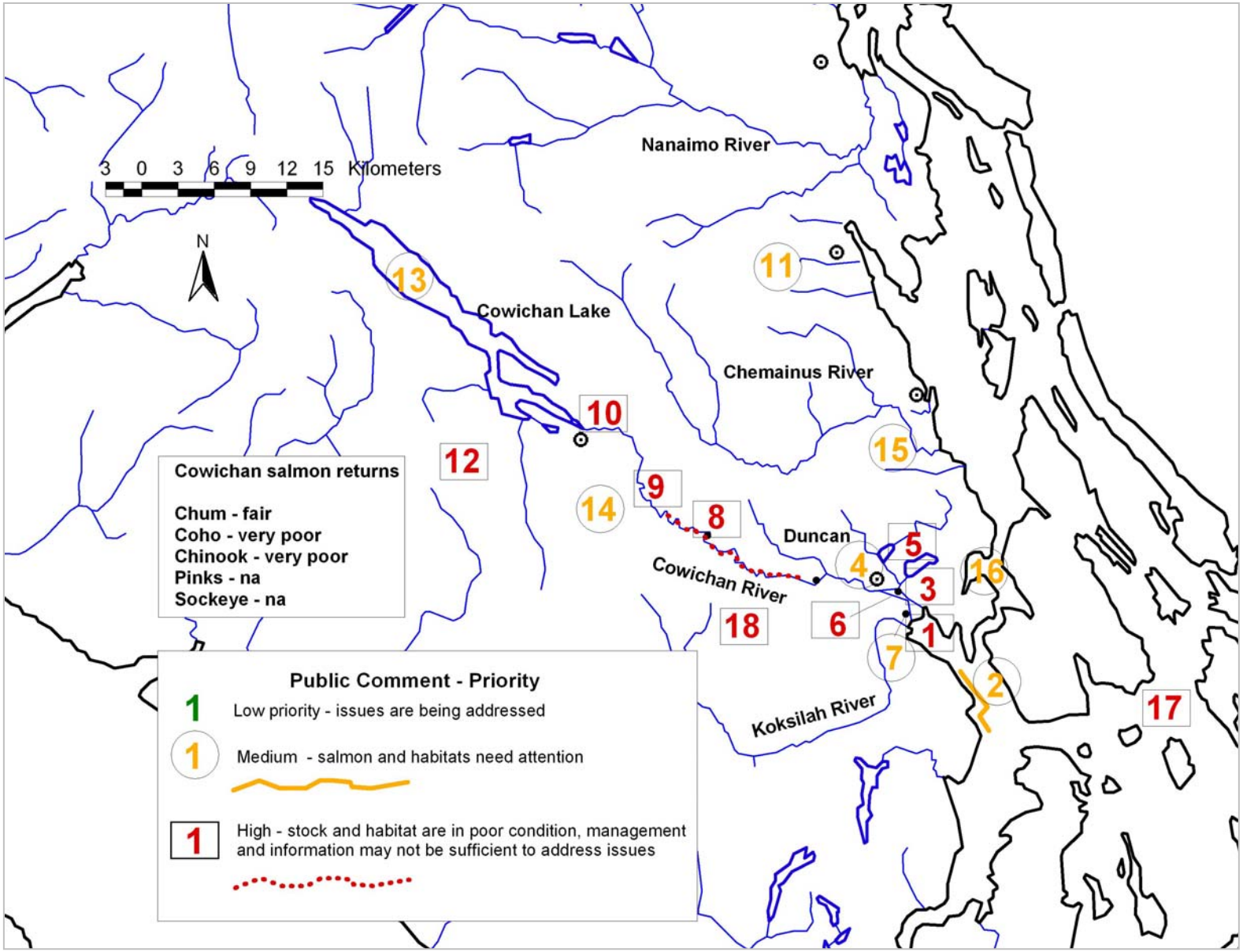
**Table A1-D. Duncan / Cowichan Meetings—March 29, 2006.**

| Map # | Priority | Public Comments |
|---|---|---|
| 1 | High | Cowichan River estuary—eel grass habitat declines caused by log boom storage and chemicals associated with mills; impacts on salmon smolt survival with reduced estuary habitat quality |
| 2 | Medium | Cherry Point—eel grass habitats degraded – restoration needed. |
| 3 | High | Lower Cowichan River—log jams needed, extensive gravel build up. |
| 4 | Medium | Lower Cowichan River—constructed side channels require repair. |
| 5 | High | Somenos wetlands (Somenos and Quamichan Lakes), Richards Creek—water quality major issues; nitrogen and nutrient enrichment causing algae and production changes from local septic field and development. These local creeks and streams from the wetland and off-channel areas of the Cowichan are considered important. Local communities are willing to restore habitat to support salmon. Funding is concern to motivate these activities. |
| 6 | Medium | Lower Cowichan River—Duncan sewer outfall. |
| 7 | Medium | Lower Cowichan River—mouth side channel needs protection and restoration. |
| 8 | Very High | Cowichan River—Stolz slide, uncontrolled large exposed clay and sand bank eroding rapidly; strong indication of large lower river impact by fine sediments on salmon incubation and rearing survival. |
| 9 | High | Cowichan River—Clay seam bank Block 51—fine sediment erosion on large exposed bank, considerable lower stream impacts. |
| 10 | High | Cowichan Lake—control lake weir to assist salmon and fish habitat<br>Additional water control into lower river during low and high flow conditions. |
| 11 | Medium | Ladysmith Harbour—smaller coho streams development impacts. |
| 12 | High | Cowichan watershed—greater than 70% private forest lands with perceived uncontrolled land and forest development—impacts include breeding bird populations. |
| 13 | Medium | Cowichan Lake—and other local lakes, eutrophication pressures, high surface water temperatures |
| 14 | Medium | Duncan and Cowichan lake communities—increasing development and population increase. |
| 15 | Medium | Bonsall Creek—sensitive chum and coho stream under pressure from agricultural and land development |
| 16 | Medium | Samsung Narrows—no herring stocks remain. |
| 17 | Medium | The size at age of returning salmon is a concern. This information can help provide a basis for examining the effort and investment into hatcheries, and help define the structure and function of coastal marine ecosystems, food supplies (krill) for salmon. |
| 18 | High | High public concern over investment by Canada and DFO into salmon stock assessment and enhancement. |

## Duncan / Cowichan: Suggested Solutions—Management Approaches

- A quota on in-river chinook and coho catches is needed for all user groups.
- Westcoast Vancouver Island troll has dramatic impact on Cowichan chinook – improve management and coordination to benefit local stocks.
- Restoration and mitigation of major landslides (Stolz slide and Block 51) which contribute high impacts from sediment on incubation success and fry survival in the lower Cowichan. Some suggestion that 60% of lower river sediments are contributed by the Stolz slide.
- Cowichan River stewardship roundtable has been formed by multiple industry, agency and community groups in support of local planning for water and salmon.
- Cowichan River water management forum – planning process developed to assist local groups in water control from lake outlet; local community initiative and success story.
- Using the stewardship roundtable and management forum to actively manage water control during high and low flows to support improved downstream salmon habitats.
- Somenos wetland – management committee formed successfully.
- Improved regulation needed for forest practices and harvesting in private lands.
- Local planning to support more sustainable and sound development for urban growth, agriculture and forest harvesting activities.
- Nutrient abatement programs should be implemented in the lower Cowichan river wetlands to control eutrophication to protect oxygen levels and important salmon rearing habitats.
- Improved salmon stock assessment with emphasis on smolt output from the Cowichan watershed and local smaller streams.
- Very strong public concern about levels of funding to support agency management and local groups. In the Cowichan, the sport fishing is promoted internally with little local investment back into habitats and salmon stocks.
- Reduce log booming in estuary and move dry land sorting.
- Improved information and research is needed to support sound management of salmon resources.
- What is meant by wild fish? On many parts of the coast, it's hard to find salmon with no hatchery influence. We know there is little if any genetic difference between wild and hatchery fish. Naturally hatchery numbers in Georgia Strait are high, because we are using hatcheries to augment populations in streams with potential or no remaining natural populations. Hatcheries are using modern techniques and are doing a very good job in providing viable fisheries. The high abundance of hatchery fish in the Strait of Georgia Strait is not construed as a bad issue.
- Efforts to restore and support salmon stocks in the Cowichan represents a local success story. The Cowichan is a singularly unique system which needs protection and investment. Community groups are working with First Nations and federal and provincial agencies to support these initiatives. More needs to be done.

**Figure A1-D. Summary of comments and priorities heard by the PFRCC in Duncan, March 29, 2006.**



## Port Alberni / Alberni Valley / Barkley Sound Meetings

**Table A1-E. Port Alberni / Alberni Valley / Barkley Sound Meetings—March 30, 2006.**

| Map # | Priority | Public Comments |
|---|---|---|
| 1 | Very High | Beaufort range private lands forest harvesting—impacts on sediment transport, altered low and high flow in downslope salmon streams. Strong habitat protection needed. |
| 2 | High | Somass and Stamp Rivers—important riparian corridors need protection. |
| 3 | High | Port Alberni streams—urban and road develop impacts in valley area. |
| 4 | Medium | Alberni canal—effluent discharge from pulp mill. |
| 5 | High | Alberni canal—log boom, pulp fibre mat which causes significant water quality issues in the canal marine / freshwater interface in the estuary. |
| 6 | High | Somass River—1992 unexplained fish kill. |
| 7 | High | Somass River—consistently high in-river temperatures during low flow periods during summer months. Delay in salmon spawning migration, spawning success issues. |
| 8 | High | Deer Creek—wetlands, springs, and water wells experiencing siltation and higher levels of suspended sediments from upslope land use activities including forest harvesting activities. |
| 9 | High | Cherry Creek—agricultural impacts on salmonid streams. |
| 10 | High | Beaver Creek—June 2005 landslide on upper Beaufort Range destroyed local creek and salmon habitats. |
| 11 | Medium | Salmon stock assessments are presently high-graded to large systems only, smaller systems virtually ignored. |
| 12 | Medium | Riparian protection along lower Somass River and estuary including repair of breach connecting estuary back to lower Somass River. |
| 13 | High | Industrial land development and salmon habitat loss in freshwater and coastal areas in Alberni canal. |
| 14 | Medium | Loss of historic runs of cutthroat trout and sturgeon. |
| 15 | Medium | Rogers Creek—Index stream, coho, cutthroat, chum, lost pink, smolt trap on system – needs additional support and protection. |
| 16 | High | Loss of sockeye, coho tributary spawning habitat throughout Great Central and Sproat Lake. Particularly in Sproat Lake with rural residence development around lake. |
| 17 | Medium | Commercial and sport fisheries have significant impacts in local areas, i.e., upper Alberni canal. |
| 18 | Medium | Conflicting user goals for migratory and local mix stock salmon fisheries. |
| 19 | Medium | Significant exotic species—predator species have impacts on local salmon stocks, i.e., mackerel, sea lions. |
| 20 | Medium | Bamfield area—important eel grass beds need protection. |
| 21 | High | Marine based fish farms—studies needed to determine potential impacts on wild fish populations including chinook and herring stocks in Clayoquot and Kyuquot Sound and strong management to limit impacts in sensitive areas. |

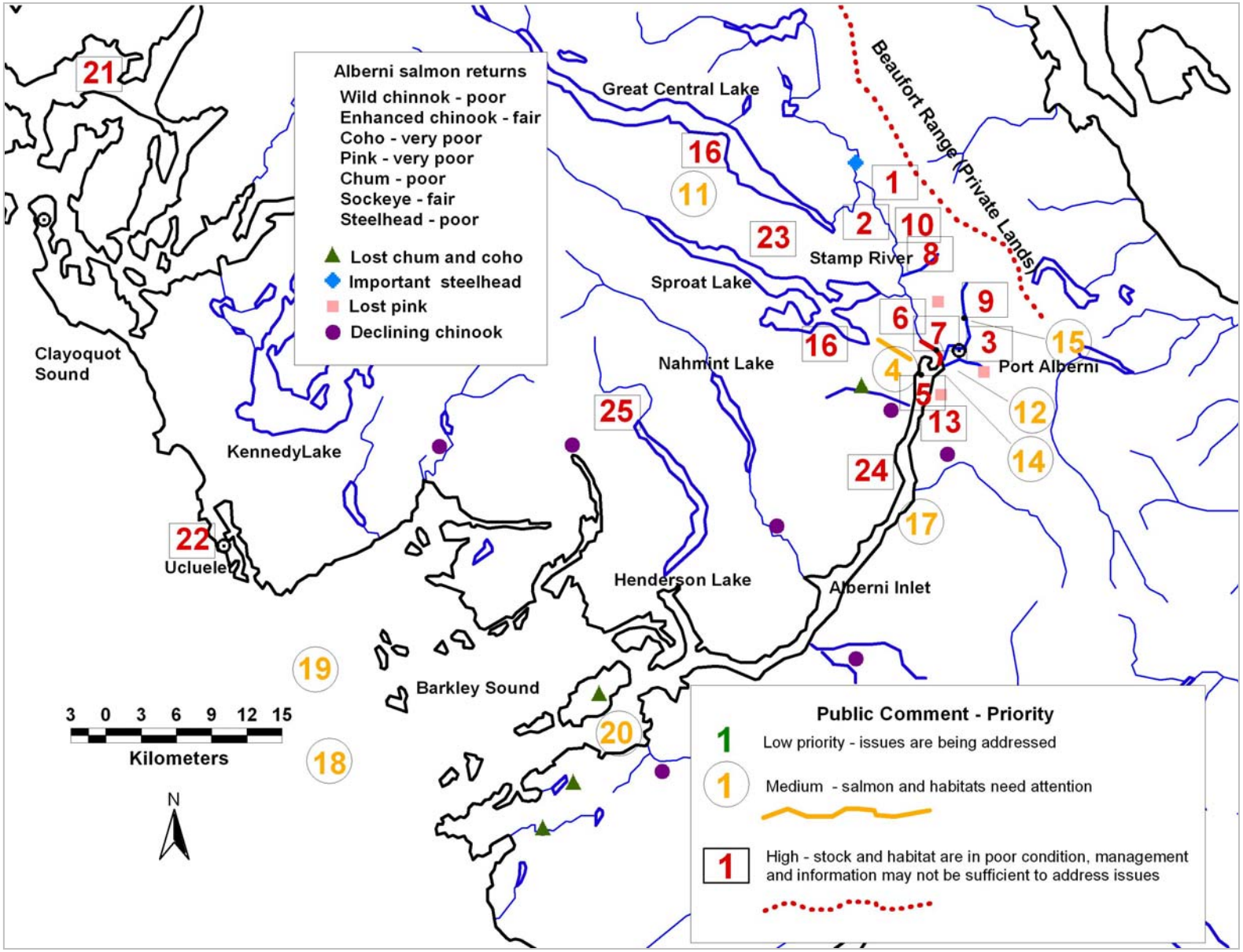
| Map # | Priority | Public Comments |
|---|---|---|
| 22 | High | Ucluelet Inlet and Harbour—concerns about damaged salmon and herring habitats. Lack of agency concern and support to protection and restore these habitats. |
| 23 | High | Great Central and Sproat Lake surface water temperatures and associated high temperature river discharge. Concern about river temperatures and their influence on salmon migration and spawning. |
| 24 | High | Seals and sea lions becoming a very large concern. They are now distributed to areas along the coasts and in inlets where they have not been seen in the past. |
| 25 | High | Henderson Lake, Clemens Creek—very high concerns about the status of Clemens Creek sockeye relative to other enhanced sockeye from Great Central and Sproat Lakes. Mixed stock fisheries is causing a dramatic decline in Clemens Creek sockeye. The Uchucklesaht First Nation is seeking support and development of alternative and local fisheries options. |
| 26 | High | Somass River—the Somass watershed historically comprises multiple runs of chinook salmon to a variety of streams and through different run timing. The combination of over-fishing, plus chinook enhancement by Robertson Creek Hatchery has now homogenized the chinook stock into a single enhanced run. |

## Alberni Valley: Suggested Solutions—Management Approaches

- Water management planning needed for Sproat, Stamp and Somass Rivers to coordinate options to input cooler water to reduce temperature impacts on migrating salmon.
- Need additional research and management of marine conditions and impacts of salmon survival.
- Private forest land regulations should be tightened to reflect those used on crown lands using ecosystem based management approaches, i.e., Alberni Valley Beaufort Range land forest harvesting issues.
- Private lands forest harvesting needs to managed to ensure conservation of wild salmon habitats and water quality and quantity.
- Continued funding for Nitinat Hatchery and enhancement.
- Funding to support lake fertilization and hatchery enhancement for sockeye salmon in Henderson Lake as the lowest producing portion of the Barkley Sound mixed sockeye stock.
- Improve planning process in private and crown lands including riparian protection.
- Lower sockeye salmon escapement targets in Sproat and Great Central Lakes.
- Enhance riparian protection areas in Alberni Valley
- Urban stormwater management planning needed.
- Increase funding to small rural and urban streams in Alberni Valley – these streams support smaller but important populations of coho salmon and cutthroat trout.
- Process is needed to keep stewardship groups and agency together and focused on coordination and planning in the watershed.

- Improve salmon stock assessments to small and large streams throughout valley.
- Improve links among First Nations, steward groups and agencies.
- Improve riparian protection of lower Somass and estuary.
- Reconnect tidal salt marsh portion of estuary with lower Somass River.
- Additional meetings along coast to integrate other stewards and First Nations into discussion and concern about wild salmon.
- Management of predator populations including mergansers, seas and sea lions.
- Additional research and assessment on interactions of ocean and freshwater climate and impacts on ecosystems and salmon production and survival.
- There is a need for an integrated enhancement and watershed restoration process focused in smaller and larger systems across Alberni Valley.
- Comprehensive water management plan needed across valley.
- Forestry, urban development and agriculture land use needed to be connected into planning process to ensure conservation of salmon habitats.
- Government agencies not supporting enhancement as effectively as steward and volunteer groups. Improve funding to smaller groups for local salmon enhancement activities.
- Limited long term follow-through on well intentioned research and management initiatives.
- Concerted effort needed to identify lost salmon populations, protect those we can and rebuild declining and extinct stocks.
- Improved enforcement, enhancement and salmon stock assessment.
- Funding and local management is needed to support small enhancement operations and build strong watershed restoration initiatives.

**Figure A1-E. Summary of comments and priorities heard by the PFRCC in Port Alberni, March 30, 2006.**



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