

## **Staff summary of Issues & Recommendations**

### **Non-native and Invasive Species**

\*Preliminary draft, please refer to full recommendations for complete review

10/29/2013 10:06 AM

#### **2009 Fish and Wildlife Program Section**

Section II (pages 18 and 22-23); Section (page 53)

#### **I. Overview**

The Council received many recommendations concerning non-native and invasive species. Generally the recommendations fall into two or three categories. Overwhelmingly, many agencies and tribes recommend that the Council play a leadership role in coordinating the issue on a basinwide level. They recommend that the Council be a leader in developing strategies and partnerships in the basin. Many recommend that the Council ask for regular reports from and work closely with the 100<sup>th</sup> Meridian Columbia Basin Team.

In addition, several agencies and tribes recommend that Council direct Bonneville to support activities that prevent introductions and establishment of invasive species and that address the adverse effects of invasive, non-native species on native populations. Some recommend that the Council direct Bonneville to support monitoring of invasive species and research innovative control /eradication methods and the effects of invasive species on fish and wildlife program restoration efforts.

The Council also received recommendations to expand the requirement of conducting environmental risk assessments to locations where management of non-native invasive fish overlaps with native fish conservation and endangered species listings.

#### **II. Summary**

##### ***Definitions to Add to the Program***

1. *Non-native species*: a species living outside its native distributional range, which has arrive there by human activity, either deliberate or accidental. (UCUT, Coeur d'Alene Tribe)
2. *Non-native invasive species*: a species that establishes and reproduces rapidly outside of its native range and may threaten the diversity or abundance of native species through predation, competition, parasitism, hybridization with native populations, introduction of pathogens or physical or chemical alteration of the invaded habitat. (UCUT, Coeur d'Alene Tribe)

##### ***Tracking Monitoring of Non-Native Species Information***

1. Coordinate with other organizations to track and monitor data on existing non-native invasive species distribution in the CRB and encourage regional data sharing on rapid response, prevention, containment, control, eradication, enforcement, and education and outreach efforts. (Coeur d'Alene, UCUT)
2. Create long-term integrated monitoring programs in the CRB to establish the distribution of existing invasive species and identify new and existing invasive species. (USGS)

### ***Research***

1. Support research to seek new and innovative ways to eradicate new and existing infestations of invasive species and determine the effects of existing invasive species on efforts to restore anadromous fish and healthy ecosystems in the CRB. (USGS)
2. Support projects that address new and emerging challenges regarding changes to CRB food webs, such as invasive species. (USFWS)

### ***Management Strategies***

1. Suppress flora and fauna populations that directly or indirectly adversely affect native fish and wildlife populations or habitats. (Colvilles)
2. Take an active leadership role in developing strategies and partnerships needed to understand and prevent the introduction and spread of harmful invasive species in the CRB. (UCSRB)
3. Coordinate with BPA, AAs, NOAA, USFWS, states and tribes to develop and implement system-wide strategies to reduce/control non-native invasive fish where they are negatively impacting salmon, steelhead, and native resident fish, including effects of hybridization, competition and predation. First priority should be to suppress/eradicate invasive fish predators; second priority to control invasives as competitors. Highest priority should be given to eradicate non-native fish in native species strongholds where there is a reasonable chance the non-natives can be completely eradicated and prevented from re-invasion (Coeur d'Alene, Confederated Salish Kootenai, USRT, Burns Paiute, Salish and Kootenai, Kootenai Tribe of Idaho, Grande Ronde, Cowlitz and MT DFW&P)
4. Minimize impacts to native species by using appropriate invasive fish removal methods (gill net, electro-fishing, fishing regulations, bounties or other) and monitor their effectiveness. All methodologies may be implemented while most appropriate method is determined. (Spokane Tribe)
5. Provide guidance to power producers in the Northwest on the use of non-native, invasive plant species as alternative fuel sources (e.g., *Arundo donax*) and require power producers to evaluate of the invasive potential and ecological risks of using non-native bioenergy feedstock species, cultivars and hybrids. (WISC)
6. Require and conduct environmental risk assessments for all resident fish substitution projects in the CRB in which a non native is to be selected for substitution. Such assessments should be expanded throughout the CRB where management of non-native invasive fish overlaps with native fish conservation (Coeur d'Alene Tribe, UCUTs)
7. Mitigation projects implemented under the Program should include efforts to prevent and reduce the occurrence of non-native species. Presence and population trend assessments for non-native species should be included within long-term monitoring efforts, as well as evaluation techniques implemented for habitat restoration projects. Fish and Wildlife managers should determine when deterrent actions would be required for non-native species. (MT DFW&P, USFWS)
8. The Program should continue to encourage collaborative policies and efforts to address the adverse effects of non-native fish species (on native fish species), including the longstanding pikeminnow reduction efforts. (BPA)

### ***Funding for AIS Prevention***

1. To protect FCRPS assets (and fish and wildlife investments), the Program should support activities known to be effective at stopping the invasion and spread of zebra and quagga mussels,

infectious salmon anemia virus, giant reed (*Arundo donax*), and invasive aquatic plants such as Eurasian milfoil, flowering rush, *Didymo* and other emerging species of concern. Funding should be provided equally through the Fish and Wildlife Program and O&M budgets from Power Operations within BPA. These activities include, but are not limited to: a) inspection and decontamination of boats moored in infested waters and then transported into the region on our roadways (AIS prevention); and b) developing protocols for early detection and rapid response to the inspection and decontamination of boats moored in infested waters and then transported on roadways in the region. (CRITFC, ODFW, WDFW, GSRO, USRT, Confederated Salish and Kootenai, LCFWRB, WISC, MT DFW&P, USFWS)

2. BPA should fund efforts to address the primary limiting factors affecting native resident fish, including non-native species eradication/suppression. (Confederated Salish and Kootenai, COWLITZ, USRT, NEZ PERCE)
3. Enhance inspection/ decontamination efforts in the region, strengthen measures to prevent the inadvertent spread of invasive species resulting from habitat research and restoration activities, improve communication and coordination throughout the basin, and continue to coordinate regional forums on science, policy and outreach. The USFWS recommends that, since the Program is not intended to protect Federal hydropower infrastructure investments from the threat of AIS, protection of existing Federal infrastructure investments from invasive species should be supported by O&M funding by the appropriate Federal action agency. (USFWS)
4. Others recommend that invasive quagga/zebra mussel prevention is inappropriate for Program funding because it does not address FCRPS effects on fish and wildlife. Instead, hydropower facility O&M funding by BPA and other project operators is more appropriate for this work. BPA and Council should continue to coordinate with regional partners on invasive mussel prevention and response strategies. (BPA, BPA Customer Groups)

### ***Regional Coordination***

1. Encourage regional collaborative policies and efforts to address the adverse effects of non-native species on native fish, including BPA's longstanding pikeminnow reduction efforts as well as invasive mussel prevention and response strategies. (BPA)
2. The Council should continue to be a regional leader coordinating regional stakeholder groups around the issue of AIS, particularly those that pose the greatest risk to the CRB ecosystem and industries. Include specific language supporting the work of the PSMFC 100th Meridian Initiative CRB Team and request regular reports from that group on the following items: current efforts for inspection and decontamination, research priorities relative to invasive species control and prevention, and opportunities for collaboration and lessons learned. (CRITFC, ODFW, WDFW, MT DFW&P, GSRO, USRT, COWLITZ, Confederated Salish and Kootenai, LCFWRB, USFWS, USGS, WISC)

## State Fish and Wildlife Agencies and Other State and State-Supported Agencies

MT DFW&P (2), ODFW(3), WDFW(4), WA Governor's SRO(5) LCFRB(6), UCSRB(7), WISC(9):

***BPA Funding for Effective Prevention:*** To protect FCRPS infrastructure and fish and wildlife investments, the Program should support activities that are known to be effective at stopping the invasion and spread of zebra and quagga mussels, infectious salmon anemia virus, giant reed (*Arundo donax*), and invasive aquatic plants such as Eurasian milfoil, flowering rush, *Didymo* and other emerging species of concern. Funding should be equally provided through both the Fish and Wildlife Program and O&M budgets from Power Operations within BPA. These activities include, but are not limited to, a) inspection and decontamination of boats moored in infested waters and then transported into the region on roadways (AIS prevention) and b) developing protocols for early detection and rapid response.

***Coordination:*** The Council should continue to play a leadership role in coordinating regional stakeholder groups on the issue of aquatic invasive species, particularly those that pose the greatest risk to the Columbia River Basin ecosystem and industries. In particular, the Fish and Wildlife Program should include specific language supporting the work of the 100th Meridian Initiative Columbia River Basin Team, which is coordinated by the PSMFC. This group has provided strong, successful leadership on invasive species prevention efforts in the region. We recommend the Council ask for regular reports from 100th Meridian Initiative-CRB Team on the following items: 1) Current efforts for inspection and decontamination, 2) Research priorities relative to invasive species control and prevention, 3) Opportunities for collaboration and lessons learned.

***Suppression and Control of Non-Native Species*** (MT DFW&P [2]): Projects designed to eradicate or suppress non-native species should be prioritized based on the site-specific level of threat to native species represented by non-native species, the likelihood of successful mitigation, cost-effectiveness, and partnership opportunity. Top priority should be given to native species strongholds where there is a reasonable chance that non-native species can be completely eradicated and prevented from re-invasion.<sup>1</sup>

***Non-Native Species Prevention in Mitigation Programs*** (MT DFW&P [2]): It is recommended mitigation programs should include efforts to prevent and reduce the occurrence of non-native species. Presence and population trend assessments for non-native species should be included within long-term monitoring efforts as well as evaluation techniques implemented for habitat restoration projects. Fish and Wildlife managers should determine when deterrent actions would be required.

***Evaluation of Non-Native Plant Species Prior to Use as Alternative Fuel Sources*** (WISC [9]): The Fish and Wildlife Program should provide guidance to hydropower producers in the Pacific Northwest region on the use of invasive species as alternative fuel sources and require the consideration of invasive potential and ecological risks associated with all novel feedstock species, cultivars, and hybrids. Studies have shown that some non-native plants with the highest bioenergy capacity, such as giant reed (*Arundo donax*), are highly invasive and potentially

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<sup>1</sup> Long-term suppression projects that cannot eradicate the threat of non-native species should not displace funding for habitat restoration or other mitigation actions with defined costs and high likelihood of success.

harmful to native fish, wildlife and ecosystems. To prevent unintended consequences from the promotion of non-native and modified plants as biofuels, the invasion risk of any proposed bioenergy feedstock must be assessed and vetted before their use.<sup>2</sup>

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<sup>2</sup> Tools for assessing the invasiveness of plant species and cultivars are widely available, including USDA APHIS' weed risk assessment.

## Indian Tribes and Tribal Organizations

BURNS PAIUTE (12)

***Address Threat of Non-Native Species as Resident Fish Mitigation:*** BPA should fund efforts to address all primary limiting factors affecting resident fish, including non-native species eradication and suppression. Non-native species are increasingly complicating the protection, restoration and enhancement of resident fish species in CRB due to competition, predation and hybridization of native fish species. Where non-native species have been identified as a primary limiting factor, funding should be directed to treat the non-native problem through eradication and suppression, not the symptoms, including increased understanding of food web interactions.

COEUR D'ALENE (13)

***Non-Native Invasive Species Management Strategies:*** Council should work cooperatively with NOAA, USFWS, states and tribes to develop and implement strategies to control non-native invasive fish where they negatively impact salmon, steelhead and native resident fish based on the following priorities: 1) top priority is to suppress/eradicate invasive fish species that negatively impact native species due to predation; 2) second priority is to suppress/eradicate invasive fish species that negatively impact native species due to competition and hybridization.

***Environmental Risk Assessment for Non-Native Species:*** Currently an environmental risk assessment is required for all resident fish substitution projects in which a non native species is to be selected for substitution. Such assessments should be expanded throughout the CRB in locations where management of non-native invasive fish overlaps with native fish conservation and ESA listings.

***Tracking/monitoring of Non-Native Species Information:*** Council's Program should coordinate with organizations/programs that track and monitor data on existing non-native invasive species distribution in the CRB. Emphasis should be on tracking rapid response, prevention, containment, control, eradication, enforcement, education and outreach, and may include participation in local, state, tribal, regional, national, and international efforts regarding invasive species. Public awareness of threat of invasives on aquatic ecosystem and native species is critical for reducing the spread and impact of new non-native species. Planning for prevention, control and management of non-natives to reduce impact on native species and ecosystems should be a priority.

***Add Definitions:*** Add the following definitions to Program: 1) non-native species -- a species living outside its native distributional range, which has arrived there by human activity, either deliberate or accidental; and 2) non-native invasive species -- a species that establishes and reproduces rapidly outside of its native range and may threaten the diversity or abundance of native species through predation, competition, parasitism, hybridization with native populations, introduction of pathogens, or physical or chemical alteration of the invaded habitat.

CRITFC (14)

***Coordination:*** The Council should continue to play a leadership role in coordinating regional stakeholder groups on the issue of aquatic invasive species, particularly those that pose the greatest risk to the Columbia River Basin ecosystem and industries. In particular, the Fish and Wildlife Program should include specific language supporting the work of the 100th Meridian Initiative Columbia River Basin Team, which is coordinated by the PSMFC. This group has provided strong, successful leadership on invasive species prevention efforts in the region. We recommend the Council ask for regular reports from 100th Meridian Initiative-CRB Team on the

following items: 1) Current efforts for inspection and decontamination, 2) Research priorities relative to invasive species control and prevention, 3) Opportunities for collaboration and lessons learned. The Council should take a leadership role as the key convener and coordinator in the CRB for AIS science, policy and outreach activities.

#### COLVILLE (15)

The CCT recommends that the Council amend the Program to support implementation of non-native species projects under the 2008 CCT Accord:

***Suppression of Non-Native Species:*** Continue to suppress flora and fauna populations that directly or indirectly adversely affect native fish and wildlife populations or habitats.

#### SALISH AND KOOTENAI (16)

***Funding for Suppression of Non-Native Species:*** BPA should fund efforts to address all primary limiting factors affecting resident fish including non-native species eradication and suppression and coordinate these efforts with companion efforts to protect anadromous fish from non-native species.

The tribes are proposing specific Program language similar to that of the Burns Paiute recommendation to be added to either the Non-Native Species (p. 18) or Resident Fish Mitigation strategies (pp. 22-23) under the Basinwide Strategies section.

***Funding for Prevention:*** in order to protect FCRPS assets the Program should direct BPA should provide funding for activities to prevent the spread AIS such as z/q mussels, milfoil and flowering rush. Funding should be equally provided through the Program and O&M budgets from Power Operations within BPA for inspection and decontamination of boats moored in infested waters then transported on our roadways in the region.

***Coordination:*** The Council should continue to play a regional leadership role in coordinating regional stakeholder groups around the issue of AIS, particularly those that pose a great risk to the CRB ecosystem and industries. In particular, the Program should include specific language supporting the work of the 100<sup>th</sup> Meridian-CRB Team.

#### CONFEDERATED TRIBES OF THE GRANDE RONDE (18): (on p. 29 of recommendations)

The Program should amend the second paragraph on under section a Piscivorous predator control on pg 52 to read as stated below. This paragraph should be moved from the mainstem plan and inserted under sec 2 on pg 19 titled Non-Native Species Strategies.

~~The federal agencies BPA (and action agencies) should work cooperatively with NOAA, USFWS, states, tribes and Council to review, evaluate, develop and implement basinwide strategies to reduce non-native piscivorous predation on salmon and steelhead, especially by smallmouth bass, channel catfish and walleye~~ native fish in mainstem and in tributary habitat.

#### COWLITZ TRIBE (22)

***Coordination:*** The Northwest Power and Conservation Council should continue to play a regional leadership role in coordinating stakeholder groups around the issue of aquatic invasive species, particularly those that pose the greatest risk to the Columbia River Basin ecosystem and industries. In particular, the Fish and Wildlife Program should include specific language supporting the work of the 100th Meridian Initiative Columbia River Basin Team, which is coordinated by the Pacific States Marine Fisheries Commission. This group has provided strong, successful leadership on invasive species prevention efforts in the region. We recommend the Council ask for regular reports from 100th Meridian Initiative Columbia River Basin Team on

the following items:

1. Current efforts for inspection and decontamination
2. Research priorities relative to invasive species control and prevention
3. Opportunities for collaboration and lessons learned

***Funding for Suppression of Non-Native Fish Species:***

Proposed Program language to be added to Section 2-Non-Native Species strategies (p. 18) and/or Section 7-Resident Fish Mitigation strategies (pp. 22-23) under Basinwide Strategies: *“The threat of non-native species increasingly complicates the protection, restoration, and enhancement of resident fish species throughout the basin. Competition, predation and hybridization by non-natives often reduces the effectiveness of habitat protection and restoration efforts for native fish populations. Funding should be directed to treat the problem, not the symptoms, including research to better understand food-web interactions. Where non-native species have been identified as a primary limiting factor in subbasin plans, increased effort and funding should be directed to eradicate or suppress non-native species in conjunction with the proven methods that benefit their habitats.”*

KOOTENAI TRIBE of IDAHO (24)

***Mitigate Effects of Non-Native Species:*** Mitigate the negative impacts to native species and habitat caused by the introduction of non-native species, including hybridization, competition and predation.

NEZ PERCE (25)

***Funding for Suppression of Non-Native Fish Species:*** BPA should fund efforts to address all primary limiting factors affecting resident fish including non-native species eradication and suppression and coordinate these efforts with companion efforts that protect anadromous fish from non-native species. Note: this recommendation to be added to the Section 7-Resident Fish Mitigation strategies (pp. 22-23) under Basinwide Strategies.

SPOKANE TRIBE (26)

***Management and Suppression of Non-Native Species:*** Minimize negative impacts to native species from non-native species by using appropriate methods to remove nuisance species (gill net, electrofishing, fishing regulations, bounties or other appropriate methodologies). All methodologies may be implemented while fisheries managers determine the most appropriate method for Lake Roosevelt. Monitoring should be conducted to assess effectiveness of suppression methods and to determine if interim targets are achieved.

UCUT (27)

***Management and Control of Non-Native Invasive Species:*** Develop and implement strategies to control non-native, invasive fish where they are negatively impacting salmon, steelhead and native resident fish.

***Non-Native Invasive Species Management Strategies:*** Council should work cooperatively with NOAA, USFWS, states and tribes to develop and implement strategies to control non-native invasive fish where they negatively impact salmon, steelhead and native resident fish based on the following priorities: 1) top priority is to suppress/eradicate invasive fish species that



negatively impact native species due to predation; 2) second priority is to suppress/eradicate invasive fish species that negatively impact native species due to competition and hybridization. **Conduct Environmental Risk Assessment for Non-Native Species:** Currently an environmental risk assessment is required for all resident fish substitution projects in which a non native species is to be selected for substitution. Such assessments should be expanded throughout the CRB in locations where management of non-native invasive fish overlaps with native fish conservation and ESA listings.

**Tracking/monitoring of Nan-Native Species Distribution:** Council's Program should coordinate with organizations/programs that track and monitor data on existing non-native invasive species distribution in the CRB. Emphasis should be on tracking rapid response, prevention, containment, control, eradication, enforcement, education and outreach, and may include participation in local, state, tribal, regional, national, and international efforts regarding invasive species. Public awareness of threat of invasives on aquatic ecosystem and native species is critical for reducing the spread and impact of new non-native species. Planning for prevention, control and management of non-natives to reduce impact on native species and ecosystems should be a priority.

**Add Definitions:** Add the following definitions to Program: 1) non-native species -- a species living outside its native distributional range, which has arrived there by human activity, either deliberate or accidental; and 2) non-native invasive species -- a species that establishes and reproduces rapidly outside of its native range and may threaten the diversity or abundance of native species through predation, competition, parasitism, hybridization with native populations, introduction of pathogens, or physical or chemical alteration of the invaded habitat.

USRT (28)

**Funding for Suppression of Non-Native Fish Species:** BPA should fund efforts to address all primary limiting factors affecting resident fish including non-native species eradication and suppression and coordinate these efforts with companion efforts that protect anadromous fish from non-native species. Note: this recommendation to be added to the Resident Fish Mitigation strategies (pp. 22-23) under the Basinwide Strategies section.

**Non-Native Fish Species Management Strategies:** BPA and the action agencies should work cooperatively with NOAA, USFWS, states, tribes and the Council to develop and implement system-wide strategies to manage and reduce non-native fish where they negatively impact salmon, steelhead and native resident fish in both the mainstem and tributaries. Note: this recommendation to be added to the Non-Native Species strategies on p. 18 in the Basinwide Strategies section.

**BPA Funding for Effective Prevention of Aquatic Invasive Species:** To protect FCRPS infrastructure and fish and wildlife investments, the Program should support activities that are known to be effective at stopping the invasion and spread of zebra and quagga mussels, infectious salmon anemia virus, giant reed (*Arundo donax*), and invasive aquatic plants such as Eurasian milfoil, flowering rush, *Didymo* and other emerging species of concern. Funding should be equally provided through both the Fish and Wildlife Program and O&M budgets from Power Operations within BPA. These activities include, but are not limited to, inspection and decontamination of boats moored in infested waters and then transported into the region on our roadways.

**Coordination:** The Council should continue to play a leadership role in coordinating regional stakeholder groups on the issue of aquatic invasive species, particularly those that pose the

greatest risk to the Columbia River Basin ecosystem and industries. In particular, the Fish and Wildlife Program should include specific language supporting the work of the 100th Meridian Initiative Columbia River Basin Team, which is coordinated by the PSMFC. This group has provided strong, successful leadership on invasive species prevention efforts in the region. We recommend the Council ask for regular reports from 100th Meridian Initiative-CRB Team on the following items: 1) Current efforts for inspection and decontamination, 2) Research priorities relative to invasive species control and prevention, 3) Opportunities for collaboration and lessons learned.

## **Federal Agencies**

### **BURNS PAIUTE (12)**

***Address Threat of Non-Native Species as Resident Fish Mitigation:*** BPA should fund efforts to address all primary limiting factors affecting resident fish, including non-native species eradication and suppression. Non-native species are increasingly complicating the protection, restoration and enhancement of resident fish species in CRB due to competition, predation and hybridization of native fish species. Where non-native species have been identified as a primary limiting factor, funding should be directed to treat the non-native problem through eradication and suppression, not the symptoms, including increased understanding of food web interactions.

### **COEUR D'ALENE (13)**

***Non-Native Invasive Species Management Strategies:*** Council should work cooperatively with NOAA, USFWS, states and tribes to develop and implement strategies to control non-native invasive fish where they negatively impact salmon, steelhead and native resident fish based on the following priorities: 1) top priority is to suppress/eradicate invasive fish species that negatively impact native species due to predation; 2) second priority is to suppress/eradicate invasive fish species that negatively impact native species due to competition and hybridization.

***Environmental Risk Assessment for Non-Native Species:*** Currently an environmental risk assessment is required for all resident fish substitution projects in which a non native species is to be selected for substitution. Such assessments should be expanded throughout the CRB in locations where management of non-native invasive fish overlaps with native fish conservation and ESA listings.

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***Add Definitions:*** Add the following definitions to Program: 1) non-native species -- a species living outside its native distributional range, which has arrived there by human activity, either deliberate or accidental; and 2) non-native invasive species -- a species that establishes and reproduces rapidly outside of its native range and may threaten the diversity or abundance of native species through predation, competition, parasitism, hybridization with native populations, introduction of pathogens, or physical or chemical alteration of the invaded habitat.

### **CRITFC (14)**

***Coordination:*** The Council should continue to play a leadership role in coordinating regional stakeholder groups on the issue of aquatic invasive species, particularly those that pose the greatest risk to the Columbia River Basin ecosystem and industries. In particular, the Fish and Wildlife Program should include specific language supporting the work of the 100th Meridian Initiative Columbia River Basin Team, which is coordinated by the PSMFC. This group has provided strong, successful leadership on invasive species prevention efforts in the region. We recommend the Council ask for regular reports from 100th Meridian Initiative-CRB Team on the

following items: 1) Current efforts for inspection and decontamination, 2) Research priorities relative to invasive species control and prevention, 3) Opportunities for collaboration and lessons learned. The Council should take a leadership role as the key convener and coordinator in the CRB for AIS science, policy and outreach activities.

#### COLVILLE (15)

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***Coordination:*** The Council should continue to play a regional leadership role in coordinating regional stakeholder groups around the issue of AIS, particularly those that pose a great risk to the CRB ecosystem and industries. In particular, the Program should include specific language supporting the work of the 100<sup>th</sup> Meridian-CRB Team.

#### KOOTENAI TRIBE of IDAHO (24)

***Mitigate Effects of Non-Native Species:*** Mitigate the negative impacts to native species and habitat caused by the introduction of non-native species, including hybridization, competition and predation.

#### NEZ PERCE (25)

***Funding for Suppression of Non-Native Fish Species:*** BPA should fund efforts to address all primary limiting factors affecting resident fish including non-native species eradication and suppression and coordinate these efforts with companion efforts that protect anadromous fish from non-native species. Note: this recommendation to be added to the Resident Fish Mitigation strategies (pp. 22-23) under the Basinwide Strategies section.

#### SPOKANE TRIBE (26)

***Management and Suppression of Non-Native Species:*** Minimize negative impacts to native species from non-native species by using appropriate methods to remove nuisance species (gill net, electrofishing, fishing regulations, bounties or other appropriate methodologies). All methodologies may be implemented while fisheries managers determine the most appropriate

method for Lake Roosevelt. Monitoring should be conducted to assess effectiveness of suppression methods and to determine if interim targets are achieved.

#### UCUT (27)

**Management and Control of Non-Native Invasive Species:** Develop and implement strategies to control non-native, invasive fish where they are negatively impacting salmon, steelhead and native resident fish.

**Non-Native Invasive Species Management Strategies:** Council should work cooperatively with NOAA, USFWS, states and tribes to develop and implement strategies to control non-native invasive fish where they negatively impact salmon, steelhead and native resident fish based on the following priorities: 1) top priority is to suppress/eradicate invasive fish species that negatively impact native species due to predation; 2) second priority is to suppress/eradicate invasive fish species that negatively impact native species due to competition and hybridization.

**Conduct Environmental Risk Assessment for Non-Native Species:** Currently an environmental risk assessment is required for all resident fish substitution projects in which a non native species is to be selected for substitution. Such assessments should be expanded throughout the CRB in locations where management of non-native invasive fish overlaps with native fish conservation and ESA listings.

**Tracking/monitoring of Non-Native Species Distribution:** Council's Program should coordinate with organizations/programs that track and monitor data on existing non-native invasive species distribution in the CRB. Emphasis should be on tracking rapid response, prevention, containment, control, eradication, enforcement, education and outreach, and may include participation in local, state, tribal, regional, national, and international efforts regarding invasive species. Public awareness of threat of invasives on aquatic ecosystem and native species is critical for reducing the spread and impact of new non-native species. Planning for prevention, control and management of non-natives to reduce impact on native species and ecosystems should be a priority.

**Add Definitions:** Add the following definitions to Program: 1) non-native species -- a species living outside its native distributional range, which has arrived there by human activity, either deliberate or accidental; and 2) non-native invasive species -- a species that establishes and reproduces rapidly outside of its native range and may threaten the diversity or abundance of native species through predation, competition, parasitism, hybridization with native populations, introduction of pathogens, or physical or chemical alteration of the invaded habitat.

#### USRT (28)

**Funding for Suppression of Non-Native Fish Species:** BPA should fund efforts to address all primary limiting factors affecting resident fish including non-native species eradication and suppression and coordinate these efforts with companion efforts that protect anadromous fish from non-native species. Note: this recommendation to be added to the Resident Fish Mitigation strategies (pp. 22-23) under the Basinwide Strategies section.

**Non-Native Fish Species Management Strategies:** BPA and the action agencies should work cooperatively with NOAA, USFWS, states, tribes and the Council to develop and implement system-wide strategies to manage and reduce non-native fish where they negatively impact salmon, steelhead and native resident fish in both the mainstem and tributaries. Note: this recommendation to be added to the Non-Native Species strategies on p. 18 in the Basinwide Strategies section.

***BPA Funding for Effective Prevention of Aquatic Invasive Species:*** To protect FCRPS infrastructure and fish and wildlife investments, the Program should support activities that are known to be effective at stopping the invasion and spread of zebra and quagga mussels, infectious salmon anemia virus, giant reed (*Arundo donax*), and invasive aquatic plants such as Eurasian milfoil, flowering rush, *Didymo* and other emerging species of concern. Funding should be equally provided through both the Fish and Wildlife Program and O&M budgets from Power Operations within BPA. These activities include, but are not limited to, inspection and decontamination of boats moored in infested waters and then transported into the region on our roadways.

***Coordination:*** The Council should continue to play a leadership role in coordinating regional stakeholder groups on the issue of aquatic invasive species, particularly those that pose the greatest risk to the Columbia River Basin ecosystem and industries. In particular, the Fish and Wildlife Program should include specific language supporting the work of the 100th Meridian Initiative Columbia River Basin Team, which is coordinated by the PSMFC. This group has provided strong, successful leadership on invasive species prevention efforts in the region. We recommend the Council ask for regular reports from 100th Meridian Initiative-CRB Team on the following items: 1) Current efforts for inspection and decontamination, 2) Research priorities relative to invasive species control and prevention, 3) Opportunities for collaboration and lessons learned.

## **BPA Customers, Other Utilities and River Users**

PPC, NWRP, PNGC, NRU [44]

***Limit funding for AIS:*** Council should resist expansion of the Program into measures that are not caused or related to the development and operation of the FCRPS because it will distract from the goals of the Act and dilute the effect of available funding from BPA's customers, particularly for calls to expand the Program to address invasive species and toxics.

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