

Salmon, Native Diets, and the Role of the River and Fish to Indigenous Peoples: *Introduction to Kettle Falls, Inland Northwest, and Beyond*

A photograph showing two men in outdoor gear pulling a large fishing net filled with salmon in a river. The background features a steep, light-colored cliffside under a clear sky. The men are wearing jackets, hats, and boots, and the net is overflowing with fish.

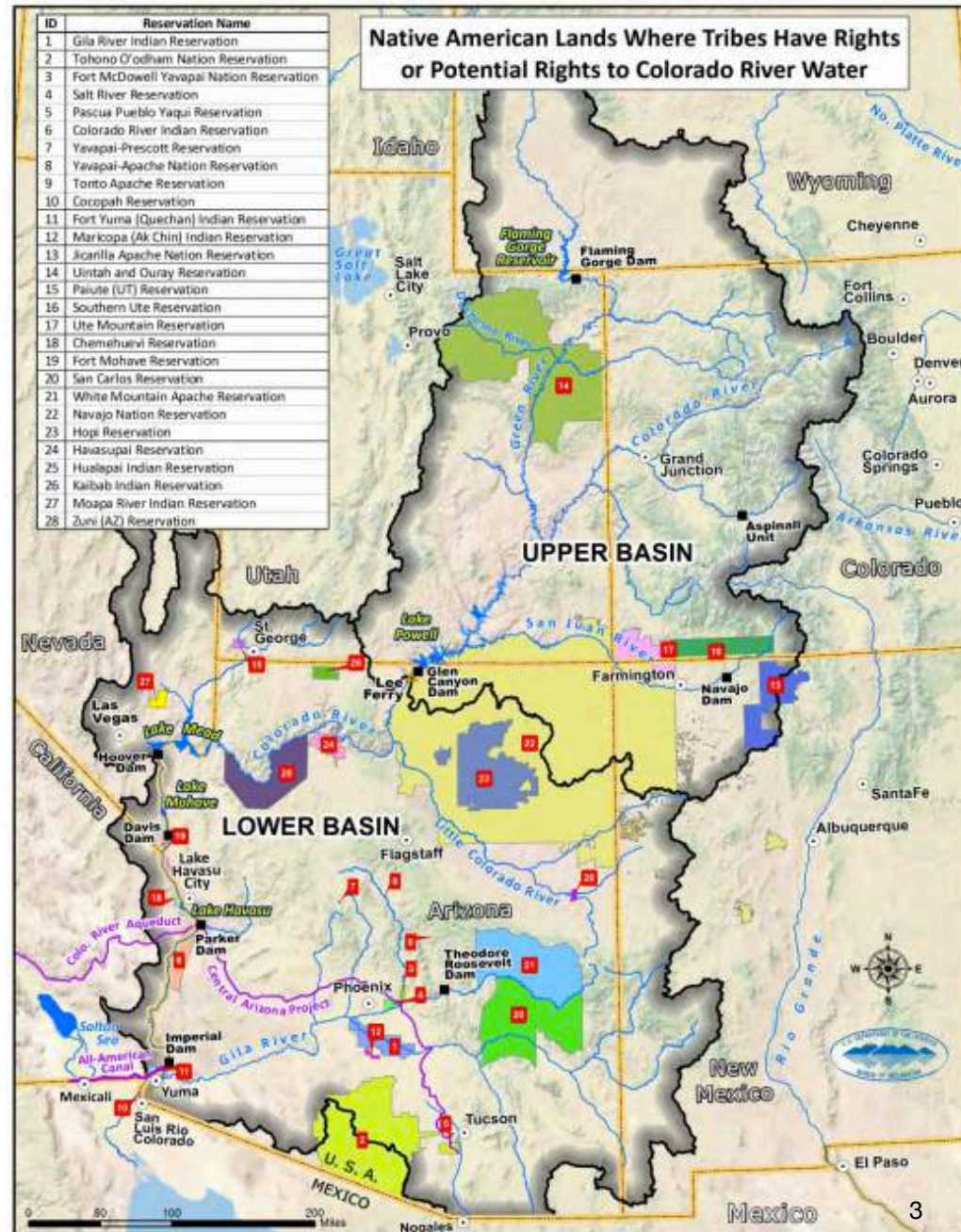
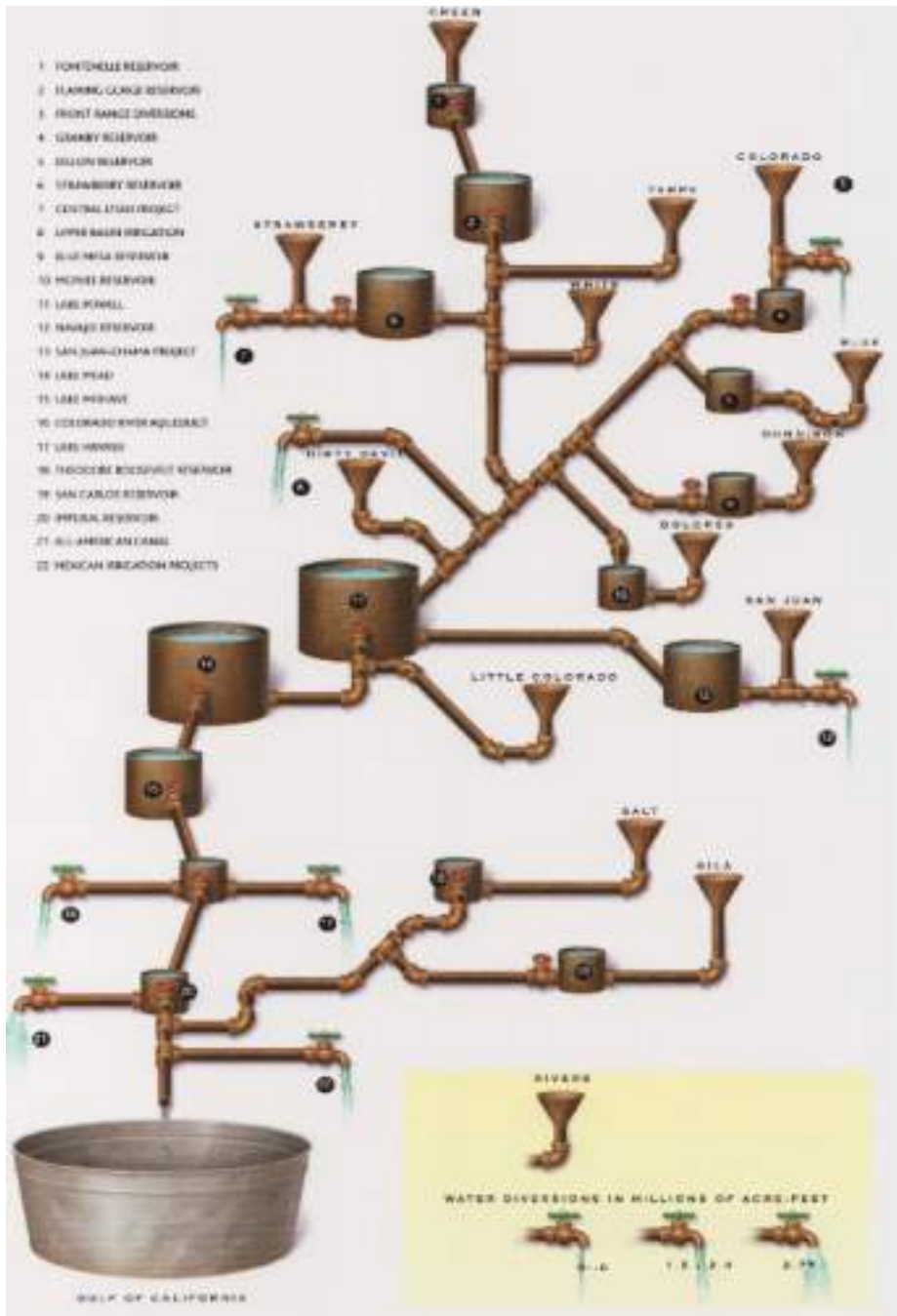
Benedict J. Colombi, PhD
Faculty Director, Graduate Interdisciplinary Programs
Acting Head and Associate Professor, American Indian Studies
Associate Professor, School of Anthropology
Associate Professor, School of Geography and Development
Associate Professor, School of Natural Resources and Environment
University of Arizona

24 July 2017 NEH Landmarks Workshop

What Does Large Dam Development Mean for American Indian / Indigenous Peoples: Exploitation or Opportunity?



Colorado River Basin and American Indian Lands: Hydroelectric dams, storage reservoirs and irrigation canals

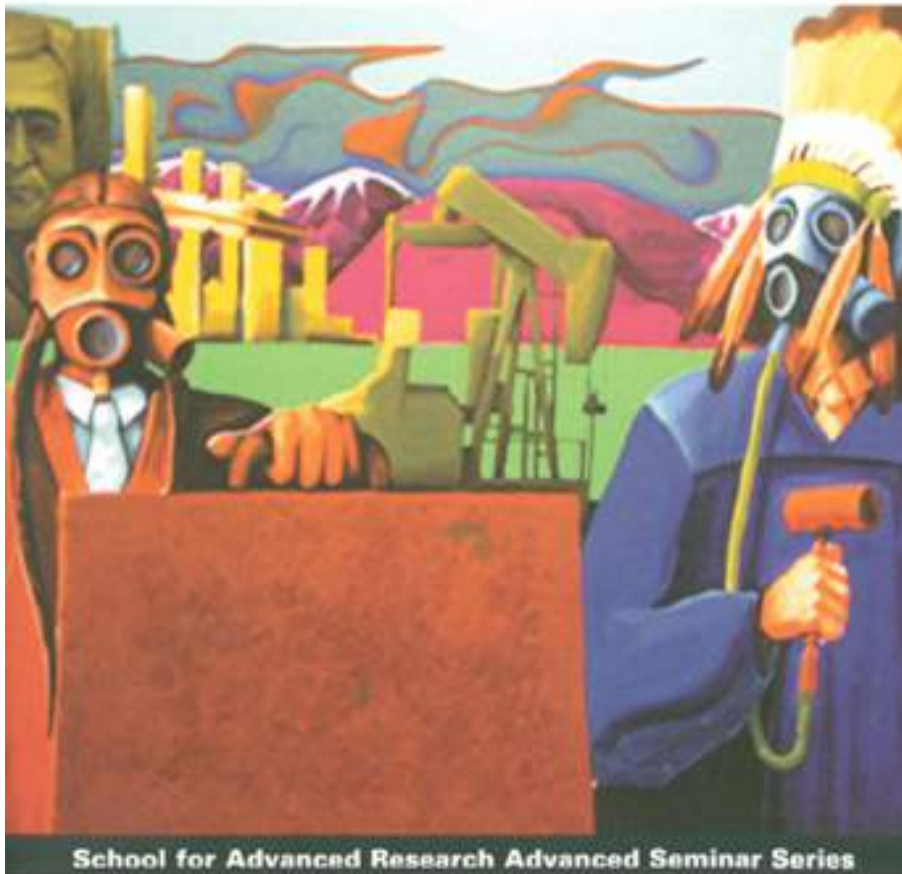


Mexican Cucapa, the Lower Colorado River Delta and Upstream U.S. Dams -- Over Allocation, Diversion and Drought



Indians & Energy

Exploitation and Opportunity in the American Southwest



School for Advanced Research Advanced Seminar Series

Edited by Sherry L. Smith and Brian Fehner

Contributors Benedict J. Colombi, Susan Dawson, Donald L. Fixico, Brian Fehner, Leah S. Glaser, Barbara Rose Johnston, Dáilan J. Long, Gary Madsen, Andrew Needham, Colleen O'Neill, Dana E. Powell, Sherry L. Smith, Rebecca Tsosie, Garrit Voggeser

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Indigenous Peoples, Large Dams, and Capital-Intensive Energy Development

A View from the Lower Colorado River

Benedict J. Colombi

The Western Area Power Administration transmits huge amounts of hydroelectric energy from three large dams on the Lower Colorado River—the Hoover, Parker, and Davis dams—to consumers in Nevada, California, and Arizona. The federal system utilizes more than 3,000 miles of high voltage lines and produces roughly 3,000 megawatts of electricity, enough energy to power more than two million homes for a year or more. Utility companies profit from the more than 9.5 billion kilowatt-hours of Colorado River hydroelectric energy they produce each year, resulting in annual revenues to the US Treasury of roughly \$140 million.¹ This chapter takes a probing look at the relationship of indigenous peoples to large dams and capital-intensive energy development on the Lower Colorado River and asks the questions, where are we going, and at what price?

Hydroelectric energy from dams and irrigated water on Indian lands have improved many lives, but at enormous ecological costs. Hydroelectric development on the Lower Colorado River is a story full of great tensions between patterns of exploitation and opportunity. The larger question, then, is whether dams and other hydraulic projects *ultimately* ensure the sustainability of an entire region. The present century marks a period of prolonged drought, global climate change, and increased population pressures. In this context, how well do these technologies function, and will

89

Colombi, Benedict J. (2014). Here and There: The Effects of Upriver Dams on Indigenous Peoples. In special issue, Contemporary Debates: Indigenous Peoples, Dams and Resistance in Brazilian Amazonia. *Tipiti: Journal of the Society for the Anthropology of Lowland South America* 12(2):99-104.



Amazon Dams Network
Rede Barragens Amazonicas



UHE Belo Monte – No consultation



Fonte: <http://norteenergiasa.com.br/site/>

<http://amazondamsnetwork.org/>





The Research Council
of Norway

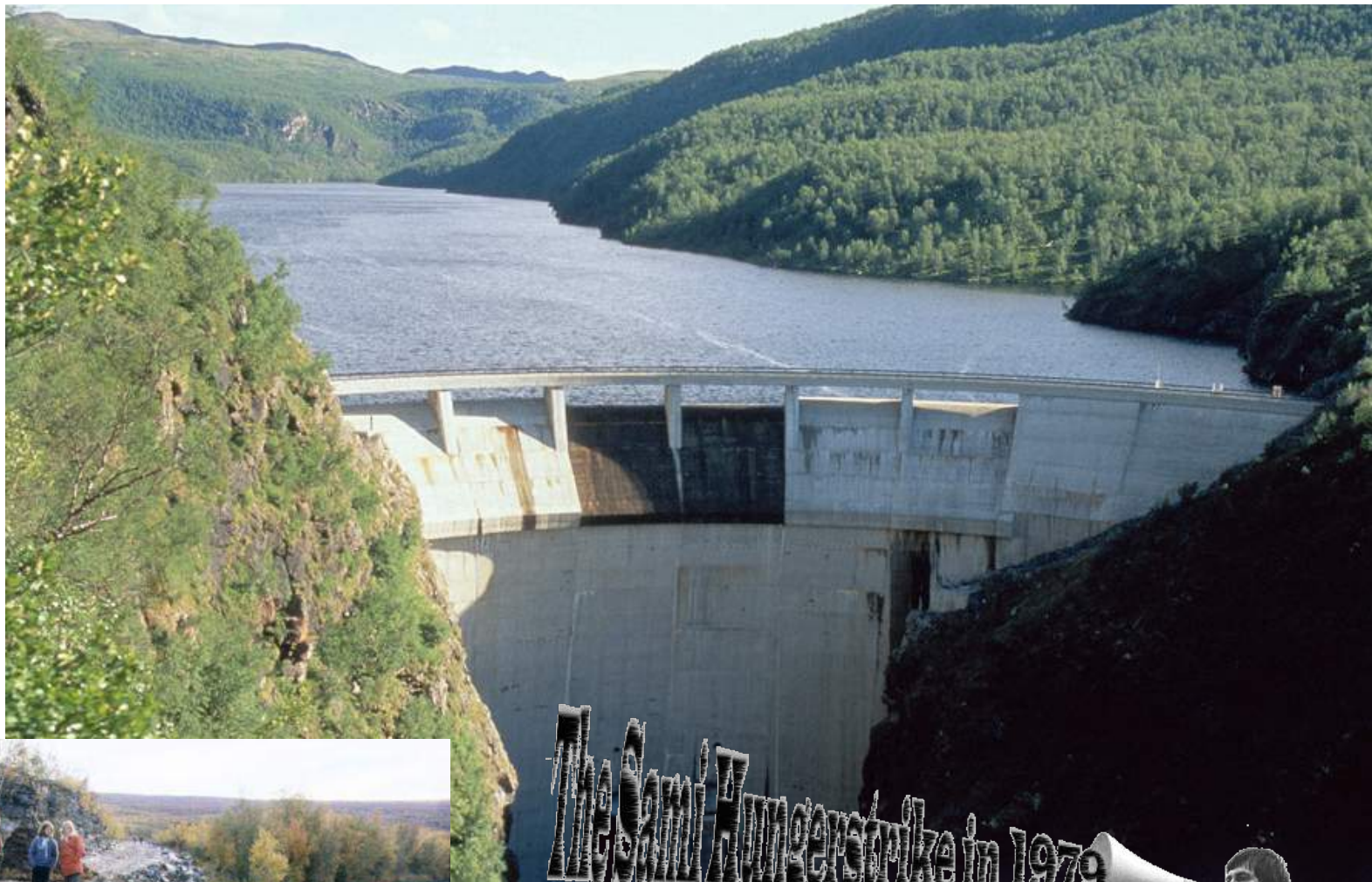
SAMI - Finnmark, Norway... 2010



Ween, Gro and Benedict J. Colombi. (2013). Two Rivers: The Politics of Wild Salmon, Indigenous Rights and Natural Resources Management. In special issue, Endangered Human Diversity: Languages, Cultures, Epistemologies. *Sustainability* 5(2): 478-495.



Alta Dam: Finnmark, Norway



The Sami Hungerstrike in 1979

Sami People are the indigenous people of Northern parts of Norway, Sweden and Finland. Sami People are one of the indigenous people in the North West of Russia. The National States have tried to recreate us as Norwegians, Swedes, Finns and Russians. In that way we have lost many of our people, big areas of our land and much of our culture.

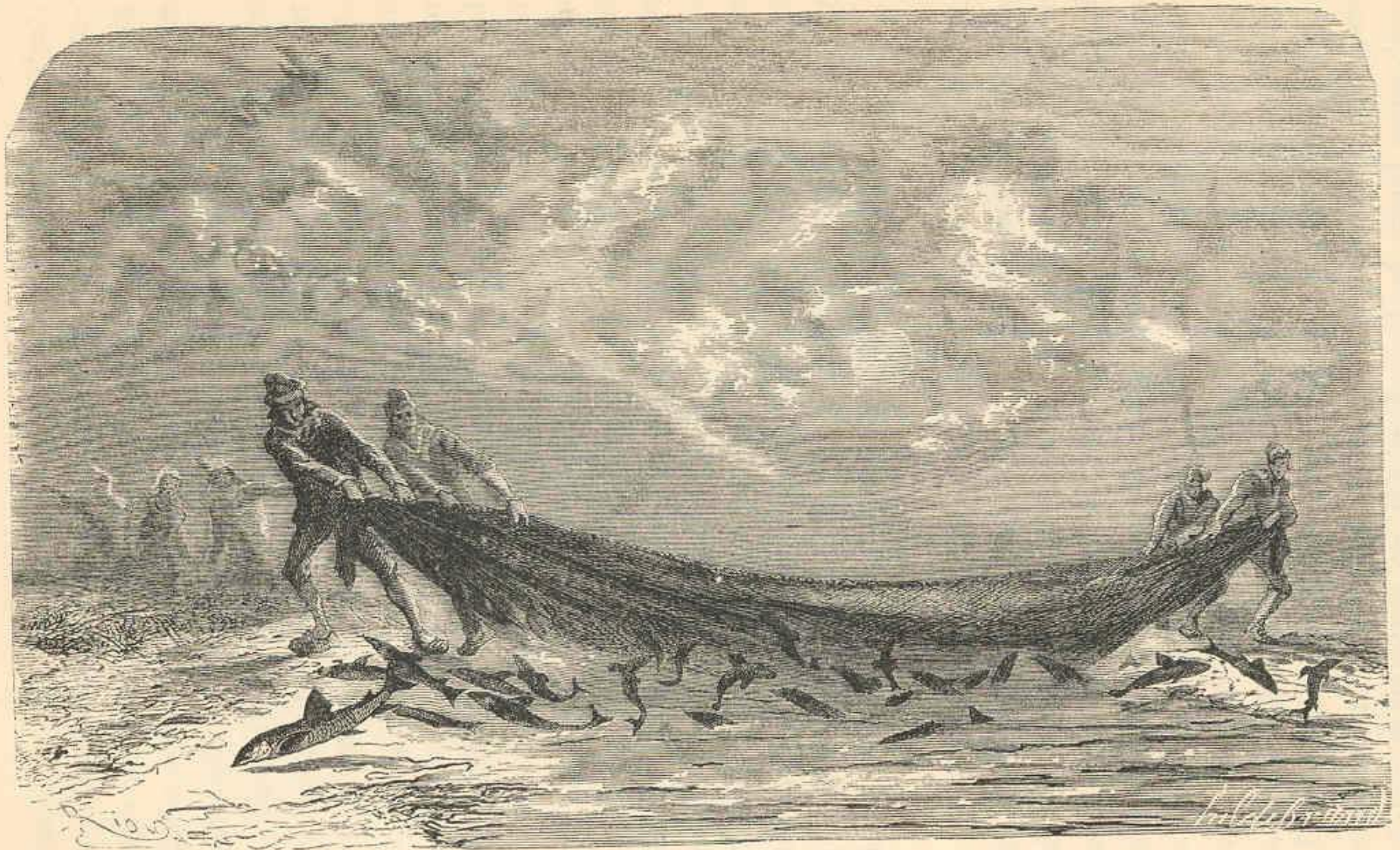




HÁSKÓLASETUR VESTFJARÐA
UNIVERSITY CENTRE OF THE WEST FJORDS



Icelanders as First Peoples, Traditional Knowledge Systems and the Centrality of Salmon

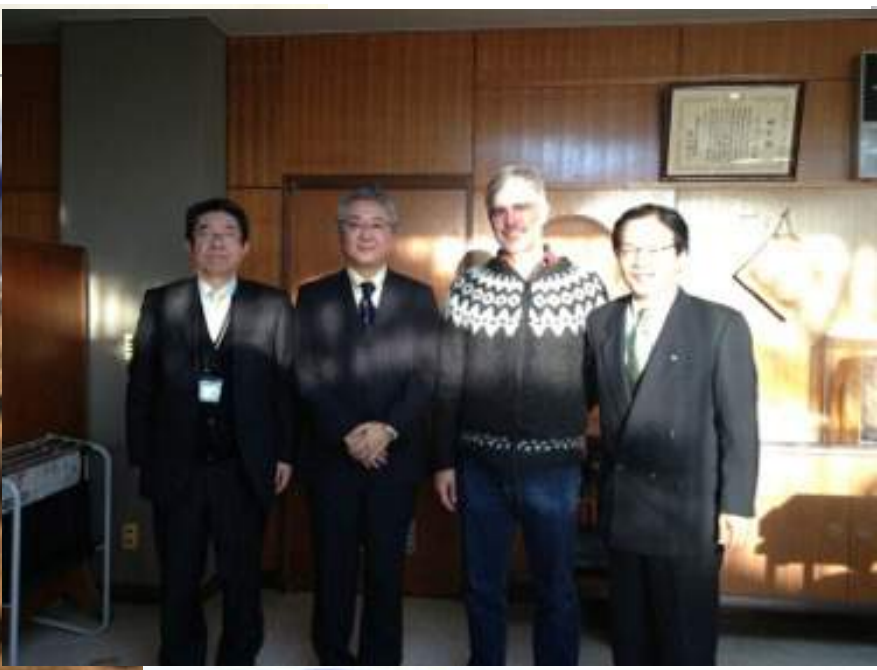


SALMON-FISHING IN AN ICELAND RIVER.

Karahnjukar Dam: Eastern Iceland



AINU Heritage and Sovereignty -- Hokkaido, Japan [ASARI DAM]



The Anthropology of Power (i.e. John Bodley, Michael Mann, etc.) and the Political Ecology of Dam Building - Nimiipuu watersheds of the Snake and Columbia rivers

This research expands on the following problems:

(1) in order for the Nez Perce to survive, so too must the salmon, and (2) the development of large dams on the Snake and Columbia rivers contributes to the concentration of wealth and power in the present regional and global economy. This latter discovery runs counter to popular notions of dams serving as “public works projects for a public good.” Instead, large dams are also related to the broader issue of externalities, or social and environmental costs that impact the survival of Nez Perce culture, tied to salmon, and the resiliency of salmon-based ecosystems.



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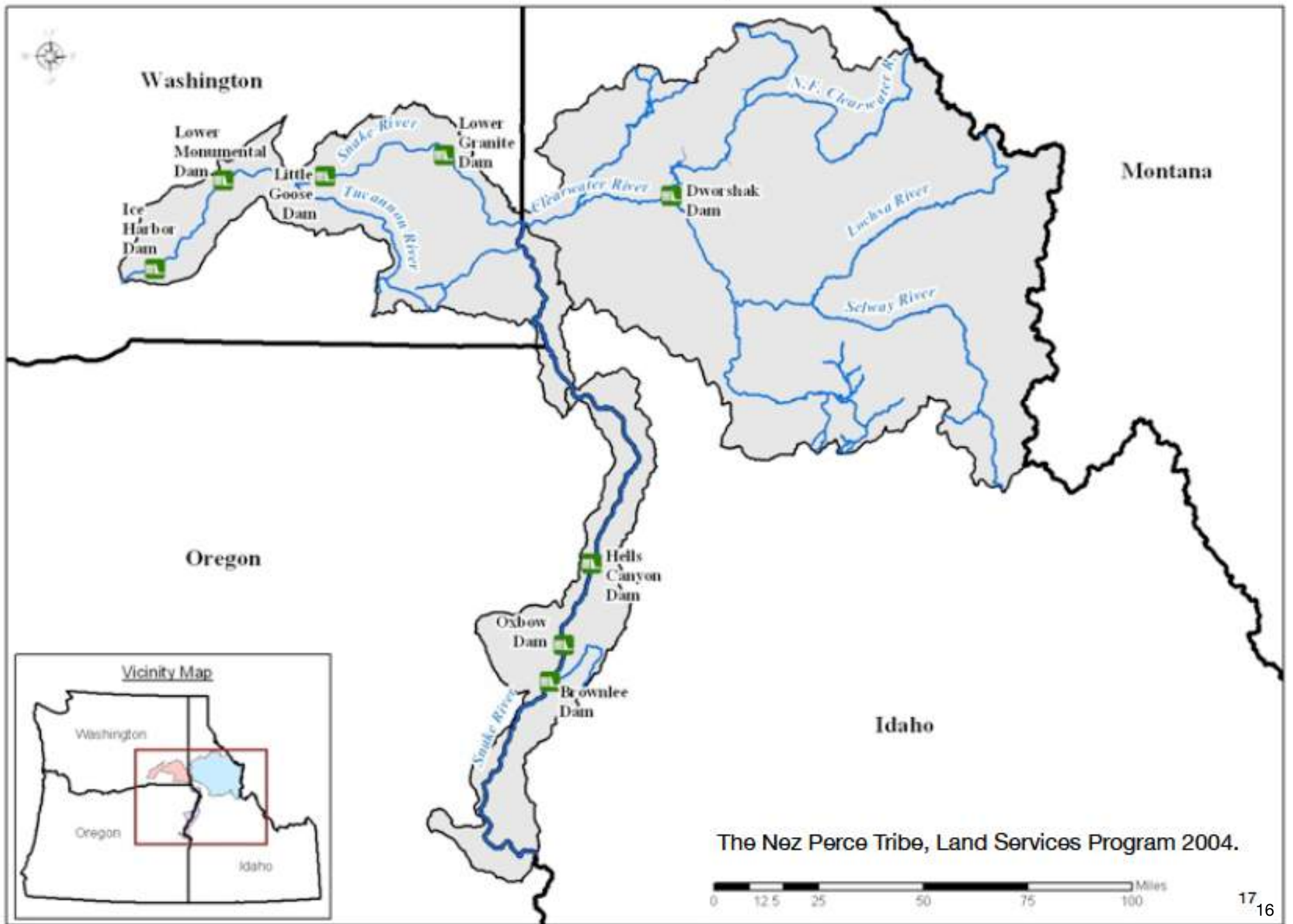


Dammed in Region Six: The Nez Perce Tribe, Agricultural Development, and the Inequality of Scale

Benedict J. Colombi. 2005. *American Indian Quarterly*, 28(3/4):560-589

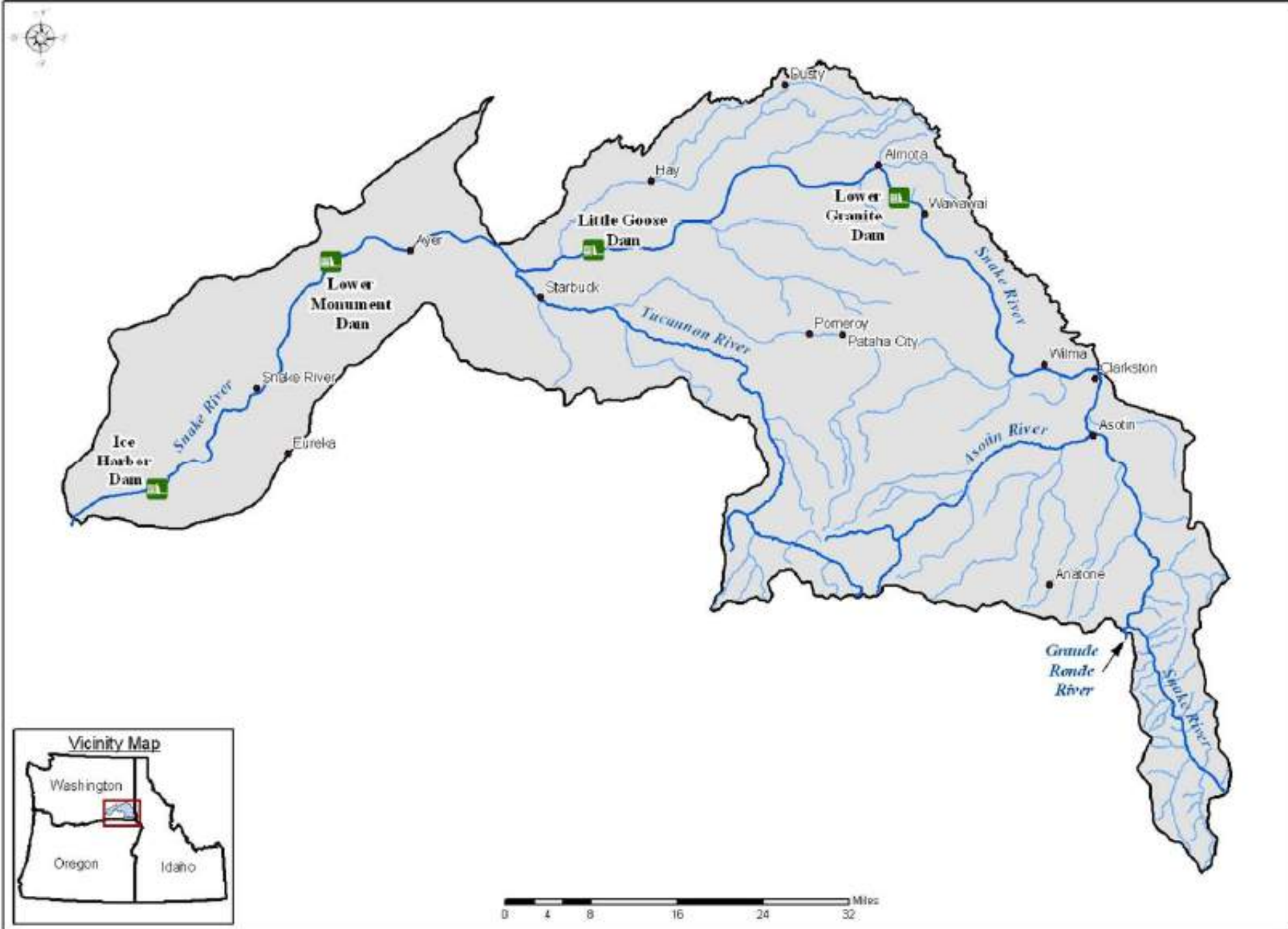


Clearwater River, Lower Snake River, and Hells Canyon Subbasins



The Nez Perce Tribe, Land Services Program 2004.

0 12.5 25 50 75 100 Miles



The Four Lower Snake River Dams



ICE HARBOR LOCK AND DAM



LOWER MONUMENTAL LOCK AND DAM



LITTLE GOOSE LOCK AND DAM



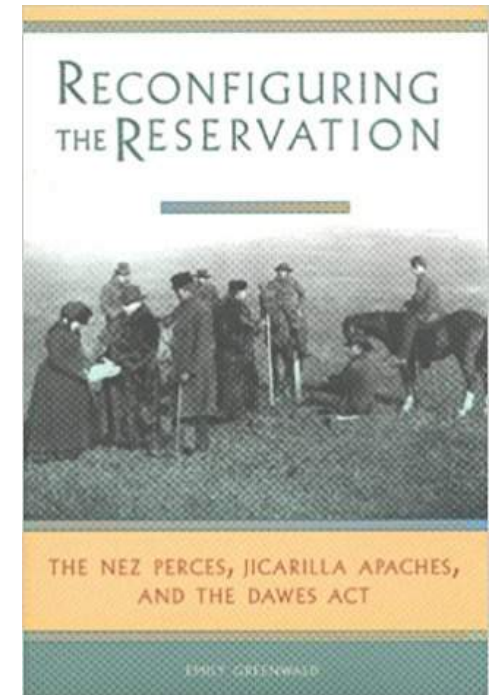
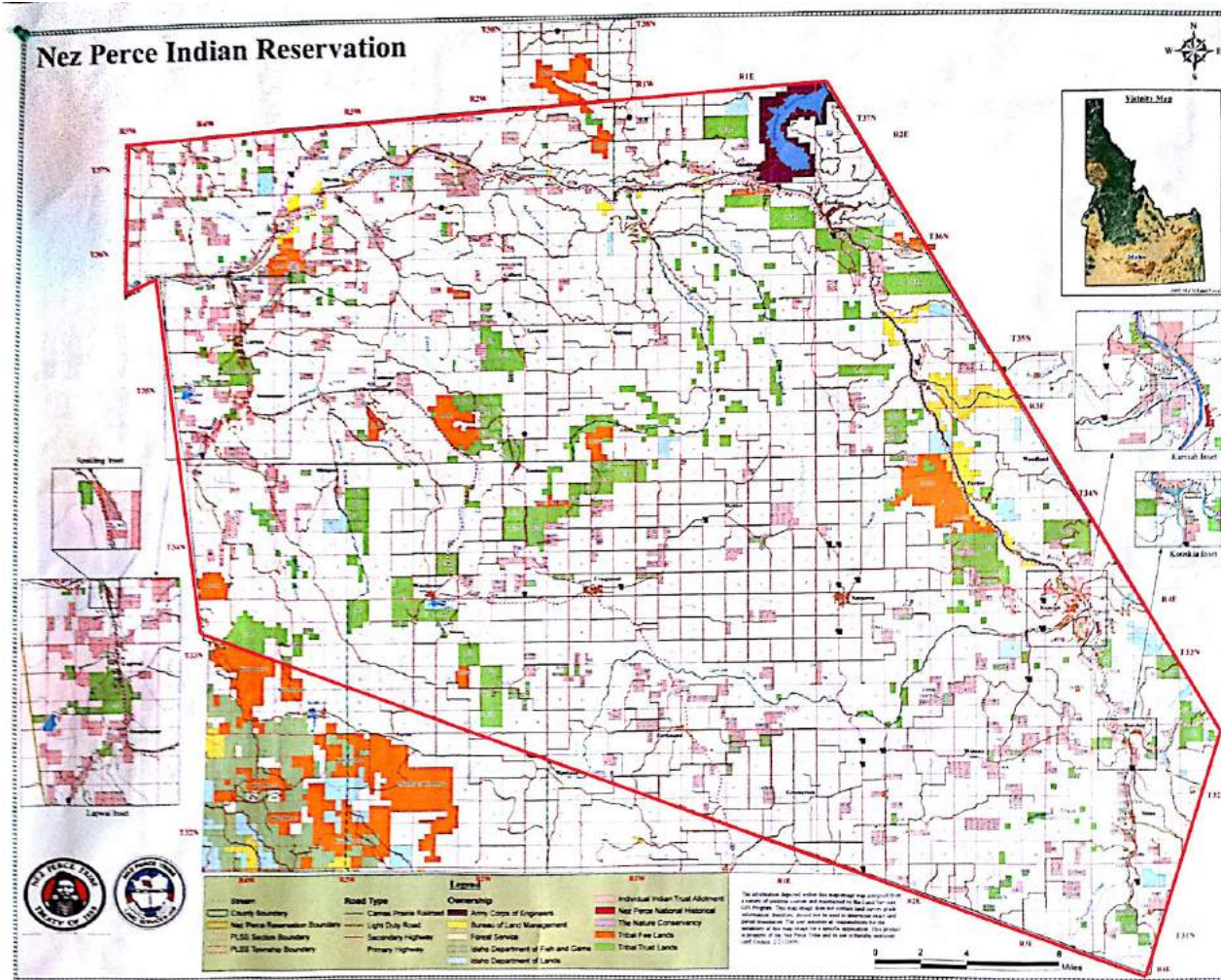
LOWER GRANITE LOCK AND DAM

Source: U.S. Army Corp of Engineers. Walla Walla District, Walla Walla, WA.





Allotment Act - 1887 - Post-Allotment Realities







Snake River, OR, WA, and ID, Freight Traffic by Commodity, 2003 (thousand short tons)

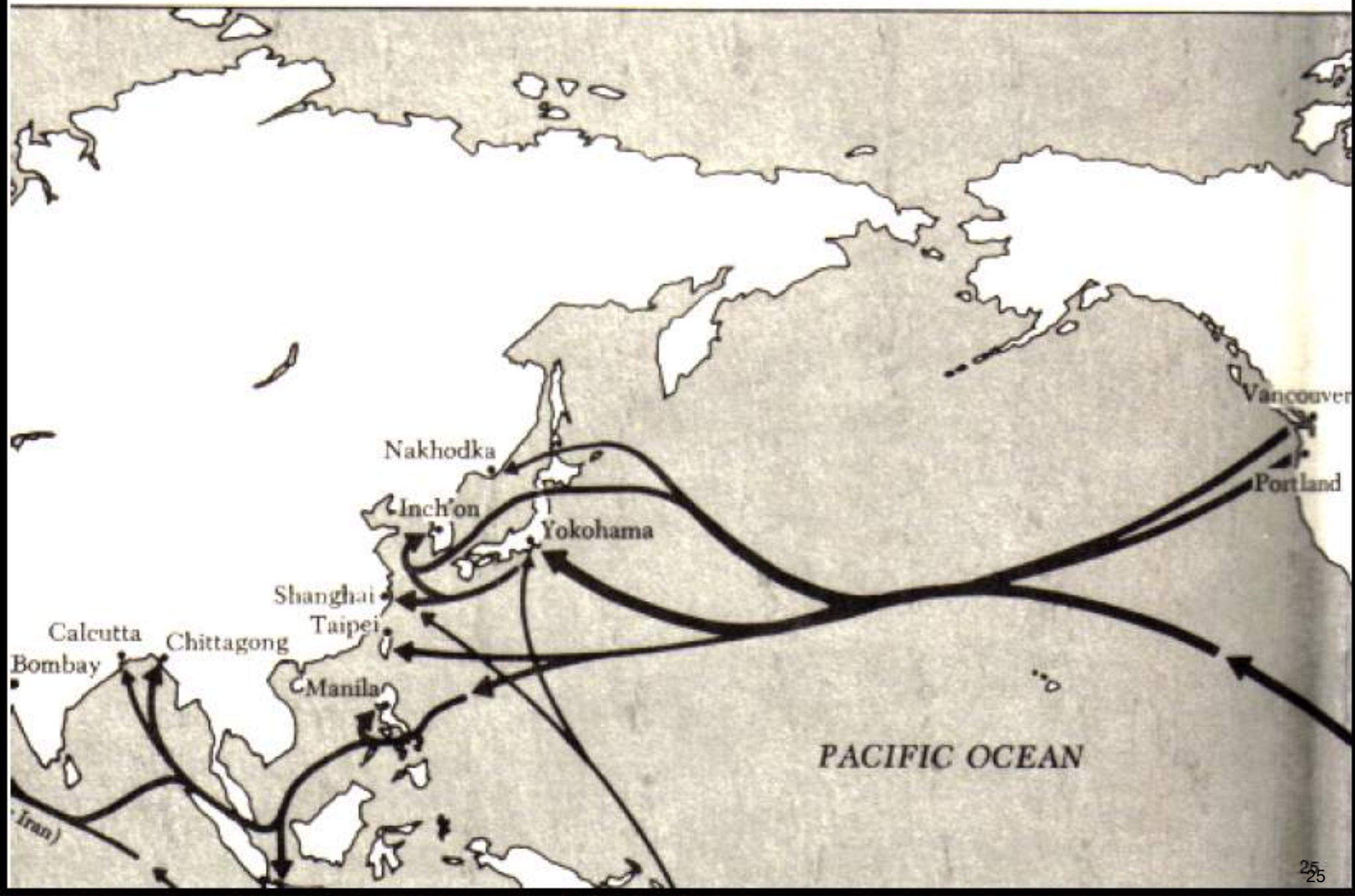
Commodity	Grand Total
Total, all commodities	5,339
Total petroleum and petroleum products	1,824
Subtotal petroleum products	1,824
gasoline	1,218
distillate fuel oil	1
residual fuel oil	605
Total chemicals and related products	35
Subtotal fertilizers	35
nitrogenous fertilizer	35
Total crude materials, inedible except fuels	202
Subtotal forest products, wood and chip s	149
wood chips	95
wood in the rough	54
Subtotal pulp and waste paper	19
pulp & waste paper	19
Subtotal iron ore and scrap	34
iron & steel scrap	34
Total food and farm products	3,193
Subtotal grain	3,193
wheat	3,031
barley & rye	162
Total all manufactured equipment, machinery and products	86
manufactured products	86

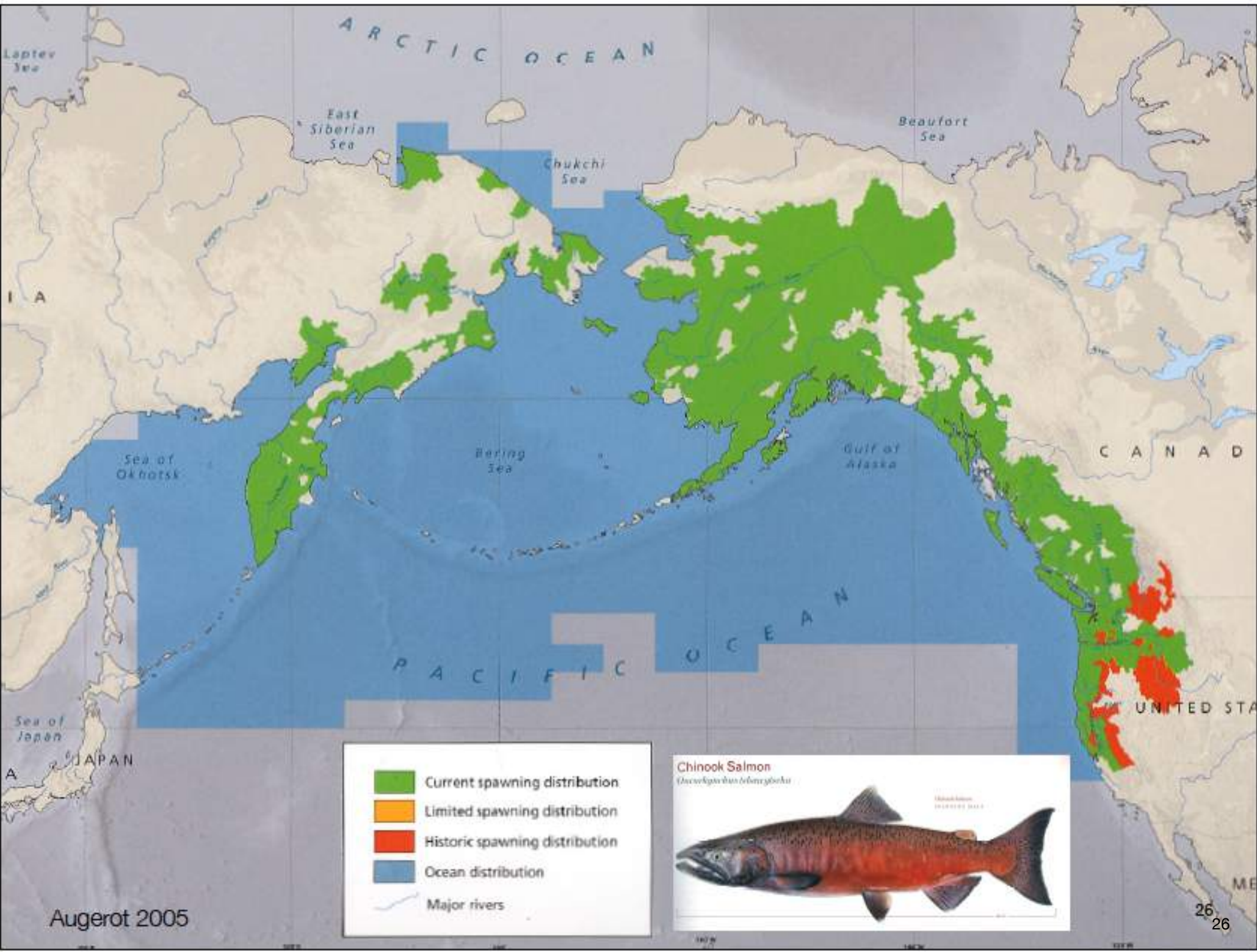
**GASOLINE AND
 FERTILIZER
 =
 WHEAT, BARLEY, AND RYE**

Source: Institute for Water Resources. 2003. *Waterborne Commerce of the United States: Part 4, Waterways and Harbors Pacific Coast, Alaska and Hawaii.*

Alexandria, VA: The U.S. Army Corps of Engineers, (p. 5)

MAJOR WORLD GRAIN ROUTES, 1978





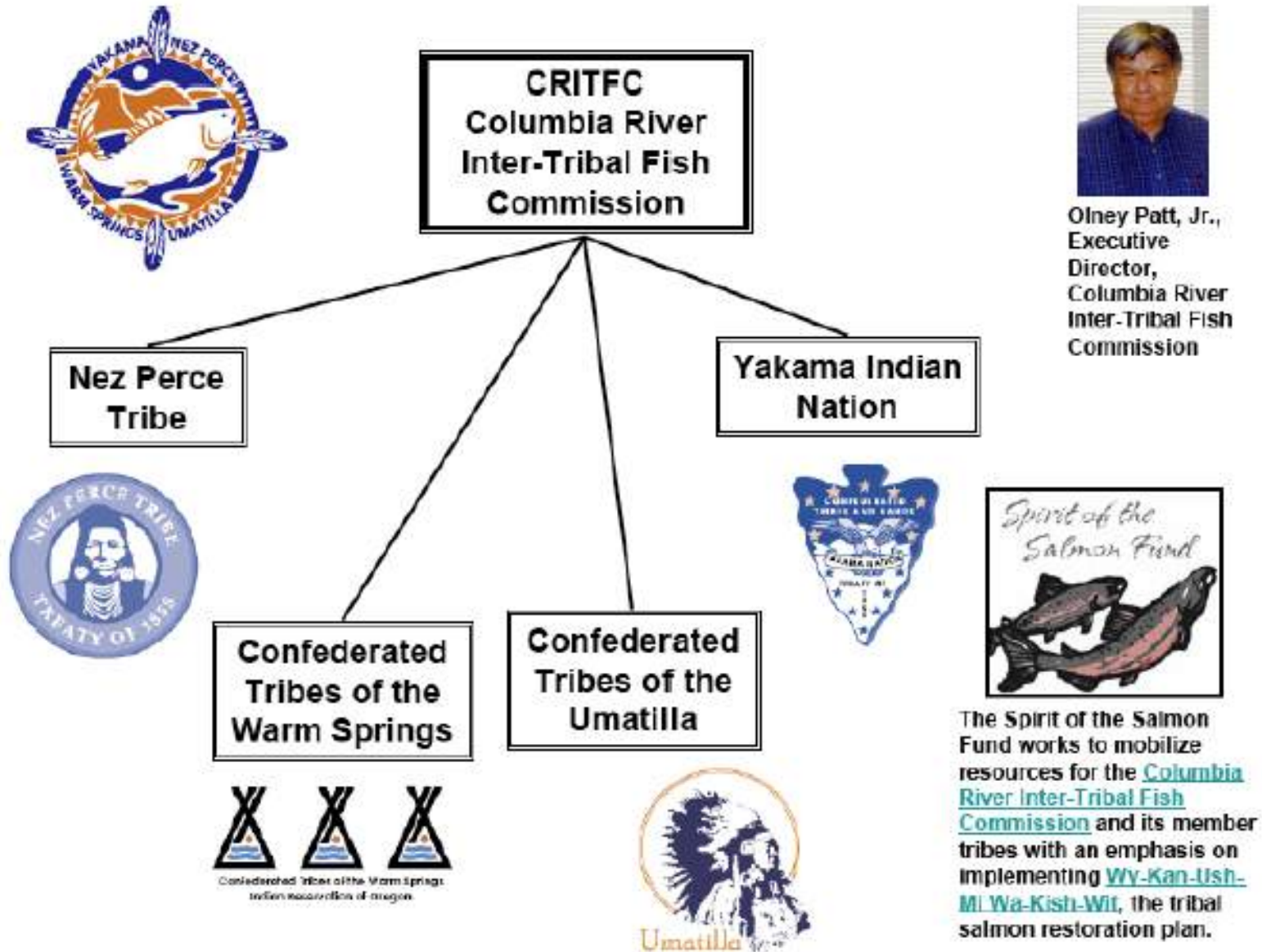
Augerot 2005

- Current spawning distribution
- Limited spawning distribution
- Historic spawning distribution
- Ocean distribution
- Major rivers





Nation Building Through Salmon (1970s to Present)



Columbia River Tribal Projects under the Pacific Coastal Salmon Recovery Fund FY2000-2004



What makes Nimiipuu (Nez Perce) culture adaptive?

(Colombi 2012 *American Indian Quarterly*)

Three criteria of Nimiipuu culture in the context of adaptive capacity:

1. The continuation of an Indigenous knowledge system.
2. The establishment of sovereign relations and power.
3. A tradition of strong leadership and a vision for the future and the ability to forge and maintain partnerships.

Salmon and the Adaptive Capacity of Nimiipuu (Nez Perce) Culture to Cope with Change

BENEDICT J. COLOMBI

Change due to natural disturbances and disasters, population growth and decline, economic crises, and environmental and climate change creates significant cultural challenges.¹ Rapid change and the transformation it brings also involve complex relationships between sovereign tribes, resources, and the global system. This article explores how salmon and the Nimiipuu (Nez Perce) people who depend upon them survive given invasion and treaty making, population decline and growth, destruction of salmon habitat and damming of streams, and impending climate change.²

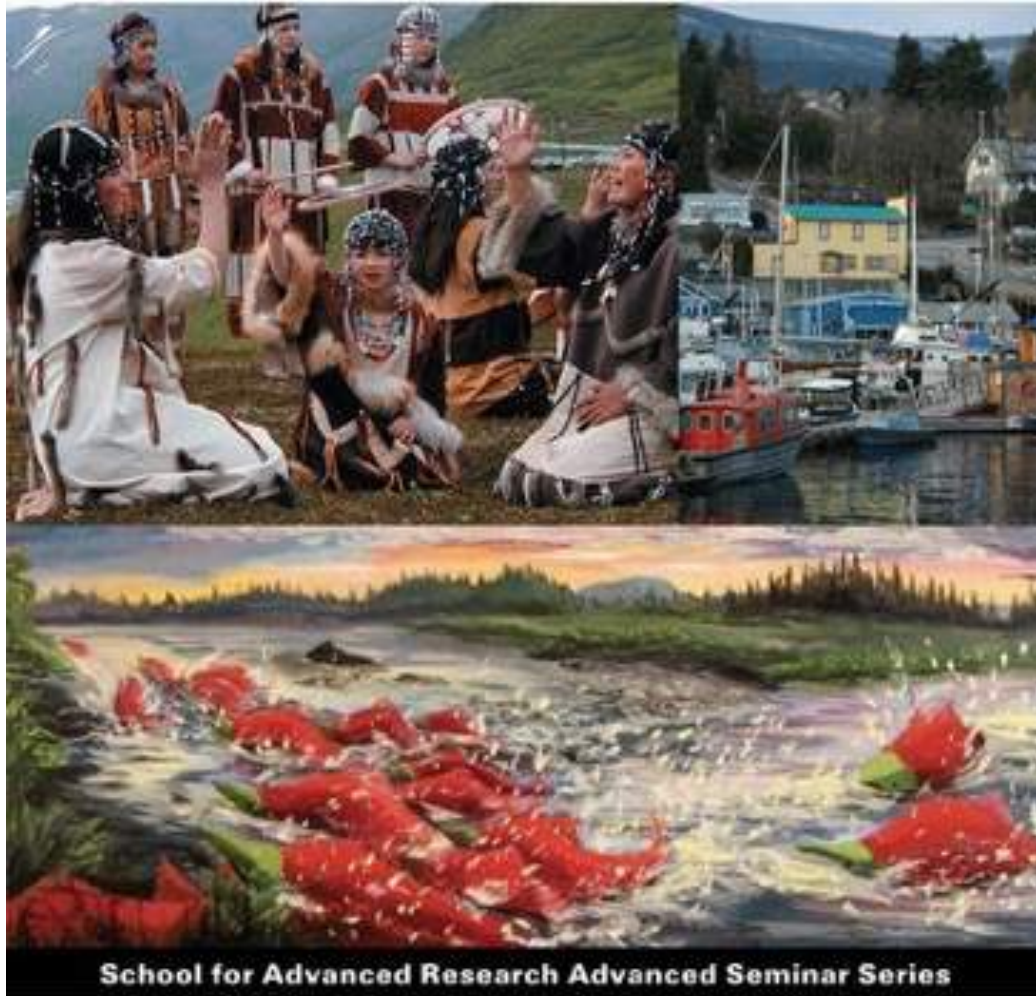
Salmon and Nimiipuu survival are interdependent, and without salmon the Nimiipuu say their culture will die. The Nimiipuu revere salmon as a cultural keystone species, which, for the Nimiipuu, are those species that they rely upon “most extensively to meet their needs[,] . . . are the species that become embedded in cultural traditions and narratives[,] . . . and [are] the ones on which they focus in their immediate activities and conversations.”³ As cultural keystones, Nimiipuu and salmon have forged long-standing economic and spiritual relationship and have coped with continuing change since at least the last Ice Age and perhaps even before that time.

Horace Axtell, a Nez Perce elder, commented in September 2008 on the relationship between water and salmon and Nimiipuu culture: “According to our spiritual way of life, everything is based on nature. Anything that grows or lives is part of our spiritual life. The most important element we have in way of life is water. The next most important element is the fish because the fish comes from water.”⁴

This emphasis on the interdependency of salmon and Nimiipuu cul-

Keystone Nations

Indigenous Peoples and Salmon across the North Pacific



Edited by Benedict J. Colombi and James E. Brooks

Contributors James E. Brooks, Courtney Carothers, Benedict J. Colombi, Sibyl Diver, Erich Kasten, David Koester, Marianne Elisabeth Lien, Charles R. Menzies, Katherine Reedy-Maschner, Victoria N. Sharakhmanova, Courtland L. Smith, Emma Wilson

The histories and futures of Indigenous peoples and salmon are inextricably bound across the vast ocean expanse and rugged coastlines of the North Pacific. *Keystone Nations* addresses this enmeshment and the marriage of the biological and social sciences that have led to the research discussed in this book. Salmon stocks and Indigenous peoples across the northern Pacific region represent a significance beyond their size in maintaining the viability and legitimacy of ecological and political systems. Both species' futures are simultaneously a matter of the conservation concerns of natural scientists and the political agenda of Indigenous sovereignty movements that arc across the northern hemisphere. If wild salmon vanish in the North Pacific, as they largely have in the North Atlantic, their absence will herald the cascading failure of a complete marine system. If Indigenous peoples vanish from the North Pacific, as they largely have in the North Atlantic, their absence will sound the failure of the world's dominant political powers to recognize the human right to cultural expression and survival.

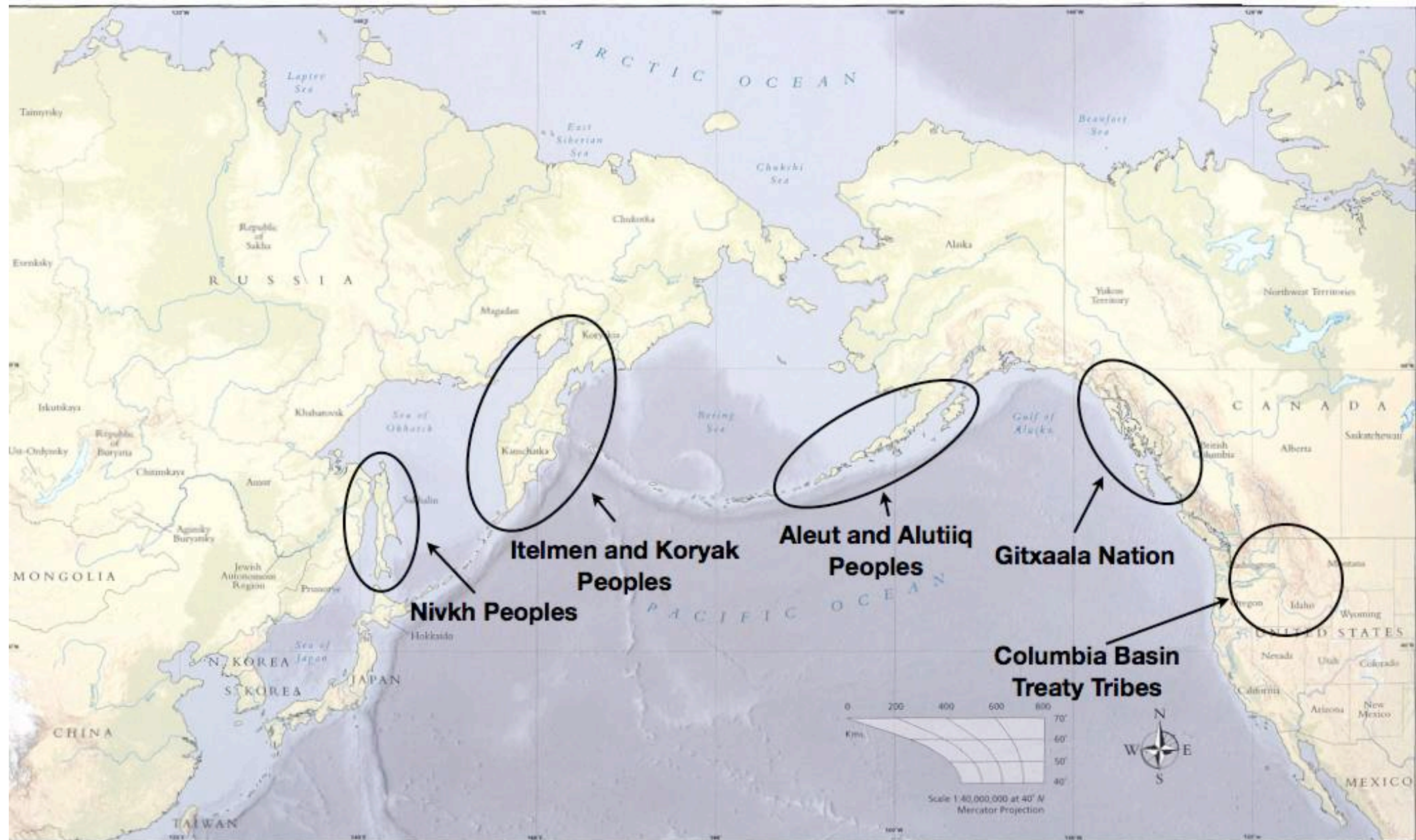




Keystone Nations: Indigenous Peoples and Salmon across the Northern Pacific

Advanced Seminar Co-chaired by Dr. James F. Brooks, President, School for Advanced Research and Dr. Benedict Colombi, Assistant Professor, American Indian Studies, University of Arizona.

KEYSTONE NATIONS: *Indigenous Peoples and Salmon across the Northern Pacific*



**Indigenous Histories and Futures
Knowledge Systems**

**Globalization
Environmental Change**

**Culture, Policy
Sovereignty**

137 species rely on Pacific salmon

Pacific salmon do a strange thing. After they spawn, they die.

In evolutionary terms, it seems counterproductive. Wouldn't it be better if each fish lived to rear its young, and perhaps even get a second shot at spawning?

It turns out that Pacific Salmon, in their own way, are providing for their offspring. When salmon swim upstream, they are returning to the waters where they themselves hatched years before — their bodies plump with eggs as well as the bounty of the seas.

After spawning, they leave their nutrient-rich carcasses behind. Many of the tiny creatures that nibble on the carcasses eventually become prey for the next generation of fish. And so the parents nourish the young.

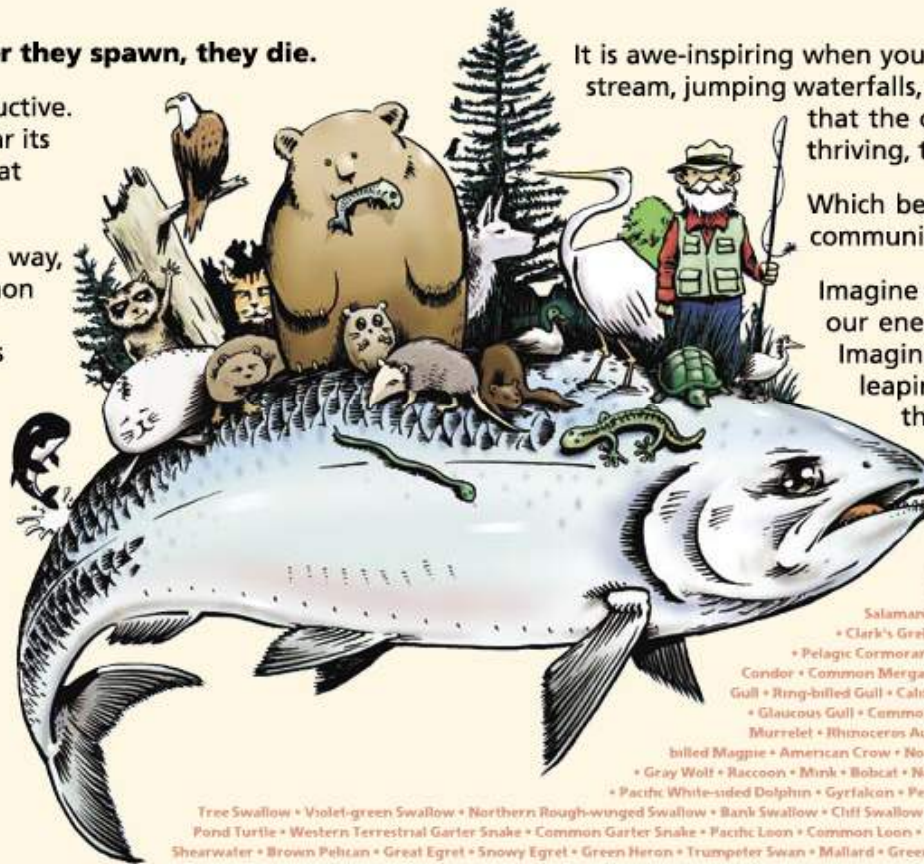
But salmon provide more than an indirect food source for baby salmon. At least 137 different species — from grizzly bears to gray wolves — depend on salmon for part of their diet. Even trees and plants benefit from the nutrients brought back by salmon from the seas.

It is awe-inspiring when you think about it. This mighty fish struggles up stream, jumping waterfalls, and its last act is sacrificing its body to ensure that the community that will raise its children will be thriving, teeming with life.

Which begs the question, what are we doing for our community, for the next generation?

Imagine what could be accomplished if we devoted our energies to the future the way that salmon do. Imagine if you will, a Nation of such salmon-people, leaping great obstacles to make a better place for their offspring and their ecosystem.

**Isn't it time you put
your carcass to work ?**



Harlequin Duck • Osprey • Bald Eagle • Caspian Tern • Black Bear • Grizzly Bear
• Northern River Otter • Killer Whale • Cope's Giant Salamander • Pacific Giant
Salamander • Pacific Coast Aquatic Garter Snake • Red-throated Loon • Pied-billed Grebe
• Clark's Grebe • American White Pelican • Brandt's Cormorant • Double-crested Cormorant
• Pelagic Cormorant • Great Blue Heron • Black-crowned Night-heron • Turkey Vulture • California
Condor • Common Merganser • Red-breasted Merganser • Golden Eagle • Bonaparte's Gull • Heermann's
Gull • Ring-billed Gull • California Gull • Herring Gull • Thayer's Gull • Western Gull • Glaucous-winged Gull
• Glaucous Gull • Common Tern • Arctic Tern • Forster's Tern • Elegant Tern • Common Murre • Marbled
Murrelet • Rhinoceros Auklet • Tufted Puffin • Belted Kingfisher • American Dipper • Steller's Jay • Black-
billed Magpie • American Crow • Northwestern Crow • Common Raven • Virginia Opossum • Water Shrew • Coyote
• Gray Wolf • Raccoon • Mink • Bobcat • Northern Fur Seal • Northern (Steller) Sea Lion • California Sea Lion • Harbor Seal
• Pacific White-sided Dolphin • Gyrfalcon • Peregrine Falcon • Killdeer • Spotted Sandpiper • Snowy Owl • Willow Flycatcher •
Tree Swallow • Violet-green Swallow • Northern Rough-winged Swallow • Bank Swallow • Cliff Swallow • Barn Swallow • Harbor Porpoise • Dall's Porpoise • Snapping Turtle • Western
Pond Turtle • Western Terrestrial Garter Snake • Common Garter Snake • Pacific Loon • Common Loon • Yellow-billed Loon • Horned Grebe • Red-necked Grebe • Western Grebe • Sooty
Shearwater • Brown Pelican • Great Egret • Snowy Egret • Green Heron • Trumpeter Swan • Mallard • Green-winged Teal • Canvasback • Greater Scaup • Surf Scoter • White-winged Scoter
• Common Goldeneye • Barrow's Goldeneye • Hooded Merganser • Red-tailed Hawk • Greater Yellowlegs • Franklin's Gull • Mew Gull • Black-legged Kittiwake • Pigeon Guillemot • Ancient
Murrelet • Gray Jay • Winter Wren • American Robin • Varied Thrush • Spotted Towhee • Song Sparrow • Masked Shrew • Vagrant Shrew • Mountain Shrew • Fog Shrew • Pacific Shrew
• Pacific Water Shrew • Trowbridge's Shrew • Douglas' Squirrel • Northern Flying Squirrel • Deer Mouse • Red Fox • Gray Fox • Ringtail • American Marten • Fisher • Long-tailed Weasel •
Wolverine • Striped Skunk • Mountain Lion • White-tailed Deer • Black-tailed Deer • Minke Whale • Sperm Whale • Humpback Whale • Northern Rightwhale Dolphin

Source: Cederholm, C. J., et al. 2000. Pacific Salmon and Wildlife - Ecological Connections, Relationships, and Implications for Management. Special Edition. Technical Report, Prepared for D. H. Johnson and T. A. O'Neil (Managing Director), Wildlife-Habitat Relationships in Oregon and Washington. Washington Department of Fish and Wildlife, Olympia, Washington.

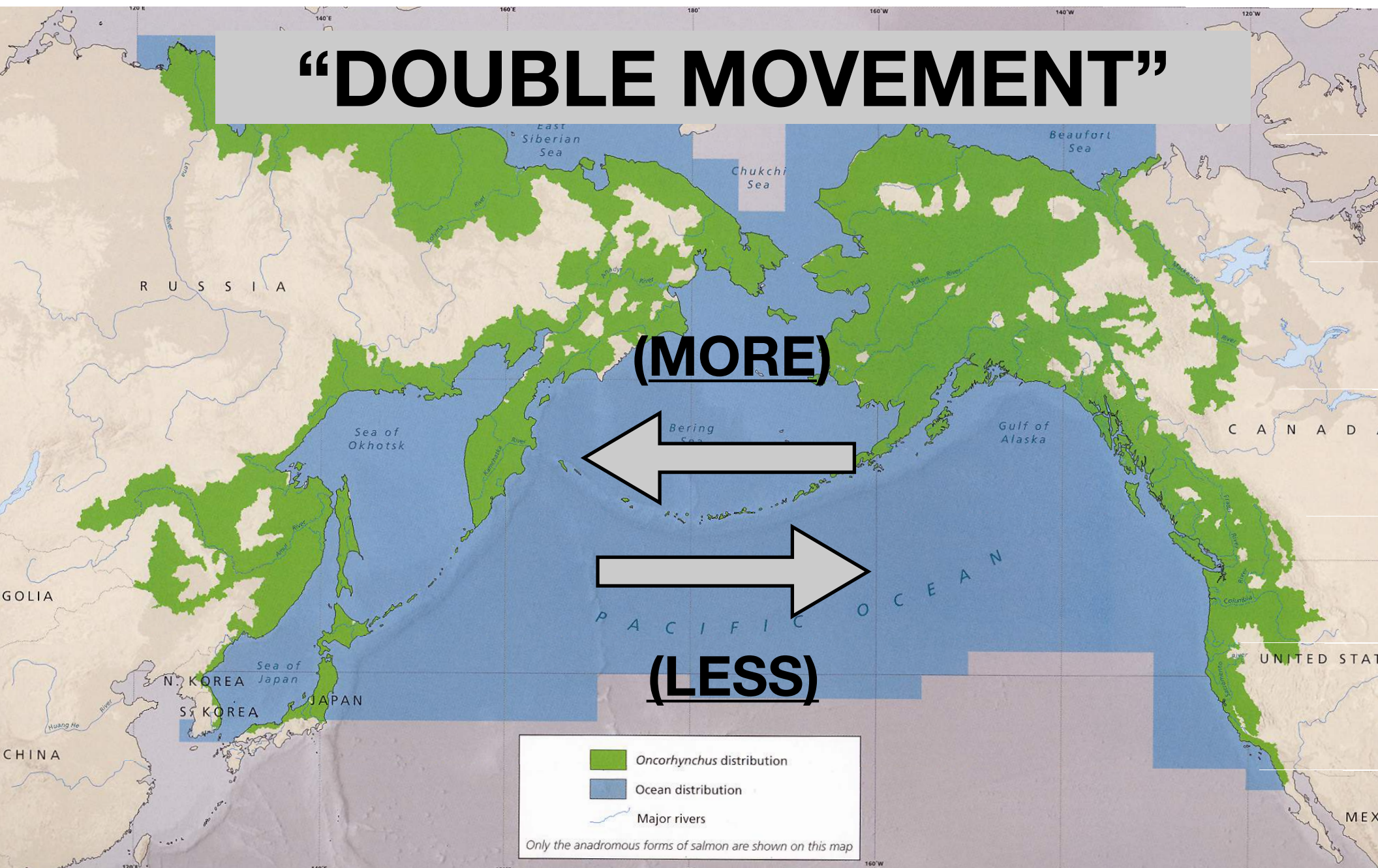
SALMON NATION

Salmon as a Cultural Keystone Species

Garibaldi and Turner – *Ecology and Society* 2004

Cultural keystone species are: “the species most closely associated with indigenous and local peoples, wherever they reside, are the ones they depend upon most extensively to meet their needs for food, shelter, fuel, medicine, and other necessities of life. These are the species that become embedded in a people’s cultural traditions and narratives, their ceremonies, dances, songs, and discourse. These are also the species for which a people will have developed the most detailed names and associated vocabulary, and the ones on which they focus in their immediate activities and conversations.”

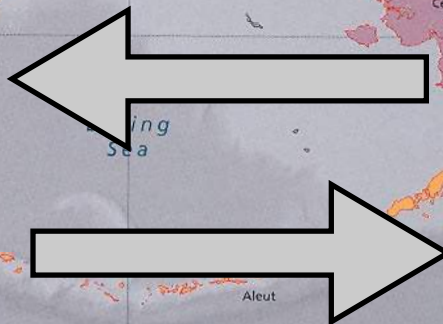
“DOUBLE MOVEMENT”



Salmon Biodiversity

“DOUBLE MOVEMENT”

(LESS)



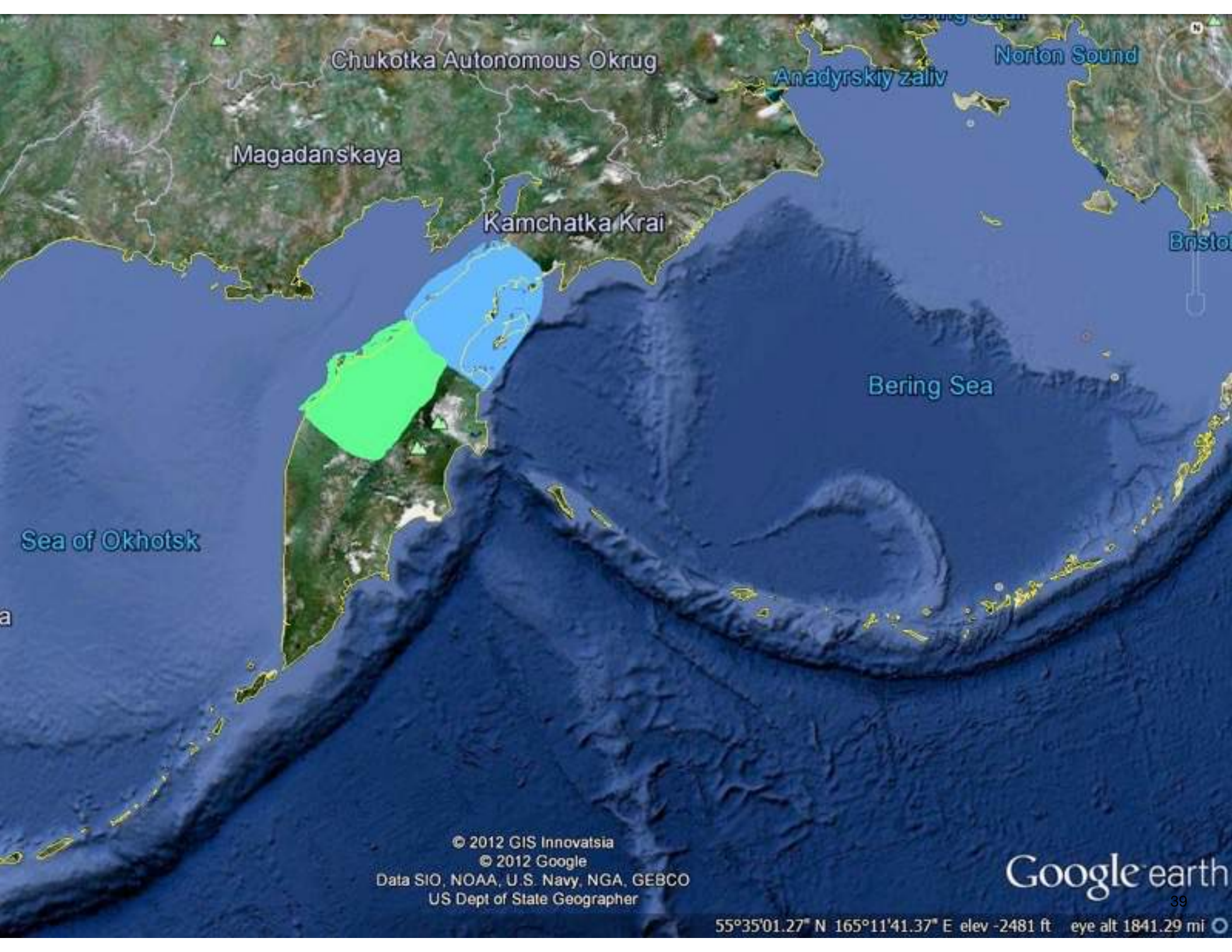
(MORE)

Indigenous Peoples' Political Standing Directionally across North Pacific

Next Phase

Indigenous Google-Mapping on the Kamchatka Peninsula - Russia





Chukotka Autonomous Okrug

Magadanskaya

Kamchatka Krai

Anadyrskiy zaliv

Norton Sound

Bristol

Bering Sea

Sea of Okhotsk

© 2012 GIS Innovatsia
© 2012 Google
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
US Dept of State Geographer

Google earth

55°35'01.27" N 165°11'41.37" E elev -2481 ft eye alt 1841.29 mi



















Семинар "Картирование традиционных знаний коренных народов Камчатки" / Kamchatka Indigenous Mapping Project

Поиск по сайту

Введение в Семинар Камчатка / Introduction to the Kamchatka Workshops
PhotoSpheres
карты - Mars
Карта сайта

Введение в Семинар Камчатка / Introduction to the Kamchatka Workshops

Введение в Семинар [Картирование коренной культуры на Камчатке](#) с использованием программы Создание Туры, Google Планета Земля / Introduction to Kamchatka Indigenous Mapping Workshop Tour in Google Earth's TourBuilder [here](#)

Посмотреть цифровую версию [культурной карты](#) "Stz'uminus Storied Places" / See the Stz'uminus Storied Places digital cultural map [here](#)

Семинар в Петропавловске-Камчатском / Petropavlovsk-Kamchatsky Workshop

Попробуйте заполнить [форму "Картирование знаний коренных народов"](#) используя формы Google Try filling out the sample Indigenous Mapping Data Form using Google Forms [here](#).

Посмотрите заполненную форму [здесь](#). See the completed data form spreadsheet [here](#)

Посмотрите пример готовой формы в программе Google Fusion Tables [здесь](#) / See an example of structured data table using Google Fusion Tables [here](#)

Семинар в Ковране / Kovran Workshop

Проект Картирование коренной культуры на Камчатке: [Форма](#) / Kamchatka Indigenous Mapping Project Data Form [link](#)

Проект Картирование коренной культуры на Камчатке: [Результаты](#) / Kamchatka Indigenous Mapping in Kovran Data Results [link](#)

[Скачать Google Планета Земля](#) для установки на персональный компьютер / Download Google Earth [here](#) to install on your computer

Продвинутые методы работы в Google Планета Земля с использованием KML кода ([на русском](#)) / Learn advanced techniques using KML coding (in Russian) [link](#)

<input type="checkbox"/>	basic_HTML_for_KML.txt Скачать	1 кб	версия 1	8 сент. 2014 г., 23:56	Brian Thom
<input type="checkbox"/>	Indigenous Mapping Sample Spreadsheet.csv Скачать	1 кб	версия 1	2 сент. 2014 г., 3:12	Brian Thom
<input type="checkbox"/>	belmen language and culture2.pdf Просмотр Скачать	2862 кб	версия 1	1 сент. 2014 г., 2:04	Brian Thom
<input type="checkbox"/>	Kovran_from_book.jpg Просмотр Скачать	82 кб	версия 1	27 окт. 2014 г., 13:26	Brian Thom





Ethnographic Mapping Lab

Tagil-Region Map

Made with Google My Maps

- населенные пункты (лагеря, по...
- Окал (село Утлоок на правом б...
- Утлоок
- домик Писанкина
- СТАРЫЙ КОВРАН
- охотничий домик
- Окал алаа
- Увал(утлоок)

- пути передвижения / travel routes
- новая дорога Ковран-Усть-Ковран
- Дорога Ковран-Усть-Ковран (ста...
- Ковран, место для вырубки леса
- Дорога Усть-Ковран-Утлоок
- Путь от Коврана до старого Ков...
- Путь от Коврана до Эльвеля

The map shows a satellite view of a mountainous region with several travel routes highlighted in red and green. Markers include blue squares for settlements, yellow house icons for specific locations, and blue wavy icons for water features. A search bar is at the top, and a legend is on the left. A small inset map in the top right shows the location within a larger region.

English Klytkhaam
description brook above the river Lyfvich, right tributary to the river Kavral

Map data ©2015 Google Imagery ©2015 DigitalGlobe, Landsat

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Interdisciplinary Journal of Siberian Studies

VOLUME 15 • ISSUE 3 • WINTER 2016

ARTICLES

Bringing Indigenous Kamchatka to Google Earth: Collaborative Digital Mapping with the Itelmen Peoples

Brian Thom, Benedict J. Colombi, and Tatiana Degai

Family on the Edge: Neblagopoluchnaia Family and the State in Yakutsk and Magadan, Russian Federation

Lena Sidorova and Elena Khlinovskaya Rockhill

Social Pressure in the Choice of Individual Religious Practice

Tatiana Bulgakova

The Representation of Childhood in Ethnographic Films of Siberian Indigenous Peoples: The Case of the Documentary Film *Malen'kaia Katerina* (Tiny Katerina)

Ivan Golovnev and Elena Golovneva, translated by Jenanne Ferguson

The Socio-Demographic Situation in the Republic of Tyva under Conditions of Social Transformation, 1990s–early 2000s

Zoia Dorzhu, translated by Jenanne Ferguson

BOOK REVIEWS



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Thom, Colombi, and Degai. 2016. Bringing Indigenous Kamchatka to Google Earth: Collaborative Digital Mapping with the Itelmen Peoples. *Sibirica*, 15(3): 1-30.

KETTLE FALLS, DIET, CENTRALITY OF PLACE



KETTLE FALLS, DIET, CENTRALITY OF PLACE



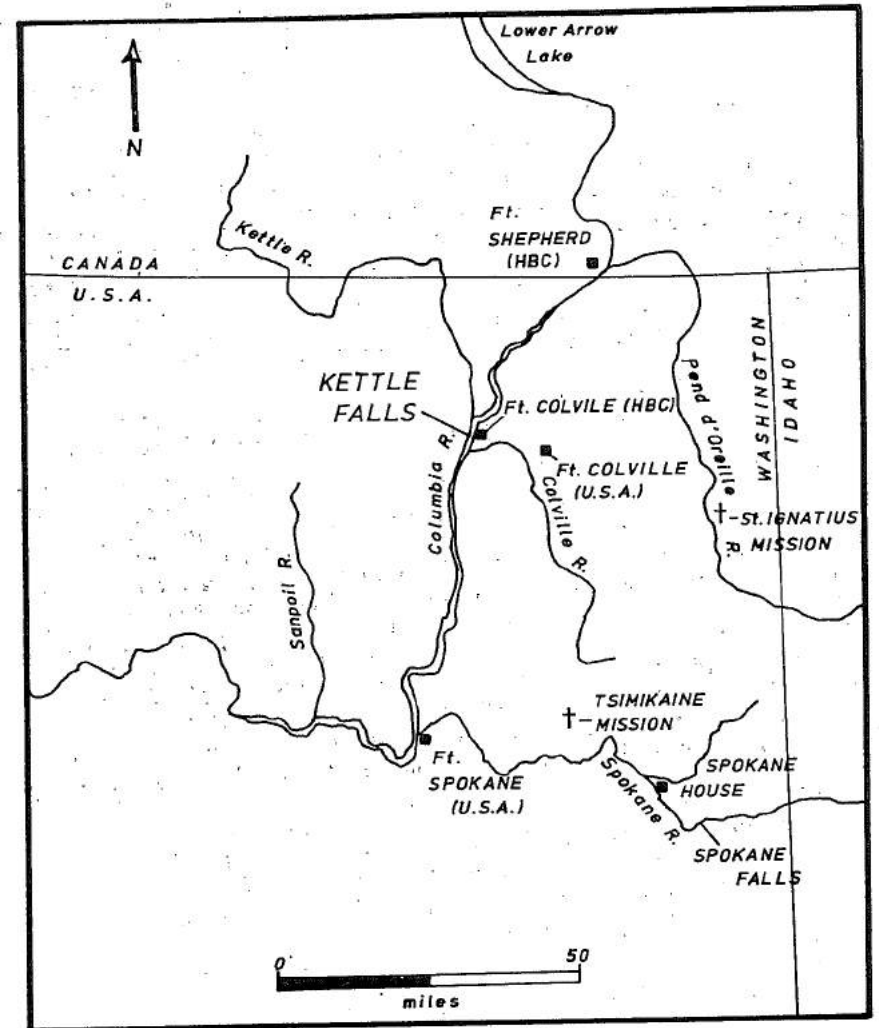
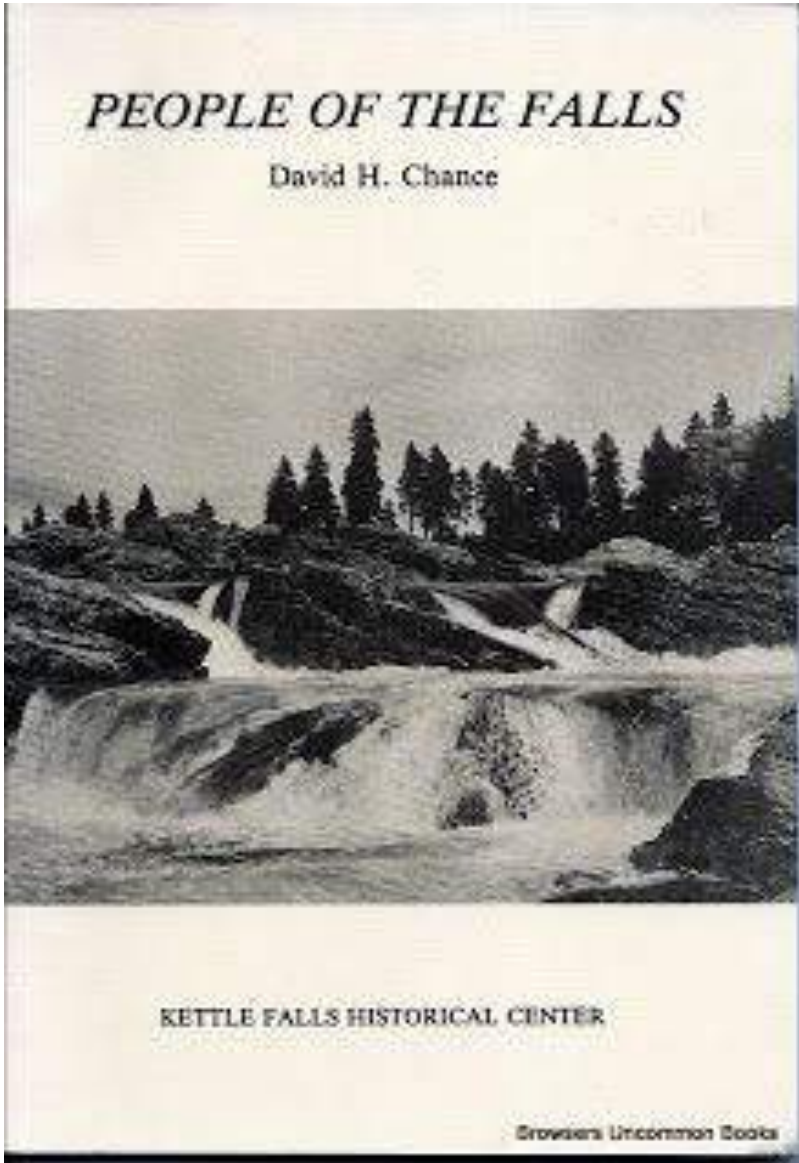
Rich Diet:

- 1. 50 % consisted of fish (i.e. Fr. Desmet in 1840s noted up to 3000 per day and fish divided equally among the women).*
- 2. Reliance on Plants is much greater than one could imagine (i.e. over 450 plant species, camas, berries, etc).*

KETTLE FALLS, DIET, CENTRALITY OF PLACE



PEOPLE OF THE FALLS



Similar to Celilo Falls yet Smaller in Scale



GRAND COULEE DAM AND LAKE ROOSEVELT



Conclusions: Indigenous Peoples and Environments, and the Future

- Adaptive capacity is the ecological and economic, socio-political, and ideological dimensions of culture that enables societies to be flexible, adaptive, and knowledgeable in the face of unknown futures.
- Sovereignty is critical to the control of resources and establishing rights to engage in an activity that is limited to sovereigns, i.e. tribal economic portfolios, natural resource management, etc.
- Having concern for a place, too, is important, especially when sovereignty is so often tied to a land base and reserved rights (i.e. water, fishing, hunting, and gathering rights).
- The conversation of what makes communities and cultures capable of adapting to change is really about which societies' narratives will survive into the future.

Thank You!

Questions and Comments?

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