

CURRICULUM VITAE

Sanjay Pyare

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Program in Environmental Sciences
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PROFESSIONAL INTERESTS

GIS-supported landscape assessments, ground-truthing GIS and remotely sensed resources, landscape connectivity, habitat modeling, animal dispersal/movement, aquatic-terrestrial-marine interactions, hands-on/experiential education, supporting information needs of resource managers

EDUCATION

1993 - 1999 Ph.D. Ecology, Evolution, and Conservation Biology. University of Nevada, Reno, NV
Dissertation: Interrelationships among northern flying squirrels, ectomycorrhizal fungi, and conifers in old-growth forest habitat of the Sierra Nevada.

1988 – 1992 B.A. Biology (Studio Art Minor), Hartwick College, Oneonta, NY
Senior Thesis: Habitat Use by Eastern Chipmunks.

HONORS AND AWARDS

2000-2001 Post-Doctoral Fellowship, Wildlife Conservation Society

1997 American Society of Mammalogy Scholarship

1997 Theodore Roosevelt Memorial Scholarship, American Museum of Natural History

1996 Sigma Xi Scholarship

1992 Magna Cum Laude, Hartwick College

1992 Departmental Distinction in Biology, Hartwick College

1992 Scholar of the Year, Hartwick College

1991 Alpha Sigma Phi National Scholar of the Year, Hartwick College

1988-1992 Presidential Scholar, Hartwick College

PROFESSIONAL RESEARCH EXPERIENCE

Assistant Professor of GIS & Landscape Ecology
University of Alaska Southeast
Juneau, AK
May 2005 – Present

Landscape Connectivity and Old Growth Reserves on the Tongass National Forest

I am collaborating with the USFS and USFWS to conduct a 3-yr study of connectivity of flying squirrel populations in an old-growth reserve network in fragmented landscapes on Prince of Wales Island. I use a combination of advanced GIS-based modeling and radiotelemetry-based field studies to support decision making about reserve configuration and functionality.

Regional Amphibian Monitoring & Conservation planning in Southeast Alaska

I am collaborating with ADFG, USFS, USFWS, USGS, and NPS to develop a long-term monitoring program for amphibians through predictive GIS-based habitat models of amphibian occurrence, large-scale inventories of breeding site occupancy, and coordination of an interagency monitoring team.

Habitat Suitability and Connectivity of the Cleveland Peninsula Mountain Goat Population, Southeast Alaska In collaboration with the Alaska Department of Fish and Game, I am using existing databases of goat occurrence, in combination with GIS modeling and DNA-based hair collection inventories, to evaluate habitat suitability and connectivity in an isolated and critically sensitive mountain goat population on the Cleveland Peninsula.

Research Ecologist

Denver Zoological Foundation (DZF)

Missoula, MT

June 2003 – April 2005 and Oct 2001 – April 2002

Occurrence and Habitat of Canada Lynx, Yellowstone Ecosystem

I conducted GIS-based habitat modeling, DNA hair sampling, and snow-tracking to evaluate the occurrence of

Canada lynx in Grand Teton National Park and adjacent Bridger Teton National Forest.

Distribution of Winter Recreation in Lynx and Wolverine Habitat, Yellowstone Ecosystem

I conducted GIS analysis and habitat modeling, as well as aerial & ground-based snow-tracking surveys, to evaluate potential impacts of human winter use on lynx and wolverine habitat.

Landscape/Wildlife Ecologist

Ecosystem Management Research Institute

Seeley Lake, MT

Oct 2002 – May 2003

Multi-Disciplinary Landscape Assessments

I provided GIS support for this consulting firm on an assortment of landscape-level assessment projects in the Rocky Mountain States, including a *Multi-species Habitat Conservation Plan in Thunder Basin National Grasslands* (Wyoming), an *Old-growth Ponderosa Pine Restoration Assessment* (Idaho), and *Fuels Reduction Plan* (Seeley Lake, Montana)

Habitat Biologist I

Alaska Department of Fish & Game

Douglas, AK

May - Sept 2002 (seasonal)

Mapping and Ground Truthing of Salmonid Distribution

I cooperated with a team of federal, state, and tribal agencies to conduct GIS-aided assessments of salmonid habitat for statewide restoration efforts. My duties included using GPS and GIS to map the upper extent of salmonid occurrence, identifying passage-conflicts, and sampling salmonid productivity.

Post Doctoral Research Ecologist

Wildlife Conservation Society

Jackson Hole, WY

Jan 2000 – Sept 2001

Ecological Impacts of Reintroduced and Recovering Large Carnivores

I evaluated the extent of grizzly bear and wolf recovery by studying the distributional and behavioral aspects of predator-prey interactions involving moose and these large carnivores.

Geographic Analysis of Changes in Grizzly Bear Distribution

I conducted a geographic analysis of grizzly bear recovery by developing a GIS-supported model of grizzly bear expansion that was based on historical changes in grizzly distribution.

Research Associate

Hornocker Wildlife Institute
Jackson Hole, WY USA
Dec – Mar 2001 (seasonal)

Assessment of Wolverine Distribution

I studied wolverine occurrence as a pilot study of wolverine ecology and habitat use through deployment of remote cameras and snow-tracking.

Science Director & Co-founder

Great Basin Institute
Reno, NV
1994-1999

Great Basin Institute (GBI)

During my graduate studies, I co-founded and directed GBI, which integrated K-12 and higher education, experiential learning, and ecological restoration (www.unr.edu/artsci/ceah/gbi). I also developed an 8-12 course program that highlighted local resource issues and needs, recruited and supervised a team of 10 instructors, and fundraised through agency contracts, federal and private grants, and institutional support.

TECHNICAL ABILITY WITH GIS

Proficiency with ESRI products: ArcGIS 9.x, ArcView 3.x, ArcPad

Proficiency with GIS extensions and imagery software: Spatial Analyst, 3-D Analyst, Geostatistical Analyst, Animal Movement, Hawth's Tool, ET GeoWizards, GeoTools, ERDAS, ER Mapper

Visual Basic for Application (VBA) programming skills for customization of GIS

Skills: vector and raster-based modeling skills, raster interpolation, surface analyses, cost-weighted distance analyses, geodatabase creation, re-projection, map/image georectification, geostatistical analysis, hot-linking, integration with GPS and PDA technology, meta-data compliance

PUBLICATIONS

- Pyare, S., R. E. Christensen III, R. C. Carstensen, and M. J. Adams. 2005. Preliminary assessment of breeding site occupancy, microhabitat associations, and sampling for western toad (*Bufo boreas*) monitoring in Glacier Bay. Proceedings of the Fourth Glacier Bay Science Symposium, 2004. USGS/BRD/ITR-2005-00XX, Washington, D.C.
- Pyare, S., S. Cain, D. Moody, C. Schwartz, and J. Berger. 2004. Carnivore recolonisation: reality, possibility, and a non-equilibrium century for grizzly bears in the southern Yellowstone ecosystem. *Animal Conservation* 7:1-7
- Pyare, S. and J. Berger. 2003. Beyond demography and delisting: ecological recovery for Yellowstone's grizzly bears and wolves. *Biological Conservation* 113:63-73.
- Pyare, S., W. P. Smith, J. V. Nicholls, and J. A. Cook. 2002. Diets of northern flying squirrels in Southeast Alaska. *Canadian Field-Naturalist* 116(1):98-103.
- Pyare, S. and W. S. Longland. 2002. Influence of habitat characteristics and truffles on habitat use by northern flying squirrels in old-growth forests. *Canadian Journal of Forest Research* 32(6):1016-1024.
- Pyare, S. and W. S. Longland. 2001. Mechanisms of truffle detection by northern flying squirrels. *Canadian Journal of Zoology* 79:1007-1015.
- Pyare, S. and W. S. Longland. 2001. Patterns and consequences of ectomycorrhizal fungi consumption by small mammals in Sierra Nevada old-growth forests. *Journal of Mammalogy* 82:681-689.
- Pyare, S. and J. Hodge. 2000. Northern flying squirrel. Pp 86-94 in D.M. Murphy and C.M. Knopp (eds.), Lake Tahoe watershed assessment (Vol. 2). USDA Gen. Tech. Rep. PSW-GTR-176.
- Pyare, S. and W. S. Longland. 2000. Seedling aided cache detection in desert rodents. *Oecologia* 122:66-71.
- W. S. Longland, S. H. Jenkins, S. B. Vander Wall, J. A. Veech, and S. Pyare. 2000. Seedling recruitment in Indian ricegrass: are desert granivores mutualists or predators? *Ecology* 82(11):3131-3148.
- S. B. Vander Wall, W. S. Longland, S. Pyare, and J. A. Veech. 1998. Cheek pouch capacities and loading rates of heteromyid rodents. *Oecologia* 113:21-28.
- Pyare, S. J. A. Kent, D. L. Noxon, and M. T. Murphy. 1993. Acorn preference and habitat use by eastern chipmunks. *American Midland Naturalist* 130:173-183.

MANUSCRIPTS IN PREPARATION

- Pyare, S. and M. J. Adams. Conservation assessment of western toads for landscape-level monitoring in Southeast Alaska.
- Pyare, S. and W. P. Smith. Connectivity in Pacific Northwest forests: from landscape movements to landscape models to landscape management.
- Pyare, S. and W. P. Smith. Den use by flying squirrels in fragmented landscapes.
- Pyare, S. and W. P. Smith. Understanding connectivity: using real animal movements to estimate landscape permeability.

CONFERENCE / WORKSHOP PRESENTATIONS

- 2004 Assessment of western toads in Glacier Bay NP, Glacier Bay Science Symposium, Juneau, AK
- 2004 Models for large-scale monitoring of amphibian distribution in Southeast Alaska, ARMI Workshop, Juneau, AK
- 2004 Landscape connectivity of old-growth reserves in the Tongass, Society for Conservation Biology, NY
- 2003 Ecological indicators of forest connectivity in the Tongass, CERI Workshop, Bozeman, MT
- 2003 Lynx survey and monitoring in Grand Teton NP, NPS Lynx Workshop, Missoula, MT
- 2001 Lynx survey and monitoring in Jackson Hole, Yellowstone Regional Lynx Workshop, Yellowstone NP
- 2001 Lynx survey and monitoring in Grand Teton NP, NPS Lynx Workshop, Missoula, MT
- 2001 Ecological criteria for carnivore recovery, American Society of Mammalogy, Missoula, MT
- 2000 Habitat relationships of northern flying squirrels, American Society of Mammalogy, Seattle, WA
- 1998 Use of visual and topographical cues by heteromyid rodents, Behavioral Ecology, CA
- 1998 Interdisciplinary environmental studies, Conference on Environment and Community, Reno, NV
- 1997 Effects of seed production on seed-caching rodents, Wildlife Society, Snowmass, CO
- 1997 Impacts of granivory on Indian ricegrass populations, Ecological Society of America, Albuquerque, NM

CONTRACTS & GRANTS AWARDED

Total funds awarded through 2005: \$ 660,810

\$ 48,667	<i>Alaska EPSCoR Young Investigator First Award</i> to conduct research in species-distribution modeling in relation to climate change, 2006-2007
\$ 5,500	<i>President's Special Project Fund</i> to support a statewide, multi-agency conference on declining amphibian populations, 2006
\$ 6,000	<i>Alaska Natural Heritage Program</i> contract to model amphibian distribution in Alaska
\$ 5,000	<i>UAS Chancellor's Special Fund</i> to conduct a phylogeographic analysis of western toads in Southeast Alaska (with D. Tallmon), 2005
\$ 31,863	<i>UA Partnership</i> funding to establish a GIS participatory-mapping project that focuses on amphibians in rural Southeast Alaska communities, 2005-2006
\$ 35,000	<i>U.S. Forest Service</i> contract to conduct a spatial analysis of moose habitat use in relation to off-highway vehicle access in the Yakutat forelands, 2005-2006
\$ 90,000	<i>National Park Service</i> contract to conduct a GIS-supported assessment of coastal water resources and watershed conditions in and adjacent to SW Alaska National Parks, 2005-2006 (with S. Nagorski, E. Hood, and G. Eckert)
\$ 70,000	<i>Alaska Department of Fish and Game Non-Game Program</i> grant to conduct a GIS-based habitat assessment of western toads and implement a landscape-level monitoring strategy, 2005-2006
\$ 29,180	<i>Earthwatch Foundation</i> grant to validate a GIS-based model of landscape connectivity of the old-growth reserve system in the Tongass National Forest, 2005-2006 (with W.P. Smith)
\$ 10,000	<i>National Park Foundation</i> contract for conducting a GIS-supported assessment of western-toads in Glacier Bay National Park, 2004 (with B. Christensen, R. Carstensen, & M. J. Adams)
\$ 5,000	<i>U.S. Forest Service</i> contract for an assessment of Northern Goshawk and marten management standards on the Tongass National Forest, 2004
\$174,000	<i>U.S. Fish and Wildlife Service</i> contract to conduct a GIS-based assessment of landscape connectivity of the old-growth reserve system in the Tongass National Forest, 2003-2006 (with W.P. Smith)
\$ 45,000	<i>National Park Service</i> contract to develop a landscape-level habitat model for Canada lynx and conduct an inventory of lynx occurrence in Grand Teton NP, 2000-2003 (with J. L. Weaver and J. Berger)
\$ 27,000	<i>U.S. Forest Service</i> contract to conduct an inventory of Canada lynx and wolverine in Bridger-Teton National Forest, 2001-2002
\$ 10,000	<i>National Park Service</i> contract to conduct a GIS-supported assessment of impacts of winter recreation on wolverine and Canada lynx habitat in Grand Teton National Park, 2001-2002
\$ 48,000	<i>Wildlife Conservation Society</i> post-doctoral fellowship to conduct a geographic and ecological assessment of large-carnivore recovery in the southern Yellowstone ecosystem, 2000
\$ 23,000	<i>Northwest K-12 Professional Development Program</i> contract to develop hands-on, in-service workshops for K-12 teachers in ecology and conservation, 1999-2000
\$ 4,000	<i>Whittell Wildlife Board</i> grant to purchase equipment for field-based educational curricula, 1998
\$ 2,000	<i>American Society of Mammalogy</i> grant for dissertation research, 1997
\$ 800	<i>American Museum of Natural History</i> grant for dissertation research, 1997
\$ 800	<i>Sigma Xi</i> grant for dissertation research, 1996

ASSOCIATION MEMBERSHIPS

International Association of Landscape Ecology, Society for Conservation Biology, Society for Conservation GIS, Ecological Society of America, The Wildlife Society, and American Society of Mammalogists

PROFESSIONAL EDITORIAL ACTIVITIES

Journals: Conservation Biology, Ecological Applications, Biological Conservation, Animal Conservation, Journal of Mammalogy, Journal of Wildlife Management, Oecologia, Canadian Journal of Zoology

Grants: National Science Foundation, National Geographic, USDA Competitive Grants, and Earthwatch Foundation

PROFESSIONAL REFERENCES:

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