Final Report of Purple Martin Monitoring

Morgan Sparks and Courtney Fung

August 16, 2008

Introduction

For this project Western Purple Martins (*Progne subis arboricola*) were observed at the Woodard Bay Natural Resource Conservation Area. Over the duration of three months habits and behaviors of the birds were recorded on a weekly basis. During the project stakeholders were researched and interviewed to determine their interest in Purple Martins and the project. After the data was collected, it was processed and reflected upon.

There is a wide variety of animals at the Woodard Bay site. This is most evident in the 175 species of bird that have been recorded there (Department of Natural Resources). These include bald eagles, cormorants, sea gulls, a rookery of blue heron, pigeon guillemots, and of course one of the largest colonies of purple martin on the west coast. Other animals that can be viewed here are the colony of nesting bats under the old Weyerhaeuser pier and the occasional mink beside the water's edge. Also, a large number of Canadian geese can be found here during the spring. Raccoon tracks are evident on a closer inspection of the sand, as well as the holes used by mollusks underneath our feet. In addition to these animals there are a large number of seals in the bay at most times, 30 were counted upon one visit, but numbers over 100 are not unheard of (Site Manager). The reason for the abundance of animals in the area seems to be because of the status of the area as a natural preserve since 1985 (DNR). The population of purple martin exploded after the introduction of nesting areas. This was due to the fact that the bay provides a safe area for the animals, away from human contact, in a situation in which conservationism is promoted instead of ignored. All animals in the bay use it for this reason; it serves to protect wintering waterfowl, allows for a safe place for seals to keep their pups and provides a safe place away from negative human involvement.

On the North Peninsula of Woodard Bay native flora and fauna are present. There are four acres of wetland here mostly containing Spirea in the center where there is no overstory vegetation (DNR). Moving inward Oregon ash begins to dominate the vegetation with slough sledge as the understory. Here there are many trees in the 70-80-year range, with a few in the 125-year range (DNR). There are a few Douglas fir that are believed to be in the 200-year+ range (DNR). In the Central Peninsula area there are a few old growth trees that could be as old as 500 years (DNR). There is a nearby area of 50-60-year old Douglas Firs that appear to be second growth (DNR). Also appearing, is a stand of 60 year old alders (DNR).

Woodard Bay drains into Woodard Creek, which is the only perennial stream flowing into the bay (DNR). The stream originates in Olympia near I-5. The stream has many seasonal tributaries as well as a few possible perennial tributaries. The basin in which it drains has been extensively altered by development which has changed the drainage patterns of the basin. Water quality is threatened because of the urban origins of the stream. Threats to the stream include biocides, siltation, and petrochemicals (DNR). The stream is home to a small number of anadromous fish and is listed as a type 3 stream (DNR). This requires a 75 foot buffer under the Critical Areas Ordinance for Thurston County (DNR).

Monitoring

Puget Sound Purple Martins were monitored because the Western Purple Martin species is one of greatest conservation need. Currently, it is estimated that the Washington population stands at 700 pairs, with 3500 on the West Coast. Monitoring, as well as helping to determine numbers, assesses the health and sustainability of the population. The species is endangered because of three main hazards. The most detrimental of the three is the loss of habitat from urban and agriculture development. Within this comes a loss of snags which provide nesting cavities. The birds are also threatened by invasive species (i.e. Starlings) which makes nest sites more competitive. The birds are important because they play an important role in biodiversity. The birds also fill an important niche in their ecosystem.

Observation took place on a weekly basis as it provided for a more in depth examination of Purple Martins. Observations included perching, entries, roosting, as well as other behaviors. Also, numbers of adults, juveniles, and young were recorded. When the birds first returned to their spring and summer homes they were focused on finding the best possible spot to rear their young. Because of this, the birds would enter many different boxes and would contest each other for the better boxes. Also, the birds were focused on finding mates. As the season progressed the birds began to settle down as they became more focused on building their nests and preparing for their young. Activity began to die down with the occasional bird leaving for food or other reasons but returning quickly. At season's end activity resumed with the arrival of young. Monitoring began at two hours before sunset and ended at sunset. This was because the birds were most active at their nests the two hours after sunrise and the two before sunset. For monitoring a scope was set up and binoculars were used to view the birds. One person generally recorded the data as the other monitored the activity.

Stakeholder Descriptions

One stakeholder at the Woodard Bay NRCA is the landowner, the Washington Department of Natural Resources. The goal of the DNR is to manage the historical, archaeological, and environmental aspects of the area. It works to maintain the public's opportunity to visit a relatively untouched site of over 20 years. The primary purpose of the NRCA program is to protect outstanding examples of native ecosystems, habitat for endangered, threatened, and sensitive plants and animals, and scenic landscapes. In relation to the PUMA project, DNR maintains the site with the help of other organizations. DNR's role is to maintain the area's status as a nature conservancy and to manage the upkeep of the site. The PUMA project will impact the DNR because it will provide them with data on a major species that are important to the area. The DNR is a major contributor to the project and looks forward to viewing the data that has been gathered.

The Audubon Society is a nationwide society that is a non-profit organization whose members are interested in birds and other wildlife, their habitats, and natural history. The Black Hills chapter contains 1,100+ members, whose goals are to promote environmental education and recreation and to maintain and protect our ecosystems for future generations. The group's members serve to provide the community with volunteers for projects similar to this. In relation to the PUMA project they serve as the majority of non-professional (and

professional) participants in the fight to help save species like this. They provide manpower, funding and voice for various conservation issues. This project will provide the Audubon Society with valuable information on the local numbers of animals which could lead to the society lobbying for the species' welfare or helping to improve the birds' outlook through volunteer projects.

The National Wildlife Federation is the nation's largest non-profit conservation education and advocacy organization. It has over five million members and supporters in 48 state-affiliated organizations. The Western Natural Resource Area encompasses Washington, Oregon, California, and Hawaii. It focuses on the protection and restoration of threatened and endangered species, habitat protection, and climate change education and damage control. The organization has the capability to further the advancements in Purple Martin restoration and research through restoration activities and their ability to provide the public with information. Currently the NWF does not have projects or funding devoted to Purple Martins but does provide lots of information about these birds for the public. The organization is impacted by the project because it will provide it with more information that can be forwarded to the public which may also lead to financial or volunteer support. This is important because the organization (Western Natural Resource Area) is focused on conservation issues in Puget Sound and coastal habitats which of course encompasses the entire range of Purple Martin habitat.

The Washington Department of Fish and Wildlife look after the interests of fish and wildlife. The WDFW is responsible for helping to inform the public so that they can participate in policy development and decision making. It strives to create partnerships with people and groups of interest who share responsibility for fish and wildlife in order to maintain and enhance habitat. The Department works to provide fishing, hunting and non-consumptive recreational opportunities in conjunction with healthy and diverse fish and wildlife populations. The Washington Department of Fish and Wildlife is responsible for initiating this project. This department also helps to raise awareness about the decline of the Western Purple Martins. The PUMA project will impact the WDFW because it will provide it with important information on the health and sustainability. This Department manages fish and wildlife species based on the best available science. New information allows the Washington Department of Fish and Wildlife to make better decisions in the future.

Public Use

During the monitoring period many people visited the site and participated in a number of different recreational activities. Most people came with the purpose of watching wildlife, which included many species of birds, harbor seals, and the large bat colony at the site. Other visitors included kayakers, swimmers and picnickers. Also, some came to enjoy the view or get some exercise on the walk out. A few visitors did not understand the purpose of the conservation area and participated in activities such as digging large holes in the beach and entering areas in which they were not permitted.

Highlights and Challenges

Over the course of the project there have been many memorable moments. One that particularly stood out was when a seagull was perched on top of a box and many Purple

Martins banded together to drive the seagull away with a series of dive-bombs. It was interesting to see the birds come together and help each other. Another memorable moment was during one monitoring session when a young buck swam from under the pier and across the bay around the point. This seemed like strange behavior for the animal because it is much more suited for travel on the land and there was plenty of available beach. It was also very memorable when an eagle was observed sitting among the seals out on the wooden planks made for the seals to bask on. This was fascinating because the eagle was just feet from the huge seals but remained stationary without worry.

Reflections

Courtney Fung:

Upon reflection of this project I have discovered that my way of thinking about birds and Purple Martins have changed. For example, I now know what a Purple Martin is. Also, I have gained more of an appreciation for my natural surroundings. For instance, at the beginning I was more focused at the task at hand. I only watched the Purple Martins and recorded the data. However, by the end of this experience I was interested in finding out more about the other animals that inhabited the area. Morgan and I looked up birds that we were unfamiliar with. We also became very interested in the bat colony but had no time to observe it. This project makes me want to take a more active role in preserving our environment and I have realized the importance of improving our natural surroundings. I think that this study will affect the Purple Martins positively. The data collected could help bring awareness and concern to Purple Martins.

Morgan Sparks:

With the completion of this project I have a greater appreciation for the environment in which we live. I would consider myself an "outdoorsy" person but at the end of this project I found myself paying much more attention to birds. I now take time to observe and listen to birds. I especially tuned into the unique sounds that the Purple Martin makes. Before the project I had seen Purple Martins at Luhr Beach but never knew what they were. Upon visiting Luhr Beach for pictures after the project I was not only interested in the Purple Martins but also the many other birds that can be viewed there. I now see that birds (and other animals) play an important role in their ecosystems. Also, I see the importance of preserving such animals even though they do not interest me as much as other animals. I believe that this project will affect the Western Purple Martin population because it will help boost the species in their bid for protection. The power of having actual numbers, even if it is a small amount, should help bring awareness the plight of the Purple Martin.

Final Data Sheet

Location of Site: Woodard Bay PRSU100-1

Dates & Times of Monitoring	4/26/08-18:15 5/03/08-18:40 5/09/08-18:15 5/12/08-18:45 5/25/08-18:52 5/31/08-18:58 6/07/08-19:03 6/14/08-19:07 6/21/08-19:06 6/29/08-19:10 7/07/08-19:08 7/13/08-19:04 7/21/08-18:57
# of Boxes at the site	27
# of Nests *list box numbers*	1, 3, 5, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 23, 25
# of Active Nests (with young) *list box numbers*	1, 15
# of Adults	35
# of Young	4